

# AIR DISTRIBUTION PRODUCTS

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[www.nailor.com](http://www.nailor.com)



Nailor offers a selection of standard colors and finishes available on our grilles, registers and diffusers. For painted finishes, our state-of-the-art paint systems provide environmentally friendly finishing solutions with uniform coverage and coating thickness. The result is an exceptionally durable finish that resists scratching, corrosion and general wear. Additional facilities for special requirements, as well as a selection of anodized or brushed finishes, complete our ability to provide unmatched beauty and durability for any application.

**NAILOR POWDER COAT PROPERTIES**

FILM THICKNESS	2.0 to 3.0 mils
HARDNESS	2 H
IMPACT RESISTANCE	Direct: 160 inch - lbs. Reverse 160 inch - lbs.
SALT SPRAY	1000 hours

**ELECTROCOATING PROPERTIES**

FILM THICKNESS	.8 to 1.2 mils
HARDNESS	HB TO H
IMPACT RESISTANCE	80 inch - lbs
SALT SPRAY	100 hours


**POWDER COAT**

Nailor's powder coat is a high-tech thermosetting polyester powder coating with superior physical properties that provide excellent color and gloss retention. The finish offers extreme durability and hardness that resists scratching, chipping and general wear. Surface preparation includes degreasing and a chemical cleaning followed by a clean rinse before a final powder coat finish is applied and baked. The environmentally friendly Nailor powder coat system assures uniform coverage and color consistency resulting in a long lasting superior finish. Colors, including simulated anodizing, which is far more economical than color anodizing, can be selected from Nailor's standard color chart or non-standard colors and can be matched from sample chips provided to Nailor.

**ELECTROCOATING**

E-Coat is an environmentally friendly coating that provides complete coverage and a wide range of performance properties, formulated to meet corrosion, durability and other performance specifications. Electrocoating is a highly automated process in which paint is electrically deposited onto a metal foundation. Film build thickness is uniform and overall application efficiencies are in excess of 90%. Paint is consistent on all part-to-part surfaces, preventing sags, runs or drips. E-Coat offers flexibility, better first yield pass and quicker production times compared to other forms of paint applications. Electrocoating is an excellent solution that offers superior properties and uniform finish.

**CLEAR ANODIZING** (Aluminum products only)

Clear anodizing is a clear oxide coating that exemplifies an aluminum surface's natural oxide coating producing a hard, scratch resistant surface that is resistant to general wear and mild chemicals. The process provides a natural looking, virtually maintenance free finish that will endure for many years.

**COLOR ANODIZING** (Aluminum products only)

Color anodizing is an electrolytic process where, after standard anodizing procedures, colored metallic pigments penetrate the oxide surface pores producing a corrosion resistant, colorfast finish. The process results in a natural metallic appearance that requires little maintenance.

**BRUSHED AND CLEAR COAT**

Available on specific aluminum products (consult applicable product page for availability). Surface is brushed to achieve a scratch finish texture before being degreased and chemically cleaned. A clear lacquer coating is then applied to provide a durable protective finish.

**#4 BRUSHED SATIN POLISHED** (Stainless Steel products only)

Surface is polished to ASTM A480 #4 standard to achieve a bright durable finish that is resistant to mild chemicals and corrosion. A final coating is not required due to the inherent anti-corrosion properties of the stainless steel.

**PRIME COAT**

Prime coat provides a stable base for painting in the field. Surface pretreatment includes degreasing and a chemical cleaning before an alkyd prime coat is applied. After a thorough cleaning for dust, etc. that can contaminate the final finish and cause premature flaking or peeling, finish coat should be field applied as soon as possible.

**PAINT PREPARED ALUMINUM** (Aluminum products only)

Allows for field applied paint. Surface preparation includes degreasing and a chemical cleaning followed by a clean rinse. Finish coat should be field applied as soon as possible.

**MILL FINISH**

Surface is left untreated and requires cleaning, degreasing, etc. in the field before final finish can be applied if required.

**FLOWLINE™ LINEAR DIFFUSERS**

**A**

**LINEAR DIFFUSERS AND BAR GRILLES**

**B**

**PLENUM SLOT AND LIGHT TROFFER DIFFUSERS**

**C**

**CEILING DIFFUSERS**

**D**

**FIRE RATED PRODUCTS**

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Nailor Industries Inc. pursues a policy of continuous product development and we therefore reserve the right to change any of the information in this publication without notice.

Contact your Nailor representative to verify current product details.

# **Nailor International Inc.**

Today, we are proud that the Nailor International Group of manufacturing companies are recognized worldwide in the HVAC industry for our comprehensive product offering. However, many may not know that the group had humble beginnings.

The company commenced operations in 1971 at a small facility in Toronto, Canada manufacturing a single air control device (the curtain fire damper). Michael T. Nailor (President and CEO) started with the founding principle that the company would be customer focused and service orientated, dedicated to fulfilling the need for high quality, competitively priced products, delivered to our customers on schedule. That attitude and the values instilled by Mike in all Nailor employees, still applies today and as a result the company has been rewarded with a continually increasing demand for our products.

Our track record is one of technical leadership and innovation, pioneering the development of new products that exceed industry standard design and performance specifications. Just one example is the commercial introduction in 1995 of the EC motor (ECM) in fan powered terminal units, providing substantial energy savings and which has now become the industry standard. This was followed in 2005 with the introduction of a new line of innovative commercial fan coil units, the first available with variable air volume EPIC Fan Technology® and ECM to provide increased occupant comfort as well as energy savings. We felt the significance of this new development at the time, should also herald a new brand name – Engineered Comfort.

In order to benefit the industry, continue to innovate and stay ahead, Nailor is committed to actively participating on technical committees and in the standards writing process at ASHRAE, AHRI and AMCA for our product lines.

Today, Nailor International Inc. is still a privately held company with Group Headquarters in Houston, Texas. The company now has manufacturing plants totaling over one million square feet strategically located in three countries with an international distribution network of representatives working together to not only meet, but exceed the expectations of clients, engineers and customers around the world.

**"Complete Air Control and Distribution Solutions."**



[www.nailor.com](http://www.nailor.com)

Terminal Units, Air Distribution and  
Air Control Products  
(USA, Canada and Worldwide)



[www.engineered-comfort.com](http://www.engineered-comfort.com)

Commercial Fan Coil Units  
(USA and Canada)



[www.klean-aire.com](http://www.klean-aire.com)

Filter Housings for Commercial and  
Industrial HVAC Filtration Systems  
(USA and Canada)



[www.thermal-corp.com](http://www.thermal-corp.com)

Quality Custom Air Handling Equipment  
and Blower Coils since 1945  
(USA and Canada)



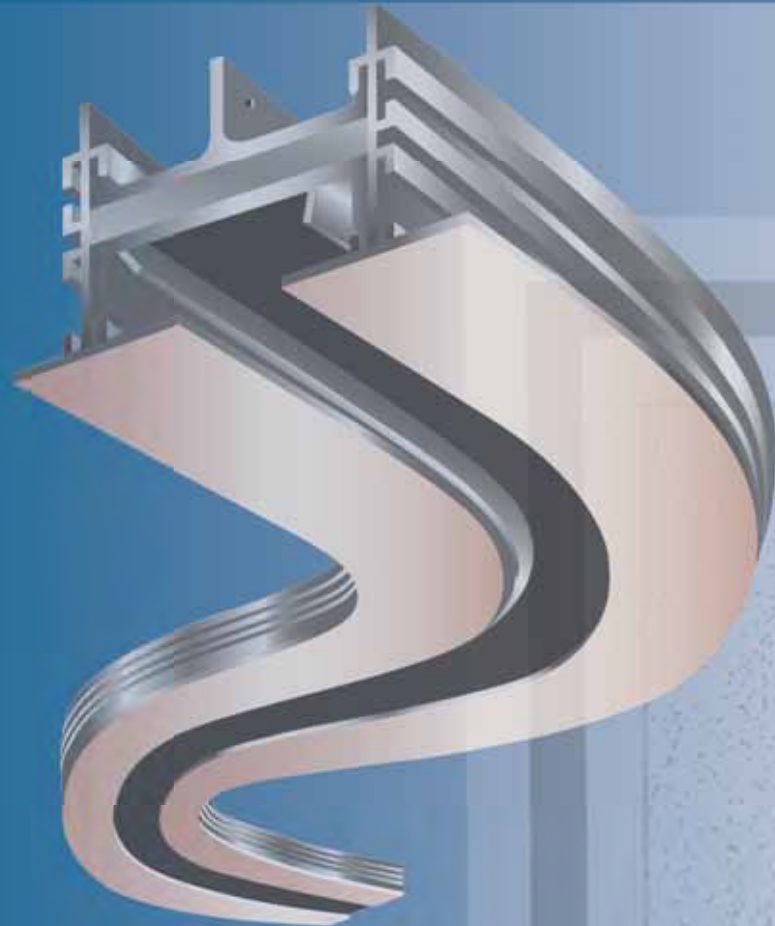
[www.advancedair.co.uk](http://www.advancedair.co.uk)

Commercial Fan Coils and Terminal Units,  
Air Distribution and Air Control Products  
(UK and Europe)

**U.S.A. • CANADA • U.K.**



# FLOWLINE LINEAR DIFFUSERS



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**A**

**FLOWLINE™ LINEAR DIFFUSERS**



## THE FLOWLINE™ SYSTEM...

### AN ARCHITECTURAL SOLUTION FOR SUPERIOR AIR DISTRIBUTION.

FlowLine™ is a custom architectural linear diffuser system designed to integrate and blend supply and return air openings harmoniously into interior commercial building designs. The flexibility of FlowLine™ provides design and application possibilities that are limited only by your imagination. FlowLine™ can blend or contrast as you integrate it into either ceiling or sidewall applications. FlowLine™ linear may be used to either inconspicuously hide the air distribution system or conversely it may be used as a contrasting, architectural design element, using straight lines and/or curves to enhance the interior of a building.

Whether you require straight lines, mitered angles or smooth curves, Nailor can custom fabricate FlowLine™ to meet your most demanding architectural and engineering performance requirements. FlowLine™ can be custom curved in any plane to suit architectural requirements. Flat face radiuses for ceilings and concave or convex curving for sidewall

applications are available to special order. FlowLine™ is fabricated using sturdy heavy wall aluminum extrusions. A variety of frame/border styles and associated mounting hardware allows FlowLine™ to be installed either during or after ceiling installation. In acoustical suspension ceiling systems using continuous runs, the FlowLine™ system is installed at the same time as the ceiling grid and becomes an integral part of the ceiling assembly.

FlowLine™ linear is available in five slot widths providing a much higher air volume capability than conventional multiple slot linear designs, which are more visible. A two slot option is also available for even higher capacities. Engineered for outstanding performance and tested in accordance with the latest ASHRAE Standard 70, FlowLine™ can provide higher airflows at lower noise levels than traditional linear slot designs, making it an ideal solution for high profile architectural projects.





FlowLine™ is available in two air pattern controller designs. The FLH Series features adjustable horizontal high throw pattern controllers for ceiling applications. The FLV Series features adjustable vertical jet pattern controllers for high ceiling and sidewall applications.

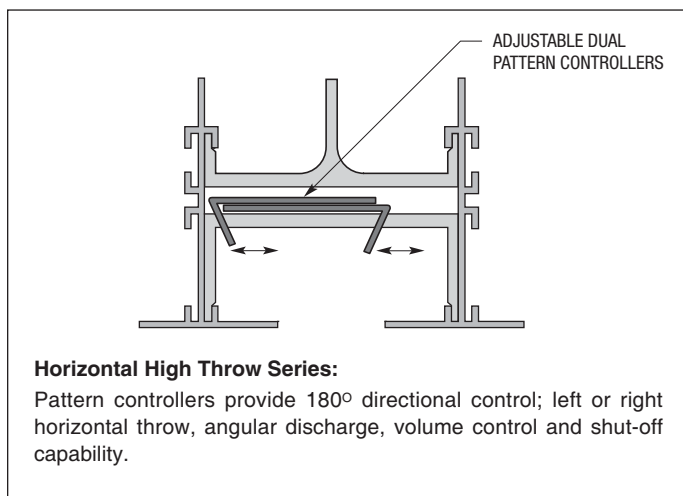
**...Invisible Air**

## KEY FEATURES:

- High capacity single slot linear diffuser available in five slot widths, offers an attractive alternative to traditional multi-slot designs. Available slot widths are 1" (25), 1 1/2" (38), 2" (51), 2 1/2" (64) and 3" (76). A two slot option is also available.
- Comprehensive selection of frame/border styles and mounting hardware to suit any installation.
- Choice of FLH Series Horizontal or FLV Series Vertical Pattern Controllers. May be combined within a single system.
- Custom curving availability to meet specific design requirements, provides architectural appeal.
- Heavy wall extruded aluminum construction permits support and full integration with ceiling system.
- Mitered end borders are available which maximize aesthetic appeal.
- Available in single sections up to 12 ft. (3658) in length. Longer lengths are supplied in multiple sections with alignment strips for field assembly.
- High performance design is ideally suited to VAV systems, both heating and cooling.
- Custom colors and anodized finishes are available.

## FLH SERIES:

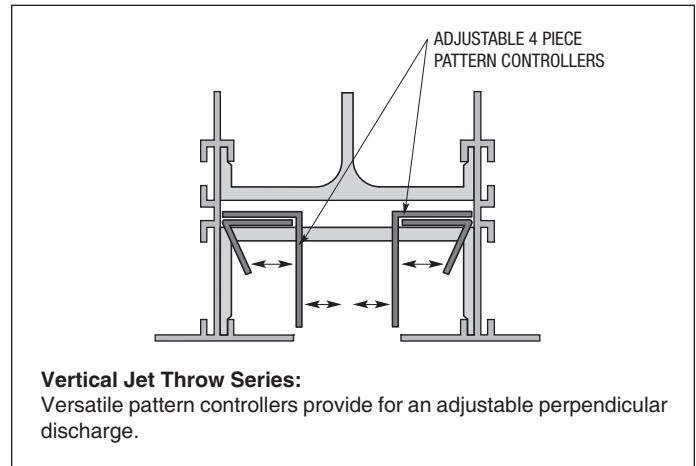
Designed primarily for continuous linear slot ceiling applications requiring horizontal air patterns. Tight, high induction air pattern maximizes coanda effect under a wide range of airflow volumes for maximum occupant comfort. Typical applications would include open office perimeter zones, entrance foyers and lobbies, mall and office entrance atriums and conference meeting rooms.



## FLV SERIES:

Designed primarily for continuous linear slot ceiling applications requiring an adjustable extended throw vertical air pattern. Typical applications would include perimeter glass curtain walls and high bays for heated and/or cooled air, which may be directed downwards, terminating at the floor at a comfortable velocity. Also suitable for interior zones with high ceilings, such as entrance foyers and lobbies, mall and office entrance atriums, convention center and theaters.

This model may also be used in high sidewall applications with long throw requirements.



## FLP(I) SERIES:

Nailor offers factory built supply air plenum boots in various lengths to suit the application in both uninsulated and insulated versions. Nailor engineered plenums save on costly field labor and ensure a sure-fit trouble free installation.

## FT SERIES:

The FlowLine™ Series is available in modular lengths for lay-in T-Bar applications, utilizing either the horizontal high throw or vertical jet throw pattern controllers. Units are supplied with factory installed engineered plenums in uninsulated or insulated versions.

## FM SERIES:

The FM Series is an architecturally pleasing modular square ceiling diffuser primarily for lay-in T-Bar applications. Designed to complement the FlowLine™ Linear Diffuser System, the FM Series features a single slot at the perimeter of a 2 ft. x 2 ft. (600 x 600) ceiling module and accommodates a center acoustic ceiling tile.

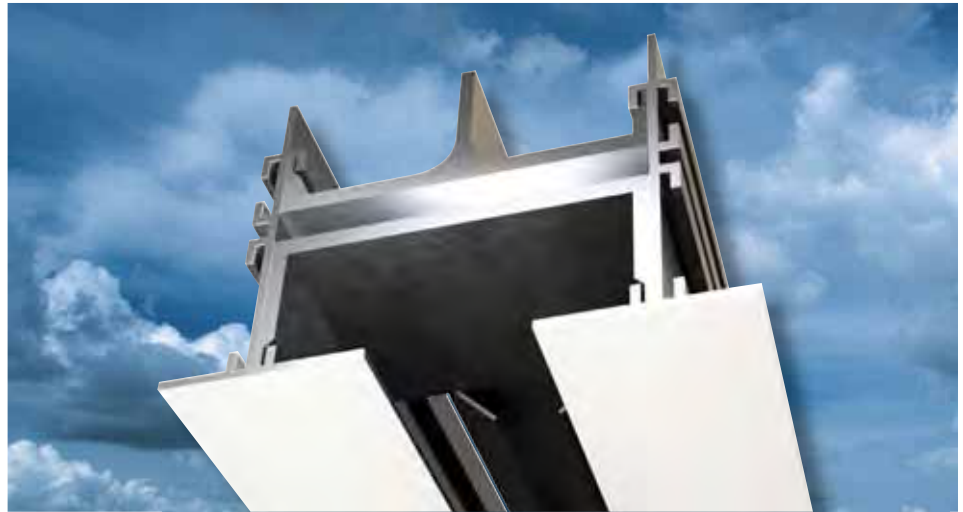


## FLH SERIES

- HORIZONTAL HIGH THROW PATTERN CONTROLLERS
- CONTINUOUS CUSTOM LINEAR DIFFUSER

### Models:

- FLH10 1" (25) Slot
- FLH15 1 1/2" (38) Slot
- FLH20 2" (51) Slot
- FLH25 2 1/2" (64) Slot
- FLH30 3" (76) Slot



The FlowLine™ FLH Series continuous slot diffuser is designed primarily for ceiling applications. The adjustable pattern controllers, which are easily adjusted from the face, allow the discharge air to be directed to the left or right as well as downward. When positioned for horizontal discharge, a tight horizontal air pattern is produced that makes full use of the ceiling (coanda) effect, even at reduced air volumes. High induction characteristics maximize room air movement and mixing, making FlowLine™ FLH Series eminently suitable for variable air volume systems.

### STANDARD FEATURES:

- Heavy wall extruded aluminum construction with galvanized steel pattern controllers.
- Sliding pattern controller design provides easy adjustment for horizontal or vertical directional control as well as a volume control or shut-off capability.
- Dual blade pattern controllers are constructed on 24" (610) centers as standard for maximum flexibility.
- Five slot widths in a one or two slot configuration provide a high air volume capability.
- Single section lengths up to 12 ft. (3658) reduce the number of joints in continuous runs.
- Multiple section assemblies are divided into equal length single sections and are provided with alignment strips.

- Mitered end borders on standard frame Type AA provide a superior architectural finish.
- FlowLine™ can be custom curved in any plane - concave, convex or flat radius.

### FRAME/BORDER STYLES:

- FlowLine™ FLH Series is designed for continuous length installation in both hard drywall or acoustical suspension (T-Bar) ceiling systems. Optional mounting hardware is available to suit the installation method.
- Available in two standard and various special frame/border designs to suit any installation requirement.
- Various end border options are available to suit installation.
- Mitered corner and transition sections are available.

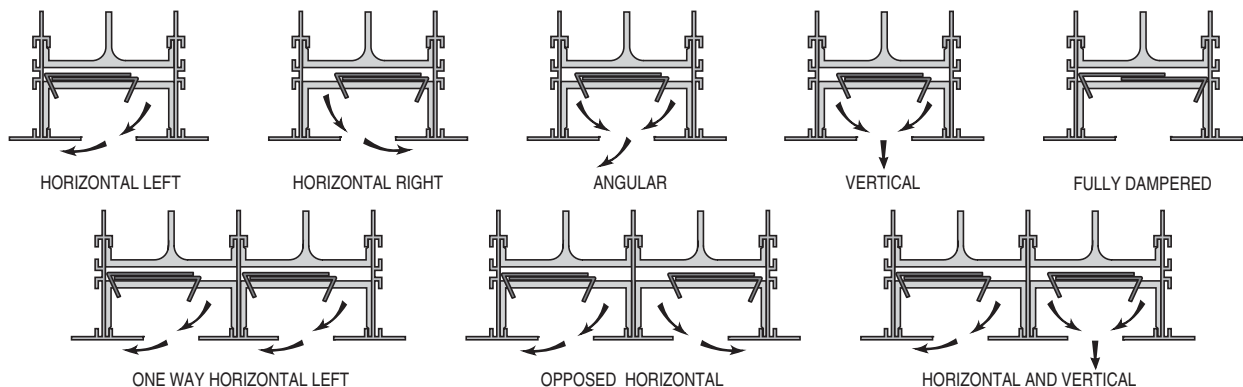
### SUPPLY AIR PLENUMS:

- Model Series FLP(I) factory engineered plenum boots are available, which ensure both a trouble free installation and that catalog performance is met.

### FINISH:

- Standard finish is AW Appliance White on exposed frame surfaces. Pattern controllers and interior surfaces are black.
- Custom color and anodized finishes are available to suit architectural requirements.

### FLH Series Pattern Controller Adjustment



## FLV SERIES

- VERTICAL JET THROW PATTERN CONTROLLERS
- CONTINUOUS CUSTOM LINEAR DIFFUSER

### Models:

- FLV10 1" (25) Slot
- FLV15 1 1/2" (38) Slot
- FLV20 2" (51) Slot
- FLV25 2 1/2" (64) Slot
- FLV30 3" (76) Slot



The FlowLine™ FLV Series continuous slot diffuser is designed for both ceiling and high sidewall applications and provides total air pattern control flexibility. Similar in appearance to the FLH Series, the FLV Series features adjustable pattern controllers that direct the airstream perpendicular to the face, providing a strong vertical projection when installed in a ceiling and horizontally when installed in a sidewall application. The pattern controllers permit angular discharge, allowing the airstream to be directed left or right in a ceiling application and up or down in a sidewall application. The pattern controllers also provide a variable aperture capability to adjust performance to specific applications.

### STANDARD FEATURES:

- Heavy wall extruded aluminum construction with galvanized steel pattern controllers.
- Sliding pattern controller design provides easy adjustment for vertical directional control as well as a volume control capability.
- Dual blade pattern controllers are constructed on 24" (610) centers as standard for maximum flexibility.
- Five slot widths in a one or two slot configuration provide a high air volume capability.
- Single section lengths up to 12 ft. (3658) reduce the number of joints in continuous runs.
- Multiple section assemblies are divided into equal length single sections and are provided with alignment strips.

- Mitered end borders on standard frame Type AA provide a superior architectural finish.
- FlowLine™ can be custom curved in any plane - concave, convex or flat radius.

### FRAME/BORDER STYLES:

- FlowLine™ FLV Series is designed for continuous length installation in both hard drywall or acoustical suspension (T-Bar) ceiling systems. Optional mounting hardware is available to suit the installation method.
- Available in two standard and various special frame/border designs to suit any installation requirement.
- Various end border options are available to suit installation.

- Mitered corner and transition sections are available.

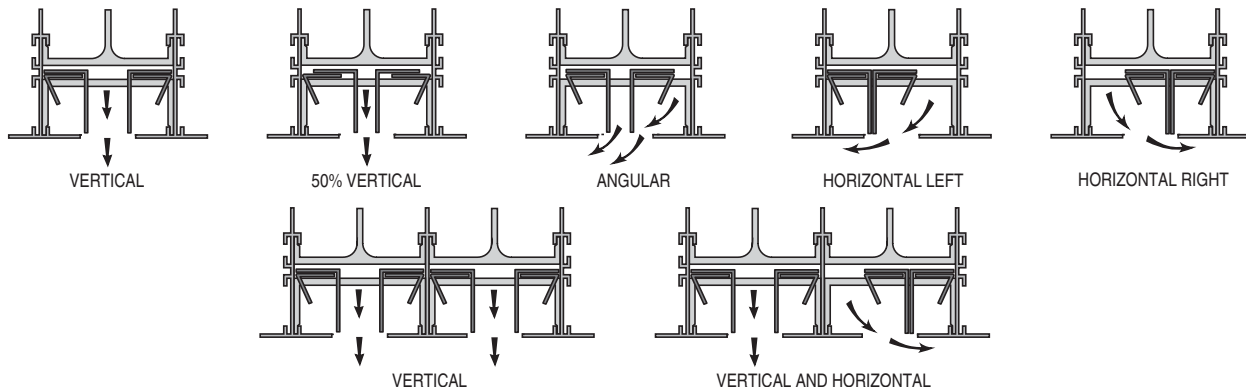
### SUPPLY AIR PLENUMS:

- Model Series FLP(I) factory engineered plenum boots are available, which ensure both a trouble free installation and that catalog performance is met.

### FINISH:

- Standard finish is AW Appliance White on exposed frame surfaces. Pattern controllers and interior surfaces are black.
- Custom color and anodized finishes are available to suit architectural requirements.

### FLV Series Pattern Controller Adjustment



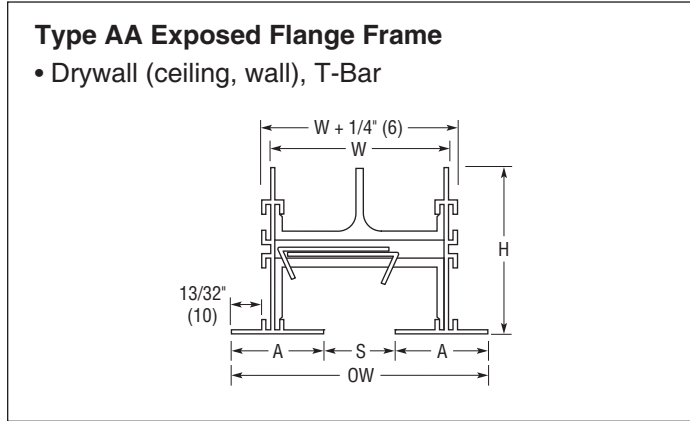


## STANDARD FRAME/BORDER STYLES

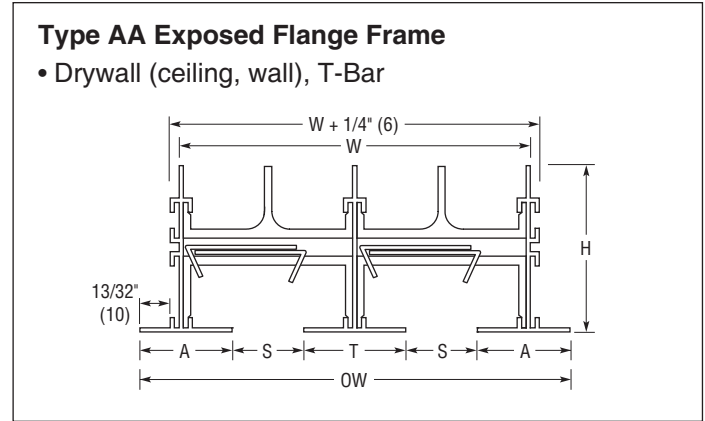
(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).

These frame/border styles require installation of the FlowLine™ diffuser prior to installation of the drywall. The ceiling opening should be framed and the diffuser attached with optional mounting clips or suspended from the building structure with hanger wire using the integral hanger brackets supplied with the diffuser.

### One Slot



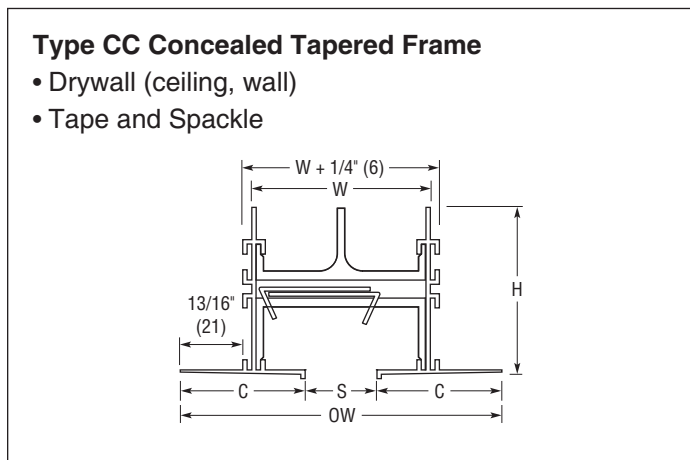
### Two Slot



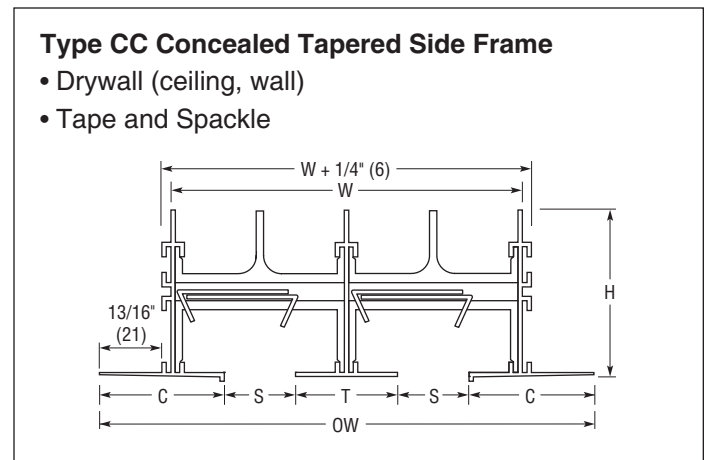
### Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot		2 Slot		A Border Width	H Height	T 2 Slot
		W	OW	W	OW			
FL(H or V)10	1 (25)	2 1/2 (64)	3 9/16 (90)	4 15/16 (125)	6 (152)	1 9/32 (33)	2 3/8 (60)	1 7/16 (37)
FL(H or V)15	1 1/2 (38)	3 1/2 (89)	4 9/16 (116)	6 15/16 (176)	8 (203)	1 17/32 (39)	2 5/8 (67)	1 15/16 (49)
FL(H or V)20	2 (51)	4 1/2 (114)	5 9/16 (141)	8 15/16 (227)	10 (254)	1 25/32 (45)	2 7/8 (73)	2 7/16 (62)
FL(H or V)25	2 1/2 (64)	5 1/2 (140)	6 9/16 (167)	10 15/16 (278)	12 (305)	2 1/32 (52)	3 1/8 (79)	2 15/16 (75)
FL(H or V)30	3 (76)	6 1/2 (165)	7 9/16 (192)	12 15/16 (329)	14 (356)	2 9/32 (58)	3 3/8 (86)	3 7/16 (87)

### One Slot



### Two Slot



### Dimensional Data - Imperial (Metric) Units

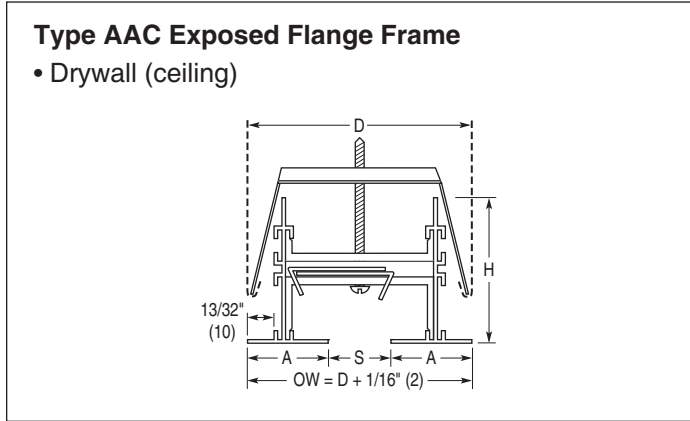
Model	S Slot Width	1 Slot		2 Slot		C Border Width	H Height	T 2 Slot
		W	OW	W	OW			
FLH10	1 (25)	2 1/2 (64)	4 3/8 (111)	4 15/16 (125)	6 13/16 (173)	1 11/16 (43)	2 3/8 (60)	1 7/16 (37)
FLH15	1 1/2 (38)	3 1/2 (89)	5 3/8 (137)	6 15/16 (176)	8 13/16 (224)	1 15/16 (49)	2 5/8 (67)	1 15/16 (49)
FLH20	2 (51)	4 1/2 (114)	6 3/8 (162)	8 15/16 (227)	10 13/16 (275)	2 3/16 (56)	2 7/8 (73)	2 7/16 (62)
FLH25	2 1/2 (64)	5 1/2 (140)	7 3/8 (187)	10 15/16 (278)	12 13/16 (325)	2 7/16 (62)	3 1/8 (79)	2 15/16 (75)
FLH30	3 (76)	6 1/2 (165)	8 3/8 (213)	12 15/16 (329)	14 13/16 (376)	2 11/16 (68)	3 3/8 (86)	3 7/16 (87)

## STANDARD FRAME/BORDER STYLES WITH CONCEALED MOUNTING BRACKET

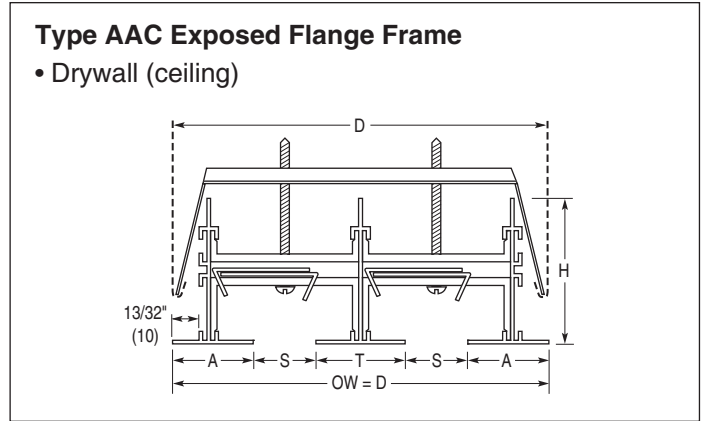
(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).

The concealed mounting bracket option permits surface mounting of the FlowLine™ diffuser after the ceiling installation. Diffuser simply pushes up into the ceiling opening until the legs of the factory supplied mounting brackets locate into a hemmed duct plenum or onto the topside of the drywall. Factory supplied levelling screws then draw the diffuser up until it is tight and snug with the ceiling.

### One Slot



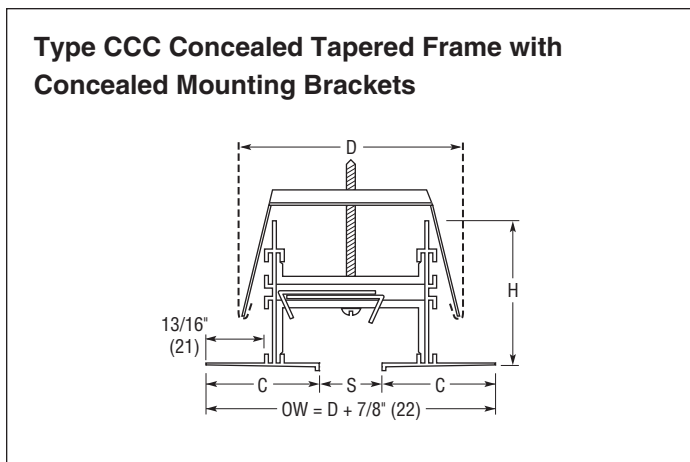
### Two Slot



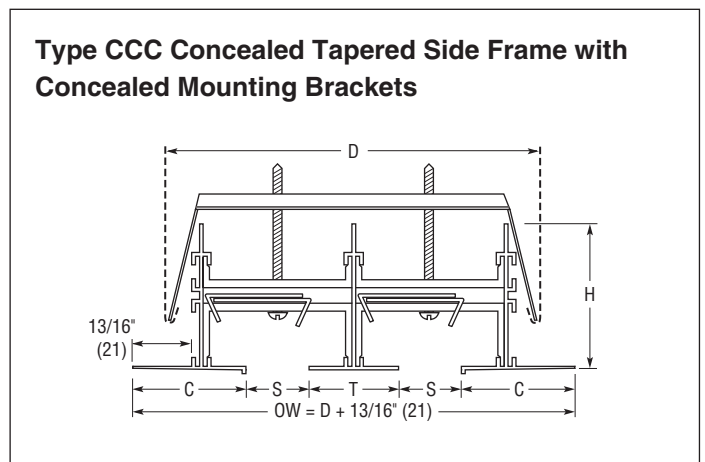
### Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	D Duct Width		Ceiling Opening Width		A Border Width	H Height	T 2 Slot
		1 Slot	2 Slot	1 Slot	2 Slot			
FLH10	1 (25)	3 1/2 (89)	6 (152)	3 (76)	5 1/2 (140)	1 9/32 (33)	2 3/8 (60)	1 7/16 (37)
FLH15	1 1/2 (38)	4 1/2 (114)	8 (203)	4 (102)	7 1/2 (191)	1 17/32 (39)	2 5/8 (67)	1 15/16 (49)
FLH20	2 (51)	5 1/2 (140)	10 (254)	5 (127)	9 1/2 (241)	1 25/32 (45)	2 7/8 (73)	2 7/16 (62)
FLH25	2 1/2 (64)	6 1/2 (165)	12 (305)	6 (152)	11 1/2 (292)	2 1/32 (52)	3 1/8 (79)	2 15/16 (75)
FLH30	3 (76)	7 1/2 (191)	14 (356)	7 (178)	13 1/2 (343)	2 9/32 (58)	3 3/8 (86)	3 7/16 (87)

### One Slot



### Two Slot



### Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	D Duct Width		C Border Width	H Height	T 2 Slot	Ceiling Opening Width	
		1 Slot	2 Slot				1 Slot	2 Slot
FLH10	1 (25)	3 1/2 (89)	6 (152)	1 11/16 (43)	2 3/8 (60)	1 7/16 (37)	3 (76)	5 1/2 (140)
FLH15	1 1/2 (38)	4 1/2 (114)	8 (203)	1 15/16 (49)	2 5/8 (67)	1 15/16 (49)	4 (102)	7 1/2 (191)
FLH20	2 (51)	5 1/2 (140)	10 (254)	2 3/16 (56)	2 7/8 (73)	2 7/16 (62)	5 (127)	9 1/2 (241)
FLH25	2 1/2 (64)	6 1/2 (165)	12 (305)	2 7/16 (62)	3 1/8 (79)	2 15/16 (75)	6 (152)	11 1/2 (292)
FLH30	3 (76)	7 1/2 (191)	14 (356)	2 11/16 (68)	3 3/8 (86)	3 7/16 (87)	7 (178)	13 1/2 (343)



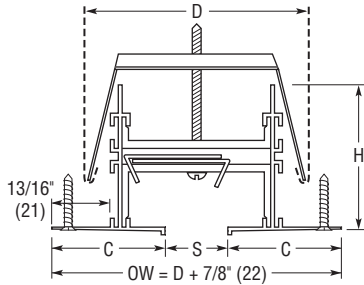
## STANDARD FRAME/BORDER STYLES

(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).

These frame/border styles require installation of the FlowLine™ diffuser prior to installation of the drywall. The ceiling opening should be framed and the diffuser attached with optional mounting clips or suspended from the building structure with hanger wire using the integral hanger brackets supplied with the diffuser.

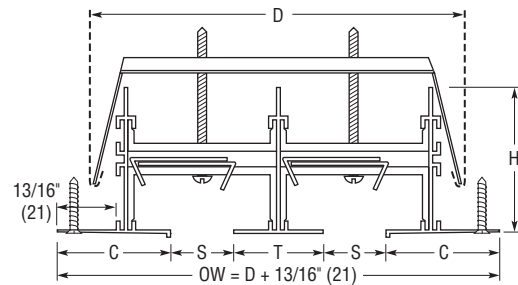
### One Slot

**Type CCCA Concealed Tapered Frame with Concealed Mounting Brackets & Countersunk Screw Holes**



### Two Slot

**Type CCCA Concealed Tapered Side Frame with Concealed Mounting Brackets & Countersunk Screw Holes**

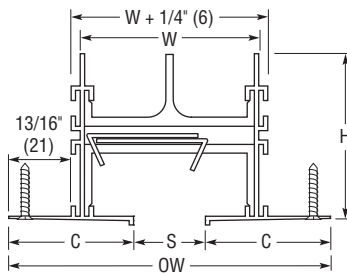


### Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	D Duct Width		C Border Width	H Height	T 2 Slot	Ceiling Opening Width	
		1 Slot	2 Slot				1 Slot	2 Slot
FLH10	1 (25)	3 1/2 (89)	6 (152)	1 11/16 (43)	2 3/8 (60)	1 7/16 (37)	3 (76)	5 1/2 (140)
FLH15	1 1/2 (38)	4 1/2 (114)	8 (203)	1 15/16 (49)	2 5/8 (67)	1 15/16 (49)	4 (102)	7 1/2 (191)
FLH20	2 (51)	5 1/2 (140)	10 (254)	2 3/16 (56)	2 7/8 (73)	2 7/16 (62)	5 (127)	9 1/2 (241)
FLH25	2 1/2 (64)	6 1/2 (165)	12 (305)	2 7/16 (62)	3 1/8 (79)	2 15/16 (75)	6 (152)	11 1/2 (292)
FLH30	3 (76)	7 1/2 (191)	14 (356)	2 11/16 (68)	3 3/8 (86)	3 7/16 (87)	7 (178)	13 1/2 (343)

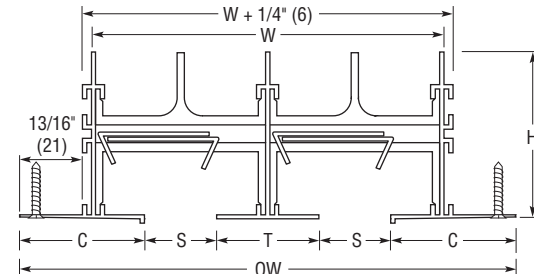
### One Slot

**Type CCA Concealed Tapered Frame with Countersunk Screw Holes**



### Two Slot

**Type CCA Concealed Tapered Side Frame with Countersunk Screw Holes**



### Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot		2 Slot		C Border Width	H Height	T 2 Slot
		W	OW	W	OW			
FLH10	1 (25)	2 1/2 (64)	4 3/8 (111)	4 15/16 (125)	6 13/16 (173)	1 11/16 (43)	2 3/8 (60)	1 7/16 (37)
FLH15	1 1/2 (38)	3 1/2 (89)	5 3/8 (137)	6 15/16 (176)	8 13/16 (224)	1 15/16 (49)	2 5/8 (67)	1 15/16 (49)
FLH20	2 (51)	4 1/2 (114)	6 3/8 (162)	8 15/16 (227)	10 13/16 (275)	2 3/16 (56)	2 7/8 (73)	2 7/16 (62)
FLH25	2 1/2 (64)	5 1/2 (140)	7 3/8 (187)	10 15/16 (278)	12 13/16 (325)	2 7/16 (62)	3 1/8 (79)	2 15/16 (75)
FLH30	3 (76)	6 1/2 (165)	8 3/8 (213)	12 15/16 (329)	14 13/16 (376)	2 11/16 (68)	3 3/8 (86)	3 7/16 (87)

## SPECIAL FRAME/BORDER STYLES

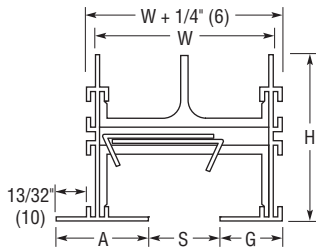
(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).

These frame/border styles require installation of the FlowLine™ diffuser prior to installation of the drywall. The ceiling opening should be framed and the diffuser attached with optional mounting clips or suspended from the building structure with hanger wire using the integral hanger brackets supplied with the diffuser.

### One Slot

#### Type AG Flangeless Frame

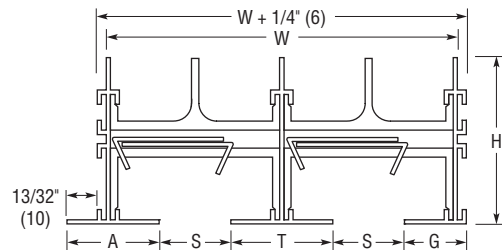
- Drywall (ceiling, wall)



### Two Slot

#### Type AG Flange/Flangeless Frame

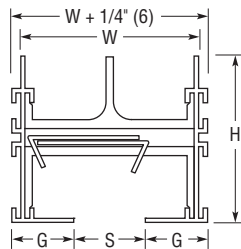
- Drywall (ceiling, wall)



### One Slot

#### Type GG Flangeless Frame

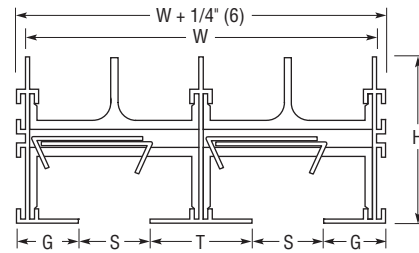
- Drywall (ceiling, wall)



### Two Slot

#### Type GG Flange/Flangeless Frame

- Drywall (ceiling, wall)



### Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot	2 Slot	A Border Width	G Border Width	H Height	T 2 Slot
		W	W				
FL(H or V)10	1 (25)	2 1/2 (64)	4 15/16 (125)	1 9/32 (33)	7/8 (22)	2 3/8 (60)	1 7/16 (37)
FL(H or V)15	1 1/2 (38)	3 1/2 (89)	6 15/16 (176)	1 17/32 (39)	1 1/8 (29)	2 5/8 (67)	1 15/16 (49)
FL(H or V)20	2 (51)	4 1/2 (114)	8 15/16 (227)	1 25/32 (45)	1 3/8 (35)	2 7/8 (73)	2 7/16 (62)
FL(H or V)25	2 1/2 (64)	5 1/2 (140)	10 15/16 (278)	2 1/32 (52)	1 5/8 (41)	3 1/8 (79)	2 15/16 (75)
FL(H or V)30	3 (76)	6 1/2 (165)	12 15/16 (329)	2 9/32 (58)	1 7/8 (48)	3 3/8 (86)	3 7/16 (87)

## SPECIAL FRAME/BORDER STYLES

These frame/border styles require installation of the FlowLine™ diffuser prior to installation of the drywall. The ceiling opening should be framed and the diffuser attached with optional mounting clips or suspended from the building structure with hanger wire using the integral hanger brackets supplied with the diffuser.

### One Slot

**Type CA Concealed Tapered/Exposed Flange Frame**

- Tape and Spackle (one side)
- Drywall (ceiling)

### Two Slot

**Type CA Concealed Tapered/Exposed Flange Frame**

- Tape and Spackle (one side)
- Drywall (ceiling)

### Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot		2 Slot		C Border Width	A Border Width	H Height	T 2 Slot
		W	OW	W	OW				
FLH10, FLV10	1 (25)	2 1/2 (64)	3 31/32 (101)	4 15/16 (125)	6 13/32 (163)	1 11/16 (43)	1 9/32 (33)	2 3/8 (60)	1 7/16 (37)
FLH15, FLV15	1 1/2 (38)	3 1/2 (89)	4 31/32 (126)	6 15/16 (176)	8 13/32 (214)	1 15/16 (49)	1 17/32 (39)	2 5/8 (67)	1 15/16 (49)
FLH20, FLV20	2 (51)	4 1/2 (114)	5 31/32 (152)	8 15/16 (227)	10 13/32 (264)	2 3/16 (56)	1 25/32 (45)	2 7/8 (73)	2 7/16 (62)
FLH25, FLV25	2 1/2 (64)	5 1/2 (140)	6 31/32 (177)	10 15/16 (278)	12 13/32 (315)	2 7/16 (62)	2 1/32 (52)	3 1/8 (79)	2 15/16 (75)
FLH30, FLV30	3 (76)	6 1/2 (165)	7 31/32 (202)	12 15/16 (329)	14 13/32 (366)	2 11/16 (68)	2 9/32 (58)	3 3/8 (86)	3 7/16 (87)

### One Slot

**Type CG Concealed Tapered/Flangeless Frame**

- Tape and Spackle (one side)
- Drywall (ceiling)

### Two Slot

**Type CG Concealed Tapered/Flangeless Frame**

- Tape and Spackle (one side)
- Drywall (ceiling)

### Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot	2 Slot	C Border Width	G Border Width	H Height	T 2 Slot
		W	W				
FLH10, FLV10	1 (25)	2 1/2 (64)	4 15/16 (125)	1 11/16 (43)	7/8 (22)	2 3/8 (60)	1 7/16 (37)
FLH15, FLV15	1 1/2 (38)	3 1/2 (89)	6 15/16 (176)	1 15/16 (49)	1 1/8 (29)	2 5/8 (67)	1 15/16 (49)
FLH20, FLV20	2 (51)	4 1/2 (114)	8 15/16 (227)	2 3/16 (56)	1 3/8 (35)	2 7/8 (73)	2 7/16 (62)
FLH25, FLV25	2 1/2 (64)	5 1/2 (140)	10 15/16 (278)	2 7/16 (62)	1 5/8 (41)	3 1/8 (79)	2 15/16 (75)
FLH30, FLV30	3 (76)	6 1/2 (165)	12 15/16 (329)	2 11/16 (68)	1 7/8 (48)	3 3/8 (86)	3 7/16 (87)



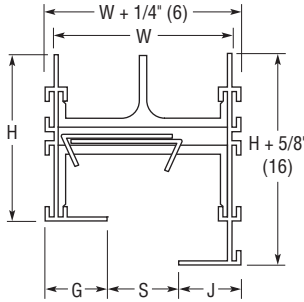
## SPECIAL FRAME/BORDER STYLES

These frame/border styles require installation of the FlowLine™ diffuser prior to installation of the drywall. The ceiling opening should be framed and the diffuser attached with optional mounting clips or suspended from the building structure with hanger wire using the integral hanger brackets supplied with the diffuser.

### One Slot

#### Type GJ Concealed Offset Frame

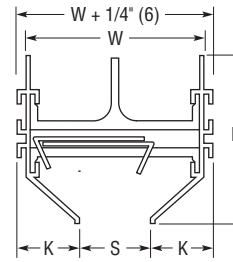
- Drywall (ceiling, wall)



### One Slot

#### Type KK Concealed Angular Frame

- Drywall (ceiling, wall)



### Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot	G Border Width	J Border Width	H Height
FLH10	1 (25)	2 1/2 (64)	7/8 (22)	7/8 (22)	2 3/8 (60)
FLH15	1 1/2 (38)	3 1/2 (89)	1 1/8 (29)	1 1/8 (29)	2 5/8 (67)
FLH20	2 (51)	4 1/2 (114)	1 3/8 (35)	1 3/8 (35)	2 7/8 (73)
FLH25	2 1/2 (64)	5 1/2 (140)	1 5/8 (41)	1 5/8 (41)	3 1/8 (79)
FLH30	3 (76)	6 1/2 (165)	1 7/8 (48)	1 7/8 (48)	3 3/8 (86)

### Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	W	K Border Width	H Height
FLH10, FLV10	1 (25)	2 1/2 (64)	7/8 (22)	2 3/8 (60)
FLH15, FLV15	1 1/2 (38)	3 1/2 (89)	1 1/8 (29)	2 5/8 (67)
FLH20, FLV20	2 (51)	4 1/2 (114)	1 3/8 (35)	2 7/8 (73)

## END BORDER CONFIGURATIONS FOR VARIOUS MOUNTINGS

### M Mitered End Border

- Architecturally superior look for Type A Frame/ Border with Exposed Flange.
- Factory mounted.

### F Flanged End Cap

- Removable for field end trim or stocking.

### O Open End

### C Flat End Cap

- Removable for field end trim or stocking.

### Overall Length Dimensions and End Cap Position

D = Duct Length

E = End Cap Position

L = Overall Length

Frame Type	M M		M O		M C		O O		O C	
	E	L	E	L	E	L	E	L	E	L
AA, AAC	D - 1/4 (6)	D + 9/16 (14)	D - 1/8 (3)	D + 9/32 (7)	D - 1/16 (2)	D + 11/32 (9)	D	D	D - 1/16 (2)	D - 1/16 (2)
CC, CCA, CCC, CCCA	D - 1/4 (6)	D + 1 3/8 (35)	D - 1/8 (3)	D + 11/16 (17)	D - 1/16 (2)	D + 3/4 (19)	D	D	D - 1/16 (2)	D - 1/16 (2)
GG, AG	N/A	N/A	N/A	N/A	N/A	N/A	D	D	D - 1/16 (2)	D - 1/16 (2)
CA, CG, GJ, KK	N/A	N/A	N/A	N/A	N/A	N/A	D	D	D - 1/16 (2)	D - 1/16 (2)

Frame Type	C C		F F		F O		F C	
	E	L	E	L	E	L	E	L
AA, AAC	D - 1/8 (3)	D - 1/8 (3)	D - 1/4 (6)	D + 1 5/8 (41)	D - 1/8 (3)	D + 13/16 (21)	D - 1/16 (2)	D + 7/8 (22)
CC, CCA, CCC, CCCA	D - 1/8 (3)	D - 1/8 (3)	N/A	N/A	N/A	N/A	N/A	N/A
GG, AG	D - 1/8 (3)	D - 1/8 (3)	D - 1/4 (6)	D + 1 5/8 (41)	D - 1/8 (3)	D + 13/16 (21)	D - 1/16 (2)	D + 7/8 (22)
CA, CG, GJ, KK	D - 1/8 (3)	D - 1/8 (3)	N/A	N/A	N/A	N/A	N/A	N/A

**OPTIONS AND ACCESSORIES**

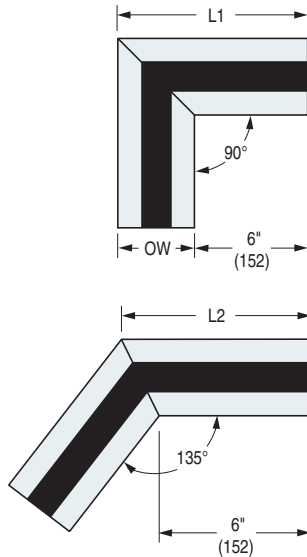
**FLOWLINE™ LINEAR DIFFUSERS**

**Mitered Corners**

- FLMC10 • 1" (25) Slot
- FLMC15 • 1 1/2" (38) Slot
- FLMC20 • 2" (51) Slot
- FLMC25 • 2 1/2" (64) Slot
- FLMC30 • 3" (76) Slot

The standard mitered corners are 90° and 135°. Units are factory welded with precision to match and align with the associated straight leg.

Units are supplied with factory installed blank-offs in the slot (painted black) and are inactive. Other angles are available.



No. of Slots	Slot Width	Border AA, CC		Border GG	
		L1	L2	L1	L2
1	1 (25)	9 9/16 (243)	7 15/32 (190)	8 11/16 (221)	7 1/8 (181)
	1 1/2 (38)	10 9/16 (268)	7 7/8 (200)	9 11/16 (246)	7 17/32 (191)
	2 (51)	11 9/16 (294)	8 5/16 (211)	10 11/16 (271)	7 15/16 (202)
2	2 1/2 (64)	12 9/16 (319)	8 23/32 (221)	11 11/16 (297)	8 11/32 (212)
	3 (76)	13 9/16 (344)	9 1/8 (232)	12 11/16 (322)	8 3/4 (222)
	1 (25)	11 31/32 (304)	8 15/32 (215)	11 3/32 (282)	8 3/32 (206)
2	1 1/2 (38)	13 31/32 (355)	9 5/16 (237)	13 3/32 (333)	8 29/32 (226)
	2 (51)	15 31/32 (406)	10 1/8 (257)	15 3/32 (383)	9 3/4 (248)
	2 1/2 (64)	17 31/32 (456)	10 31/32 (279)	17 3/32 (434)	10 9/16 (268)
3 (76)	19 31/32 (507)	11 25/32 (299)	19 3/32 (485)	11 13/32 (290)	

**Special Mitered Corners**

\*Available from 45 – 179° as SPL. (A detailed sketch is required for co-ordination with installing contractors).

**Transitions**

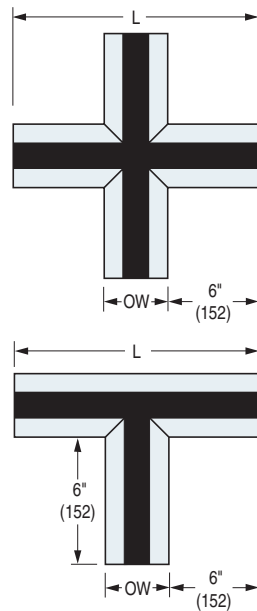
**Type C Cross**

- FLC10 • 1" (25) Slot
- FLC15 • 1 1/2" (38) Slot
- FLC20 • 2" (51) Slot
- FLC25 • 2 1/2" (64) Slot
- FLC30 • 3" (76) Slot

**Type T Tee**

- FLT10 • 1" (25) Slot
- FLT15 • 1 1/2" (38) Slot
- FLT20 • 2" (51) Slot
- FLT25 • 2 1/2" (64) Slot
- FLT30 • 3" (76) Slot

Transitions are inactive. Blank-offs installed at factory. Not available in 2 slot version.

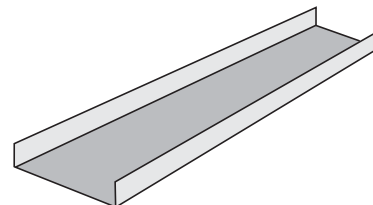


No. of Slots	Slot Width	Border AA, CC		Border GG	
		OW	L	OW	L
1	1 (25)	3 9/16 (90)	15 9/16 (395)	2 3/4 (70)	14 11/16 (373)
	1 1/2 (38)	4 9/16 (116)	16 9/16 (421)	3 3/4 (95)	15 11/16 (398)
	2 (51)	5 9/16 (141)	17 9/16 (446)	4 3/4 (121)	16 11/16 (424)
2	2 1/2 (64)	6 9/16 (167)	18 9/16 (471)	5 3/4 (146)	17 11/16 (449)
	3 (76)	7 9/16 (192)	19 9/16 (497)	6 3/4 (171)	18 11/16 (475)

**Blank-Offs**

- FLBO10 • 1" (25) Slot
- FLBO15 • 1 1/2" (38) Slot
- FLBO20 • 2" (51) Slot
- FLBO25 • 2 1/2" (64) Slot
- FLBO30 • 3" (76) Slot

Corrosion resistant steel, painted flat black. Fit in neck of diffuser. Provided in 48" (1219) lengths. Field cut to length.





## OPTIONS AND ACCESSORIES

### Return Hood/Sight Shield

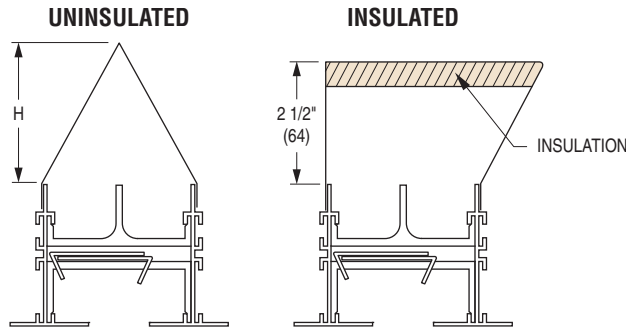
**Uninsulated:**

- FLR10 • 1" (25) Slot
- FLR15 • 1 1/2" (38) Slot
- FLR20 • 2" (51) Slot
- FLR25 • 2 1/2" (64) Slot
- FLR30 • 3" (76) Slot

51% free area perforated corrosion resistant steel, painted flat black. Provided in 4 ft. (1219) lengths. Field cut to length.

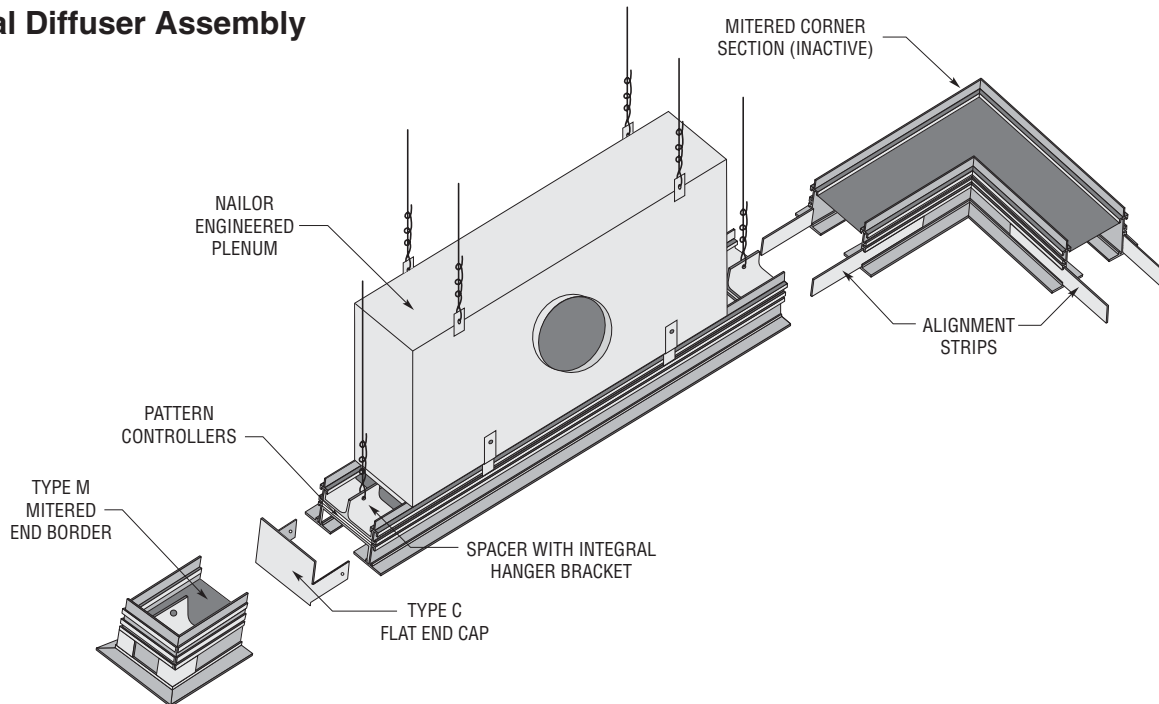
**Insulated:**

- FLRI10 • 1" (25) Slot
- FLRI15 • 1 1/2" (38) Slot
- FLRI20 • 2" (51) Slot
- FLRI25 • 2 1/2" (64) Slot
- FLRI30 • 3" (76) Slot



No. of Slots	Slot Width	H Height
1	1 (25)	3 3/8 (86)
	1 1/2 (38)	3 3/8 (86)
	2 (51)	3 3/8 (86)
	2 1/2 (64)	3 3/8 (86)
	3 (76)	3 3/8 (86)
2	1 (25)	2 1/8 (54)
	1 1/2 (38)	3 1/8 (79)
	2 (51)	4 1/8 (105)
	2 1/2 (64)	5 1/8 (130)
	3 (76)	6 1/8 (156)

### Typical Diffuser Assembly



- Diffuser sections can be joined end to end for long continuous runs.
- Type M Mitered End Borders provide a superior architectural finish. Type C End Caps close off the ends of the diffuser when terminating at a wall or other stop. Type C may be field installed.
- Alignment strips are factory supplied as standard on all multiple section assemblies to ensure close and positive alignment between sections.
- Nailor's optional engineered plenums ensure catalog performance and a trouble free sure fit installation.
- Unique integral hanger brackets provide independent hanging points and eliminate the need for field add-on hanger clips.

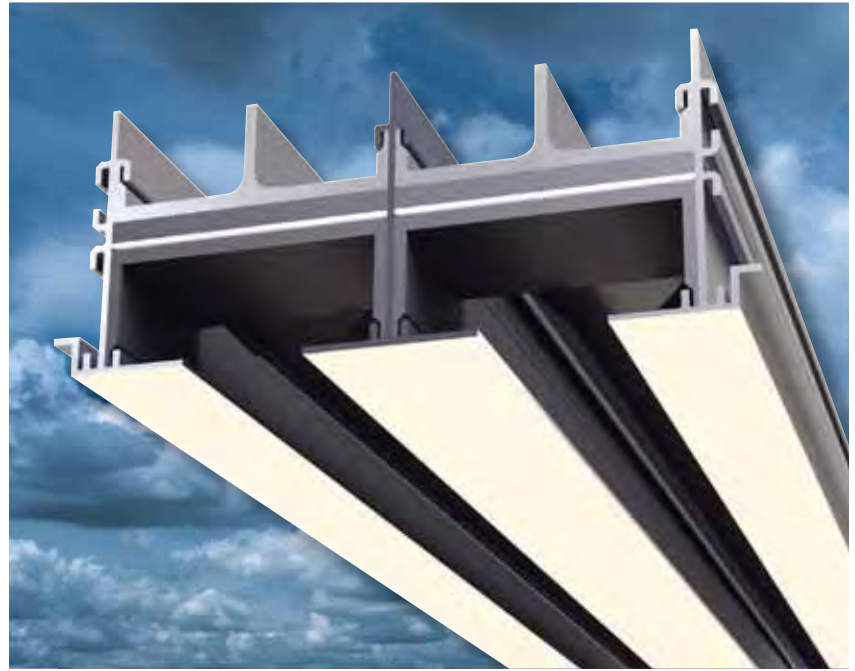
## FLH OR FLV SERIES FOR TECHZONE™ TYPE CEILINGS

- HORIZONTAL HIGH THROW AND VERTICAL JET THROW PATTERN CONTROLLERS
- CONTINUOUS CUSTOM LINEAR DIFFUSER
- STANDARD T-BAR & NARROW T-BAR FRAMES
- ALUMINUM

### Models:

FLH10TZ 1" (25) Slot

FLV10TZ 1" (25) Slot



The FlowLine™ FL (H or V) 10TZ Series Continuous Slot Diffusers provide outstanding performance flexibility. Compatible with the Armstrong® TechZone™ and USG Logix™ Ceiling Systems, the crisp, clean lines of this linear slot diffuser are not only architecturally appealing but they integrate smoothly into the ceiling system, delivering a high performance VAV solution with 180° air pattern for true design flexibility. The adjustable pattern controllers, which are easily adjusted from the face, allow the discharge air to be directed to the left or right as well as downward. Ideally suited for applications such as open plan offices, computer rooms, corridors (walls-to-desk), auditoriums.

### STANDARD FEATURES:

- Heavy duty extruded aluminum frame and spacers.
- Adjustable pattern controllers are corrosion resistant steel, constructed on 24" (610) centers as standard for maximum flexibility.
- Standard module lengths range from 24" (610) to 72" (1829).
- Available in 1" (25) slot width, choice of 1 slot with 4" (102) TechZone™ module or 2 slot with 6" (152) TechZone™ module.
- Single section lengths up to 12 ft. (3658) reduce the number of joints in continuous runs.
- Multiple section assemblies are provided with alignment strips for continuous run applications.
- Linear over 144" (3658) long are supplied in equal section lengths.
- Ends are finished with Type CC Flat End Caps.
- Integral hanger brackets on 24" (610) centers are standard.

### FRAME/BORDER STYLES:

- The FlowLine™ TechZone™ models are compatible with standard 15/16" (24) flat T-Bars (Flowline™ diffuser lays flush on the T-Bars) as well as 9/16" (14) flat tees that provide a tegular appearance and 9/16" (14) Bolt-Slot Fineline® Type regressed tees for a flush appearance with a tegular ceiling tile.

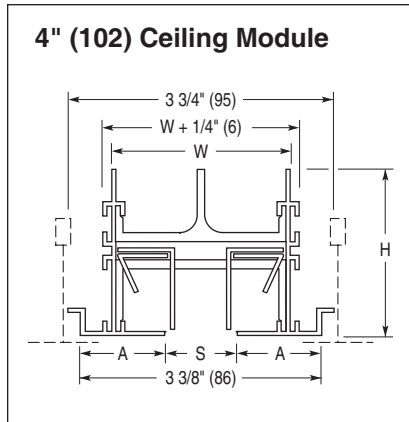
### FINISH:

- Standard finish is AW Appliance White on exterior frame surfaces (optional finishes are available). Pattern controllers and interior surfaces are black on all models.
- Custom color and anodized finishes are available to suit architectural requirements.

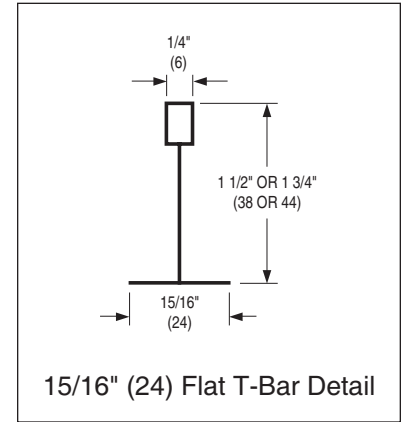
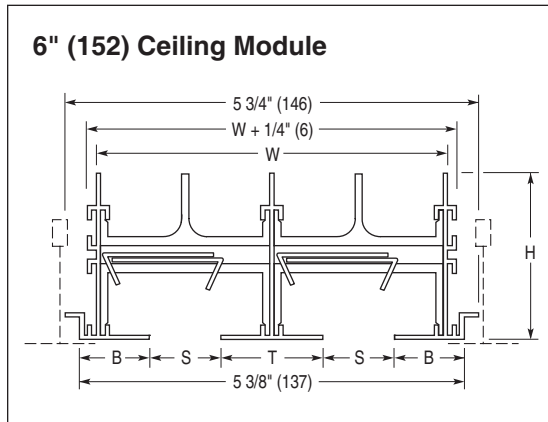
## STANDARD FRAME/BORDER STYLES

(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).  
TYPE LT 15/16" (24) STANDARD T-BAR.

### One Slot

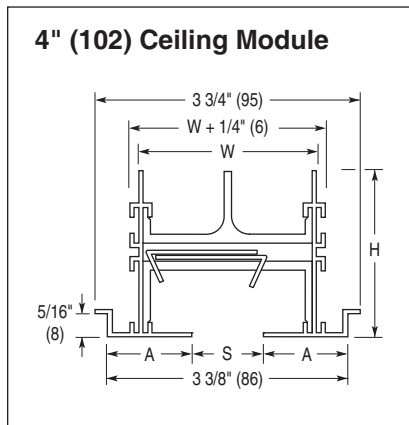


### Two Slot

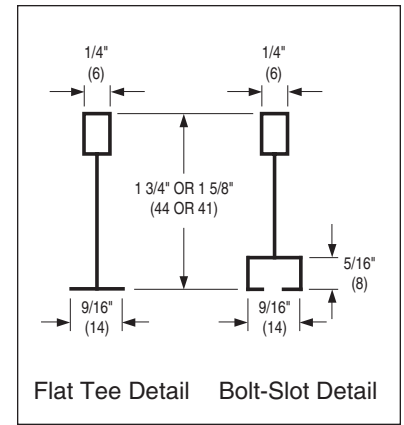
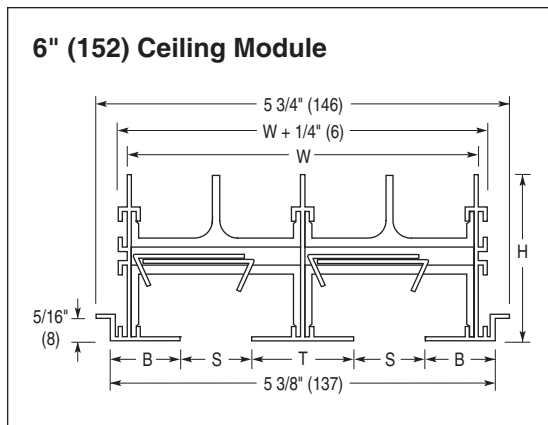


(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).  
TYPE NT 9/16" (14) NARROW T-BAR.

### One Slot



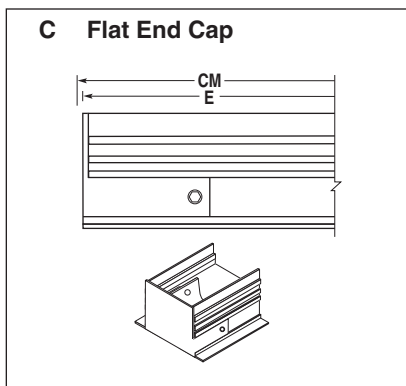
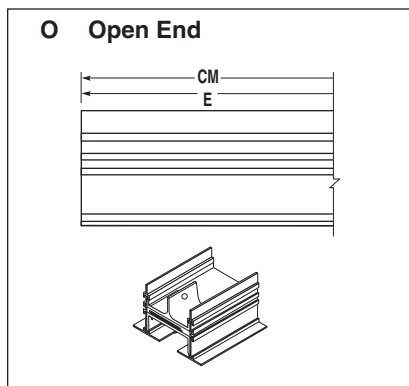
### Two Slot



## Dimensional Data - Imperial (Metric) Units

Model	S Slot Width	1 Slot	2 Slot	Border Width		H Height	T 2 Slot
		W	OW	A	B		
FL(H or V)10TZ	1 (25)	2 1/2 (64)	4 15/16 (125)	1 3/16 (30)	31/32 (25)	2 3/8 (60)	1 7/16 (37)

## End Condition



Type LT End Condition	Face Length E
CC	Ceiling Module – 1/4" (6)
OC	Ceiling Module – 1/8" (3)
OO	Ceiling Module

Type NT End Condition	Face Length E
CC	Ceiling Module – 5/8" (16)
OC	Ceiling Module – 5/16" (8)
OO	Ceiling Module

CM = Ceiling Module      E = Overall Length



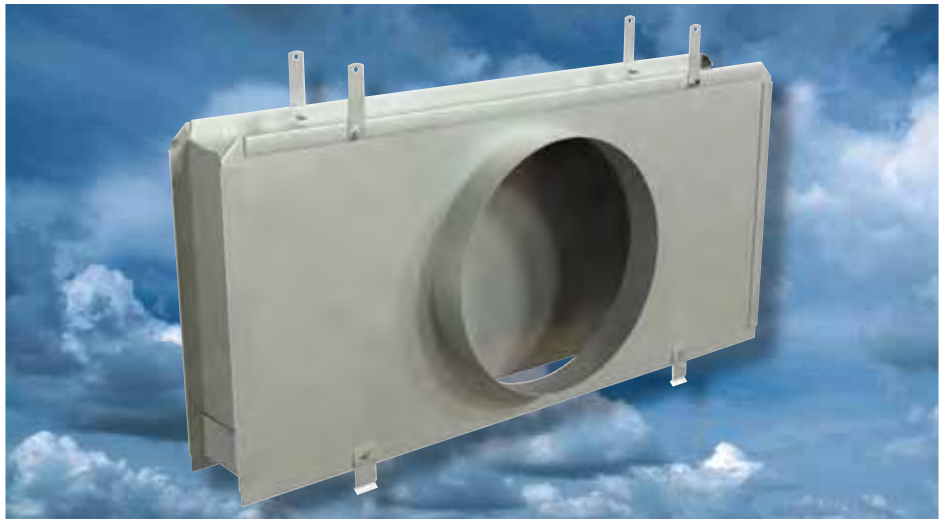
## FLP SERIES

- SUPPLY AIR ENGINEERED PLENUMS FOR FLOWLINE™ LINEAR DIFFUSERS

### Models:

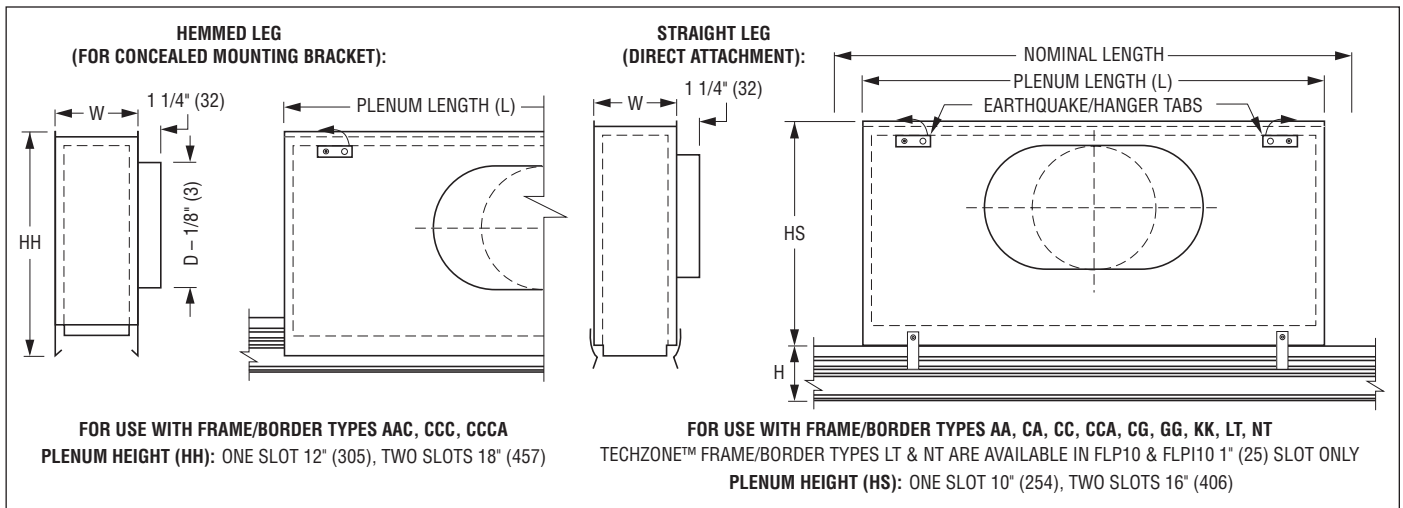
- FLP(I)10 1" (25) Slot
- FLP(I)15 1 1/2" (38) Slot
- FLP(I)20 2" (51) Slot
- FLP(I)25 2 1/2" (64) Slot
- FLP(I)30 3" (76) Slot

(I) Adds internal insulation.



The Nailor FLP Series engineered plenum boots are designed specifically for the FLH and FLV Series FlowLine™ Linear diffuser. These plenums are factory fabricated and tested to provide the engineer with proven catalog performance and the installing contractor with a labor saving, cost effective unit that provides for a fast, correct fit and easy field installation. FLP Series plenums are shipped loose from the factory. Uninsulated and insulated versions are available.

FLP Series plenums are available in two basic styles to suit the installation method. A straight leg version with spring clips is provided for direct attachment to the FlowLine™ diffuser neck. The diffuser and plenum are installed and attached directly to the ceiling structure prior to installation of the drywall or acoustic suspension ceiling and tiles. Plenums are provided as standard with hanger tabs. A hemmed leg version is available when it is desired to install the FlowLine™ diffuser after the hard gypsum board/drywall ceiling. The diffuser requires a frame/border style which includes a factory supplied concealed mounting bracket. The diffuser simply slides up through the ceiling opening until the mounting straps locate in the hem and is then secured through the slot face using the fastening screws provided.



### Dimensional Data

Nominal Length	Actual Plenum Length (L) for Frame/Border Type		Available Inlet Sizes	
	AA, CA, CC, CCA, CG, GG, KK, LT, NT	AAC, CCC, CCCA	1 Slot	2 Slot
24 (610)	20 3/4 (527)	24 (610)	6 (152), 8 (203)	6 (152), 8 (203), Round
30 (762)	26 3/4 (679)	30 (762)	10 (254), 12 (305), 14 (356)	10 (254), 12 (305), 14 (356), Round
36 (914)	32 3/4 (832)	36 (914)	14 (356)	14 (356), Round
48 (1219)	44 3/4 (1137)	48 (1219)	14 (356)	14 (356), Round
60 (1524)	56 3/4 (1441)	60 (1524)	14 (356)	14 (356), Round
72 (1829)	68 3/4 (1746)	72 (1829)	Flat Oval*	Flat Oval*

Plenum Model	Width (W) for Frame/Border Type Noted			
	AA, CA, CC, CCA, CG, GG, KK, LT, NT		AAC, CCC, CCCA	
	1 Slot	2 Slot	1 Slot	2 Slot
FLP(I)10	2 3/4 (70)	5 3/16 (132)	3 1/2 (89)	5 15/16 (151)
FLP(I)15	3 3/4 (95)	7 3/16 (183)	4 1/2 (114)	7 15/16 (202)
FLP(I)20	4 3/4 (121)	9 3/16 (233)	5 1/2 (140)	9 15/16 (252)
FLP(I)25	5 3/4 (146)	11 3/16 (284)	6 1/2 (165)	11 15/16 (303)
FLP(I)30	6 3/4 (171)	13 3/16 (335)	7 1/2 (191)	13 15/16 (354)

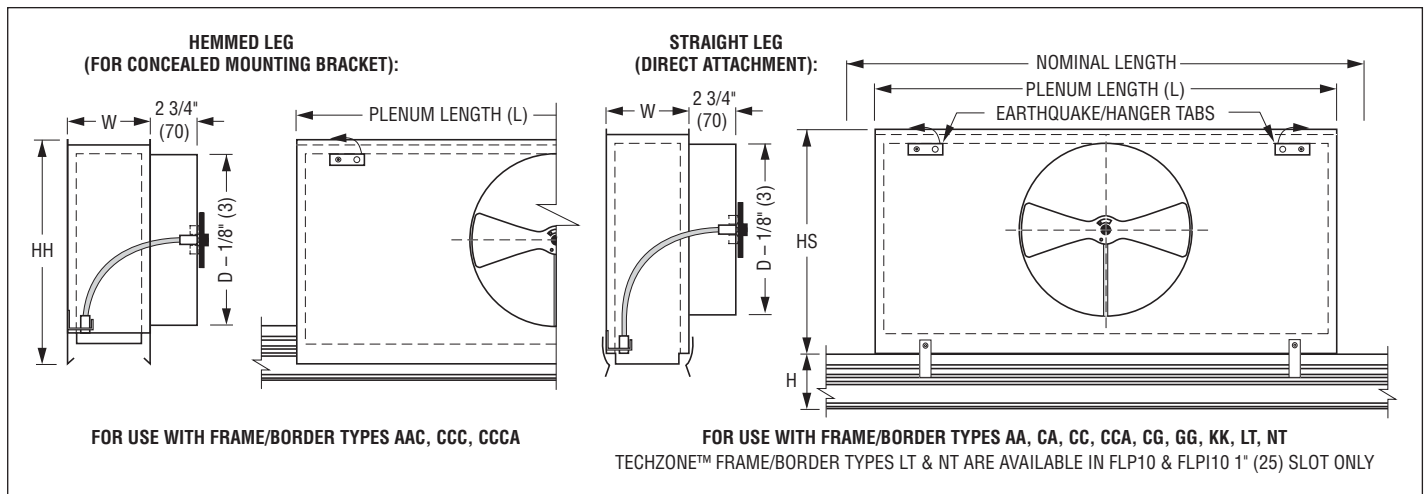
\* Equivalent Oval: 10" (254) = 11" x 7 7/8" (279 x 200); 12" (305) = 14 1/8" x 7 7/8" (359 x 200); 14" (356) = 17 5/16" x 7 7/8" (440 x 200).

## FLP PLENUMS WITH IDCO OPTION (CABLE OPERATED INLET DAMPER)

The Nailor FLP Series engineered plenum boots with IDCO option (Cable Operated inlet damper) are designed specifically for the FLH and FLV Series FlowLine™ Linear diffuser. These plenums are factory fabricated and tested to provide the engineer with proven catalog performance and the installing contractor with a labor saving, cost effective unit that provides for a fast, correct fit and easy field installation. FLP Series plenums are shipped loose from the factory. Uninsulated and insulated versions are available.

The round inlet damper is Nailor's 4250 radial sliding blade design factory mounted on the inlet. A flexible rotary cable connects the damper to a Phillips head screw operator mounted inside the plenum that permits air balancing at the diffuser face.

FLP Series plenums are available in two basic styles to suit the installation method. A straight leg version with spring clips is provided for direct attachment to the FlowLine™ diffuser neck. The diffuser and plenum are installed and attached directly to the ceiling structure prior to installation of the drywall or acoustic suspension ceiling and tiles. Plenums are provided as standard with hanger tabs. A hemmed leg version is available when it is desired to install the FlowLine™ diffuser after the hard gypsum board/drywall ceiling. The diffuser requires a frame/border style which includes a factory supplied concealed mounting bracket. The diffuser simply slides up through the ceiling opening until the mounting straps locate in the hem and is then secured through the slot face using the fastening screws provided.



**Hemmed Leg (For concealed mounting bracket)**  
For use w/Frame/Border Types AAC, CCC, CCCA

Inlet Size D (Round)	Plenum Height HH	
	1 Slot	2 Slot
6 (152), 8 (203)	12 (305)	18 (457)
10 (254)	13 (330)	18 (457)
12 (305)	15 (381)	18 (457)
14 (356)	17 (432)	18 (457)

**Straight Leg (Direct Attachment)**  
For use w/Frame/Border Types AA, CA, CC, CCA, CG, GG, KK, LT, NT

Inlet Size D (Round)	Plenum Height HS	
	1 Slot	2 Slot
6 (152), 8 (203)	10 (254)	16 (406)
10 (254)	13 (330)	16 (406)
12 (305)	15 (381)	16 (406)
14 (356)	17 (432)	17 (432)

### Dimensional Data

Nominal Length	Actual Plenum Length (L) for Frame/Border Type	
	AA, CA, CC, CCA, CG, GG, KK, LT, NT	AAC, CCC, CCCA
24 (610)	20 3/4 (527)	24 (610)
30 (762)	26 3/4 (679)	30 (762)
36 (914)	32 3/4 (832)	36 (914)
48 (1219)	44 3/4 (1137)	48 (1219)
60 (1524)	56 3/4 (1441)	60 (1524)
72 (1829)	68 3/4 (1746)	72 (1829)

Plenum Model	Width (W) for Frame/Border Type Noted			
	AA, CA, CC, CCA, CG, GG, KK, LT, NT		AAC, CCC, CCCA	
	1 Slot	2 Slot	1 Slot	2 Slot
FLP(l)10	2 3/4 (70)	5 3/16 (132)	3 1/2 (89)	5 15/16 (151)
FLP(l)15	3 3/4 (95)	7 3/16 (183)	4 1/2 (114)	7 15/16 (202)
FLP(l)20	4 3/4 (121)	9 3/16 (233)	5 1/2 (140)	9 15/16 (252)
FLP(l)25	5 3/4 (146)	11 3/16 (284)	6 1/2 (165)	11 15/16 (303)
FLP(l)30	6 3/4 (171)	13 3/16 (335)	7 1/2 (191)	13 15/16 (354)

**A**

**FLOWLINE™ LINEAR DIFFUSERS**

**CURVED FLOWLINE™**

- FLH OR FLV SERIES
- CUSTOM CURVING FOR WALL / CEILING APPLICATIONS
- CONCAVE, CONVEX AND FLAT FACE CURVING OPTIONS
- 1 AND 2 SLOTS
- 1" (25) TO 3" (76) SLOT WIDTHS



Our expansive selection of FlowLine™ custom curving options will fulfill the architect's most intricate designs. Curving is available for both the FLH Horizontal High Throw Pattern and FLV Jet Throw Pattern Model Series. Applications include Concave and Convex for both wall/ceiling and Flat Curve for ceiling applications. Nailor's most discreet and exposed frames options are available for curving. With our curving techniques and custom ordering support tools, the simplest of arches to the most complex design styles are achievable. Custom Curved Plenum Model Series FLP are also available. For further details and sizing information for custom curving; contact your local Nailor representative or go to [www.nailor.com](http://www.nailor.com) for a detailed submittal drawing.

**STANDARD FEATURES:**

- Heavy duty extruded aluminum frame and spacers.
- Pattern controllers are corrosion-resistant steel.\*
- Standard Frame Styles A, C and G are available.

- End border include Flanged, Flat and Open styles.

**SUPPLY AIR PLENUMS:**

- Model Series FLP(I) custom curved plenum boots are available.

**FINISH:**

- Standard finish is AW Appliance White on exposed frame surfaces. Pattern controllers and interior surfaces are black.
- Custom color and anodized finishes are available.

**CURVE TYPE:**

**FLT – Flat Face Curve**

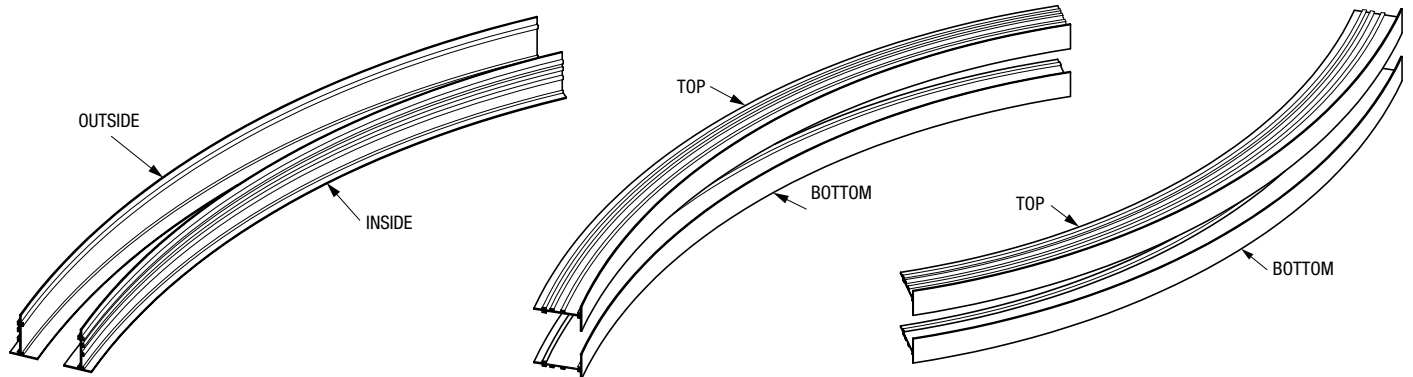
- Ceiling Applications

**CAV – Concave Face Curve**

- Wall / Ceiling Applications

**VEX – Convex Face Curve**

- Wall / Ceiling Applications



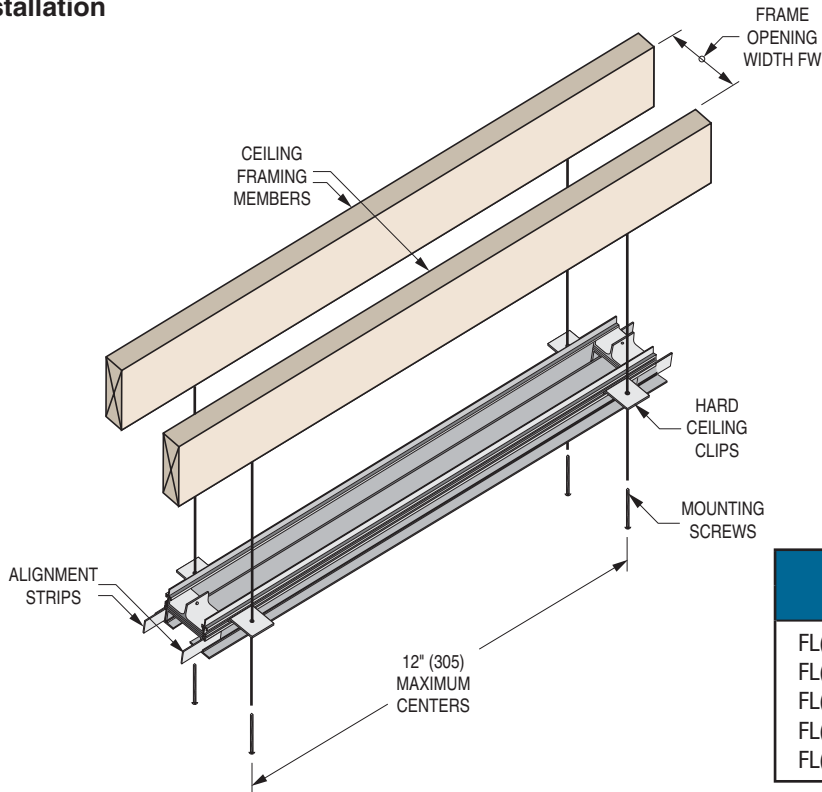
**Minimum Radius:**

Models	Slot Width	Flat Face				Concave & Convex	
		Frame Types AA & GG		Frame Type CC		Frame Types AA, CC & GG	
		1 Slot	2 Slot	1 Slot	2 Slot	1 Slot	2 Slot
FLH10, FLV10	1 (25)	30 (762)	30 (762)	40 (1016)	40 (1016)	60 (1524)	60 (1524)
FLH15, FLV15	1 1/2 (38)	30 (762)	30 (762)	40 (1016)	40 (1016)	60 (1524)	60 (1524)
FLH20, FLV20	2 (51)	60 (1524)	60 (1524)	60 (1524)	60 (1524)	60 (1524)	60 (1524)
FLH25, FLV25	2 1/2 (64)	60 (1524)	60 (1524)	60 (1524)	60 (1524)	60 (1524)	60 (1524)
FLH30, FLV30	3 (76)	60 (1524)	60 (1524)	60 (1524)	60 (1524)	60 (1524)	60 (1524)



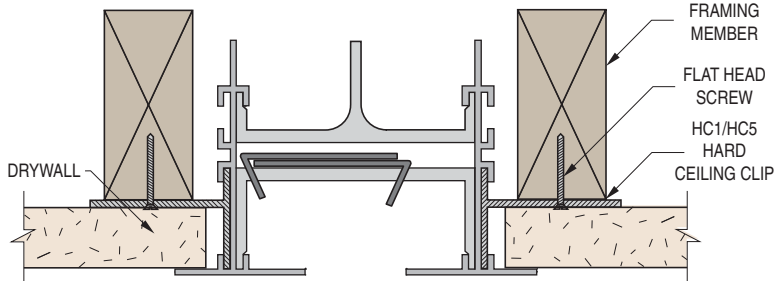
## HARD CEILING APPLICATION AND INSTALLATION METHODS

### Typical Installation

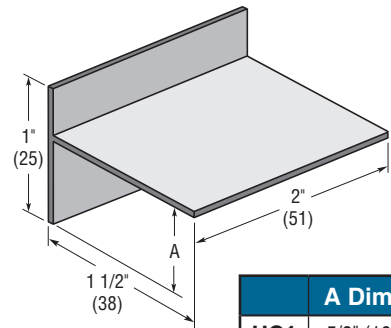


Model	Frame Opening Width FW	
	1 Slot	2 Slot
FL(H or V)10	3 1/4 (83)	5 3/4 (146)
FL(H or V)15	4 1/4 (108)	7 3/4 (197)
FL(H or V)20	5 1/4 (133)	9 3/4 (248)
FL(H or V)25	6 1/4 (159)	11 3/4 (298)
FL(H or V)30	7 1/4 (184)	13 3/4 (349)

### Exposed Flange Frame Type AA



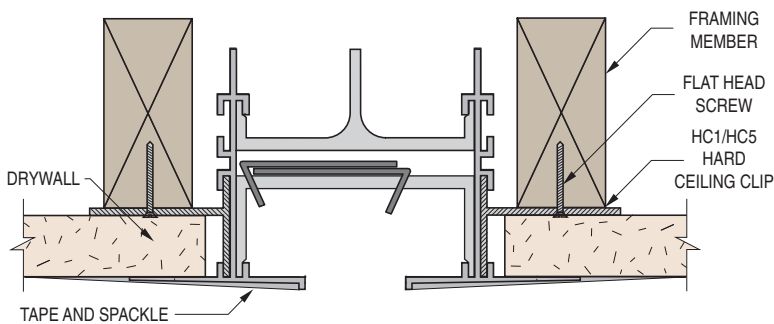
### HC1 Hard Ceiling Clip 5/8" (16) HC5 Hard Ceiling Clip 1/2" (13)



	A Dim.
HC1	5/8" (16)
HC5	1/2" (13)

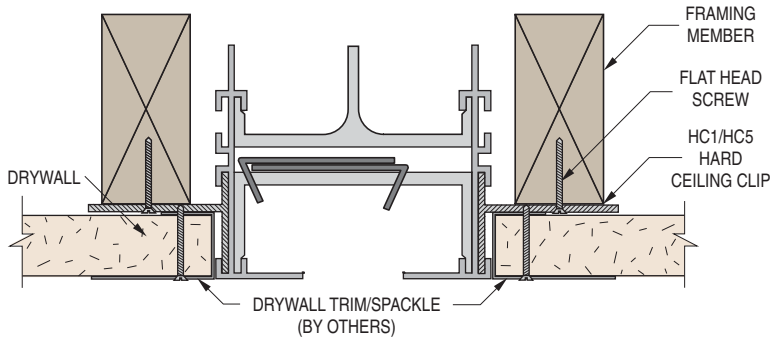
The HC1 and HC5 Hard Ceiling Clips can be used to mount the FlowLine™ assembly with Frame/Border Types AA, CC or GG, where 5/8" (16) or 1/2" (13) gypsum wallboard (drywall) is used.

### Concealed Tapered Frame Type CC

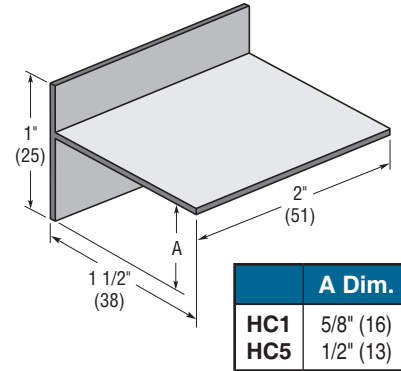


## HARD CEILING APPLICATION AND INSTALLATION METHODS

### Flangeless Flush Frame Type GG

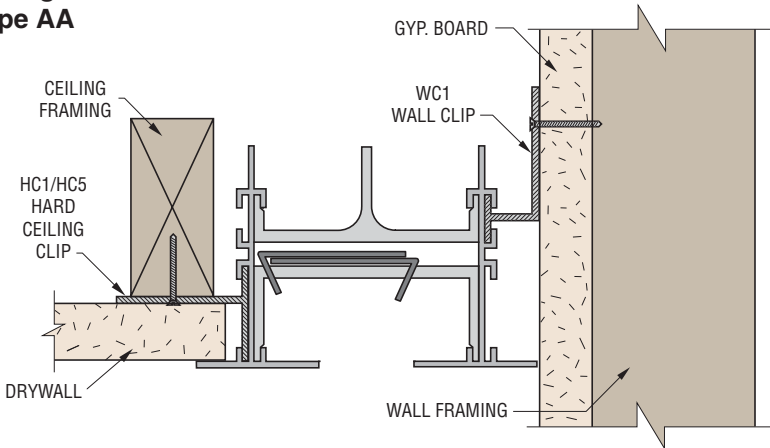


### HC1 Hard Ceiling Clip 5/8" (16) HC5 Hard Ceiling Clip 1/2" (13)

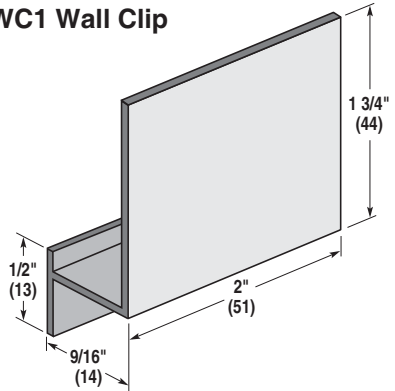


The HC1 and HC5 Hard Ceiling Clips can be used to mount the FlowLine™ assembly with Frame/Border Type GG, where standard 5/8" (16) or 1/2" (13) gypsum wallboard (drywall) is used.

### Ceiling/Sidewall Type AA



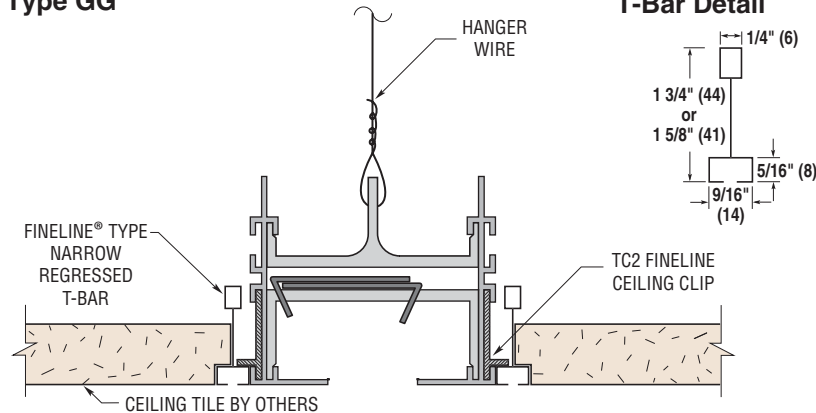
### WC1 Wall Clip



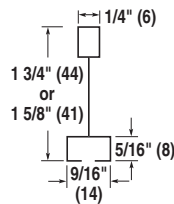
The WC1 Wall Clip is used to mount the FlowLine™ assembly with Frame/Border Type AA flush to a wall.

## NARROW REGRESSED T-BAR CEILING SUSPENSION SYSTEM (COMMONLY REFERRED TO AS BOLT-SLOT OR FINELINE® T-BAR)

### Flangeless Frame Type GG

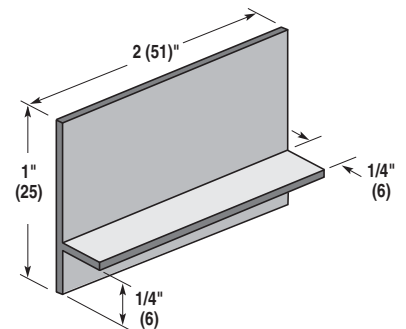


### Typical Regressed T-Bar Detail



USG 'Donn® Finline®, Rockfon® 'Ultraline™' and Armstrong 'Silhouette' are three common examples of compatibility.

### TC2 Finline® T-Bar Clip



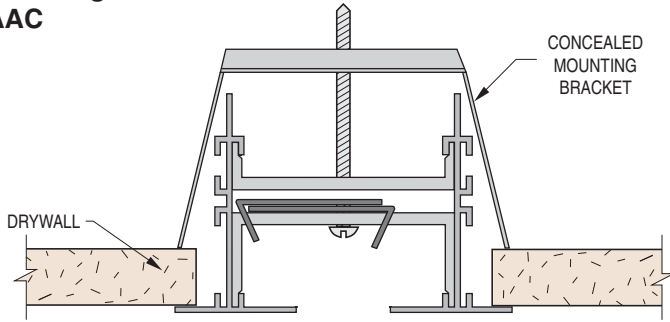
The TC2 Finline® T-Bar Clips are used to support and level the FlowLine™ assembly in Bolt-Slot (Finline® Type) suspension systems.

## HARD CEILING APPLICATION AND INSTALLATION METHODS

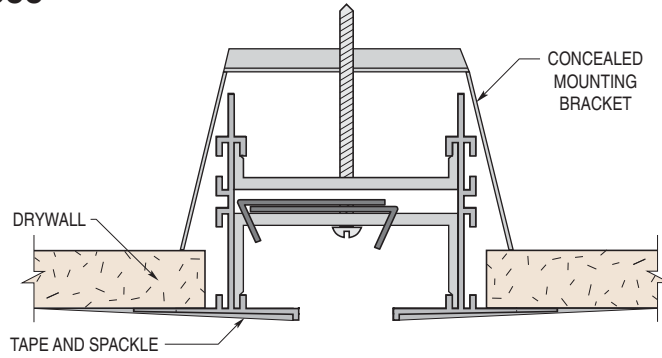
A

FLOWLINE™ LINEAR DIFFUSERS

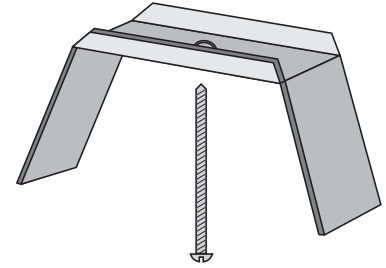
**Exposed Flange Frame  
Type AAC**



**Concealed Tapered Frame with Concealed Mounting Brackets  
Type CCC**



**FLCMB Concealed Mounting  
Bracket**



Supplied as standard with Frame/Border  
Types AAC, CCC and CCCA.



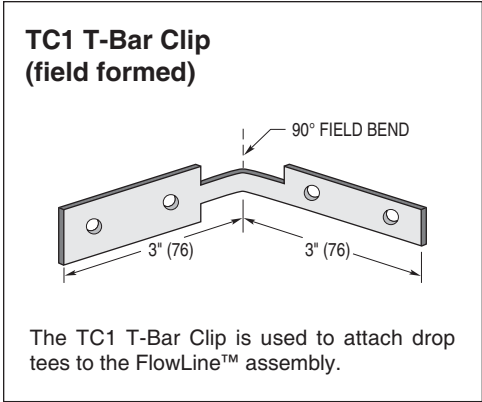
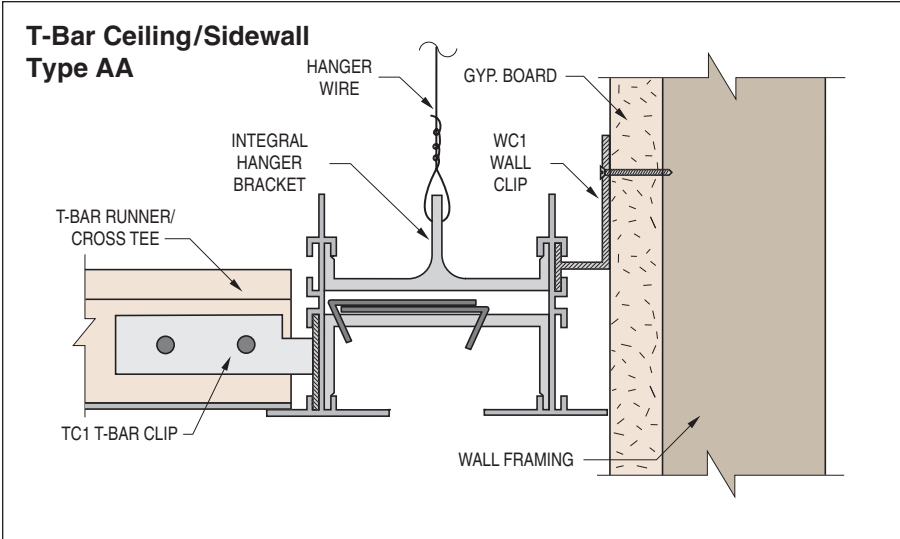
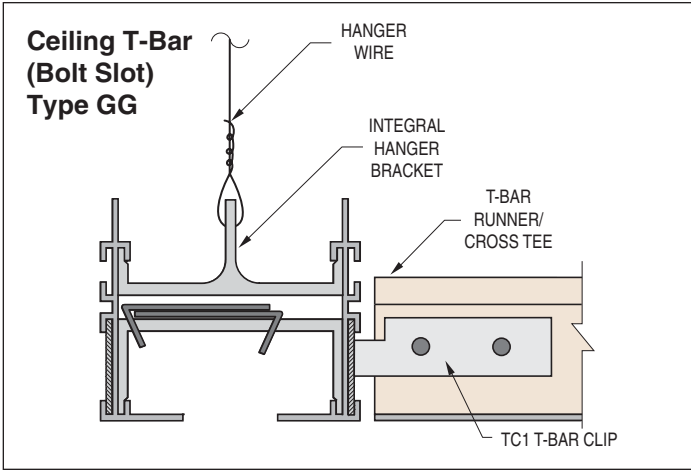
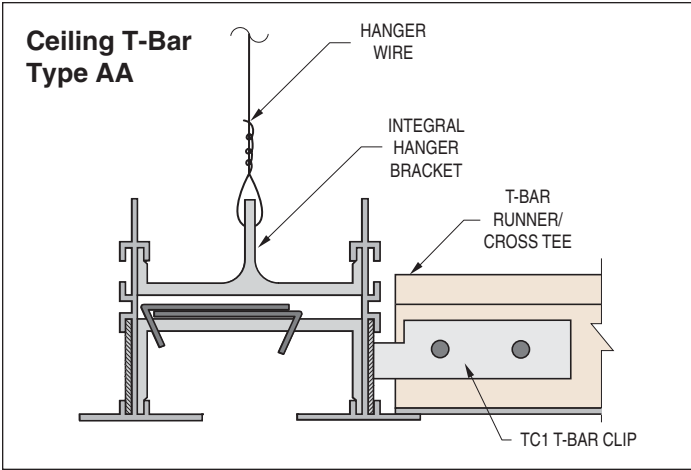
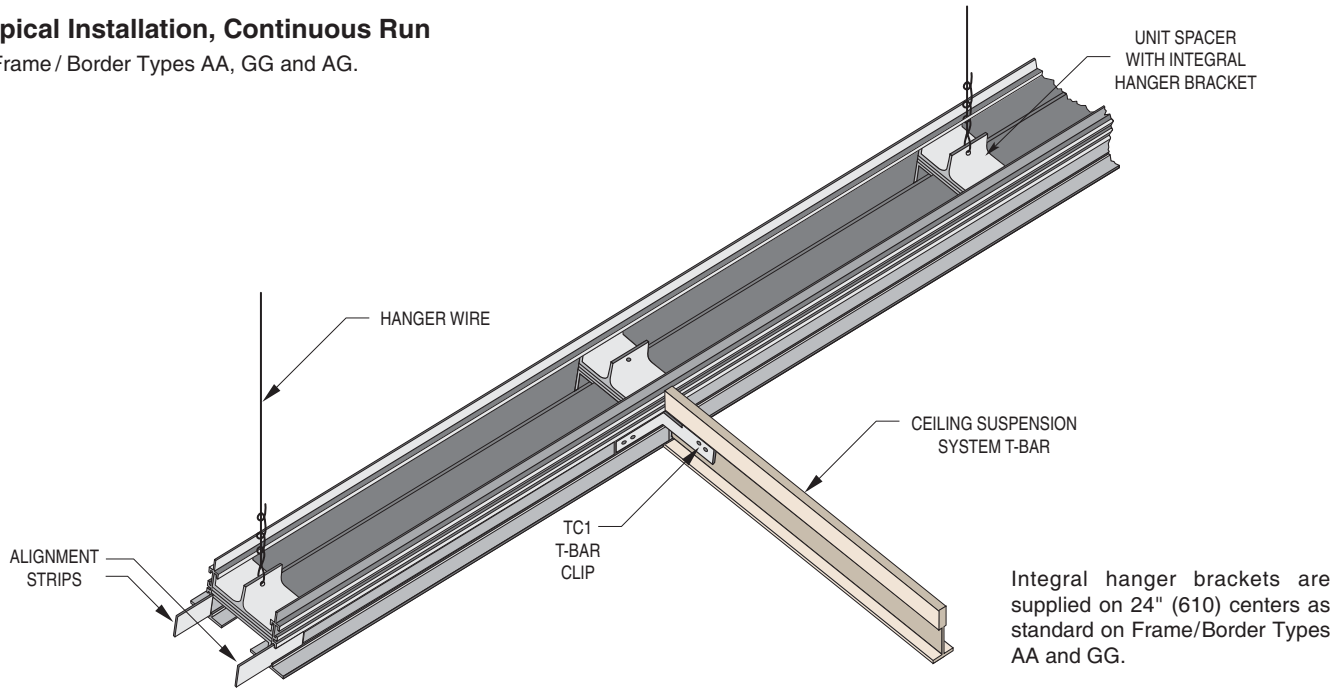
## T-BAR CEILING SUSPENSION SYSTEM APPLICATION AND INSTALLATION METHODS

A

FLOWLINE™ LINEAR DIFFUSERS

### Typical Installation, Continuous Run

- Frame / Border Types AA, GG and AG.



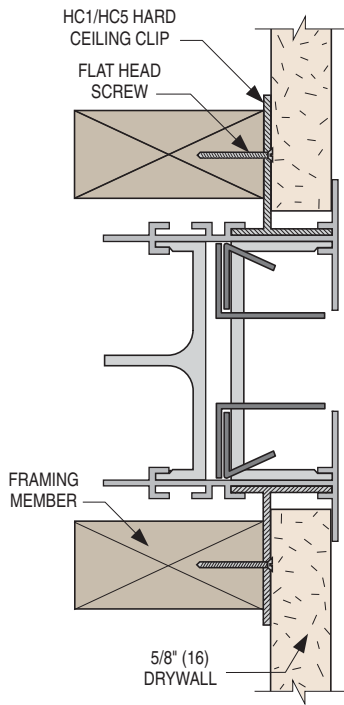


## SIDEWALL APPLICATION AND INSTALLATION METHODS

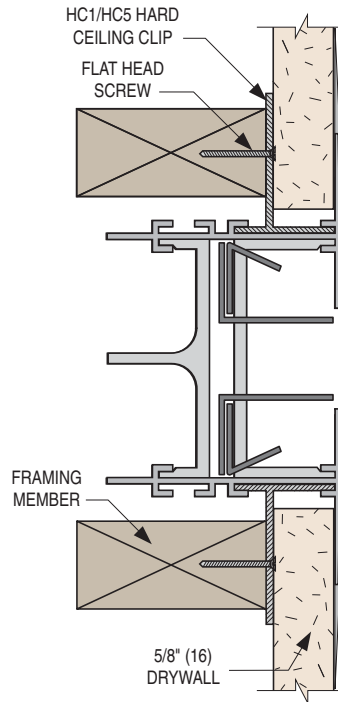
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FLOWLINE™ LINEAR DIFFUSERS

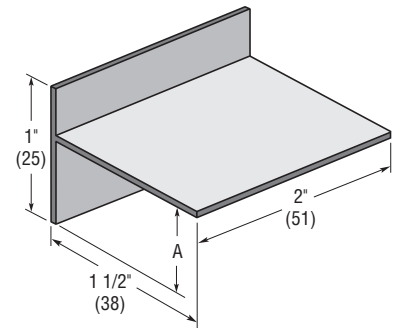
### Exposed Flange Frame Type AA



### Concealed Tapered Frame Type CC



### HC1 Hard Ceiling Clip 5/8" (16) HC5 Hard Ceiling Clip 1/2" (13)



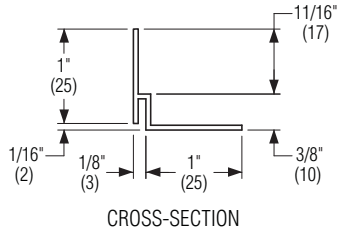
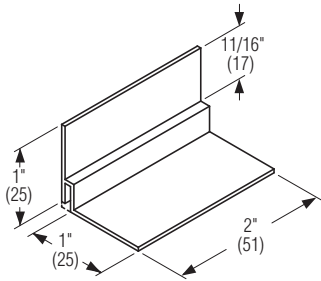
	A Dim.
HC1	5/8" (16)
HC5	1/2" (13)

The HC1 and HC5 Hard Ceiling Clips can be used to mount the FlowLine™ assembly with Frame/Border Types AA or CC, where 5/8" (16) or 1/2" (13) gypsum wallboard (drywall) is used.

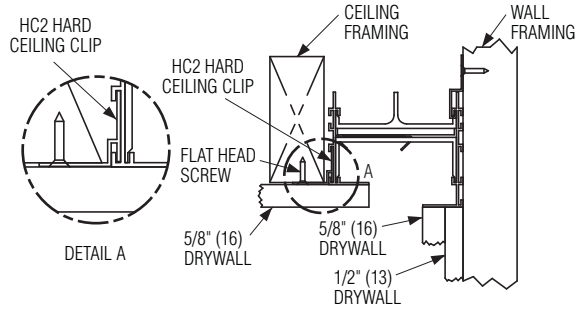


## SIDEWALL APPLICATION AND INSTALLATION METHODS

### Mounting Clips HC2 Hard Ceiling Clip

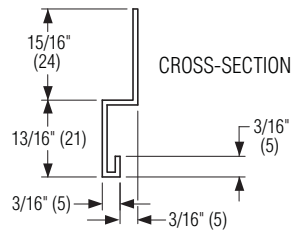
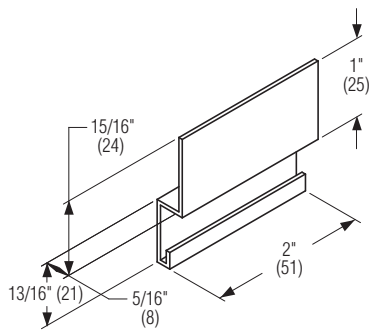


The HC2 Hard Ceiling Clip can be used to mount the FlowLine™ assembly with frame/border type **G**, where standard 5/8" (16) gypsum wallboard (drywall) is installed below the frame face.

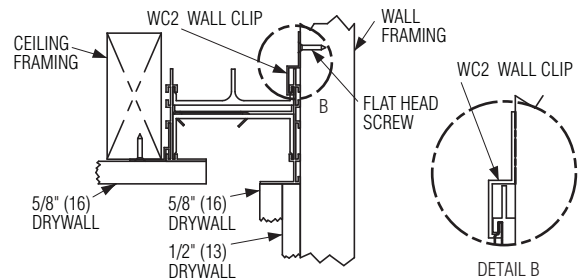


**Flangeless Concealed Frame  
Type GJ**

### Mounting Clips WC2 Wall Clip

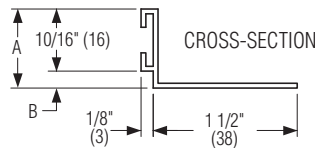
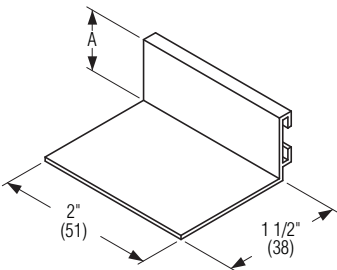


The WC2 Wall Clip can be used to mount the FlowLine™ assembly with frame/border types **G** or **J**, flush to a wall.

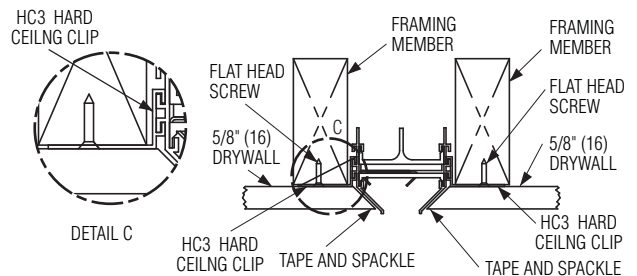


**Flangeless Concealed Frame  
Type GJ**

### Mounting Clips HC3 Hard Ceiling Clip for Type K Border



The HC3 Hard Ceiling Clip can be used to mount the FlowLine™ assembly with frame/border type **K**, where standard 5/8" (16) gypsum wallboard (drywall) is used.



**Flangeless Concealed Frame  
Type KK**

Flowline	Part No.	A Dim.	B Dim.
FLH10	HC3-10	13/16 (21)	3/16 (5)
FLH15	HC3-15	1 1/16 (27)	7/16 (11)
FLH20	HC3-20	1 5/16 (33)	11/16 (17)

## FT SERIES

- LAY-IN UNITS FOR T-BAR SUSPENSION CEILING SYSTEMS
- COMPLETE WITH ENGINEERED PLENUM
- CHOICE OF HORIZONTAL OR VERTICAL PATTERN CONTROLLERS

### Horizontal High Throw Models:

Standard 15/16" (24) or 9/16" (14) Flat T-Bar

FTH(I)10	1" (25) Slot
FTH(I)15	1 1/2" (38) Slot
FTH(I)20	2" (51) Slot
FTH(I)25	2 1/2" (64) Slot
FTH(I)30	3" (76) Slot

Bolt-Slot (Fineline® Type) T-Bar

FTBH(I)10	1" (25) Slot
FTBH(I)15	1 1/2" (38) Slot
FTBH(I)20	2" (51) Slot
FTBH(I)25	2 1/2" (64) Slot
FTBH(I)30	3" (76) Slot

### Vertical Jet Throw Models:

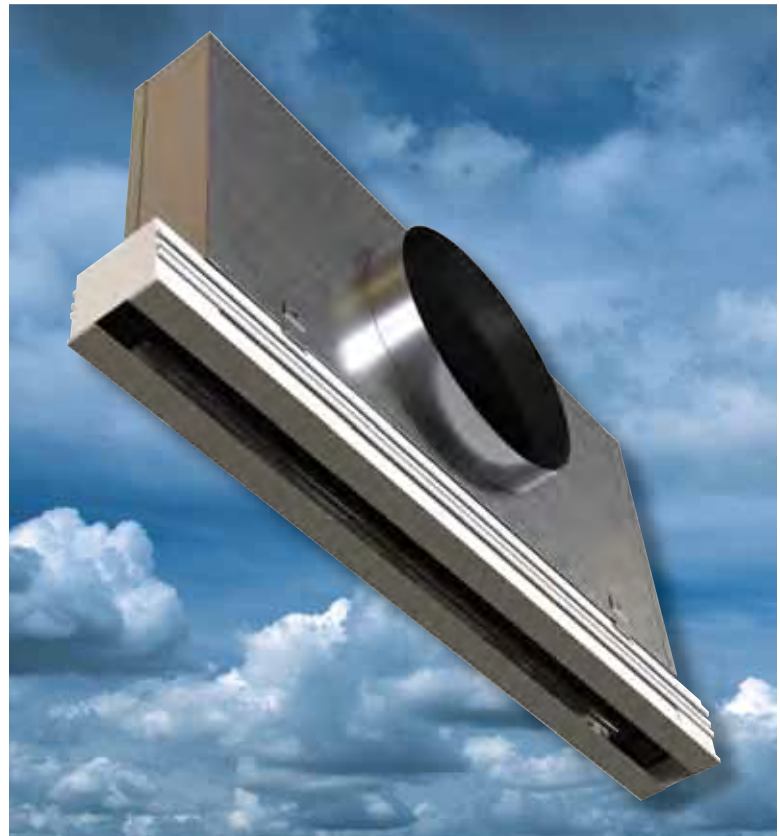
Standard 15/16" (24) or 9/16" (14) Flat T-Bar

FTV(I)10	1" (25) Slot
FTV(I)15	1 1/2" (38) Slot
FTV(I)20	2" (51) Slot
FTV(I)25	2 1/2" (64) Slot
FTV(I)30	3" (76) Slot

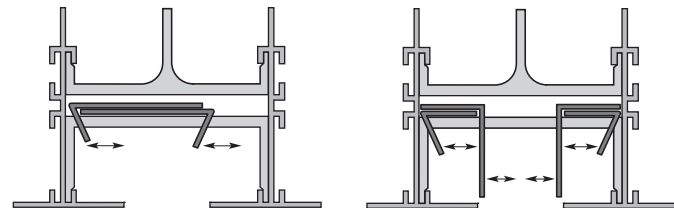
Bolt-Slot (Fineline® Type) T-Bar

FTBV(I)10	1" (25) Slot
FTBV(I)15	1 1/2" (38) Slot
FTBV(I)20	2" (51) Slot
FTBV(I)25	2 1/2" (64) Slot
FTBV(I)30	3" (76) Slot

(I) Adds internal insulation.



### Pattern Controller Options



**FTH Series**  
Horizontal High Throw Design

**FTV Series**  
Vertical Jet Throw Design

The FT Series is a modular version of Nailor's FlowLine™ Linear Diffuser System. The FT Series is available in various discrete lengths for installation in lay-in type suspended ceiling grid systems. They are available for both Imperial and Metric ceiling grids. These diffusers are manufactured to fit standard ceiling grid modules and provide quick and easy installation. The units are provided with factory mounted engineered plenums and are normally individually suspended by either integral hanger brackets at each end of the diffuser and/or hanger straps on the plenum. Relocation is easy for office layout and tenant improvement changes.

The high induction characteristics of the FTH Series Horizontal High Throw pattern controller option make it an excellent choice for variable air volume systems. The FTV Series Vertical Jet Throw option is ideally suited to perimeter glass curtain wall applications.

These units are also suitable for return air applications. Return models are available and supplied without plenum (Models FTBR and FTBHR). Supplied with horizontal type dual pattern controllers for system balancing.

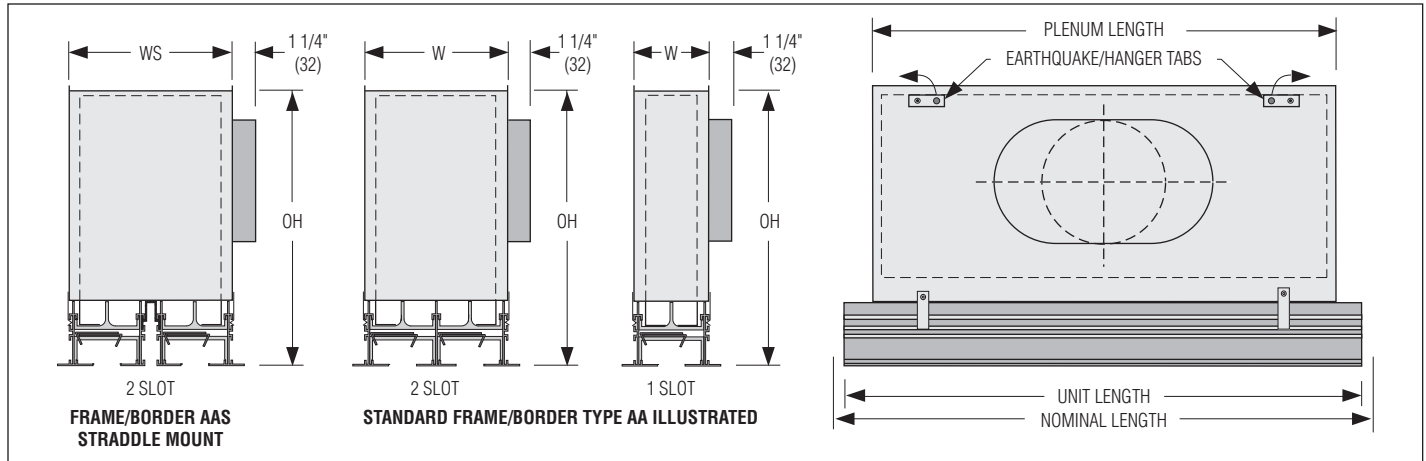
### STANDARD FEATURES:

- Available in 24" (610), 48" (1219) and 60" (1524) nominal lengths (FTH and FTV series models).
- Available in 600 mm, 1200 mm and 1500 mm nominal lengths for Metric Suspension Ceiling Systems (FTH and FTV series models).
- Standard slot widths are 1" (25), 1 1/2" (38) and 2" (51).
- Heavy wall extruded aluminum construction with galvanized steel pattern controllers.
- Horizontal or vertical throw pattern controller options.
- Supply models are complete with an integral engineered plenum. Optional internal insulation is available.
- Various Frame/Border styles are available to integrate with most ceiling systems.
- Units are supplied with flat end caps.
- Standard finish is AW Appliance White on exposed frame surfaces. Pattern controllers and interior surfaces are black.

## FT SERIES • 9/16" (14) OR 15/16" (24) FLAT T-BAR

(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).

FLOWLINE™ LINEAR DIFFUSERS



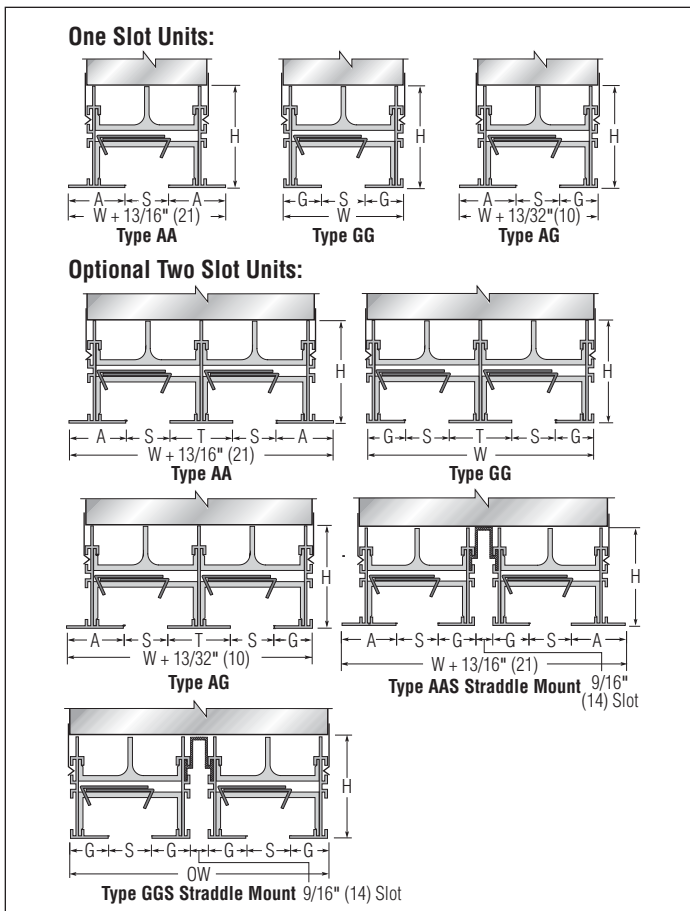
### Dimensional Data (Imperial Grids)

Nominal Length	Unit Length	Plenum Length	Available Inlet Sizes	
			1 Slot	2 Slot
24 (610)	23 3/4 (603)	20 3/4 (527)	6 (152), 8 (203) Round	6 (152), 8 (203), 10 (254), 12 (305), 14 (356) Flat Oval*
48 (1219)	47 3/4 (1213)	44 3/4 (1137)	10 (254), 12 (305), 14 (356)	10 (254), 12 (305), 14 (356) Round
60 (1524)	59 3/4 (1518)	56 3/4 (1441)		

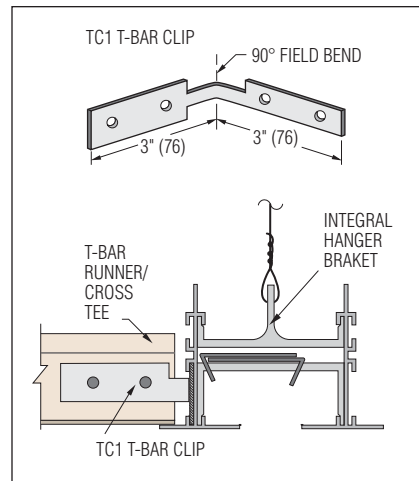
FT Series Model	1 Slot		2 Slot		
	W	OH	W	WS	OH
FT(H or V)(I)10	2 3/4 (70)	12 3/8 (314)	5 3/16 (132)	6 1/16 (154)	18 3/8 (467)
FT(H or V)(I)15	3 3/4 (95)	12 5/8 (321)	7 3/16 (183)	8 1/16 (205)	18 5/8 (473)
FT(H or V)(I)20	4 3/4 (121)	12 7/8 (327)	9 3/16 (233)	10 1/16 (256)	18 7/8 (479)
FT(H or V)(I)25	5 3/4 (146)	13 1/8 (333)	11 3/16 (284)	12 1/16 (306)	19 1/8 (486)
FT(H or V)(I)30	6 3/4 (171)	13 3/8 (340)	13 3/16 (335)	14 1/16 (357)	19 3/8 (492)

\* Equivalent Oval: 10" (254) = 11" x 7 7/8" (279 x 200); 12" (305) = 14 1/8" x 7 7/8" (359 x 200); 14" (356) = 17 5/16" x 7 7/8" (440 x 200).

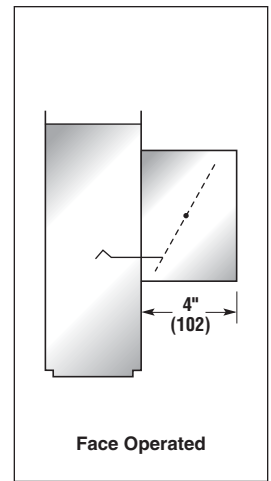
### AVAILABLE FT SERIES BORDER TYPES



### OPTIONAL MOUNTING HARDWARE



### OPTIONAL ID INLET DAMPER



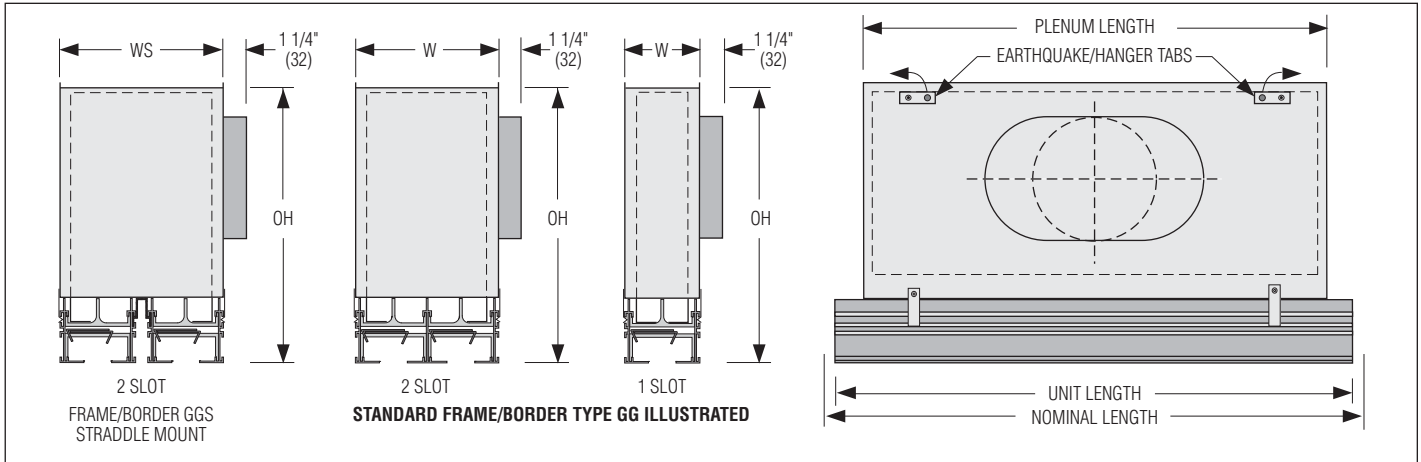
### Dimensional Data - Imperial (Metric) Units

FT Series Model	S Slot Width	A Border Width	G Border Width	H Height	T 2 Slot
FT(H or V)(I)10	1 (25)	1 9/32 (33)	7/8 (22)	2 3/8 (60)	1 7/16 (37)
FT(H or V)(I)15	1 1/2 (38)	1 17/32 (39)	1 1/8 (29)	2 5/8 (67)	1 15/16 (49)
FT(H or V)(I)20	2 (51)	1 25/32 (45)	1 3/8 (35)	2 7/8 (73)	2 7/16 (62)
FT(H or V)(I)25	2 1/2 (64)	2 1/32 (52)	1 5/8 (41)	3 1/8 (79)	2 15/16 (75)
FT(H or V)(I)30	3 (76)	2 9/32 (58)	1 7/8 (48)	3 3/8 (86)	3 7/16 (87)



## FTB SERIES • BOLT-SLOT (FINELINE® TYPE) T-BAR

(TYPE H HORIZONTAL PATTERN CONTROLLERS ILLUSTRATED. ALSO AVAILABLE WITH TYPE V VERTICAL).



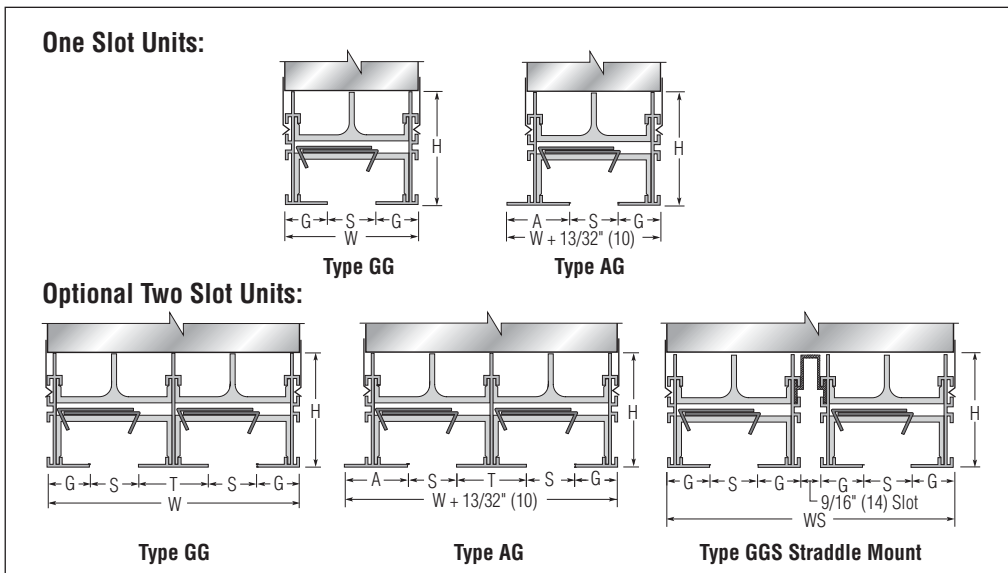
### Dimensional Data (Imperial Grids)

Nominal Length	Unit Length	Plenum Length	Available Inlet Sizes	
			1 Slot	2 Slot
24 (610)	23 3/8 (594)	20 3/8 (518)	6 (152), 8 (203) Round	6 (152), 8 (203), 10 (254), 12 (305), 14 (356) Flat Oval*
48 (1219)	47 3/8 (1203)	44 3/8 (1127)		

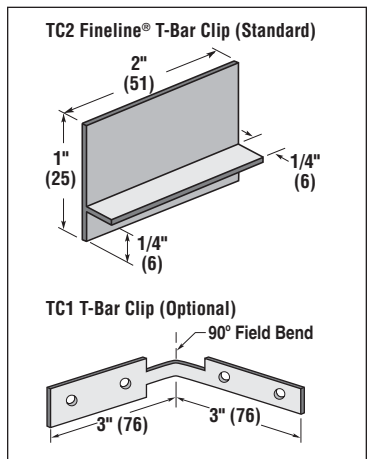
FTB Series Model	1 Slot		2 Slot		
	W	OH	W	WS	OH
FTB(H or V)(I)10	2 3/4 (70)	12 3/8 (314)	5 3/16 (132)	6 1/16 (154)	18 3/8 (467)
FTB(H or V)(I)15	3 3/4 (95)	12 5/8 (321)	7 3/16 (183)	8 1/16 (205)	18 5/8 (473)
FTB(H or V)(I)20	4 3/4 (121)	12 7/8 (327)	9 3/16 (233)	10 1/16 (256)	18 7/8 (479)
FTB(H or V)(I)25	5 3/4 (146)	13 1/8 (333)	11 3/16 (284)	12 1/16 (306)	19 1/8 (486)
FTB(H or V)(I)30	6 3/4 (171)	13 3/8 (340)	13 3/16 (335)	14 1/16 (357)	19 3/8 (492)

\* Equivalent Oval: 10" (254) = 11" x 7 7/8" (279 x 200); 12" (305) = 14 1/8" x 7 7/8" (359 x 200); 14" (356) = 17 5/16" x 7 7/8" (440 x 200).

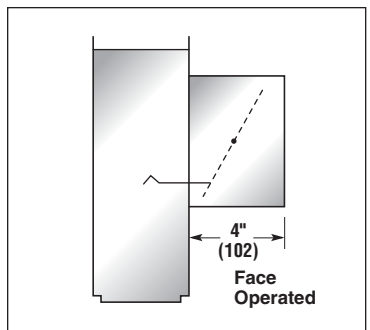
### AVAILABLE FTB SERIES BORDER TYPES



### MOUNTING HARDWARE



### OPTIONAL ID INLET DAMPER

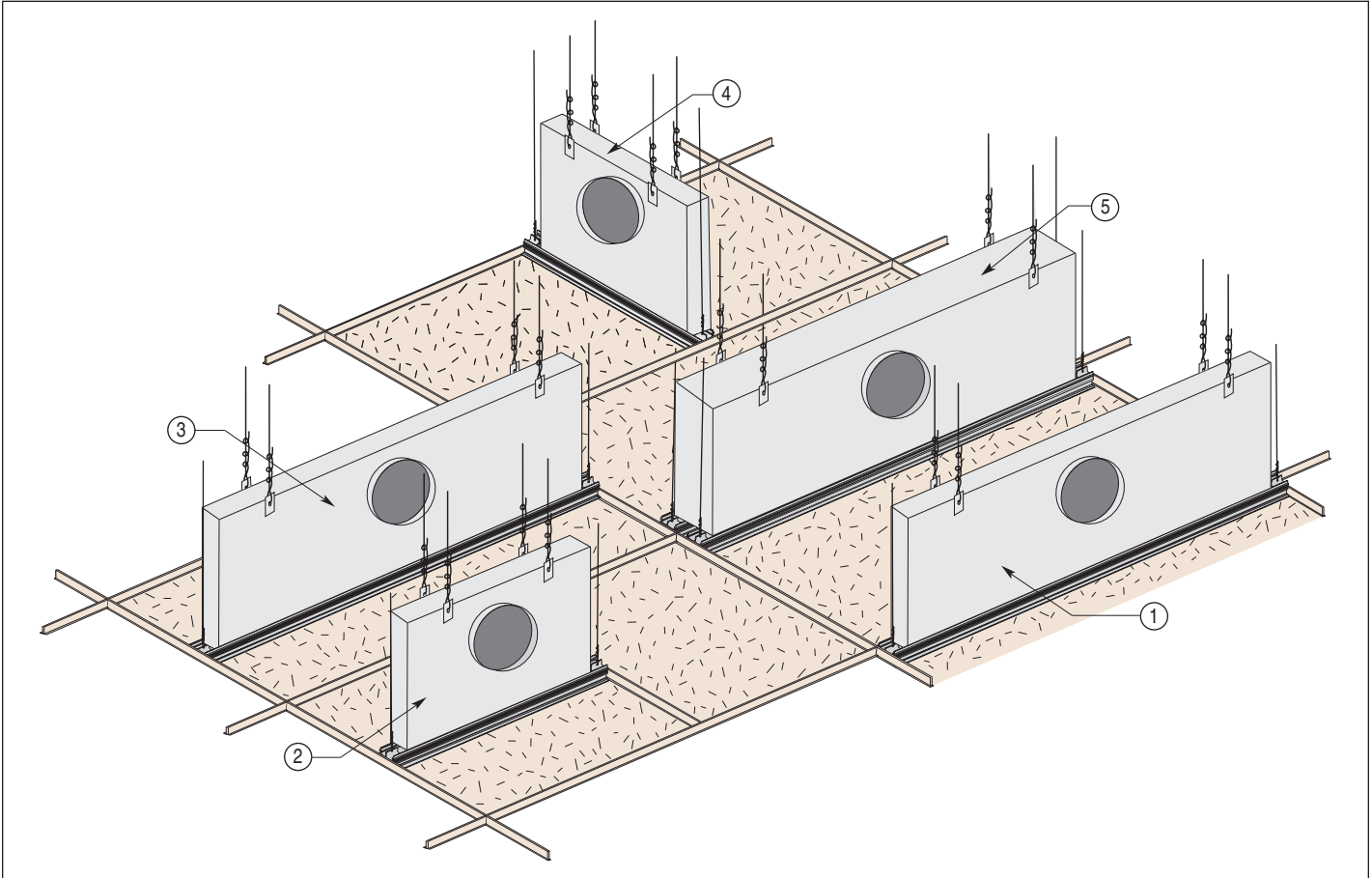


### Dimensional Data - Imperial (Metric) Units

FTB Series Model	S Slot Width	A Border Width	G Border Width	H Height	T 2 Slot
FTB(H or V)(I)10	1 (25)	1 9/32 (33)	7/8 (22)	2 3/8 (60)	1 7/16 (37)
FTB(H or V)(I)15	1 1/2 (38)	1 17/32 (39)	1 1/8 (29)	2 5/8 (67)	1 15/16 (49)
FTB(H or V)(I)20	2 (51)	1 25/32 (45)	1 3/8 (35)	2 7/8 (73)	2 7/16 (62)
FTB(H or V)(I)25	2 1/2 (64)	2 1/32 (52)	1 5/8 (41)	3 1/8 (79)	2 15/16 (75)
FTB(H or V)(I)30	3 (76)	2 9/32 (58)	1 7/8 (48)	3 3/8 (86)	3 7/16 (87)

## TYPICAL FT SERIES APPLICATION • T-BAR CEILING SUSPENSION SYSTEMS

FLOWLINE™ LINEAR DIFFUSERS



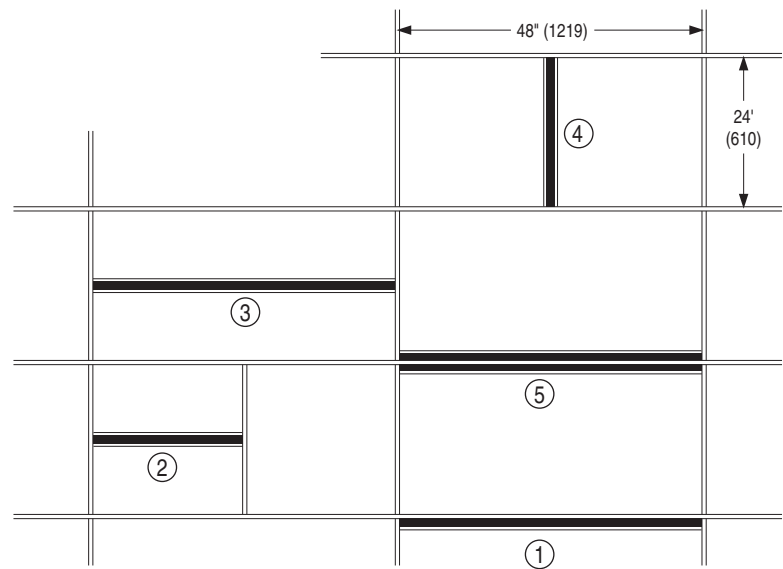
### DESCRIPTION:

1. Nominal 4 ft. (1219) unit installed alongside a main runner.
2. 2 ft. (610) unit installed parallel to and mid-way between main runners.
3. Nominal 4 ft. (1219) unit installed mid-way between main runners.
4. 2 ft. (610) unit installed perpendicular to main runners.
5. Nominal 4 ft. (1219) two slot unit straddling a main runner.

### Notes:

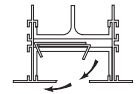
Frame/Border style should be carefully selected to ensure compatibility with specific ceiling grid suspension system and desired visual appearance. Type A Flange Border can lie on flat T-Bar or support cut ceiling tile. Type G Flangeless Border requires a supplementary cross tee for support in 15/16" (24) or 9/16" (14) flat T-Bar applications. In Bolt Slot (Fineline® Type) applications, utilizing Type G Flangeless Border, optional TC2 Fineline® T-Bar Clips are recommended to support and level the unit. Bolt slot ceiling system grids are usually 2 ft. x 2 ft. (610 x 610) modules. Cross notches on 4 ft. (1219) units are not available. Modification of ceiling grid and field cutting of ceiling tiles will be required.

Reflected Ceiling Plan 2 ft. x 4 ft. (610 x 1219) T-Bar Grid



**PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES**

**MODELS: FLH (10, 15, 20, 25 & 30) • CONTINUOUS PRESSURIZED PLENUM**



**A**

**FLOWLINE™ LINEAR DIFFUSERS**

Slot Width	Slots	Airflow, CFM/FT.	20	35	50	65	80	95	110
		Static Pressure	.013	.039	.080	.135	.205	.289	.387
Noise Criteria	<15	<15	23	30	36	42	45		
Throw	4-6-12	7-11-16	10-14-20	13-16-22	15-18-25	16-20-27	17-21-30		
1" Slot Width	1 Slot	Airflow, CFM/FT.	20	35	50	65	80	95	110
		Static Pressure	.013	.039	.080	.135	.205	.289	.387
Noise Criteria	<15	<15	23	30	36	42	45		
Throw	4-6-12	7-11-16	10-14-20	13-16-22	15-18-25	16-20-27	17-21-30		
1" Slot Width	2 Slot	Airflow, CFM/FT.	40	70	100	130	160	190	220
		Static Pressure	.013	.039	.080	.135	.205	.289	.387
Noise Criteria	<15	<15	25	33	39	45	48		
Throw	5-8-17	10-15-24	15-20-29	17-22-32	19-25-35	20-28-38	22-30-40		
1.5" Slot Width	1 Slot	Airflow, CFM/FT.	25	40	55	70	85	100	115
		Static Pressure	.011	.029	.054	.089	.130	.180	.237
		Noise Criteria	<15	<15	17	25	31	36	40
		Throw	5-8-12	9-12-17	12-15-20	14-17-22	15-18-25	16-20-28	17-21-30
1.5" Slot Width	2 Slot	Airflow, CFM/FT.	55	80	105	130	155	180	205
		Static Pressure	.014	.029	.049	.076	.108	.145	.189
		Noise Criteria	<15	<15	16	26	31	35	39
		Throw	8-12-19	12-17-25	15-20-29	17-22-31	20-26-35	21-27-39	23-30-40
2" Slot Width	1 Slot	Airflow, CFM/FT.	25	45	65	85	105	125	145
		Static Pressure	.007	.021	.044	.075	.115	.163	.219
		Noise Criteria	<15	<15	19	24	32	38	43
		Throw	4-8-13	8-12-18	11-16-22	14-19-26	16-21-30	17-22-31	20-24-34
2" Slot Width	2 Slot	Airflow, CFM/FT.	45	85	125	165	205	245	285
		Static Pressure	.005	.019	.042	.073	.113	.161	.218
		Noise Criteria	<15	<15	19	26	34	40	45
		Throw	4-9-15	11-16-25	16-21-29	21-26-37	23-28-40	26-31-42	27-32-44
2.5" Slot Width	1 Slot	Airflow, CFM/FT.	30	55	80	105	130	155	180
		Static Pressure	.009	.031	.065	.113	.173	.245	.331
		Noise Criteria	<15	<15	18	25	30	34	39
		Throw	3-7-16	9-14-21	13-18-26	15-20-29	18-22-33	20-25-36	21-27-39
2.5" Slot Width	2 Slot	Airflow, CFM/FT.	60	105	150	195	240	285	330
		Static Pressure	.009	.028	.057	.097	.147	.207	.278
		Noise Criteria	<15	<15	21	27	32	37	41
		Throw	7-12-22	13-19-28	19-24-35	22-27-39	25-31-44	27-33-48	29-36-51
3" Slot Width	1 Slot	Airflow, CFM/FT.	30	60	90	120	150	180	210
		Static Pressure	.008	.033	.074	.131	.205	.296	.403
		Noise Criteria	<15	<15	15	24	30	35	40
		Throw	3-6-15	10-14-22	14-19-27	17-23-32	19-25-35	22-27-39	24-29-42
3" Slot Width	2 Slot	Airflow, CFM/FT.	60	120	180	240	300	360	420
		Static Pressure	.008	.033	.074	.131	.205	.296	.403
		Noise Criteria	<15	<15	18	27	33	38	43
		Throw	4-9-20	12-20-31	19-26-38	24-31-44	27-34-48	30-37-53	32-40-57

**NC Correction Factors for Various Lengths**

Length (ft.)	2	4	6	8	9	10	15
Supply	-3	0	+2	+3	+4	+5	+8
Return	0	+3	+5	+6	+7	+8	+11

**Throw Correction Factors for Various Lengths**

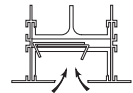
Length (ft.)	2	4	6	8	10	12
Multiplier	0.70	1.00	1.25	1.40	1.55	1.70

**Performance Notes:**

- Data is based upon pressurized plenum application (non ducted) with no plenum effect for pressure or sound. Plenums should be sized to achieve equal velocity along the slot length. Keep duct inlet velocities below 700 fpm in order to maintain cataloged performance.
- All pressures are in inches w.g..
- Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Throw data is based on active sections 4 ft. (1219) long. For other lengths, use the correction factor table above.
- Noise criteria values are based on 10 dB room absorption, re 10<sup>-12</sup> watts, for a 4 ft. section. For other lengths, use the correction factor table above.
- Throw values are based on a 1-way air pattern. For 2-way pattern, throw is determined from the 1 slot data at half the specified air volume.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

**PERFORMANCE DATA • RETURN AIR APPLICATIONS**

**MODELS: FLH (10, 15, 20, 25 & 30)**



**FLOWLINE™ LINEAR DIFFUSERS**

Slot Width	Slots	Airflow, CFM/FT.	20	35	50	65	80	95	110
		Static Pressure	.014	.043	.088	.149	.226	.318	.426
Noise Criteria	<15	<18	26	33	39	45	48		
1" Slot Width	1 Slot	Airflow, CFM/FT.	20	35	50	65	80	95	110
		Static Pressure	.014	.043	.088	.149	.226	.318	.426
Noise Criteria	<15	<18	26	33	39	45	48		
1" Slot Width	2 Slot	Airflow, CFM/FT.	40	70	100	130	160	190	220
		Static Pressure	.014	.043	.088	.149	.226	.318	.426
Noise Criteria	<15	<19	28	36	42	48	51		
1.5" Slot Width	1 Slot	Airflow, CFM/FT.	25	40	55	70	85	100	115
		Static Pressure	.012	.032	.059	.098	.143	.198	.261
Noise Criteria	<15	<15	20	28	34	39	43		
1.5" Slot Width	2 Slot	Airflow, CFM/FT.	55	80	105	130	155	180	205
		Static Pressure	.015	.032	.054	.084	.119	.160	.208
Noise Criteria	<15	<15	19	29	34	38	42		
2" Slot Width	1 Slot	Airflow, CFM/FT.	25	45	65	85	105	125	145
		Static Pressure	.008	.023	.048	.083	.127	.179	.241
Noise Criteria	<15	<15	22	27	35	41	46		
2" Slot Width	2 Slot	Airflow, CFM/FT.	45	85	125	165	205	245	285
		Static Pressure	.006	.021	.046	.080	.124	.177	.240
Noise Criteria	<15	<15	22	29	37	43	48		
2.5" Slot Width	1 Slot	Airflow, CFM/FT.	30	55	80	105	130	155	180
		Static Pressure	.010	.034	.074	.124	.190	.270	.364
Noise Criteria	<15	<15	21	28	33	37	42		
2.5" Slot Width	2 Slot	Airflow, CFM/FT.	60	105	150	195	240	285	330
		Static Pressure	.010	.031	.063	.107	.162	.228	.306
Noise Criteria	<15	<15	24	30	35	40	44		
3" Slot Width	1 Slot	Airflow, CFM/FT.	30	60	90	120	150	180	210
		Static Pressure	.009	.036	.081	.144	.226	.326	.443
Noise Criteria	<15	<15	18	27	33	38	43		
3" Slot Width	2 Slot	Airflow, CFM/FT.	60	120	180	240	300	360	420
		Static Pressure	.009	.036	.081	.144	.226	.326	.443
Noise Criteria	<15	<15	22	30	36	41	46		

**NC Correction Factors for Various Lengths**

Length (ft.)	2	4	6	8	9	10	15
Return	- 3	0	+ 1	+ 2	+ 3	+ 5	+ 7

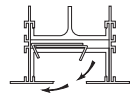
**Performance Notes:**

1. Data is based upon a ductless return application.
2. All pressures are in inches w.g..
3. Noise criteria values are based on 10 dB room absorption, re 10<sup>-12</sup> watts, for a 4 ft. (1219) section. For other lengths, use the correction factor table above.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.



**PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES**

**MODELS: FLH / FTH (10 &15) • 1 SLOT WITH NAILOR PLENUM**



**A**

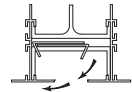
**FLOWLINE™ LINEAR DIFFUSERS**

<b>1" Slot Width</b>	<b>1 Slot 6" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	25	50	75	100	125	150	175
			Total Pressure	.008	.034	.075	.132	.206	.297	.040
			Static Pressure	.007	.030	.065	.115	.180	.260	.350
			Noise Criteria	<15	<15	<15	20	29	36	40
			Throw	1-2-5	3-6-9	5-9-12	7-10-13	8-10-14	9-11-16	10-12-18
		<b>4 Ft.</b>	Airflow, CFM	40	80	120	160	200	240	280
			Total Pressure	.009	.031	.066	.117	.180	.264	.352
			Static Pressure	.006	.020	.042	.075	.115	.170	.225
			Noise Criteria	<15	<15	<15	17	25	32	38
			Throw	1-2-5	3-6-12	5-9-15	8-12-17	10-12-18	12-15-20	13-16-22
		<b>5 Ft.</b>	Airflow, CFM	50	100	150	200	250	300	350
			Total Pressure	.009	.036	.079	.140	.217	.316	.424
			Static Pressure	.005	.020	.042	.075	.115	.170	.225
			Noise Criteria	<15	<15	<15	18	26	33	38
			Throw	1-2-7	3-7-13	8-10-17	10-13-19	12-15-20	14-16-22	15-17-24
<b>1" Slot Width</b>	<b>1 Slot 8" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	50	75	100	125	150	175	200
			Total Pressure	.029	.068	.119	.188	.272	.358	.471
			Static Pressure	.028	.065	.114	.180	.260	.342	.450
			Noise Criteria	<15	<15	20	28	35	41	44
			Throw	2-5-9	5-9-11	7-10-14	8-11-15	9-12-18	10-12-19	11-13-20
		<b>4 Ft.</b>	Airflow, CFM	70	110	150	190	230	270	310
			Total Pressure	.016	.040	.075	.120	.176	.242	.319
			Static Pressure	.014	.034	.063	.101	.149	.205	.270
			Noise Criteria	<15	<15	<15	23	30	36	41
			Throw	2-4-10	6-8-14	7-11-17	9-13-19	10-15-22	13-16-24	15-18-26
		<b>5 Ft.</b>	Airflow, CFM	80	130	180	230	280	330	380
			Total Pressure	.007	.025	.056	.093	.142	.206	.283
			Static Pressure	.006	.020	.044	.072	.110	.160	.220
			Noise Criteria	<15	<15	<15	23	29	35	40
			Throw	2-5-11	6-9-15	8-12-18	9-14-20	11-15-22	13-17-24	14-18-26
<b>1.5" Slot Width</b>	<b>1 Slot 6" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	30	60	90	120	150	180	210
			Total Pressure	.002	.038	.088	.148	.246	.367	.471
			Static Pressure	.001	.032	.075	.125	.210	.315	.400
			Noise Criteria	<15	<15	<15	22	31	39	44
			Throw	1-4-7	4-7-11	6-9-13	8-10-15	10-13-17	11-14-19	12-15-20
		<b>4 Ft.</b>	Airflow, CFM	70	110	150	190	230	270	310
			Total Pressure	.021	.045	.089	.148	.206	.288	.376
			Static Pressure	.013	.025	.052	.089	.120	.170	.220
			Noise Criteria	<15	<15	<15	20	24	30	36
			Throw	2-5-11	5-8-15	8-12-17	10-13-19	12-15-20	13-16-21	14-17-23
		<b>5 Ft.</b>	Airflow, CFM	85	135	185	235	285	335	385
			Total Pressure	.013	.055	.101	.165	.247	.342	.440
			Static Pressure	.001	.025	.045	.075	.115	.160	.200
			Noise Criteria	<15	<15	<15	20	26	31	37
			Throw	2-5-11	5-19-15	8-13-18	11-15-21	12-17-23	14-18-25	15-20-27
<b>1.5" Slot Width</b>	<b>1 Slot 8" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	30	60	90	120	150	180	210
			Total Pressure	.002	.032	.076	.128	.222	.317	.428
			Static Pressure	.001	.030	.072	.120	.210	.300	.405
			Noise Criteria	<15	<15	<15	23	31	40	44
			Throw	1-4-7	4-7-11	7-9-13	8-12-15	10-13-17	11-14-18	12-15-19
		<b>4 Ft.</b>	Airflow, CFM	70	120	170	220	270	320	370
			Total Pressure	.015	.035	.075	.125	.207	.272	.380
			Static Pressure	.012	.027	.060	.100	.170	.220	.310
			Noise Criteria	<15	<15	<15	22	30	36	44
			Throw	2-5-11	6-9-15	9-13-18	12-15-21	14-17-23	15-19-25	16-20-26
		<b>5 Ft.</b>	Airflow, CFM	85	145	205	265	325	385	445
			Total Pressure	.016	.041	.084	.131	.204	.276	.401
			Static Pressure	.012	.03	.062	.095	.150	.200	.300
			Noise Criteria	<15	<15	<15	23	30	36	43
			Throw	2-5-11	6-10-16	9-13-20	12-17-23	15-19-25	16-20-27	17-21-29
<b>1.5" Slot Width</b>	<b>1 Slot 10" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	30	60	90	120	150	180	210
			Total Pressure	.002	.027	.065	.109	.189	.269	.364
			Static Pressure	.002	.026	.063	.106	.184	.263	.355
			Noise Criteria	<15	<15	<15	20	28	37	41
			Throw	1-4-7	4-7-11	7-9-13	8-12-15	10-13-17	11-14-18	12-15-19
		<b>4 Ft.</b>	Airflow, CFM	70	120	170	220	270	320	370
			Total Pressure	.013	.030	.064	.106	.176	.231	.323
			Static Pressure	.012	.027	.058	.096	.161	.210	.294
			Noise Criteria	<15	<15	<15	19	27	33	41
			Throw	2-5-11	6-9-15	9-13-18	12-15-21	14-17-23	15-19-25	16-20-26
		<b>5 Ft.</b>	Airflow, CFM	85	145	205	265	325	385	445
			Total Pressure	.014	.035	.071	.111	.173	.235	.341
			Static Pressure	.012	.030	.063	.097	.151	.204	.299
			Noise Criteria	<15	<15	<15	20	27	33	40
			Throw	2-5-11	6-10-16	9-13-20	12-17-23	15-19-25	16-20-27	17-21-29

For performance table notes, see page A37.

**PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES**

**MODELS: FLH / FTH (20 & 25) • 1 SLOT WITH NAILOR PLENUM**



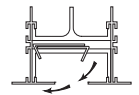
**FLOWLINE™ LINEAR DIFFUSERS**

<b>2" Slot Width</b>	<b>1 Slot 8" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	<b>40</b>	<b>80</b>	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>
			Total Pressure	.007	.028	.065	.115	.180	.259	.352
			Static Pressure	.006	.025	.057	.102	.159	.229	.312
			Noise Criteria	<15	<15	<15	17	26	31	38
			Throw	1-3-8	5-8-13	7-10-15	10-13-17	11-14-19	12-15-22	13-16-23
		<b>4 Ft.</b>	Airflow, CFM	<b>100</b>	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>
			Total Pressure	.015	.034	.040	.094	.136	.185	.241
			Static Pressure	.010	.022	.040	.062	.089	.122	.159
			Noise Criteria	<15	<15	<15	15	22	30	37
			Throw	3-4-11	6-9-14	8-12-17	9-13-19	12-14-23	14-25-27	15-17-28
		<b>5 Ft.</b>	Airflow, CFM	<b>125</b>	<b>180</b>	<b>235</b>	<b>290</b>	<b>345</b>	<b>400</b>	<b>455</b>
			Total Pressure	.180	.037	.064	.097	.137	.184	.238
			Static Pressure	.010	.021	.035	.535	.076	.102	.132
			Noise Criteria	<15	<15	<15	22	29	34	39
			Throw	3-6-12	8-12-17	9-13-19	12-14-23	14-13-26	16-18-28	17-21-30
<b>2" Slot Width</b>	<b>1 Slot 12" Oval Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	<b>50</b>	<b>100</b>	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>
			Total Pressure	.007	.028	.064	.113	.177	.254	.346
			Static Pressure	.007	.027	.060	.108	.168	.242	.329
			Noise Criteria	<15	<15	<15	17	24	29	37
			Throw	2-5-10	5-8-12	6-10-14	8-12-17	9-13-19	10-14-22	13-16-25
		<b>4 Ft.</b>	Airflow, CFM	<b>100</b>	<b>170</b>	<b>240</b>	<b>310</b>	<b>380</b>	<b>450</b>	<b>520</b>
			Total Pressure	.008	.023	.045	.076	.114	.169	.213
			Static Pressure	.065	.019	.038	.063	.094	.132	.176
			Noise Criteria	<15	<15	<15	20	27	33	39
			Throw	3-6-12	7-11-15	9-13-19	11-15-23	14-17-27	15-19-30	16-21-34
		<b>5 Ft.</b>	Airflow, CFM	<b>125</b>	<b>205</b>	<b>285</b>	<b>365</b>	<b>445</b>	<b>525</b>	<b>605</b>
			Total Pressure	.009	.023	.045	.074	.109	.152	.202
			Static Pressure	.007	.018	.034	.056	.083	.115	.153
			Noise Criteria	<15	<15	<15	23	31	36	41
			Throw	3-7-15	7-11-19	10-14-24	13-16-25	15-19-30	16-21-32	21-25-34
<b>2.5" Slot Width</b>	<b>1 Slot 10" Oval Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	<b>100</b>	<b>145</b>	<b>190</b>	<b>235</b>	<b>280</b>	<b>325</b>	<b>370</b>
			Total Pressure	.024	.05	.085	.131	.186	.25	.324
			Static Pressure	.045	.045	.077	.117	.167	.224	.291
			Noise Criteria	<15	<15	<15	22	29	35	40
			Throw	4-9-11	6-19-13	8-12-17	10-14-18	12-16-22	13-17-24	14-18-26
		<b>4 Ft.</b>	Airflow, CFM	<b>140</b>	<b>220</b>	<b>300</b>	<b>380</b>	<b>460</b>	<b>540</b>	<b>620</b>
			Total Pressure	.015	.037	.069	.111	.163	.225	.296
			Static Pressure	.010	.026	.048	.077	.112	.155	.204
			Noise Criteria	<15	<15	<15	25	33	40	45
			Throw	5-8-17	10-14-22	12-16-25	14-17-28	16-19-31	19-22-33	21-24-35
		<b>5 Ft.</b>	Airflow, CFM	<b>150</b>	<b>240</b>	<b>330</b>	<b>420</b>	<b>510</b>	<b>600</b>	<b>690</b>
			Total Pressure	.013	.034	.063	.103	.151	.209	.277
			Static Pressure	.002	.020	.037	.060	.088	.122	.162
			Noise Criteria	<15	<15	<15	23	31	38	43
			Throw	3-8-16	8-12-21	12-15-25	15-18-29	17-21-32	19-23-35	21-27-38
<b>2.5" Slot Width</b>	<b>1 Slot 12" Oval Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	<b>100</b>	<b>145</b>	<b>190</b>	<b>235</b>	<b>280</b>	<b>325</b>	<b>370</b>
			Total Pressure	.021	.043	.074	.114	.161	.217	.282
			Static Pressure	.019	.041	.070	.106	.151	.204	.264
			Noise Criteria	<15	<15	<15	20	27	33	38
			Throw	4-9-11	6-19-13	8-12-17	10-14-18	12-16-22	13-17-24	14-18-26
		<b>4 Ft.</b>	Airflow, CFM	<b>140</b>	<b>225</b>	<b>310</b>	<b>395</b>	<b>480</b>	<b>565</b>	<b>650</b>
			Total Pressure	.012	.031	.059	.096	.142	.197	.261
			Static Pressure	.009	.024	.046	.075	.111	.154	.204
			Noise Criteria	<15	<15	15	23	31	38	43
			Throw	5-8-17	10-14-22	12-16-25	14-17-29	17-20-32	20-23-34	22-26-37
		<b>5 Ft.</b>	Airflow, CFM	<b>150</b>	<b>250</b>	<b>350</b>	<b>450</b>	<b>550</b>	<b>650</b>	<b>750</b>
			Total Pressure	.010	.028	.054	.090	.134	.188	.250
			Static Pressure	.007	.019	.038	.063	.094	.131	.174
			Noise Criteria	<15	<15	16	26	34	40	46
			Throw	3-8-16	8-12-21	13-16-26	16-19-31	18-22-33	20-25-37	22-28-39

For performance table notes, see page A37.

**PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES**

**MODELS: FLH30 AND FTH30 • 1 SLOT WITH NAILOR PLENUM**



**A**

**FLOWLINE™ LINEAR DIFFUSERS**

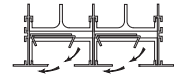
<b>3" Slot Width</b>	<b>1 Slot 10" Oval Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	125	170	215	260	305	350	395
			Total Pressure	.030	.056	.089	.131	.180	.237	.302
			Static Pressure	.027	.049	.078	.115	.158	.208	.265
			Noise Criteria	<15	<15	<15	24	29	35	40
		Throw	7-11-16	9-13-19	11-15-21	13-17-23	15-18-25	16-19-28	17-20-31	
		<b>4 Ft.</b>	Airflow, CFM	200	275	350	425	500	575	650
	Total Pressure		.027	.050	.081	.120	.166	.220	.281	
	Static Pressure		.017	.032	.052	.076	.106	.140	.179	
	Noise Criteria		<15	<15	18	22	28	34	40	
	<b>5 Ft.</b>	Airflow, CFM	220	310	400	490	580	670	760	
		Total Pressure	.025	.040	.082	.123	.172	.230	.296	
		Static Pressure	.013	.026	.043	.065	.091	.122	.157	
Noise Criteria		<15	<15	16	24	32	39	45		
<b>3" Slot Width</b>	<b>1 Slot 12" Oval Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	125	170	215	260	305	350	395
			Total Pressure	.029	.053	.085	.124	.170	.224	.286
			Static Pressure	.026	.049	.078	.115	.158	.208	.265
			Noise Criteria	<15	<15	<15	18	25	31	36
		Throw	7-11-16	9-13-19	11-15-21	13-17-23	15-18-25	16-19-28	17-20-31	
		<b>4 Ft.</b>	Airflow, CFM	200	290	380	470	560	650	740
	Total Pressure		.022	.047	.081	.123	.175	.236	.306	
	Static Pressure		.017	.036	.061	.094	.133	.179	.232	
	Noise Criteria		<15	<15	<15	22	29	36	41	
	<b>5 Ft.</b>	Airflow, CFM	220	330	440	550	660	770	880	
		Total Pressure	.020	.044	.079	.123	.177	.241	.315	
		Static Pressure	.013	.030	.053	.082	.118	.161	.210	
Noise Criteria		<15	<15	19	26	32	39	43		
<b>3" Slot Width</b>	<b>1 Slot 12" Oval Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	125	170	215	260	305	350	395
			Total Pressure	.029	.053	.085	.124	.170	.224	.286
			Static Pressure	.026	.049	.078	.115	.158	.208	.265
			Noise Criteria	<15	<15	<15	18	25	31	36
		Throw	7-11-16	9-13-19	11-15-21	13-17-23	15-18-25	16-19-28	17-20-31	
		<b>4 Ft.</b>	Airflow, CFM	200	290	380	470	560	650	740
	Total Pressure		.022	.047	.081	.123	.175	.236	.306	
	Static Pressure		.017	.036	.061	.094	.133	.179	.232	
	Noise Criteria		<15	<15	<15	22	29	36	41	
	<b>5 Ft.</b>	Airflow, CFM	220	330	440	550	660	770	880	
		Total Pressure	.020	.044	.079	.123	.177	.241	.315	
		Static Pressure	.013	.030	.053	.082	.118	.161	.210	
Noise Criteria		<15	<15	19	26	32	39	43		
<b>3" Slot Width</b>	<b>1 Slot 12" Oval Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	125	170	215	260	305	350	395
			Total Pressure	.029	.053	.085	.124	.170	.224	.286
			Static Pressure	.026	.049	.078	.115	.158	.208	.265
			Noise Criteria	<15	<15	<15	18	25	31	36
		Throw	7-11-16	9-13-19	11-15-21	13-17-23	15-18-25	16-19-28	17-20-31	
		<b>4 Ft.</b>	Airflow, CFM	200	290	380	470	560	650	740
	Total Pressure		.022	.047	.081	.123	.175	.236	.306	
	Static Pressure		.017	.036	.061	.094	.133	.179	.232	
	Noise Criteria		<15	<15	<15	22	29	36	41	
	<b>5 Ft.</b>	Airflow, CFM	220	330	440	550	660	770	880	
		Total Pressure	.020	.044	.079	.123	.177	.241	.315	
		Static Pressure	.013	.030	.053	.082	.118	.161	.210	
Noise Criteria		<15	<15	19	26	32	39	43		

**Performance Notes:**

1. Data is based upon FlowLine™ with Nailor engineered plenum (uninsulated) as a complete assembly.
2. All pressures are in inches w.g..
3. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Noise criteria values are based on 10 dB room absorption, re 10<sup>-12</sup> watts.
5. Throw values are based on a 1-way air pattern. For 2-way pattern, throw is determined from the 1 slot data at half the specified air volume.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

**PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES**

**MODELS: FLH / FTH (10 & 15) • 2 SLOT WITH NAILOR PLENUM**



**FLOWLINE™ LINEAR DIFFUSERS**

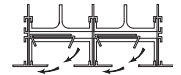
<b>1" Slot Width</b>	<b>2 Slot 8" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	<b>80</b>	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>
			Total Pressure	.016	.036	.064	.101	.145	.198	.258
			Static Pressure	.018	.041	.072	.080	.115	.157	.205
			Noise Criteria	<15	<15	<15	23	29	35	40
		Throw	3-6-12	6-10-16	9-13-18	11-14-20	13-16-22	14-17-23	15-18-25	
		<b>4 Ft.</b>	Airflow, CFM	<b>160</b>	<b>230</b>	<b>300</b>	<b>370</b>	<b>440</b>	<b>510</b>	<b>580</b>
			Total Pressure	.025	.053	.091	.138	.196	.263	.340
			Static Pressure	.013	.026	.045	.068	.097	.130	.168
			Noise Criteria	<15	<15	17	24	31	36	41
		Throw	5-8-17	8-12-21	10-16-24	13-18-26	16-20-30	17-22-32	18-24-34	
		<b>5 Ft.</b>	Airflow, CFM	<b>200</b>	<b>280</b>	<b>360</b>	<b>440</b>	<b>520</b>	<b>600</b>	<b>680</b>
			Total Pressure	.033	.065	.108	.161	.225	.300	.385
Static Pressure	.013		.025	.041	.062	.087	.115	.148		
Noise Criteria	<15		<15	19	26	32	37	42		
Throw	5-10-20	9-14-24	12-17-26	15-20-30	17-22-33	19-24-35	22-26-38			
<b>1" Slot Width</b>	<b>2 Slot 10" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	<b>80</b>	<b>130</b>	<b>180</b>	<b>230</b>	<b>280</b>	<b>330</b>	<b>380</b>
			Total Pressure	.014	.038	.073	.119	.176	.244	.324
			Static Pressure	.013	.034	.065	.106	.157	.218	.289
			Noise Criteria	<15	<15	19	28	35	41	47
		Throw	3-6-13	7-11-16	10-14-19	12-15-22	13-17-24	14-18-26	15-19-28	
		<b>4 Ft.</b>	Airflow, CFM	<b>160</b>	<b>240</b>	<b>320</b>	<b>400</b>	<b>480</b>	<b>560</b>	<b>640</b>
			Total Pressure	.019	.043	.076	.118	.170	.232	.303
			Static Pressure	.013	.029	.051	.080	.115	.157	.205
			Noise Criteria	<15	<15	18	26	33	39	44
		Throw	4-9-18	9-14-22	12-28-26	15-20-29	17-22-32	20-24-34	19-25-35	
		<b>5 Ft.</b>	Airflow, CFM	<b>200</b>	<b>295</b>	<b>390</b>	<b>485</b>	<b>580</b>	<b>675</b>	<b>770</b>
			Total Pressure	.022	.048	.085	.132	.189	.256	.333
Static Pressure	.013		.028	.049	.075	.108	.146	.190		
Noise Criteria	<15		<15	20	28	34	40	45		
Throw	5-19-19	10-14-24	13-19-27	17-22-32	20-24-35	21-25-38	22-27-39			
<b>1.5" Slot Width</b>	<b>2 Slot 8" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>
			Total Pressure	.036	.064	.101	.145	.198	.258	.327
			Static Pressure	.029	.051	.080	.115	.157	.205	.259
			Noise Criteria	<15	<15	19	26	32	37	41
		Throw	5-19-16	8-12-18	11-12-18	13-16-21	14-17-24	15-18-26	15-19-27	
		<b>4 Ft.</b>	Airflow, CFM	<b>240</b>	<b>310</b>	<b>380</b>	<b>450</b>	<b>520</b>	<b>590</b>	<b>660</b>
			Total Pressure	.058	.097	.146	.205	.274	.352	.441
			Static Pressure	.029	.048	.072	.101	.135	.174	.218
			Noise Criteria	<15	<15	21	27	33	37	42
		Throw	9-14-22	12-17-25	14-20-28	16-22-31	17-23-33	19-25-35	21-26-37	
		<b>5 Ft.</b>	Airflow, CFM	<b>300</b>	<b>370</b>	<b>440</b>	<b>510</b>	<b>580</b>	<b>650</b>	<b>720</b>
			Total Pressure	.075	.114	.161	.217	.281	.352	.432
Static Pressure	.029		.044	.062	.083	.108	.135	.166		
Noise Criteria	<15		<15	22	27	32	36	40		
Throw	10-15-25	13-19-28	15-21-30	16-22-32	18-23-33	19-24-34	21-27-38			
<b>1.5" Slot Width</b>	<b>2 Slot 12" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	<b>120</b>	<b>170</b>	<b>220</b>	<b>270</b>	<b>320</b>	<b>370</b>	<b>420</b>
			Total Pressure	.031	.062	.103	.156	.219	.293	.377
			Static Pressure	.029	.058	.097	.146	.205	.274	.353
			Noise Criteria	<15	<15	21	29	35	40	45
		Throw	5-9-16	9-13-19	12-14-21	14-16-24	15-18-26	15-19-28	17-21-29	
		<b>4 Ft.</b>	Airflow, CFM	<b>240</b>	<b>320</b>	<b>400</b>	<b>480</b>	<b>560</b>	<b>640</b>	<b>720</b>
			Total Pressure	.037	.065	.102	.146	.199	.260	.329
			Static Pressure	.029	.051	.080	.115	.157	.205	.259
			Noise Criteria	<15	<15	22	26	32	37	41
		Throw	9-14-22	12-18-26	15-20-29	17-22-32	18-24-33	20-26-36	22-27-39	
		<b>5 Ft.</b>	Airflow, CFM	<b>300</b>	<b>400</b>	<b>500</b>	<b>600</b>	<b>700</b>	<b>800</b>	<b>900</b>
			Total Pressure	.041	.073	.114	.163	.222	.291	.368
Static Pressure	.029		.051	.080	.115	.157	.205	.259		
Noise Criteria	<15		<15	23	30	35	40	45		
Throw	10-15-25	14-20-29	16-22-32	19-24-35	22-27-38	23-28-41	24-30-43			

For performance table notes, see page A40.



**PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES**

**MODELS: FLH / FTH (20 & 25) • 2 SLOT WITH NAILOR PLENUM**



**A**

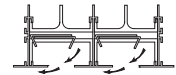
**FLOWLINE™ LINEAR DIFFUSERS**

<b>2" Slot Width</b>	<b>2 Slot 8" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	120	165	210	255	300	345	390
			Total Pressure	.023	.043	.069	.101	.141	.186	.238
			Static Pressure	.015	.029	.047	.068	.095	.125	.160
			Noise Criteria	<15	<15	16	24	29	34	38
			Throw	5-8-14	7-11-16	9-14-19	11-14-21	13-16-23	14-17-24	14-18-25
		<b>4 Ft.</b>	Airflow, CFM	240	300	360	420	480	540	600
			Total Pressure	.051	.079	.114	.156	.204	.258	.318
			Static Pressure	.021	.034	.048	.066	.086	.108	.134
			Noise Criteria	<15	17	23	29	34	39	43
			Throw	6-11-20	9-14-23	11-16-24	13-19-26	14-20-29	16-22-30	18-23-32
		<b>5 Ft.</b>	Airflow, CFM	260	325	390	455	520	585	650
			Total Pressure	.053	.082	.118	.161	.211	.267	.329
			Static Pressure	.018	.028	.040	.055	.072	.092	.113
			Noise Criteria	<15	16	22	29	34	38	42
			Throw	5-11-21	8-14-23	11-16-25	13-18-28	14-21-30	16-23-32	17-23-33
<b>2" Slot Width</b>	<b>2 Slot 12" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	120	195	270	345	420	495	570
			Total Pressure	.009	.024	.046	.075	.111	.155	.205
			Static Pressure	.007	.020	.039	.063	.094	.130	.172
			Noise Criteria	<15	<15	<15	22	28	35	41
			Throw	5-8-14	8-13-18	12-15-22	14-17-24	15-19-26	16-21-29	18-20-31
		<b>4 Ft.</b>	Airflow, CFM	240	330	420	510	600	690	780
			Total Pressure	.019	.037	.060	.088	.122	.161	.206
			Static Pressure	.013	.026	.042	.062	.086	.113	.145
			Noise Criteria	<15	<15	17	24	30	35	41
			Throw	6-11-20	10-15-23	13-19-26	15-21-29	18-23-32	20-24-34	21-25-36
		<b>5 Ft.</b>	Airflow, CFM	280	380	480	580	680	780	880
			Total Pressure	.022	.040	.065	.094	.130	.172	.218
			Static Pressure	.014	.026	.041	.060	.083	.110	.140
			Noise Criteria	<15	<15	18	25	31	36	41
			Throw	5-12-22	10-15-25	13-20-29	15-22-32	18-24-34	21-25-36	23-27-39
<b>2.5" Slot Width</b>	<b>2 Slot 10" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	80	160	240	320	400	480	560
			Total Pressure	.005	.019	.043	.078	.122	.175	.238
			Static Pressure	.003	.014	.032	.057	.088	.127	.173
			Noise Criteria	<15	<15	<15	18	27	35	41
			Throw	2-4-10	6-10-16	10-14-20	13-16-23	15-18-26	16-20-29	18-22-31
		<b>4 Ft.</b>	Airflow, CFM	160	280	400	520	640	760	880
			Total Pressure	.011	.034	.070	.118	.178	.251	.336
			Static Pressure	.005	.018	.036	.061	.092	.130	.174
			Noise Criteria	<15	<15	<15	22	31	38	44
			Throw	3-15-14	7-12-22	12-17-26	15-21-30	18-23-32	21-25-36	23-27-39
		<b>5 Ft.</b>	Airflow, CFM	200	335	470	605	740	875	1010
			Total Pressure	.014	.040	.079	.130	.194	.271	.361
			Static Pressure	.005	.016	.032	.054	.079	.110	.147
			Noise Criteria	<15	<15	<15	23	31	38	44
			Throw	3-5-15	7-13-23	12-18-28	15-23-32	19-25-35	23-27-29	23-29-41
<b>2.5" Slot Width</b>	<b>2 Slot 12" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	80	170	260	350	440	530	620
			Total Pressure	.003	.015	.034	.061	.097	.140	.192
			Static Pressure	.002	.012	.027	.049	.077	.112	.153
			Noise Criteria	<15	<15	<15	17	27	34	41
			Throw	2-4-10	7-10-17	11-14-21	14-17-24	15-19-27	17-21-31	19-23-32
		<b>4 Ft.</b>	Airflow, CFM	160	295	430	595	700	835	970
			Total Pressure	.007	.024	.051	.088	.136	.193	.260
			Static Pressure	.004	.016	.033	.056	.086	.122	.165
			Noise Criteria	<15	<15	<15	21	29	37	43
			Throw	3-5-14	8-13-23	13-19-27	16-22-31	20-24-34	22-26-38	23-29-41
		<b>5 Ft.</b>	Airflow, CFM	200	350	500	650	800	950	1100
			Total Pressure	.010	.029	.059	.100	.151	.212	.284
			Static Pressure	.005	.017	.033	.057	.086	.121	.162
			Noise Criteria	<15	<15	<15	21	29	37	43
			Throw	3-5-15	8-14-24	13-19-29	17-23-33	21-26-37	23-28-40	25-31-43

For performance table notes, see page A40.

**PERFORMANCE DATA • HORIZONTAL HIGH THROW SERIES**

**MODELS: FLH30 AND FTH30 • 2 SLOT WITH NAILOR PLENUM**



**FLOWLINE™ LINEAR DIFFUSERS**

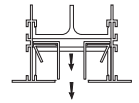
3" Slot Width	2 Slot 10" Dia. Inlet	2 Ft.	Airflow, CFM	80	180	280	380	480	580	680
			Total Pressure	.004	.022	.053	.097	.155	.226	.311
Static Pressure	.003	.015	.036	.067	.106	.156	.214			
Noise Criteria	<15	<15	<15	17	28	36	43			
Throw	1-3-9	6-10-17	11-15-22	14-18-25	16-20-29	18-22-32	20-24-34			
3" Slot Width	2 Slot 10" Dia. Inlet	4 Ft.	Airflow, CFM	150	300	450	600	750	900	1050
			Total Pressure	.009	.035	.080	.143	.222	.321	.436
Static Pressure	.004	.016	.038	.067	.104	.151	.205			
Noise Criteria	<15	<15	<15	19	29	38	45			
Throw	2-4-12	6-12-23	12-18-28	16-23-32	20-25-35	23-28-39	24-30-42			
3" Slot Width	2 Slot 12" Dia. Inlet	5 Ft.	Airflow, CFM	180	350	520	690	860	1030	1200
			Total Pressure	.011	.042	.092	.162	.251	.360	.489
Static Pressure	.004	.016	.035	.062	.096	.138	.186			
Noise Criteria	<15	<15	<15	19	29	38	45			
Throw	2-4-13	6-13-24	13-19-30	16-24-34	21-27-38	24-30-41	26-32-45			
3" Slot Width	2 Slot 12" Dia. Inlet	2 Ft.	Airflow, CFM	80	180	280	380	480	580	680
			Total Pressure	.004	.017	.042	.077	.124	.180	.248
Static Pressure	.003	.014	.034	.063	.100	.146	.201			
Noise Criteria	<15	<15	<15	<15	23	32	39			
Throw	1-3-9	6-10-17	11-15-22	14-18-25	16-20-29	18-22-32	20-24-34			
3" Slot Width	2 Slot 12" Dia. Inlet	4 Ft.	Airflow, CFM	150	310	470	630	790	950	1110
			Total Pressure	.006	.024	.056	.100	.156	.226	.309
Static Pressure	.003	.014	.033	.059	.093	.135	.184			
Noise Criteria	<15	<15	<15	23	29	35	42			
Throw	2-4-12	7-13-23	13-19-28	17-23-32	21-26-36	23-28-40	25-31-43			
3" Slot Width	2 Slot 12" Dia. Inlet	5 Ft.	Airflow, CFM	180	360	540	720	900	1080	1260
			Total Pressure	.007	.027	.060	.108	.169	.244	.331
Static Pressure	.003	.014	.031	.056	.087	.126	.170			
Noise Criteria	<15	<15	16	24	30	35	42			
Throw	2-4-13	6-13-24	13-19-30	17-24-35	22-28-39	24-30-42	26-32-46			

**Performance Notes:**

1. Data is based upon FlowLine™ with Nailor engineered plenum (uninsulated) as a complete assembly.
2. All pressures are in inches w.g..
3. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Noise criteria values are based on 10 dB room absorption, re 10<sup>-12</sup> watts.
5. Throw values are based on a 1-way air pattern. For 2-way pattern, throw is determined from the 1 slot data at half the specified air volume.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

**PERFORMANCE DATA • VERTICAL JET THROW SERIES**

**MODELS: FLV (10, 15, 20, 25 & 30) • CONTINUOUS PRESSURIZED PLENUM**



**A**

**FLOWLINE™ LINEAR DIFFUSERS**

Slot Width	Slots	Airflow, CFM/FT.	20	40	60	80	100	120	140
		Static Pressure	.005	.018	.041	.074	.114	.164	.223
Noise Criteria	—	—	<15	20	24	30	35		
Throw	1-3-10	4-10-21	10-15-29	14-21-33	18-26-37	21-19-41	24-31-44		
1.5" Slot Width	1 Slot	Airflow, CFM/FT.	30	60	90	120	150	180	210
		Static Pressure	.005	.020	.045	.080	.125	.180	.245
Noise Criteria	—	—	<15	20	26	32	37		
Throw	1-3-12	6-12-24	12-19-34	17-24-40	21-31-44	24-34-48	29-36-52		
2" Slot Width	2 Slot	Airflow, CFM/FT.	60	120	180	240	300	360	420
		Static Pressure	.006	.023	.052	.093	.145	.209	.285
Noise Criteria	—	<15	16	24	31	37	43		
Throw	2-6-20	9-20-36	20-31-44	28-36-51	33-41-57	36-44-63	39-47-67		
2.5" Slot Width	1 Slot	Airflow, CFM/FT.	40	95	150	205	260	315	370
		Static Pressure	.004	.020	.050	.094	.151	.222	.306
Noise Criteria	<15	<15	16	24	29	35	48		
Throw	1-2-7	4-10-22	11-18-31	16-25-37	20-30-42	25-32-42	29-36-50		
3" Slot Width	2 Slot	Airflow, CFM/FT.	80	190	300	410	520	630	740
		Static Pressure	.004	.023	.058	.108	.174	.256	.353
Noise Criteria	<15	<15	20	26	35	41	46		
Throw	1-3-11	7-16-33	18-29-42	26-34-48	31-38-54	35-43-60	37-46-65		
3" Slot Width	1 Slot	Airflow, CFM/FT.	50	115	180	245	310	375	440
		Static Pressure	.004	.021	.052	.097	.155	.226	.312
Noise Criteria	<15	<15	16	26	32	37	42		
Throw	1-2-8	5-11-25	12-20-34	17-26-40	22-31-45	26-35-49	31-37-54		
3" Slot Width	2 Slot	Airflow, CFM/FT.	100	230	360	490	620	750	880
		Static Pressure	.005	.025	.060	.112	.179	.261	.360
Noise Criteria	<15	<15	21	29	36	41	45		
Throw	2-3-13	8-17-36	19-31-44	29-37-52	33-41-58	37-45-64	40-49-70		

**NC Correction Factors for Various Lengths**

Length (ft.)	2	4	6	8	9	10	15
Supply	-3	0	+2	+3	+4	+5	+8
Return	0	+3	+5	+6	+7	+8	+11

**Throw Correction Factors for Various Lengths**

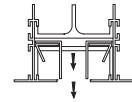
Length (ft.)	2	4	6	8	10	12
Multiplier	0.80	1.00	1.20	1.30	1.40	1.50

**Performance Notes:**

- Data is based upon pressurized plenum application (non ducted) with no plenum effect for pressure or sound. Plenums should be sized to achieve equal velocity along the slot length. Keep duct inlet velocities below 700 fpm in order to maintain cataloged performance.
- All pressures are in inches w.g..
- Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Throw data is based on active sections 4 ft. (1219) long. For other lengths, use the correction factor table above.
- Throw values are based on pattern controller set 100% open.
- Noise criteria values are based on 10 dB room absorption, re 10<sup>-12</sup> watts, for a 4 ft. section. For other lengths, use the correction factor table above.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

PERFORMANCE DATA • VERTICAL JET THROW SERIES

MODELS: FLV / FTV (10 & 15) • 1 SLOT WITH NAILOR PLENUM



FLOWLINE™ LINEAR DIFFUSERS

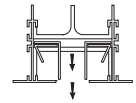
1" Slot Width	1 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	50	95	140	185	230	275	320
			Total Pressure	.010	.033	.073	.127	.197	.281	.381
			Static Pressure	.007	.029	.062	.109	.168	.241	.325
			Noise Criteria	<15	<15	17	26	33	39	44
			Throw	2-3-10	7-9-19	9-14-24	12-19-28	15-22-31	18-24-34	21-26-36
		4 Ft.	Airflow, CFM	100	175	250	325	400	475	550
			Total Pressure	.018	.056	.113	.190	.289	.408	.547
			Static Pressure	.013	.039	.079	.133	.201	.285	.381
			Noise Criteria	<15	<15	20	29	35	41	46
			Throw	2-4-13	6-11-23	11-17-30	14-21-34	18-26-37	21-29-41	24-31-44
		5 Ft.	Airflow, CFM	110	195	280	365	450	535	620
			Total Pressure	.019	.060	.124	.212	.322	.455	.611
			Static Pressure	.013	.040	.081	.139	.211	.297	.400
			Noise Criteria	<15	<15	21	30	36	42	47
			Throw	1-3-12	6-11-22	10-17-31	14-21-35	18-25-39	21-30-42	23-32-45
1" Slot Width	1 Slot 10" Oval Inlet	2 Ft.	Airflow, CFM	50	95	140	185	230	275	320
			Total Pressure	.006	.022	.049	.087	.134	.192	.259
			Static Pressure	.005	.020	.045	.079	.122	.174	.236
			Noise Criteria	<15	<15	15	23	30	35	40
			Throw	2-3-10	7-9-19	9-14-24	12-19-28	15-22-31	18-24-34	21-26-36
		4 Ft.	Airflow, CFM	100	180	260	340	420	500	580
			Total Pressure	.011	.036	.075	.128	.196	.278	.373
			Static Pressure	.009	.029	.060	.103	.156	.221	.299
			Noise Criteria	<15	<15	17	24	31	37	42
			Throw	2-4-13	7-12-23	11-17-30	14-22-34	18-28-39	22-30-42	25-32-45
		5 Ft.	Airflow, CFM	110	210	310	410	510	610	710
			Total Pressure	.011	.040	.087	.152	.235	.337	.456
			Static Pressure	.009	.030	.065	.114	.177	.256	.342
			Noise Criteria	<15	<15	17	26	33	39	44
			Throw	1-3-12	6-12-24	12-18-32	15-23-37	20-29-41	23-32-45	28-34-48
1" Slot Width	1 Slot 12" Oval Inlet	2 Ft.	Airflow, CFM	50	95	140	185	230	275	320
			Total Pressure	.004	.017	.037	.064	.100	.142	.194
			Static Pressure	.004	.016	.035	.061	.094	.135	.182
			Noise Criteria	<15	<15	<15	20	27	32	37
			Throw	2-3-10	7-9-19	9-14-24	12-19-28	15-22-31	18-24-34	21-26-36
		4 Ft.	Airflow, CFM	100	190	280	370	460	550	640
			Total Pressure	.009	.032	.068	.120	.185	.264	.358
			Static Pressure	.007	.028	.060	.105	.163	.232	.315
			Noise Criteria	<15	<15	18	26	33	38	43
			Throw	2-4-13	7-12-24	12-18-31	17-24-36	20-29-41	24-31-44	28-33-47
		5 Ft.	Airflow, CFM	110	220	330	440	550	660	770
			Total Pressure	.007	.016	.035	.061	.094	.135	.182
			Static Pressure	.006	.026	.057	.101	.157	.227	.308
			Noise Criteria	<15	<15	17	24	31	37	42
			Throw	1-3-12	7-12-25	12-19-33	17-25-39	21-31-43	25-33-47	30-36-51
1.5" Slot Width	1 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	60	110	160	210	260	310	360
			Total Pressure	.009	.029	.060	.104	.159	.226	.305
			Static Pressure	.006	.021	.046	.079	.122	.173	.234
			Noise Criteria	<15	<15	<15	20	27	33	38
			Throw	1-2-9	4-9-18	9-12-24	11-17-29	13-20-32	17-24-34	19-26-37
		4 Ft.	Airflow, CFM	120	200	280	360	440	520	600
			Total Pressure	.020	.057	.111	.184	.276	.385	.513
			Static Pressure	.013	.035	.068	.113	.170	.236	.316
			Noise Criteria	<15	<15	19	27	33	39	43
			Throw	1-3-12	3-9-21	8-14-29	12-19-34	15-23-37	18-26-41	21-31-44
		5 Ft.	Airflow, CFM	140	220	300	380	460	540	620
			Total Pressure	.026	.062	.116	.186	.272	.376	.494
			Static Pressure	.015	.035	.066	.107	.156	.215	.285
			Noise Criteria	<15	<15	19	26	32	38	42
			Throw	1-3-12	3-8-20	6-13-28	10-18-34	14-21-37	17-24-41	19-29-43

For performance table notes, see page A44.



**PERFORMANCE DATA • VERTICAL JET THROW SERIES**

**MODELS: FLV / FTV (15 & 20) • 1 SLOT WITH NAILOR PLENUM**



**A**

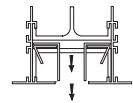
**FLOWLINE™ LINEAR DIFFUSERS**

1.5" Slot Width	1 Slot 10" Oval Inlet	2 Ft.	Airflow, CFM	60	125	190	255	320	385	450
			Total Pressure	.005	.025	.057	.103	.163	.235	.321
			Static Pressure	.005	.021	.049	.089	.139	.201	.275
			Noise Criteria	<15	<15	<15	23	30	36	41
			Throw	1-2-9	6-10-20	10-14-26	13-20-31	17-24-35	20-28-39	23-30-39
		4 Ft.	Airflow, CFM	120	240	360	480	600	720	840
			Total Pressure	.012	.045	.102	.181	.281	.406	.552
			Static Pressure	.009	.032	.073	.128	.201	.290	.394
			Noise Criteria	<15	<15	19	28	35	41	46
			Throw	1-3-12	6-12-24	12-19-34	17-24-40	21-31-44	24-34-48	29-36-52
		5 Ft.	Airflow, CFM	140	280	420	560	700	840	980
			Total Pressure	.014	.054	.121	.215	.336	.484	.659
			Static Pressure	.009	.036	.081	.144	.226	.325	.443
			Noise Criteria	<15	<15	21	30	37	43	48
			Throw	1-3-12	6-12-25	12-19-35	17-25-41	21-32-46	25-35-51	30-39-54
1.5" Slot Width	1 Slot 12" Oval Inlet	2 Ft.	Airflow, CFM	60	125	190	255	320	385	450
			Total Pressure	.004	.019	.044	.078	.123	.179	.244
			Static Pressure	.004	.017	.040	.072	.112	.163	.221
			Noise Criteria	<15	<15	<15	20	28	34	39
			Throw	1-2-9	6-10-20	10-14-26	13-20-31	17-24-35	20-28-39	23-30-42
		4 Ft.	Airflow, CFM	120	240	360	480	600	720	840
			Total Pressure	.007	.031	.070	.123	.192	.276	.376
			Static Pressure	.006	.025	.055	.097	.153	.220	.300
			Noise Criteria	<15	<15	16	24	31	37	42
			Throw	1-3-12	6-12-24	12-19-34	17-24-40	21-31-44	24-34-48	29-36-52
		5 Ft.	Airflow, CFM	140	280	420	560	700	840	980
			Total Pressure	.009	.035	.079	.141	.220	.318	.432
			Static Pressure	.006	.027	.060	.107	.168	.242	.328
			Noise Criteria	<15	<15	16	25	32	38	43
			Throw	1-3-12	6-12-15	12-19-35	17-25-41	21-32-46	25-35-51	30-39-54
2" Slot Width	1 Slot 8" Dia. Inlet	2 Ft.	Airflow, CFM	70	140	210	280	350	420	490
			Total Pressure	.010	.036	.082	.146	.228	.328	.447
			Static Pressure	.006	.026	.058	.103	.161	.232	.316
			Noise Criteria	<15	<15	16	24	32	38	42
			Throw	1-2-7	3-7-14	7-11-21	9-14-25	12-18-27	14-21-30	17-23-32
		4 Ft.	Airflow, CFM	140	220	300	380	460	540	620
			Total Pressure	.025	.060	.111	.178	.261	.36	.474
			Static Pressure	.014	.033	.062	.098	.144	.200	.263
			Noise Criteria	<15	<15	18	25	31	37	41
			Throw	1-2-8	3-5-14	4-9-20	7-13-26	9-15-29	12-18-31	14-21-33
		5 Ft.	Airflow, CFM	150	250	350	450	550	650	750
			Total Pressure	.026	.071	.138	.227	.339	.474	.631
			Static Pressure	.013	.036	.071	.117	.174	.243	.323
			Noise Criteria	<15	<15	21	29	35	41	45
			Throw	1-2-6	2-4-14	3-9-20	6-14-26	9-16-31	13-20-33	14-22-36
2" Slot Width	1 Slot 10" Oval Inlet	2 Ft.	Airflow, CFM	70	150	230	310	390	470	550
			Total Pressure	.005	.027	.062	.112	.179	.259	.354
			Static Pressure	.004	.021	.050	.091	.144	.210	.287
			Noise Criteria	<15	<15	<15	23	30	36	41
			Throw	1-2-7	3-8-15	8-12-22	10-16-26	14-20-29	16-22-31	19-24-34
		4 Ft.	Airflow, CFM	140	265	390	515	640	765	890
			Total Pressure	.013	.047	.103	.179	.276	.394	.534
			Static Pressure	.009	.031	.068	.119	.184	.263	.356
			Noise Criteria	<15	<15	18	27	34	40	45
			Throw	1-2-8	3-7-18	7-13-26	12-17-31	14-21-34	17-26-37	20-28-40
		5 Ft.	Airflow, CFM	150	300	450	600	750	900	1050
			Total Pressure	.013	.054	.122	.212	.331	.477	.649
			Static Pressure	.009	.033	.074	.132	.205	.295	.401
			Noise Criteria	<15	<15	20	29	36	42	47
			Throw	1-2-6	3-6-18	6-14-26	11-18-31	14-22-36	18-26-39	20-30-42

For performance table notes, see page A44.

PERFORMANCE DATA • VERTICAL JET THROW SERIES

MODELS: FLV / FTV (20, 25 & 30) • 1 SLOT WITH NAILOR PLENUM



FLOWLINE™ LINEAR DIFFUSERS

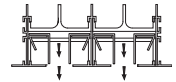
Slot Width	Inlet	Throw	Airflow, CFM							
			70	160	250	340	430	520	610	
2" Slot Width	1 Slot 12" Oval Inlet	2 Ft.	Airflow, CFM	70	160	250	340	430	520	610
			Total Pressure	.004	.022	.055	.102	.162	.236	.325
			Static Pressure	.004	.019	.048	.089	.141	.208	.286
			Noise Criteria	<15	<15	<15	23	30	37	42
	Throw			1-2-7	4-9-16	9-13-23	12-17-27	14-21-30	18-24-33	20-26-36
	4 Ft.	Airflow, CFM	140	290	440	590	740	890	1040	
		Total Pressure	.009	.035	.082	.148	.232	.335	.458	
		Static Pressure	.006	.027	.061	.109	.172	.249	.340	
		Noise Criteria	<15	<15	16	26	33	39	44	
	Throw			1-2-8	3-9-20	9-14-28	14-20-32	16-25-37	20-28-40	23-31-43
	5 Ft.	Airflow, CFM	150	330	510	690	870	1050	1230	
		Total Pressure	.009	.040	.096	.175	.279	.406	.557	
Static Pressure		.005	.028	.067	.124	.197	.289	.394		
Noise Criteria		<15	<15	18	28	35	41	46		
Throw			1-2-6	3-8-20	8-15-29	14-20-34	17-26-38	20-30-42	25-32-46	
2.5" Slot Width	1 Slot 12" Oval Inlet	2 Ft.	Airflow, CFM	80	190	300	410	520	630	740
			Total Pressure	.004	.025	.061	.114	.185	.271	.375
			Static Pressure	.003	.020	.051	.096	.155	.228	.315
			Noise Criteria	<15	<15	<15	24	31	38	43
	Throw			1-2-6	4-9-17	9-14-25	12-19-29	15-23-32	19-26-36	22-27-38
	4 Ft.	Airflow, CFM	150	335	520	705	890	1075	1260	
		Total Pressure	.009	.042	.100	.183	.292	.426	.584	
		Static Pressure	.005	.029	.071	.129	.207	.301	.413	
		Noise Criteria	<15	<15	19	28	36	42	47	
	Throw			1-2-6	3-8-20	9-15-30	14-21-35	18-26-39	21-30-43	25-32-46
	5 Ft.	Airflow, CFM	160	370	580	790	1000	1210	1420	
		Total Pressure	.009	.044	.108	.200	.320	.469	.646	
Static Pressure		.005	.029	.072	.133	.212	.310	.428		
Noise Criteria		<15	<15	19	29	37	43	48		
Throw			1-1-5	3-7-20	7-15-31	14-20-36	17-26-40	21-31-44	25-34-48	
3" Slot Width	1 Slot 14" Oval Inlet	2 Ft.	Airflow, CFM	100	225	350	475	600	725	850
			Total Pressure	.004	.022	.055	.102	.162	.236	.325
			Static Pressure	.004	.020	.048	.088	.141	.205	.282
			Noise Criteria	<15	<15	<15	22	30	36	41
	Throw			1-2-7	4-9-18	9-14-26	13-20-31	16-24-34	20-26-37	23-29-40
	4 Ft.	Airflow, CFM	200	400	600	800	1000	1200	1400	
		Total Pressure	.010	.036	.082	.146	.228	.328	.446	
		Static Pressure	.006	.027	.061	.108	.169	.244	.333	
		Noise Criteria	<15	<15	<15	26	33	39	44	
	Throw			1-2-8	3-8-21	8-16-31	14-21-36	18-26-40	21-31-44	25-33-48
	5 Ft.	Airflow, CFM	240	460	680	900	1120	1340	1560	
		Total Pressure	.012	.042	.091	.159	.247	.354	.480	
Static Pressure		.007	.030	.064	.112	.174	.249	.338		
Noise Criteria		<15	<15	18	27	34	49	44		
Throw			1-2-8	3-8-21	7-16-32	13-21-37	18-26-42	21-31-45	25-35-48	

Performance Notes:

1. Data is based upon FlowLine™ with Nailor engineered plenum (uninsulated) as a complete assembly.
2. All pressures are in inches w.g..
3. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Noise criteria values are based on 10 dB room absorption, re 10<sup>-12</sup> watts.
5. Throw values are based on pattern controller set 100% open.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

**PERFORMANCE DATA • VERTICAL JET THROW SERIES**

**MODELS: FLV / FTV (10 & 15) • 2 SLOT WITH NAILOR PLENUM**



**A**

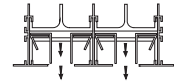
**FLOWLINE™ LINEAR DIFFUSERS**

<b>1" Slot Width</b>	<b>2 Slot 8" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	<b>80</b>	<b>155</b>	<b>230</b>	<b>305</b>	<b>380</b>	<b>455</b>	<b>530</b>
			Total Pressure	.012	.045	.098	.173	.269	.385	.523
			Static Pressure	.009	.032	.070	.122	.189	.272	.369
			Noise Criteria	<15	<15	18	27	34	40	45
			Throw	2-4-13	7-12-23	12-19-29	12-23-33	21-26-36	23-29-40	25-31-43
		<b>4 Ft.</b>	Airflow, CFM	<b>160</b>	<b>260</b>	<b>360</b>	<b>460</b>	<b>560</b>	<b>660</b>	<b>760</b>
			Total Pressure	.031	.083	.159	.261	.386	.537	.712
			Static Pressure	.017	.046	.089	.144	.215	.299	.396
			Noise Criteria	<15	<15	24	31	38	43	48
			Throw	2-4-17	6-12-28	10-29-33	17-24-37	20-29-41	23-31-44	26-34-47
		<b>5 Ft.</b>	Airflow, CFM	<b>200</b>	<b>300</b>	<b>400</b>	<b>500</b>	<b>600</b>	<b>700</b>	<b>800</b>
			Total Pressure	.045	.101	.180	.280	.404	.550	.718
			Static Pressure	.022	.051	.092	.143	.207	.281	.368
			Noise Criteria	<15	<15	25	32	38	43	47
			Throw	2-4-19	4-11-19	9-19-34	13-23-37	19-29-41	22-32-44	25-34-47
<b>1" Slot Width</b>	<b>2 Slot 10" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	<b>80</b>	<b>165</b>	<b>250</b>	<b>335</b>	<b>420</b>	<b>505</b>	<b>590</b>
			Total Pressure	.006	.029	.067	.121	.190	.275	.376
			Static Pressure	.005	.024	.054	.096	.151	.217	.297
			Noise Criteria	<15	<15	<15	23	31	37	42
			Throw	2-4-13	8-13-24	13-20-30	18-24-34	22-28-39	24-30-42	26-32-46
		<b>4 Ft.</b>	Airflow, CFM	<b>160</b>	<b>300</b>	<b>440</b>	<b>580</b>	<b>720</b>	<b>860</b>	<b>1000</b>
			Total Pressure	.016	.057	.122	.212	.326	.464	.628
			Static Pressure	.011	.036	.078	.136	.210	.299	.404
			Noise Criteria	<15	<15	20	29	36	42	47
			Throw	2-4-17	7-15-30	15-23-36	21-30-42	25-33-46	30-35-51	32-39-55
		<b>5 Ft.</b>	Airflow, CFM	<b>200</b>	<b>350</b>	<b>500</b>	<b>650</b>	<b>800</b>	<b>950</b>	<b>1100</b>
			Total Pressure	.022	.068	.140	.238	.360	.506	.679
			Static Pressure	.014	.042	.085	.142	.215	.304	.408
			Noise Criteria	<15	<15	22	31	37	43	47
			Throw	2-4-19	7-14-32	13-23-37	20-31-43	25-43-47	30-36-52	32-40-56
<b>1" Slot Width</b>	<b>2 Slot 12" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	<b>80</b>	<b>170</b>	<b>260</b>	<b>350</b>	<b>440</b>	<b>530</b>	<b>620</b>
			Total Pressure	.004	.021	.049	.090	.142	.207	.282
			Static Pressure	.004	.018	.043	.077	.122	.177	.242
			Noise Criteria	<15	<15	<15	21	28	34	39
			Throw	2-4-13	8-13-24	14-21-31	19-25-35	23-28-40	25-31-43	28-33-47
		<b>4 Ft.</b>	Airflow, CFM	<b>160</b>	<b>320</b>	<b>480</b>	<b>640</b>	<b>800</b>	<b>960</b>	<b>1120</b>
			Total Pressure	.010	.036	.082	.147	.229	.330	.448
			Static Pressure	.006	.026	.058	.102	.159	.229	.312
			Noise Criteria	<15	<15	<15	24	32	37	42
			Throw	2-4-17	8-17-31	17-25-37	23-31-44	29-34-48	31-37-54	33-41-57
		<b>5 Ft.</b>	Airflow, CFM	<b>200</b>	<b>375</b>	<b>550</b>	<b>725</b>	<b>900</b>	<b>1075</b>	<b>1250</b>
			Total Pressure	.013	.044	.095	.165	.255	.363	.490
			Static Pressure	.009	.029	.062	.108	.167	.238	.321
			Noise Criteria	<15	<15	17	26	33	38	43
			Throw	2-4-19	8-17-33	17-25-40	23-32-45	29-35-51	32-39-55	34-42-59
<b>1.5" Slot Width</b>	<b>2 Slot 10" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	<b>120</b>	<b>210</b>	<b>300</b>	<b>390</b>	<b>480</b>	<b>570</b>	<b>660</b>
			Total Pressure	.011	.033	.068	.116	.175	.248	.333
			Static Pressure	.007	.024	.048	.082	.124	.175	.234
			Noise Criteria	<15	<15	<15	21	27	33	38
			Throw	2-4-15	6-13-26	12-19-31	17-25-35	21-28-40	24-31-43	26-33-46
		<b>4 Ft.</b>	Airflow, CFM	<b>240</b>	<b>340</b>	<b>440</b>	<b>540</b>	<b>640</b>	<b>740</b>	<b>840</b>
			Total Pressure	.029	.059	.097	.148	.207	.276	.356
			Static Pressure	.016	.032	.055	.082	.114	.154	.198
			Noise Criteria	<15	<15	<15	22	28	32	37
			Throw	2-6-20	4-10-29	8-17-34	11-23-39	15-26-42	21-31-45	23-34-47
		<b>5 Ft.</b>	Airflow, CFM	<b>260</b>	<b>365</b>	<b>470</b>	<b>575</b>	<b>680</b>	<b>785</b>	<b>890</b>
			Total Pressure	.031	.061	.102	.152	.213	.284	.365
			Static Pressure	.016	.031	.052	.078	.109	.146	.187
			Noise Criteria	<15	<15	<15	22	28	32	36
			Throw	2-4-17	3-8-28	6-13-35	9-20-39	12-25-42	17-30-45	21-33-47

For performance table notes, see page A47.

PERFORMANCE DATA • VERTICAL JET THROW SERIES

MODELS: FLV / FTV (15 & 20) • 2 SLOT WITH NAILOR PLENUM



FLOWLINE™ LINEAR DIFFUSERS

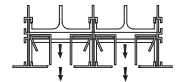
1.5" Slot Width	2 Slot 12" Dia. Inlet	2 Ft.	Airflow, CFM	120	230	340	450	560	670	780
			Total Pressure	.006	.025	.054	.094	.146	.209	.284
			Static Pressure	.005	.019	.042	.073	.112	.161	.217
			Noise Criteria	<15	<15	<15	19	26	32	36
		Throw	2-4-15	8-14-28	14-22-33	19-26-39	24-30-43	26-33-46	29-35-40	
		4 Ft.	Airflow, CFM	240	390	540	690	840	990	1140
			Total Pressure	.016	.043	.082	.134	.199	.276	.366
			Static Pressure	.010	.027	.050	.082	.122	.170	.225
			Noise Criteria	<15	<15	<15	22	28	33	38
		Throw	2-6-20	6-13-32	17-25-37	23-31-44	29-34-48	31-37-54	33-41-57	
		5 Ft.	Airflow, CFM	260	425	590	755	920	1085	1250
			Total Pressure	.017	.046	.089	.144	.215	.300	.397
Static Pressure	.010		.027	.051	.083	.124	.172	.228		
Noise Criteria	<15		<15	<15	22	29	34	39		
Throw	2-4-17	4-11-32	9-21-39	15-29-44	22-34-48	26-37-53	31-40-56			
1.5" Slot Width	2 Slot 14" Dia. Inlet	2 Ft.	Airflow, CFM	120	240	360	480	600	720	840
			Total Pressure	.005	.018	.042	.074	.116	.167	.227
			Static Pressure	.004	.015	.034	.061	.094	.136	.185
			Noise Criteria	<15	<15	<15	<15	23	29	34
		Throw	2-4-15	8-15-28	15-23-34	21-28-40	25-31-44	28-34-48	30-36-52	
		4 Ft.	Airflow, CFM	240	415	590	765	940	1115	1290
			Total Pressure	.010	.030	.060	.101	.152	.214	.287
			Static Pressure	.006	.019	.040	.066	.101	.141	.189
			Noise Criteria	<15	<15	<15	18	24	30	35
		Throw	2-6-20	7-15-33	13-25-40	22-32-45	26-35-51	31-39-55	34-42-55	
		5 Ft.	Airflow, CFM	260	440	620	800	980	1160	1340
			Total Pressure	.011	.032	.063	.105	.157	.220	.293
Static Pressure	.007		.020	.041	.067	.101	.141	.188		
Noise Criteria	<15		<15	<15	18	25	30	35		
Throw	2-4-17	6-12-33	10-23-40	17-30-45	24-35-51	29-39-55	33-42-58			
2" Slot Width	2 Slot 10" Dia. Inlet	2 Ft.	Airflow, CFM	70	140	210	280	350	420	490
			Total Pressure	.003	.013	.028	.050	.078	.112	.154
			Static Pressure	.002	.009	.018	.032	.051	.073	.100
			Noise Criteria	<15	<15	<15	<15	<15	19	24
		Throw	0-1-3	1-3-11	3-6-18	5-11-22	8-14-25	11-18-27	14-20-30	
		4 Ft.	Airflow, CFM	250	355	460	565	670	775	880
			Total Pressure	.028	.057	.095	.143	.201	.270	.348
			Static Pressure	.014	.028	.047	.072	.101	.135	.174
			Noise Criteria	<15	<15	<15	21	27	31	35
		Throw	1-3-10	3-5-20	4-9-26	6-13-29	9-19-31	11-21-34	14-25-37	
		5 Ft.	Airflow, CFM	280	390	500	610	720	830	940
			Total Pressure	.032	.061	.101	.150	.210	.278	.357
Static Pressure	.014		.027	.045	.067	.093	.128	.158		
Noise Criteria	<15		<15	<15	21	27	31	35		
Throw	1-3-9	2-4-17	3-7-25	4-10-30	7-14-32	9-20-34	11-23-37			
2" Slot Width	2 Slot 12" Dia. Inlet	2 Ft.	Airflow, CFM	140	275	410	545	680	815	950
			Total Pressure	.007	.028	.062	.109	.170	.244	.332
			Static Pressure	.005	.019	.044	.077	.120	.172	.234
			Noise Criteria	<15	<15	<15	20	27	33	38
		Throw	1-3-11	5-11-22	11-17-27	15-22-31	19-25-35	22-27-38	24-27-38	
		4 Ft.	Airflow, CFM	250	425	600	775	950	1125	1300
			Total Pressure	.015	.044	.088	.147	.219	.308	.412
			Static Pressure	.008	.024	.049	.081	.122	.171	.229
			Noise Criteria	<15	<15	<15	22	29	34	39
		Throw	1-3-10	3-8-24	7-14-30	11-21-34	16-26-37	20-29-41	24-31-44	
		5 Ft.	Airflow, CFM	280	460	640	820	1000	1180	1360
			Total Pressure	.017	.047	.091	.149	.221	.309	.410
Static Pressure	.008		.024	.047	.076	.113	.158	.210		
Noise Criteria	<15		<15	<15	22	28	34	38		
Throw	1-3-9	3-6-22	5-12-31	9-19-34	13-25-37	18-29-41	22-31-44			

For performance table notes, see page A47.



**PERFORMANCE DATA • VERTICAL JET THROW SERIES**

**MODELS: FLV / FTV (20, 25 & 30) • 2 SLOT WITH NAILOR PLENUM**



**A**

**FLOWLINE™ LINEAR DIFFUSERS**

<b>2" Slot Width</b>	<b>2 Slot 14" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	140	280	420	560	700	840	980
			Total Pressure	.004	.018	.041	.073	.114	.165	.225
			Static Pressure	.003	.014	.031	.055	.086	.123	.168
			Noise Criteria	<15	<15	<15	<15	21	27	32
			Throw	1-3-11	5-11-22	11-18-27	15-22-31	20-25-36	22-27-39	24-30-42
		<b>4 Ft.</b>	Airflow, CFM	250	450	650	850	1050	1250	1450
			Total Pressure	.010	.030	.062	.106	.161	.228	.307
			Static Pressure	.005	.018	.037	.063	.096	.137	.184
			Noise Criteria	<15	<15	<15	18	24	30	35
			Throw	1-3-10	3-9-25	8-17-31	13-24-36	20-28-40	23-31-43	26-33-47
		<b>5 Ft.</b>	Airflow, CFM	280	480	680	880	1080	1280	1480
			Total Pressure	.011	.030	.061	.102	.153	.215	.288
			Static Pressure	.005	.017	.034	.057	.086	.120	.159
			Noise Criteria	<15	<15	<15	16	23	28	33
			Throw	1-3-10	3-8-28	7-15-37	11-25-42	17-31-46	24-26-50	28-38-54
<b>2.5" Slot Width</b>	<b>2 Slot 14" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	150	335	520	705	890	1075	1260
			Total Pressure	.004	.022	.054	.098	.157	.229	.315
			Static Pressure	.003	.016	.037	.070	.111	.162	.223
			Noise Criteria	<15	<15	<15	18	26	32	37
			Throw	1-3-9	5-11-24	12-20-30	17-25-35	22-27-39	25-31-43	26-32-46
		<b>4 Ft.</b>	Airflow, CFM	300	540	780	1020	1260	1500	1740
			Total Pressure	.012	.039	.080	.137	.209	.295	.398
			Static Pressure	.006	.021	.044	.076	.116	.164	.220
			Noise Criteria	<15	<15	<15	21	28	33	38
			Throw	1-3-10	3-9-26	8-17-33	13-25-38	20-30-43	25-32-46	28-35-50
		<b>5 Ft.</b>	Airflow, CFM	350	600	850	1100	1350	1600	1850
			Total Pressure	.015	.043	.087	.144	.218	.306	.410
			Static Pressure	.007	.022	.044	.074	.111	.157	.210
			Noise Criteria	<15	<15	<15	22	28	34	38
			Throw	1-3-9	3-7-26	6-14-34	10-23-38	15-29-43	22-33-47	26-36-50
<b>3" Slot Width</b>	<b>2 Slot 14" Dia. Inlet</b>	<b>2 Ft.</b>	Airflow, CFM	175	385	595	805	1015	1225	1435
			Total Pressure	.005	.026	.062	.113	.181	.263	.361
			Static Pressure	.003	.017	.042	.076	.120	.175	.241
			Noise Criteria	<15	<15	<15	20	27	33	38
			Throw	1-3-9	5-10-25	11-20-31	18-26-37	22-29-41	26-31-44	28-34-18
		<b>4 Ft.</b>	Airflow, CFM	320	580	840	1100	1360	1620	1880
			Total Pressure	.013	.042	.087	.149	.227	.322	.433
			Static Pressure	.006	.021	.045	.078	.119	.168	.227
			Noise Criteria	<15	<15	<15	22	27	34	39
			Throw	1-2-9	3-7-26	7-14-34	11-24-39	17-30-43	24-33-47	27-36-51
		<b>5 Ft.</b>	Airflow, CFM	380	645	910	1175	1440	1705	1970
			Total Pressure	.016	.045	.090	.149	.224	.314	.419
			Static Pressure	.007	.020	.041	.068	.103	.144	.193
			Noise Criteria	<15	<15	<15	21	28	33	38
			Throw	1-2-9	3-6-23	5-12-34	9-20-39	13-28-43	18-33-47	24-36-50

**Performance Notes:**

1. Data is based upon FlowLine™ with Nailor engineered plenum (uninsulated) as a complete assembly.
2. All pressures are in inches w.g..
3. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
4. Noise criteria values are based on 10 dB room absorption, re 10<sup>-12</sup> watts.
5. Throw values are based on pattern controller set 100% open.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

**FM SERIES**

- MODULAR SQUARE CEILING DIFFUSER
- COMPLIMENTS FLOWLINE™ LINEAR DIFFUSER SYSTEM
- ROUND NECK (SUPPLY)

**Models:**

**Supply 1" (25) Slot**

**FM(I)10** Standard 15/16" (24) or 9/16" (14) Flat T-Bar

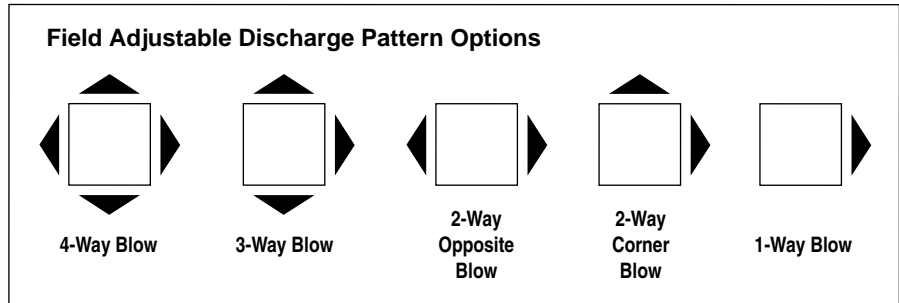
**FMB(I)10** Bolt-Slot (Fineline® Type) T-Bar

**(I)** Adds Internal Insulation.

**Return 1" (25) Slot**

**FMR10** Standard 15/16" (24) or 9/16" (14) Flat T-Bar

**FMBR10** Bolt-Slot (Fineline® Type) T-Bar



The FM Series modular square ceiling diffusers are ideal for interior spaces and compliment the Nailor FlowLine™ Linear Diffuser system. Designed with the architect in mind, these single slot diffusers provide a high capacity capability with high performance. To fully integrate into the ceiling system, the FM Series diffusers incorporate a field cut center ceiling tile (by others) that matches and blends in with the surrounding ceiling system.

This product is available in a nominal ceiling module size of 24" x 24" (600 x 600) with a 1" (25) slot to suit either imperial or metric exposed grid ceiling systems. The 4-way blow linear slot design utilizes the FlowLine™ Horizontal High Throw adjustable pattern controller, providing a tight air pattern along the ceiling and making it an excellent choice for VAV systems.

**STANDARD FEATURES:**

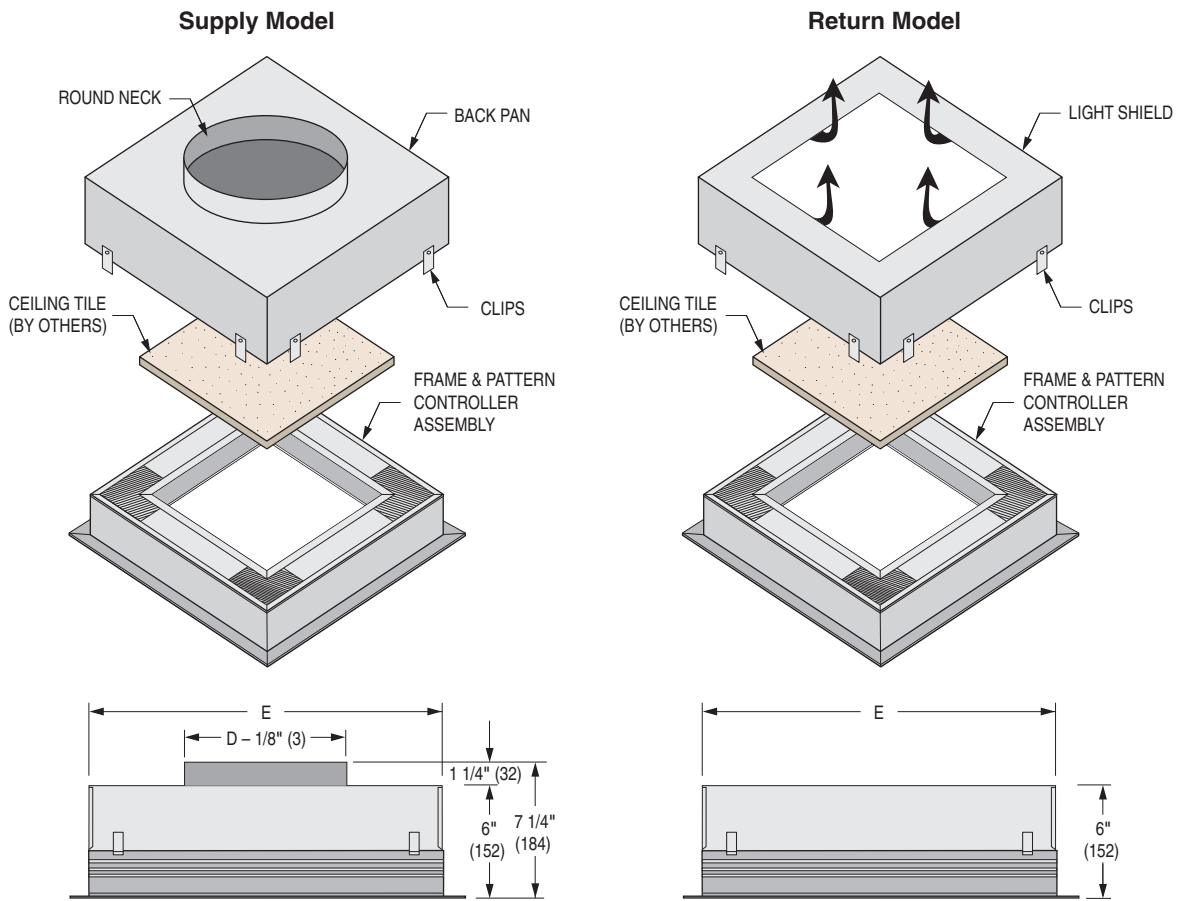
- Extruded aluminum construction with corrosion-resistant steel pattern controllers.
- Factory precision welding on all mitered corners.
- Pattern controllers are individually adjustable for horizontal or vertical discharge air patterns.
- Can be field adjusted for one, two, three or four-way blow directional air patterns.
- Adjustable dual pattern controller design permits both dampering and full shut-off without adding blank-offs.
- Supply diffusers have a round neck for flexible or hard duct connection.
- Matching return air units for ductless plenum return applications incorporate a light shield to block out light and prevent see-through.
- Plenum is secured with steel S-clips and is easily removed for installation of a field cut ceiling tile (by others) into the face of the diffuser.
- Standard finish is AW Appliance White face with black pattern controllers. Other finishes are available.

**FM SERIES SQUARE CEILING DIFFUSERS**

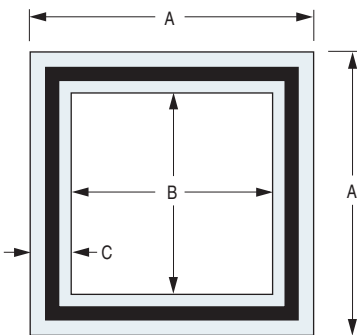
**A**

**FLOWLINE™ LINEAR DIFFUSERS**

**Standard Ceiling Module (CM) Sizes: Imperial 24" x 24" (610 x 610) • Metric 600 x 600mm**  
 (Frame/Border Type AA Illustrated)



**Face View**



**Ceiling Tile Cutting Dimensions**

Models	Border	Imperial Module 24" x 24" (610 x 610)	Metric Module 600 x 600 mm
FM(I)10, FMR10	AA	17 3/16 x 17 3/16 (437 x 437)	427 x 427
FMB(I)10, FMBR10	AG	17 5/8 x 17 5/8 (448 x 448)	438 x 438

**Standard Round Inlet Sizes (Supply Units):**

(Nominal D Diameter)  
 6" (152), 8" (203), 10" (254).

**Dimensional Data:**

Models	Imperial Module 24 x 24 (610 x 610)				Metric Module 600 x 600 mm			
	A	B	C	E	A	B	C	E
FM(I)10, FMR10	23 3/4 (603)	16 5/8 (422)	3 9/16 (90)	22 15/16 (583)	594	413	90	573
FMB(I)10, FMBR10	23 3/8 (594)	17 1/16 (433)	3 5/32 (80)	22 9/16 (573)	584	423	80	584

**FM SERIES SQUARE CEILING DIFFUSERS • FRAME/BORDER TYPES**

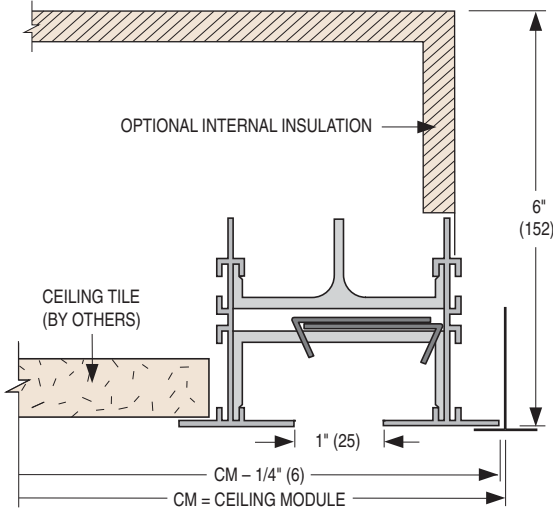
**A**

**FLOWLINE™ LINEAR DIFFUSERS**

**Type AA Lay-in T-Bar Ceiling**

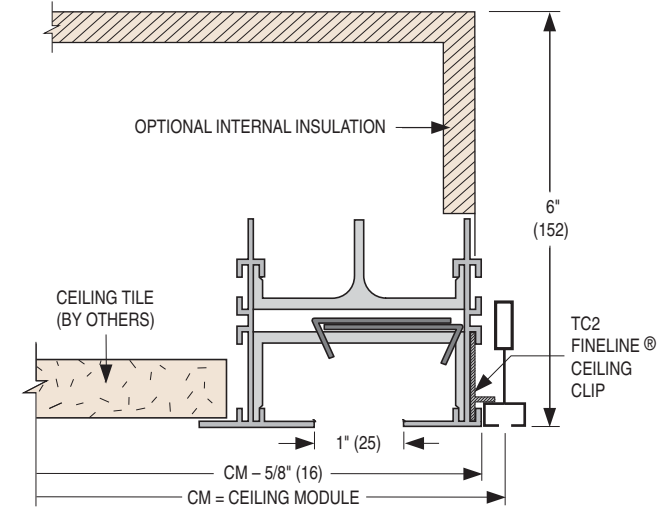
(Models FM and FMR)

For Installation with 15/16" (24) or 9/16" (14) Flat T-Bar only.



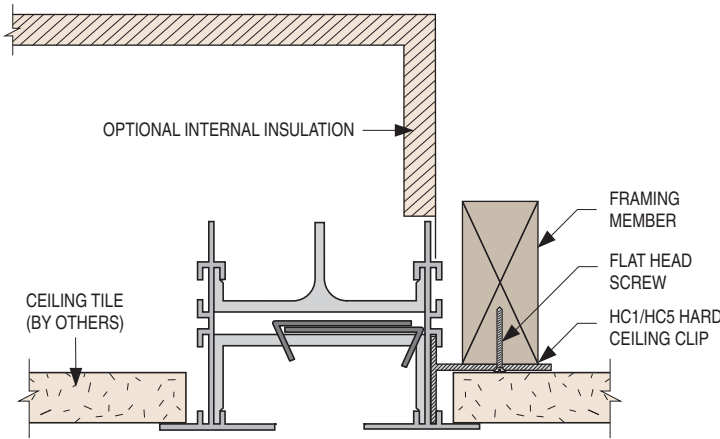
**Type AG Bolt-Slot (Fineline® Type) Ceiling**

(Models FMB and FMR)

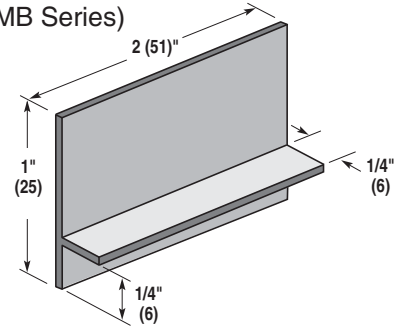


**OPTIONAL HANGER & MOUNTING CLIPS**

**Type AA Surface Mount Application in Hard Ceiling**

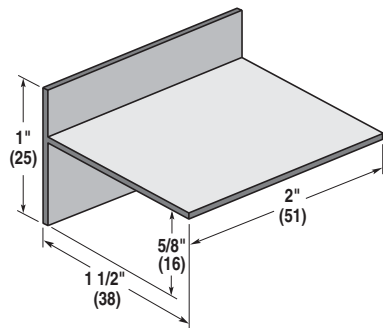


**TC2 Fineline® T-Bar Clip**  
(Standard on FMB Series)



The TC2 FlowLine™ T-Bar clips are used to support and level the FlowLine™ assembly in Bolt-Slot (Fineline® type) suspension systems.

**HC1 Hard Ceiling Clip 5/8" (16)**  
**HC5 Hard Ceiling Clip 1/2" (13)**  
(Optional)

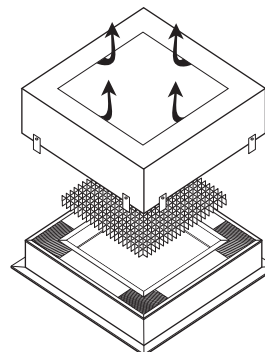


A Dim.	
HC1	5/8" (16)
HC5	1/2" (13)

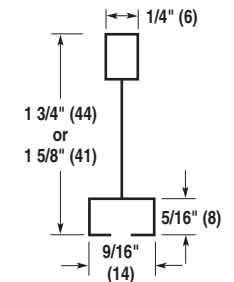
The HC1 and HC5 Hard Ceiling Clip can be used to mount the FlowLine™ Square Ceiling Diffuser with frame/border type AA, where standard 5/8" (16) or 1/2" (13) gypsum wallboard (drywall) is used.

**High Capacity Return**

1/2" x 1/2" x 1/2" (13 x 13 x 13)  
Aluminum Grid Face



**Typical Bolt-Slot (Fineline® Type) T-Bar Detail**





**PERFORMANCE DATA • MODULAR SQUARE CEILING DIFFUSERS**

**MODELS: FM10 AND FMB10**

	Inlet Size	Neck Velocity, FPM	300	400	500	600	700	800	900
		Velocity Pressure, (in. w.g.)	.006	.010	.016	.022	.031	.040	.050
1" Slot Width	6" Dia. Inlet	Airflow, CFM	59	79	98	118	137	157	177
		Static Pressure	.015	.026	.041	.059	.080	.104	.132
		Noise Criteria	<15	<15	<15	16	20	24	28
		Throw	0-1-5	1-2-07	2-4-10	2-5-11	3-6-12	4-7-13	5-8-14
	8" Dia. Inlet	Airflow, CFM	105	140	175	209	244	279	314
		Static Pressure	.029	.052	.081	.117	.160	.209	.264
		Noise Criteria	<15	18	25	30	35	39	43
		Throw	1-4-10	2-6-13	5-8-14	6-10-16	7-12-17	8-13-18	10-13-19
	10" Dia. Inlet	Airflow, CFM	164	218	273	327	382	436	491
		Static Pressure	.050	.089	.139	.201	.273	.357	.452
		Noise Criteria	22	30	37	43	47	51	55
		Throw	4-7-13	7-11-16	8-12-18	11-13-19	12-14-20	13-16-23	13-17-24

**Performance Notes:**

- All pressures are in inches w.g..
- Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Noise criteria values are based on 10 dB room absorption, re 10<sup>-12</sup> watts.
- Pressure, throw and NC values are based on 4-way air pattern.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

## HOW TO ORDER

**MODEL SERIES: FM**

**FLOWLINE™ MODULAR SQUARE CEILING DIFFUSERS**

**EXAMPLE: FM10 - 24 x 24 - 08 - AA - AW - —**

- |  |   |  |
|--|---|--|
| <ol style="list-style-type: none"> <li><b>Models</b><br/> <b>Supply – 1" (25)</b><br/>                     FM(l)10 Standard T-Bar<br/>                     FMB(l)10 Bolt-Slot T-Bar<br/> <b>(l) Adds Internal Insulation</b><br/> <b>Return – 1" (25)</b><br/>                     FMR10 Standard T-Bar<br/>                     FMBR10 Bolt-Slot T-Bar</li> </ol> | <ol style="list-style-type: none"> <li><b>Inlet Size</b><br/> <b>(Supply Models only)</b><br/>                     06 6" (152) Round<br/>                     08 8" (203) Round<br/>                     10 10" (254) Round</li> </ol>  | <ol style="list-style-type: none"> <li><b>Options and Accessories</b></li> </ol>   |
| <ol style="list-style-type: none"> <li><b>Ceiling Module Size</b><br/> <b>Imperial Sizes</b><br/>                     inches<br/>                     24 x 24<br/> <b>Metric Sizes</b><br/>                     mm<br/>                     600 x 600</li> </ol>   | <ol style="list-style-type: none"> <li><b>Frame/Border Type</b><br/>                     AA Flange Frame<br/>                     (Models FM &amp; FMR only) (default)<br/>                     AG Flange/Flangeless Frame<br/>                     (Models FMB &amp; FMBR only) (default)</li> </ol> | <ol style="list-style-type: none"> <li><b>Optional</b><br/>                     (Return Models only)<br/>                     HCR High Capacity Return</li> </ol>  |
|  | <ol style="list-style-type: none"> <li><b>Finish</b><br/>                     AW Appliance White (default)<br/>                     BW British White<br/>                     SP Special custom color</li> </ol>  | <ol style="list-style-type: none"> <li><b>Outside Mounting Hardware</b><br/>                     – None (default)<br/>                     HC1* Hard Ceiling Clip – 5/8" (16) drywall<br/>                     HC5* Hard Ceiling Clip – 1/2" (13) drywall<br/>                     TC2** Finline® T-Bar Mounting Clip</li> </ol> |

**Note:**

- Mounting clips are not removable once mounted at factory.
- \*HC1 and HC5 Hard Ceiling Clips are optional on FM models, where installation is required in a hard ceiling. Standard FM models are for lay-in flat T-Bar ceilings.
- \*\*TC2 Finline T-Bar Clips are supplied as standard on FMB Bolt-Slot models and allow unit to sit flush and level in ceiling grid.
- HCR High Capacity return option available for models FMR10 and FMBR10 includes a 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid face.

**HOW TO ORDER**

**MODEL SERIES: FLH & FLV**

**STRAIGHT FLOWLINE™ LINEAR DIFFUSERS**

**EXAMPLE: FLH20 - 144" x 1 SLOT - STR - AA - AW - MM - HC1 - HC1 - —**

**1. Models**

**Horizontal High Throw**

- FLH10 1" (25) Slot
- FLH15 1 1/2" (38) Slot
- FLH20 2" (51) Slot
- FLH25 2 1/2" (64) Slot
- FLH30 3" (76) Slot

**Vertical Jet Throw**

- FLV10 1" (25) Slot
- FLV15 1 1/2" (38) Slot
- FLV20 2" (51) Slot
- FLV25 2 1/2" (64) Slot
- FLV30 3" (76) Slot

**2. Nominal Length**

inches (mm's)

**3. Number of Slots**

- 1 One
- 2 Two

**4. Type**

STR Straight Section (default)

**5. Frame/Border Type**

- AA Exposed Flange Frame
- AAC Exposed Flange Frame with Concealed Mounting Brackets
- AG Flange / Flangeless Frame
- CA Concealed Tapered/Exposed Flange Frame
- CC Concealed Tapered Frame
- CCA Concealed Tapered Frame with Countersunk Screw Holes
- CCC Concealed Tapered Frame with Concealed Mounting Brackets
- CCCA Concealed Tapered Frame with Concealed Mounting Brackets and Countersunk Screw Holes
- CG Concealed Tapered/Exposed Flangeless Frame

- GG Flangeless Frame
- GJ Exposed/Concealed Offset Frame (one slot FLH only)
- KK Concealed Angular Frame (One Slot FLH or FLV 10, 15, 20 only)

**6. Finish**

- AW Appliance White (default) (on Frames AA, AG, GG and GJ)
- AL Aluminum
- BK Black
- BW British White
- MI Mill (default on frames CC and KK)
- MIAW Mill/Appliance White (default on frames CA and CG)
- PC Prime Coat Paint
- SA Satin (clear) anodized (Frame/Border AA and AAC only)
- SP Special custom color
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint

**7. End Cap Configuration**

**Frame/Border Types AA, AAC, CC, CCA, CCC and CCCA only**

- MM Mitered Mitered (default)
- MO Mitered Open
- MC Mitered Flat Cap

**Frame/Border Types AA, AAC, GG and AG only**

- FF Flanged Flanged
- FO Flanged Open
- FC Flanged Flat Cap

**All Frame/Border Types including CA, CG, GJ and KK**

- OO Open Open
- OC Open Flat Cap
- CC Flat Cap Flat Cap

**Options and Accessories**

**8. Left Hand Mounting Hardware**

- None (default)
- HC1 Hard Ceiling Clip – 5/8" (16) drywall
- HC2 Hard Ceiling Clip – 5/8" (16) drywall
- HC3 Hard Ceiling Clip – 5/8" (16) drywall
- HC5 Hard Ceiling Clip – 1/2" (13) drywall
- WC1 Wall Clip
- WC2 Wall Clip
- TC1 T-Bar Clip
- TC2 Fineline® T-Bar Clip

**9. Right Hand Mounting Hardware**

- None (default)
- HC1 Hard Ceiling Clip – 5/8" (16) drywall
- HC2 Hard Ceiling Clip – 5/8" (16) drywall
- HC3 Hard Ceiling Clip – 5/8" (16) drywall
- HC5 Hard Ceiling Clip – 1/2" (13) drywall
- WC1 Wall Clip
- WC2 Wall Clip
- TC1 T-Bar Clip
- TC2 Fineline® T-Bar Clip

**10. Angle Cut \***

- None (default)
- AC1 One End
- AC2 Both Ends

**Note:**

1. Maximum single section length is 144" (3658).
2. Border Types CC, CCA, CCC, CCCA and KK (concealed frame) are supplied as standard with mill finish (MI). No options. Two slot model Frame/Border CC (A, C and CA), CA and CG have AW Appliance White center tee.
3. All models except Frame/Border Type AAC, CCC and CCCA (supplied with concealed mounting brackets) include integral hanger brackets on 24" (610) centers as standard.
4. Hard ceiling clips and wall clips are shipped in quantities based on 12" (305) spacing and T-Bar clips on 24" (610) spacing. Left and right hand clips are identical.
5. \*Specify AC Angle cut(s) and attach drawing. Angle cuts require an open end border.

**Mounting Clip Availability**

Accessory	Compatibility Frame/Border Type	Accessory	Compatibility Frame/Border Type
HC1	A, C, G	WC1	A
HC2	G	WC2	G, J
HC3-10	K (FLH10 or FLV10)	TC1	A, G
HC3-15	K (FLH15 or FLV15)		
HC3-20	K (FLH20 or FLV20)		
HC5	A, C, G	TC2	G

# HOW TO ORDER

**MODEL SERIES: FLH AND FLV  
CURVED FLOWLINE™ LINEAR DIFFUSERS**

**EXAMPLE: FLH20 - 120" x 1 SLOT - FLT - ARC - LRIO - 240" - AA - AW - FF - HC1 - HC1**

**1. Models**

**Horizontal High Throw**

- FLH10 1" (25) Slot
- FLH15 1 1/2" (38) Slot
- FLH20 2" (51) Slot
- FLH25 2 1/2" (64) Slot
- FLH30 3" (76) Slot

**Vertical Jet Throw**

- FLV10 1" (25) Slot
- FLV15 1 1/2" (38) Slot
- FLV20 2" (51) Slot
- FLV25 2 1/2" (64) Slot
- FLV30 3" (76) Slot

**2. Nominal Length**

inches (mm's)

**3. Number of Slots**

- 1 One
- 2 Two

**4. Type**

- STR Straight Section (default)
- FLT Flat Face Curve
- CAV Concave Face Curve < )
- VEX Convex Face Curve ) >

**5. Curve Length**

- ARC Arc (default)
- CHRD Chord
- CIRC Circle

**6. Location of Radius**

**Type FLT:**

- LRIO Inside Edge of Opening
- LRCL Centerline of Opening

**Type CAV / VEX:**

- LRFO Face of Opening

**7. Radius Dim.**

Specify in inches (mm's)  
(See table for restrictions)

**8. Frame/Border Type**

- AA Exposed Flange Frame
- AAC Exposed Flange Frame with Concealed Mounting Brackets
- CC Concealed Tapered Frame
- CCA Concealed Tapered Frame with Countersunk Screw Holes
- CCC Concealed Tapered Frame with Concealed Mounting Brackets
- CCCA Concealed Tapered Frame with Concealed Mounting Brackets and Countersunk Screw Holes
- GG Flangeless Frame

**9. Finish**

- AW Appliance White (default) (on Frame AA)
- AL Aluminum
- BK Black
- BW British White
- MI Mill (default on frames CC)
- PC Prime Coat Paint
- SP Special custom color
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint

**10. End Cap Configuration**

**Frame/Border Types AA, AAC and GG only**

- FF Flanged Flanged
- FO Flanged Open
- FC Flanged Flat Cap

**All Frame/Border Types**

- OO Open Open
- OC Open Flat Cap
- CC Flat Cap Flat Cap
- (None for circle length)

**Options and Accessories**

**11. Left Hand Mounting Hardware**

- None (default)
- HC1 Hard Ceiling Clip – 5/8" (16) drywall
- HC5 Hard Ceiling Clip – 1/2" (13) drywall

**12. Right Hand Mounting Hardware**

- None (default)
- HC1 Hard Ceiling Clip – 5/8" (16) drywall
- HC5 Hard Ceiling Clip – 1/2" (13) drywall

**Notes:**

1. Maximum single section curved length is 120" (3048). Longer lengths are supplied in multiple sections.

2. Curve Length: Must be ordered by ARC or CIRCLE.

Chord: There is no standard pricing for the configuration selected. Contact Application Engineering, Houston or calculate ARC length.  
Circle: Length - 2 r. Radius = Length/2 Arc Length = Angle (degrees) 2 r/360

3. Radius: Refer to submittal FLCC. For multiple radius, contact Application Engineering, Houston and provide a sketch.

4. Border Types CC, CCA, CCC and CCCA are supplied as standard with mill finish (MI). No options. Two slot model has AW Appliance White center tee.

5. All models except Frame/Border Type AAC, CCC and CCCA (supplied with concealed mounting brackets) include integral hanger brackets on 24" (610) centers as standard.

6. Hard ceiling clips and wall clips are shipped in quantities based on 12" (305) spacing. Left and right hand clips are identical.

**Minimum Radius:**

Models	Slot Width	Flat Face				Concave & Convex	
		Frame Types AA & GG		Frame Type CC		Frame Types AA, CC & GG	
		1 Slot	2 Slot	1 Slot	2 Slot	1 Slot	2 Slot
FLH10, FLV10	1" (25)	30" (762)	30" (762)	40" (1016)	40" (1016)	60" (1524)	60" (1524)
FLH15, FLV15	1 1/2" (38)	30" (762)	30" (762)	40" (1016)	40" (1016)	60" (1524)	60" (1524)
FLH20, FLV20	2" (51)	60" (1524)	60" (1524)	60" (1524)	60" (1524)	60" (1524)	60" (1524)
FLH25, FLV25	2 1/2" (64)	60" (1524)	60" (1524)	60" (1524)	60" (1524)	60" (1524)	60" (1524)
FLH30, FLV30	3" (76)	60" (1524)	60" (1524)	60" (1524)	60" (1524)	60" (1524)	60" (1524)

**HOW TO ORDER**

**MODEL SERIES: FLH-TZ & FLV-TZ**

**TECHZONE™ FLOWLINE™ LINEAR DIFFUSERS**

**EXAMPLE: FLH10TZ - 48" x 2 SLOT - 06 - NT - AW - CC - —**

**1. Models**

**Horizontal High Throw**

FLH10TZ 1" (25) Slot

**Vertical Jet Throw**

FLV10TZ 1" (25) Slot

**2. Nominal Length**

inches (mm's)

**3. Number of Slots**

1 One

2 Two

**4. Ceiling Module Width**

04 4" (102) Wide

06 6" (152) Wide

**5. Frame/Border Type**

LT Lay-in T-Bar

NT Narrow T-Bar

**6. Finish**

AW Appliance White (default)

AL Aluminum

BK Black

BW British White

MI Mill

PC Prime Coat Paint

SP Special custom color

**7. End Cap Configuration**

OO Open Open

OC Open Flat Cap

CC Flat Cap Flat Cap

**Options and Accessories**

**8. Angle Cut \***

– None (default)

AC1 One End

AC2 Both Ends

**Note:**

1. Maximum single section length is 144" (3658).

2. All models include integral hanger brackets on 24" (610) centers as standard.

3. \*Specify AC Angle cut(s) and attach drawing. Angle cut AC1 is available with OO and OC end cap. Angle cut AC2 is available with OO end cap.

**HOW TO ORDER**

**MODEL SERIES: FLMC**

**FLOWLINE™ ACCESSORIES — MITERED CORNER SECTIONS**

**EXAMPLE: FLMC20 - 1 - AA - AW - 90 - HC1 - HC1**

**1. Models**

- FLMC10 1" (25) Slot
- FLMC15 1 1/2" (38) Slot
- FLMC20 2" (51) Slot
- FLMC25 2 1/2" (64) Slot
- FLMC30 3" (76) Slot

**2. Number of Slots**

- 1 One
- 2 Two

**3. Frame/Border Type**

- AA Exposed Flange Frame
- AC\* Exposed Flange/Concealed Tapered Frame
- AG\* Flange/Flangeless Frame
- CA\* Concealed Tapered/Exposed Flange Frame
- CC Concealed Tapered Frame
- CG\* Concealed Tapered/Exposed Flangeless Frame
- GG Flangeless Frame
- GA\* Flangeless/Flange Frame
- GC\* Exposed Flangeless/Concealed Tapered Frame
- GJ\* Exposed/Concealed Offset Frame (One Slot FLH only)
- KK Concealed Angular Frame (One Slot FLH or FLV 10, 15, 20 only)

**4. Finish**

- AW Appliance White (default) (on Frames AA, GG, AG, GA & GJ)
- AL Aluminum
- BK Black
- BW British White
- MI Mill (default on frames CC and KK)
- MIAW Mill/Appliance White (default on frames AC, CA, CG and GC)
- PC Prime Coat Paint
- SA Satin (clear) anodized (Frame/border AA only)
- SP Special custom color
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint

**5. Mitered Angle**

- 90 90 degree (default)
- 135 135 degree
- AN Degree of angle (Specify angle = \_\_\_\_ )

**Options and Accessories**

**6. Inside Mounting Hardware**

- None (default)
- HC1 Hard Ceiling Clip – 5/8" (16) drywall
- HC5 Hard Ceiling Clip – 1/2" (13) drywall
- TC2 Finline® T-Bar Mounting Clip

**7. Outside Mounting Hardware**

- None (default)
- HC1 Hard Ceiling Clip – 5/8" (16) drywall
- HC5 Hard Ceiling Clip – 1/2" (13) drywall
- TC2 Finline® T-Bar Mounting Clip

**Notes:**

1. Border Types CC and KK are supplied with Mill finish (MI). No options (2 slot model CC has AW Appliance White center tee). Border Types AC, CA, CG and GC are supplied with MIAW Mill/Appliance White finish. No options except SP.
2. Mitered corner section is supplied inactive with integral blank-offs. Unit is supported by adjacent Flowline™.
3. \*First specified Frame/Border is inside edge of miter, second is outside.

**MODEL SERIES: FLEF**

**FLOWLINE™ ACCESSORIES — FLANGED END CAPS (TYPE F)**

**EXAMPLE: FLEF20 - 1 - AA - AW**

**1. Models**

- FLEF10 1" (25) Slot
- FLEF15 1 1/2" (38) Slot
- FLEF20 2" (51) Slot
- FLEF25 2 1/2" (64) Slot
- FLEF30 3" (76) Slot

**2. Number of Slots**

- 1 One
- 2 Two

**3. Frame/Border Type**

- AA Exposed Flange Frame
- AG Flange / Flangeless Frame
- GG Flangeless Frame

**4. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime Coat Paint



**HOW TO ORDER**

**MODEL SERIES: FLC & FLT**

**FLOWLINE™ ACCESSORIES — TRANSITIONS**

**EXAMPLE: FLC20 - 1 - AA - AW - HC1**

**1. Models**

**Type C Cross**

- FLC10 1" (25) Slot
- FLC15 1 1/2" (38) Slot
- FLC20 2" (51) Slot
- FLC25 2 1/2" (64) Slot
- FLC30 3" (76) Slot

**Type T Tee**

- FLT10 1" (25) Slot
- FLT15 1 1/2" (38) Slot
- FLT20 2" (51) Slot
- FLT25 2 1/2" (64) Slot
- FLT30 3" (76) Slot

**2. Number of Slots**

- 1 One

**3. Frame/Border Type**

- AA Exposed Flange Frame
- CC Concealed Tapered Frame
- GG Flangeless Frame

**4. Finish**

- AW Appliance White (default) (on Frames AA and GG)
- AL Aluminum
- BK Black
- BW British White
- MI Mill (default on frame CC)
- PC Prime Coat Paint
- SP Special custom color
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint

**Options and Accessories**

**5. Mounting Hardware**

- None (default)
- HC1 Hard Ceiling Clip – 5/8" (16) drywall
- HC5 Hard Ceiling Clip – 1/2" (13) drywall
- TC2 Finline® T-Bar Mounting Clip

**Note:**

- 1. Border Type CC is supplied with Mill finish (MI) only.
- 2. Units are supplied inactive with integral blank-offs. Unit is supported by adjacent flowline.

**MODEL SERIES: FLR**

**FLOWLINE™ ACCESSORIES — RETURN HOOD/SIGHT SHIELD**

**EXAMPLE: FLR20 - 48 - 1**

**1. Models**

- FLR(I)10 1" (25) Slot
- FLR(I)15 1 1/2" (38) Slot
- FLR(I)20 2" (51) Slot
- FLR(I)25 2 1/2" (64) Slot
- FLR(I)30 3" (76) Slot

**(I) Adds Internal Insulation**

**2. Length**

- Imperial Sizes**
- inches (mm's)
- 48 (1219) (default)

**3. Number of Slots**

- 1 One
- 2 Two

# HOW TO ORDER

**MODEL SERIES: FLP**

**FLOWLINE™ LINEAR DIFFUSER PLENUMS**

**EXAMPLE: FLP10 - 48" x 1 SLOT - STR - HSTD - 08 - AA - —**

1. **Models**
  - Uninsulated Plenum**
  - FLP10 1" (25) Slot
  - FLP15 1 1/2" (38) Slot
  - FLP20 2" (51) Slot
  - FLP25 2 1/2" (64) Slot
  - FLP30 3" (76) Slot
  - Insulated Plenum (internal)**
  - FLPI10 1" (25) Slot
  - FLPI15 1 1/2" (38) Slot
  - FLPI20 2" (51) Slot
  - FLPI25 2 1/2" (64) Slot
  - FLPI30 3" (76) Slot
2. **Nominal Length**
  - Imperial Sizes**
  - inches (mm's)
  - 24, 30, 36, 48, 60, 72
  - (610, 762, 914, 1219, 1524, 1829)
  - Metric Sizes**
  - (mm's)
  - (600, 750, 900, 1200, 1500, 1800)
3. **Number of Slots**
  - 1 One
  - 2 Two
4. **Type**
  - STR Straight Section (default)
5. **Plenum Height**
  - HSTD Standard (default)
  - One Slot Option (for round inlets)**
  - H13 13" (330)
  - H15 15" (381)
  - H17 17" (432)
6. **Inlet Size**
  - One Slot**
  - 06 6" (152) Round
  - 08 8" (203) Round
  - 10 10" (254) Flat Oval
  - 10R 10" (254) Round
  - 12 12" (305) Flat Oval
  - 12R 12" (305) Round
  - 14 14" (356) Flat Oval
  - 14R 14" (356) Round

7. **Frame/Border Type (Diffuser)**
  - Two Slot
  - 06 6" (152) Round
  - 08 8" (203) Round
  - 10R 10" (254) Round
  - 12R 12" (305) Round
  - 14R 14" (356) Round
  - AA Exposed Flange Frame
  - AAC Exposed Flange Frame with Concealed Mounting Brackets
  - AG Flange/Flangeless Frame
  - CA Concealed Tapered/Exposed Flange Frame
  - CC Concealed Tapered Frame
  - CCA Concealed Tapered Frame with Countersunk Screw Holes
  - CCC Concealed Tapered Frame with Concealed Mounting Brackets
  - CCCA Concealed Tapered Frame with Concealed Mounting Brackets and Countersunk Screw Holes
  - CG Concealed Tapered/Exposed Flangeless Frame
  - GG Flangeless Frame
  - GJ Exposed/Concealed Offset Frame (One Slot FLH only)
  - KK Concealed Angular Frame (One Slot FLH or FLV 10, 15, 20 only)
  - LT Lay-in T-Bar (TechZone™)
  - NT Narrow T-Bar (TechZone™)

- Options and Accessories:**
8. **Inlet Damper**
    - None (default)
    - ID Inlet Damper with HLQ
    - IDCO Cable Operated Damper
  - 9a. **External Insulation** (FLP models only)
    - None (default)
    - EX Foil Back (installed)
  - 9b. **Internal Insulation** (FLPI models only)
    - FGI 1/4" (6.35) Coated fiberglass (default)
    - FFI 3/8" (9.53) Fiber-free foam

- Notes:**
1. Plenums are shipped loose as standard for field installation.
  2. Plenums for Frame/Border Types AA, CC, CA, CG, CCA, GG, AG, GJ, KK, LT and NT are for direct attachment to diffuser neck. TechZone™ Frame Border Type LT and NT are available in FLP10 and FLPI10 1" (25) slot only.
  3. Plenums for Frame Types AAC, CCC and CCCA are hemmed for field attachment by use of concealed mounting brackets.
  4. Standard internal insulation ("I" suffix models) is 1/4" (6.35) coated fiberglass.

**Available Inlet Sizes – One Slot Plenum**

Plenum		Inlet Type/Size	
Code	Height	Round	Oval
HSTD	Standard *	06, 08	10 – 14
H13	13" (330)	06, 08, 10R	12 – 14
H15	15" (381)	06, 08, 10R, 12R	14
H17	17" (432)	06, 08, 10R – 14R	—

\* 10" (254) for Type AA, CC, CA, CG, CCA, GG, AG, GJ, KK, LT and NT (straight leg).  
 12" (305) for Type AAC, CCC and CCCA (hemmed leg).

**HOW TO ORDER**

**MODEL SERIES: FLP**

**CURVED FLOWLINE™ LINEAR DIFFUSER PLENUMS**

**EXAMPLE: FLP10 - 48" x 1 SLOT - FLT - LRIO - HSTD - 08 - IC - AA - —**

**1. Models**

**Uninsulated Plenum**

FLP10	1" (25) Slot
FLP15	1 1/2" (38) Slot
FLP20	2" (51) Slot
FLP25	2 1/2" (64) Slot
FLP30	3" (76) Slot

**Insulated Plenum (internal)**

FLPI10	1" (25) Slot
FLPI15	1 1/2" (38) Slot
FLPI20	2" (51) Slot
FLPI25	2 1/2" (64) Slot
FLPI30	3" (76) Slot

**2. Nominal Length**

**Imperial Sizes**

inches (mm's)  
24, 30, 36, 48, 60, 72  
(610, 762, 914, 1219, 1524, 1829)

**Metric Sizes**

(mm's)  
(600, 750, 900, 1200, 1500, 1800)

**3. Number of Slots**

1	One
2	Two

**4. Type**

STR	Straight Section (default)
FLT	Flat Face Curve
CAV	Concave Face Curve < )
VEX	Convex Face Curve ) >

**5. Location of Radius**

**Type FLT:**

LRIO	Inside Edge of Opening
LRCL	Centerline of Opening

**Type CAV / VEX:**

LRFO	Face of Opening
------	-----------------

**6. Radius Dim.**

Specify in inches (mm's)  
(See table for restrictions)

**7. Plenum Height**

HSTD Standard (default)

**One Slot Option (for round inlets)**

H13	13" (330)
H15	15" (381)
H17	17" (432)

**8. Inlet Size**

**One Slot**

06	6" (152)	Round
08	8" (203)	Round
10	10" (254)	Flat Oval
10R	10" (254)	Round
12	12" (305)	Flat Oval
12R	12" (305)	Round
14	14" (356)	Flat Oval
14R	14" (356)	Round

**Two Slot**

06	6" (152)	Round
08	8" (203)	Round
10R	10" (254)	Round
12R	12" (305)	Round
14R	14" (356)	Round

**9. Inlet Location**

**(FLT only)**

IC	Inside Curve
OC	Outside Curve

**10. Frame/Border Type**

**(Diffuser)**

AA	Exposed Flange Frame
AAC	Exposed Flange Frame with Concealed Mounting Brackets

CC	Concealed Tapered Frame
CCA	Concealed Tapered Frame with Countersunk Screw Holes
CCC	Concealed Tapered Frame with Concealed Mounting Brackets
CCCA	Concealed Tapered Frame with Concealed Mounting Brackets and Countersunk Screw Holes
GG	Flangeless Frame

**Options and Accessories**

**11. Inlet Damper**

–	None (default)
ID	Inlet Damper with HLQ
IDCO	Cable Operated Damper

**12a. External Insulation**

	(FLP models only)
–	None (default)
EX	Foil Back (installed)

**12b. Internal Insulation**

	(FLPI models only)
FGI	1/4" (6.35) Coated fiberglass (default)
FFI	3/8" (9.53) Fiber-free foam

**Notes:**

1. Plenums are shipped loose as standard for field installation.
2. Plenums for Frame/Border Types AA, CC, CA, CCA and GG are for direct attachment to diffuser neck.
3. Plenums for Frame Types AAC, CCC and CCCA are hemmed for field attachment by use of concealed mounting brackets.
4. Standard internal insulation ("I" suffix models) is 1/4" (6.35) coated fiberglass.

**Available Inlet Sizes – One Slot Plenum**

Plenum		Inlet Type/Size	
Code	Height	Round	Oval
HSTD	Standard *	06, 08	10 – 14
H13	13" (330)	06, 08, 10R	12 – 14
H15	15" (381)	06, 08, 10R, 12R	14
H17	17" (432)	06, 08, 10R – 14R	—

\* 10" (254) for Type AA, CC, CA, CCA and GG (straight leg).  
12" (305) for Type AAC, CCC and CCCA (hemmed leg).

**Curved Plenum Minimum Radius:**

Models	Flat Face		Concave & Convex	
	1 Slot	2 Slot	1 Slot	2 Slot
FLP10, FLPI10	30" (762)	30" (762)	60" (1524)	60" (1524)
FLP15, FLPI15	30" (762)	30" (762)	60" (1524)	60" (1524)
FLP20, FLPI20	60" (1524)	60" (1524)	60" (1524)	60" (1524)
FLP25, FLPI25	60" (1524)	60" (1524)	60" (1524)	60" (1524)
FLP30, FLPI30	60" (1524)	60" (1524)	60" (1524)	60" (1524)

**HOW TO ORDER**

**MODEL SERIES: FT**

**LAY-IN FLOWLINE™ LINEAR DIFFUSERS**

**EXAMPLE: FTH10 - 48" x 1 SLOT - 08 - AA - AW - - - - -**

**1. Models**

**Horizontal High Throw**

Standard Flat T-Bar (15/16" or 9/16")

FTH(I)10 1" (25) Slot

FTH(I)15 1 1/2" (38) Slot

FTH(I)20 2" (51) Slot

FTH(I)25 2 1/2" (64) Slot

FTH(I)30 3" (76) Slot

Bolt-Slot (Fineline® Type T-Bar)

FTBH(I)10 1" (25) Slot

FTBH(I)15 1 1/2" (38) Slot

FTBH(I)20 2" (51) Slot

FTBH(I)25 2 1/2" (64) Slot

FTBH(I)30 3" (76) Slot

**Vertical Jet Throw**

Standard Flat T-Bar (15/16" or 9/16")

FTV(I)10 1" (25) Slot

FTV(I)15 1 1/2" (38) Slot

FTV(I)20 2" (51) Slot

FTV(I)25 2 1/2" (64) Slot

FTV(I)30 3" (76) Slot

Bolt-Slot (Fineline® Type T-Bar)

FTBV(I)10 1" (25) Slot

FTBV(I)15 1 1/2" (38) Slot

FTBV(I)20 2" (51) Slot

FTBV(I)25 2 1/2" (64) Slot

FTBV(I)30 3" (76) Slot

**(I) Adds Internal Insulation**

**Return (no plenum)**

Standard Flat T-Bar (15/16" or 9/16")

FTHR10 1" (25) Slot

FTHR15 1 1/2" (38) Slot

FTHR20 2" (51) Slot

FTHR25 2 1/2" (64) Slot

FTHR30 3" (76) Slot

Bolt-Slot (Fineline® Type T-Bar)

FTBHR10 1" (25) Slot

FTBHR15 1 1/2" (38) Slot

FTBHR20 2" (51) Slot

FTBHR25 2 1/2" (64) Slot

FTBHR30 3" (76) Slot

**2. Nominal Length\***

**Imperial Sizes**

inches (mm's)

24, 48, 60

(610, 1219, 1524)

**Metric Sizes**

(mm's)

(600, 1200, 1500)

**3. Number of Slots**

1 One

2 Two

**4. Inlet Size**

**One Slot**

06 6" (152) Round

08 8" (203) Round

10 10" (254) Flat Oval

12 12" (305) Flat Oval

14 14" (356) Flat Oval

**Two Slot**

06 6" (152) Round

08 8" (203) Round

10R 10" (254) Round

12R 12" (305) Round

14R 14" (356) Round

**5. Frame/Border Type\***

**One or Two Slot**

AA Flange Frame

AG Flange/Flangeless Frame

GG Flangeless Frame

**Two Slot**

AAS Flange Frame (Straddle Mount)

GGG Flangeless Frame (Straddle Mount)

**6. Finish**

AW Appliance White (default)

BW British White

SP Special custom color

**Options and Accessories**

**7. Left Hand Mounting Hardware**

– None (default)

TC1 T-Bar Mounting Clips

TC2 Fineline® T-Bar Mounting Clips

**8. Right Hand Mounting Hardware**

– None (default)

TC1 T-Bar Mounting Clips

TC2 Fineline® T-Bar Mounting Clips

**9. Inlet Damper**

– None (default)

ID Inlet Damper with HLQ

**10a. External Insulation**

(non "I" models only)

– None (default)

EX External Foil Back (installed)

**10b. Internal Insulation**

("I" models only)

FGI 1/4" (6.35) Coated fiberglass (default)

FFI 3/8" (9.53) Fiber-free foam

**Notes:**

1. All models include an integral hanger bracket at each end of unit as standard.

2. Bolt-slot Models (FTB) are available in 24" and 48" imperial (600 and 1200 metric) modules only and only with Frame/Border Types GG, AG and GGS. TC2 Fineline® T-Bar Clips are recommended for support and levelling.

3. FT Series models are supplied with Type CC Flat End Caps.

4. Return models are supplied with horizontal type dual pattern controllers for dampering (system balancing) and without plenum. If plenums are required on return air units, use supply model.

5. Standard internal insulation ("I" suffix models) is 1/4 (6.35) coated fiberglass.

## SUGGESTED SPECIFICATIONS

**FLH and FLV Series**

Furnish and install Nailor FlowLine™ linear slot diffusers and accessories of the size and type shown on the architectural and mechanical plans and/or air distribution schedules. Mechanical contractor shall coordinate installation with General Contractor and other sub-contractors as required.

The linear slot diffuser shall utilize heavy wall extruded aluminum frames and be capable of supporting the ceiling system. Material shall be minimum wall thickness 0.06" (1.52). Diffuser frames shall be supplied with integral spacer bars and hanger brackets, spaced approximately on 24" (610) centers. The integral hanger brackets shall allow the linear slot diffusers to be supported from the ceiling structure with hanger wire in lay-in suspension ceiling installations. In hard ceiling installations, provide support clips by the manufacturer that allow the diffusers to be secured to the ceiling diffuser opening framing channels.

The linear slot diffuser shall be complete with factory end border configurations as shown or indicated. Where exposed end caps are required, they shall be factory installed architectural mitered picture frame type. Flanges/butt type end caps are not acceptable.

Provide alignment strips and spline clips by the manufacturer to secure joints and ceiling tees to the linear diffuser as required. Mitered corner sections shall be supplied by the manufacturer in one-piece construction.

The air pattern controller shall be dual type on 24" (610) centers and fully adjustable to permit various air pattern configurations, as well as allow throttling, as required for air volume reduction or complete shut-off without adding any blank-off devices. Pattern controllers shall be minimum 20 ga. (1.01) corrosion-resistant steel. One-piece pattern controllers are not acceptable.

Linear slot diffusers shall incorporate either horizontal high throw or vertical jet throw pattern controllers as shown on mechanical plans and drawings.

All diffusers shall have a single slot, unless shown otherwise, and shall be capable of being used for supply, return or exhaust air. Horizontal high throw diffusers shall maintain a tight ceiling pattern from maximum to minimum cataloged airflows and be suitable for VAV systems.

Where curved linear slot diffusers are indicated, they shall be one slot design and stretch formed by the manufacturer to the exact radii required. Segmented linear slot diffusers are not acceptable. Pattern controller shall be factory installed and fixed in the airflow direction specified on the drawings.

Supply air engineered plenum boots shall be minimum 22 ga. (0.85) coated steel and of the same manufacturer as the linear slot diffuser. Lengths and inlet sizes shall be as indicated on the plans and schedules. Where required, plenums shall be insulated with either internal matt faced fiberglass insulation or external foil back insulation, as specified on drawings or schedules. Return hood/sight baffles shall be provided as shown.

Exposed flange/border frames shall be factory painted standard white or custom painted to match specified architectural requirements. Provide paint samples if required. Pattern controllers and integral spacers shall be painted flat black.

Performance of the linear slot diffuser shall be based upon cataloged data obtained from tests conducted in accordance with ASHRAE Standard 70-2006. Pattern controllers shall be field adjusted after diffuser installation and set in their normal operating condition. Air test and balancing of linear slot diffusers shall be in accordance with the testing and balancing portion section of the specifications.

Provide manufacturers submittal drawings and published performance data.

**FM Series**

Furnish and install Nailor FlowLine™ modular square ceiling diffusers of the size and type shown on the architectural and mechanical plans and/or air distribution schedules. Diffusers shall be designed as a nominal 24" x 24" (600 x 600mm) module size. Mechanical contractor shall coordinate installation with General Contractor and other sub-contractors as required.

These diffusers shall utilize heavy wall extruded aluminum frames with inside and outside mitered corners. The diffusers shall feature a 1" (25) continuous slot around all four sides with dual pattern controllers that are fully adjustable to permit throttling, as required for air volume reduction or complete shut-off without adding any blank-off devices. Diffusers shall be capable of being adjustable for a 4, 3, 2 or 1-way blow pattern as required after installation. Pattern controllers shall be minimum 20 ga. (1.01) corrosion-resistant steel. One-piece pattern controllers are not acceptable. The pattern controllers shall be horizontal high throw type and shall maintain a tight ceiling air pattern from maximum to minimum cataloged airflows and be suitable for VAV systems.

Supply units shall be complete with a compatible steel back pan that is removable and secured by steel 's' clips. The back pan shall incorporate an integral drawn round neck to permit hard or flexible duct connection. Return units shall be similar in appearance but feature a light shield back pan for ductless return installations. The center acoustical ceiling tile shall be supplied, cut and field installed by the acoustical tile sub-contractor.

Exposed flange/border frames shall be factory painted standard white or custom painted to match specified architectural requirements. Provide paint samples if required. Pattern controllers and integral spacers shall be painted flat black.

Performance of the ceiling diffuser shall be based upon cataloged data obtained from tests conducted in accordance with ASHRAE Standard 70-2006. Pattern controllers shall be field adjusted after diffuser installation and set in their normal operating condition. Air test and balancing of ceiling diffusers shall be in accordance with the testing and balancing portion section of the specifications.

Provide manufacturers submittal drawings and published performance data.



# LINEAR DIFFUSERS AND BAR GRILLES



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<b>Linear Bar Grilles</b>	
<b>Model Series 4900 • Fixed Bars • Extruded Aluminum</b>	
49-240 • 1/2" (13) Spacing • 1/4" (6) Bars • 0° Deflection	<b>B47</b>
49-241 • 1/2" (13) Spacing • 1/4" (6) Bars • 15° Deflection	<b>B47</b>
49-243 • 1/2" (13) Spacing • 1/4" (6) Bars • 30° Deflection	<b>B47</b>
49-280 • 1/2" (13) Spacing • 1/8" (3) Bars • 0° Deflection	<b>B47</b>
49-281 • 1/2" (13) Spacing • 1/8" (3) Bars • 15° Deflection	<b>B47</b>
49-480 • 1/4" (6) Spacing • 1/8" (3) Bars • 0° Deflection	<b>B47</b>
49-481 • 1/4" (6) Spacing • 1/8" (3) Bars • 15° Deflection	<b>B47</b>
Accessories	<b>B54</b>
Heavy Duty Maximum Floor Loading	<b>B55</b>
<b>Linear Louver Diffusers</b>	
<b>Model Series 48LL • Architectural • Extruded Aluminum</b>	
48LL1 • One-way Pattern	<b>B66</b>
48LL2 • Two-way Pattern	<b>B66</b>
<b>Linear Vane Diffusers</b>	
<b>Model Series 48LV • Architectural • Extruded Aluminum • Fixed Blades</b>	
48LV1 • One-way Pattern	<b>B70</b>
48LV2 • Two-way Pattern	<b>B70</b>

## GENERAL PRODUCT OVERVIEW

### Linear Diffusers and Bar Grilles

Linear type diffusers and grilles have been developed to satisfy architectural and engineering applications that require a continuous length appearance, aesthetically pleasing design and high engineering performance with premium quality aluminum products. Installations can be equally effective where lengths are literally continuous around the periphery of a wall, floor or ceiling space and certain sections of the unit are active with regard to airflow, satisfying mechanical and architectural requirements. Individual discreet lengths may be separately installed at reduced cost and offer the same engineering performance. The proposed application and installed location will usually dictate whether a slot, bar or louvered type product is the most suitable choice. When the ideal product type has been chosen, the airflow and performance requirements will dictate the style and sizing selections from a comprehensive range of available sizes and capacities.

### LINEAR SLOT DIFFUSERS

Model Series 5000 provides architectural excellence and outstanding performance flexibility. Available in four different slot opening widths, a range of 1 to 10 slots and a wide choice of border/frame styles that co-ordinate with ceiling and installation details. They feature 'ice tong' style individual pattern controllers in each slot that not only offer a 180° air pattern adjustment, but can also be used to dampen airflow.

Designed primarily for ceiling and high sidewall installation, they are eminently suited to, and recommended for, VAV applications. They maintain a tight and stable horizontal air pattern over a wide range of air volumes by utilizing the maximum ceiling coanda effect.

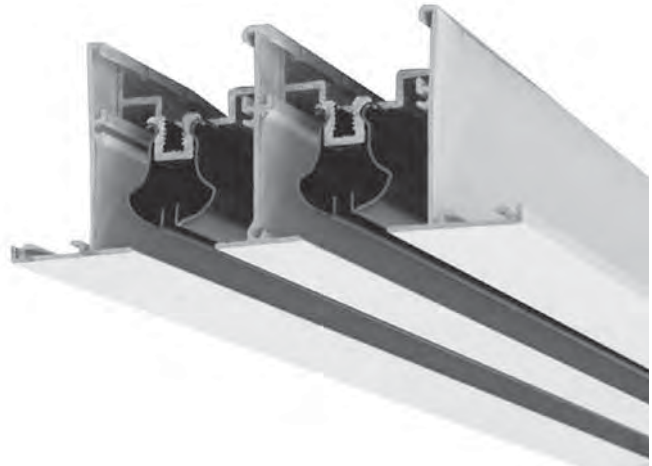
Also commonly used in overhead heating applications, the versatile pattern controllers allow vertical projection of heated air to meet almost any perimeter condition.

**Supply Air** – Models 5050, 5075, 5010, 5015

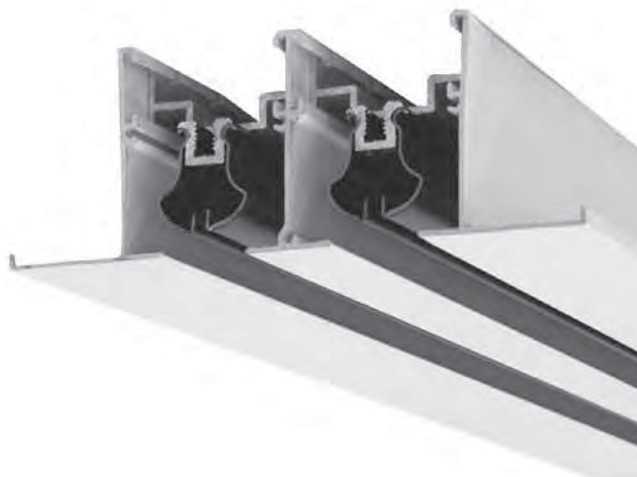
**Return Air** – Models 5050R, 5075R, 5010R, 5015R

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Model 5075



Model 5075TZ

### LINEAR SLOT DIFFUSERS FOR TECHZONE™ TYPE CEILINGS

Model Series 5000TZ provides architectural excellence and outstanding performance flexibility. Available to suit two ceiling modules. 4" (102) wide with 1 to 2 slots and 6" (152) wide with 1 to 4 slots to suit capacity requirements with three frame styles for Armstrong® TechZone™ and USG Logix™ ceiling systems. They feature 'ice tong' style individual pattern controllers in each slot that not only offer a 180° air pattern adjustment, but can also be used to dampen airflow.

Designed primarily for ceiling and high sidewall installation, they are eminently suited to, and recommended for, VAV applications. They maintain a tight and stable horizontal air pattern over a wide range of air volumes by utilizing the maximum ceiling coanda effect.

Also commonly used in overhead heating applications, the versatile pattern controllers allow vertical projection of heated air to meet almost any perimeter condition.

**Supply Air** – Model 5075TZ

**Return Air** – Model 5075TZR

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### PLENUMS FOR LINEAR SLOT DIFFUSERS

Model Series 5300 Plenums are designed to fit the 5000 Series Slot Diffusers. The plenums are constructed from corrosion-resistant steel and are available in two different styles for an extensive performance range. The standard constructed plenum is suited for applications that require longer throws and shorter spreads, whereas the modified plenum increases the spread and reduces the throw. Specially designed end caps can be turned up for continuous runs. All styles are offered with internal or external insulation.

**Standard Performance (non-insulated)** –

Models 5350, 5375, 5310, 5315

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**Standard Performance (internally insulated)** –

Models 5350I, 5375I, 5310I, 5315I

**Page B27**

**Modified Performance (non-insulated)** –

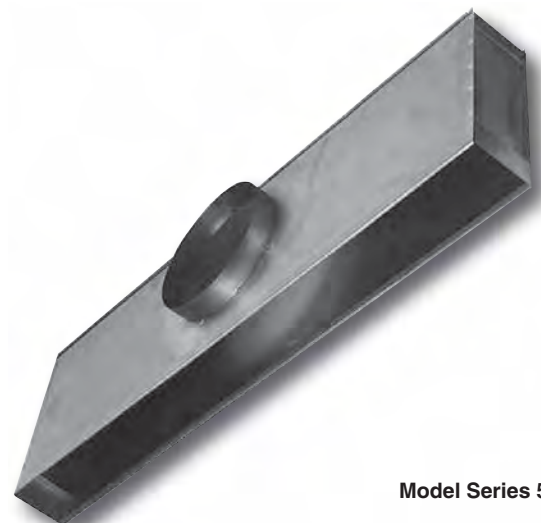
Models 5350MP, 5375MP, 5310MP, 5315MP

**Page B27**

**Modified Performance (internally insulated)** –

Models 5350IMP, 5375IMP, 5310IMP, 5315IMP

**Page B27**



Model Series 5300



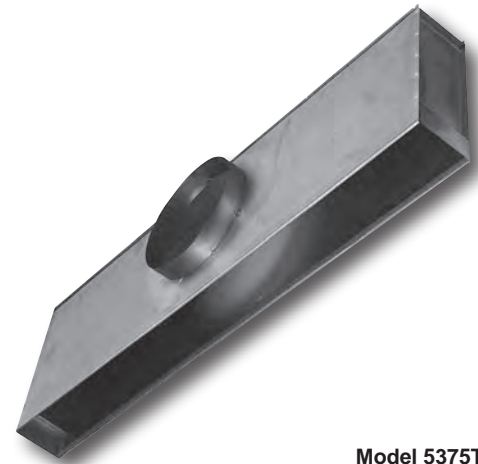
## LINEAR SLOT DIFFUSER PLENUMS FOR TECHZONE™ TYPE CEILINGS

Model Series 5300TZ Plenums are designed to fit the 5000TZ Series Slot Diffusers. The plenums are constructed from corrosion-resistant steel and are available in two different styles for an extensive performance range.

Available choice of 1 to 4 slots are available to suit capacity requirements and three frame styles for Armstrong® TechZone™ and USG Logix™ ceiling systems. The standard constructed plenum is suited for applications that require longer throws and shorter spreads, whereas the modified plenum increases the spread and reduces the throw. Specially designed end caps can be turned up for continuous runs. All styles are offered with internal or external insulation.

- Standard Performance (non-insulated)** – Model 5375TZ
- Standard Performance (internally insulated)** – Model 5375TZI
- Modified Performance (non-insulated)** – Models 5375TZMP
- Modified Performance (internally insulated)** – Models 5375TZIMP, 5310TZIMP, 5315TZIMP

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**Page B30**  
**Page B30**  
**Page B30**



**Model 5375TZ**

B  
LINEAR DIFFUSERS AND BAR GRILLES



**Models 49-240, 49-280 and 49-480**

## LINEAR BAR GRILLES

4900 Series provides an extruded aluminum bar grille that offers beautiful styling and efficient performance.

Linear bar grilles offer a choice of fixed air patterns with 0°, 15° or 30° air deflection, a choice of bar widths and spacing and a wide choice of border/frame style combinations to suit most types of installation. They are available with an optional opposed blade damper for volume control. Linear bar grilles are recommended for supply air applications in floors, window sills, and high sidewall locations. They are not generally suited to ceiling mounted supply applications (other than for directional spot heating or cooling as an air curtain) as they are not designed for horizontal projection from the face.

Models 49-240, 49-241, 49-243, 49-280, 49-281, 49-480, 49-481  
 Suffix '-O' adds a steel OBD.

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## LINEAR LOUVER DIFFUSERS

48LL Series Linear Louver (Vane) Diffusers are designed to provide a high capacity, architecturally pleasing linear diffuser that can supply large volumes of air at relatively low sound levels and pressure drops.

High quality, extruded aluminum angular discharge louvers are designed to create a stable horizontal air pattern that is tight to the ceiling. Ideal for applications in VAV systems, these diffusers create a strong ceiling coanda effect at typical maximum and minimum flow rates and ensure optimal comfort conditions.

Models 48LL, 48LL2  
 Suffix '-O' adds a steel OBD.  
 Suffix '-OA' adds an aluminum OBD.

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**Models 48LL2 and 48LL1**



**Models 48LV1 and 48LV2**

## LINEAR VANE DIFFUSERS

48LV Series Linear Vane Diffusers are designed to provide an effective, architecturally pleasing linear vane diffuser that are suited for supply and return applications.

Available in one-way or two-way pattern with fixed vanes that provide a tight coanda air pattern for optimal VAV performance. The core assembly is removable for ease of installation and access to the optional opposed blade damper.

Models 48LV1, 48LV2  
 '-OBD' adds a steel OBD.  
 '-OBDA' adds an aluminum OBD.

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## LINEAR SLOT DIFFUSERS

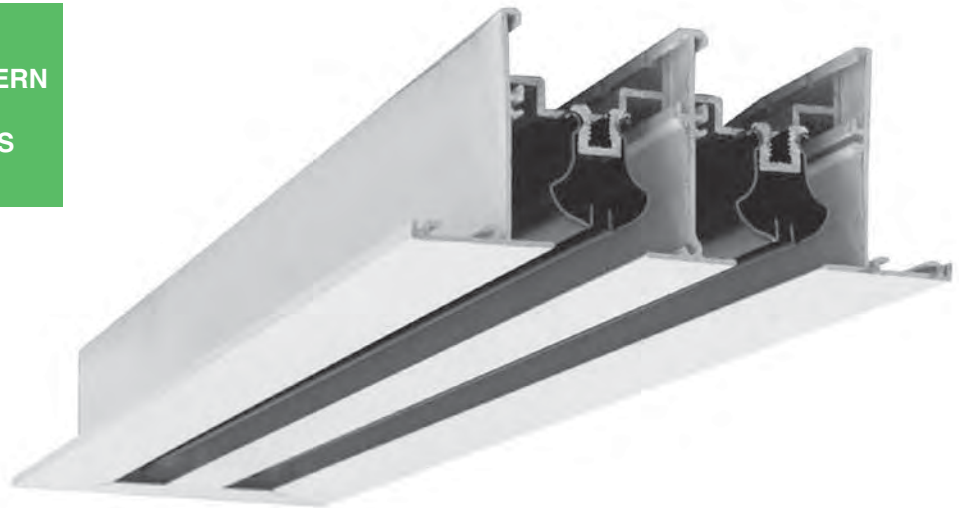
- ADJUSTABLE 'ICE TONG' PATTERN CONTROLLERS
- AVAILABLE WITH 1 TO 10 SLOTS
- CHOICE OF 4 SLOT WIDTHS

### Supply Models:

- 5050 1/2" (13) Slot
- 5075 3/4" (19) Slot
- 5010 1" (25) Slot
- 5015 1 1/2" (38) Slot

### Return Models:

- 5050R 1/2" (13) Slot
- 5075R 3/4" (19) Slot
- 5010R 1" (25) Slot
- 5015R 1 1/2" (38) Slot



Model 5075

Model Series 5000 Linear Slot Ceiling Diffuser have been specially designed to provide both the unobtrusive appearance required for architectural excellence, and the full 180° pattern controller adjustment at minimum NC levels required for high engineering performance. Model Series 5000 Diffusers provide stable diffusion under large amounts of air with both constant and changing load conditions. This is particularly suitable for variable air volume systems. With several choices of mounting frames, the diffusers are suited to accommodate multiple applications. The diffusers are available with mitered corner end caps and feature die-formed components to provide consistent quality and performance.

### STANDARD FEATURES:

- The volume and direction of the discharge air can be adjusted by moving the pattern controllers.
- Available with 1 to 10 slots.
- Choice of four slot widths to suit capacity requirements.
- Selection of frames & mounting sub-frames for various types of installations.
- The maximum length of the pattern controller is 36" (914). Diffusers longer than 36" (914) are provided with multiple pattern controller sections.
- Diffusers are supplied in lengths of up to 6 feet (1829) in a single section.
- Ideal for continuous length applications.

- Multiple sections are provided with alignment strips on the frames and sub-frames to provide superior, positive field alignment.

- Model Series 5000R returns and Series 5000 supply diffusers are identical except for the omission of pattern controllers.

- Mounting sub-frames are cut to length and assembled in the field.

### CONSTRUCTION MATERIAL:

Extruded aluminum frame with corrosion-resistant steel pattern controllers.

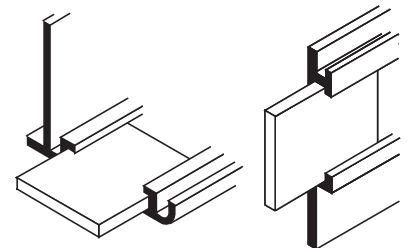
### FINISH OPTIONS:

- All visible frames are AW Appliance White and the pattern controllers have a

black finish as standard. Optional finishes are available.

### Alignment Strips

Alignment strips on the frames and sub-frames provide superior, positive alignment on multi-section assemblies.



Frame

Sub-frame

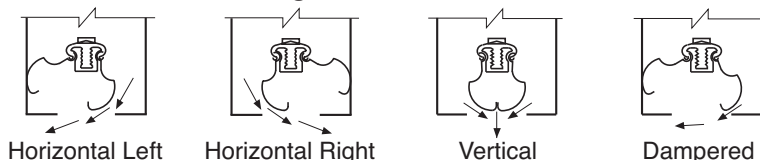
**Supply Model**

- 5050 S = 1/2" (13) slot
- 5075 S = 3/4" (19) slot
- 5010 S = 1" (25) slot
- 5015 S = 1 1/2" (38) slot

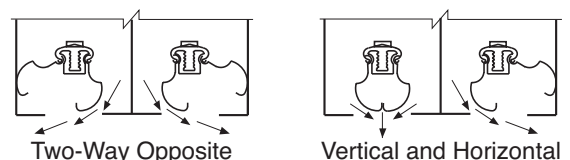
**Return Model**

- 5050R S = 1/2" (13) slot
- 5075R S = 3/4" (19) slot
- 5010R S = 1" (25) slot
- 5015R S = 1 1/2" (38) slot

### Single Slot Air Patterns



### Multi-Slot Air Patterns





## FRAME AND MOUNTING SUB-FRAME COMBINATIONS FOR HARD CEILINGS:

D = Duct Size  
 S = Slot Width  
 W = Overall Face Width

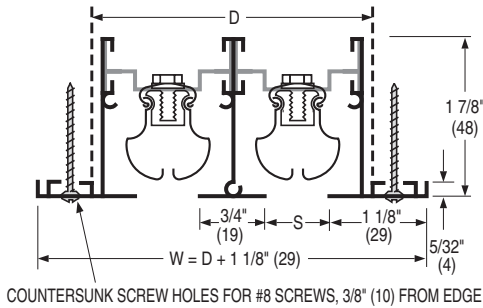
Standard Frames are the most commonly recommended, specified and easiest to install.

B

LINEAR DIFFUSERS AND BAR GRILLES

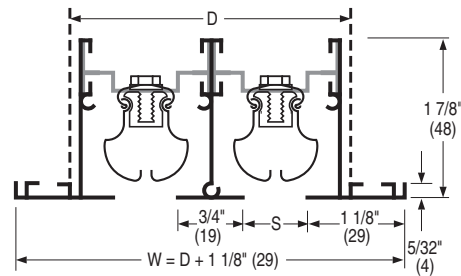
### TYPE A STANDARD FRAME

Flange Frame/Screw Mounting



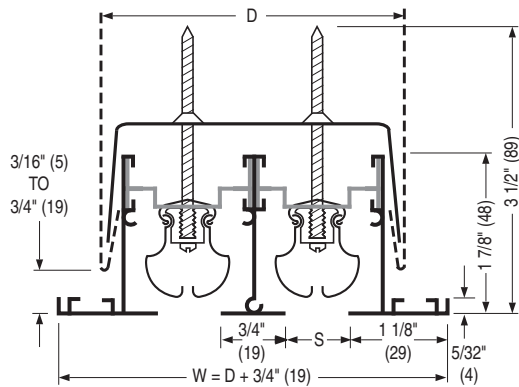
### TYPE B STANDARD FRAME

Flange Frame/Duct Mounting, less screw holes



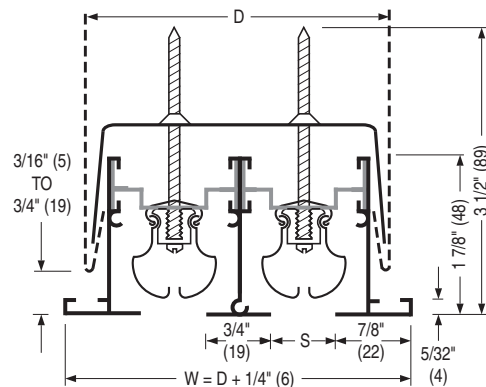
### TYPE C STANDARD FRAME

Flange Frame/Concealed Mounting



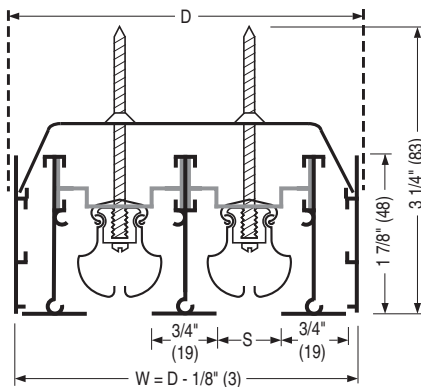
### TYPE D STANDARD FRAME

Flange Frame, Narrow Margin/Concealed Mounting



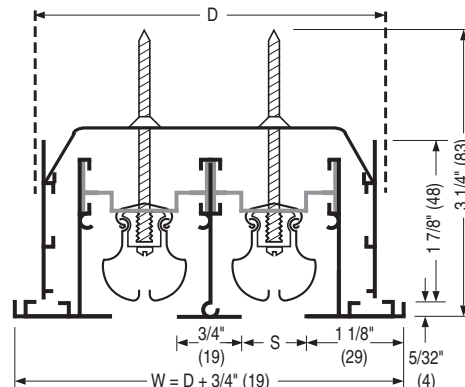
### TYPE E

Flush Frame & Sub-Frame/Concealed Mounting



### TYPE F

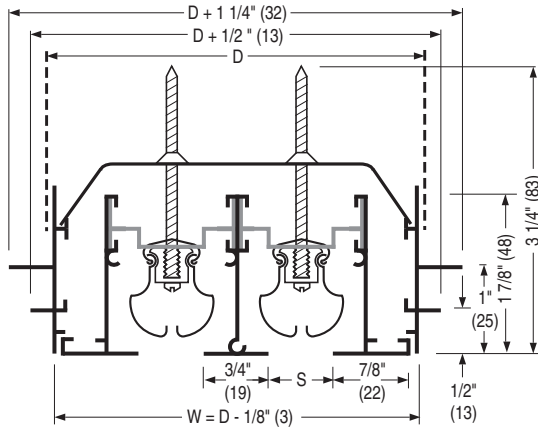
Flange Frame & Sub-Frame/Concealed Mounting



## FRAME AND MOUNTING SUB-FRAME COMBINATIONS FOR HARD CEILINGS:

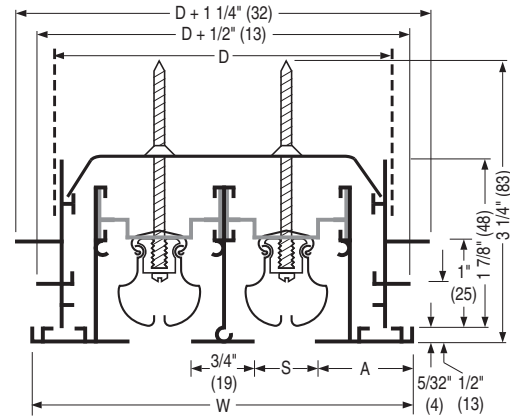
### TYPE G

Flush Frame w/Plaster & Tile Sub-Frame/Concealed Mounting



### TYPE H, H2

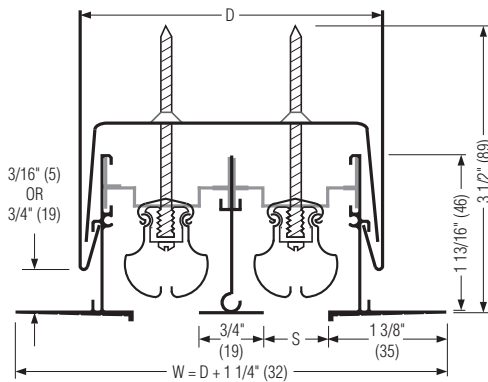
Flange Frame w/Plaster & Tile Sub-Frame/Concealed Mounting



Type	A	W
H	1 1/8" (29)	D + 3/4" (19)
H2	7/8" (22)	D + 1/4" (6)

### TYPE J

Tape & Spackle Frame/Concealed Mounting

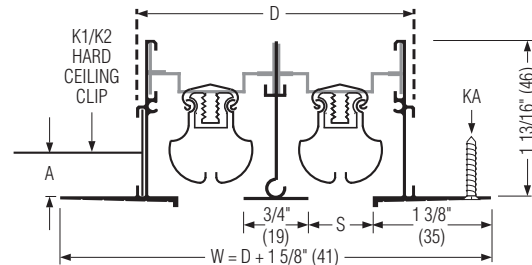


### TYPE KA

Tape & Spackle Frame/Countersunk Screw Holes (both sides)

### TYPES K1, K2

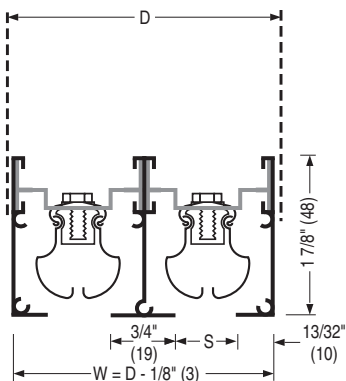
Tape & Spackle Frame/Hard Ceiling Clip for 1/2" (13) or 5/8" (16) drywall (both sides)



Type	A	Hard Clip
K1	1/2" (13)	HC5
K2	5/8" (16)	HC1

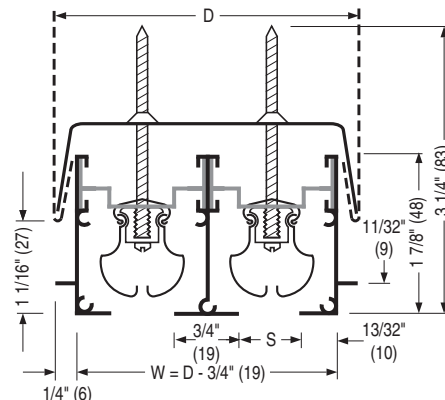
### TYPE M

Flush Frame / Duct Mounting / Flangeless Frame



### TYPE N

Spline Frame Ceiling / Concealed Mounting



## DUCT WIDTH D DIMENSION:

S = SLOT WIDTH (IMPERIAL UNITS – INCHES)

**B**

**LINEAR DIFFUSERS AND BAR GRILLES**

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 1/2"	S = 3/4"	S = 1"	S = 1 1/2"
<b>A B</b>	1	1 5/8"	1 7/8"	2 1/8"	2 5/8"
	2	2 7/8"	3 3/8"	3 7/8"	4 7/8"
	3	4 1/8"	4 7/8"	5 5/8"	7 1/8"
	4	5 3/8"	6 3/8"	7 3/8"	9 3/8"
	5	6 5/8"	7 7/8"	9 1/8"	11 5/8"
	6	7 7/8"	9 3/8"	10 7/8"	13 7/8"
	7	9 1/8"	10 7/8"	12 5/8"	16 1/8"
	8	10 3/8"	12 3/8"	14 3/8"	18 3/8"
	9	11 5/8"	13 7/8"	16 1/8"	20 5/8"
	10	12 7/8"	15 3/8"	17 7/8"	22 7/8"

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 1/2"	S = 3/4"	S = 1"	S = 1 1/2"
<b>C D</b>	1	2"	2 1/4"	2 1/2"	3"
	2	3 1/4"	3 3/4"	4 1/4"	5 1/4"
	3	4 1/2"	5 1/4"	6"	7 1/2"
	4	5 3/4"	6 3/4"	7 3/4"	9 3/4"
	5	7"	8 1/4"	9 1/2"	12"
	6	8 1/4"	9 3/4"	11 1/4"	14 1/4"
	7	9 1/2"	11 1/4"	13"	16 1/2"
	8	10 3/4"	12 3/4"	14 3/4"	18 3/4"
	9	12"	14 1/4"	16 1/2"	21"
	10	13 1/4"	15 3/4"	18 1/4"	23 1/4"

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 1/2"	S = 3/4"	S = 1"	S = 1 1/2"
<b>E</b>	1	2 1/4"	2 1/2"	2 3/4"	3 1/4"
	2	3 1/2"	4"	4 1/2"	5 1/2"
	3	4 3/4"	5 1/2"	6 1/4"	7 3/4"
	4	6"	7"	8"	10"
	5	7 1/4"	8 1/2"	9 3/4"	12 1/4"
	6	8 1/2"	10"	11 1/2"	14 1/2"
	7	9 3/4"	11 1/2"	13 1/4"	16 3/4"
	8	11"	13"	15"	19"
	9	12 1/4"	14 1/2"	16 3/4"	21 1/4"
	10	13 1/2"	16"	18 1/2"	23 1/2"

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 1/2"	S = 3/4"	S = 1"	S = 1 1/2"
<b>F, H, H2</b>	1	2"	2 1/4"	2 1/2"	3"
	2	3 1/4"	3 3/4"	4 1/4"	5 1/4"
	3	4 1/2"	5 1/4"	6"	7 1/2"
	4	5 3/4"	6 3/4"	7 3/4"	9 3/4"
	5	7"	8 1/4"	9 1/2"	12"
	6	8 1/4"	9 3/4"	11 1/4"	14 1/4"
	7	9 1/2"	11 1/4"	13"	16 1/2"
	8	10 3/4"	12 3/4"	14 3/4"	18 3/4"
	9	12"	14 1/4"	16 1/2"	21"
	10	13 1/4"	15 3/4"	18 1/4"	23 1/4"

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 1/2"	S = 3/4"	S = 1"	S = 1 1/2"
<b>G</b>	1	2 1/2"	2 3/4"	3"	3 1/2"
	2	3 3/4"	4 1/4"	4 3/4"	5 3/4"
	3	5"	5 3/4"	6 1/2"	8"
	4	6 1/4"	7 1/4"	8 1/4"	10 1/4"
	5	7 1/2"	8 3/4"	10"	12 1/2"
	6	8 3/4"	10 1/4"	11 3/4"	14 3/4"
	7	10"	11 3/4"	13 1/2"	17"
	8	11 1/4"	13 1/4"	15 1/4"	19 1/4"
	9	12 1/2"	14 3/4"	17"	21 1/2"
	10	13 3/4"	16 1/4"	18 3/4"	23 3/4"

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 1/2"	S = 3/4"	S = 1"	S = 1 1/2"
<b>J, N</b>	1	2"	2 1/4"	2 1/2"	3"
	2	3 1/4"	3 3/4"	4 1/4"	5 1/4"
	3	4 1/2"	5 1/4"	6"	7 1/2"
	4	5 3/4"	6 3/4"	7 3/4"	9 3/4"
	5	7"	8 1/4"	9 1/2"	12"
	6	8 1/4"	9 3/4"	11 1/4"	14 1/4"
	7	9 1/2"	11 1/4"	13"	16 1/2"
	8	10 3/4"	12 3/4"	14 3/4"	18 3/4"
	9	12"	14 1/4"	16 1/2"	21"
	10	13 1/4"	15 3/4"	18 1/4"	23 1/4"

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 1/2"	S = 3/4"	S = 1"	S = 1 1/2"
<b>KA, K1, K2</b>	1	1 5/8"	1 7/8"	2 1/8"	2 5/8"
	2	2 7/8"	3 3/8"	3 7/8"	4 7/8"
	3	4 1/8"	4 7/8"	5 5/8"	7 1/8"
	4	5 3/8"	6 3/8"	7 3/8"	9 3/8"
	5	6 5/8"	7 7/8"	9 1/8"	11 5/8"
	6	7 7/8"	9 3/8"	10 7/8"	13 7/8"
	7	9 1/8"	10 7/8"	12 5/8"	16 1/8"
	8	10 3/8"	12 3/8"	14 3/8"	18 3/8"
	9	11 5/8"	13 7/8"	16 1/8"	20 5/8"
	10	12 7/8"	15 3/8"	17 7/8"	22 7/8"

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 1/2"	S = 3/4"	S = 1"	S = 1 1/2"
<b>M</b>	1	1 3/8"	1 5/8"	1 7/8"	2 3/8"
	2	2 5/8"	3 1/8"	3 5/8"	4 5/8"
	3	3 7/8"	4 5/8"	5 3/8"	6 7/8"
	4	5 1/8"	6 1/8"	7 1/8"	9 1/8"
	5	6 3/8"	7 5/8"	8 7/8"	11 3/8"
	6	7 5/8"	9 1/8"	10 5/8"	13 5/8"
	7	8 7/8"	10 5/8"	12 3/8"	15 7/8"
	8	10 1/8"	12 1/8"	14 1/8"	18 1/8"
	9	11 3/8"	13 5/8"	15 7/8"	20 3/8"
	10	12 5/8"	15 1/8"	17 5/8"	22 5/8"

## DUCT WIDTH D DIMENSION:

S = SLOT WIDTH (METRIC UNITS – MILLIMETERS)

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 13	S = 19	S = 25	S = 38
<b>A B</b>	1	41	48	54	67
	2	73	86	98	124
	3	105	124	143	181
	4	137	162	187	238
	5	168	200	232	295
	6	200	238	276	352
	7	232	276	321	410
	8	264	314	365	467
	9	295	352	410	524
	10	327	391	454	581

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 13	S = 19	S = 25	S = 38
<b>E</b>	1	57	64	70	83
	2	89	102	114	140
	3	121	140	159	197
	4	152	178	203	254
	5	184	216	248	311
	6	216	254	292	368
	7	248	292	337	425
	8	279	330	381	483
	9	311	368	425	540
	10	343	406	470	597

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 13	S = 19	S = 25	S = 38
<b>G</b>	1	64	70	76	89
	2	95	108	121	146
	3	127	146	165	203
	4	159	184	210	260
	5	191	222	254	318
	6	222	260	298	375
	7	254	298	343	432
	8	286	337	387	489
	9	318	375	432	546
	10	349	413	476	603

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 13	S = 19	S = 25	S = 38
<b>KA, K1, K2</b>	1	41	48	54	67
	2	73	86	98	124
	3	105	124	143	181
	4	137	162	187	238
	5	168	200	232	295
	6	200	238	276	352
	7	232	276	321	410
	8	264	314	365	467
	9	295	352	410	524
	10	327	391	454	581

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 13	S = 19	S = 25	S = 38
<b>C D</b>	1	51	57	64	76
	2	83	95	108	133
	3	114	133	152	191
	4	146	171	197	248
	5	178	210	241	305
	6	210	248	286	362
	7	241	286	330	419
	8	273	324	375	476
	9	305	362	419	533
	10	337	400	464	591

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 13	S = 19	S = 25	S = 38
<b>F, H, H2</b>	1	51	57	64	76
	2	83	95	108	133
	3	114	133	152	191
	4	146	171	197	248
	5	178	210	241	305
	6	210	248	286	362
	7	241	286	330	419
	8	273	324	375	476
	9	305	362	419	533
	10	337	400	464	591

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 13	S = 19	S = 25	S = 38
<b>J, N</b>	1	51	57	64	76
	2	83	95	108	133
	3	114	133	152	191
	4	146	171	197	248
	5	178	210	241	305
	6	210	248	286	362
	7	241	286	330	419
	8	273	324	375	476
	9	305	362	419	533
	10	337	400	464	591

Frame Type	No. of Slots	5050	5075	5010	5015
		5050R	5075R	5010R	5015R
		S = 13	S = 19	S = 25	S = 38
<b>M</b>	1	35	41	48	60
	2	67	79	92	117
	3	98	117	137	175
	4	130	156	181	232
	5	162	194	225	289
	6	194	232	270	346
	7	225	270	314	403
	8	257	308	359	460
	9	289	346	403	518
	10	321	384	448	575

## END CAP CONFIGURATIONS FOR VARIOUS MOUNTINGS:

SPECIFY MM, FF, MO, FO, MC, FC, OO, OC OR CC

**M - MITERED END CAP**

(Standard)

**O - OPEN END**

**C - FLAT END CAP**

**F - FLANGED END CAP**

Frame Type	X Dim.
A, B, C, F, H	1" (25)
D, G, H2	3/4" (19)

Field attachable. Suitable for stocking reps.

D = Duct length E = End cap position L = Overall length

## OVERALL LENGTH DIMENSIONS AND END CAP POSITION:

Frame Type	M		F		M		C		O		O		C	
	E	L	E	L	E	L†	E	L†	E	L	E	L	E	L
A, B	D - 1/2" (13)	D+1" (25)	D - 1/2" (13)	D+1 1/2" (38)	D - 1/4" (6)	D+1/2" (13)	D - 3/16" (5)	D+9/16" (14)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
C	D - 1/2" (13)	D+1" (25)	D - 1/2" (13)	D+1 1/2" (38)	D - 1/4" (6)	D+1/2" (13)	D - 3/16" (5)	D+9/16" (14)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
D	D - 1/2" (13)	D+1/2" (13)	D - 1/2" (13)	D+1" (25)	D - 1/4" (6)	D+1/4" (6)	D - 3/16" (5)	D+7/16" (11)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
E	D - 7/8" (22)	D	N/A	N/A	D - 7/16" (11)	D	D - 3/8" (10)	D+1/16" (2)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
F, H	D - 3/4" (19)	D+3/4" (19)	D - 3/4" (19)	D+1 1/4" (32)	D - 3/8" (10)	D+3/8" (10)	D - 5/16" (8)	D+7/16" (11)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
H2	D - 3/4" (19)	D+1/4" (6)	D - 3/4" (19)	D+7/8" (22)	D - 3/8" (10)	D+1/8" (3)	D - 5/16" (8)	D+5/16" (8)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)
G	D - 1 1/8" (29)	D	D - 1 3/8" (35)	D	D - 9/16" (14)	D	D - 1/2" (13)	D+1/16" (2)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)

† Configurations FO and FC: Add 1/4" (6) for frame types A, B, C, D, F, G, H and H2.

Frame Type	M		M		C		O		O		C		C	
	E	L	E	L	E	L	E	L	E	L	E	L	E	L
J	D - 3/4" (19)	D+3/4" (19)	D - 3/8" (10)	D+3/8" (10)	D - 1/16" (2)	D - 1/16" (2)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)	D - 1/8" (3)	D - 1/8" (3)
KA, K1, K2	D - 1/2" (13)	D+1" (25)	D - 1/4" (6)	D+1/2" (13)	D - 1/16" (2)	D - 1/16" (2)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)	D - 1/8" (3)	D - 1/8" (3)
M*, N*	D - 1/16" (2)	D - 1/16" (2)	D - 1/32" (1)	D - 1/32" (1)	D - 1/16" (2)	D - 1/16" (2)	D	D	D - 1/16" (2)	D - 1/16" (2)	D - 1/8" (3)	D - 1/8" (3)	D - 1/8" (3)	D - 1/8" (3)

\* These types have a flangeless mitered end cap which is the same extrusion profile as the frame.

B LINEAR DIFFUSERS AND BAR GRILLES



## STANDARD LAY-IN T-BAR APPLICATION:

Designed and fabricated specifically to integrate with standard exposed grid T-Bar Ceiling Systems.

Available in nominal lengths to suit both imperial and metric ceiling grid modules.

Imperial module lengths: 20", 24", 48" and 60".

Metric module lengths: 500, 600, 1200 and 1500 mm.

Also available in custom lengths for special applications and in multiple section assemblies for continuous paired T-Bar ceilings.

\* Type CC Flat Endcaps are not recommended for use with 9/16" (14) flat face T-bar.

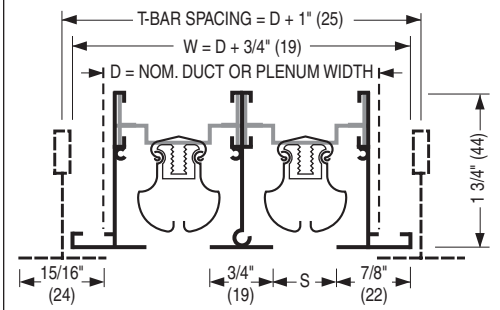
## DUCT WIDTH D DIMENSION:

S = SLOT WIDTH (IMPERIAL UNITS – INCHES)

Frame Type	No. of Slots	Imperial Units (inches)				Metric Units (mm)			
		5050	5075	5010	5015	5050	5075	5010	5015
		5050R	5075R	5010R	5015R	5050R	5075R	5010R	5015R
T, FL		S = 1/2"	S = 3/4"	S = 1"	S = 1 1/2"	S = 13	S = 19	S = 25	S = 38
	1	1 1/2"	1 3/4"	2"	2 1/2"	38	44	51	64
	2	2 3/4"	3 1/4"	3 3/4"	4 3/4"	70	83	95	121
	3	4"	4 3/4"	5 1/2"	7"	102	121	140	178
	4	5 1/4"	6 1/4"	7 1/4"	9 1/4"	133	159	184	235
	5	6 1/2"	7 3/4"	9"	11 1/2"	165	197	229	292
	6	7 3/4"	9 1/4"	10 3/4"	13 3/4"	197	235	273	349
	7	9"	10 3/4"	12 1/2"	16"	229	273	318	406
	8	10 1/4"	12 1/4"	14 1/4"	18 1/4"	260	311	362	464
	9	11 1/2"	13 3/4"	16"	20 1/2"	292	349	406	521
10	12 3/4"	15 1/4"	17 3/4"	22 3/4"	324	387	451	578	

### TYPE T FRAME

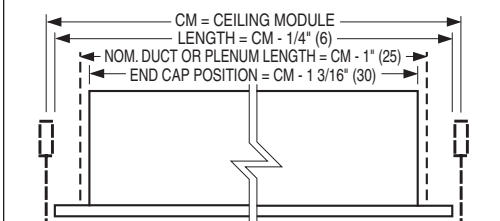
- For standard 15/16" (24) or \*9/16" (14) face lay-in T-Bar



### END CAP CONFIGURATIONS • TYPE T FRAME

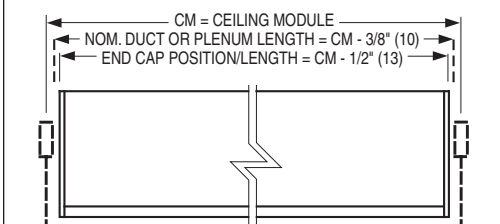
#### TYPE MM

- Mitered End Caps (standard)



#### \*TYPE CC

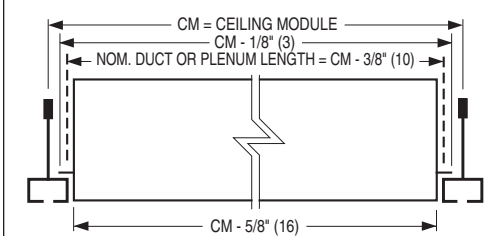
- Flat End Caps



### END CAP CONFIGURATION • TYPE FL FRAME

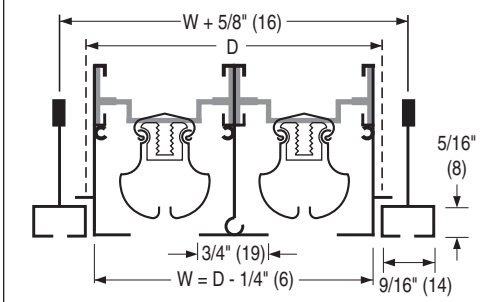
#### TYPE MM

- Mitered End Caps (standard)



### TYPE FL FRAME

- For Fineline® type ceilings



## FINELINE® TYPE CEILING SYSTEMS:

Nailor can fabricate the **5000 Series** to integrate with most available Fineline® or Regressed T-Bar type ceiling systems.

Available in nominal lengths to suit both imperial and metric ceiling grid modules.

Imperial module lengths: 24" and 48".

Metric module lengths: 600 and 1200 mm.

Note: Nominal 48" (1200) does not include a cross notch.

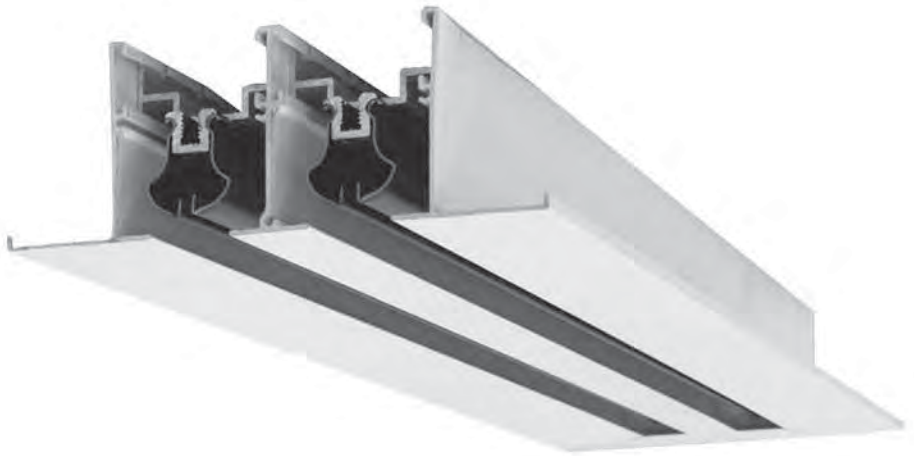
The Type FL frame is compatible with both the USG Interiors Inc. 'Donn® Fineline® and Rockfon® 'Ultraline™' 3500/3600 systems. For other ceiling systems, contact your Nailor representative.

'Fineline®' is a registered trademark of USG Interiors Inc.

'Ultraline™' is a registered trademark of Rockfon®.

**LINEAR SLOT DIFFUSERS FOR TECHZONE™ TYPE CEILINGS**

- COMPATIBLE WITH ARMSTRONG® AND USG LOGIX™ CEILING SYSTEMS



Model 5075TZ

**Supply Models:**

5075TZ 3/4" (19) Slot

**Return Models:**

5075TZR 3/4" (19) Slot

Model Series 5075TZ Linear Slot Ceiling Diffusers have been specially designed to provide both the unobtrusive appearance required for architectural excellence, and the full 180° pattern controller adjustment at minimum NC levels required for high engineering performance. Particularly suitable for variable air volume systems, they provide stable diffusion under large amounts of air with both constant and changing load conditions. The 5075TZ diffusers are compatible with Armstrong® TechZone™ and USG Logix™ ceiling systems. The diffusers are available with open or flat end caps and feature die-formed components to provide consistent quality and performance. Ideal for continuous length applications.

**STANDARD FEATURES:**

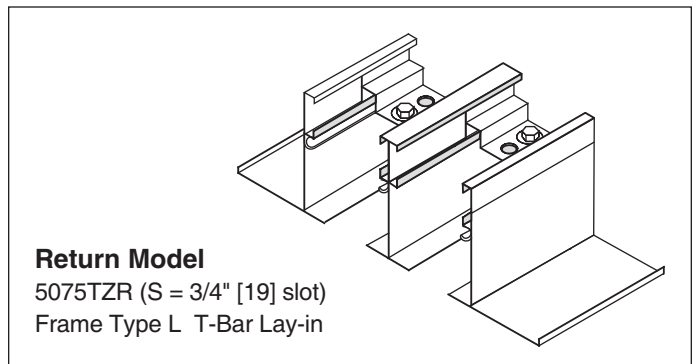
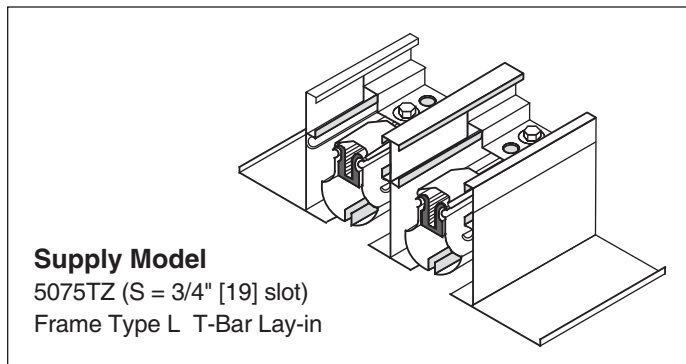
- Compatible with Armstrong TechZone™ and USG Logix™ ceiling systems. Available for Standard, Tegral, and Narrow T-Bar Lay-in ceilings.
- The volume and direction of the discharge air can be adjusted by moving the pattern controllers.
- The diffuser slot width is 3/4" (19).
- Available in either a 4" (102) module size up to 2 slots or a 6" (152) module size up to 4 slots.
- Available for Standard Ceiling Module lengths from sizes 24" (610) to 72" (1829).
- Sizes larger than 72" (1829) will be supplied in equal multiple sections. Alignment strips will be provided for superior field alignment.
- Model 5075TZR returns and Model 5075TZ supply diffusers are identical except for the omission of pattern controllers.

**CONSTRUCTION MATERIAL:**

Extruded aluminum frame with corrosion-resistant steel pattern controllers.

**FINISH OPTIONS:**

- AW Appliance White frame with black pattern controllers is standard. Other finishes are available.

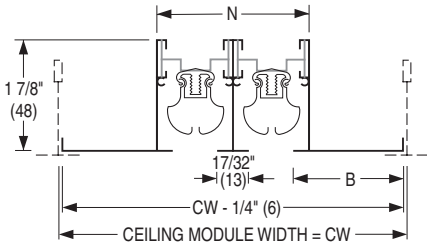


**FRAME TYPES FOR TECHZONE™ TYPE CEILINGS 4" (102) AND 6" (152) WIDE:**

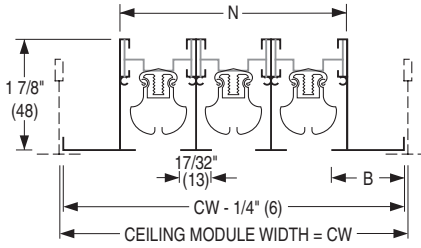
**B**  
LINEAR DIFFUSERS AND BAR GRILLES

**TYPE L 15/16" (24) & 9/16" (14) T-BAR LAY-IN**

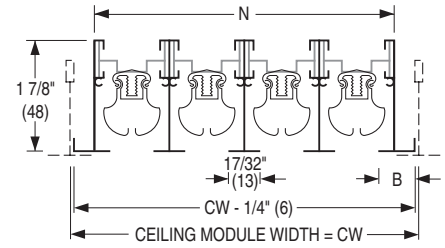
**2 Slot:**



**3 Slot:**

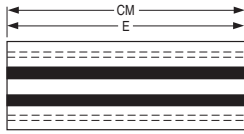


**4 Slot:**

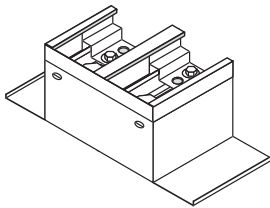
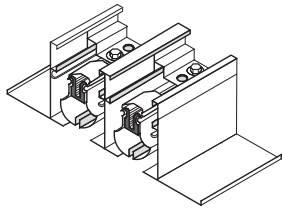
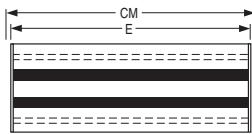


**END CAP CONFIGURATION**

**O – Open End**



**C – Flat End Cap**



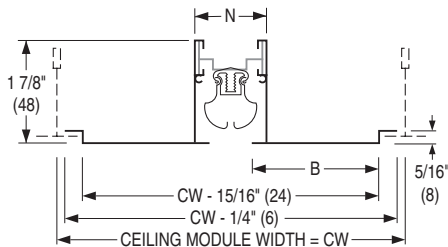
CM = Ceiling Module E = Overall Length

Ceiling Module Width CW	No. of Slots	Border B	Neck N
4"	1	1 1/2" (38)	1 3/8" (35)
	2	7/8" (22)	2 5/8" (67)
6"	1	2 1/2" (64)	1 3/8" (35)
	2	1 7/8" (48)	2 5/8" (67)
	3	1 1/4" (32)	3 7/8" (98)
	4	5/8" (16)	5 1/8" (130)

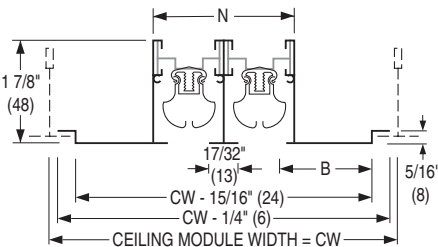
End Condition	Face Length E
CC	Ceiling Module – 1/4" (6)
OC	Ceiling Module – 1/8" (3)
OO	Ceiling Module

**TYPE TL 15/16" (24) T-BAR REGULAR LAY-IN**

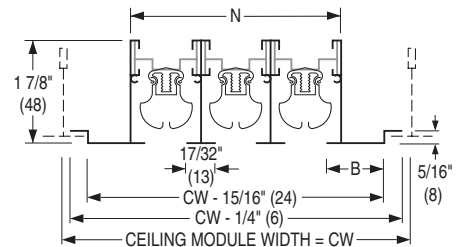
**1 Slot:**



**2 Slot:**

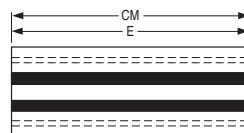


**3 Slot:**

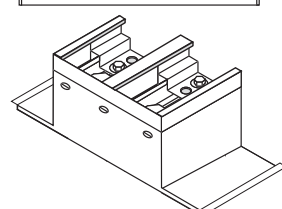
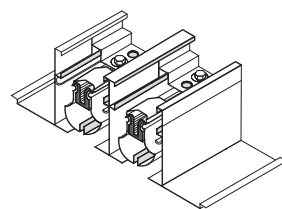
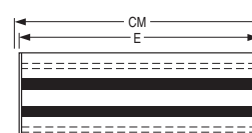


**END CAP CONFIGURATION**

**O – Open End**



**C – Flat End Cap**



CM = Ceiling Module E = Overall Length

Ceiling Module Width CW	No. of Slots	Border B	Neck N
4"	1	1 1/8" (29)	1 3/8" (35)
	2	1/2" (13)	2 5/8" (67)
6"	1	2 1/8" (54)	1 3/8" (35)
	2	1 1/2" (38)	2 5/8" (67)
	3	7/8" (22)	3 7/8" (98)

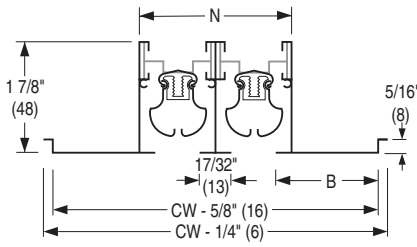
End Condition	Face Length E
CC	Ceiling Module – 1" (25)
OC	Ceiling Module – 1/2" (13)
OO	Ceiling Module

## FRAME TYPES FOR TECHZONE™ TYPE CEILINGING 4" (102) AND 6" (152) WIDE:

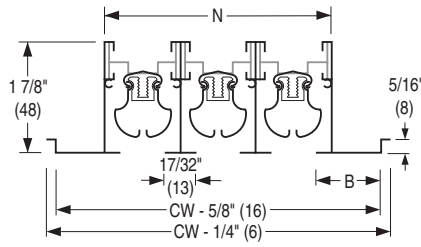
**B** LINEAR DIFFUSERS AND BAR GRILLES

### TYPE NT 9/16" (14) NARROW T-BAR LAY-IN

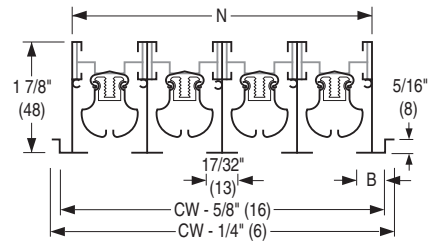
**2 Slot:**



**3 Slot:**

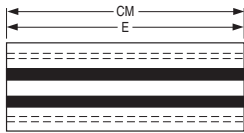


**4 Slot:**

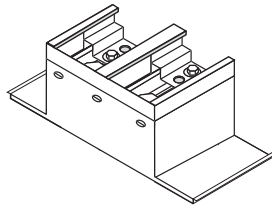
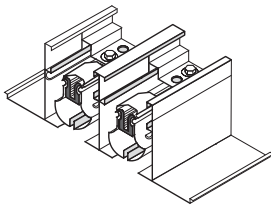
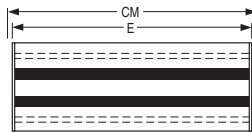


### END CAP CONFIGURATION

**O – Open End**



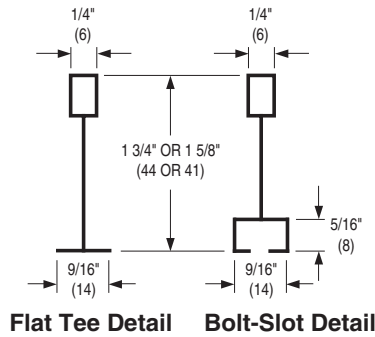
**C – Flat End Cap**



CM = Ceiling Module    E = Overall Length

Ceiling Module Width CW	No. of Slots	Border B	Neck N
4"	1	1 5/16" (33)	1 3/8" (35)
	2	11/16" (17)	2 5/8" (67)
6"	1	2 5/16" (59)	1 3/8" (35)
	2	1 11/16" (43)	2 5/8" (67)
	3	1 1/16" (27)	3 7/8" (98)
	4	7/16" (11)	5 1/8" (130)

End Condition	Face Length E
CC	Ceiling Module – 5/8" (16)
OC	Ceiling Module – 5/16" (8)
OO	Ceiling Module



## Options and Accessories

### 90° MITERED CORNERS:

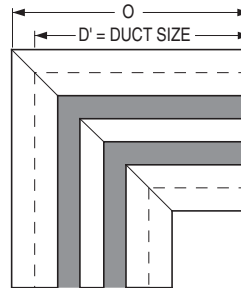
- 5050MC** • 1/2" (13) SLOT
- 5075MC** • 3/4" (19) SLOT
- 5010MC** • 1" (25) SLOT
- 5015MC** • 1 1/2" (38) SLOT

The standard mitered corners are 90° and 135°. Units are factory welded with precision to match and align with the associated straight leg.

Units are supplied with factory installed blank-offs in the slot (painted black) and are inactive.

### SPECIAL MITERED CORNERS • OTHER ANGLE

\*Available from 45 – 179° as SPL. (A detailed dimensional sketch is required for co-ordination with installing contractor).



D' = Duct Size		
Models	No. of Slots	D'
<b>5050MC</b> <b>5075MC</b>	1 to 4	12 (305)
	5 to 10	24 (610)
<b>5010MC</b> <b>5015MC</b>	1 to 4	16 (406)
	5 to 8	24 (610)
	9 to 10	36 (914)

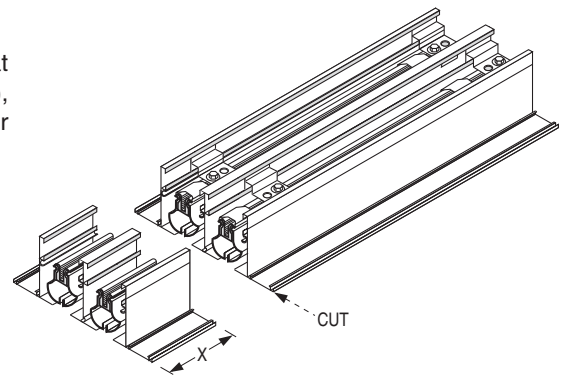
90° Mitered Corner Dimension 'O'

Frame Type					
A, B	C, F, H, H2, J, T	D	E, G	KA, K1, K2	M, N, FL
D' + 9/16 (14)	D' + 3/8 (10)	D' + 1/8 (3)	D' - 1/8 (3)	D' + 5/8 (16)	D'

### FIELD TRIMMING OF DIFFUSERS:

If "X" is less than 3" (76) at either end (6" (152) total), standard **Model 5000** or **5000R** can be field-cut.

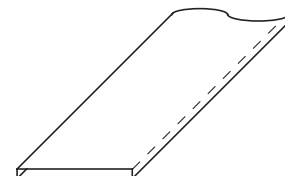
- Factory-Cut Diffusers **Model 5000** or **5000R** are ordered for a specific length from the factory, but can be trimmed as much as 6" (152) in length, (3" [76] from each end) with a fine tooth, high speed carbon steel metal cutting blade.



### BLANK-OFFS:

- 5050BO** for 1/2" (13) SLOT
- 5075BO** for 3/4" (19) SLOT
- 5010BO** for 1" (25) SLOT
- 5015BO** for 1 1/2" (38) SLOT

- Cold-rolled steel.
- Fits over neck.
- Black Finish
- Shipped in 6' (1829) lengths to be field-cut.



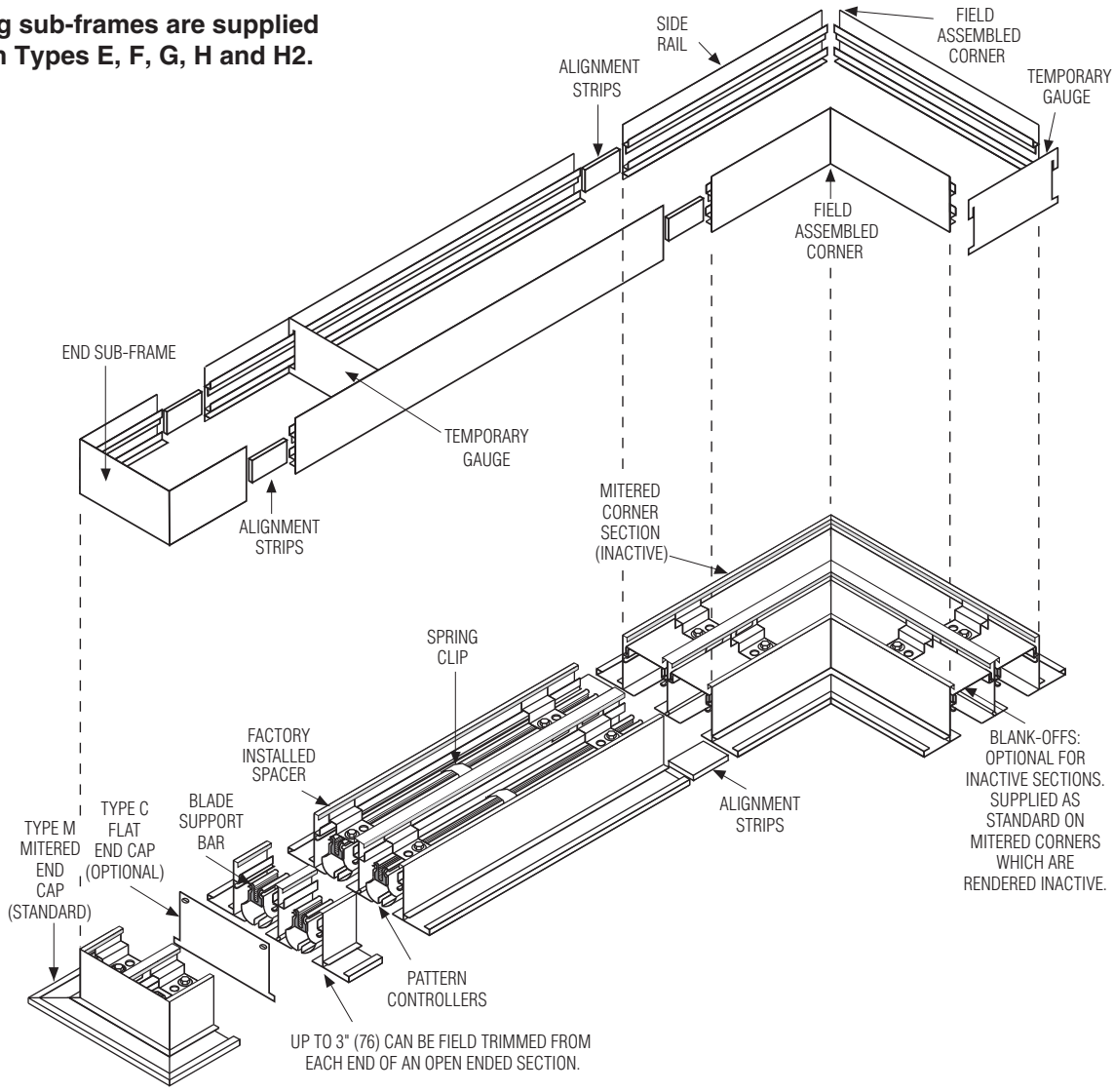


## TYPICAL DIFFUSER AND SUB-FRAME ASSEMBLY:

B

LINEAR DIFFUSERS AND BAR GRILLES

Mounting sub-frames are supplied only with Types E, F, G, H and H2.



### Diffuser Assembly Features:

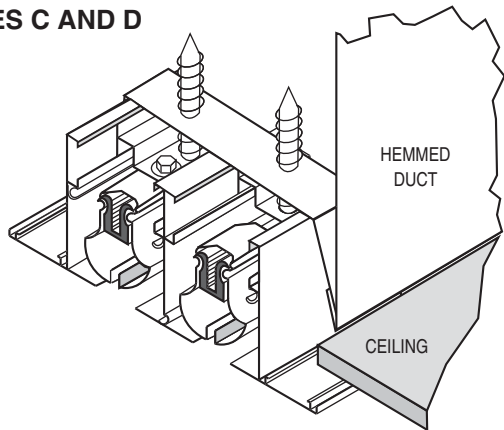
- Diffusers can be joined together end to end to form long continuous slots.
- The standard Type M end cap is mitered and offers a superior architectural finish on the visible surface.
- The optional Type F end cap can be field installed.
- The optional Type C flat end cap may be used where the diffuser ends at a wall or other stopping point.
- The standard 90° mitered corner section is factory welded and fully assembled to ensure a smooth professional finish. They are inactive.
- Alignment strips are factory supplied as standard on all multiple section frame and sub-frame assemblies and ensure close and positive alignment between sections.

### Sub-Frame Features:

- Supplied with Frame Types E, F, G, H and H2.
- Assures a clean, accurately dimensioned opening to receive the diffuser.
- Allows the diffuser to be installed at the end of the job, minimizing risk of damage or contamination from paint or plaster.
- Diffuser can be simply removed and replaced without damage to architectural ceiling finishes.
- Types E, F, G, H and H2 are ideal as a wet plaster ground. In this case they should be installed sufficiently proud to allow for the finished ceiling thickness.
- Types E and G are designed to leave a diffuser totally flush with the finished ceiling.
- Types F, H and H2 are designed to leave a surface mount diffuser appearance.
- Type E may also be used where a diffuser runs flush along a wall.

## HEMMED DUCT PREPARATION:

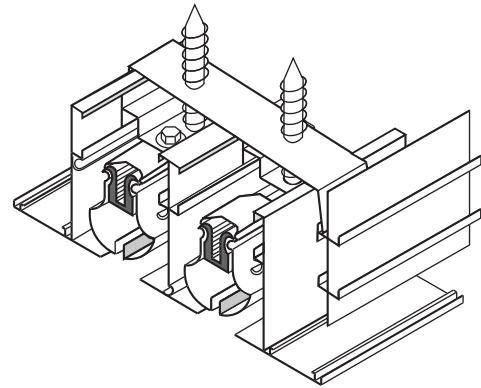
### TYPES C AND D



- Far and away the most popular type of installation. Simple and quick.
- Diffuser simply pushes up into duct until the legs of the factory supplied mounting straps locate into the hems of the duct.
- Factory supplied levelling screws then draw the diffuser up until it is tight and snug with the ceiling.
- Duct should be fabricated with a 1/2" (13) hem on both long sides and opened approximately 1/8" (3).

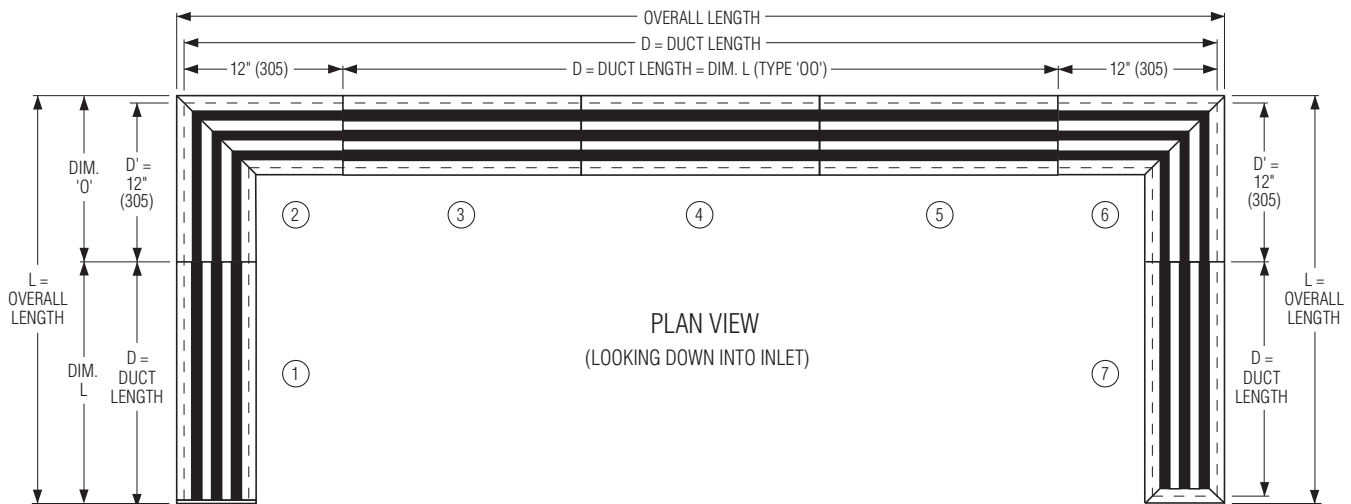
## AUXILIARY SUB-FRAME PREPARATION:

### TYPES E, F, G, H AND H2



- Sub-frame should be attached to inside of duct and/or a framed ceiling opening as deemed necessary.
- Factory supplied mounting straps locate into an extrusion slot in the sub-frame. Installation of diffuser is similar to the hemmed duct method shown to the left.

## CONTINUOUS RUN DIMENSIONS:



The above example illustrates a typical 3 slot installation with two 90° mitered corner sections.

- ① Type 'CO' End Cap configuration.
- ② and ⑥ 'MC' Mitered Corner Section.
- ③, ④ and ⑤ Type 'OO' End Cap configuration.
- ⑦ Type 'MO' End Cap configuration.

Each straight section, regardless of total duct length may be ordered as a single section.

#### Example:

- ① and ⑦ Each section may be ordered as a single item, regardless of total length.
- ③, ④ and ⑤ One section may be ordered, regardless of total length.

Multiple sections are sub-divided by the factory into equal length sections at the factories' discretion.

**Note:** It is extremely difficult to achieve a perfect installation where compound miters are involved, such as above, when all sections are ordered from the factory fabricated to suit finished duct dimensions. This is due to field tolerance variations which may prevent proper alignment and butting together of individual sections due to insufficient material.

It is recommended that section ③, ④ or ⑤ are ordered oversized by 3" (76) and field cut to suit field conditions. 'OO' configuration lengths can be trimmed by up to 6" (152). 3" (76) from each end.

## PERFORMANCE DATA:

### SUPPLY • CONTINUOUS PRESSURIZED PLENUM

#### Model 5050 • 1/2" (13) Slot

**B**  
LINEAR DIFFUSERS AND BAR GRILLES

No. of Slots	Total Pressure, Horizontal	.005	.020	.041	.074	.120	.173	.230	.310
	Total Pressure, Vertical	.003	.014	.027	.051	.083	.116	.158	.215
1	Airflow, CFM/FT.	5	10	15	20	25	30	35	40
	Throw, Horizontal	1-1-6	3-6-12	6-10-14	8-12-18	10-14-18	12-14-20	12-14-20	14-16-24
	Throw, Vertical	2	6	9	11	12	13	14	15
	Noise Criteria	–	–	17	21	26	31	35	38
2	Airflow, CFM/FT.	10	20	30	40	50	60	70	80
	Throw, Horizontal	1-3-9	4-9-16	6-12-20	10-16-22	14-18-24	16-20-28	18-20-30	18-22-32
	Throw, Vertical	3	7	12	14	15	17	18	20
	Noise Criteria	–	15	20	24	28	34	38	41
3	Airflow, CFM/FT.	15	30	45	60	75	90	105	120
	Throw, Horizontal	2-4-10	6-12-20	10-16-24	14-20-28	18-20-30	20-24-38	20-24-40	22-28-44
	Throw, Vertical	4	10	15	18	21	22	25	23
	Noise Criteria	–	16	21	26	31	36	40	43
4	Airflow, CFM/FT.	20	40	60	80	100	120	140	160
	Throw, Horizontal	3-5-12	8-12-22	12-18-28	16-22-32	20-24-40	22-28-44	24-30-48	26-32-52
	Throw, Vertical	6	11	16	20	22	24	26	29
	Noise Criteria	–	17	22	27	32	37	41	44
5	Airflow, CFM/FT.	25	50	75	100	125	150	175	200
	Throw, Horizontal	3-6-14	8-14-24	14-20-30	18-24-40	22-28-46	26-32-50	28-40-52	30-40-58
	Throw, Vertical	6	12	20	26	27	30	30	33
	Noise Criteria	–	18	23	28	33	38	42	45
6	Airflow, CFM/FT.	30	60	90	120	150	180	210	240
	Throw, Horizontal	4-7-16	10-16-28	14-20-38	20-28-44	24-32-50	28-40-54	30-42-58	32-46-64
	Throw, Vertical	6	14	20	25	27	30	33	34
	Noise Criteria	–	19	24	29	34	39	43	46
7	Airflow, CFM/FT.	35	70	105	140	175	210	245	280
	Throw, Horizontal	5-8-18	12-18-30	16-24-42	22-30-48	26-36-54	30-42-58	38-46-64	40-48-68
	Throw, Vertical	6	14	22	27	30	32	36	38
	Noise Criteria	–	19	24	29	34	39	43	46
8	Airflow, CFM/FT.	40	80	120	160	200	240	280	320
	Throw, Horizontal	6-10-20	14-20-32	18-30-44	24-36-52	28-40-58	32-46-64	40-48-68	42-52-72
	Throw, Vertical	7	15	24	29	33	36	39	40
	Noise Criteria	–	20	25	30	35	40	44	47

#### Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	9	10	15
Supply	- 3	0	+ 2	+ 3	+ 4	+ 5	+ 8
Return	0	+ 3	+ 4	+ 6	+ 7	+ 8	+ 10

#### Throw Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	10	12
Multiplier	0.70	1.0	1.25	1.40	1.55	1.70

#### Performance Notes:

- Data is based upon pressurized plenum application (non ducted) with no plenum effect for pressure or sound. Plenums should be sized to achieve equal velocity along the slot length. Keep duct inlet velocities below 700 fpm in order to maintain cataloged performance.
- All pressures are in inches w.g..
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities. Vertical throws are given at 50 fpm terminal velocity. Both under isothermal conditions.
- Throw data are based on active sections 4 ft. long. For other lengths, use the correction factor table above.

- Noise criteria [NC] values are based on 10 dB room absorption, re 10<sup>-12</sup> watts, for a 4 ft. section. For other lengths, use the correction factor table above. For vertical throw, deduct 10 NC.
- Throw values are for a 1-way air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
- Dash (–) in space indicates a Noise Criteria level of less than 15.

- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.018	.033
2	.035	.066
3	.053	.099
4	.070	.132
5	.088	.165
6	.105	.198
7	.123	.231
8	.140	.264

## PERFORMANCE DATA:

### SUPPLY • CONTINUOUS PRESSURIZED PLENUM

#### Models 5075 and 5075TZ • 3/4" (19) Slot

No. of Slots	Total Pressure, Horizontal	.004	.017	.030	.055	.089	.123	.176	.256
	Total Pressure, Vertical	.003	.012	.026	.042	.065	.092	.125	.174
1	Airflow, CFM/FT.	5	10	20	25	30	35	40	50
	Throw, Horizontal	1-1-5	2-5-14	5-9-16	7-14-21	12-16-23	14-16-23	16-18-25	16-21-28
	Throw, Vertical	2	6	10	12	13	14	15	16
	Noise Criteria	–	–	16	21	26	30	33	38
2	Airflow, CFM/FT.	10	20	40	50	60	70	80	100
	Throw, Horizontal	1-2-10	4-9-21	7-16-23	14-21-28	16-23-32	21-23-35	21-25-44	23-28-46
	Throw, Vertical	3	8	11	15	18	20	21	22
	Noise Criteria	–	–	19	24	29	33	36	41
3	Airflow, CFM/FT.	15	30	60	75	90	105	120	150
	Throw, Horizontal	2-4-12	6-12-23	12-18-30	16-23-35	21-28-46	23-30-48	28-32-53	28-35-55
	Throw, Vertical	6	10	15	19	20	24	25	27
	Noise Criteria	–	–	21	26	31	35	38	43
4	Airflow, CFM/FT.	20	40	80	100	120	140	160	200
	Throw, Horizontal	2-5-14	8-14-28	16-23-35	21-28-46	23-32-53	28-35-55	32-44-60	32-46-64
	Throw, Vertical	5	11	18	21	25	27	30	31
	Noise Criteria	–	–	22	27	32	36	39	44
5	Airflow, CFM/FT.	25	50	100	125	150	175	200	250
	Throw, Horizontal	3-7-16	9-16-32	16-23-46	23-32-53	28-37-58	32-46-62	35-48-67	44-53-74
	Throw, Vertical	6	12	18	25	28	30	34	35
	Noise Criteria	–	–	23	28	33	37	40	45
6	Airflow, CFM/FT.	30	60	120	150	180	210	240	300
	Throw, Horizontal	4-8-17	10-18-35	18-28-48	23-35-55	30-46-62	35-48-69	44-53-74	46-58-78
	Throw, Vertical	7	13	21	25	30	32	36	39
	Noise Criteria	–	–	24	29	34	38	41	46
7	Airflow, CFM/FT.	35	70	140	175	210	245	280	350
	Throw, Horizontal	5-9-18	11-21-38	21-30-53	28-44-60	32-48-67	44-53-74	46-58-81	51-60-85
	Throw, Vertical	8	16	22	29	33	35	40	42
	Noise Criteria	–	–	24	29	34	38	41	46
8	Airflow, CFM/FT.	40	80	160	200	240	280	320	400
	Throw, Horizontal	6-10-21	12-21-41	21-32-55	28-46-64	37-53-74	46-58-78	51-60-85	53-64-90
	Throw, Vertical	8	17	21	30	35	40	42	43
	Noise Criteria	–	15	25	30	35	39	42	47

#### Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	9	10	15
Supply	-3	0	+2	+3	+4	+5	+8
Return	0	+3	+4	+6	+7	+8	+10

#### Throw Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	10	12
Multiplier	0.70	1.0	1.25	1.40	1.55	1.70

#### Performance Notes:

- Data is based upon pressurized plenum application (non ducted) with no plenum effect for pressure or sound. Plenums should be sized to achieve equal velocity along the slot length. Keep duct inlet velocities below 700 fpm in order to maintain cataloged performance.
- All pressures are in inches w.g..
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities. Vertical throws are given at 50 fpm terminal velocity. Both under isothermal conditions.
- Throw data are based on active sections 4 ft. long. For other lengths, use the correction factor table above.

- Noise criteria [NC] values are based on 10 dB room absorption, re 10<sup>-12</sup> watts, for a 4 ft. section. For other lengths, use the correction factor table above. For vertical throw, deduct 10 NC.
- Throw values are for a 1-way air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
- Dash (–) in space indicates a Noise Criteria level of less than 15.

8. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.024	.039
2	.049	.078
3	.073	.117
4	.098	.156
5	.122	.195
6	.146	.234
7	.171	.273
8	.195	.312

## PERFORMANCE DATA:

### SUPPLY • CONTINUOUS PRESSURIZED PLENUM

#### Model 5010 • 1" (25) Slot

No. of Slots	Total Pressure, Horizontal	.004	.016	.036	.065	.098	.138	.192	.245
	Total Pressure, Vertical	.002	.009	.024	.038	.057	.082	.113	.148
1	Airflow, CFM/FT.	10	15	25	30	40	50	55	65
	Throw, Horizontal	1-4-10	3-6-13	8-13-18	10-16-21	13-16-23	16-18-26	18-18-26	18-21-29
	Throw, Vertical	2	8	12	13	15	16	17	18
	Noise Criteria	-	-	18	22	29	34	37	41
2	Airflow, CFM/FT.	20	30	50	60	80	100	110	130
	Throw, Horizontal	3-7-18	5-10-21	13-18-26	16-21-31	18-23-39	21-26-42	23-34-44	26-39-47
	Throw, Vertical	4	10	16	19	20	21	23	25
	Noise Criteria	-	-	21	25	32	37	40	44
3	Airflow, CFM/FT.	30	45	75	90	120	150	165	195
	Throw, Horizontal	5-9-21	8-14-26	16-21-31	18-26-42	23-29-47	26-31-49	29-34-55	31-36-57
	Throw, Vertical	6	11	18	22	25	27	30	31
	Noise Criteria	-	-	23	27	34	39	42	46
4	Airflow, CFM/FT.	40	60	100	120	160	200	220	260
	Throw, Horizontal	8-10-26	12-19-31	18-26-42	21-29-47	26-39-55	29-42-57	31-44-62	34-47-68
	Throw, Vertical	7	13	21	26	29	30	34	36
	Noise Criteria	-	-	24	28	35	40	43	47
5	Airflow, CFM/FT.	50	75	125	150	200	250	275	325
	Throw, Horizontal	10-12-29	16-21-36	20-29-47	23-34-52	31-44-60	39-47-68	42-49-73	44-52-78
	Throw, Vertical	8	15	22	27	30	36	37	40
	Noise Criteria	-	-	25	29	36	41	44	48
6	Airflow, CFM/FT.	60	90	150	180	240	300	330	390
	Throw, Horizontal	11-14-31	18-23-39	21-31-42	26-42-57	39-47-68	42-52-70	44-57-75	47-60-81
	Throw, Vertical	8	17	26	30	34	36	41	44
	Noise Criteria	-	15	26	30	37	42	45	49
7	Airflow, CFM/FT.	70	105	175	210	280	350	385	455
	Throw, Horizontal	12-16-39	20-26-44	26-39-55	29-44-60	42-52-73	47-55-78	49-60-83	52-62-88
	Throw, Vertical	9	18	28	32	37	41	43	48
	Noise Criteria	-	15	26	30	37	42	45	49
8	Airflow, CFM/FT.	80	120	200	240	320	400	440	520
	Throw, Horizontal	13-18-42	21-29-47	26-42-57	34-47-68	47-55-78	49-57-81	55-62-86	57-68-94
	Throw, Vertical	11	20	30	35	40	45	50	51
	Noise Criteria	-	16	27	31	38	43	46	50

#### Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	9	10	15
Supply	-3	0	+2	+3	+4	+5	+8
Return	0	+3	+4	+6	+7	+8	+10

#### Throw Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	10	12
Multiplier	0.70	1.0	1.25	1.40	1.55	1.70

#### Performance Notes:

- Data is based upon pressurized plenum application (non ducted) with no plenum effect for pressure or sound. Plenums should be sized to achieve equal velocity along the slot length. Keep duct inlet velocities below 700 fpm in order to maintain cataloged performance.
- All pressures are in inches w.g..
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities. Vertical throws are given at 50 fpm terminal velocity. Both under isothermal conditions.
- Throw data are based on active sections 4 ft. long. For other lengths, use the correction factor table above.

- Noise criteria [NC] values are based on 10 dB room absorption, re 10<sup>-12</sup> watts, for a 4 ft. section. For other lengths, use the correction factor table above. For vertical throw, deduct 10 NC.
- Throw values are for a 1-way air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
- Dash (-) in space indicates a Noise Criteria level of less than 15.

- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.030	.044
2	.060	.088
3	.090	.132
4	.121	.176
5	.151	.220
6	.181	.264
7	.211	.308
8	.241	.352

B LINEAR DIFFUSERS AND BAR GRILLES



## PERFORMANCE DATA:

### SUPPLY • CONTINUOUS PRESSURIZED PLENUM

#### Model 5015 • 1 1/2" (38) Slot

No. of Slots	Total Pressure, Horizontal	.017	.032	.056	.082	.118	.154	.203	.250
	Total Pressure, Vertical	.010	.019	.033	.049	.071	.093	.122	.150
1	Airflow, CFM/FT.	18	25	33	40	48	55	63	70
	Throw, Horizontal	3-5-9	5-8-12	7-10-14	8-11-15	10-12-17	11-13-18	12-14-19	13-15-20
	Throw, Vertical	9	12	13	15	16	17	18	19
	Noise Criteria	–	–	21	26	31	35	38	41
2	Airflow, CFM/FT.	35	50	65	80	95	110	125	140
	Throw, Horizontal	5-8-14	8-12-17	10-13-20	12-16-25	13-17-27	15-18-29	16-19-30	17-20-32
	Throw, Vertical	11	16	19	20	21	23	25	27
	Noise Criteria	–	17	24	29	34	38	41	44
3	Airflow, CFM/FT.	53	75	98	120	143	165	188	210
	Throw, Horizontal	7-10-17	10-14-20	13-17-28	15-19-31	16-20-33	19-22-35	20-27-36	22-28-38
	Throw, Vertical	12	18	23	25	27	30	31	35
	Noise Criteria	–	19	26	31	36	40	43	46
4	Airflow, CFM/FT.	70	100	130	160	190	220	250	280
	Throw, Horizontal	9-14-22	12-17-27	14-20-32	17-25-36	18-27-38	20-29-40	22-31-44	24-33-47
	Throw, Vertical	15	21	26	29	31	34	36	40
	Noise Criteria	–	20	27	32	37	41	44	47
5	Airflow, CFM/FT.	88	125	163	200	238	275	313	350
	Throw, Horizontal	11-15-25	13-19-31	16-23-35	20-28-39	24-30-43	27-32-47	28-33-50	30-35-53
	Throw, Vertical	17	22	27	30	34	37	39	43
	Noise Criteria	–	21	28	33	38	42	45	48
6	Airflow, CFM/FT.	105	150	195	240	285	330	375	420
	Throw, Horizontal	12-17-27	14-20-32	18-27-40	25-31-44	27-33-46	29-37-49	30-38-52	31-39-55
	Throw, Vertical	18	26	31	34	37	41	43	45
	Noise Criteria	15	22	29	34	39	43	46	49

#### Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	9	10	15
Supply	- 3	0	+ 2	+ 3	+ 4	+ 5	+ 8
Return	0	+ 3	+ 4	+ 6	+ 7	+ 8	+ 10

#### Throw Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	10	12
Multiplier	0.70	1.0	1.25	1.40	1.55	1.70

#### Performance Notes:

1. Data is based upon pressurized plenum application (non ducted) with no plenum effect for pressure or sound. Plenums should be sized to achieve equal velocity along the slot length. Keep duct inlet velocities below 700 fpm in order to maintain cataloged performance.
2. All pressures are in inches w.g..
3. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities. Vertical throws are given at 50 fpm terminal velocity. Both under isothermal conditions.

4. Throw data are based on active sections 4 ft. long. For other lengths, use the correction factor table above.
5. Noise criteria [NC] values are based on 10 dB room absorption, re 10<sup>-12</sup> watts, for a 4 ft. section. For other lengths, use the correction factor table above. For vertical throw, deduct 10 NC.
6. Throw values are for a 1-way air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

7. Dash (–) in space indicates a Noise Criteria level of less than 15.
8. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

## PERFORMANCE DATA:

### PLENUM RETURN

#### Model 5050R • 1/2" (13) Slot

No. of Slots	Static Pressure	.011	.024	.045	.070	.108	.184	.279	.421
1	Airflow, CFM/FT.	10	15	20	25	30	40	50	60
	Noise Criteria	-	-	-	20	26	34	39	45
2	Airflow, CFM/FT.	20	30	40	50	60	80	100	120
	Noise Criteria	-	-	-	23	28	37	42	48
3	Airflow, CFM/FT.	30	45	60	75	90	120	150	180
	Noise Criteria	-	-	-	25	31	39	44	50
4	Airflow, CFM/FT.	40	60	80	100	120	160	200	240
	Noise Criteria	-	-	20	26	30	38	45	51
5	Airflow, CFM/FT.	50	75	100	125	150	200	250	300
	Noise Criteria	-	-	21	27	32	40	45	53
6	Airflow, CFM/FT.	60	90	120	150	180	240	300	360
	Noise Criteria	-	-	22	29	33	41	46	53
7	Airflow, CFM/FT.	70	105	140	175	210	280	350	420
	Noise Criteria	-	-	23	29	34	42	47	53
8	Airflow, CFM/FT.	80	120	160	200	240	320	400	480
	Noise Criteria	-	-	23	30	34	43	48	54

#### Models 5075R and 5075TZR • 3/4" (19) Slot

No. of Slots	Static Pressure	.006	.028	.065	.110	.170	.250	.350	.465
1	Airflow, CFM/FT.	10	20	30	40	50	60	70	80
	Noise Criteria	-	-	-	25	30	38	42	46
2	Airflow, CFM/FT.	20	40	60	80	100	120	140	160
	Noise Criteria	-	-	21	29	35	40	46	49
3	Airflow, CFM/FT.	30	60	90	120	150	180	210	240
	Noise Criteria	-	-	23	31	38	42	47	51
4	Airflow, CFM/FT.	40	80	120	160	200	240	280	320
	Noise Criteria	-	-	24	33	38	44	47	52
5	Airflow, CFM/FT.	50	100	150	200	250	300	350	400
	Noise Criteria	-	-	25	33	40	44	48	53
6	Airflow, CFM/FT.	60	120	180	240	300	360	420	480
	Noise Criteria	-	-	26	34	40	45	49	54
7	Airflow, CFM/FT.	70	140	210	280	350	420	490	560
	Noise Criteria	-	-	27	35	40	46	49	54
8	Airflow, CFM/FT.	80	160	240	320	400	480	560	640
	Noise Criteria	-	-	28	36	41	46	49	56

#### Model 5010R • 1" (25) Slot

No. of Slots	Static Pressure	.020	.045	.070	.110	.165	.215	.291	.471
1	Airflow, CFM/FT.	20	30	40	50	60	70	80	100
	Noise Criteria	-	-	-	25	30	34	38	45
2	Airflow, CFM/FT.	40	60	80	100	120	140	160	200
	Noise Criteria	-	-	22	28	33	36	40	48
3	Airflow, CFM/FT.	60	90	120	150	180	210	240	300
	Noise Criteria	-	-	24	30	35	38	43	50
4	Airflow, CFM/FT.	80	120	160	200	240	280	320	400
	Noise Criteria	-	-	25	31	35	40	45	51
5	Airflow, CFM/FT.	100	150	200	250	300	350	400	500
	Noise Criteria	-	-	25	32	37	41	45	51
6	Airflow, CFM/FT.	120	180	240	300	360	420	480	600
	Noise Criteria	-	-	27	33	38	42	47	53
7	Airflow, CFM/FT.	140	210	280	350	420	490	560	700
	Noise Criteria	-	20	28	34	40	42	48	53
8	Airflow, CFM/FT.	160	240	320	400	480	560	640	800
	Noise Criteria	-	20	28	34	40	43	48	54

#### Model 5015R • 1 1/2" (38) Slot

No. of Slots	Static Pressure	.007	.029	.066	.117	.183	.263	.358	.468
1	Airflow, CFM/FT.	20	40	60	80	100	120	140	180
	Noise Criteria	-	-	21	29	33	40	44	48
2	Airflow, CFM/FT.	40	80	120	160	200	240	280	320
	Noise Criteria	-	-	25	33	34	44	48	52
3	Airflow, CFM/FT.	60	120	180	240	300	360	420	480
	Noise Criteria	-	15	26	34	40	45	49	53
4	Airflow, CFM/FT.	80	160	240	320	400	480	560	640
	Noise Criteria	-	17	28	36	42	47	52	55
5	Airflow, CFM/FT.	100	200	300	400	500	600	700	800
	Noise Criteria	-	17	28	36	42	47	52	55
6	Airflow, CFM/FT.	120	240	360	480	600	720	840	960
	Noise Criteria	-	18	29	37	43	48	52	56

#### Performance Notes:

- All pressures are in inches w.g..
- Noise Criteria [NC] values are based on a 10 ft. active section. For other lengths, use the correction factor table show here.
- Dash (-) in space indicates a Noise Criteria [NC] level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

#### Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	4	6	8	9	10	15	20	25	30
Correction	-8	-5	-4	-2	-1	0	+2	+3	+4	+5

## HOW TO ORDER

### LINEAR SLOT DIFFUSER – MODEL SERIES 5000

MODELS 5050, 5075, 5010, 5015, 5050R, 5075R, 5010R, 5015R, 5050BO, 5075BO, 5010BO, 5015BO

EXAMPLE: 5075 - 48" x 2 SLOT - C - AW - MM - —

#### 1. Models

##### Supply

5050	1/2" (13) Slot
5075	3/4" (19) Slot
5010	1" (25) Slot
5015	1 1/2" (38) Slot

##### Return

5050R	1/2" (13) Slot
5075R	3/4" (19) Slot
5010R	1" (25) Slot
5015R	1 1/2" (38) Slot

##### Blank-Off

5050BO	1/2" (13) Slot – 6 ft. long
5075BO	3/4" (19) Slot – 6 ft. long
5010BO	1" (25) Slot – 6 ft. long
5015BO	1 1/2" (38) Slot – 6 ft. long

#### 2. Nominal Length

inches or mm's

#### 3. No. of Slots

1 through 10

#### 4. Frame or Frame/Sub-Frame Combination

A	1 1/8" (29) Flange Frame, screwholes
B	1 1/8" (29) Flange Frame, no screwholes
C	1 1/8" (29) Flange Frame, concealed mounting
D	7/8" (22) Flange Frame, concealed mounting
E	3/4" (19) Flush Frame/sub-frame, concealed mounting
F	1 1/8" (29) Flange Frame/sub-frame, concealed mounting
FL	Fineline® Frame
G	7/8" (22) Flush Frame/plaster sub-frame, concealed mounting
H	1 1/8" (29) Flange Frame/plaster sub-frame, concealed mounting
H2	7/8" (22) Flange Frame/plaster sub-frame, concealed mounting

\*J Tape & Spackle Frame, concealed mounting

\*KA Tape & Spackle Frame, Countersunk screw holes (both sides)

\*K1 Tape & Spackle Frame, HC5 Hard Ceiling Clip, 1/2" (13) drywall (both sides)

\*K2 Tape & Spackle Frame, HC1 Hard Ceiling Clip, 5/8" (16) drywall (both sides)

M Flangeless Frame/Duct mounting

N Spline Frame, concealed mounting

T 7/8" (22) Flange Frame – T-Bar

#### 5. Finish

AW	Appliance White (default)
AL	Aluminum
BW	British White
BK	Black
DBP	Dark Bronze Paint
LBP	Light Bronze Paint
MBP	Medium Bronze Paint
MI	Mill
PC	Prime Coat
PPA	Paint Prepared Aluminum
SP	Special Custom Color
SA	Satin (clear) anodized
BC	Brushed and clear coat lacquer

#### 6. End Cap Configuration

MM	Mitered Mitered (default)
MO	Mitered Open
MC	Mitered Flat
OO	Open Open
OC	Open Flat
CC	Flat Flat
FF	Flanged Flanged
FO	Flanged Open
FC	Flanged Flat

#### OPTIONS & ACCESSORIES

##### 7. Angle Cut

—	None (default)
AC1	One End, Specify Angle
AC2	Both Ends, Specify Angle

#### End Cap Availability

Frame or Frame/Subframe Combination	End Cap
A, B, C, D, E, F, G, H, H2	M, C, F, O
FL	M, O
J, KA, K1, K2, T	M, C, O
M, N	C, O

#### Notes:

1. Flanged end caps (FF) may be shipped loose upon request for field attachment and are intended for use with Field Cut sections or for use by stocking representatives.
2. It is helpful to include a sketch for multiple units with mitered corners and angle cuts. Specify exact outside length of diffuser run and angles.
3. For lay-in T-Bar installations, specify nominal T-Bar opening length.
4. Frame type T with Type CC end caps is not recommended for use with 9/16" (14) lay-in T-Bar.
5. Blank-offs are supplied in 6 ft. sections for field trimming. Specify No. of slots only.
6. \*Frame Types J, KA, K1 and K2 are supplied with "MI" Mill finish on the outer frame and AW Appliance White on the center tees.

## HOW TO ORDER

### MITERED CORNER SECTION – LINEAR SLOT DIFFUSER – MODEL SERIES 5000 MODELS 5050MC, 5075MC, 5010MC, 5015MC

EXAMPLE: 5075MC - 2 SLOT - 12 - C - AW - 90

**1. Models**

- 5050MC 1/2" (13) Slot
- 5075MC 3/4" (19) Slot
- 5010MC 1" (25) Slot
- 5015MC 1 1/2" (38) Slot

**2. No. of Slots**

1 through 10

**3. Duct Length O. D.**

- 12 12" Outside Length
- 16 16" Outside Length
- 24 24" Outside Length
- 36 36" Outside Length

(see page B16)

**4. Frame or Frame/Sub-Frame Combination**

- A 1 1/8" (29) Flange Frame, screwholes
- B 1 1/8" (29) Flange Frame, no screwholes
- C 1 1/8" (29) Flange Frame, concealed mounting
- D 7/8" (22) Flange Frame, concealed mounting
- E 3/4" (19) Flush Frame & sub-frame, concealed mtg.
- F 1 1/8" (29) Flange Frame & sub-frame, concealed mtg.
- FL Finline® Frame
- G 7/8" (22) Flush Frame w/plaster & tile sub-frame, concealed mounting
- H 1 1/8" (29) Flange Frame w/plaster & tile sub-frame, concealed mounting
- H2 7/8" (22) Flange Frame w/plaster & tile sub-frame, concealed mounting
- \*J Tape & Spackle Frame, concealed mounting
- \*KA Tape & Spackle Frame, Countersunk screw holes (both sides)
- \*K1 Tape & Spackle Frame, HC5 Hard Ceiling Clip, 1/2" (13) drywall (both sides)
- \*K2 Tape & Spackle Frame, HC1 Hard Ceiling Clip, 5/8" (16) drywall (both sides)
- M Flangeless Frame/Duct mounting
- N Spline Frame, concealed mounting
- T 7/8" (22) Flange Frame – T-Bar

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BW British White
- BK Black
- DBP Dark Bronze Paint
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- MI Mill
- PC Prime Coat
- PPA Paint Prepared Aluminum
- SP Special Custom Color
- SA Satin (clear) anodized
- BC Brushed and clear coat lacquer

**6. Mitered Angle**

- 90 90° (default)
- 135 135°
- AN Degree of Angle (Specify angle = \_\_\_\_ )

**Notes:**

1. It is helpful to include a sketch for multiple units with mitered corners and angle cuts. Specify exact outside length of diffuser run and angles.
2. Mitered corner selection is supplied inactive with integral blank-offs.
3. \*Frame Types J, KA, K1 and K2 are supplied with "MI" Mill finish on the outer frame and AW Appliance White on the center tees.

## HOW TO ORDER

### TECHZONE™ LINEAR SLOT DIFFUSERS

#### MODEL SERIES 5075TZ • 3/4" (19) SLOT • 4" (102) AND 6" (152) CEILING MODULE

EXAMPLE: 5075TZ - 48" x 2 SLOT - 4" - L - AW - CC

1. **Models**

**Slot Width / Fabrication**

**Supply**

5075TZ 3/4" (19) Slot

**Return**

5075TZR 3/4" (19) Slot

2. **Nominal Length**

inches or mm's

3. **No. of Slots**

1, 2, 3, 4

4" (102) Ceiling Module, 1 and 2 slot only.

6" (152) Ceiling Module.

4. **Ceiling Module Width**

04 4" (102) Wide

06 6" (152) Wide

5. **Frame Type**

L Lay-in T-Bar

NT Narrow T-Bar Lay-in

TL Tegular Lay-in

6. **Finish**

AW Appliance White (default)

AL Aluminum

BW British White

MI Mill

PC Prime coat paint

7. **End Cap Configuration**

CC Flat Flat (default)

OO Open Open

OC Open Flat

**Notes:**

1. Nailor 5075TZ Series Linear Diffusers are compatible with both Armstrong® TechZone™ and USG Interiors, Inc.® Logix™ Ceiling Systems.

2. Ensure Diffuser Frame Type selection correctly matches architectural suspension ceiling system T-Bar and ceiling panel type selection.

Frame Type L is for standard 15/16" (24) flat T-Bars usually with flush ceiling tiles.

Frame Type NT is for both 9/16" (14) flat T-Bars usually with tegular (drop-face) ceiling tiles and 9/16" (14) Bolt-Slot (regressed) T-Bars with tegular ceiling tiles which provides a flush finish.

Frame Type TL is for standard 15/16" (24) flat T-Bars with tegular (drop-face) ceiling tiles.

3. Frame Type TL is not available in 4 slots.



## HOW TO SPECIFY

### LINEAR SLOT DIFFUSERS – MODEL SERIES 5000

#### MODELS 5015, 5010, 5075, 5050, 5015R, 5010R, 5075R, 5050R

##### SUGGESTED SPECIFICATION:

###### Models 5015, 5010, 5075, 5050

Furnish and install **Nailor Model** (select one) **5015** (1 1/2" [38] slot), **5010** (1" [25] slot), **5075** (3/4" [19] slot), or **5050** (1/2" [13] slot) **Linear Slot Supply Diffusers** of the sizes and capacities shown on the plans and air distribution schedules. The maximum length of a single section shall be 72" (1829) long. All sizes larger than 72" (1829) will be provided in continuous multiple sections. Alignment strips are to be provided for joining continuous diffuser sections together. The frame borders and end caps shall be extruded aluminum with extruded aluminum spacers. The linear shall be supplied in 1 – 10 slots wide as specified. Pattern deflectors shall have an aerodynamic 'ice tong' shape that can be adjusted to regulate the volume and direction of the airflow. The maximum length of the deflectors shall be 36" (914), longer sizes shall be provided in multiple sections. The pattern deflector finish shall be black. The frame/border finish is to be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the linear slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

###### Models 5015R, 5010R, 5075R, 5050R

Furnish and install **Nailor Model** (select one) **5015R** (1 1/2" [38] slot), **5010R** (1" [25] slot), **5075R** (3/4" [19] slot), or **5050R** (1/2" [13] slot) **Linear Slot Return Diffusers** of the sizes and capacities shown on the plans and air distribution schedules. The maximum length of a single section shall be 72" (1829) long. All sizes larger than 72" (1829) will be provided in continuous multiple sections. Alignment strips are to be provided for joining continuous diffuser sections together. The frame border and end caps shall be extruded aluminum with extruded aluminum spacers. The linear shall be supplied in 1 – 10 slots wide as specified. The finish is to be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the linear slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

### TECHZONE™ LINEAR SLOT DIFFUSERS – MODEL SERIES 5000TZ

#### MODELS 5075TZ, 5075TZR

##### SUGGESTED SPECIFICATION:

###### Model 5075TZ

Furnish and install **Nailor Model 5075TZ** (3/4" [19] slot) **Linear Slot Supply Diffusers for TechZone™ Ceilings** of the sizes and capacities as shown on the plans and air distribution schedules. The linear diffuser must fit a lay-in style T-Bar as specified in either a 4" (102) or 6" (152) ceiling module width, as determined by the TechZone™ ceiling system selected. The linear shall be supplied with 1 – 4 slots as specified. The maximum length of a single section shall be 72" (1829) long. All sizes larger than 72" (1829) will be provided in continuous multiple sections. Alignment strips are to be provided for joining continuous diffuser sections together. The frame borders and end caps shall be extruded aluminum with extruded aluminum spacers. Corrosion-resistant steel pattern deflectors shall have an aerodynamic "ice tong" shape that can be adjusted to regulate the volume and direction of the airflow. Pattern deflector finish shall be black. The maximum length of the deflectors shall be 36" (914), longer sizes shall be provided in multiple sections. The frame/border finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the linear slot diffusers, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

###### Model 5075TZR

Furnish and install **Nailor Model 5075TZR** (3/4" [19] slot) **Linear Slot Return Diffusers for TechZone™ Ceilings** of the sizes and capacities as shown on the plans and air distribution schedules. The linear diffuser will have 1 – 4 slots, must fit a lay-in style T-Bar, as specified, and fit either a 4" (102) or 6" (152) ceiling module width, as determined by the TechZone™ ceiling system selected. The maximum length of a single section shall be 72" (1829) long. All sizes larger than 72" (1829) will be provided in continuous multiple sections. Alignment strips are to be provided for joining continuous diffuser sections together. The frame borders and end caps shall be extruded aluminum with extruded aluminum spacers. Model 5075TZR is a matching return diffuser and supplied without pattern controllers. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the linear slot diffusers, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

## LINEAR SLOT DIFFUSER PLENUMS

- ADAPTORS FOR MODEL SERIES 5000 LINEAR SLOT 'ICE TONG' DIFFUSERS
- HEMMED OR STRAIGHT LEG
- STANDARD OR MODIFIED MODELS
- 1 THROUGH 8 SLOTS

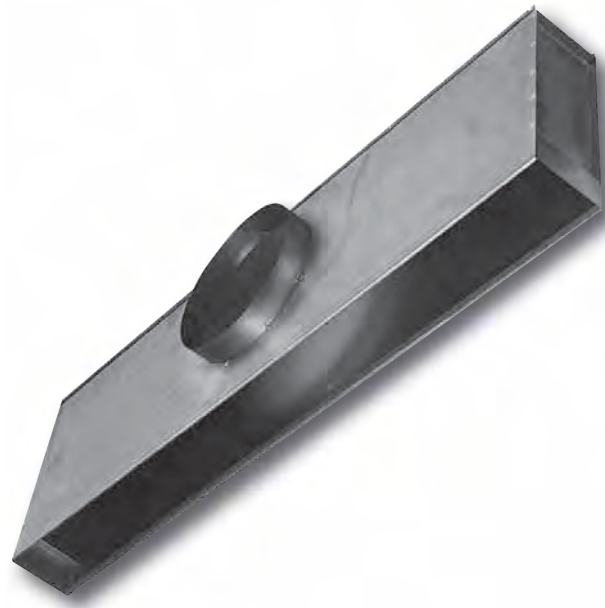
### Standard Models:

- 5350(I) 1/2" (13) Slot
- 5375(I) 3/4" (19) Slot
- 5310(I) 1" (25) Slot
- 5315(I) 1 1/2" (38) Slot

### Modified Performance Models:

- 5350(I)MP 1/2" (13) Slot
- 5375(I)MP 3/4" (19) Slot
- 5310(I)MP 1" (25) Slot
- 5315(I)MP 1 1/2" (38) Slot

- Suffix 'I' adds internal insulation



Model 5375

Model Series 5300 Diffuser Plenums are designed specifically to fit the 5000 Series 'Ice Tong' Linear Slot Diffusers. They have been designed for flexible duct connection with a model to suit each of the various frame/sub-frame 5000 Series combinations available. For drywall ceiling mounted applications, the plenums are installed separately. Unless there is access to the ceiling space, the plenum is intended to be installed during the drywall installation. Most applications of this type utilize concealed mounting straps on the 5000 Series. The plenums may be supplied with a hemmed leg into which the mounting straps snap or they locate in extrusion slots on sub-frames as the linear is drawn up to the plenum from below the ceiling. Model Series 5300 Plenums save on-site fabrication and field labor as well as maximizing performance of Model Series 5000. When room lay-out changes occur, the plenums can be simply relocated to satisfy the re-arrangement of air distribution requirements. The airflow discharge maintains a horizontal pattern that is close and tight to the ceiling throughout the full range of cataloged air volumes. Excellent for variable air volume applications. Model Series 5300MP Modified Performance Plenums are fabricated in a similar manner to the 5300 Series with the addition of internal sloping baffles for reduced throw and increased spread of the air pattern.

### STANDARD FEATURES:

- Standard nominal lengths are 20", 24", 30", 36", 48", 60" and 72" (500, 600, 750, 900, 1200, 1500 and 1800 mm).
- Widths available to fit Model Series 5000 and 5000R with option of 1 to 8 slots.
- Easily installed with flexible duct.
- Ends caps can be turned up to allow plenums to be installed on continuous runs.

### CONSTRUCTION MATERIAL:

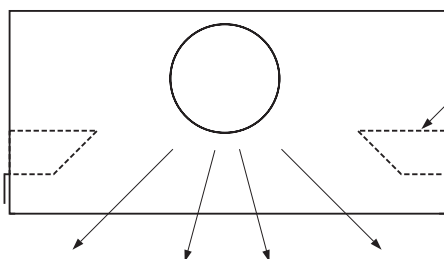
Corrosion-resistant steel.

### OPTIONS & ACCESSORIES:

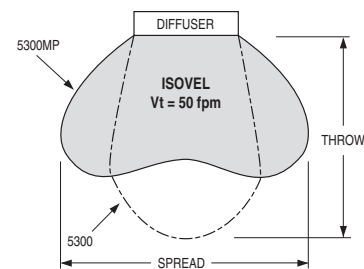
- Internal insulation for Models 5350I(MP), Models 5375I(MP), 5310I(MP) & 5315IMP or 1/4" (6) coated fiberglass or 3/8" (10) fiber-free foam.
- EX External Foil Back insulation.
- ID Inlet dampers with hand locking quadrant are available.

- IDCO Cable Operated Damper with a radial sliding blade design factory mounted on the inlet.

### MP Modified Performance



INTEGRAL BAFFLES  
REDUCE THROW  
AND INCREASE  
SPREAD FOR  
IMPROVED COMFORT  
IN SHORT-THROW  
APPLICATIONS.



## DIMENSIONAL DATA:

### ACCESSORIES FOR MODEL SERIES 5000 LINEAR SLOT ICE TONG DIFFUSER • 1 TO 8 SLOT MODELS 5350, 5375, 5310 AND 5315(I)(MP)

**B** LINEAR DIFFUSERS AND BAR GRILLES

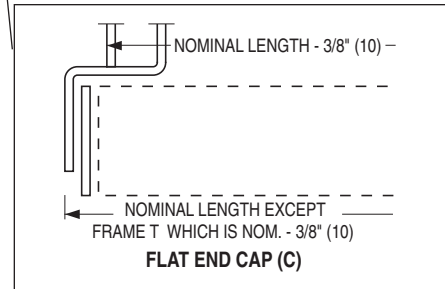
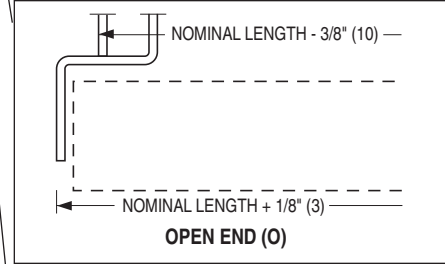
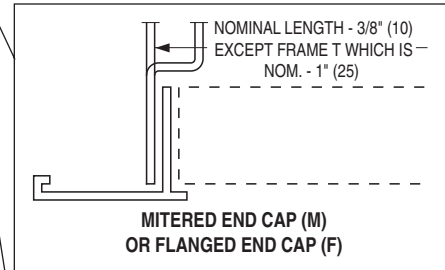
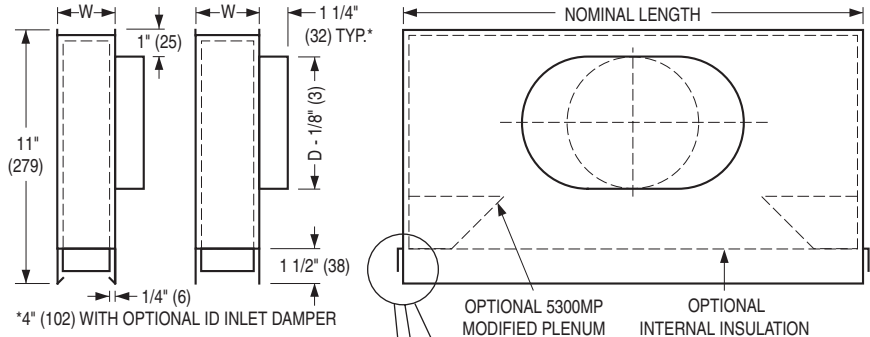
Nominal Length		Standard Nominal Inlets (D)	
inches	mm	inches	mm
24	610	4, 5, 6, 8, 10	102, 127, 152, 203, 254
30	762		
36	914		
48	1219	6, 8, 10, 12, 14	152, 203, 254, 305, 356
60	1524		
72	1829		

Plenum		Inlet Type / Size	
Code	Height	D (Round)	D (Oval)
H11	11" (279)	04 - 08	10 - 14
H13	13" (330)	04 - 08, 10 - 14	12 - 14
H15	15" (381)	04 - 08, 10R, 12R	14
H17	17" (432)	04 - 08, 10R - 14R	—

Equivalent oval: 10" (254) = 11" x 7 7/8" (279 x 200);  
 12" (305) = 14 1/8" x 7 7/8" (359 x 200);  
 14" (356) = 17 5/16" x 7 7/8" (440 x 200).

**HEMMED LEG FRAME TYPES:**  
C, D, J, N

**STRAIGHT LEG FRAME TYPES:**  
A, B, E, F, FL, G, H, H2, KA, K1, K2, M, T



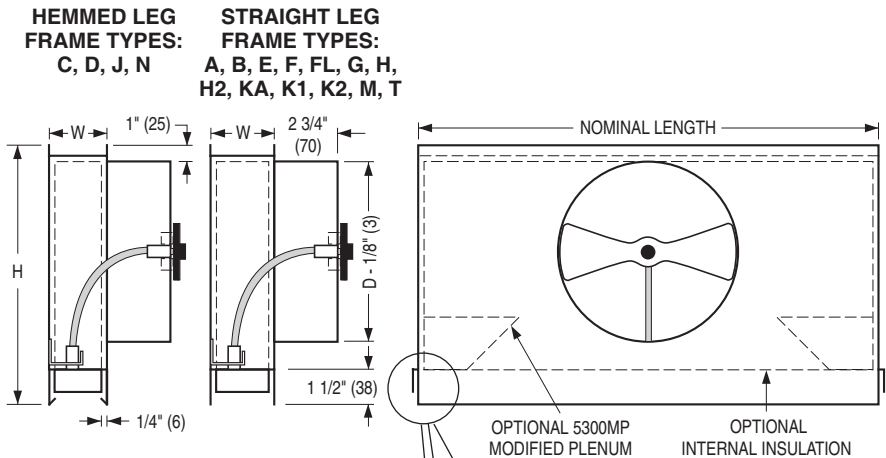
Model	No. of Slots	Plenum Width (W) For Various Frame Types									
		Imperial Units (inches)					Metric Units (mm)				
		A, B, FL, KA, K1, K2, M, T	C, D, F, J, H, H2, N	E	G	A, B, FL, KA, K1, K2, M, T	C, D, F, J, H, H2, N	E	G		
5350	1	1 1/2	2	2 1/4	2 1/2	38	51	57	64		
5375		1 3/4	2 1/4	2 1/2	2 3/4	44	57	64	70		
5310		2	2 1/2	2 3/4	3	51	64	70	76		
5315		2 1/2	3	3 1/4	3 1/2	64	76	83	89		
5350	2	2 3/4	3 1/4	3 1/2	3 3/4	70	83	89	95		
5375		3 1/4	3 3/4	4	4 1/4	83	95	102	108		
5310		3 3/4	4 1/4	4 1/2	4 3/4	95	108	114	121		
5315		4 3/4	5 1/4	5 1/2	5 3/4	121	133	140	146		
5350	3	4	4 1/2	4 3/4	5	102	114	121	127		
5375		4 3/4	5 1/4	5 1/2	5 3/4	121	133	140	146		
5310		5 1/2	6	6 1/4	6 1/2	140	152	159	165		
5315		7	7 1/2	7 3/4	8	178	191	197	203		
5350	4	5 1/4	5 3/4	6	6 1/4	133	146	152	159		
5375		6 1/4	6 3/4	7	7 1/4	159	171	178	184		
5310		7 1/4	7 3/4	8	8 1/4	184	197	203	210		
5315		9 1/4	9 3/4	10	10 1/4	235	248	254	260		
5350	5	6 1/2	7	7 1/4	7 1/2	165	178	184	191		
5375		7 3/4	8 1/4	8 1/2	8 3/4	197	210	216	222		
5310		9	9 1/2	9 3/4	10	229	241	248	254		
5315		11 1/2	12	12 1/4	12 1/2	292	305	311	318		
5350	6	7 3/4	8 1/4	8 1/2	8 3/4	197	210	216	222		
5375		9 1/4	9 3/4	10	10 1/4	235	248	254	260		
5310		10 3/4	11 1/4	11 1/2	11 3/4	273	286	292	298		
5315		13 3/4	14 1/4	14 1/2	14 3/4	349	362	368	375		
5350	7	9	9 1/2	9 3/4	10	229	241	248	254		
5375		10 3/4	11 1/4	11 1/2	11 3/4	273	286	292	298		
5310		12 1/2	13	13 1/4	13 1/2	318	330	337	343		
5315		16	16 1/2	16 3/4	17	406	419	425	432		
5350	8	10 1/4	10 3/4	11	11 1/4	260	273	279	286		
5375		12 1/4	12 3/4	13	13 1/4	311	324	330	337		
5310		14 1/4	14 3/4	15	15 1/4	362	375	381	387		
5315		18 1/4	18 3/4	19	19 1/4	464	476	483	489		

**DIMENSIONAL DATA:**

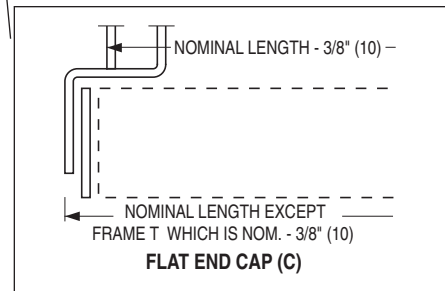
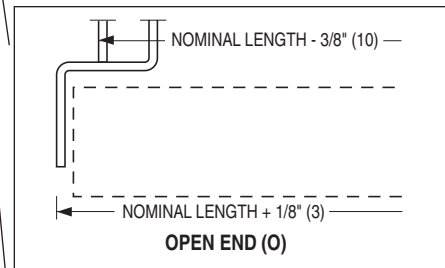
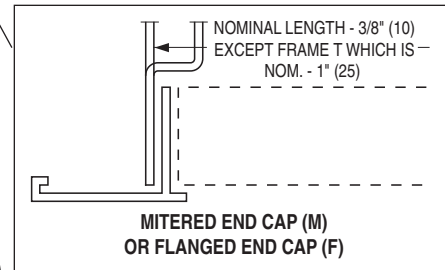
**ACCESSORIES FOR MODEL SERIES 5000 LINEAR SLOT ICE TONG DIFFUSER • 1 TO 8 SLOT MODELS 5375(I), 5310(I), 5315(I), 5375(I)MP, 5310(I)MP, 5315(I)MP WITH IDCO OPTION**

Nominal Length		Standard Nominal Inlets (D)	
inches	mm	inches	mm
20	508	6, 8, 10	152, 203, 254
24	610		
30	762		
36	914		
48	1219	6, 8, 10, 12, 14	152, 203, 254, 305, 356
60	1524		
72	1829		

Plenum		Inlet Type / Size
Code	Height	D (Round)
H11	11" (279)	06 - 08
H13	13" (330)	10R
H15	15" (381)	12R
H17	17" (432)	14R



Model	No. of Slots	Plenum Width (W) For Various Frame Types									
		Imperial Units (inches)					Metric Units (mm)				
		A, B, FL, KA, K1, K2, M, T	C, D, F, J, H, H2, N	E	G	A, B, FL, KA, K1, K2, M, T	C, D, F, J, H, H2, N	E	G		
5375	1	1 3/4	2 1/4	2 1/2	2 3/4	44	57	64	70		
5310		2	2 1/2	2 3/4	3	51	64	70	76		
5315		2 1/2	3	3 1/4	3 1/2	64	76	83	89		
5375	2	3 1/4	3 3/4	4	4 1/4	83	95	102	108		
5310		3 3/4	4 1/4	4 1/2	4 3/4	95	108	114	121		
5315		4 3/4	5 1/4	5 1/2	5 3/4	121	133	140	146		
5375	3	4 3/4	5 1/4	5 1/2	5 3/4	121	133	140	146		
5310		5 1/2	6	6 1/4	6 1/2	140	152	159	165		
5315		7	7 1/2	7 3/4	8	178	191	197	203		
5375	4	6 1/4	6 3/4	7	7 1/4	159	171	178	184		
5310		7 1/4	7 3/4	8	8 1/4	184	197	203	210		
5315		9 1/4	9 3/4	10	10 1/4	235	248	254	260		
5375	5	7 3/4	8 1/4	8 1/2	8 3/4	197	210	216	222		
5310		9	9 1/2	9 3/4	10	229	241	248	254		
5315		11 1/2	12	12 1/4	12 1/2	292	305	311	318		
5375	6	9 1/4	9 3/4	10	10 1/4	235	248	254	260		
5310		10 3/4	11 1/4	11 1/2	11 3/4	273	286	292	298		
5315		13 3/4	14 1/4	14 1/2	14 3/4	349	362	368	375		
5375	7	10 3/4	11 1/4	11 1/2	11 3/4	273	286	292	298		
5310		12 1/2	13	13 1/4	13 1/2	318	330	337	343		
5315		16	16 1/2	16 3/4	17	406	419	425	432		
5375	8	12 1/4	12 3/4	13	13 1/4	311	324	330	337		
5310		14 1/4	14 3/4	15	15 1/4	362	375	381	387		
5315		18 1/4	18 3/4	19	19 1/4	464	476	483	489		



**LINEAR SLOT DIFFUSER PLENUMS FOR TECHZONE™ TYPE CEILINGS**

- PLENUMS FOR 5075TZ SERIES TECHZONE™
- STRAIGHT LEG
- STANDARD OR MODIFIED PLENUM
- 1 THROUGH 4 SLOTS

B LINEAR DIFFUSERS AND BAR GRILLES

**Standard Model:**

5375TZ(I) 3/4" (19) Slot

**Modified Performance Model:**

5375TZ(I)MP 3/4" (19) Slot

- Suffix 'I' adds internal insulation



Model 5375TZ (MP)

Model Series 5375TZ(I)MP Diffuser Plenums are designed specifically to fit the Model Series 5000TZ(I) 'Ice Tong' Linear Slot Diffusers. They have been designed for flexible duct connection with a model to suit each of the various frame/sub-frame 5000TZ Series combinations available. For drywall ceiling mounted applications, the plenums are installed separately. Unless there is access to the ceiling space, the plenum is intended to be installed during the drywall installation. Most applications of this type utilize concealed mounting straps on the 5000TZ Series. The plenums may be supplied with a hemmed leg into which the mounting straps snap or they locate in extrusion slots on sub-frames as the linear is drawn up to the plenum from below the ceiling. Model Series 5300 Plenums save on-site fabrication and field labor. When room lay-out changes occur, the plenums can be simply relocated to satisfy the re-arrangement of air distribution requirements. Model Series 5300 Plenums maximize the 5000TZ Series performance. The airflow discharge maintains a horizontal pattern that is close and tight to the ceiling throughout the full range of cataloged air volumes. Excellent for variable air volume applications. Model Series 5375TZ(I)MP Modified Performance Plenums are fabricated in a similar manner to the 5300 Series with the addition of internal sloping baffles for reduced throw and increased spread of the air pattern.

**STANDARD FEATURES:**

- Straight Leg Frame Types are L, TL and NT.
- Nailor 5375TZ Series Plenums are designed specifically for field attachment to the 5075TZ Series Linear Slot Diffuser. They ensure optimum use of the 5075TZ Series VAV performance, providing a tight horizontal air pattern even at low volumes. Optional MP models incorporate integral baffles, which provide a reduction in throw and increased spread of the air pattern.
- Standard nominal lengths are 24", 30", 36", 48", 60" and 72" (600, 750, 900, 1200, 1500 and 1800 mm).

- Widths available to fit Model Series 5000TZ and 5000TZR with 1, 2, 3 or 4 slots.
- Easily installed with flexible duct.
- Ends caps can be turned up and field trimmed as necessary to allow plenums to fit diffuser length and provide a blank-off to reduce air leakage at end of diffuser.

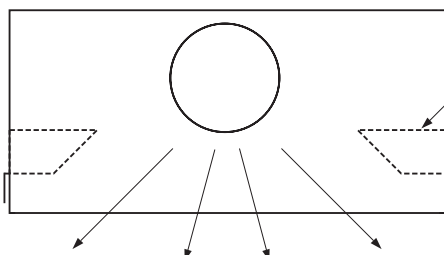
**CONSTRUCTION MATERIAL:**

Corrosion-resistant steel.

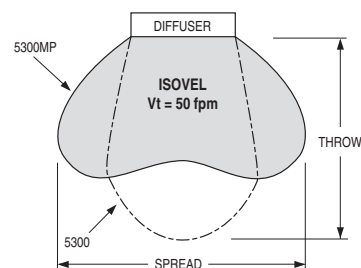
**OPTIONS & ACCESSORIES:**

- Optional internal insulation for Models 5375TZ(I)(MP) 1/4" (6) coated fiberglass or 3/8" (10) fiber-free foam.
- ID Inlet are available.
- EX External Foil Back insulation.
- IDCO Cable Operated Damper with a radial sliding blade design factory mounted on the inlet and is only available with 06, 08, 10R, 12R and 14R round inlets.

**MP Modified Performance**



INTEGRAL BAFFLES REDUCE THROW AND INCREASE SPREAD FOR IMPROVED COMFORT IN SHORT-THROW APPLICATIONS.





**DIMENSIONAL DATA:**

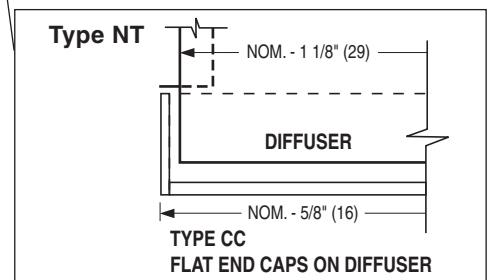
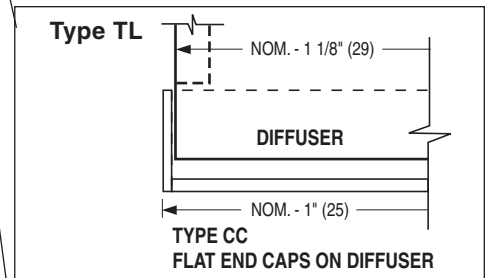
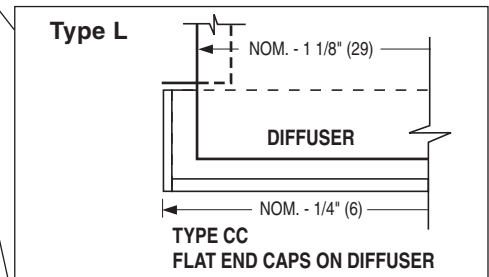
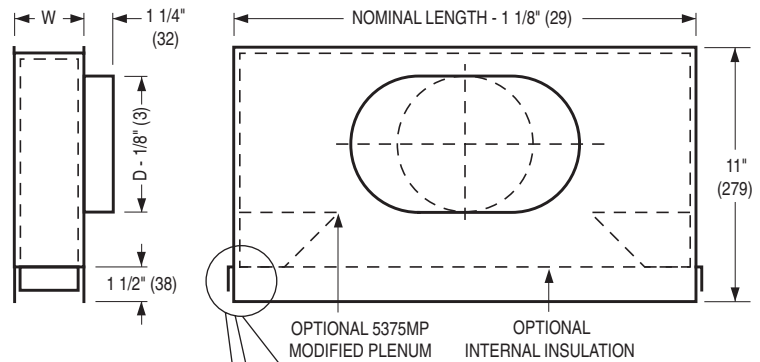
**ADAPTORS FOR MODEL SERIES 5000TZ LINEAR SLOT DIFFUSER • 1 THROUGH 4 SLOT MODELS 5375TZ(I)(MP)**

Nominal Length		Standard Nominal Inlets (D)	
inches	mm	inches	mm
24	610	4, 5, 6, 8, 10	102, 127, 152, 203, 254
30	762		
36	914		
48	1219	6, 8, 10, 12, 14	152, 203, 254, 305, 356
60	1524		
72	1829		

Inlet sizes 4" – 8" (102 – 203) are round and 10" – 14" (254 – 356) are flat oval.

No. of Slots	Plenum Width (W) For Various Frame Types			
	Imperial Units (inches)		Metric Units (mm)	
	L, NT	TL	L, NT	TL
1	1 1/2	1 1/2	38	38
2	2 3/4	2 3/4	70	70
3	4	4	102	102
4	5 1/4	N/A	133	N/A

**STRAIGHT LEG FRAME TYPES:  
L, NT, TL**



**DIMENSIONAL DATA:**

**ADAPTORS FOR MODEL SERIES 5075TZ LINEAR SLOT DIFFUSER • 1 THROUGH 4 SLOT MODELS 5375TZ(MP) WITH IDCO OPTION**

**B**

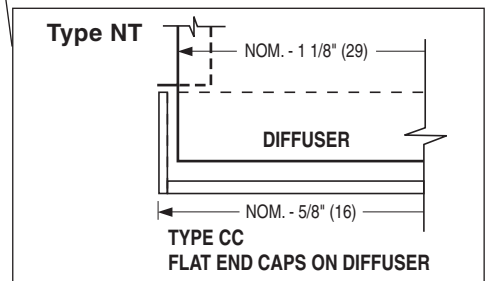
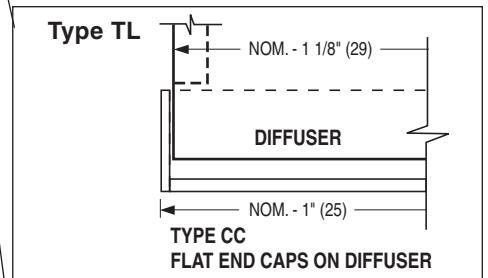
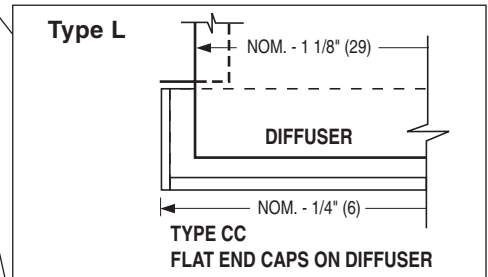
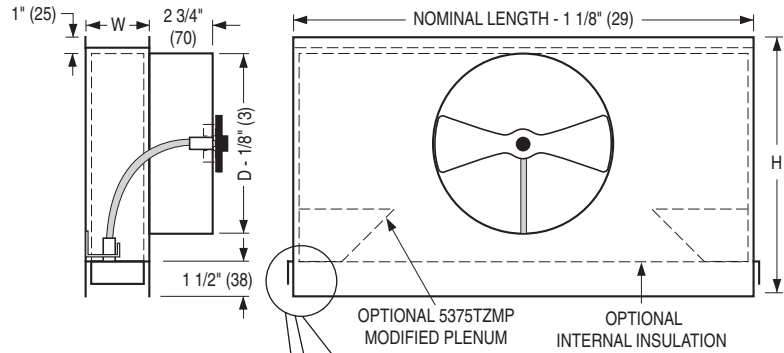
**LINEAR DIFFUSERS AND BAR GRILLES**

Nominal Length		Standard Nominal Inlets (D)	
inches	mm	inches	mm
24	610	6, 8, 10	152, 203, 254
30	762		
36	914		
48	1219	6, 8, 10, 12, 14	152, 203, 254, 305, 356
60	1524		
72	1829		

Plenum		Inlet Type / Size	
Code	Height	D (Round)	
H11	11" (279)	6" (152), 8" (203)	
H13	13" (330)	10" (254)	
H15	15" (381)	12" (305)	
H15	17" (432)	14" (356)	

No. of Slots	Plenum Width (W) For Various Frame Types			
	Imperial Units (inches)		Metric Units (mm)	
	L, NT	TL	L, NT	TL
1	1 1/2	1 1/2	38	38
2	2 3/4	2 3/4	70	70
3	4	4	102	102
4	5 1/4	N/A	133	N/A

**STRAIGHT LEG FRAME TYPES:  
L, NT, TL**



## PERFORMANCE DATA:

### MODEL 5350(I) • 1/2" (13) SLOT WIDTH

#### 1 Slot • 24" (610) Long

<b>6" Round Inlet</b>	Airflow, CFM	20	30	40	50	60	70	80	90
	Total Pressure	.017	.038	.068	.107	.154	.209	.273	.346
	Noise Criteria	–	17	23	29	33	37	41	43
	Throw	3-4-8	5-6-10	6-8-12	7-9-13	8-10-14	9-11-15	9-11-16	10-12-16

#### 1 Slot • 48" (1219) Long

<b>6" Round Inlet</b>	Airflow, CFM	35	50	65	80	95	110	125	140
	Total Pressure	.023	.047	.080	.121	.171	.229	.295	.371
	Noise Criteria	–	19	25	30	34	37	40	43
	Throw	3-5-10	6-8-13	7-10-15	9-11-17	10-13-18	11-14-19	12-14-20	12-15-21
<b>8" Round Inlet</b>	Airflow, CFM	50	65	80	95	110	125	140	155
	Total Pressure	.030	.051	.077	.109	.146	.188	.236	.29
	Noise Criteria	15	21	26	30	33	36	39	42
	Throw	6-8-13	7-10-15	9-11-17	10-13-18	11-14-19	12-14-20	12-15-21	13-16-22

#### 1 Slot • 60" (1524) Long

<b>6" Round Inlet</b>	Airflow, CFM	50	65	80	95	110	125	140	155
	Total Pressure	.025	.043	.064	.091	.122	.157	.198	.242
	Noise Criteria	–	20	26	30	34	37	40	42
	Throw	5-7-13	7-9-15	8-11-17	9-12-19	10-13-20	11-14-21	12-15-22	13-16-23
<b>8" Round Inlet</b>	Airflow, CFM	50	65	80	95	110	125	140	155
	Total Pressure	.021	.036	.055	.077	.103	.133	.167	.205
	Noise Criteria	–	17	22	26	30	34	37	39
	Throw	5-7-13	7-9-15	8-11-17	9-12-19	10-13-20	11-14-21	12-15-22	13-16-23

### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
- Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
- Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
- Dash (–) in space indicates a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.018	.033
2	.035	.066
3	.053	.099
4	.070	.132

## PERFORMANCE DATA:

### MODEL 5350(I) • 1/2" (13) SLOT WIDTH

#### 2 Slot • 24" (610) Long

<b>6" Round Inlet</b>	Airflow, CFM	<b>35</b>	<b>50</b>	<b>65</b>	<b>80</b>	<b>95</b>	<b>110</b>	<b>125</b>	<b>140</b>
	Total Pressure	.021	.042	.072	.108	.153	.205	.265	.332
	Noise Criteria	–	20	26	31	36	39	42	45
	Throw	3-6-10	5-8-13	7-10-15	8-11-16	9-12-18	10-13-19	11-14-20	12-15-21

#### 2 Slot • 48" (1219) Long

<b>6" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.042	.074	.116	.168	.228	.298	.377	.465
	Noise Criteria	–	19	24	28	32	36	38	41
	Throw	2-6-13	5-9-16	7-11-18	9-13-20	10-14-22	11-16-23	13-17-25	13-18-26
<b>8" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>
	Total Pressure	.039	.060	.087	.118	.154	.195	.241	.291
	Noise Criteria	16	20	24	28	31	34	37	39
	Throw	5-9-16	7-11-18	9-13-20	10-14-22	11-16-23	13-17-25	13-18-26	14-19-27
<b>10" Oval Inlet</b>	Airflow, CFM	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>	<b>240</b>
	Total Pressure	.041	.058	.079	.104	.131	.162	.196	.233
	Noise Criteria	18	22	26	29	32	35	37	39
	Throw	7-11-18	9-13-20	10-14-22	11-16-23	13-17-25	13-18-26	14-19-27	15-19-28

#### 2 Slot • 60" (1524) Long

<b>8" Round Inlet</b>	Airflow, CFM	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>	<b>240</b>	<b>260</b>
	Total Pressure	.071	.097	.126	.160	.198	.239	.284	.334
	Noise Criteria	21	25	28	31	34	36	38	40
	Throw	8-12-20	9-14-22	11-15-23	12-16-25	13-17-26	14-18-27	15-19-28	15-20-29
<b>10" Oval Inlet</b>	Airflow, CFM	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>	<b>240</b>	<b>260</b>	<b>280</b>
	Total Pressure	.065	.085	.107	.133	.161	.191	.224	.260
	Noise Criteria	22	25	28	31	33	35	37	39
	Throw	9-14-22	11-15-23	12-16-25	13-17-26	14-18-27	15-19-28	15-20-29	16-21-30

### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
- Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
- Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
- Dash (–) in space indicates a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
<b>1</b>	.018	.033
<b>2</b>	.035	.066
<b>3</b>	.053	.099
<b>4</b>	.070	.132

**B**

**LINEAR DIFFUSERS AND BAR GRILLES**

## PERFORMANCE DATA:

### MODEL 5375(I) • 3/4" (19) SLOT WIDTH

#### 1 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	20	30	40	50	60	70	80	90
	Total Pressure	.014	.031	.055	.085	.123	.168	.219	.277
Noise Criteria	–	–	20	26	30	34	37	40	
Throw	2-4-08	4-6-11	6-8-13	7-10-14	8-11-16	9-12-17	9-12-18	10-13-18	
8" Round Inlet	Airflow, CFM	30	40	50	60	70	80	90	100
	Total Pressure	.026	.046	.073	.104	.142	.186	.235	.290
Noise Criteria	–	17	22	26	30	32	35	38	
Throw	4-6-11	6-8-13	7-10-14	8-11-16	9-12-17	9-12-18	10-13-18	11-14-19	
10" Oval Inlet	Airflow, CFM	40	50	60	70	80	90	100	110
	Total Pressure	.037	.058	.084	.114	.149	.188	.232	.281
Noise Criteria	–	18	22	26	29	32	35	37	
Throw	6-8-13	7-10-14	8-11-16	9-12-17	9-12-18	10-13-18	11-14-19	11-14-20	

#### 1 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	35	50	65	80	95	110	125	140
	Total Pressure	.012	.024	.040	.061	.086	.115	.149	.187
Noise Criteria	–	17	22	27	30	33	36	39	
Throw	2-5-11	5-8-14	7-10-17	8-12-19	10-13-20	11-14-22	12-16-23	13-17-24	
8" Round Inlet	Airflow, CFM	50	65	80	95	110	125	140	155
	Total Pressure	.020	.034	.052	.073	.098	.127	.159	.195
Noise Criteria	–	17	22	26	29	31	34	37	
Throw	5-8-14	7-10-17	8-12-19	10-13-20	11-14-22	12-16-23	13-17-24	13-17-25	
10" Oval Inlet	Airflow, CFM	65	80	95	110	125	140	155	170
	Total Pressure	.027	.042	.059	.079	.101	.127	.156	.188
Noise Criteria	–	19	23	27	30	32	34	37	
Throw	7-10-17	8-12-19	10-13-20	11-14-22	12-16-23	13-17-24	13-17-25	14-18-26	
12" Oval Inlet	Airflow, CFM	80	95	110	125	140	155	170	185
	Total Pressure	.037	.052	.070	.090	.113	.138	.166	.197
Noise Criteria	16	20	23	26	29	31	34	36	
Throw	8-12-19	10-13-20	11-14-22	12-16-23	13-17-24	13-17-25	14-18-26	15-19-26	

#### 1 Slot • 60" (1524) Long

8" Round Inlet	Airflow, CFM	80	95	110	125	140	155	170	185
	Total Pressure	.039	.055	.074	.095	.119	.146	.176	.209
Noise Criteria	18	22	26	29	32	35	36	39	
Throw	8-11-18	9-13-20	10-14-22	11-15-23	12-16-24	13-17-25	14-18-26	15-19-27	
10" Oval Inlet	Airflow, CFM	95	110	125	140	155	170	185	200
	Total Pressure	.050	.068	.087	.110	.134	.162	.191	.224
Noise Criteria	20	23	26	29	31	33	35	37	
Throw	9-13-20	10-14-22	11-15-23	12-16-24	13-17-25	14-18-26	15-19-27	15-20-28	
12" Oval Inlet	Airflow, CFM	110	125	140	155	170	185	200	215
	Total Pressure	.048	.062	.078	.095	.115	.136	.159	.184
Noise Criteria	21	24	26	29	31	33	36	37	
Throw	10-14-22	11-15-23	12-16-24	13-17-25	14-18-26	15-19-27	15-20-28	16-21-29	

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned

between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.

6. Dash (–) in space indicates a Noise Criteria level of less than 15.

7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.024	.039
2	.049	.078
3	.073	.117
4	.098	.156



## PERFORMANCE DATA:

### MODEL 5375(I) • 3/4" (19) SLOT WIDTH

#### 2 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	50	65	80	95	110	125	140	155
	Total Pressure	.027	.045	.068	.096	.129	.167	.209	.257
	Noise Criteria	16	21	26	30	34	37	40	43
	Throw	5-8-15	7-10-18	9-12-20	10-14-22	11-15-23	12-16-25	13-17-26	13-17-27
8" Round Inlet	Airflow, CFM	65	80	95	110	125	140	155	170
	Total Pressure	.036	.055	.077	.103	.134	.168	.205	.247
	Noise Criteria	17	22	26	29	32	35	38	41
	Throw	7-10-18	9-12-20	10-14-22	11-15-23	12-16-25	13-17-26	13-17-27	14-18-28
10" Oval Inlet	Airflow, CFM	80	95	110	125	140	155	170	185
	Total Pressure	.044	.062	.083	.107	.134	.164	.197	.234
	Noise Criteria	16	22	26	30	33	36	39	41
	Throw	9-12-20	10-14-22	11-15-23	12-16-25	13-17-26	13-17-27	14-18-28	15-19-29

#### 2 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.022	.039	.061	.088	.119	.156	.198	.244
	Noise Criteria	–	16	21	25	29	32	35	38
	Throw	2-6-14	5-9-18	8-12-22	9-14-24	11-16-27	12-17-29	14-19-30	15-20-32
8" Round Inlet	Airflow, CFM	80	100	120	140	160	180	200	220
	Total Pressure	.022	.034	.049	.067	.088	.111	.137	.166
	Noise Criteria	–	15	19	23	27	30	33	36
	Throw	5-9-18	8-12-22	9-14-24	11-16-27	12-17-29	14-19-30	15-20-32	16-21-33
10" Oval Inlet	Airflow, CFM	100	120	140	160	180	200	220	240
	Total Pressure	.025	.036	.049	.064	.082	.101	.122	.145
	Noise Criteria	–	17	21	24	27	30	33	35
	Throw	8-12-22	9-14-24	11-16-27	12-17-29	14-19-30	15-20-32	16-21-33	17-22-35
12" Oval Inlet	Airflow, CFM	120	140	160	180	200	220	240	260
	Total Pressure	.031	.042	.055	.070	.086	.104	.124	.145
	Noise Criteria	–	15	18	23	26	29	32	34
	Throw	9-14-24	11-16-27	12-17-29	14-19-30	15-20-32	16-21-33	17-22-35	17-23-36

#### 2 Slot • 60" (1524) Long

8" Round Inlet	Airflow, CFM	140	160	180	200	220	240	260	280
	Total Pressure	.054	.070	.089	.110	.133	.158	.186	.216
	Noise Criteria	20	23	26	28	31	33	35	37
	Throw	10-15-26	11-17-28	13-18-30	14-19-32	15-21-34	16-22-35	17-23-36	18-24-38
10" Oval Inlet	Airflow, CFM	160	180	200	220	240	260	280	300
	Total Pressure	.049	.063	.077	.093	.111	.130	.151	.174
	Noise Criteria	20	23	25	28	30	32	34	36
	Throw	11-17-28	13-18-30	14-19-32	15-21-34	16-22-35	17-23-36	18-24-38	19-25-39
12" Oval Inlet	Airflow, CFM	180	200	220	240	260	280	300	320
	Total Pressure	.044	.055	.066	.079	.092	.107	.123	.140
	Noise Criteria	20	23	25	27	29	31	33	35
	Throw	13-18-30	14-19-32	15-21-34	16-22-35	17-23-36	18-24-38	19-25-39	19-25-40

#### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
- Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned

between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

- Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
- Dash (–) in space indicates a Noise Criteria level of less than 15.

- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.024	.039
2	.049	.078
3	.073	.117
4	.098	.156

## PERFORMANCE DATA:

### MODEL 5375(I) • 3/4" (19) SLOT WIDTH

#### 3 Slot • 24" (610) Long

<b>6" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.026	.047	.073	.106	.144	.188	.238	.294
	Noise Criteria	–	20	26	30	34	37	40	43
	Throw	5-8-16	8-11-20	10-13-23	11-15-25	12-17-27	14-18-29	15-19-31	15-20-32
<b>8" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>
	Total Pressure	.030	.047	.068	.093	.122	.154	.190	.230
	Noise Criteria	15	20	25	29	32	35	37	39
	Throw	8-11-20	10-13-23	11-15-25	12-17-27	14-18-29	15-19-31	15-20-32	16-21-33
<b>10" Oval Inlet</b>	Airflow, CFM	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>	<b>240</b>
	Total Pressure	.040	.058	.078	.102	.130	.160	.194	.230
	Noise Criteria	19	23	27	30	33	35	37	39
	Throw	10-13-23	11-15-25	12-17-27	14-18-29	15-19-31	15-20-32	16-21-33	17-22-35

#### 3 Slot • 48" (1219) Long

<b>6" Round Inlet</b>	Airflow, CFM	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>	<b>225</b>	<b>250</b>	<b>275</b>	<b>300</b>
	Total Pressure	.074	.107	.145	.190	.240	.297	.359	.427
	Noise Criteria	20	24	28	32	35	37	39	41
	Throw	8-13-23	10-15-27	12-17-30	14-19-32	15-21-35	16-22-37	18-23-39	19-25-40
<b>8" Round Inlet</b>	Airflow, CFM	<b>150</b>	<b>175</b>	<b>200</b>	<b>225</b>	<b>250</b>	<b>275</b>	<b>300</b>	<b>325</b>
	Total Pressure	.057	.077	.101	.128	.157	.191	.227	.266
	Noise Criteria	20	24	27	30	33	35	37	39
	Throw	10-15-27	12-17-30	14-19-32	15-21-35	16-22-37	18-23-39	19-25-40	20-26-42
<b>10" Oval Inlet</b>	Airflow, CFM	<b>175</b>	<b>200</b>	<b>225</b>	<b>250</b>	<b>275</b>	<b>300</b>	<b>325</b>	<b>350</b>
	Total Pressure	.051	.067	.085	.104	.126	.150	.176	.204
	Noise Criteria	22	25	27	30	32	34	36	38
	Throw	12-17-30	14-19-32	15-21-35	16-22-37	18-23-39	19-25-40	20-26-42	20-27-43
<b>12" Oval Inlet</b>	Airflow, CFM	<b>200</b>	<b>225</b>	<b>250</b>	<b>275</b>	<b>300</b>	<b>325</b>	<b>350</b>	<b>375</b>
	Total Pressure	.041	.052	.064	.077	.092	.108	.125	.143
	Noise Criteria	20	23	26	28	30	32	34	38
	Throw	14-19-32	15-21-35	16-22-37	18-23-39	19-25-40	20-26-42	20-27-43	21-28-45

#### 3 Slot • 60" (1524) Long

<b>8" Round Inlet</b>	Airflow, CFM	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>	<b>330</b>	<b>360</b>	<b>390</b>
	Total Pressure	.069	.094	.123	.156	.192	.233	.277	.325
	Noise Criteria	21	25	28	31	34	36	38	40
	Throw	11-16-29	13-19-33	15-21-36	16-22-38	18-24-40	19-26-42	20-27-44	21-28-46
<b>10" Oval Inlet</b>	Airflow, CFM	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>	<b>330</b>	<b>360</b>	<b>390</b>	<b>420</b>
	Total Pressure	.064	.084	.106	.131	.159	.189	.222	.257
	Noise Criteria	23	26	28	31	33	35	37	39
	Throw	13-19-33	15-21-36	16-22-38	18-24-40	19-26-42	20-27-44	21-28-46	22-29-48
<b>12" Oval Inlet</b>	Airflow, CFM	<b>240</b>	<b>270</b>	<b>300</b>	<b>330</b>	<b>360</b>	<b>390</b>	<b>420</b>	<b>450</b>
	Total Pressure	.049	.063	.077	.093	.111	.130	.151	.174
	Noise Criteria	22	24	27	29	31	33	35	37
	Throw	15-21-36	16-22-38	18-24-40	19-26-42	20-27-44	21-28-46	22-29-48	23-30-49

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned

between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.

7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
<b>1</b>	.024	.039
<b>2</b>	.049	.078
<b>3</b>	.073	.117
<b>4</b>	.098	.156

## PERFORMANCE DATA:

### MODEL 5375(I) • 3/4" (19) SLOT WIDTH

#### 4 Slot • 24" (610) Long

<b>6" Round Inlet</b>	Airflow, CFM	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>	<b>225</b>	<b>250</b>
	Total Pressure	.033	.058	.091	.131	.179	.233	.295	.365
	Noise Criteria	16	21	27	31	35	38	41	44
	Throw	6-9-18	9-13-22	11-16-26	13-18-29	14-20-31	15-22-33	17-23-35	18-24-37
<b>8" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>	<b>225</b>	<b>250</b>	<b>275</b>
	Total Pressure	.031	.049	.070	.095	.124	.157	.194	.235
	Noise Criteria	17	22	26	31	34	37	39	41
	Throw	9-13-22	11-16-26	13-18-29	14-20-31	15-22-33	17-23-35	18-24-37	19-25-38
<b>10" Oval Inlet</b>	Airflow, CFM	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>	<b>225</b>	<b>250</b>	<b>275</b>	<b>300</b>
	Total Pressure	.042	.060	.082	.107	.135	.167	.202	.240
	Noise Criteria	21	24	27	31	34	36	38	40
	Throw	11-16-26	13-18-29	14-20-31	15-22-33	17-23-35	18-24-37	19-25-38	19-27-39

#### 4 Slot • 48" (1219) Long

<b>6" Round Inlet</b>	Airflow, CFM	<b>160</b>	<b>190</b>	<b>220</b>	<b>250</b>	<b>280</b>	<b>310</b>	<b>340</b>	<b>370</b>
	Total Pressure	.074	.159	.213	.275	.345	.422	.508	.602
	Noise Criteria	23	27	30	33	35	38	40	42
	Throw	9-14-27	12-18-31	14-20-34	16-22-37	17-24-39	19-26-42	20-28-44	21-29-46
<b>8" Round Inlet</b>	Airflow, CFM	<b>190</b>	<b>220</b>	<b>250</b>	<b>280</b>	<b>310</b>	<b>340</b>	<b>370</b>	<b>400</b>
	Total Pressure	.071	.096	.124	.155	.190	.229	.271	.317
	Noise Criteria	22	25	28	31	33	36	38	40
	Throw	12-18-31	14-20-34	16-22-37	17-24-39	19-26-42	20-28-44	21-29-46	22-31-47
<b>10" Oval Inlet</b>	Airflow, CFM	<b>220</b>	<b>250</b>	<b>280</b>	<b>310</b>	<b>340</b>	<b>370</b>	<b>400</b>	<b>430</b>
	Total Pressure	.064	.082	.103	.126	.152	.180	.210	.243
	Noise Criteria	22	25	28	31	33	35	37	39
	Throw	14-20-34	16-22-37	17-24-39	19-26-42	20-28-44	21-29-46	22-31-47	23-32-49
<b>12" Oval Inlet</b>	Airflow, CFM	<b>250</b>	<b>280</b>	<b>310</b>	<b>340</b>	<b>370</b>	<b>400</b>	<b>430</b>	<b>460</b>
	Total Pressure	.046	.057	.070	.084	.100	.117	.135	.155
	Noise Criteria	21	24	27	29	31	33	35	37
	Throw	16-22-37	17-24-39	19-26-42	20-28-44	21-29-46	22-31-47	23-32-49	24-33-50

#### 4 Slot • 60" (1524) Long

<b>8" Round Inlet</b>	Airflow, CFM	<b>220</b>	<b>260</b>	<b>300</b>	<b>340</b>	<b>380</b>	<b>420</b>	<b>460</b>	<b>500</b>
	Total Pressure	.089	.124	.165	.212	.265	.324	.389	.459
	Noise Criteria	22	26	29	32	35	37	39	41
	Throw	12-18-33	15-21-37	17-24-40	19-27-43	20-29-46	22-31-49	23-33-51	25-34-53
<b>10" Oval Inlet</b>	Airflow, CFM	<b>260</b>	<b>300</b>	<b>340</b>	<b>380</b>	<b>420</b>	<b>460</b>	<b>500</b>	<b>540</b>
	Total Pressure	.077	.103	.132	.165	.201	.242	.285	.333
	Noise Criteria	23	26	29	32	35	37	39	41
	Throw	15-21-37	17-24-40	19-27-43	20-29-46	22-31-49	23-33-51	25-34-53	26-36-55
<b>12" Oval Inlet</b>	Airflow, CFM	<b>300</b>	<b>340</b>	<b>380</b>	<b>420</b>	<b>460</b>	<b>500</b>	<b>540</b>	<b>580</b>
	Total Pressure	.053	.068	.085	.104	.124	.147	.171	.198
	Noise Criteria	22	25	28	30	33	35	37	39
	Throw	17-24-40	19-27-43	20-29-46	22-31-49	23-33-51	25-34-53	26-36-55	27-37-57

#### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
- Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned

between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

- Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
- Dash (–) in space indicates a Noise Criteria level of less than 15.

- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
<b>1</b>	.024	.039
<b>2</b>	.049	.078
<b>3</b>	.073	.117
<b>4</b>	.098	.156

## PERFORMANCE DATA:

### MODEL 5310(I) • 1" (25) SLOT WIDTH

#### 1 Slot • 24" (610) Long

<b>6" Round Inlet</b>	Airflow, CFM	<b>20</b>	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>
	Total Pressure	.008	.018	.032	.049	.071	.097	.126	.160
	Noise Criteria	–	–	17	23	27	31	34	37
	Throw	1-3-07	3-5-09	5-7-11	6-8-13	7-10-14	9-11-15	9-11-16	10-12-17
<b>8" Round Inlet</b>	Airflow, CFM	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>
	Total Pressure	.015	.027	.042	.060	.082	.107	.136	.168
	Noise Criteria	–	–	17	23	27	30	32	35
	Throw	3-5-09	5-7-11	6-8-13	7-10-14	9-11-15	9-11-16	10-12-17	11-13-18
<b>10" Oval Inlet</b>	Airflow, CFM	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>	<b>110</b>
	Total Pressure	.022	.034	.048	.066	.086	.109	.135	.163
	Noise Criteria	–	15	20	24	27	29	32	35
	Throw	5-7-11	6-8-13	7-10-14	9-11-15	9-11-16	10-12-17	11-13-18	12-13-19

#### 1 Slot • 48" (1219) Long

<b>6" Round Inlet</b>	Airflow, CFM	<b>50</b>	<b>65</b>	<b>80</b>	<b>95</b>	<b>110</b>	<b>125</b>	<b>140</b>	<b>155</b>
	Total Pressure	.019	.033	.049	.070	.093	.121	.151	.185
	Noise Criteria	–	18	23	26	30	33	36	38
	Throw	2-6-12	5-8-14	7-10-16	8-12-18	10-13-20	11-14-21	12-15-22	13-16-23
<b>8" Round Inlet</b>	Airflow, CFM	<b>65</b>	<b>80</b>	<b>95</b>	<b>110</b>	<b>125</b>	<b>140</b>	<b>155</b>	<b>170</b>
	Total Pressure	.022	.033	.046	.062	.080	.101	.124	.149
	Noise Criteria	–	18	22	25	28	31	33	36
	Throw	5-8-14	7-10-16	8-12-18	10-13-20	11-14-21	12-15-22	13-16-23	14-17-24
<b>10" Oval Inlet</b>	Airflow, CFM	<b>80</b>	<b>95</b>	<b>110</b>	<b>125</b>	<b>140</b>	<b>155</b>	<b>170</b>	<b>185</b>
	Total Pressure	.026	.037	.050	.064	.081	.099	.119	.141
	Noise Criteria	16	20	24	27	30	32	34	36
	Throw	7-10-16	8-12-18	10-13-20	11-14-21	12-15-22	13-16-23	14-17-24	15-18-25
<b>12" Oval Inlet</b>	Airflow, CFM	<b>95</b>	<b>110</b>	<b>125</b>	<b>140</b>	<b>155</b>	<b>170</b>	<b>185</b>	<b>200</b>
	Total Pressure	.033	.044	.057	.071	.087	.105	.124	.145
	Noise Criteria	16	19	22	25	28	31	33	35
	Throw	8-12-18	10-13-20	11-14-21	12-15-22	13-16-23	14-17-24	15-18-25	16-18-26

#### 1 Slot • 60" (1524) Long

<b>8" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>95</b>	<b>110</b>	<b>125</b>	<b>140</b>	<b>155</b>	<b>170</b>	<b>185</b>
	Total Pressure	.026	.037	.049	.064	.080	.098	.118	.140
	Noise Criteria	15	19	23	26	29	31	33	35
	Throw	5-9-16	7-11-18	8-12-19	10-14-21	11-15-22	12-16-23	13-17-24	14-18-25
<b>10" Oval Inlet</b>	Airflow, CFM	<b>95</b>	<b>110</b>	<b>125</b>	<b>140</b>	<b>155</b>	<b>170</b>	<b>185</b>	<b>200</b>
	Total Pressure	.031	.041	.054	.067	.082	.099	.117	.137
	Noise Criteria	15	19	23	25	28	30	32	35
	Throw	7-11-18	8-12-19	10-14-21	11-15-22	12-16-23	13-17-24	14-18-25	15-18-26
<b>12" Oval Inlet</b>	Airflow, CFM	<b>110</b>	<b>125</b>	<b>140</b>	<b>155</b>	<b>170</b>	<b>185</b>	<b>200</b>	<b>215</b>
	Total Pressure	.030	.038	.048	.059	.071	.084	.098	.113
	Noise Criteria	17	20	22	26	28	30	33	34
	Throw	8-12-19	10-14-21	11-15-22	12-16-23	13-17-24	14-18-25	15-18-26	16-19-27

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned

between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.

7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
<b>1</b>	.030	.051
<b>2</b>	.060	.104
<b>3</b>	.090	.155
<b>4</b>	.120	.206

## PERFORMANCE DATA:

### MODEL 5310(I) • 1" (25) SLOT WIDTH

#### 2 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	50	65	80	95	110	125	140	155
	Total Pressure	.020	.034	.052	.073	.098	.127	.159	.195
	Noise Criteria	–	17	23	27	31	34	37	40
	Throw	3-6-13	5-8-16	7-11-18	9-13-20	10-14-22	11-16-24	12-17-25	13-18-26
8" Round Inlet	Airflow, CFM	65	80	95	110	125	140	155	170
	Total Pressure	.026	.039	.055	.074	.095	.119	.146	.176
	Noise Criteria	15	19	22	26	29	32	35	38
	Throw	5-8-16	7-11-18	9-13-20	10-14-22	11-16-24	12-17-25	13-18-26	14-19-27
10" Oval Inlet	Airflow, CFM	80	95	110	125	140	155	170	185
	Total Pressure	.043	.060	.081	.104	.131	.160	.193	.229
	Noise Criteria	16	20	24	27	30	33	36	38
	Throw	7-11-18	9-13-20	10-14-22	11-16-24	12-17-25	13-18-26	14-19-27	14-20-28

#### 2 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	100	120	140	160	180	200	220	240
	Total Pressure	.054	.077	.105	.137	.174	.214	.259	.309
	Noise Criteria	18	22	26	29	33	35	37	39
	Throw	4-8-19	7-11-22	9-13-24	10-15-26	12-17-28	13-19-30	14-20-32	15-22-33
8" Round Inlet	Airflow, CFM	120	140	160	180	200	220	240	260
	Total Pressure	.041	.056	.073	.092	.113	.137	.163	.192
	Noise Criteria	17	21	24	27	30	32	34	36
	Throw	7-11-22	9-13-24	10-15-26	12-17-28	13-19-30	14-20-32	15-22-33	16-23-34
10" Oval Inlet	Airflow, CFM	140	160	180	200	220	240	260	280
	Total Pressure	.038	.049	.063	.077	.093	.111	.130	.151
	Noise Criteria	18	21	24	27	29	31	33	35
	Throw	9-13-24	10-15-26	12-17-28	13-19-30	14-20-32	15-22-33	16-23-34	17-24-36
12" Oval Inlet	Airflow, CFM	160	180	200	220	240	260	280	300
	Total Pressure	.032	.040	.049	.060	.071	.083	.097	.111
	Noise Criteria	17	21	23	25	27	29	31	33
	Throw	10-15-26	12-17-28	13-19-30	14-20-32	15-22-33	16-23-34	17-24-36	18-25-37

#### 2 Slot • 60" (1524) Long

8" Round Inlet	Airflow, CFM	160	180	200	220	240	260	280	300
	Total Pressure	.059	.075	.093	.112	.133	.157	.182	.209
	Noise Criteria	20	23	25	27	29	31	33	35
	Throw	8-13-25	10-15-28	11-17-30	13-19-31	14-20-33	15-22-34	16-23-36	17-24-37
10" Oval Inlet	Airflow, CFM	180	200	220	240	260	280	300	320
	Total Pressure	.052	.064	.077	.092	.108	.125	.143	.163
	Noise Criteria	19	21	23	26	28	30	32	34
	Throw	10-15-28	11-17-30	13-19-31	14-20-33	15-22-34	16-23-36	17-24-37	18-26-38
12" Oval Inlet	Airflow, CFM	200	220	240	260	280	300	320	340
	Total Pressure	.045	.054	.064	.076	.088	.101	.115	.129
	Noise Criteria	19	22	24	26	28	30	32	34
	Throw	11-17-30	13-19-31	14-20-33	15-22-34	16-23-36	17-24-37	18-26-38	19-27-39

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned

between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.

6. Dash (–) in space indicates a Noise Criteria level of less than 15.

7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.030	.051
2	.060	.104
3	.090	.155
4	.120	.206



## PERFORMANCE DATA:

### MODEL 5310(I) • 1" (25) SLOT WIDTH

#### 3 Slot • 24" (610) Long

<b>6" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.024	.043	.067	.096	.131	.171	.216	.267
	Noise Criteria	–	18	23	27	31	34	37	40
	Throw	2-6-13	5-9-17	7-11-20	9-13-23	11-15-25	12-16-27	13-17-28	14-18-30
<b>8" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>
	Total Pressure	.034	.053	.077	.104	.136	.173	.213	.258
	Noise Criteria	–	18	23	26	29	32	35	37
	Throw	5-9-17	7-11-20	9-13-23	11-15-25	12-16-27	13-17-28	14-18-30	15-19-31
<b>10" Oval Inlet</b>	Airflow, CFM	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>	<b>240</b>
	Total Pressure	.029	.042	.057	.075	.095	.117	.141	.168
	Noise Criteria	16	20	23	26	29	32	34	36
	Throw	7-11-20	9-13-23	11-15-25	12-16-27	13-17-28	14-18-30	15-19-31	16-20-32

#### 3 Slot • 48" (1219) Long

<b>6" Round Inlet</b>	Airflow, CFM	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>	<b>225</b>	<b>250</b>	<b>275</b>	<b>300</b>
	Total Pressure	.071	.103	.140	.183	.231	.285	.345	.411
	Noise Criteria	17	21	25	28	31	34	36	38
	Throw	4-9-19	7-12-23	9-14-26	11-16-29	12-18-31	14-19-33	15-21-35	17-22-37
<b>8" Round Inlet</b>	Airflow, CFM	<b>150</b>	<b>175</b>	<b>200</b>	<b>225</b>	<b>250</b>	<b>275</b>	<b>300</b>	<b>325</b>
	Total Pressure	.048	.065	.085	.108	.134	.162	.192	.226
	Noise Criteria	18	21	24	27	30	32	34	36
	Throw	7-12-38	9-14-38	11-16-38	12-18-38	14-19-38	15-21-38	17-22-38	18-23-38
<b>10" Oval Inlet</b>	Airflow, CFM	<b>175</b>	<b>200</b>	<b>225</b>	<b>250</b>	<b>275</b>	<b>300</b>	<b>325</b>	<b>350</b>
	Total Pressure	.045	.058	.074	.091	.110	.131	.154	.179
	Noise Criteria	19	22	25	27	29	31	33	35
	Throw	9-14-26	11-16-29	12-18-31	14-19-33	15-21-35	17-22-37	18-23-38	19-24-40
<b>12" Oval Inlet</b>	Airflow, CFM	<b>200</b>	<b>225</b>	<b>250</b>	<b>275</b>	<b>300</b>	<b>325</b>	<b>350</b>	<b>375</b>
	Total Pressure	.032	.040	.049	.060	.071	.083	.097	.111
	Noise Criteria	17	20	23	25	27	29	31	33
	Throw	11-16-29	12-18-31	14-19-33	15-21-35	17-22-37	18-23-38	19-24-40	20-25-41

#### 3 Slot • 60" (1524) Long

<b>8" Round Inlet</b>	Airflow, CFM	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>	<b>330</b>	<b>360</b>	<b>390</b>
	Total Pressure	.063	.085	.111	.141	.174	.210	.250	.293
	Noise Criteria	18	21	25	29	31	33	35	37
	Throw	7-13-25	9-15-28	11-17-31	13-19-34	15-21-36	16-23-38	18-24-40	19-25-42
<b>10" Oval Inlet</b>	Airflow, CFM	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>	<b>330</b>	<b>360</b>	<b>390</b>	<b>420</b>
	Total Pressure	.054	.071	.090	.111	.134	.160	.188	.218
	Noise Criteria	20	22	25	27	30	32	34	36
	Throw	9-15-28	11-17-31	13-19-34	15-21-36	16-23-38	18-24-40	19-25-42	20-26-44
<b>12" Oval Inlet</b>	Airflow, CFM	<b>240</b>	<b>270</b>	<b>300</b>	<b>330</b>	<b>360</b>	<b>390</b>	<b>420</b>	<b>450</b>
	Total Pressure	.036	.046	.057	.069	.082	.096	.111	.128
	Noise Criteria	19	21	23	26	28	30	32	34
	Throw	11-17-31	13-19-34	15-21-36	16-23-38	18-24-40	19-25-42	20-26-44	21-28-45

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned

between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.
6. Dash (–) in space indicates a Noise Criteria level of less than 15.

7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
<b>1</b>	.030	.051
<b>2</b>	.060	.104
<b>3</b>	.090	.155
<b>4</b>	.120	.206

## PERFORMANCE DATA:

### MODEL 5310(I) • 1" (25) SLOT WIDTH

#### 4 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	75	100	125	150	175	200	225	250
	Total Pressure	.030	.054	.084	.121	.164	.214	.271	.335
	Noise Criteria	15	19	24	28	32	35	38	40
	Throw	4-6-15	7-10-20	9-13-23	11-15-26	12-18-29	14-20-31	15-21-33	16-23-34
8" Round Inlet	Airflow, CFM	100	125	150	175	200	225	250	275
	Total Pressure	.035	.054	.078	.106	.138	.175	.216	.261
	Noise Criteria	15	19	23	27	31	33	35	38
	Throw	7-10-20	9-13-23	11-15-26	12-18-29	14-20-31	15-21-33	16-23-34	17-24-36
10" Oval Inlet	Airflow, CFM	125	150	175	200	225	250	275	300
	Total Pressure	.029	.041	.056	.073	.093	.115	.139	.165
	Noise Criteria	17	21	24	28	30	33	35	37
	Throw	9-13-23	11-15-26	12-18-29	14-20-31	15-21-33	16-23-34	17-24-36	18-25-37

#### 4 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	160	190	220	250	280	310	340	370
	Total Pressure	.104	.147	.198	.255	.320	.392	.472	.559
	Noise Criteria	19	23	27	30	33	35	37	39
	Throw	7-10-23	9-13-27	11-16-31	13-18-33	14-21-36	16-23-38	17-25-40	18-26-42
8" Round Inlet	Airflow, CFM	190	220	250	280	310	340	370	400
	Total Pressure	.065	.087	.112	.140	.172	.207	.245	.287
	Noise Criteria	19	22	25	28	30	32	34	36
	Throw	9-13-27	11-16-31	13-18-33	14-21-36	16-23-38	17-25-40	18-26-42	19-28-44
10" Oval Inlet	Airflow, CFM	220	250	280	310	340	370	400	430
	Total Pressure	.054	.070	.088	.108	.129	.153	.179	.207
	Noise Criteria	19	23	25	27	29	31	33	35
	Throw	11-16-1931	13-18-33	14-21-36	16-23-38	17-25-40	18-26-42	19-28-44	20-29-45
12" Oval Inlet	Airflow, CFM	250	280	310	340	370	400	430	460
	Total Pressure	.039	.049	.061	.073	.086	.101	.116	.133
	Noise Criteria	17	20	23	25	27	29	31	33
	Throw	13-18-33	14-21-36	16-23-38	17-25-40	18-26-42	19-28-44	20-29-45	21-31-47

#### 4 Slot • 60" (1524) Long

8" Round Inlet	Airflow, CFM	220	260	300	340	380	420	460	500
	Total Pressure	.085	.118	.157	.202	.253	.309	.370	.437
	Noise Criteria	19	22	27	29	31	33	36	38
	Throw	9-13-29	12-17-33	14-20-36	16-23-39	17-25-42	19-27-45	20-29-47	22-31-49
10" Oval Inlet	Airflow, CFM	260	300	340	380	420	460	500	540
	Total Pressure	.072	.095	.122	.153	.187	.224	.265	.309
	Noise Criteria	21	24	27	30	32	34	36	38
	Throw	12-17-33	14-20-36	16-23-39	17-25-42	19-27-45	20-29-47	22-31-49	23-33-51
12" Oval Inlet	Airflow, CFM	300	340	380	420	460	500	540	580
	Total Pressure	.043	.056	.070	.085	.102	.121	.141	.162
	Noise Criteria	20	23	26	28	30	32	34	36
	Throw	14-20-36	16-23-39	17-25-42	19-27-45	20-29-47	22-31-49	23-33-51	24-35-53

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total Pressure is in inches w.g..
3. Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned

between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.

5. Performance data is based upon the standard **5300 Series** Model. The **5300MP** Modified Performance Series reduces the tabulated throw values by approximately 25%. Horizontal spread values are approximately 150% of the horizontal throw (T) projection values.

6. Dash (-) in space indicates a Noise Criteria level of less than 15.

7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.030	.051
2	.060	.104
3	.090	.155
4	.120	.206

**HOW TO ORDER**

**LINEAR SLOT DIFFUSER PLENUMS – MODEL SERIES 5300**

**MODELS 5315(I), 5310(I), 5375(I), 5350(I), 5315(I)MP, 5310(I)MP, 5375(I)MP, 5350(I)MP**

**EXAMPLE: 5375 - 48" x 2 SLOT - H11 - C - MM - 08 - ID**

**1. Models**

**Standard Plenum**

- 5350(I) 1/2" (13) Slot
- 5375(I) 3/4" (19) Slot
- 5310(I) 1" (25) Slot
- 5315(I) 1 1/2" (38) Slot

**Modified Plenum**

- 5350(I)MP 1/2" (13) Slot
  - 5375(I)MP 3/4" (19) Slot
  - 5310(I)MP 1" (25) Slot
  - 5315(I)MP 1 1/2" (38) Slot
- (Add Suffix "I" for optional internal insulation)

**2. Nominal Length**

**Imperial Sizes**

- inches / mm's
- 20, 24, 30, 36, 48, 60, 72  
(508, 610, 762, 914, 1219, 1524, 1829)

**Metric Sizes**

- mm's
- 500, 600, 750, 900, 1200, 1500, 1800

**3. No. of Slots**

1 through 8

**4. Plenum Height**

- H11 11" (279) standard (default)
- H13 13" (330)
- H15 15" (381)
- H17 17" (432)

**5. Linear Slot Diffuser 5000 Series Frame or Frame/Sub-Frame Combination**

A, B, C, D, E, F, FL, G, H, H2, J, KA, K1, K2, M, N or T

**6. Linear Slot Diffuser 5000 Series End Caps**

MM, MO, MC, OO, OC, CC, FF, FO or FC

**7. Plenum Inlet Size**

- 04 4" (102) round
- 05 5" (127) round
- 06 6" (152) round
- 07 7" (178) round
- 08 8" (203) round
- 10 10" (254) flat oval
- 10R 10" (254) round
- 12 12" (305) flat oval
- 12R 12" (305) round
- 14 14" (356) flat oval
- 14R 14" (356) round

**OPTIONS & ACCESSORIES**

**8. Inlet Damper**

- None (default)
- ID Inlet Damper with HLQ
- IDCO Cable Operated Damper

**9a. External Insulation**

- (Non-insulated models only)
- None (default)
  - EX Foil-Back Insulation, installed – R-4.2

**9b. Internal Insulation**

- ("I" models only)
- FGI 1/4" (6) Coated Fiberglass (default)
  - FFI 3/8" (10) Fiber-free Foam

**Notes:**

1. Plenums are shipped loose as standard for field installation.
2. Standard plenum height is 11" (279). Inlet sizes 4" – 8" (102 – 203) are round, 10" – 14" (254 – 356) are flat oval. 10R, 12R and 14R round inlets require a minimum plenum height of inlet size + 3".
3. Plenums for frame/sub-frame types A, B, E, F, G, H, H2, KA, K1, K2 and M are for direct attachment to diffuser neck or sub-frame.  
  
Plenums for frame types C, D, J and N are hemmed for field attachment by use of concealed mounting straps.
4. End caps of plenums can be turned up for use on continuous runs.
5. For lay-in T-Bar installations, specify nominal T-Bar opening length. Plenums can be factory mounted when nominal length is same as finished length of linear. Please specify.
6. Standard internal insulation ("I" suffix models) is 1/4" (6) coated fiberglass.
7. IDCO Cable Operated Damper is only available on 5375(I)(MP) 3/4" (19), 5310 (I)(MP) 1" (25), and 5315(I)(MP) 1 1/2" (38) slot widths and only with 06, 08, 10R, 12R and 14R round inlets.

**Available Inlet Sizes**

Plenum		Inlet Type/Size	
Code	Height	Round	Oval
H11	11" (279)	04 – 08	10 – 14
H13	13" (330)	04 – 08, 10R	12 – 14
H15	15" (381)	04 – 08, 10R, 12R	14
H17	17" (432)	04 – 08, 10R – 14R	–

**B**  
**LINEAR DIFFUSERS AND BAR GRILLES**

**HOW TO SPECIFY**

**LINEAR SLOT DIFFUSER PLENUMS – MODEL SERIES 5300**

**MODELS 5315(I), 5310(I), 5375(I), 5350(I), 5315(I)MP, 5310(I)MP, 5375(I)MP, 5350(I)MP**

**SUGGESTED SPECIFICATION:**

**Models 5315(I), 5310(I), 5375(I), 5350(I)**

Furnish and install **Nailor Model** (select one) **5315(I)** (1 1/2" [38] slot), **5310(I)** (1" [25] slot), **5375(I)** (3/4" [19] slot), or **5350(I)** (1/2" [13] slot) **Plenums for Linear Slot Diffusers** of the sizes and capacities shown on the plans and air distribution schedules. The plenums shall be manufactured from corrosion-resistant steel and shall include a side inlet for connection to the duct. The width shall fit a 1, 2, 3, 4, 5, 6, 7 or 8 slot linear as specified and the length shall be in standard nominal lengths of 20", 24", 30", 36", 48", 60" and 72" (508, 610, 762, 914, 1219, 1524 and 1829 mm). When continuous sections are required, the end caps shall be folded up for uninterrupted airflow. Models 5315I, 5310I, 5375I and 5350I shall have internal insulation.

The manufacturer shall provide published performance data for the linear slot diffuser plenums, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

**Models 5315(I)MP, 5310(I)MP, 5375(I)MP, 5350(I)MP**

Furnish and install **Nailor Model** (select one) **5315(I)MP** (1 1/2" [38] slot), **5310(I)MP** (1" [25] slot), **5375(I)MP** (3/4" [19] slot), or **5350(I)MP** (1/2" [13] slot) **Modified Performance Plenums for Linear Slot Diffusers** of the sizes and capacities shown on the plans and air distribution schedules. The plenums shall be manufactured from corrosion-resistant steel and shall include a side inlet for connection to the duct. The modified performance plenums shall incorporate integral baffles, providing a reduction in throw and increased spread of the air pattern. The width shall fit a 1, 2, 3, 4, 5, 6, 7 or 8 slot linear as specified and the length shall be in standard nominal lengths of 20", 24", 30", 36", 48", 60" and 72" (508, 610, 762, 914, 1219, 1524 and 1829 mm). When continuous sections are required, the end caps shall be folded up for uninterrupted airflow. Models 5315IMP, 5310IMP, 5375IMP and 5350IMP shall have internal insulation.

**(IDCO)** An optional cable operated round inlet damper with a radial sliding blade design shall be factory mounted on the inlet. Models 5315 and 5310 shall include a flexible rotary cable, connecting the damper to a Phillips head screw operator mounted inside the plenum, permitting air balancing at the diffuser face. Model 5375 shall include a flexible rotary cable with male square rotary end and nylon cable clamp which can be adjusted with 1/4" (6) hex nut driver. Cable shall be threaded through the diffuser face during installation for balancing and pushed back in afterwards.

The manufacturer shall provide published performance data for the linear slot diffuser plenums, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

**B**

**LINEAR DIFFUSERS AND BAR GRILLES**

**HOW TO ORDER**

**TECHZONE™ LINEAR SLOT DIFFUSER PLENUMS  
MODEL SERIES 5375TZ • 3/4" (19) SLOT  
MODELS 5375TZ, 5375TZI, 5375TZMP, 5375TZIMP**

**EXAMPLE: 5375TZ - 48" x 2 SLOT - H11 - L - CC - 08 - ID - —**

1. **Models**  
 5375TZ Standard Plenum  
 5375TZI Insulated Plenum (internal)  
 5375TZMP Modified Performance Plenum  
 5375TZIMP Insulated Modified Performance Plenum (internal)
2. **Nominal Length**  
**Imperial Sizes**  
 inches / mm's  
 24, 30, 36, 48, 60, 72  
 (610, 762, 914, 1219, 1524, 1829)  
**Metric Sizes**  
 mm's  
 600, 750, 900, 1200, 1500, 1800
3. **No. of Slots**  
 1 through 4
4. **Plenum Height**  
 H11 11" (279) standard (default)  
 H13 13" (330)  
 H15 15" (381)  
 H17 17" (432)
5. **Linear Slot Diffuser 5075TZ Series**  
**Frame Type**  
 L Lay-in T-Bar  
 NT Narrow T-Bar Lay-in  
 TL Tegular T-Bar Lay-in
6. **End Cap Configuration 5075TZ Series**  
 CC Flat Flat (default)  
 OO Open Open  
 OC Open Flat

7. **Plenum Inlet Size**  
 04 4" (102) round  
 05 5" (127) round  
 06 6" (152) round  
 07 7" (178) round  
 08 8" (203) round  
 10 10" (254) flat oval  
 10R 10" (254) round  
 12 12" (305) flat oval  
 12R 12" (305) round  
 14 14" (356) flat oval  
 14R 14" (356) round

**OPTIONS & ACCESSORIES**

8. **Inlet Damper**  
 — None (default)  
 ID Inlet Damper with HLQ  
 IDCO Cable Operated Damper
- 9a. **External Insulation**  
 — None (default)  
 EX Foil Back R-4.2 (installed)
- 9b. **Internal Insulation**  
 ("I" models only)  
 FGI 1/4" (6) Coated Fiberglass (default)  
 FFI 3/8" (10) Fiber-free Foam

**Notes:**

1. Plenums are shipped loose as standard for field installation.
2. Standard plenum height is 11" (279). Inlet sizes 4" – 8" (102 – 203) are round, 10" – 14" (254 – 356) are flat oval. 10R, 12R and 14R round inlets require a minimum plenum height of inlet size + 3".
3. End caps of plenums can be turned up for use on continuous runs.
4. Standard internal insulation ("I" suffix models) is 1/4" (6) coated fiberglass.
5. IDCO Cable Operated Damper is only available on 06, 08, 10R, 12R and 14R round inlets.
6. Frame Type TL is available in one through three slots only.

**Available Inlet Sizes**

Plenum		Inlet Type/Size	
Code	Height	Round	Oval
H11	11" (279)	04 – 08	10 – 14
H13	13" (330)	04 – 08, 10R	12 – 14
H15	15" (381)	04 – 08, 10R, 12R	14
H17	17" (432)	04 – 08, 10R – 14R	–



HOW TO SPECIFY

TECHZONE™ LINEAR SLOT DIFFUSER PLENUMS  
 MODELS 5375TZ(I), 5375TZ(I)MP

B

LINEAR DIFFUSERS AND BAR GRILLES

**SUGGESTED SPECIFICATION:**

**Model 5375TZ(I)**

Furnish and install **Nailor Model** (select one) **5375TZ(I)** (3/4" [19] slot) **Plenums for Linear Slot Diffusers for TechZone™ Type Ceilings** of the sizes and capacities shown on the plans and air distribution schedules. The plenums shall be manufactured from corrosion-resistant steel and shall include a side inlet for connection to the duct. The width shall fit a 1, 2, 3 or 4 slot linear as specified and the length shall be in standard nominal lengths of 24", 30", 36", 48", 60" and 72" (610, 762, 914, 1219, 1524 and 1829 mm). When continuous sections are required, the end caps shall be folded up for uninterrupted airflow. Model 5375TZI shall have internal insulation.

**(IDCO)** An optional cable operated round inlet damper with a radial sliding blade design shall be factory mounted on the inlet. Model 5375 shall include a flexible rotary cable with male square rotary end and nylon cable clamp which can be adjusted with 1/4" (6) hex nut driver. Cable shall be threaded through the diffuser face during installation for balancing and pushed back in afterwards.

The manufacturer shall provide published performance data for the linear slot diffuser plenums, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

**Model 5375TZ(I)MP**

Furnish and install **Nailor Model** (select one) **5375TZ(I)MP** (3/4" [19] slot) **Modified Performance Plenums for Linear Slot Diffusers for TechZone™ Type Ceilings** of the sizes and capacities shown on the plans and air distribution schedules. The plenums shall be manufactured from corrosion-resistant steel and shall include a side inlet for connection to the duct. The width shall fit a 1, 2, 3 or 4 slot linear as specified and the length shall be in standard nominal lengths of 24", 30", 36", 48", 60" and 72" (610, 762, 914, 1219, 1524 and 1829 mm). When continuous sections are required, the end caps shall be folded up for uninterrupted airflow. Model 5375TZIMP shall have internal insulation.

**(IDCO)** An optional cable operated round inlet damper with a radial sliding blade design shall be factory mounted on the inlet. Model 5375 shall include a flexible rotary cable with male square rotary end and nylon cable clamp which can be adjusted with 1/4" (6) hex nut driver. Cable shall be threaded through the diffuser face during installation for balancing and pushed back in afterwards.

The manufacturer shall provide published performance data for the linear slot diffuser plenums, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

## LINEAR BAR GRILLES

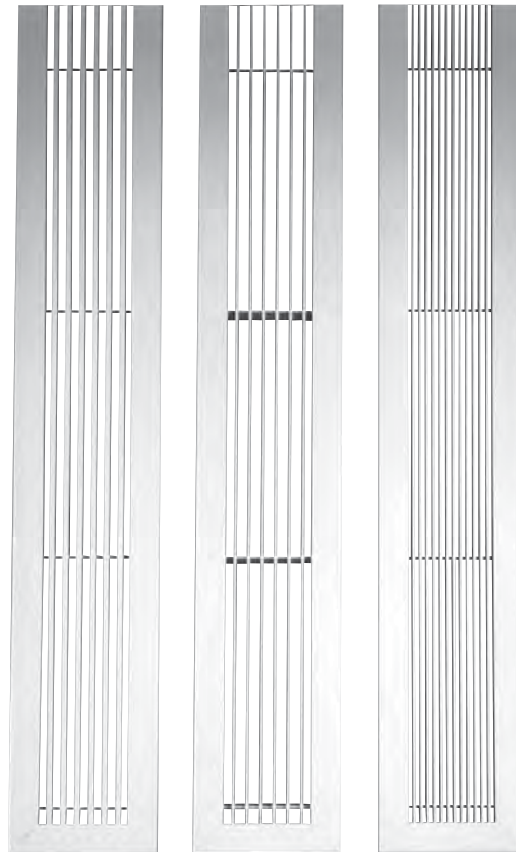
- STANDARD OR HEAVY DUTY MODELS
- SUITABLE FOR CEILING, SIDEWALL, SILL OR FLOOR INSTALLATIONS
- FIXED BARS
- 7 CORE STYLES
- ALUMINUM CONSTRUCTION

### 1/2" (13) Bar Spacing Models:

- 49-240 • 1/4" (6) Bars • 0° Deflection • Pencil-Proof
- 49-241 • 1/4" (6) Bars • 15° Deflection • Pencil-Proof
- 49-243 • 1/4" (6) Bars • 30° Deflection • Pencil-Proof
- 49-280 • 1/8" (3) Bars • 0° Deflection
- 49-281 • 1/8" (3) Bars • 15° Deflection

### 1/4" (6) Bar Spacing Models:

- 49-480 • 1/8" (3) Bars • 0° Deflection
- 49-481 • 1/8" (3) Bars • 15° Deflection
- Suffix 'O' adds a steel opposed blade damper



Models 49-240, 49-280, 49-480

Model Series 4900 Linear Bar Grilles have been specially designed to provide the precision quality appearance required for architectural excellence with crisply sculptured styling, careful workmanship and effective air distribution. Designed for heating and cooling applications, supply and return, the grilles are manufactured with precision mitered corners to maximize quality.

### STANDARD FEATURES:

- Deflection bars are fixed and are parallel to the long dimension.
- Available in 7 core styles and a variety of frame and sub-frame options.
- Diffusers are supplied in lengths of up to 6 ft. (1829) in a single section.
- Standard incremental units of length are 1, 2, 3, 4, 5 and 6 ft. (305, 610, 914, 1219, 1524 and 1829 mm). However, the 4900 Series is available in any nominal length to suit engineering and architectural requirements.
- Ideal for continuous length applications.
- Multiple sections are provided with alignment strips on the frame and sub-frame to provide superior, positive field alignment.
- End caps are staked and mitered for a superior quality appearance.
- Standard duty models are available for ceiling, wall or sill installations. Heavy duty models are designed specifically for use in floor installations.

### CONSTRUCTION MATERIAL:

Extruded Aluminum.

### FINISH OPTIONS:

- AW Appliance White frame is standard. Optional finish is AL Aluminum.
- Premium finishes are SA Satin (clear) Anodized or BC Brushed and Clear Coat lacquer.
- Other finishes are available.

### OPTIONS & ACCESSORIES:

- Heavy gauge steel opposed blade damper (add suffix '-O').
- HC Heavy Duty Core.
- DV Rear directional control vanes.
- MC Mitered Corner Sections.
- AD Access Doors.
- BO Blank-offs.

## DIMENSIONAL DATA: STANDARD DUTY FRAME TYPES

LINEAR DIFFUSERS AND BAR GRILLES

<p><b>TYPE A</b> 1" (25) Border</p> <p>Standard Frame</p>	<p><b>TYPE B</b> 3/4" (19) Reduced Border</p>	<p><b>TYPE C</b> 1" (25) Border and Sub-Frame</p>
<p><b>TYPE D</b> 1" (25) Border Deep Stack (permits DV option)</p>	<p><b>TYPE E</b> 1/2" (13) Narrow Border</p>	

## HEAVY DUTY MOUNTING FRAMES FLOOR INSTALLATIONS

<p><b>TYPE F</b> 1" (25) Border Flange</p>	<p><b>TYPE G</b> No Flange Flush Mounting</p>	<p><b>TYPE H</b> 3/4" (19) Bevelled Border</p>
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## CEILING INSTALLATIONS

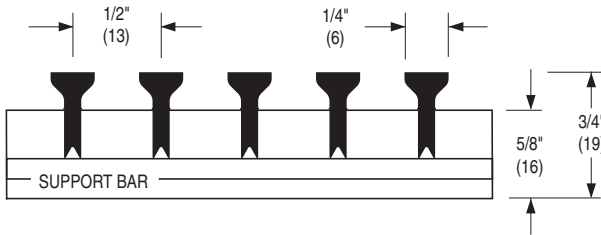
<p><b>TYPE K</b> 1" (25) Tape &amp; Spackle Border</p>
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## DIMENSIONAL DATA:

### AVAILABLE CORE STYLES

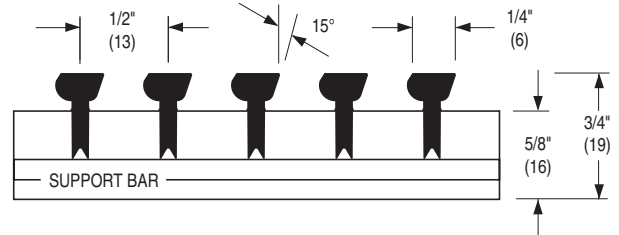
#### MODEL 49-240

1/2" (13) Spacing • 1/4" (6) Bars • 0° Deflection  
"Pencil Proof"



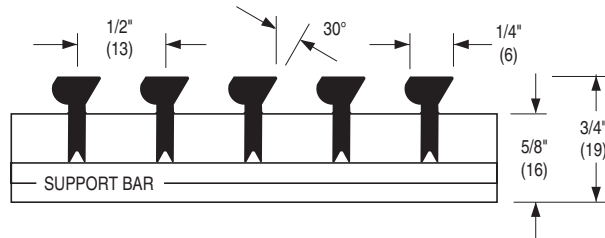
#### MODEL 49-241

1/2" (13) Spacing • 1/4" (6) Bars • 15° Deflection  
"Pencil Proof"



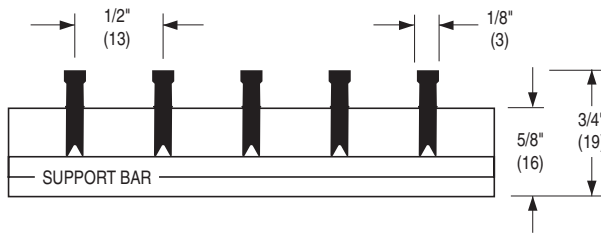
#### MODEL 49-243

1/2" (13) Spacing • 1/4" (6) Bars • 30° Deflection  
"Pencil Proof"



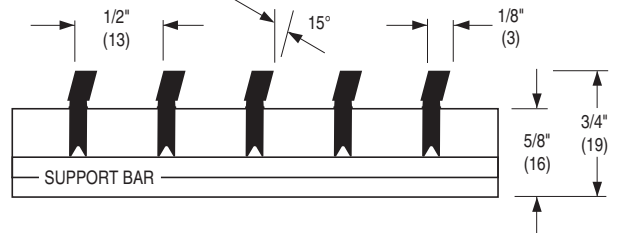
#### MODEL 49-280

1/2" (13) Spacing • 1/8" (3) Bars • 0° Deflection



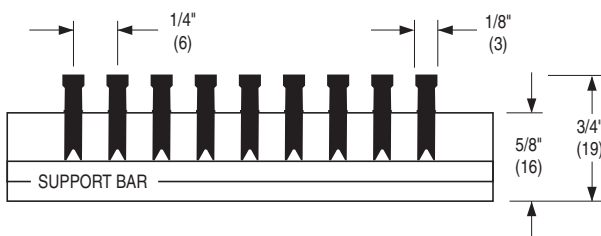
#### MODEL 49-281

1/2" (13) Spacing • 1/8" (3) Bars • 15° Deflection



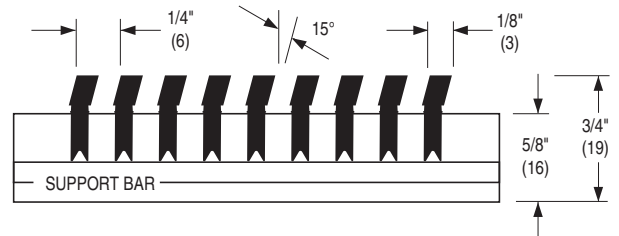
#### MODEL 49-480

1/4" (6) Spacing • 1/8" (3) Bars • 0° Deflection  
"Heel Proof"



#### MODEL 49-481

1/4" (6) Spacing • 1/8" (3) Bars • 15° Deflection  
"Heel Proof"



## DIMENSIONAL DATA:

### OVERALL LENGTH AND WIDTH

B LINEAR DIFFUSERS AND BAR GRILLES

Type	N	O
A	D - 1/2" (13)	D + 1 1/2" (38)
B	D - 1/2" (13)	D + 1" (25)
D	D - 1/2" (13)	D + 1 1/2" (38)
E	D - 1/2" (13)	D + 1/2" (13)
F	D	D + 1 5/8" (41)
G	D	D
H	D	D + 1 1/8" (29)
K	D	D + 1 1/2" (38)

Dimensions are for length or width.

Type	N	O
C	D - 1/2" (13)	D + 2 1/8" (54)

Dimensions are for length or width.

### STANDARD WIDTHS AND CORE

Duct Width D	1/4" (6) Spacing	
	Opening Width A	Number of Bars
1 1/2" (38)	3/4" (19)	2
2" (51)	1 1/4" (32)	4
2 1/2" (64)	1 3/4" (44)	6
3" (76)	2 1/4" (57)	8
3 1/2" (89)	2 3/4" (70)	10
4" (102)	3 1/4" (83)	12
5" (127)	4 1/4" (108)	16
6" (152)	5 1/4" (133)	20

For frames types F, G, H & K increase the number of bars by two.  
Dimensions are in inches (mm).

Duct Width D	1/2" (13) Spacing	
	Opening Width A	Number of Bars
1 1/2" (38)	3/4" (19)	1
2" (51)	1 1/4" (32)	2
2 1/2" (64)	1 3/4" (44)	3
3" (76)	2 1/4" (57)	4
3 1/2" (89)	2 3/4" (70)	5
4" (102)	3 1/4" (83)	6
5" (127)	4 1/4" (108)	8
6" (152)	5 1/4" (133)	10

For frames types F, G, H & K increase the numbers of bars by one.

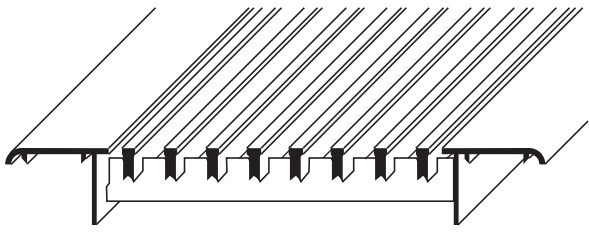
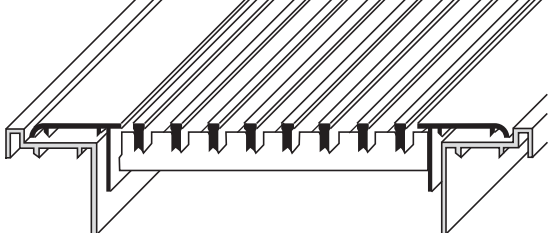
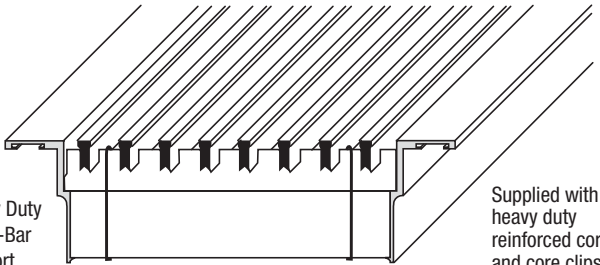
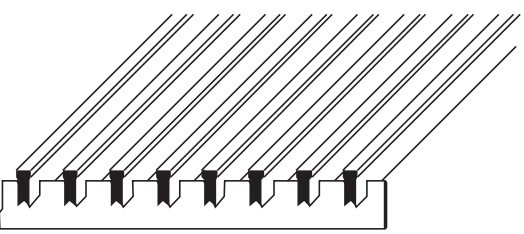
### CROSS-BAR SPACING

Standard Core: S = 12" (305) maximum support bar spacing. Frame Types A, B, C, D and E.  
**Optional HC Heavy Duty Core:** S = 8" (203) maximum.  
 Standard for ceiling installations with frame type K and floor models with frame types F, G and H which also include secondary reinforcing support bars on 8" (203) maximum centers. Structural support designed and installed by others.

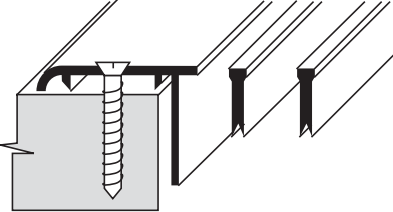
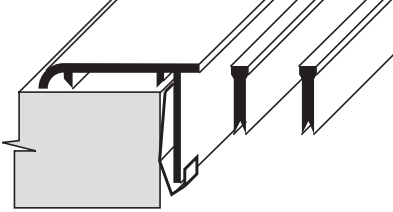
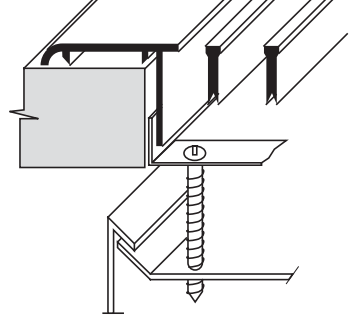
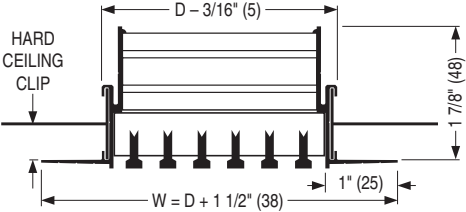
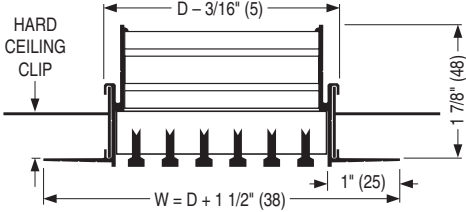


## DIMENSIONAL DATA:

### TYPICAL FRAME/CORE ASSEMBLIES

<p><b>CORE WITH FRAME</b></p>  <p><b>Type A Frame</b></p>	<p><b>CORE WITH FRAME &amp; SUB-FRAME</b></p>  <p><b>Type C Frame</b></p>
<p><b>CORE WITH HEAVY DUTY MOUNTING FRAME</b></p>  <p>Heavy Duty Cross-Bar Support</p> <p>Supplied with heavy duty reinforced core and core clips</p> <p><b>Type F Heavy Duty Mounting Frame</b></p>	<p><b>CORE ONLY NO FRAME</b></p>  <p><b>Type CO No Frame</b></p>

## FASTENINGS

<p><b>TYPE A • COUNTERSUNK SCREW HOLES</b></p>  <p>For ceiling, side wall, sill or floor. Frame Types: A, B, C, D, F, K.</p>	<p><b>TYPE B • FRICTION SPRING CLIP</b></p>  <p>For sill installations. Frame Types: A, B, D, E, F, G, H.</p>	<p><b>TYPE C • CONCEALED MOUNTING</b></p>  <p>For ceiling, side wall, sill or floor. Frame Types: A, B, C, D, E. Not recommended for use with cores with 1/4" (6) bar spacing.</p>
<p><b>TYPE HC5 • HARD CEILING CLIPS</b></p>  <p>For 1/2" (13) drywall, frame type K only.</p>	<p><b>TYPE HC1 • HARD CEILING CLIPS</b></p>  <p>For 5/8" (16) drywall, frame type K only.</p>	

## DIMENSIONAL DATA:

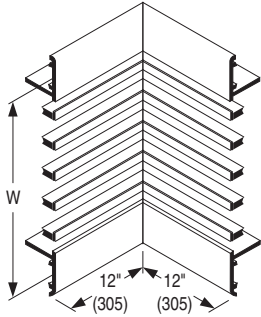
### MITERED CORNER SECTIONS

49-240MC  
49-241MC  
49-243MC  
49-280MC

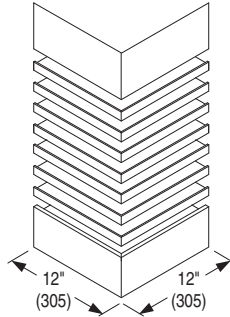
49-281MC  
49-480MC  
49-481MC

Factory welded with precision to match and align with the associated straight leg.  
Standard mitered corner section for floor, ceiling or wall is 90°. Other angles are available.  
**SPECIAL MITERED CORNERS:**  
\*Available from 45° – 179° as SPL. (A detailed sketch is required for co-ordination with installing contractors).

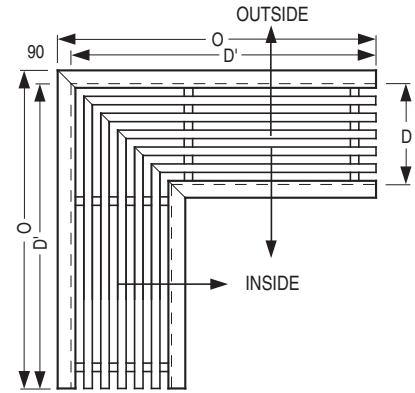
#### APPLICATION PATTERN



Type WC – Sidewall, inside



Type WD – Sidewall, outside

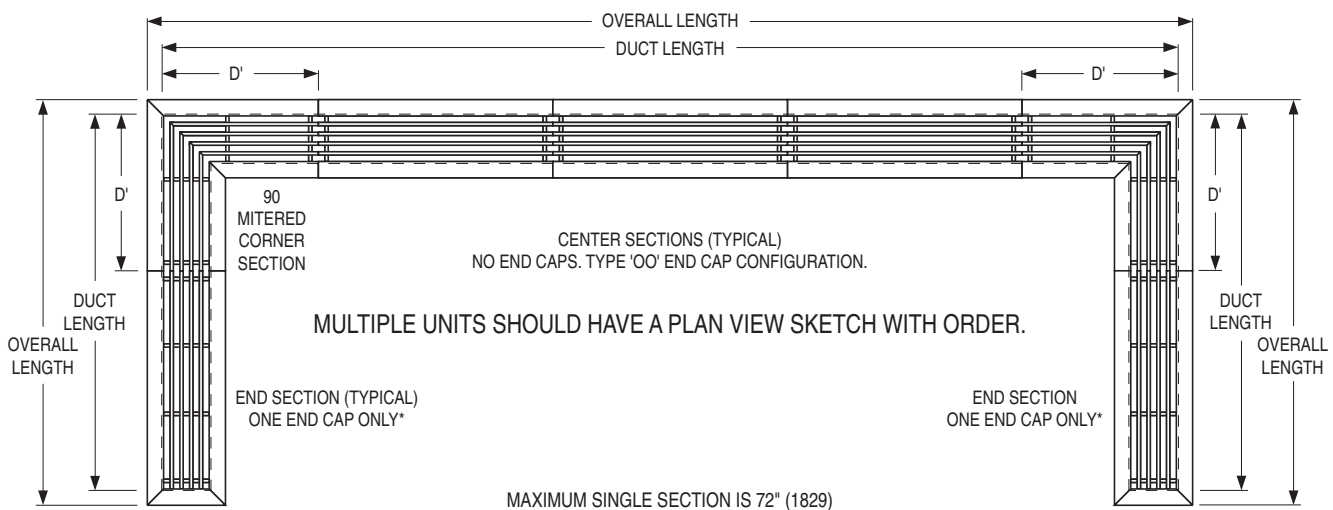


**Floor, Ceiling or Sill**  
Type FO • 0° deflection  
Type FA • Deflection inside  
Type FB • Deflection outside

#### 90° Mitered Corner Dimension 'O'

Duct Width D	Duct Length D'	Frame Type							
		A, D	B	C	E	F	G	H	K
1 1/2" – 4"	12"	12 3/4" (324)	12 1/2" (318)	13 1/16" (332)	12 1/4" (311)	12 13/16" (325)	12" (305)	12 9/16" (319)	12 3/4" (324)
4 1/2" – 12"	18"	18 3/4" (476)	18 1/2" (470)	19 1/16" (484)	18 1/4" (464)	18 13/16" (478)	18" (457)	18 9/16" (471)	18 3/4" (476)

## CONTINUOUS RUN DIMENSIONS



\* End sections with single end caps and deflecting cores must be specified and ordered with the desired core deflection direction. End cap configurations (mitered end cap one end and open opposite end):

Type 'MO' = 0° deflection

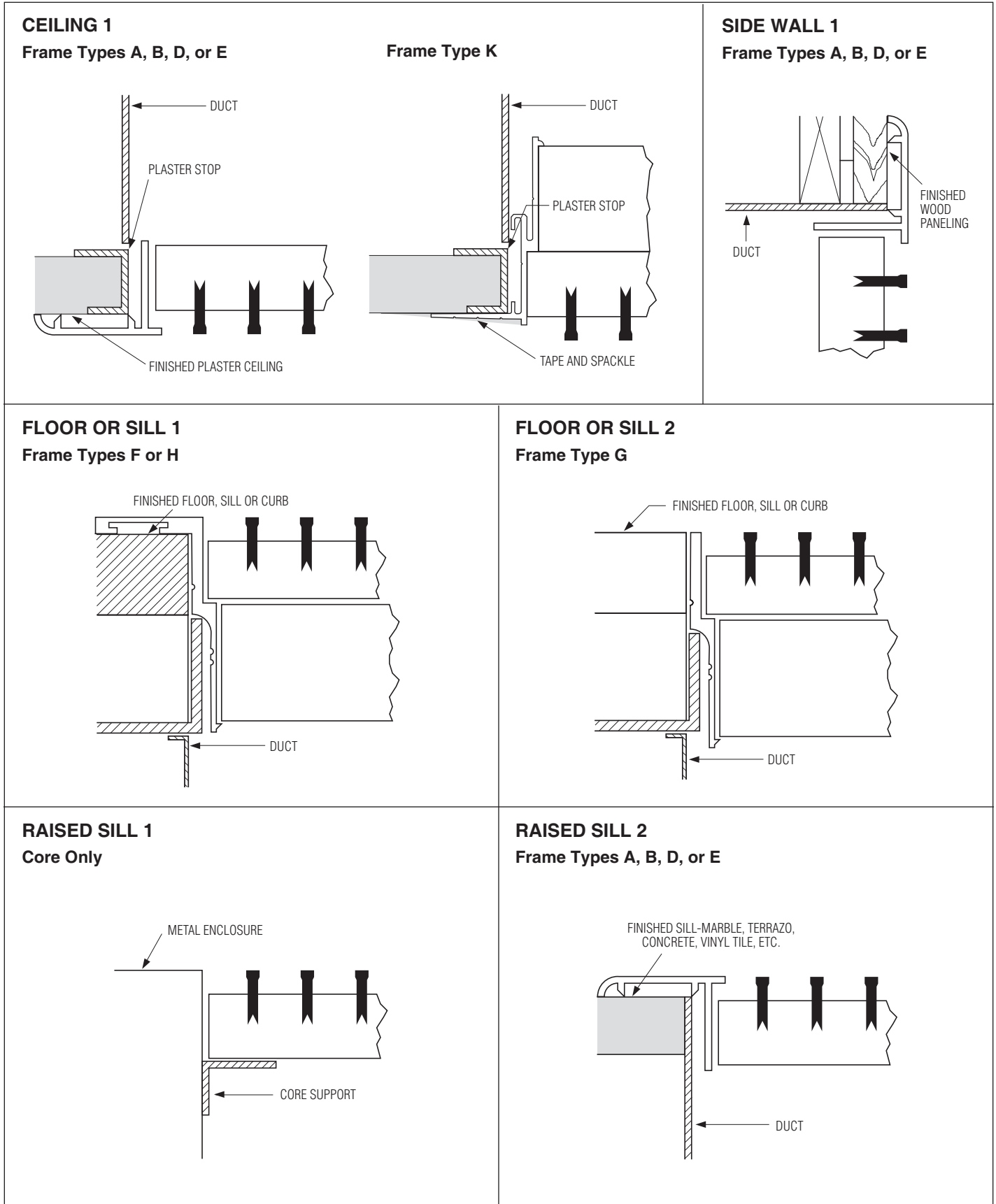
Type 'MU' = 15° or 30°



Type 'MD' = 15° or 30°



## DIMENSIONAL DATA: TYPICAL OPENING PREPARATIONS



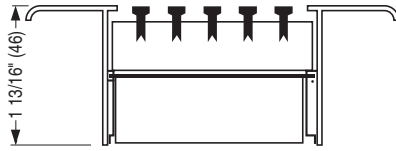
## ACCESSORIES:

### MODEL SERIES 4900

B LINEAR DIFFUSERS AND BAR GRILLES

#### TYPE DV DIRECTIONAL VANES

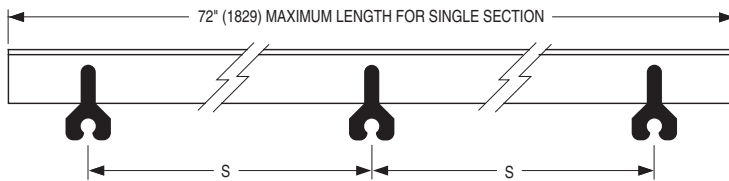
For widths 3" (76) and larger. Fully adjustable extruded aluminum blades on 3/4" (19) centers perpendicular to length.



Requires Frame Type D (deep stack), F, G, H or K.

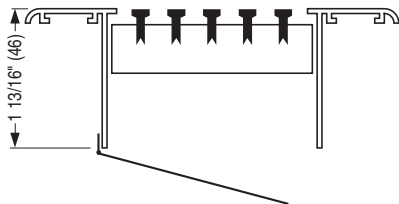
#### TYPE HC HEAVY DUTY CORE

Standard with Heavy duty mounting frame types F, G, H and K. Optional heavy duty core has cross bars on 8" (203) maximum centers (standard duty core is 12" [305]). Structural support designed and installed by others.



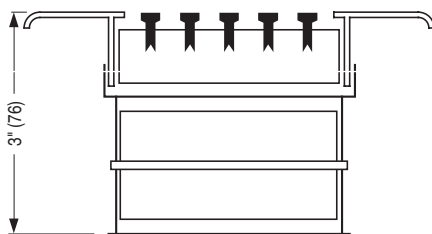
#### TYPE O SINGLE BLADE DAMPER

Friction hinge on 1 1/2" (38) and 2" (51) widths. Screwdriver operator on 2 1/2" (64) through 4" (102).



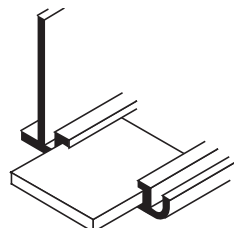
#### TYPE OBD OPPOSED BLADE DAMPER

For linear bar grilles with a nominal duct width of 2 1/2" (64) and wider.



#### ALIGNMENT STRIPS

Supplied as standard on multiple-section assemblies to provide positive and accurate field alignment, except frame G which uses alignment pins.



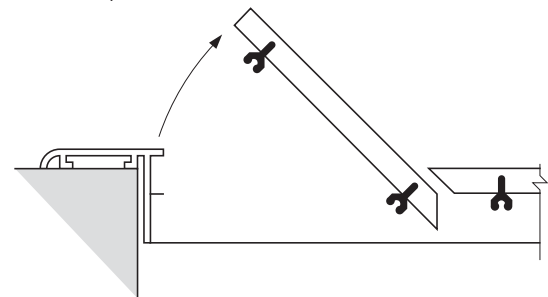
#### TYPE BO STEEL BLANK-OFF

For all available widths. Supplied in 6' (1829) lengths for field cutting. Steel, painted black.

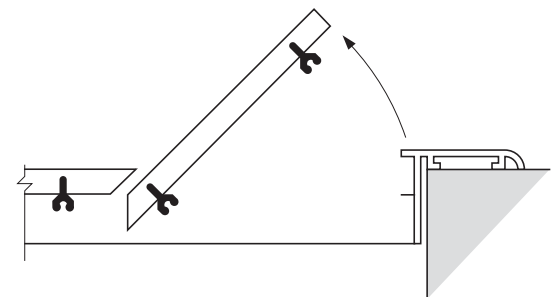


#### ACCESS DOORS

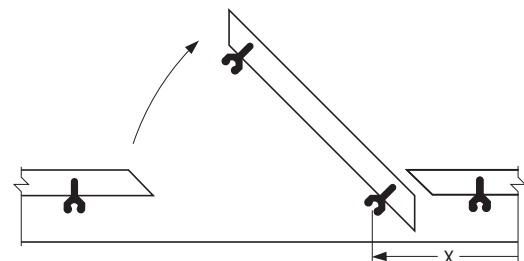
(Not available with Heavy Duty Frame/Border Types F, G, H or K).



□ Type AD1L (left side)



□ Type AD1R (right side)



#### CENTER SECTION:

Type AD3L                      Type AD3R (not shown)

Specify 'X' dim.:

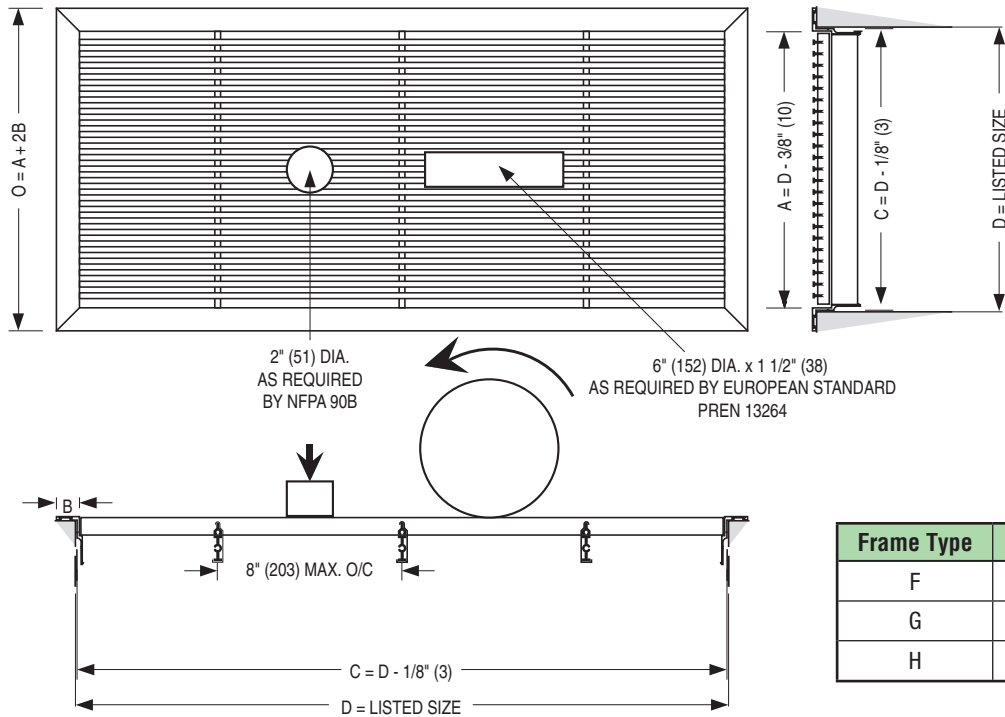
(distance from end of grille frame): \_\_\_\_\_ .

Access door is a 6" (152) core section hinged on one side. When selected with a deflected core, specify deflection:

Sill/ - To the front  
Floor - To the rear

Wall - Up  
Wall - Down

## HEAVY DUTY MAXIMUM FLOOR LOADING: FRAMES F, G, H • ALUMINUM REMOVABLE CORE



### MAXIMUM RECOMMENDED FLOOR LOADING

Model Number	Concentrated Load lbs (kg)	Rolling Load lbs (kg)
49-480, 49-481	500 (227)	350 (159)
49-240, 49-241, 49-243	500 (227)	300 (136)
49-280, 49-281	300 (136)	250 (113)

### DESCRIPTION:

1. Test results are based on standard construction heavy duty bar grilles with frame types F, G or H and with the standard core types as shown in the table. Support bars are spaced on maximum 8" (203) centers and units tested are with a maximum nominal duct width of 12" (305).
2. The maximum recommended load values shown in the chart represent the load that can be applied to the product without permanent deflection of the grille bars. The required load for actual structure failure is generally 2 to 5 times greater.
3. Concentrated load test is in accordance with NFPA 90B. Units were tested with a concentrated load on a 2" (51) diameter disk applied to the most critical area of the exposed face of the bar grille. In accordance with the standard the tests were conducted at an elevated temperature of 165° F (74° C). The standard requires the grilles to resist, without structural failure a concentrated load of 200 lbs (90.7 kg).

4. Rolling load test is in accordance with European Standard prEN 13264. Units were tested at the load shown with a 6" (152) diameter 1.5" (38) wide nylon wheel, traversed across the grille and supporting structure at 66 fpm (0.33 m/s) a minimum of 25 times in both the horizontal and vertical directions without structural failure.



## PERFORMANCE DATA:

### MODEL 49-240 • 1/2" (13) SPACING • 1/4" (6) BARS • 0° DEFLECTION

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure	.010	.022	.039	.062	.087	.119	.156	.198	.245	
<b>.026</b>	<b>1 1/2"</b>	Airflow, CFM/FT.	10	16	21	26	31	36	42	47	52	
		Noise Criteria	-	-	-	19	24	30	34	37	40	
		Throw	Sill or Floor	1-1-1	2-2-2	4-4-4	7-7-7	8-9-10	10-11-12	11-12-14	12-14-16	14-16-18
			Side Wall	2-4-6	4-7-10	5-9-13	7-12-17	8-13-19	10-16-22	11-17-24	12-19-26	14-21-29
<b>.045</b>	<b>2"</b>	Airflow, CFM/FT.	18	27	36	45	54	63	72	81	90	
		Noise Criteria	-	-	-	18	23	29	33	36	39	
		Throw	Sill or Floor	1-1-1	4-4-4	7-7-7	9-9-10	10-11-13	13-14-16	14-16-18	15-17-20	17-19-21
			Side Wall	3-5-7	5-9-12	7-11-16	9-14-20	11-17-23	13-19-26	14-21-28	15-22-30	17-25-33
<b>.066</b>	<b>2 1/2"</b>	Airflow, CFM/FT.	26	40	53	66	79	92	106	119	132	
		Noise Criteria	-	-	-	20	26	31	35	38	41	
		Throw	Sill or Floor	2-2-2	6-6-6	8-8-9	11-12-13	13-14-16	15-17-19	18-20-22	21-22-23	22-23-24
			Side Wall	4-6-9	6-9-12	8-12-17	11-16-22	13-19-25	15-21-28	18-25-32	21-28-36	22-30-39
<b>.088</b>	<b>3"</b>	Airflow, CFM/FT.	35	53	70	88	106	123	141	158	176	
		Noise Criteria	-	-	15	21	27	32	36	39	42	
		Throw	Sill or Floor	2-2-2	7-7-7	10-10-11	12-13-15	15-16-18	18-19-21	20-22-24	24-24-25	26-26-27
			Side Wall	5-7-10	7-11-15	10-14-19	12-17-23	15-21-27	18-24-31	20-27-34	24-31-39	26-34-41
<b>.110</b>	<b>3 1/2"</b>	Airflow, CFM/FT.	44	66	88	110	132	154	176	198	220	
		Noise Criteria	-	-	16	22	28	33	37	40	43	
		Throw	Sill or Floor	3-3-3	8-8-8	12-12-12	15-15-16	18-19-20	20-21-22	23-24-25	25-26-27	29-29-29
			Side Wall	5-7-10	9-12-16	12-16-20	15-20-25	18-23-28	20-26-32	23-29-36	25-32-39	29-36-43
<b>.133</b>	<b>4"</b>	Airflow, CFM/FT.	53	80	106	133	160	186	213	239	266	
		Noise Criteria	-	-	17	23	29	34	38	41	44	
		Throw	Sill or Floor	3-3-3	9-9-9	13-13-13	16-16-17	20-20-21	22-23-24	24-25-26	28-28-28	31-31-31
			Side Wall	6-8-11	10-13-17	13-17-21	16-21-26	20-25-30	22-28-34	24-30-37	28-35-41	31-38-45
<b>.177</b>	<b>5"</b>	Airflow, CFM/FT.	71	106	142	177	212	248	283	318	354	
		Noise Criteria	-	-	18	24	30	35	39	42	45	
		Throw	Sill or Floor	4-4-4	10-10-10	15-15-15	18-18-18	22-22-23	25-25-25	27-27-28	30-30-30	34-34-34
			Side Wall	8-10-13	11-14-18	15-19-23	18-22-27	22-27-32	25-31-37	27-33-39	30-37-43	34-41-47
<b>.222</b>	<b>6"</b>	Airflow, CFM/FT.	89	133	178	222	266	310	355	400	444	
		Noise Criteria	-	-	20	25	31	36	40	43	46	
		Throw	Sill or Floor	5-5-5	10-10-10	15-15-15	19-19-19	23-23-23	25-25-25	29-29-29	31-31-31	36-36-36
			Side Wall	9-11-14	13-16-20	16-20-24	20-24-29	24-29-34	28-33-39	30-35-40	34-40-45	38-44-49

#### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities.
- Throw values are based on a 4 foot section with a cooling  $\Delta T$  of 20°F (11°C). For other lengths, use the correction factor table shown.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
- Return Air Applications:  
Noise Criteria value is increased by + 4.  
Negative Static Pressure = 0.8 x Total Pressure.
- Dash (-) in space indicates a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

#### Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

#### Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.035	.030
2"	.054	.046
2 1/2"	.075	.064
3"	.098	.083
3 1/2"	.120	.102
4"	.143	.121
5"	.187	.159
6"	.233	.198

## PERFORMANCE DATA:

### MODEL 49-241 • 1/2" (13) SPACING • 1/4" (6) BARS • 15° DEFLECTION

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure	.012	.025	.047	.074	.105	.142	.187	.237	.294
<b>.031</b>	<b>1 1/2"</b>	Airflow, CFM/FT.	12	19	25	31	37	43	50	56	62
		Noise Criteria	–	16	24	32	37	42	46	49	52
		Throw	Sill or Floor Side Wall	1-1-1 2-4-6	3-3-3 4-7-10	5-5-5 6-10-14	7-7-7 7-12-17	9-9-10 9-14-20	10-11-12 10-16-23	12-13-15 12-18-25	13-15-17 13-20-27
<b>.048</b>	<b>2"</b>	Airflow, CFM/FT.	19	29	38	48	58	67	77	86	96
		Noise Criteria	–	–	20	27	32	37	41	44	47
		Throw	Sill or Floor Side Wall	1-1-1 3-5-7	4-4-4 5-8-12	7-7-7 7-11-16	9-9-10 9-14-20	11-12-13 11-17-24	13-14-15 13-19-26	15-16-18 15-22-29	16-18-20 16-23-31
<b>.067</b>	<b>2 1/2"</b>	Airflow, CFM/FT.	27	40	54	67	80	94	107	120	134
		Noise Criteria	–	–	20	27	32	37	41	44	47
		Throw	Sill or Floor Side Wall	1-1-1 4-6-8	5-5-5 6-9-13	9-9-9 9-13-17	11-11-12 11-16-21	13-14-15 14-19-25	15-16-18 15-21-27	17-19-21 17-24-31	20-21-22 20-27-35
<b>.086</b>	<b>3"</b>	Airflow, CFM/FT.	34	52	69	86	103	120	138	155	172
		Noise Criteria	–	–	20	27	32	37	41	44	47
		Throw	Sill or Floor Side Wall	2-2-2 4-6-9	6-6-6 8-11-15	10-10-11 10-14-19	12-13-14 13-18-23	15-16-18 16-21-27	18-19-20 18-24-31	20-21-23 21-28-35	23-24-25 23-30-38
<b>.105</b>	<b>3 1/2"</b>	Airflow, CFM/FT.	42	63	84	105	126	147	168	189	210
		Noise Criteria	–	–	20	28	33	38	42	45	48
		Throw	Sill or Floor Side Wall	2-2-2 6-8-11	8-8-8 9-12-16	11-11-12 12-16-21	15-15-15 14-19-24	17-18-19 18-23-29	21-21-22 21-27-33	22-23-25 23-29-36	25-25-26 25-32-39
<b>.127</b>	<b>4"</b>	Airflow, CFM/FT.	51	76	102	127	152	178	203	228	254
		Noise Criteria	–	–	21	29	34	39	43	46	49
		Throw	Sill or Floor Side Wall	3-3-3 6-9-12	9-9-9 10-13-17	13-13-13 13-17-22	16-16-17 15-20-25	19-20-21 19-24-30	22-22-23 22-28-34	24-25-26 25-31-38	27-27-27 28-36-41
<b>.167</b>	<b>5"</b>	Airflow, CFM/FT.	67	100	134	167	200	234	267	301	334
		Noise Criteria	–	–	21	29	34	39	43	46	49
		Throw	Sill or Floor Side Wall	4-4-4 8-11-14	10-10-10 11-15-19	14-14-14 15-19-24	18-18-18 19-23-28	21-21-22 21-26-32	24-24-25 24-30-36	26-27-28 26-32-39	30-30-30 29-36-42
<b>.210</b>	<b>6"</b>	Airflow, CFM/FT.	84	126	168	210	252	294	336	378	420
		Noise Criteria	–	15	23	31	36	41	45	48	51
		Throw	Sill or Floor Side Wall	5-5-5 9-12-15	10-10-10 14-17-21	15-15-15 17-21-25	19-19-19 20-24-29	23-23-23 24-29-34	25-25-25 27-32-38	28-28-29 29-35-40	31-31-31 32-38-43

#### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities.
- Throw values are based on a 4 foot section with a cooling  $\Delta T$  of 20°F (11°C). For other lengths, use the correction factor table shown.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
- Return Air Applications:  
Noise Criteria value is increased by + 4.  
Negative Static Pressure = 0.8 x Total Pressure.
- Dash (–) in space indicates a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

#### Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

#### Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.041	.037
2"	.058	.051
2 1/2"	.076	.066
3"	.095	.080
3 1/2"	.115	.098
4"	.137	.113
5"	.177	.148
6"	.230	.189

## PERFORMANCE DATA:

### MODEL 49-243 • 1/2" (13) SPACING • 1/4" (6) BARS • 30° DEFLECTION

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure	.012	.025	.047	.074	.105	.142	.187	.237	.294	
<b>.031</b>	<b>1 1/2"</b>	Airflow, CFM/FT.	12	19	25	31	37	43	50	56	62	
		Noise Criteria	–	16	24	32	37	42	46	49	52	
		Throw	Sill or Floor	1-1-1	3-3-3	5-5-5	7-7-7	9-9-10	10-11-12	12-13-15	13-15-17	14-16-18
			Side Wall	2-4-6	4-7-10	6-10-14	7-12-17	9-14-20	10-16-23	12-18-25	13-20-27	14-22-30
<b>.048</b>	<b>2"</b>	Airflow, CFM/FT.	19	29	38	48	58	67	77	86	96	
		Noise Criteria	–	–	20	27	32	37	41	44	47	
		Throw	Sill or Floor	1-1-1	4-4-4	7-7-7	9-9-10	11-12-13	13-14-15	15-16-18	16-18-20	17-19-22
			Side Wall	3-5-7	5-8-12	7-11-16	9-14-20	11-17-24	13-19-26	15-22-29	16-23-31	17-25-34
<b>.067</b>	<b>2 1/2"</b>	Airflow, CFM/FT.	27	40	54	67	80	94	107	120	134	
		Noise Criteria	–	–	20	27	32	37	41	44	47	
		Throw	Sill or Floor	1-1-1	5-5-5	9-9-9	11-11-12	13-14-15	15-16-18	17-19-21	20-21-22	22-22-23
			Side Wall	4-6-8	6-9-13	9-13-17	11-16-21	14-19-25	15-21-27	17-24-31	20-27-35	22-29-38
<b>.086</b>	<b>3"</b>	Airflow, CFM/FT.	34	52	69	86	103	120	138	155	172	
		Noise Criteria	–	–	20	27	32	37	41	44	47	
		Throw	Sill or Floor	2-2-2	6-6-6	10-10-11	12-13-14	15-16-18	18-19-20	20-21-23	23-24-25	25-25-25
			Side Wall	4-6-9	8-11-15	10-14-19	13-18-23	16-21-27	18-24-31	21-28-35	23-30-38	26-34-41
<b>.105</b>	<b>3 1/2"</b>	Airflow, CFM/FT.	42	63	84	105	126	147	168	189	210	
		Noise Criteria	–	–	20	28	33	38	42	45	48	
		Throw	Sill or Floor	2-2-2	8-8-8	11-11-12	15-15-15	17-18-19	21-21-22	22-23-25	25-25-26	28-28-29
			Side Wall	6-8-11	9-12-16	12-16-21	14-19-24	18-23-29	21-27-33	23-29-36	25-32-39	28-36-43
<b>.127</b>	<b>4"</b>	Airflow, CFM/FT.	51	76	102	127	152	178	203	228	254	
		Noise Criteria	–	–	21	29	34	39	43	46	49	
		Throw	Sill or Floor	3-3-3	9-9-9	13-13-13	16-16-17	19-20-21	22-22-23	24-25-26	27-27-27	30-30-30
			Side Wall	6-9-12	10-13-17	13-17-22	15-20-25	19-24-30	22-28-34	25-31-38	28-36-41	30-37-44
<b>.167</b>	<b>5"</b>	Airflow, CFM/FT.	67	100	134	167	200	234	267	301	334	
		Noise Criteria	–	–	21	29	34	39	43	46	49	
		Throw	Sill or Floor	4-4-4	10-10-10	14-14-14	18-18-18	21-21-22	24-24-25	26-27-28	30-30-30	32-32-32
			Side Wall	8-11-14	11-15-19	15-19-24	19-23-28	21-26-32	24-30-36	26-32-39	29-36-42	33-39-46
<b>.210</b>	<b>6"</b>	Airflow, CFM/FT.	84	126	168	210	252	294	336	378	420	
		Noise Criteria	–	15	23	31	36	41	45	48	51	
		Throw	Sill or Floor	5-5-5	10-10-10	15-15-15	19-19-19	23-23-23	25-25-25	28-28-29	31-31-31	35-35-35
			Side Wall	9-12-15	14-17-21	17-21-25	20-24-29	24-29-34	27-32-38	29-35-40	32-38-43	36-42-47

#### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities.
- Throw values are based on a 4 foot section with a cooling  $\Delta T$  of 20°F (11°C). For other lengths, use the correction factor table shown.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
- Return Air Applications:  
Noise Criteria value is increased by + 4.  
Negative Static Pressure = 0.8 x Total Pressure.
- Dash (–) in space indicates a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

#### Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

#### Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.041	.037
2"	.058	.051
2 1/2"	.076	.066
3"	.095	.080
3 1/2"	.115	.098
4"	.137	.113
5"	.177	.148
6"	.230	.189

B

LINEAR DIFFUSERS AND BAR GRILLES

## PERFORMANCE DATA:

### MODEL 49-280 • 1/2" (13) SPACING • 1/8" (3) BARS • 0° DEFLECTION

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure	.009	.020	.035	.056	.078	.107	.140	.178	.220
.035	1 1/2"	Airflow, CFM/FT.	14	21	28	35	42	49	56	63	70
		Noise Criteria	–	–	16	22	28	32	36	39	42
		Throw	Sill or Floor	1-1-1	2-2-2	4-4-4	7-7-7	8-9-10	10-11-12	11-12-14	12-14-17
		Side Wall	2-4-6	4-7-10	6-7-13	7-12-17	8-13-19	10-16-22	11-17-24	12-19-26	13-21-29
.055	2"	Airflow, CFM/FT.	22	33	44	55	66	77	88	99	110
		Noise Criteria	–	–	–	18	23	28	32	35	38
		Throw	Sill or Floor	1-1-1	4-4-4	7-7-7	9-9-10	11-11-12	13-14-16	14-16-18	15-17-20
		Side Wall	3-5-7	5-8-12	7-11-16	9-14-20	11-17-23	13-19-26	14-21-28	15-22-30	17-25-33
.074	2 1/2"	Airflow, CFM/FT.	30	44	59	74	89	104	118	133	148
		Noise Criteria	–	–	–	17	22	27	31	34	37
		Throw	Sill or Floor	1-1-1	5-5-5	9-9-9	11-11-12	13-14-15	15-16-17	18-19-20	20-21-23
		Side Wall	4-6-8	6-9-13	9-13-17	11-16-21	13-18-24	15-21-28	17-24-31	20-27-35	23-31-39
.096	3"	Airflow, CFM/FT.	38	58	77	96	115	134	154	173	192
		Noise Criteria	–	–	–	17	22	27	31	34	37
		Throw	Sill or Floor	2-2-2	7-7-7	10-10-11	12-13-14	15-16-17	18-19-20	20-21-23	23-24-25
		Side Wall	5-7-10	7-10-14	10-14-19	12-17-23	15-20-26	18-24-30	20-27-34	23-30-38	25-33-41
.116	3 1/2"	Airflow, CFM/FT.	46	69	93	116	139	162	186	209	232
		Noise Criteria	–	–	–	17	22	27	31	34	37
		Throw	Sill or Floor	3-3-3	8-8-8	12-12-12	15-15-16	18-19-20	20-21-23	23-24-25	25-26-27
		Side Wall	5-7-10	9-12-16	12-16-20	15-20-25	18-23-28	20-26-32	23-29-36	25-32-39	29-36-43
.139	4"	Airflow, CFM/FT.	56	83	111	139	167	195	222	250	278
		Noise Criteria	–	–	–	18	23	28	32	35	38
		Throw	Sill or Floor	3-3-3	9-9-9	13-13-13	16-16-17	20-20-21	23-23-24	24-25-26	27-27-27
		Side Wall	6-8-11	10-13-17	13-17-21	16-20-25	20-25-30	22-28-34	24-30-37	28-35-41	31-38-44
.179	5"	Airflow, CFM/FT.	72	107	143	179	215	250	286	322	358
		Noise Criteria	–	–	–	18	23	28	32	35	38
		Throw	Sill or Floor	4-4-4	10-10-10	14-14-14	18-18-18	22-22-23	24-24-24	27-27-28	30-30-31
		Side Wall	8-10-13	11-14-18	15-19-23	18-22-27	22-27-32	24-30-36	27-33-39	30-37-43	34-41-47
.221	6"	Airflow, CFM/FT.	88	133	177	221	265	310	354	398	442
		Noise Criteria	–	–	–	20	24	29	33	36	39
		Throw	Sill or Floor	5-5-5	10-10-10	15-15-15	18-18-18	23-23-23	25-25-25	28-28-28	31-31-31
		Side Wall	9-12-15	13-16-20	16-20-24	20-24-29	24-29-34	28-33-39	30-35-40	34-40-45	38-44-49

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities.

2. Throw values are based on a 4 foot section with a cooling  $\Delta T$  of 20°F (11°C).

For other lengths, use the correction factor table shown.

3. Total Pressure is in inches w.g..

4. Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.

5. Return Air Applications:

Noise Criteria value is increased by + 4.

Negative Static Pressure = 0.8 x Total Pressure.

6. Dash (–) in space indicates a Noise Criteria level of less than 15.

7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

#### Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

#### Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.047	.040
2"	.066	.055
2 1/2"	.084	.073
3"	.107	.089
3 1/2"	.127	.113
4"	.150	.127
5"	.190	.163
6"	.232	.197

## PERFORMANCE DATA:

### MODEL 49-281 • 1/2" (13) SPACING • 1/8" (3) BARS • 15° DEFLECTION

**LINEAR DIFFUSERS AND BAR GRILLES**

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure	.009	.020	.035	.056	.078	.107	.140	.178	.220	
<b>.039</b>	<b>1 1/2"</b>	Airflow, CFM/FT.	<b>16</b>	<b>23</b>	<b>31</b>	<b>39</b>	<b>47</b>	<b>55</b>	<b>62</b>	<b>70</b>	<b>78</b>	
		Noise Criteria	–	18	27	33	38	43	47	50	53	
		Throw	Sill or Floor	1-1-1	3-3-3	5-5-5	8-8-8	9-9-10	10-11-13	12-13-15	13-15-17	14-16-18
			Side Wall	2-4-6	4-7-10	6-10-14	8-13-18	9-14-20	10-16-23	12-18-25	13-20-27	14-22-30
<b>.056</b>	<b>2"</b>	Airflow, CFM/FT.	<b>22</b>	<b>34</b>	<b>45</b>	<b>56</b>	<b>67</b>	<b>78</b>	<b>90</b>	<b>101</b>	<b>112</b>	
		Noise Criteria	–	–	20	26	31	36	40	44	47	
		Throw	Sill or Floor	1-1-1	4-4-4	7-7-7	9-9-10	11-12-13	12-14-16	14-16-18	15-17-20	18-19-21
			Side Wall	3-5-7	5-8-12	7-11-16	9-14-20	11-17-23	12-18-25	14-20-27	15-22-30	18-26-34
<b>.075</b>	<b>2 1/2"</b>	Airflow, CFM/FT.	<b>30</b>	<b>45</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>105</b>	<b>120</b>	<b>135</b>	<b>150</b>	
		Noise Criteria	–	–	18	24	30	35	39	43	46	
		Throw	Sill or Floor	1-1-1	5-5-5	8-8-9	11-11-12	13-14-15	15-16-18	17-19-21	20-21-22	22-22-23
			Side Wall	4-6-8	6-9-13	8-12-17	11-16-21	13-19-25	15-21-27	17-24-31	20-27-35	22-30-38
<b>.093</b>	<b>3"</b>	Airflow, CFM/FT.	<b>37</b>	<b>56</b>	<b>74</b>	<b>93</b>	<b>112</b>	<b>130</b>	<b>149</b>	<b>167</b>	<b>186</b>	
		Noise Criteria	–	–	17	23	29	34	38	42	45	
		Throw	Sill or Floor	2-2-2	6-6-6	10-10-10	12-12-13	15-16-17	18-19-20	20-21-23	23-23-24	25-25-25
			Side Wall	4-6-9	7-10-14	10-13-18	12-17-22	15-20-26	18-24-30	20-26-33	23-30-37	25-32-39
<b>.113</b>	<b>3 1/2"</b>	Airflow, CFM/FT.	<b>45</b>	<b>68</b>	<b>90</b>	<b>113</b>	<b>136</b>	<b>158</b>	<b>181</b>	<b>203</b>	<b>226</b>	
		Noise Criteria	–	–	17	23	29	34	38	42	45	
		Throw	Sill or Floor	2-2-2	7-7-7	12-12-12	14-14-15	17-18-19	20-21-22	22-23-24	25-25-26	27-27-27
			Side Wall	5-7-10	8-11-15	12-16-20	14-18-23	17-22-27	20-25-31	22-28-35	25-32-39	27-34-41
<b>.133</b>	<b>4"</b>	Airflow, CFM/FT.	<b>53</b>	<b>80</b>	<b>106</b>	<b>133</b>	<b>160</b>	<b>186</b>	<b>212</b>	<b>239</b>	<b>266</b>	
		Noise Criteria	–	–	18	24	30	35	39	43	46	
		Throw	Sill or Floor	3-3-3	8-8-9	13-13-13	15-15-16	19-19-20	22-22-23	24-24-25	26-26-27	30-30-30
			Side Wall	6-8-11	9-12-16	13-17-21	15-19-24	19-24-29	22-27-33	24-30-36	26-33-39	30-37-43
<b>.173</b>	<b>5"</b>	Airflow, CFM/FT.	<b>69</b>	<b>104</b>	<b>138</b>	<b>173</b>	<b>208</b>	<b>242</b>	<b>277</b>	<b>312</b>	<b>346</b>	
		Noise Criteria	–	–	18	24	30	35	39	43	46	
		Throw	Sill or Floor	4-4-4	9-9-9	14-14-14	17-17-17	20-21-22	24-24-24	26-26-27	29-29-29	32-32-32
			Side Wall	8-10-13	11-14-18	15-19-23	17-21-26	20-25-31	24-29-35	26-33-38	29-35-41	32-39-45
<b>.212</b>	<b>6"</b>	Airflow, CFM/FT.	<b>85</b>	<b>127</b>	<b>170</b>	<b>212</b>	<b>254</b>	<b>296</b>	<b>339</b>	<b>382</b>	<b>424</b>	
		Noise Criteria	–	–	18	24	30	35	39	43	46	
		Throw	Sill or Floor	5-5-5	10-10-10	15-15-15	18-18-18	23-23-23	25-25-25	28-28-28	30-30-30	34-34-34
			Side Wall	9-11-14	13-16-20	16-20-24	20-24-28	23-27-32	25-30-36	28-33-39	31-37-42	35-41-46

#### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities.
- Throw values are based on a 4 foot section with a cooling ΔT of 20°F (11°C). For other lengths, use the correction factor table shown.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
- Return Air Applications:  
Noise Criteria value is increased by + 4.  
Negative Static Pressure = 0.8 x Total Pressure.
- Dash (–) in space indicates a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

#### Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

#### Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
<b>1 1/2"</b>	.052	.047
<b>2"</b>	.067	.060
<b>2 1/2"</b>	.086	.075
<b>3"</b>	.103	.091
<b>3 1/2"</b>	.123	.103
<b>4"</b>	.143	.126
<b>5"</b>	.183	.157
<b>6"</b>	.222	.188

## PERFORMANCE DATA:

### MODEL 49-480 • 1/4" (6) SPACING • 1/8" (3) BARS • 0° DEFLECTION

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure	.011	.024	.043	.068	.096	.130	.171	.218	.269	
.031	1 1/2"	Airflow, CFM/FT.	12	19	25	31	37	43	50	56	62	
		Noise Criteria	–	–	–	20	24	29	33	36	39	
		Throw	Sill or Floor	1-1-1	2-2-2	4-4-4	6-6-6	8-8-9	9-10-11	10-11-13	12-13-15	13-15-18
			Side Wall	2-4-6	4-7-10	6-9-13	7-11-16	8-13-19	9-15-21	10-16-23	12-18-25	13-20-28
.047	2"	Airflow, CFM/FT.	19	28	37	47	56	66	75	84	94	
		Noise Criteria	–	–	–	18	23	29	32	36	39	
		Throw	Sill or Floor	1-1-1	4-4-4	6-6-6	9-9-9	11-11-12	12-13-15	14-15-17	15-17-19	16-18-20
			Side Wall	3-5-7	5-8-11	7-11-15	9-14-19	11-16-22	12-18-25	14-20-27	15-22-29	16-24-32
.065	2 1/2"	Airflow, CFM/FT.	26	39	52	65	78	91	104	117	130	
		Noise Criteria	–	–	–	20	24	30	34	37	40	
		Throw	Sill or Floor	1-1-1	5-5-5	8-8-8	10-10-11	13-14-15	15-16-17	16-18-20	20-20-21	22-22-22
			Side Wall	4-6-8	6-9-12	8-12-16	10-15-20	13-18-24	15-21-27	16-22-30	20-27-34	22-30-38
.083	3"	Airflow, CFM/FT.	33	50	66	83	100	116	133	149	166	
		Noise Criteria	–	–	–	20	26	31	35	38	41	
		Throw	Sill or Floor	2-2-2	6-6-6	9-9-10	12-12-13	15-16-17	18-19-20	20-21-22	23-23-23	25-25-25
			Side Wall	4-6-9	7-10-14	9-13-18	12-17-22	15-20-25	18-23-29	20-26-33	23-30-37	25-32-39
.102	3 1/2"	Airflow, CFM/FT.	41	61	82	102	122	143	163	184	204	
		Noise Criteria	–	–	15	21	27	32	36	39	42	
		Throw	Sill or Floor	2-2-2	7-7-7	10-10-11	15-15-15	17-18-19	20-21-22	22-23-24	25-25-26	27-27-27
			Side Wall	5-7-10	8-11-15	10-15-20	15-19-24	17-22-27	20-25-31	22-28-35	25-32-39	27-34-41
.122	4"	Airflow, CFM/FT.	49	73	98	122	146	171	195	220	244	
		Noise Criteria	–	–	16	22	29	33	37	40	43	
		Throw	Sill or Floor	3-3-3	8-8-8	12-12-13	15-15-16	19-19-20	21-21-23	24-24-25	26-26-27	29-29-30
			Side Wall	6-8-11	9-12-16	12-16-20	15-20-25	19-24-29	21-26-32	24-30-36	26-33-39	30-37-46
.157	5"	Airflow, CFM/FT.	63	94	125	157	188	220	251	282	314	
		Noise Criteria	–	–	16	22	28	33	37	40	43	
		Throw	Sill or Floor	4-4-4	9-9-9	14-14-14	17-17-17	21-21-22	24-24-24	27-27-27	29-29-29	32-32-32
			Side Wall	7-9-12	11-14-18	14-18-22	17-21-26	21-26-31	24-29-35	27-33-39	30-36-42	33-40-46
.194	6"	Airflow, CFM/FT.	78	116	155	194	233	272	310	349	388	
		Noise Criteria	–	–	18	24	30	35	38	42	43	
		Throw	Sill or Floor	5-5-5	10-10-10	15-15-15	18-18-18	23-23-23	25-25-25	28-28-29	31-31-31	34-34-34
			Side Wall	8-10-13	12-15-19	15-19-23	20-24-28	23-27-32	26-31-37	29-34-39	33-39-44	37-43-48

#### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities.
- Throw values are based on a 4 foot section with a cooling  $\Delta T$  of 20°F (11°C). For other lengths, use the correction factor table shown.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
- Return Air Applications:  
Noise Criteria value is increased by + 4.  
Negative Static Pressure = 0.8 x Total Pressure.
- Dash (–) in space indicates a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

#### Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

#### Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.041	.034
2"	.056	.048
2 1/2"	.074	.064
3"	.092	.078
3 1/2"	.111	.098
4"	.131	.111
5"	.166	.143
6"	.203	.173



## PERFORMANCE DATA:

### MODEL 49-481 • 1/4" (6) SPACING • 1/8" (3) BARS • 15° DEFLECTION

B

LINEAR DIFFUSERS AND BAR GRILLES

Free Area Square Feet per Lineal Foot	Nominal Duct Width	Total Pressure	.012	.026	.049	.077	.109	.148	.195	.247	.304	
.034	1 1/2"	Airflow, CFM/FT.	14	20	27	34	41	48	54	61	68	
		Noise Criteria	-	-	22	30	35	39	43	46	49	
		Throw	Sill or Floor	1-1-1	3-3-3	4-4-4	7-7-7	9-9-10	10-11-12	12-13-15	13-14-16	14-16-18
			Side Wall	2-4-6	4-7-10	6-10-14	7-12-17	9-14-20	10-16-22	12-18-25	13-20-27	14-22-30
.049	2"	Airflow, CFM/FT.	20	29	39	49	59	69	78	88	98	
		Noise Criteria	-	-	20	27	32	37	41	44	47	
		Throw	Sill or Floor	1-1-1	4-4-4	6-6-6	9-9-9	11-11-12	12-13-15	14-16-18	15-17-19	16-18-20
			Side Wall	3-5-7	5-8-11	7-11-15	9-14-19	11-16-22	12-18-25	14-20-27	15-22-29	16-24-32
.065	2 1/2"	Airflow, CFM/FT.	26	39	52	65	78	91	104	117	130	
		Noise Criteria	-	-	20	27	32	37	41	44	47	
		Throw	Sill or Floor	1-1-1	5-5-5	8-8-8	10-10-11	13-14-15	14-15-17	17-18-20	19-20-21	21-21-22
			Side Wall	4-6-8	6-9-12	8-12-16	10-15-20	13-19-24	14-20-26	17-23-30	19-26-33	21-28-36
.082	3"	Airflow, CFM/FT.	33	49	66	82	98	115	131	148	164	
		Noise Criteria	-	-	20	27	32	37	41	44	47	
		Throw	Sill or Floor	2-2-2	6-6-6	9-9-9	12-12-13	15-15-16	17-18-19	20-21-22	21-22-23	23-23-24
			Side Wall	4-6-9	7-10-13	9-13-17	12-16-21	15-20-25	17-22-28	20-26-32	21-28-35	23-31-39
.099	3 1/2"	Airflow, CFM/FT.	40	59	79	99	119	138	158	178	198	
		Noise Criteria	-	-	20	28	33	37	41	44	47	
		Throw	Sill or Floor	2-2-2	8-8-8	11-11-11	13-13-14	16-17-18	19-20-21	22-22-23	23-24-25	26-26-26
			Side Wall	5-7-9	8-11-14	11-15-19	13-17-22	16-21-26	19-24-30	22-28-34	23-30-37	26-33-40
.117	4"	Airflow, CFM/FT.	47	70	94	117	140	164	187	220	234	
		Noise Criteria	-	-	21	28	34	38	42	45	48	
		Throw	Sill or Floor	3-3-3	9-9-9	12-12-12	15-15-15	18-19-20	21-21-22	23-24-25	25-25-26	28-28-28
			Side Wall	5-7-10	9-12-15	12-16-20	15-19-24	18-23-28	21-26-32	23-29-35	25-32-39	29-36-42
.152	5"	Airflow, CFM/FT.	61	91	121	152	182	212	243	274	304	
		Noise Criteria	-	-	22	29	34	39	43	46	49	
		Throw	Sill or Floor	3-3-3	9-9-9	13-13-13	16-16-17	20-20-21	23-23-24	25-25-26	28-28-28	31-31-31
			Side Wall	7-9-12	10-13-17	14-18-22	16-21-26	20-25-30	23-28-34	25-31-37	28-34-40	31-38-44
.186	6"	Airflow, CFM/FT.	74	111	149	186	223	260	298	335	372	
		Noise Criteria	-	-	22	30	35	40	43	47	50	
		Throw	Sill or Floor	4-4-4	10-10-10	14-14-14	18-18-18	22-22-22	25-25-25	28-28-28	30-30-30	33-32-32
			Side Wall	8-10-13	11-14-18	15-19-23	19-23-27	23-27-31	25-30-35	28-33-39	31-37-42	34-40-45

#### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities.
- Throw values are based on a 4 foot section with a cooling  $\Delta T$  of 20°F (11°C). For other lengths, use the correction factor table shown.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values are based on a 10 foot active section. For other lengths, use the correction factor table shown.
- Return Air Applications:  
Noise Criteria value is increased by + 4.  
Negative Static Pressure = 0.8 x Total Pressure.
- Dash (-) in space indicates a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

#### Noise Criteria Correction for Length

Active Length, ft.	1	2	4	8	10	15	20
Correction Factor	-10	-7	-4	-1	0	+2	+3

#### Throw Correction for Length

Active Length	Terminal Velocity		
	150 fpm	100 fpm	50 fpm
1 ft.	0.5	0.6	0.7
10 ft. +	1.6	1.4	1.2

Nominal Width	Ak Factor per foot	
	Supply	Return
1 1/2"	.045	.041
2"	.059	.053
2 1/2"	.074	.065
3"	.091	.080
3 1/2"	.108	.091
4"	.126	.108
5"	.161	.138
6"	.195	.166

## HOW TO ORDER

### LINEAR BAR GRILLES – MODEL SERIES 4900

#### MODELS 49-240, 49-241, 49-243, 49-280, 49-281, 49-480, 49-481

**EXAMPLE: 49 - 240 - O - 60" x 4" - B - AW - C - MM - —**

#### 1a. Models

- 49-240 1/2" (13) spacing, 1/4" (6) bars, 0° deflection
- 49-241 1/2" (13) spacing, 1/4" (6) bars, 15° deflection
- 49-243 1/2" (13) spacing, 1/4" (6) bars, 30° deflection
- 49-280 1/2" (13) spacing, 1/8" (3) bars, 0° deflection
- 49-281 1/2" (13) spacing, 1/8" (3) bars, 15° deflection
- 49-480 1/4" (6) spacing, 1/8" (3) bars, 0° deflection
- 49-481 1/4" (6) spacing, 1/8" (3) bars, 15° deflection

#### Blank-off

- 49-BO Steel – 6 ft. long

#### 1b. Damper

(model suffix)

- None (default)
- O Steel Opposed Blade Damper

#### 2. Nominal Length

inches or mm's

#### 3. Width

inches or mm's

#### 4. Frame/Border Type

- A 1" (25) Flange
- B 3/4" (19) Flange
- C 1" (25) Flange and Sub-frame
- D 1" (25) Flange with Deep Stack
- E 1/2" (13) Flange
- CO Core only

#### Heavy Duty Frame/Border Type

- F 1" (25) Flange, Heavy Duty (Floor)
- G No Flange, Heavy Duty (Floor)
- H 3/4" (19) Beveled Flange, Heavy Duty (Floor)
- K Tape and Spackle

#### 5. Finish

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime coat paint
- PPA Paint prepared aluminum
- SP Special custom color
- SA Satin (clear) anodized
- LBA Light Bronze anodized
- MBA Medium Bronze anodized
- DBA Dark Bronze anodized
- BC Brushed and clear coat lacquer
- LBP Light Bronze paint
- MBP Medium Bronze paint
- DBP Dark Bronze paint

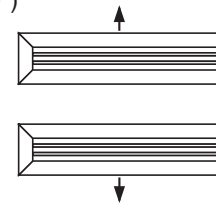
#### 6. Fastening

- N None (default)
- A Screw Holes
- B Spring Clips
- C Concealed mounting
- HC1 Hard Ceiling Clip - 5/8" (16) drywall
- HC5 Hard Ceiling Clip - 1/2" (13) drywall

#### 7. End Cap Configuration

(Not applicable on Frame/Border Type CO)

- MM Mitered Mitered (default)
- OO Open Open
- MO Mitered Open (0°)
- MU Mitered Open, Deflection up (15°, 30°)
- MD Mitered Open, Deflection down (15°, 30°)



#### OTHER OPTIONS AND ACCESSORIES:

#### 8. Access Door

- AD1L Left Side
- AD1R Right Side
- AD3L Center, opens from Left Side  
Specify 'X' Dimension (in. [mm])
- AD3R Center, opens from Right Side  
Specify 'X' Dimension (in. [mm])

#### 9. Heavy Duty Core

- HC Heavy Duty Core

#### 10. Deflector Vanes

- DV Directional Vanes (D, F, G or H Frame only)

#### 11. Angle Cut

- None (default)
- AC1 One end, Specify Angle
- AC2 Both ends, Specify Angle

#### Notes:

1. Type A fastening is not available on Frame Types E, G or H. Types B and C fastening are not available with Frame Type K. Types HC1 and HC5 fastening are only available with Frame Type K.
2. Access door not available with Frame/Border Types F, G, H or K or when damper is required. AD1L and AD1R require mitered end cap same side.
3. Blank-offs are supplied in 6 ft. sections for field trimming. Specify width only.
4. Angle cut AC1 is not applicable with end cap MM. AC2 requires OO end cap. If AC1 or AC2 is selected with Frame/Border Type CO then end cap will not apply.

## HOW TO ORDER

### MITERED CORNER SECTION LINEAR BAR GRILLES – MODEL SERIES 4900

MODELS 49-240MC, 49-241MC, 49-243MC, 49-280MC, 49-281MC, 49-480MC, 49-481MC

EXAMPLE: 49 - 240MC - 4" - 12 - B - AW - C - FO - 90

**1. Models**

- 49-240MC 1/2" (13) spacing, 1/4" (6) bars, 0° deflection
- 49-241MC 1/2" (13) spacing, 1/4" (6) bars, 15° deflection
- 49-243MC 1/2" (13) spacing, 1/4" (6) bars, 30° deflection
- 49-280MC 1/2" (13) spacing, 1/8" (3) bars, 0° deflection
- 49-281MC 1/2" (13) spacing, 1/8" (3) bars, 15° deflection
- 49-480MC 1/4" (6) spacing, 1/8" (3) bars, 0° deflection
- 49-481MC 1/4" (6) spacing, 1/8" (3) bars, 15° deflection

**2. Width**

inches or mm's

**3. Duct Length - Overall Dimension**

inches or mm's

- 12 12" (305) (Default if width is ≤ 4" [102])
- 18 18" (457) (Default if width is > 4" [102])

**4. Frame/Border Type**

- A 1" (25) Flange
- B 3/4" (19) Flange
- C 1" (25) Flange and Sub-frame
- D 1" (25) Flange with Deep Stack
- E 1/2" (13) Flange

**Heavy Duty Frame/Border Type**

- F 1" (25) Flange, Heavy Duty (Floor)
- G No Flange, Heavy Duty (Floor)
- H 3/4" (19) Beveled Flange, Heavy Duty (Floor)
- K Tape and Spackle

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime coat paint
- PPA Paint prepared aluminum
- SP Special custom color
- SA Satin (clear) anodized
- LBA Light Bronze anodized
- MBA Medium Bronze anodized
- DBA Dark Bronze anodized
- BC Brushed and clear coat lacquer
- LBP Light Bronze paint
- MBP Medium Bronze paint
- DBP Dark Bronze paint

**6. Fastening**

- N None
- A Screw Holes
- B Spring Clips
- C Concealed mounting
- HC1 Hard Ceiling Clip - 5/8" (16) drywall
- HC5 Hard Ceiling Clip - 1/2" (13) drywall

**7. Application/Pattern**

**0° Deflection Cores:**

- FO Floor, Ceiling, Sill (Flat)
- WC Sidewall, Inside
- WD Sidewall, Outside

**15° and 30° Deflection Cores:**

- FA Floor, Ceiling, Sill; Deflection Inside
- FB Floor, Ceiling, Sill; Deflection Outside
- WC Sidewall, Inside
- WD Sidewall, Outside

**8. Mitered Angle**

- 90 90° (default)
- 135 135°
- AN Degree of Angle (Specify angle = \_\_\_\_ )

**Notes:**

1. Damper not available.
2. Type A fastening is not available on Frame Types E, G or H. Types B and C fastening are not available with Frame Type K. Types HC1 and HC5 fastening are only available with Frame Type K.

## HOW TO SPECIFY

### LINEAR BAR GRILLES – MODEL SERIES 4900

**MODELS 49-240, 49-241, 49-243, 49-280, 49-281, 49-480, 49-481**

#### SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **49-240** (1/2" [13] spacing, 1/4" [6] bars, 0° deflection); **49-241** (1/2" [13] spacing, 1/4" [6] bars, 15° deflection); **49-243** (1/2" [13] spacing, 1/4" [6] bars, 30° deflection); **49-280** (1/2" [13] spacing, 1/8" [3] bars, 0° deflection); **49-281** (1/2" [13] spacing, 1/8" [3] bars, 15° deflection); **49-480** (1/4" [6] spacing, 1/8" [3] bars, 0° deflection); **49-481** (1/4" [6] spacing, 1/8" [3] bars, 15° deflection) **Linear Bar Grilles** of the sizes and capacities shown on the plans and air distribution schedules. The maximum length of a single section shall be 72" (1829) long. All sizes larger than 72" (1829) shall be provided in continuous multiple sections. Alignment strips are to be provided for joining continuous grille sections together. All frame types shall be extruded aluminum and include fastening as specified. A grille with a frame selection of A, B, C, D or E shall have a non-removable core that has fixed extruded aluminum bars and extruded aluminum cross bars that are spaced on a maximum of 12" (305) centers. A grille with a heavy duty frame selection of F, G, H or K shall have a removable core that attaches with core clips. The core shall have fixed extruded aluminum bars and extruded aluminum cross bars that are spaced on a maximum of 8" (203) centers. The finish is to be AW Appliance White (optional finishes are available).

(Optional) A damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided on all units.

The manufacturer shall provide published performance data for the linear bar grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

## LINEAR LOUVER DIFFUSERS

- EXTRUDED ALUMINUM
- ARCHITECTURAL
- HIGH CAPACITY
- SQUARE OR RECTANGULAR NECKS

### Models:

48LL1 One-Way Pattern

48LL2 Two-Way Pattern

- Suffix '-O' adds a steel OBD
- Suffix '-OA' adds an aluminum OBD



Models 48LL1 and 48LL2

Model Series 48LL Linear Louver (Vane) Diffusers feature architectural linear styling for high capacity supply and return air applications in hard ceilings or sidewalls. They are designed for duct mounted installation. Designed for use in discrete lengths, the fixed louvers provide a tight horizontal discharge pattern over a wide range of airflow rates and are an excellent choice for VAV systems.

### STANDARD FEATURES:

- Spring-loaded core. Removable without the use of tools for ease of installation and access to the optional damper.
- Secure core attachment.
- Installation is with concealed screws through the neck of the outer frame, providing an aesthetically clean visual appearance (Type N).

- Standard lengths are 24", 36", 48", 60" and 72" (600, 900, 1200, 1500 and 1800).

### CONSTRUCTION MATERIAL:

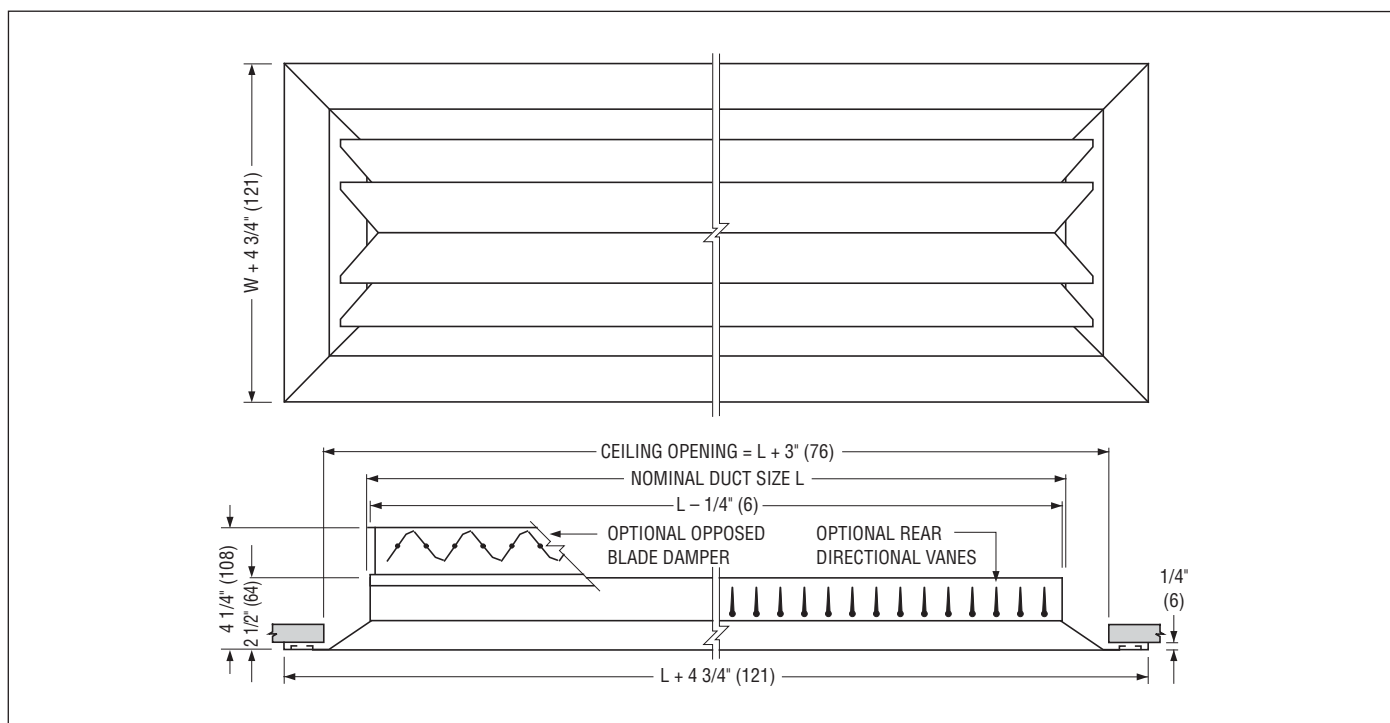
Extruded Aluminum.

### FINISH OPTIONS:

- AW Appliance White is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- Steel opposed blade damper (factory mounted) – Model 48LL1-O or 48LL2-O.
- Aluminum opposed blade damper (factory mounted) – Model 48LL1-OA or 48LL2-OA.
- DV Directional vanes (rear).
- Type A screw fastening (face).



## DIMENSIONAL DATA:

### LINEAR LOUVER DIFFUSERS

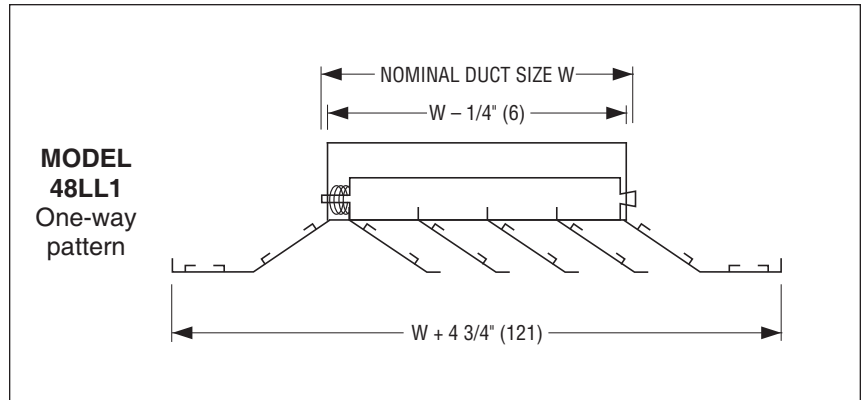
#### AVAILABLE SIZES:

Unit Size is determined by duct width W.  
Diffuser necks are undersized.

#### Model 48LL1:

Available widths are 3", 4 1/2", 6", 7 1/2", 9", 10 1/2", 12" (76, 114, 152, 191, 229, 267, 305).

Standard lengths are 24", 36", 48", 60" and 72" (600, 900, 1200, 1500 and 1800).



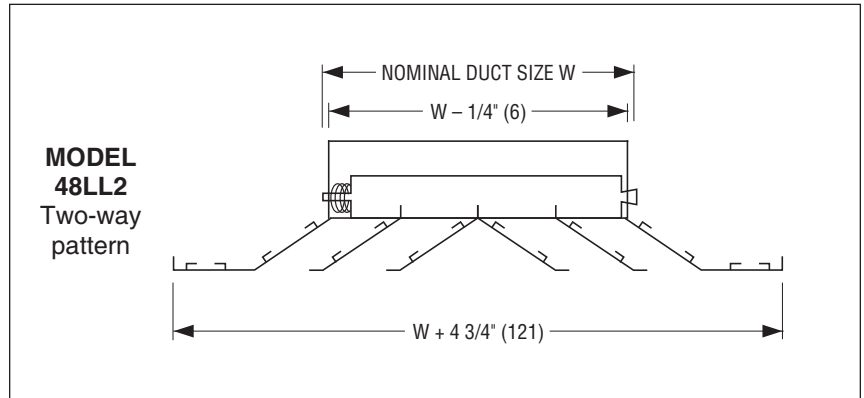
#### Available Widths

Nominal Duct Width W	inches	3	4 1/2	6	7 1/2	9	10 1/2	12
	mm	76	114	152	191	229	267	305

#### Model 48LL2:

Available widths are 3", 6", 9", 12" (76, 152, 229 and 305).

Standard lengths are 24", 36", 48", 60" and 72" (600, 900, 1200, 1500 and 1800).



#### Available Widths

Nominal Duct Width W	inches	3	6	9	12
	mm	76	152	229	305



## PERFORMANCE DATA:

### LINEAR LOUVER DIFFUSERS

#### Model: 48LL1 • One-Way Pattern

Nominal Duct Width Size	Neck Velocity, FPM	300	400	500	600	700	800	900
	Velocity Pressure	.006	.010	.016	.022	.031	.040	.050
Total Pressure	.037	.064	.101	.145	.197	.258	.326	
3"	Airflow, CFM/FT.	75	100	125	150	175	200	225
	Noise Criteria	–	–	20	24	28	32	35
	Throw	14-17-24	16-20-28	16-22-31	20-24-34	21-26-38	20-28-39	24-30-42
4 1/2"	Airflow, CFM/FT.	113	150	188	225	263	300	338
	Noise Criteria	–	16	22	26	30	34	37
	Throw	18-22-32	21-26-37	23-29-41	28-32-44	28-34-48	30-37-51	32-39-55
6"	Airflow, CFM/FT.	150	200	250	300	350	400	450
	Noise Criteria	–	17	23	27	31	35	38
	Throw	21-25-36	24-29-31	27-33-46	29-36-51	32-39-55	34-41-59	36-44-63
7 1/2"	Airflow, CFM/FT.	187	150	312	375	437	500	563
	Noise Criteria	–	17	23	27	31	35	38
	Throw	3-29-41	27-33-47	29-37-52	33-41-56	36-43-61	38-47-65	41-49-70
9"	Airflow, CFM/FT.	225	300	375	450	525	600	675
	Noise Criteria	–	18	24	28	32	36	39
	Throw	25-31-44	30-36-52	33-40-58	35-45-63	39-48-67	42-52-73	45-56-77
10 1/2"	Airflow, CFM/FT.	263	350	438	525	613	700	788
	Noise Criteria	–	18	25	28	33	37	40
	Throw	27-34-48	32-39-60	34-43-61	39-48-66	42-50-72	48-55-76	48-58-82
12"	Airflow, CFM/FT.	300	400	500	600	700	800	900
	Noise Criteria	–	19	25	29	33	37	40
	Throw	29-36-51	34-42-59	37-46-65	42-51-71	45-54-77	48-59-82	51-62-88

#### Model 48LL2 • Two-Way Pattern

Nominal Duct Width Size	Neck Velocity, FPM	300	400	500	600	700	800	900
	Velocity Pressure	.006	.010	.016	.022	.031	.040	.050
Total Pressure	.037	.064	.101	.145	.197	.258	.326	
3"	Airflow, CFM/FT.	75	100	125	150	175	200	225
	Noise Criteria	–	–	18	23	27	30	34
	Throw	8-12-22	11-16-25	13-20-28	16-22-30	19-23-33	20-25-35	21-26-37
6"	Airflow, CFM/FT.	150	200	250	300	350	400	450
	Noise Criteria	–	16	21	26	30	33	37
	Throw	11-17-30	16-23-34	19-27-39	23-30-42	27-33-45	28-34-49	30-36-52
9"	Airflow, CFM/FT.	225	300	375	450	525	600	675
	Noise Criteria	–	18	24	28	32	36	39
	Throw	25-31-44	30-36-52	33-40-58	35-45-63	39-48-67	42-52-73	45-56-77
12"	Airflow, CFM/FT.	300	400	500	600	700	800	900
	Noise Criteria	–	19	25	29	33	37	40
	Throw	16-24-42	21-32-48	26-38-54	32-42-59	37-45-64	39-48-68	41-51-72

#### Throw Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6	8	10	12
Multiplier	.70	.86	1.0	1.1	1.25	1.4	1.55	1.7

#### Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6	8	10
Supply	-3	-1	0	+1	+2	+3	+5

#### Performance Notes:

- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Throw values are based on a 4 ft. section. For other lengths, use the correction factor table above.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values are based on a 4 ft. section and a room absorption of 10 dB, re 10<sup>-12</sup> watts. For other lengths, use the correction factor table shown.
- Return Air Applications:  
Noise Criteria value is increased by + 4.  
Negative Static Pressure = 0.8 x Total Pressure.
- Dash (–) in space indicates a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

B

LINEAR DIFFUSERS AND BAR GRILLES

## HOW TO ORDER OR TO SPECIFY

### LINEAR LOUVER DIFFUSERS – MODEL SERIES 48LL MODELS 48LL1 AND 48LL2

EXAMPLE: 48LL2 - O - 48" x 6" - AW - N - MM - DV

1. **Models**

**One-Way Pattern**

48LL1

**Two-Way Pattern**

48LL2

2. **Damper (OBD)**

(standard model suffix)

— None (default)

O Steel (standard)

OA Aluminum

3. **Nominal Length**

inches (mm's)

4. **Width**

inches (mm's)

3, 4 1/2, 6, 7 1/2, 9, 10 1/2 and 12 - available on 48LL1

(76, 114, 152, 191, 229, 267 and 305) - available on 48LL1

inches (mm's)

3, 6, 9 and 12 - available on 48LL2

(76, 152, 229 and 305) - available on 48LL2

5. **Finish**

AW Appliance White (default)

AL Aluminum

BK Black

BW British White

MI Mill

PC Prime coat paint

PPA Paint prepared aluminum

SP Special

LBP Light Bronze Paint

MBP Medium Bronze Paint

DBP Dark Bronze Paint

6. **Fastening**

N None (default)

A Screw Holes

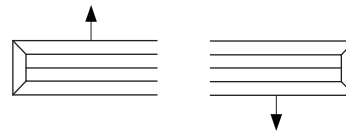
7. **End Cap Configuration**

MM Mitered Mitered (default)

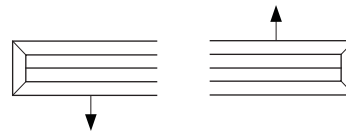
OO Open Open

MO Mitered Open (for 48LL2)

MU Mitered Open (for 48LL1)



MD Mitered Open (for 48LL1)



8. **Accessories**

— None (default)

DV Directional Vanes

**Notes:**

1. Maximum single section length is 72" (1800).

Multiple section assemblies are supplied in equal length sections with alignment strips.

2. Blank-offs are constructed of steel and supplied in 6 ft. sections for field trimming. Order Model 48BO separately.

3. Mitered corner sections are ordered separately. For one-way module, select (48MC1) or two-way module (48MC2).

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **48LL1** (one-way pattern) or **48LL2** (two-way pattern) **Linear Louver (Vane) Diffusers** of the sizes and capacities shown on the plans and air distribution schedules. The diffuser shall be manufactured from extruded aluminum and incorporate fixed pattern discharge louvers for a horizontal throw pattern. The entire core assembly shall be removable without the use of tools. The length shall be available in standard nominal lengths of 24", 36", 48", 60" and 72" (600, 900, 1200, 1500 and 1800 mm). The rectangular duct connection collar shall be an integral part of the frame assembly and be not less than 1 1/2" (38) high. The finish is to be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the diffuser, shall be provided on all units.

The manufacturer shall provide published performance data for the linear louver diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

## LINEAR VANE DIFFUSERS

- EXTRUDED ALUMINUM
- ARCHITECTURAL
- FIXED VANES
- ONE-WAY AND TWO-WAY DEFLECTION CORE



Models 48LV1 and 48LV2

### Models:

48LV1 One-Way Pattern

48LV2 Two-Way Pattern

- '-OBD' adds a steel OBD
- '-OBDA' adds an aluminum OBD

Model Series 48LV Linear Vane Diffusers are effective architectural designs suited for supply and return air applications. The linear vane diffusers feature extruded aluminum construction. Available in one-way or two-way pattern with fixed vanes that provide a tight coanda air pattern for optimal VAV performance. The core assembly is removable for ease of installation and access to the optional opposed blade damper.

### STANDARD FEATURES:

- Extruded aluminum construction.
- Frame/Border is Type A with 1" (25) flange.
- Minimum length 8" (203). Maximum single section length is 96" (2438). Sizes over 96" (2438) will be supplied in multiple section assemblies with alignment strips for a clean and continuous appearance.
- Mitered endcaps.
- Removable core is secured with countersunk screws.

- Fastening: Type N is standard. Designed for duct mounted installation with concealed screws through the neck of the outer frame, providing an aesthetically clean visual appearance.

### CONSTRUCTION MATERIAL:

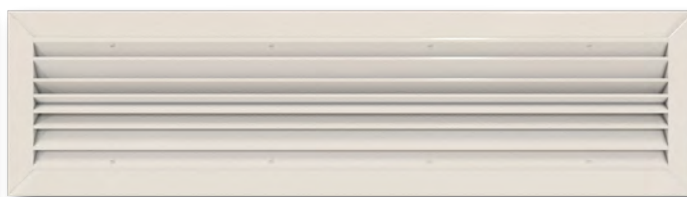
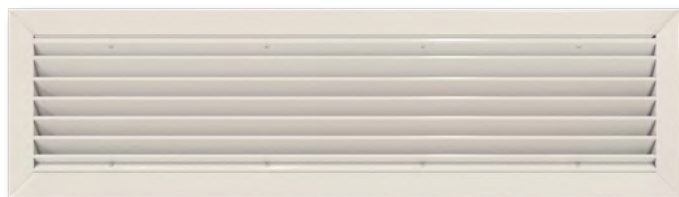
Extruded Aluminum.

### FINISH OPTIONS:

- AW Appliance White is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- Steel opposed blade damper (factory mounted).
- Aluminum opposed blade damper (factory mounted).
- DV Directional vanes (not available with OBD).
- Type A screw holes (in outer frame).



Models 48LV1 and 48LV2

## DIMENSIONAL DATA:

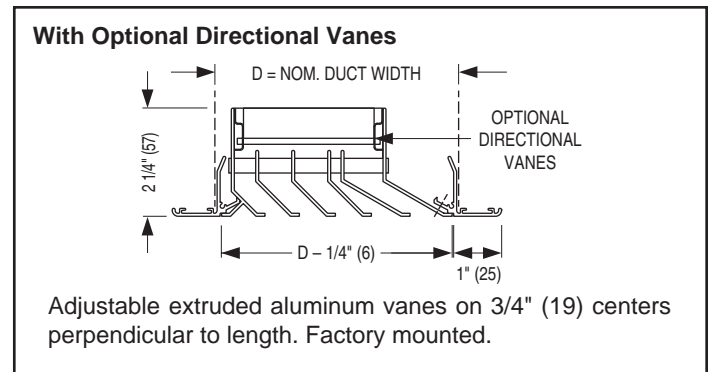
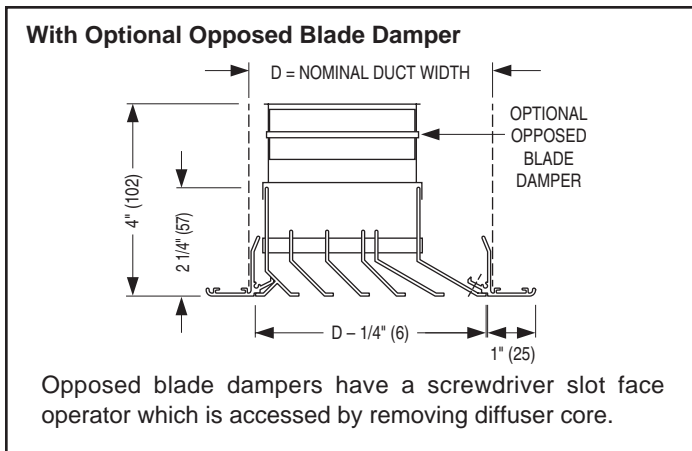
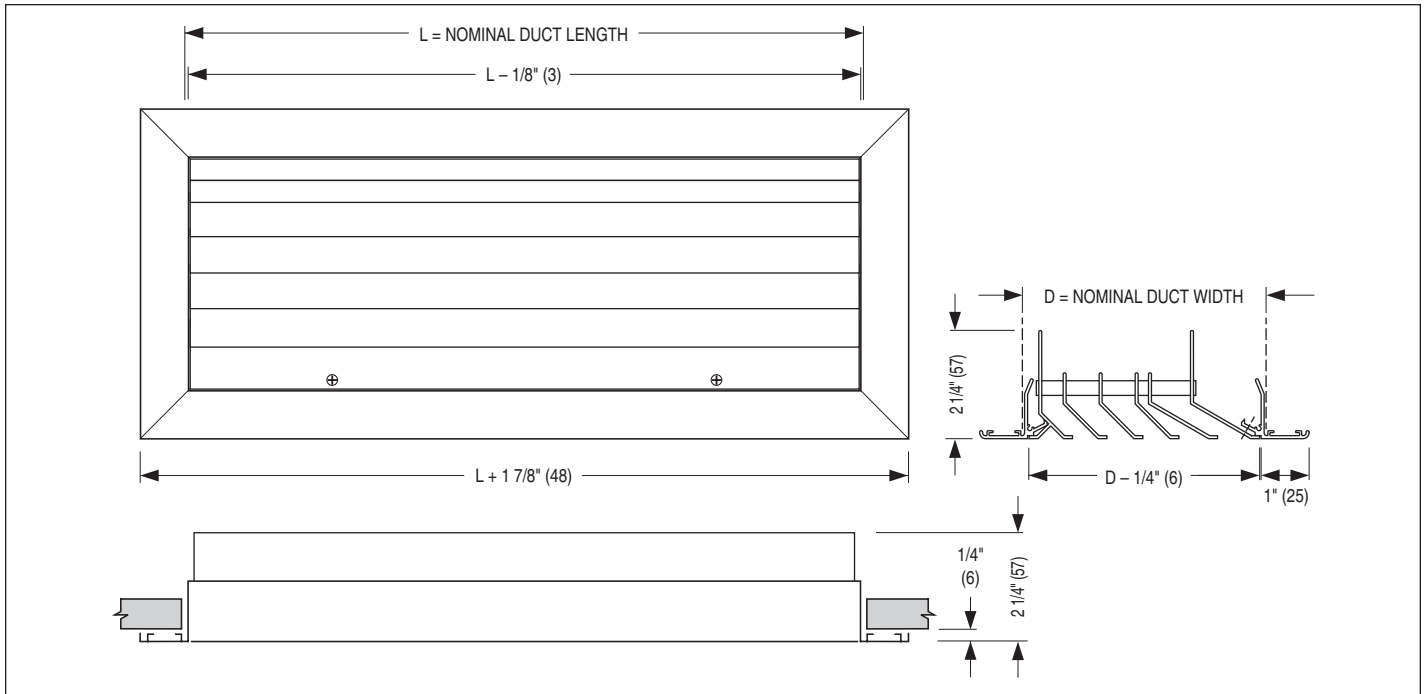
### MODEL 48LV1 LINEAR VANE DIFFUSERS • ONE-WAY PATTERN

#### AVAILABLE SIZES:

Duct width D is determined by diffuser listed width W. Diffuser necks are undersized.

Available widths are 3 1/2", 4 1/4", 5", 5 3/4", 6 1/2", 8", 9 1/2" and 11 3/4" (89, 108, 127, 146, 165, 203, 241 and 298).

Standard lengths are 12" to 96" (305 to 2438) in 12" (305) increments.



#### Available Widths

<b>Listed Width W</b>	3 1/2 (89)	4 1/4 (108)	5 (127)	5 3/4 (146)	6 1/2 (165)	8 (203)	9 1/2 (241)	11 3/4 (298)
<b>Nom. Duct Width D</b>	3 5/8 (92)	4 3/8 (111)	5 1/8 (130)	5 7/8 (149)	6 5/8 (168)	8 1/8 (206)	9 5/8 (244)	11 7/8 (302)

## DIMENSIONAL DATA:

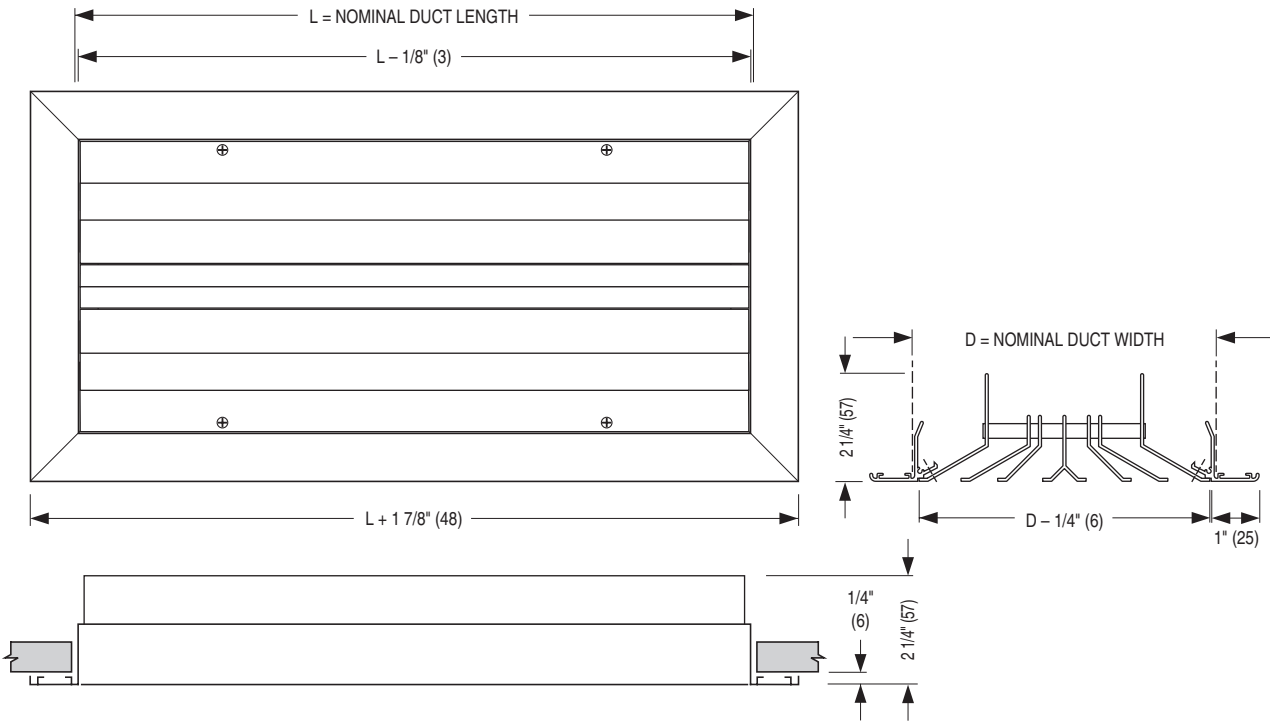
### MODEL 48LV2 LINEAR VANE DIFFUSERS • TWO-WAY PATTERN

#### AVAILABLE SIZES:

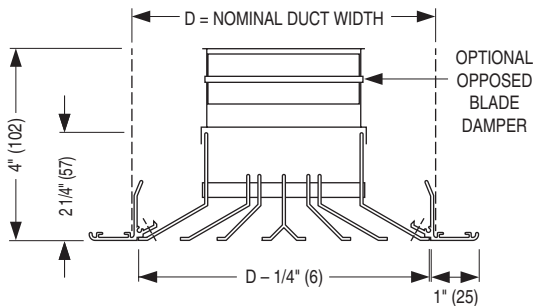
Duct width D is determined by diffuser listed width W. Diffuser necks are undersized.

Available widths are 6 1/4", 7 3/4", 9 1/4", 10 3/4" and 12 1/4" (159, 197, 235, 273 and 311).

Standard lengths are 12" to 96" (305 to 2438) in 12" (305) increments.

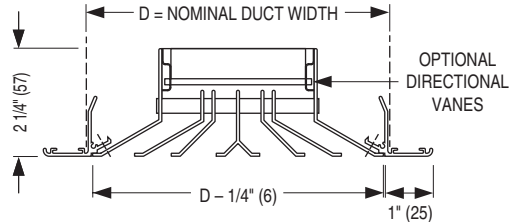


#### With Optional Opposed Blade Damper



Opposed blade dampers have a screwdriver slot face operator which is accessed by removing diffuser core.

#### With Optional Directional Vanes



Adjustable extruded aluminum vanes on 3/4" (19) centers perpendicular to length. Factory mounted.

#### Available Widths

<b>Listed Width W</b>	6 1/4 (159)	7 3/4 (197)	9 1/4 (235)	10 3/4 (273)	12 1/4 (311)
<b>Nom. Duct Width D</b>	6 3/8 (162)	7 7/8 (200)	9 3/8 (238)	10 7/8 (277)	12 3/8 (315)

## PERFORMANCE DATA:

### Model: 48LV1 • One-Way Pattern

Nominal Duct Width Size								
3 1/2"	Airflow, CFM/FT	21	31	41	51	61	71	81
	Total Pressure	.004	.008	.014	.021	.030	.041	.053
	Noise Criteria	-	-	22	27	31	35	38
	Ceiling Throw	6-9-14	8-12-17	11-14-20	13-16-22	14-17-24	15-19-26	16-20-28
4 1/4"	Airflow, CFM/FT	30	45	60	75	90	105	120
	Total Pressure	.005	.012	.021	.032	.047	.063	.083
	Noise Criteria	-	17	25	30	35	38	41
	Ceiling Throw	6-9-17	9-14-21	12-17-24	16-19-27	17-21-30	18-23-32	20-24-34
5"	Airflow, CFM/FT	40	60	80	100	120	140	160
	Total Pressure	.007	.015	.026	.041	.059	.080	.105
	Noise Criteria	-	18	26	31	36	39	42
	Ceiling Throw	7-10-20	10-15-24	14-20-28	17-22-31	20-24-34	21-26-37	23-28-39
5 3/4"	Airflow, CFM/FT	52	78	104	130	156	182	208
	Total Pressure	.009	.019	.034	.054	.078	.106	.138
	Noise Criteria	-	21	28	33	37	41	44
	Ceiling Throw	8-12-22	12-18-27	16-22-32	20-25-35	22-27-39	24-30-42	26-32-45
6 1/2"	Airflow, CFM/FT	67	100	133	166	199	232	265
	Total Pressure	.011	.025	.044	.068	.098	.133	.173
	Noise Criteria	-	22	29	34	39	42	45
	Ceiling Throw	9-14-25	14-20-31	18-25-36	23-28-40	25-31-44	27-34-47	29-36-51
8"	Airflow, CFM/FT	90	135	180	225	270	315	360
	Total Pressure	.013	.030	.054	.084	.121	.165	.216
	Noise Criteria	-	23	29	35	39	43	46
	Ceiling Throw	10-16-30	16-24-36	21-30-42	26-33-47	30-36-51	32-39-55	34-42-59
9 1/2"	Airflow, CFM/FT	115	173	231	289	347	405	463
	Total Pressure	.016	.035	.063	.098	.142	.193	.252
	Noise Criteria	-	22	29	35	39	43	46
	Ceiling Throw	12-18-33	18-27-41	24-33-47	30-37-53	33-41-58	36-44-63	39-47-67
11 3/4"	Airflow, CFM/FT	160	238	316	394	472	550	628
	Total Pressure	.020	.044	.078	.121	.174	.236	.308
	Noise Criteria	-	23	30	35	39	43	46
	Ceiling Throw	14-22-39	21-32-48	28-39-55	35-44-62	39-48-68	42-52-73	45-55-78

B

LINEAR DIFFUSERS AND BAR GRILLES

### Throw Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6	8	10	12
Multiplier	.70	.86	1.0	1.1	1.25	1.4	1.55	1.7

### Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6	8	10
Supply	- 3	- 1	0	+ 1	+ 2	+ 3	+ 5

#### Performance Notes:

- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Throw values are based on a 4 ft. section. For other lengths, use the correction factor table above.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values are based on a 4 ft. section and a room absorption of 10 dB, re 10<sup>-12</sup> watts. For other lengths, use the correction factor table shown.
- Return Air Applications:  
Noise Criteria value is increased by + 4.  
Negative Static Pressure = 0.8 x Total Pressure.
- Dash (-) in space indicates an Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.



## PERFORMANCE DATA:

### Model: 48LV2 • Two-Way Pattern

Nominal Duct Width Size								
6 1/4"	Airflow, CFM/FT	41	62	83	104	125	146	167
	Total Pressure	.005	.012	.021	.033	.048	.066	.086
	Noise Criteria	-	18	26	31	36	39	43
	Ceiling Throw	5-8-14	8-12-17	10-14-19	12-15-22	14-17-24	15-18-26	16-19-27
7 3/4"	Airflow, CFM/FT	62	94	126	158	190	222	254
	Total Pressure	.008	.018	.032	.050	.072	.099	.129
	Noise Criteria	-	21	28	34	38	42	45
	Ceiling Throw	6-9-17	9-14-21	13-17-24	15-19-27	17-21-29	18-22-32	20-24-34
9 1/4"	Airflow, CFM/FT	84	126	168	210	252	294	336
	Total Pressure	.010	.022	.040	.062	.089	.122	.159
	Noise Criteria	-	22	29	34	39	42	46
	Ceiling Throw	7-11-19	11-16-24	15-19-27	18-22-31	19-24-34	21-26-36	22-27-39
10 3/4"	Airflow, CFM/FT	107	161	215	269	323	377	431
	Total Pressure	.012	.027	.048	.075	.109	.148	.193
	Noise Criteria	-	23	30	35	39	43	46
	Ceiling Throw	8-12-22	12-19-27	17-22-31	20-25-35	22-27-38	24-29-41	25-31-44
12 1/4"	Airflow, CFM/FT	131	197	263	329	395	461	527
	Total Pressure	.014	.031	.055	.087	.125	.170	.223
	Noise Criteria	-	24	31	36	40	44	48
	Ceiling Throw	9-14-24	14-21-30	18-24-34	22-27-38	24-30-42	26-32-46	28-34-49

#### Throw Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6	8	10	12
Multiplier	.70	.86	1.0	1.1	1.25	1.4	1.55	1.7

#### Noise Criteria Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6	8	10
Supply	- 3	- 1	0	+ 1	+ 2	+ 3	+ 5

#### Performance Notes:

- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Throw values are based on a 4 ft. section. For other lengths, use the correction factor table above.
- Total Pressure is in inches w.g..
- Noise Criteria [NC] values are based on a 4 ft. section and a room absorption of 10 dB, re 10<sup>-12</sup> watts. For other lengths, use the correction factor table shown.
- Return Air Applications:  
Noise Criteria value is increased by + 4.  
Negative Static Pressure = 0.8 x Total Pressure.
- Dash (-) in space indicates an Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

**B** LINEAR DIFFUSERS AND BAR GRILLES

## HOW TO ORDER OR TO SPECIFY

### LINEAR VANE DIFFUSERS – MODEL SERIES 48LV MODELS 48LV1 AND 48LV2

EXAMPLE: 48LV1 - 48" x 5" - A - AW - N - MM - OBD

**1. Models**

- 48LV1 One-Way Pattern
- 48LV2 Two-Way Pattern

**2. Length**

inches (mm's)

**3. Width**

inches (mm's)

**48LV1**

3.5, 4.25, 5, 5.75, 6.5, 8, 9.5 and 11.75  
(89, 108, 127, 146, 165, 203, 241 and 298)

**48LV2**

6.25, 7.75, 9.25, 10.75 and 12.25  
(159, 197, 235, 273 and 311)

**4. Frame/Border**

A 1" (25) Flange (default)

**5. Finish**

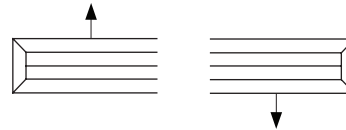
- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime coat paint
- PPA Paint prepared aluminum
- SP Special
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint

**6. Fastening**

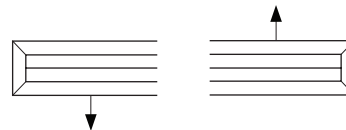
- N None (default)
- A Screw Holes

**7. End Cap Configuration**

- MM Mitered Mitered (default)
- OO Open Open
- MO Mitered Open (for 48LV2)
- MU Mitered Open (for 48LV1)



MD Mitered Open (for 48LV1)



**8. Damper**

- None (default)
- OBD Opposed Blade, Steel
- OBDA Opposed Blade, Aluminum

**9. Accessories**

- None (default)
- DV Directional Vanes

**Notes:**

1. **Maximum single section length is 96" (2438). Longer lengths are supplied in multiple sections, the number and size determined by the factory.**
2. Widths are available in the above sizes only.
3. Standard Type N fastening requires concealed screws (by others) installed through neck into duct.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **48LV1** (one-way pattern) or **48LV2** (two-way pattern) **Linear Vane Diffusers** of the sizes and capacities shown on the plans and air distribution schedules. The diffuser shall be constructed from extruded aluminum. The fixed deflectors are to be removable and the diffuser is to be fastened through the neck of the outer frame to ensure a clean appearance. Endcaps to be mitered and all multiple section sizes to be shipped with alignment strips. The finish is to be AW Appliance White (optional finishes are available).

Optional steel opposed blade damper (OBD) or aluminum opposed blade damper (OBDA) shall be mounted to the neck of the diffuser. The damper must be operable through the face of the diffuser.

Optional directional vanes (DV) to have fully adjustable extruded aluminum blades on 3/4" (19) centers. The blades shall be perpendicular to the linear vanes.

The manufacturer shall provide published performance data for the linear vane diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

NOTES:

**B**

LINEAR DIFFUSERS AND BAR GRILLES



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**Plenum Slot Diffusers**

**Adjustable 'Wiper Blade' Pattern Controller**

5700	Series • Supply • Lay-in T-Bar	<b>C6</b>
5700-F	Series • Supply • Narrow Regressed T-Bar	<b>C8</b>
5700R	Series • Return • Lay-in T-Bar	<b>C54</b>
5700R-F	Series • Return • Narrow Regressed T-Bar	<b>C56</b>

**Adjustable 'Ice Tong' Blade Pattern Controller**

5800	Series • Supply • Lay-in T-Bar	<b>C23</b>
5800-F	Series • Supply • Narrow Regressed T-Bar	<b>C25</b>
5800R	Series • Return • Lay-in T-Bar	<b>C54</b>
5800R-F	Series • Return • Narrow Regressed T-Bar	<b>C56</b>

**Curved Blade 'Flip Flop' Pattern Controller**

5600	Series • Supply • Lay-in T-Bar	<b>C46</b>
5600-F	Series • Supply • Narrow Regressed T-Bar	<b>C48</b>
5600R	Series • Return • Lay-in T-Bar	<b>C54</b>

**N Series**

59N	Series • Supply • Horizontal Discharge	<b>C64</b>
59ND	Series • Supply • Horizontal/Vertical Discharge	<b>C64</b>
59NR	Series • Supply/Return • Horizontal Discharge	<b>C64</b>
59NDR	Series • Supply/Return • Horizontal/Vertical Discharge	<b>C64</b>

**BS Series**

59BS	Series • Supply	<b>C74</b>
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**Options and Accessories for Plenum Slot Diffusers**

5600, 5700, 5800 Series • Supply	<b>C61</b>
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**Light Troffer Diffusers**

**Single and Double Side**

5410	Series • Supply • Single Side	<b>C80</b>
5420	Series • Supply • Double Side	<b>C80</b>
5400R	Series • Return	<b>C80</b>

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS



## GENERAL PRODUCT OVERVIEW

### PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

The Plenum Slot Ceiling Diffusers and Light Troffer Diffusers have been developed for an extremely unobtrusive method of air distribution. Nailor offers various types of this very discreet, cost effective, air distribution product. The Plenum Slot Diffusers are for use in suspended ceiling grid systems and are offered in four distinctive performance styles. The Light Troffer Diffusers are available in many standard sizes and can be custom built to suit most types of air handling light fixtures.

### PLENUM SLOT DIFFUSERS

The Nailor line of Plenum Slot Diffusers have been designed to integrate and blend with T-Bar suspended grid systems. They are available for Standard Lay-in T-Bar systems as well as the Narrow Regressed T-Bar systems. Four different styles are available in a wide range of sizes and capacities for an optimum combination of application flexibility, and performance requirements. All models are available with external foil back or internal insulation. Matching return air diffusers are available for all models.

### ADJUSTABLE 'WIPER BLADE' PATTERN CONTROLLER

#### SUPPLY AIR

This series features a friction pivoted, adjustable, extruded aluminum pattern controller in each slot. The pattern controller has a gasketed 'wiper blade' design. The direction of the airflow can be adjusted a full 180° from the face of the diffuser. This diffuser is available in 1 1/2" (38), 1" (25), and 3/4" (19) slot widths. Suffix 'I' adds internal insulation.

#### Standard Lay-in T-Bar –

Model Series 5700, 5700I

#### Narrow Regressed T-Bar –

Model Series 5700(I)-F, 5700(I)-F2

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Models 5710 and 5715-F

### ADJUSTABLE 'ICE TONG' PATTERN CONTROLLER

#### SUPPLY AIR

This series features a friction pivoted, adjustable, extruded aluminum pattern controller in each slot. The pattern controller has a gasketed 'ice tong' design. The direction of the airflow can be adjusted a full 180° from the face of the diffuser. This diffuser is available in 1 1/2" (38), 1" (25), 3/4" (19) and 1/2" (13) slot widths. Suffix 'I' adds internal insulation.

#### Standard Lay-in T-Bar –

Model Series 5800, 5800I

#### Narrow Regressed T-Bar –

Model Series 5800(I)-F, 5800(I)-F2

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Models 5810 and 5810-F2

### CURVED BLADE 'FLIP FLOP' PATTERN CONTROLLER

#### SUPPLY AIR

This series features a roll-formed curved blade pattern controller in each slot. Aerodynamically designed to produce a fixed horizontal discharge pattern, the controller is pivoted at either end and may be simply rotated with fingers from the face for either a left or right discharge direction. This diffuser is available with a 3/4" (19) slot width, and with a choice of 1, 2, 3 or 4 parallel slots. Suffix 'I' adds internal insulation.

#### Standard Lay-in T-Bar –

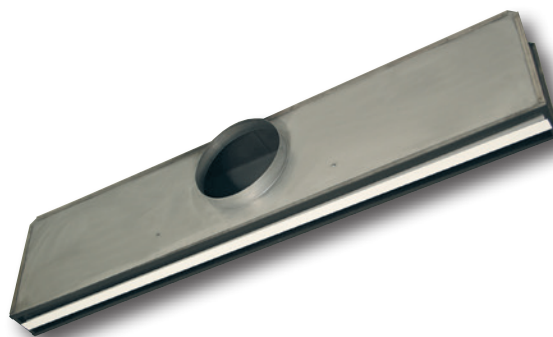
Model Series 5600, 5600I

#### Narrow Regressed T-Bar –

Model Series 5600(I)-F

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Model 5675



**RETURN AIR PLENUMS FOR 5800, 5700 AND 5600 SERIES**

This series of return air plenums are designed to match and complement their supply air counterpart. The plenums are for ductless return and include a light shield. Where required, extruded aluminum center tees will be used. Suffix 'I' adds internal insulation.

**Model Series –**

5700R(I), 5800R(I), 5600R(I)  
 5700R(I)-F, 5800R(I)-F  
 5700R(I)-F2, 5800R(I)-F2

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**Models 5675R, 5810R-F and 5775R-F2**

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS



**Model 59ND**

**N SERIES  
 PREMIUM PERFORMANCE  
 SUPPLY AIR**

This supply diffuser has a 3/4" (19) slot that incorporates an extruded aluminum pattern controller for a fixed horizontal discharge pattern. This plenum is also available with a down-blow section that incorporates two hinged pattern controllers to provide a vertical discharge pattern in addition to the horizontal discharge pattern. Suffix 'I' adds internal insulation.

**Horizontal Discharge –**  
 Models 59N, 59NI

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**Horizontal/Vertical Discharge –**  
 Models 59ND, 59NDI

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**N SERIES  
 PREMIUM PERFORMANCE  
 SUPPLY/RETURN AIR**

The plenum slot diffusers in this series combines a return air plenum attached to the side of the N Series Horizontal Discharge plenum or the combination Horizontal/Vertical Discharge plenum diffuser offered in the same series. Suffix 'I' adds internal insulation.

**Horizontal Discharge –**  
 Models 59NR, 59NRI

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**Horizontal/Vertical Discharge –**  
 Models 59NDR, 59NDRI

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**Model 59NDR**

**BS SERIES  
 PREMIUM PERFORMANCE  
 ADJUSTABLE VERTICAL DISCHARGE**

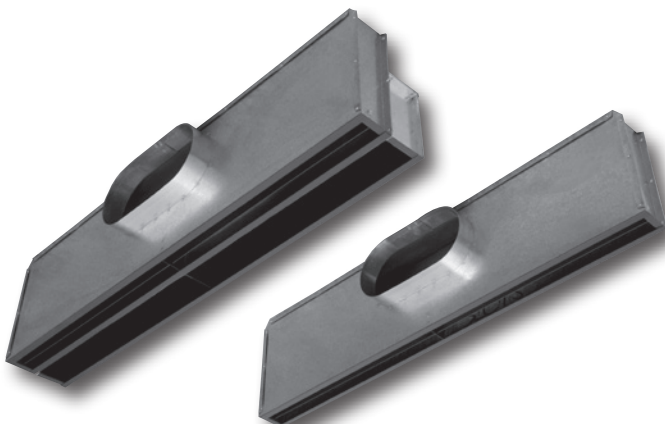
The plenum slot diffuser in this series provides premium performance in curtain wall applications. Available in both supply and supply/return models. Suffix 'I' adds internal insulation.

**Model Series – Supply**  
 59BS(I)

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**Model Series – Supply/Return**  
 59BSR(I)

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**Models 59BSR and 59BS**

## OPTIONS AND ACCESSORIES

Nailor offers a wide range of accessories and options for plenum slot diffusers. Inlet dampers, plaster frames, mounting clips, supplementary T-Bars and cross-notching are available.

**5800, 5700, 5600 Series • Supply**

**5800R, 5700R, 5600R Series • Return**

**59N, 59BS Series • Supply and Return**

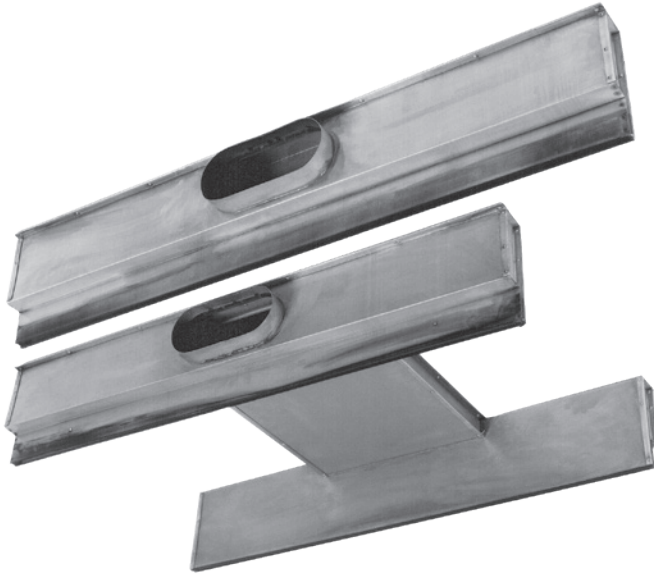
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**Model 5715 48" 1 Slot-10-ID-CN-EX-M2**



**Models 5410 and 5420**

## LIGHT TROFFER DIFFUSERS SUPPLY OR RETURN AIR

Nailor's Light Troffer Diffusers are designed to attach easily to standard air handling fluorescent light troffers. They provide an inconspicuous appearance with high engineering performance. Nailor manufactures both a single side or a double side diffuser.

### **Supply Air –**

Single Side – Model 5410

Double Side – Model 5420

### **Return Air –**

Single Side – Model 5410R

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**ADJUSTABLE 'WIPER BLADE' PATTERN CONTROLLER**

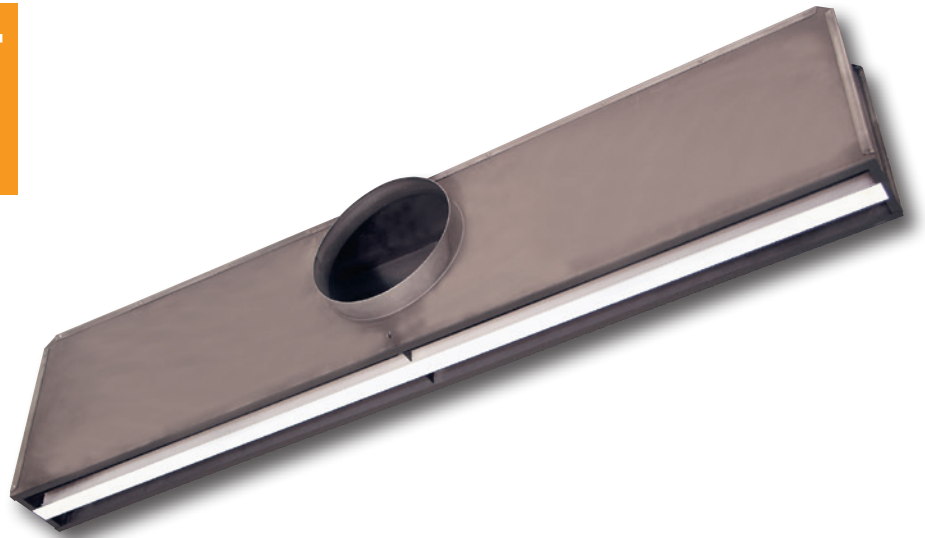
- FOR STANDARD LAY-IN T-BAR SUPPLY

**Uninsulated Models:**

- 5775 3/4" (19) Slot Width
- 5710 1" (25) Slot Width
- 5715 1 1/2" (38) Slot Width

**Insulated Models:**

- 5775I 3/4" (19) Slot Width
- 5710I 1" (25) Slot Width
- 5715I 1 1/2" (38) Slot Width



Model 5710

Model Series 5700 Plenum Slot Ceiling Diffusers have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, thus offering an extremely unobtrusive method of air distribution. Available in a wide range of sizes and capacities, the 5700 Series design offers the optimum combination of application flexibility, high performance and low cost.

Model Series 5700 features a friction pivoted adjustable extruded aluminum pattern controller in each slot. A key feature is the gasketed 'wiper blade' design. The direction of airflow is adjustable through a full 180° from the face of the diffuser. In the horizontal discharge setting, either left or right, the gasket seal at the top of the blade seals tightly against the inside of the diffuser plenum casing or factory supplied center T-Bar, assuring positive directional control. The pattern controller may also be set for vertical discharge.

In the horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow and the 5700 Series therefore provides excellent performance in variable air volume applications.

**STANDARD FEATURES:**

- Full 180° pattern controller adjustment means there are no 'lefts or rights'.
- Available in 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500 mm) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of three slot widths.
- Choice of 1, 2, 3 or 4 parallel slots.
- Standard unit is 11" (279) in height.

- Factory installed center T-Bars on multi-slot models are standard. They are dropped slightly below the diffuser face to align flush with the ceiling grid.
- Pattern controller is split mid-way on units 36" (900 mm) and longer. This permits a 2-way opposite blow pattern from a single slot.

**CONSTRUCTION MATERIAL:**

Corrosion-resistant steel plenum, extruded aluminum pattern controllers and center T-Bars.

**FINISH OPTIONS:**

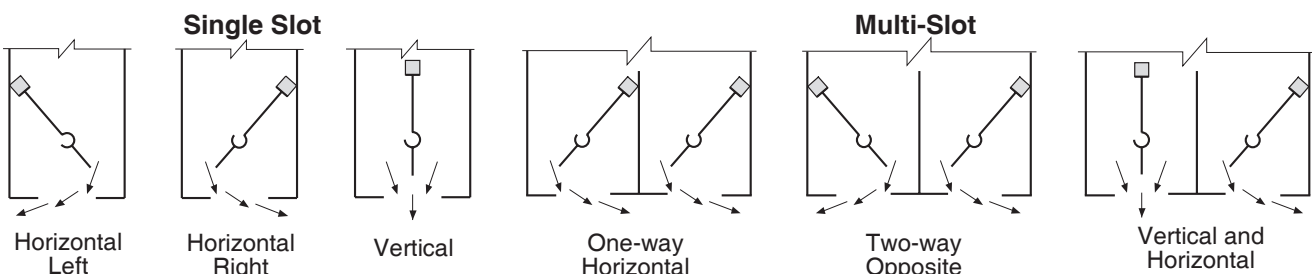
Black on pattern controllers and exposed surfaces. AW Appliance White on center T-Bars.

**OPTIONS AND ACCESSORIES:**

- Internal insulation (add suffix 'I' to model number).
- EIC Extended Inlet Collar (2.25" [57]) with bead.
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

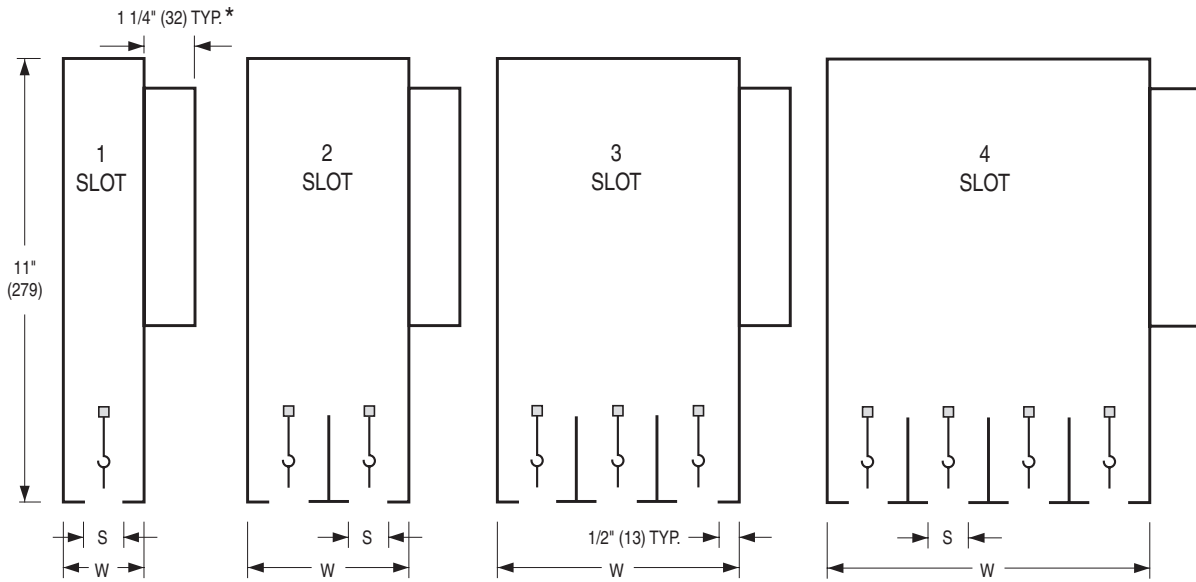
PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**Air Patterns**



## DIMENSIONAL DATA:

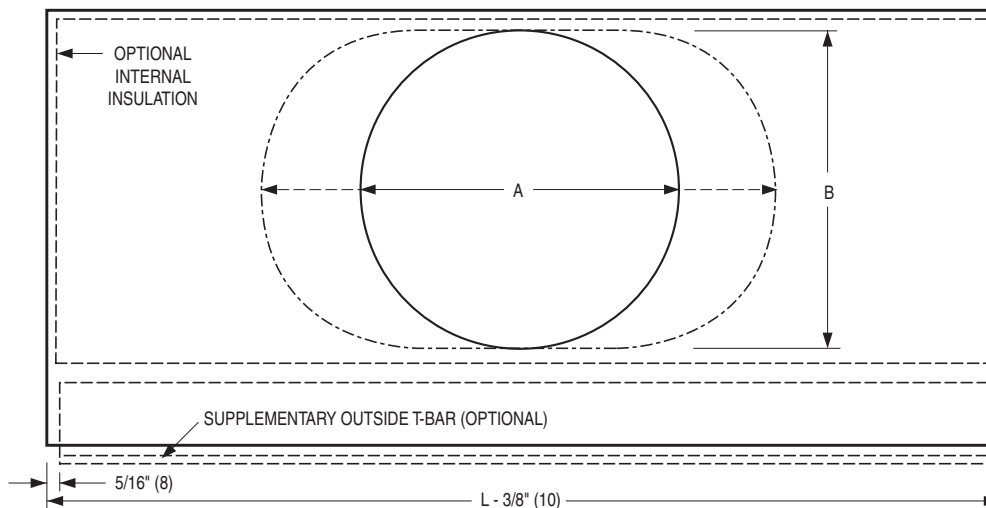
### MODEL SERIES: 5700 • STANDARD LAY-IN T-BAR MODELS



\* 4" (102) WITH OPTIONAL ID INLET DAMPER

		S Slot Width		
		3/4" (19)	1" (25)	1 1/2" (38)
W Width	1 Slot	1 3/4" (44)	2" (51)	2 1/2" (64)
	2 Slot	3 1/2" (89)	4" (102)	5" (127)
	3 Slot	5 1/4" (133)	6" (152)	7 1/2" (191)
	4 Slot	7" (178)	8" (203)	10" (254)

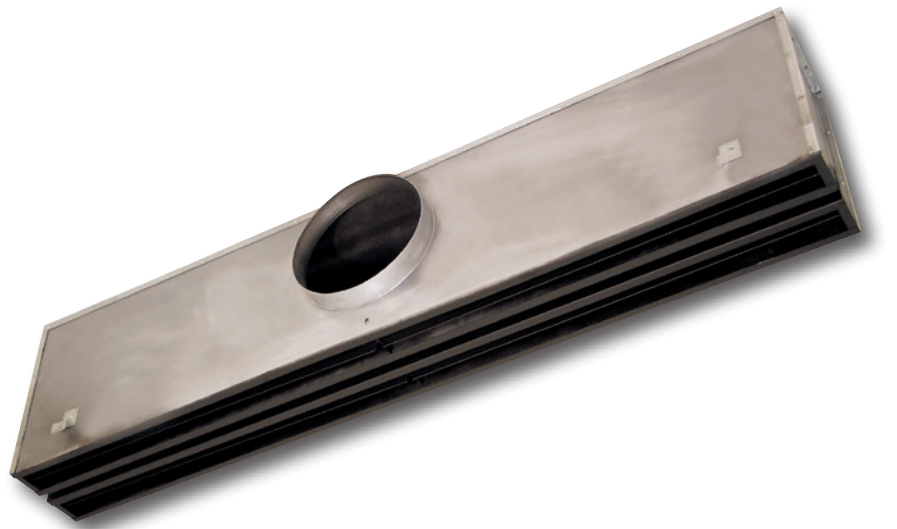
	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	—	—	7 7/8" (200)	7 7/8" (200)



Nominal Length L	
Imperial Modules Inches (mm)	Metric Modules (mm)
20" (508)	500
24" (610)	600
30" (762)	750
36" (914)	900
48" (1219)	1200
60" (1524)	1500

## ADJUSTABLE 'WIPER BLADE' PATTERN CONTROLLER

- FOR NARROW REGRESSED T-BAR SUPPLY



Model 5715-F

### Straddle Mount Models:

- 5775(I)-F 3/4" (19) Slot Width
- 5710(I)-F 1" (25) Slot Width
- 5715(I)-F 1 1/2" (38) Slot Width

### Flat Face T-Bar Models:

- 5775(I)-F2 3/4" (19) Slot Width
- 5710(I)-F2 1" (25) Slot Width
- 5715(I)-F2 1 1/2" (38) Slot Width

- Suffix 'I' adds internal insulation

Model Series 5700-F and 5700-F2 Plenum Slot Ceiling Diffusers have been specially developed to integrate with and complement 'Fineline®' type suspended ceiling grids, thus offering an extremely unobtrusive method of air distribution. Available in a wide range of sizes and capacities, the design offers the optimum combination of application flexibility, high performance and low cost.

This series features a friction pivoted adjustable extruded aluminum pattern controller. A key feature is the gasketed 'wiper blade' design. The direction of airflow is adjustable through a full 180° from the face of the diffuser. In the horizontal discharge setting, either left or right, the gasket seal at the top of the blade seals tightly against the inside of the diffuser plenum casing or factory supplied center T-Bar. The pattern controller may also be set for vertical discharge.

The single slot units, for all models, are for installation alongside a main T-Bar runner. Model Series 5700-F two slot units incorporate a center hat channel and are designed to straddle, longitudinally, a main T-Bar runner. The 5700-F2 Series multi-slot units incorporate factory installed 1" (25) flat face T-Bars.

### STANDARD FEATURES:

- Full 180° pattern controller adjustment means there are no 'lefts or rights'.
- Available in 24" or 48" (600 or 1200) nominal lengths to suit both imperial and metric ceiling systems.
- A cross notch is a recommended standard option on 48" (1200) long units which allows the plenum to be installed in a 24" x 24" (600 x 600) ceiling grid.
- Series 5700-F is available in a one or two slot configuration and Model Series 5700-F2 is available in a one, two, three, or four slot configuration.

- The single slot units are for installation alongside a main runner.
- 5700-F two slot unit has a center hat channel that is designed to straddle a main T-Bar runner.
- 5700-F2 multi-slot units include 1" (25) flat face T-Bars.

### CONSTRUCTION MATERIAL:

Corrosion-resistant steel plenum, extruded aluminum pattern controllers. The 5700-F2 Series include center T-Bars on multi-slot units that are extruded aluminum.

### FINISH OPTIONS:

Black on pattern controllers and exposed surfaces. AW Appliance White on center T-Bars.

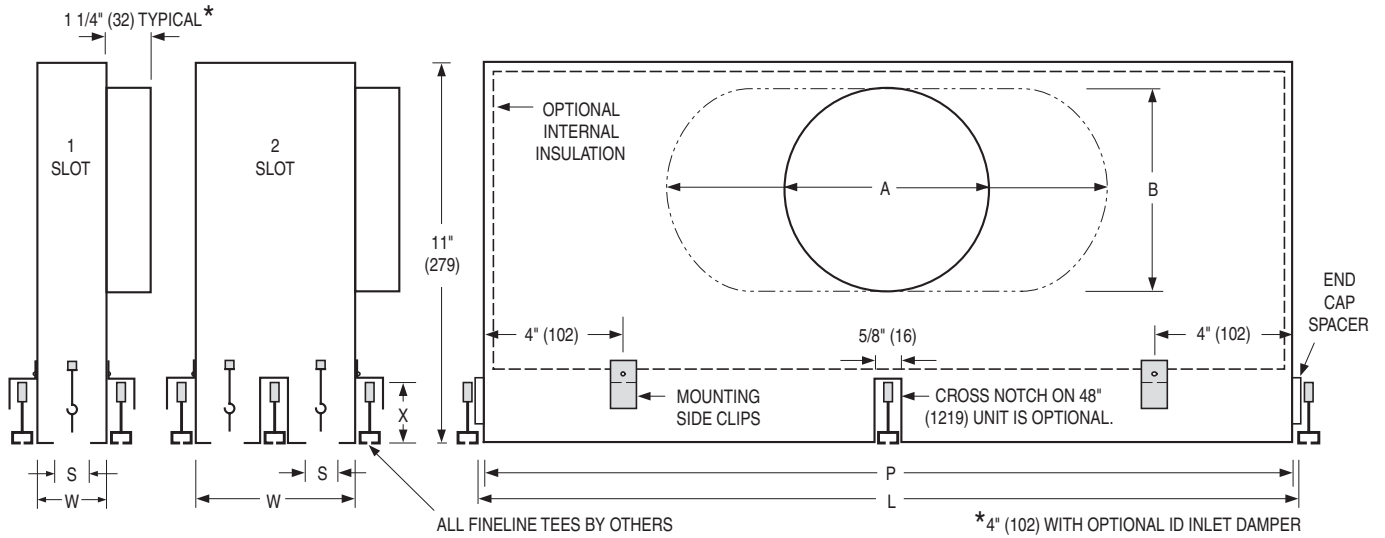
### OPTIONS AND ACCESSORIES:

- Internal insulation (add suffix 'I' to model number).
- EIC Extended Inlet Collar (2.25" [57]) with bead.
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

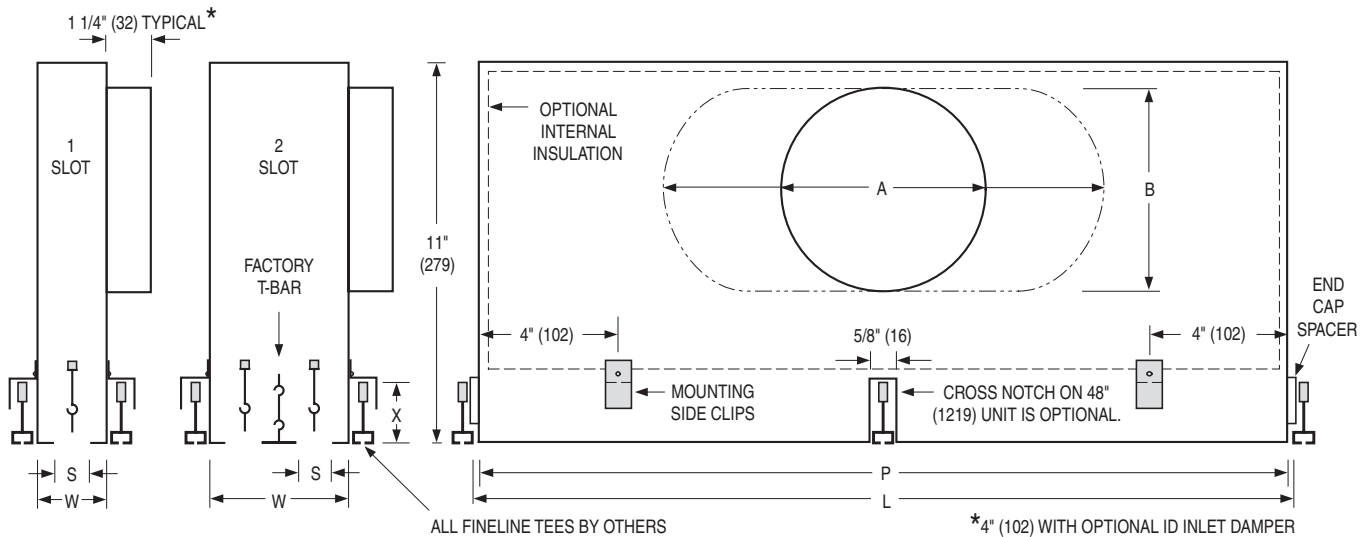
## DIMENSIONAL DATA:

### MODEL SERIES: 5700-F AND 5700-F2 • NARROW REGRESSED T-BAR MODELS

#### MODEL SERIES 5700-F



#### MODEL SERIES 5700-F2

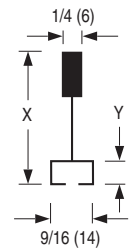


#### Imperial Ceiling Modules (in.)

Nominal Length	Overall Length L	Plenum Length P
24	23 3/4	23 3/8
48	47 3/4	47 3/8

#### Metric Ceiling Modules (mm)

Nominal Length	Overall Length L	Plenum Length P
600	594	584
1200	1194	1184



#### Model Series 5700-F

Model	S Slot Width	Width W	
		1 Slot	2 Slot
5775-F	3/4" (19)	1 3/4" (44)	4 1/8" (105)
5710-F	1" (25)	2" (51)	4 5/8" (117)
5715-F	1 1/2" (38)	2 1/2" (64)	5 5/8" (143)

#### Model Series 5700-F2

Model	S Slot Width	Width W			
		1 Slot	2 Slot	3 Slot	4 Slot
5775-F2	3/4" (19)	1 3/4" (44)	3 1/2" (89)	5 1/4" (133)	7" (178)
5710-F2	1" (25)	2" (51)	4" (102)	6" (152)	8" (203)
5715-F2	1 1/2" (38)	2 1/2" (64)	5" (127)	7 1/2" (191)	10" (254)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	—	—	7 7/8" (200)	7 7/8" (200)

	T-Bar Type (Manufacturer)	X	Y
A	Chicago Metallic Ultraline	1 3/4" (44)	5/16" (8)
C	Certaiteed Smoothline	1 5/8" (41)	5/16" (8)
D	Donn Fineline	1 25/32" (45)	5/16" (8)



**PERFORMANCE DATA • MODEL SERIES 5700**

**MODEL: 5775(I) • 3/4" (19) SLOT WIDTH**

**1 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>
	Total Pressure	.032	.051	.073	.099	.130	.164	.202
	Static Pressure	.031	.048	.069	.093	.122	.154	.190
	Noise Criteria	–	–	19	24	29	32	36
	Throw	2-4-10	3-6-12	4-7-15	6-8-17	6-10-19	7-11-20	8-12-21
<b>8" Round Inlet</b>	Airflow, CFM	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>	<b>110</b>	<b>120</b>	<b>130</b>
	Total Pressure	.073	.095	.121	.149	.180	.215	.252
	Static Pressure	.071	.093	.118	.146	.176	.210	.246
	Noise Criteria	19	23	27	30	34	36	39
	Throw	6-8-17	6-10-19	7-11-20	8-12-21	9-13-22	10-15-23	10-16-24
<b>10" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>110</b>	<b>120</b>	<b>130</b>	<b>140</b>	<b>150</b>	<b>160</b>
	Total Pressure	.124	.150	.179	.210	.243	.279	.317
	Static Pressure	.121	.147	.175	.205	.238	.273	.311
	Noise Criteria	27	30	33	36	38	40	42
	Throw	8-12-21	9-13-22	10-15-23	10-16-24	11-17-25	12-18-26	13-19-26

**1 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>70</b>	<b>90</b>	<b>110</b>	<b>130</b>	<b>150</b>	<b>170</b>	<b>190</b>
	Total Pressure	.040	.066	.099	.138	.184	.236	.295
	Static Pressure	.032	.054	.080	.112	.149	.191	.239
	Noise Criteria	–	18	24	30	34	38	42
	Throw	3-6-11	4-7-13	6-9-15	7-11-16	8-12-17	9-13-18	10-14-19
<b>8" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>
	Total Pressure	.054	.078	.106	.138	.175	.216	.262
	Static Pressure	.051	.073	.099	.130	.164	.203	.246
	Noise Criteria	15	20	25	30	33	37	40
	Throw	5-8-14	6-10-15	8-11-17	9-13-18	10-13-19	11-14-20	12-15-21
<b>10" Oval Inlet</b>	Airflow, CFM	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>	<b>240</b>	<b>260</b>
	Total Pressure	.084	.109	.138	.171	.207	.246	.289
	Static Pressure	.079	.103	.130	.161	.194	.231	.271
	Noise Criteria	21	25	29	32	36	38	41
	Throw	8-11-17	9-13-18	10-13-19	11-14-20	12-15-21	13-15-22	13-26-23
<b>12" Oval Inlet</b>	Airflow, CFM	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>	<b>240</b>	<b>260</b>	<b>280</b>
	Total Pressure	.091	.115	.142	.172	.204	.240	.278
	Static Pressure	.089	.113	.139	.168	.200	.235	.273
	Noise Criteria	22	26	29	33	35	38	40
	Throw	9-13-18	10-13-19	11-14-20	12-15-21	13-15-22	13-16-23	14-17-23

**1 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>110</b>	<b>130</b>	<b>150</b>	<b>170</b>	<b>190</b>	<b>210</b>
	Total Pressure	.050	.074	.104	.138	.177	.221	.270
	Static Pressure	.037	.056	.078	.104	.134	.167	.204
	Noise Criteria	–	20	25	30	34	38	41
	Throw	3-6-10	4-7-11	6-9-12	7-9-13	8-10-14	8-10-15	9-11-15
<b>8" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>
	Total Pressure	.032	.058	.090	.130	.176	.230	.292
	Static Pressure	.028	.050	.079	.114	.155	.202	.256
	Noise Criteria	–	16	23	29	34	38	42
	Throw	3-6-10	5-8-12	7-9-13	8-10-14	9-11-15	9-12-16	10-12-17
<b>10" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.044	.069	.099	.135	.176	.223	.275
	Static Pressure	.040	.063	.091	.123	.161	.204	.252
	Noise Criteria	–	18	24	29	33	37	40
	Throw	5-8-12	7-9-13	8-10-14	9-11-15	9-12-16	10-12-17	11-13-18
<b>12" Oval Inlet</b>	Airflow, CFM	<b>170</b>	<b>200</b>	<b>230</b>	<b>260</b>	<b>270</b>	<b>300</b>	<b>330</b>
	Total Pressure	.074	.102	.135	.173	.187	.230	.279
	Static Pressure	.071	.099	.130	.167	.180	.222	.268
	Noise Criteria	19	24	29	32	34	37	40
	Throw	8-10-14	9-11-15	9-11-16	10-12-17	10-12-17	11-13-18	11-14-19

See page C73 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5700**

**MODEL: 5775(I) • 3/4" (19) SLOT WIDTH**

**2 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>40</b>	<b>50</b>	<b>60</b>	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>
	Total Pressure	.013	.020	.029	.045	.080	.125	.180
	Static Pressure	.010	.016	.023	.036	.064	.100	.144
	Noise Criteria	–	–	–	17	26	33	39
	Throw	1-2-5	1-3-8	2-5-12	4-8-15	7-10-20	8-13-23	10-15-26
<b>8" Round Inlet</b>	Airflow, CFM	<b>40</b>	<b>55</b>	<b>65</b>	<b>80</b>	<b>105</b>	<b>130</b>	<b>160</b>
	Total Pressure	.018	.034	.047	.071	.123	.188	.284
	Static Pressure	.012	.023	.032	.049	.084	.128	.194
	Noise Criteria	–	–	12	19	27	34	41
	Throw	2-5-12	5-8-16	6-10-17	8-12-19	11-16-22	13-17-24	16-19-27
<b>10" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>
	Total Pressure	.016	.028	.043	.062	.085	.111	.140
	Static Pressure	.015	.026	.040	.058	.079	.104	.131
	Noise Criteria	–	19	24	29	32	36	40
	Throw	6-7-16	7-8-18	8-10-20	9-12-22	10-14-24	11-16-26	12-18-28

**2 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>
	Total Pressure	.014	.032	.057	.089	.129	.175	.229
	Static Pressure	.007	.016	.028	.045	.064	.087	.114
	Noise Criteria	–	–	15	23	28	36	40
	Throw	1-2-8	2-5-11	4-8-15	6-10-17	8-11-19	10-14-21	11-16-22
<b>8" Round Inlet</b>	Airflow, CFM	<b>70</b>	<b>105</b>	<b>140</b>	<b>175</b>	<b>210</b>	<b>245</b>	<b>280</b>
	Total Pressure	.011	.025	.044	.069	.099	.135	.177
	Static Pressure	.008	.019	.033	.052	.075	.103	.134
	Noise Criteria	–	–	16	23	29	34	39
	Throw	1-4-9	3-6-13	5-9-17	7-11-19	9-13-20	10-16-22	12-17-23
<b>10" Oval Inlet</b>	Airflow, CFM	<b>90</b>	<b>115</b>	<b>145</b>	<b>180</b>	<b>230</b>	<b>295</b>	<b>320</b>
	Total Pressure	.013	.021	.033	.052	.084	.138	.163
	Static Pressure	.011	.018	.029	.045	.073	.121	.142
	Noise Criteria	–	–	17	21	29	36	39
	Throw	2-5-11	4-7-14	5-9-17	8-11-19	10-15-21	12-17-24	14-18-25
<b>12" Oval Inlet</b>	Airflow, CFM	<b>100</b>	<b>140</b>	<b>180</b>	<b>220</b>	<b>260</b>	<b>300</b>	<b>340</b>
	Total Pressure	.012	.024	.040	.059	.083	.111	.142
	Static Pressure	.012	.023	.038	.057	.079	.105	.135
	Noise Criteria	–	18	23	27	31	35	40
	Throw	3-12-18	5-13-20	7-14-21	9-15-22	11-16-23	13-17-24	14-18-26

**2 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>110</b>	<b>140</b>	<b>170</b>	<b>200</b>	<b>230</b>	<b>260</b>	<b>290</b>
	Total Pressure	.035	.056	.083	.115	.152	.194	.242
	Static Pressure	.017	.027	.040	.056	.074	.094	.117
	Noise Criteria	–	15	21	27	31	35	39
	Throw	2-5-11	3-7-13	5-9-14	7-10-15	8-11-16	9-12-17	10-13-18
<b>8" Round Inlet</b>	Airflow, CFM	<b>125</b>	<b>165</b>	<b>205</b>	<b>245</b>	<b>285</b>	<b>325</b>	<b>350</b>
	Total Pressure	.028	.048	.075	.107	.144	.188	.218
	Static Pressure	.018	.031	.048	.069	.094	.122	.141
	Noise Criteria	–	15	22	28	33	37	40
	Throw	3-6-12	5-8-14	7-11-15	8-12-17	10-13-18	11-14-19	11-14-20
<b>10" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>190</b>	<b>230</b>	<b>270</b>	<b>310</b>	<b>350</b>	<b>390</b>
	Total Pressure	.028	.045	.065	.090	.119	.151	.188
	Static Pressure	.023	.036	.053	.073	.096	.123	.152
	Noise Criteria	–	17	23	28	32	36	40
	Throw	4-8-14	6-10-15	8-11-16	9-12-17	11-13-19	11-14-20	12-15-21
<b>12" Oval Inlet</b>	Airflow, CFM	<b>180</b>	<b>220</b>	<b>260</b>	<b>300</b>	<b>340</b>	<b>380</b>	<b>420</b>
	Total Pressure	.030	.045	.063	.084	.107	.134	.164
	Static Pressure	.027	.041	.057	.075	.097	.127	.148
	Noise Criteria	–	20	25	29	33	37	40
	Throw	7-10-15	8-11-16	9-12-17	10-13-18	11-14-20	12-15-21	13-15-22

See page C73 for performance data notes.

**PERFORMANCE DATA • MODEL SERIES 5700**

**MODEL: 5775(I) • 3/4" (19) SLOT WIDTH**

**3 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>50</b>	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>
	Total Pressure	.013	.028	.050	.079	.114	.155	.202
	Static Pressure	.008	.019	.034	.052	.075	.103	.134
	Noise Criteria	–	–	16	23	29	34	39
	Throw	1-5-10	2-7-14	4-9-18	7-11-22	9-13-26	10-15-28	12-18-30
<b>8" Round Inlet</b>	Airflow, CFM	<b>65</b>	<b>80</b>	<b>100</b>	<b>125</b>	<b>160</b>	<b>200</b>	<b>255</b>
	Total Pressure	.013	.019	.030	.047	.077	.120	.195
	Static Pressure	.011	.016	.025	.039	.064	.100	.162
	Noise Criteria	–	–	15	20	27	34	40
	Throw	2-5-12	4-6-19	4-9-18	7-11-22	10-14-27	12-18-30	15-23-34
<b>10" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>110</b>	<b>140</b>	<b>170</b>	<b>200</b>	<b>230</b>	<b>260</b>
	Total Pressure	.016	.030	.049	.072	.100	.132	.168
	Static Pressure	.014	.026	.043	.063	.087	.115	.147
	Noise Criteria	–	17	22	27	32	37	40
	Throw	4-6-19	6-9-22	8-12-25	10-15-27	12-18-30	13-20-32	15-23-34

**3 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>
	Total Pressure	.013	.030	.053	.083	.120	.163	.213
	Static Pressure	.004	.010	.017	.027	.038	.052	.068
	Noise Criteria	–	–	15	23	28	32	37
	Throw	1-2-9	2-5-13	4-9-17	6-11-20	9-13-22	10-15-23	12-16-24
<b>8" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>
	Total Pressure	.014	.031	.055	.087	.125	.170	.222
	Static Pressure	.009	.020	.035	.054	.078	.106	.139
	Noise Criteria	–	–	17	24	30	35	40
	Throw	1-5-14	3-8-16	6-11-20	9-14-22	11-16-24	13-19-26	14-20-28
<b>10" Oval Inlet</b>	Airflow, CFM	<b>115</b>	<b>145</b>	<b>185</b>	<b>230</b>	<b>295</b>	<b>370</b>	<b>470</b>
	Total Pressure	.012	.019	.031	.048	.079	.125	.201
	Static Pressure	.009	.015	.024	.037	.061	.096	.155
	Noise Criteria	–	–	–	20	27	34	40
	Throw	2-5-13	3-8-16	5-10-18	9-13-22	11-16-24	14-19-27	17-21-30
<b>12" Oval Inlet</b>	Airflow, CFM	<b>125</b>	<b>185</b>	<b>245</b>	<b>305</b>	<b>365</b>	<b>425</b>	<b>485</b>
	Total Pressure	.011	.025	.044	.068	.097	.131	.171
	Static Pressure	.010	.022	.038	.059	.084	.114	.148
	Noise Criteria	–	–	18	25	31	36	40
	Throw	4-7-16	7-10-19	9-13-22	11-16-25	13-19-27	15-20-29	17-22-31

**3 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>125</b>	<b>175</b>	<b>225</b>	<b>275</b>	<b>325</b>	<b>350</b>	<b>375</b>
	Total Pressure	.025	.048	.079	.119	.166	.192	.221
	Static Pressure	.023	.045	.074	.111	.155	.180	.206
	Noise Criteria	–	15	21	28	34	37	41
	Throw	2-4-11	3-8-14	5-10-16	8-12-18	10-14-20	11-15-21	12-16-22
<b>8" Round Inlet</b>	Airflow, CFM	<b>175</b>	<b>225</b>	<b>275</b>	<b>325</b>	<b>375</b>	<b>425</b>	<b>475</b>
	Total Pressure	.033	.054	.081	.113	.151	.194	.242
	Static Pressure	.017	.028	.041	.058	.077	.099	.123
	Noise Criteria	–	16	22	28	32	36	40
	Throw	3-7-14	5-10-16	8-12-18	9-14-19	11-15-21	12-15-22	13-16-23
<b>10" Oval Inlet</b>	Airflow, CFM	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>	<b>550</b>
	Total Pressure	.047	.068	.092	.120	.152	.188	.227
	Static Pressure	.033	.047	.064	.084	.106	.131	.159
	Noise Criteria	15	21	26	30	34	38	41
	Throw	6-11-17	9-13-18	10-14-20	12-15-21	13-16-23	14-17-24	14-18-25
<b>12" Oval Inlet</b>	Airflow, CFM	<b>275</b>	<b>325</b>	<b>375</b>	<b>425</b>	<b>475</b>	<b>525</b>	<b>575</b>
	Total Pressure	.042	.058	.077	.099	.124	.152	.182
	Static Pressure	.033	.046	.061	.079	.098	.120	.144
	Noise Criteria	16	21	26	30	33	37	40
	Throw	8-12-18	9-14-19	11-15-21	12-15-22	13-16-23	14-17-24	15-18-25

See page C73 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5700**

**MODEL: 5775(I) • 3/4" (19) SLOT WIDTH**

**4 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>
	Total Pressure	.013	.030	.053	.083	.119	.162	.212
	Static Pressure	.007	.016	.029	.046	.066	.089	.117
	Noise Criteria	–	–	15	23	28	33	38
	Throw	1-3-9	3-6-14	5-9-19	7-12-24	9-14-28	11-17-30	13-19-32
<b>8" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>100</b>	<b>125</b>	<b>155</b>	<b>195</b>	<b>250</b>	<b>315</b>
	Total Pressure	.014	.021	.033	.051	.081	.133	.211
	Static Pressure	.010	.016	.025	.039	.061	.101	.160
	Noise Criteria	–	–	–	20	27	34	40
	Throw	2-4-12	3-7-15	5-9-19	8-12-28	10-15-30	13-19-33	17-25-37
<b>10" Round Inlet</b>	Airflow, CFM	<b>110</b>	<b>150</b>	<b>190</b>	<b>230</b>	<b>270</b>	<b>310</b>	<b>350</b>
	Total Pressure	.020	.036	.058	.085	.118	.155	.198
	Static Pressure	.017	.033	.052	.076	.105	.139	.177
	Noise Criteria	–	18	24	29	34	38	42
	Throw	4-8-16	7-12-25	10-15-30	12-18-32	14-21-34	16-24-37	18-28-39

**4 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>
	Total Pressure	.014	.031	.055	.087	.125	.170	.222
	Static Pressure	.013	.029	.051	.079	.114	.155	.203
	Noise Criteria	–	–	16	23	30	36	42
	Throw	1-2-10	2-5-14	4-10-19	7-12-22	10-14-25	13-16-28	16-19-31
<b>8" Round Inlet</b>	Airflow, CFM	<b>120</b>	<b>180</b>	<b>240</b>	<b>300</b>	<b>360</b>	<b>420</b>	<b>480</b>
	Total Pressure	.015	.033	.059	.093	.134	.182	.238
	Static Pressure	.006	.014	.025	.039	.057	.077	.101
	Noise Criteria	–	–	16	23	29	34	39
	Throw	1-5-12	3-8-17	6-11-22	10-14-24	11-17-27	13-20-29	15-22-31
<b>10" Oval Inlet</b>	Airflow, CFM	<b>145</b>	<b>180</b>	<b>225</b>	<b>290</b>	<b>360</b>	<b>450</b>	<b>580</b>
	Total Pressure	.014	.022	.034	.056	.087	.135	.225
	Static Pressure	.010	.015	.023	.038	.059	.093	.154
	Noise Criteria	–	–	–	20	27	34	40
	Throw	2-5-14	3-8-16	5-11-21	9-14-24	12-18-27	14-21-29	18-24-34
<b>12" Oval Inlet</b>	Airflow, CFM	<b>260</b>	<b>320</b>	<b>380</b>	<b>440</b>	<b>500</b>	<b>560</b>	<b>620</b>
	Total Pressure	.034	.051	.073	.097	.126	.158	.193
	Static Pressure	.027	.041	.057	.077	.099	.124	.152
	Noise Criteria	–	19	24	29	33	37	40
	Throw	8-12-23	10-15-25	12-18-27	14-21-29	16-22-31	18-23-33	20-25-35

**4 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>180</b>	<b>220</b>	<b>260</b>	<b>300</b>	<b>340</b>	<b>380</b>	<b>420</b>
	Total Pressure	.039	.059	.082	.109	.140	.175	.214
	Static Pressure	.035	.053	.074	.098	.126	.157	.192
	Noise Criteria	.168	15	20	25	30	33	37
	Throw	2-5-14	3-8-16	5-10-17	7-12-19	8-14-21	9-16-23	10-18-25
<b>8" Round Inlet</b>	Airflow, CFM	<b>220</b>	<b>270</b>	<b>320</b>	<b>370</b>	<b>420</b>	<b>470</b>	<b>520</b>
	Total Pressure	.037	.056	.078	.104	.134	.168	.206
	Static Pressure	.011	.016	.023	.031	.040	.050	.061
	Noise Criteria	–	15	20	25	30	34	38
	Throw	3-8-16	5-10-17	7-12-19	9-14-20	11-15-22	13-16-23	15-17-25
<b>10" Oval Inlet</b>	Airflow, CFM	<b>310</b>	<b>370</b>	<b>430</b>	<b>490</b>	<b>550</b>	<b>610</b>	<b>670</b>
	Total Pressure	.050	.071	.096	.124	.156	.192	.232
	Static Pressure	.029	.041	.055	.072	.090	.111	.134
	Noise Criteria	15	21	26	30	34	37	40
	Throw	7-12-19	9-14-20	11-16-22	12-17-23	14-18-25	15-19-26	16-19-27
<b>12" Oval Inlet</b>	Airflow, CFM	<b>320</b>	<b>380</b>	<b>440</b>	<b>500</b>	<b>560</b>	<b>620</b>	<b>680</b>
	Total Pressure	.040	.056	.075	.097	.122	.150	.180
	Static Pressure	.029	.042	.056	.072	.090	.111	.133
	Noise Criteria	–	19	24	28	31	35	38
	Throw	7-12-19	10-14-21	11-16-22	13-17-24	14-18-25	15-19-26	16-20-28

See page C73 for performance data notes.

**PERFORMANCE DATA • MODEL SERIES 5700**

**MODEL: 5710(I) • 1" (25) SLOT WIDTH**

**1 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>20</b>	<b>40</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>
	Total Pressure	.006	.025	.056	.099	.155	.223	.304
	Static Pressure	.005	.018	.041	.072	.113	.162	.221
	Noise Criteria	–	–	18	24	31	37	41
	Throw	1-2-8	5-7-13	7-10-16	10-13-19	12-15-21	13-16-23	14-17-25
<b>8" Round Inlet</b>	Airflow, CFM	<b>30</b>	<b>55</b>	<b>80</b>	<b>105</b>	<b>130</b>	<b>155</b>	<b>180</b>
	Total Pressure	.012	.039	.083	.144	.220	.313	.422
	Static Pressure	.011	.038	.080	.138	.211	.300	.404
	Noise Criteria	–	–	20	26	34	38	43
	Throw	3-6-11	7-10-16	10-13-19	12-16-22	13-16-23	14-17-25	16-19-28
<b>10" Round Inlet</b>	Airflow, CFM	<b>50</b>	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>
	Total Pressure	.025	.057	.101	.158	.228	.311	.406
	Static Pressure	.025	.056	.099	.155	.222	.303	.396
	Noise Criteria	–	15	23	30	35	39	41
	Throw	6-8-14	9-12-18	12-15-21	13-16-23	14-17-25	16-19-28	18-21-30

**1 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>50</b>	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>
	Total Pressure	.016	.036	.064	.100	.143	.195	.255
	Static Pressure	.012	.027	.047	.074	.107	.145	.190
	Noise Criteria	–	–	19	26	32	36	40
	Throw	4-7-13	7-11-16	9-13-18	12-15-20	13-16-23	14-17-25	15-18-26
<b>8" Round Inlet</b>	Airflow, CFM	<b>70</b>	<b>100</b>	<b>130</b>	<b>160</b>	<b>190</b>	<b>220</b>	<b>250</b>
	Total Pressure	.021	.042	.072	.108	.153	.205	.265
	Static Pressure	.018	.037	.063	.095	.135	.180	.233
	Noise Criteria	–	15	22	28	33	36	41
	Throw	7-11-16	9-13-18	12-13-21	13-16-23	15-18-26	16-19-27	17-20-28
<b>10" Oval Inlet</b>	Airflow, CFM	<b>80</b>	<b>115</b>	<b>150</b>	<b>185</b>	<b>220</b>	<b>255</b>	<b>290</b>
	Total Pressure	.025	.051	.087	.132	.186	.250	.323
	Static Pressure	.023	.048	.082	.124	.176	.236	.305
	Noise Criteria	–	15	23	30	34	38	42
	Throw	8-12-17	12-14-20	13-16-23	14-17-25	16-19-27	17-20-28	18-22-31
<b>12" Oval Inlet</b>	Airflow, CFM	<b>110</b>	<b>150</b>	<b>190</b>	<b>230</b>	<b>270</b>	<b>310</b>	<b>350</b>
	Total Pressure	.037	.069	.110	.162	.223	.294	.372
	Static Pressure	.035	.066	.105	.154	.212	.280	.357
	Noise Criteria	–	17	22	29	33	37	40
	Throw	11-14-17	13-16-23	15-18-26	16-20-28	17-21-30	18-23-32	20-24-34

**1 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>70</b>	<b>100</b>	<b>130</b>	<b>160</b>	<b>190</b>	<b>220</b>	<b>250</b>
	Total Pressure	.027	.054	.092	.139	.196	.263	.339
	Static Pressure	.019	.038	.064	.085	.138	.185	.238
	Noise Criteria	–	17	24	30	37	39	42
	Throw	5-8-13	6-11-16	10-13-18	11-14-20	12-15-22	13-16-23	14-17-25
<b>8" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>115</b>	<b>150</b>	<b>185</b>	<b>220</b>	<b>255</b>	<b>290</b>
	Total Pressure	.022	.045	.076	.116	.164	.221	.285
	Static Pressure	.018	.038	.065	.098	.139	.187	.242
	Noise Criteria	–	15	22	27	32	37	40
	Throw	6-9-13	9-12-16	11-13-19	12-15-21	13-16-23	14-17-25	15-19-26
<b>10" Oval Inlet</b>	Airflow, CFM	<b>110</b>	<b>150</b>	<b>190</b>	<b>230</b>	<b>270</b>	<b>310</b>	<b>350</b>
	Total Pressure	.033	.061	.098	.143	.197	.260	.331
	Static Pressure	.030	.055	.089	.130	.179	.236	.301
	Noise Criteria	–	18	25	30	35	38	42
	Throw	9-12-16	11-13-19	12-15-21	13-16-24	14-18-25	16-19-27	17-21-29
<b>12" Oval Inlet</b>	Airflow, CFM	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.068	.107	.154	.209	.273	.346	.427
	Static Pressure	.065	.101	.146	.198	.259	.328	.405
	Noise Criteria	–	20	25	30	34	37	40
	Throw	11-14-19	13-16-22	14-17-24	15-18-26	16-19-28	17-21-30	18-22-32

See page C73 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5700**

**MODEL: 5710(I) • 1" (25) SLOT WIDTH**

**2 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>50</b>	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>
	Total Pressure	.016	.036	.064	.100	.144	.196	.256
	Static Pressure	.012	.026	.046	.073	.105	.142	.186
	Noise Criteria	–	15	22	27	32	36	38
	Throw	2-6-13	6-10-19	9-13-21	11-17-24	14-19-26	16-20-28	18-21-30
<b>8" Round Inlet</b>	Airflow, CFM	<b>70</b>	<b>100</b>	<b>130</b>	<b>160</b>	<b>190</b>	<b>220</b>	<b>250</b>
	Total Pressure	.021	.043	.072	.109	.154	.207	.267
	Static Pressure	.018	.037	.063	.095	.135	.186	.233
	Noise Criteria	–	15	22	27	32	36	40
	Throw	5-9-18	9-13-21	11-17-24	14-19-26	16-20-28	18-21-30	19-23-32
<b>10" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>125</b>	<b>160</b>	<b>195</b>	<b>230</b>	<b>265</b>	<b>300</b>
	Total Pressure	.032	.061	.100	.149	.207	.274	.352
	Static Pressure	.030	.057	.094	.140	.194	.258	.330
	Noise Criteria	–	16	24	30	35	38	41
	Throw	8-12-19	11-16-23	14-19-26	16-20-28	18-22-30	20-24-32	22-25-33

**2 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>115</b>	<b>150</b>	<b>185</b>	<b>220</b>	<b>255</b>	<b>290</b>
	Total Pressure	.025	.051	.086	.131	.185	.249	.322
	Static Pressure	.014	.029	.050	.076	.107	.144	.186
	Noise Criteria	–	–	16	23	29	35	40
	Throw	3-6-14	4-10-20	8-14-25	11-18-28	13-20-30	16-23-33	19-25-36
<b>8" Round Inlet</b>	Airflow, CFM	<b>85</b>	<b>110</b>	<b>140</b>	<b>175</b>	<b>220</b>	<b>285</b>	<b>360</b>
	Total Pressure	.019	.033	.053	.083	.131	.219	.349
	Static Pressure	.015	.025	.041	.064	.101	.170	.271
	Noise Criteria	–	–	–	15	22	29	37
	Throw	3-6-16	4-10-20	7-13-24	11-16-27	14-20-30	18-24-34	22-27-38
<b>10" Oval Inlet</b>	Airflow, CFM	<b>110</b>	<b>140</b>	<b>180</b>	<b>230</b>	<b>290</b>	<b>370</b>	<b>430</b>
	Total Pressure	.021	.033	.055	.090	.143	.233	.315
	Static Pressure	.018	.029	.048	.079	.126	.205	.276
	Noise Criteria	–	–	–	20	27	35	40
	Throw	4-10-21	7-13-25	11-18-28	14-22-32	19-25-36	24-29-40	25-31-43
<b>12" Oval Inlet</b>	Airflow, CFM	<b>110</b>	<b>140</b>	<b>180</b>	<b>225</b>	<b>285</b>	<b>365</b>	<b>465</b>
	Total Pressure	.016	.025	.042	.066	.105	.172	.280
	Static Pressure	.014	.023	.039	.060	.097	.159	.258
	Noise Criteria	–	–	–	16	23	31	39
	Throw	5-11-22	7-14-25	12-18-28	13-20-30	19-25-36	23-28-37	25-31-44

**2 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>70</b>	<b>115</b>	<b>160</b>	<b>205</b>	<b>250</b>	<b>295</b>	<b>340</b>
	Total Pressure	.019	.050	.097	.159	.237	.329	.437
	Static Pressure	.010	.027	.052	.086	.127	.177	.235
	Noise Criteria	–	–	19	26	32	36	38
	Throw	3-5-12	6-9-17	9-12-19	11-16-22	14-18-25	15-19-27	16-20-28
<b>8" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>150</b>	<b>210</b>	<b>270</b>	<b>330</b>	<b>390</b>	<b>450</b>
	Total Pressure	.016	.044	.086	.142	.212	.297	.395
	Static Pressure	.011	.032	.062	.102	.153	.214	.284
	Noise Criteria	–	–	15	23	30	35	40
	Throw	4-7-15	8-12-19	12-16-23	15-18-26	16-20-28	18-22-31	19-23-33
<b>10" Oval Inlet</b>	Airflow, CFM	<b>160</b>	<b>225</b>	<b>290</b>	<b>355</b>	<b>420</b>	<b>485</b>	<b>550</b>
	Total Pressure	.031	.060	.100	.151	.211	.281	.361
	Static Pressure	.024	.048	.080	.120	.168	.224	.288
	Noise Criteria	–	15	22	29	34	39	43
	Throw	8-12-19	12-16-23	15-19-26	17-21-30	19-23-32	20-24-34	21-26-37
<b>12" Oval Inlet</b>	Airflow, CFM	<b>220</b>	<b>300</b>	<b>380</b>	<b>460</b>	<b>540</b>	<b>620</b>	<b>700</b>
	Total Pressure	.036	.066	.106	.155	.214	.282	.360
	Static Pressure	.029	.054	.087	.127	.175	.231	.294
	Noise Criteria	–	19	26	32	37	41	44
	Throw	12-16-23	15-19-26	18-22-31	19-23-33	21-25-36	22-27-38	24-29-41

See page C73 for performance data notes.

8-10-2022



**PERFORMANCE DATA • MODEL SERIES 5700**

**MODEL: 5710(I) • 1" (25) SLOT WIDTH**

**3 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>
	Total Pressure	.040	.071	.112	.161	.219	.286	.362
	Static Pressure	.028	.049	.077	.110	.150	.196	.248
	Noise Criteria	–	15	21	27	32	36	40
	Throw	4-8-15	6-10-20	8-12-24	10-14-28	12-18-30	14-20-32	15-21-34
<b>8" Round Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>
	Total Pressure	.048	.073	.112	.154	.219	.277	.346
	Static Pressure	.036	.059	.087	.121	.165	.210	.278
	Noise Criteria	–	15	21	27	31	36	40
	Throw	5-9-18	8-13-24	10-16-30	12-19-32	14-22-35	17-25-37	19-27-40
<b>10" Round Inlet</b>	Airflow, CFM	<b>160</b>	<b>210</b>	<b>260</b>	<b>310</b>	<b>360</b>	<b>410</b>	<b>460</b>
	Total Pressure	.042	.072	.111	.158	.212	.276	.347
	Static Pressure	.037	.064	.098	.140	.189	.245	.308
	Noise Criteria	–	15	22	28	32	36	40
	Throw	8-12-25	10-16-29	12-20-33	14-24-37	16-28-40	18-30-42	22-32-45

**3 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>
	Total Pressure	.016	.037	.066	.103	.148	.202	.264
	Static Pressure	.008	.018	.032	.050	.072	.098	.128
	Noise Criteria	–	–	16	23	29	34	38
	Throw	1-2-6	2-3-11	3-6-15	4-10-19	6-11-22	8-13-24	10-15-26
<b>8" Round Inlet</b>	Airflow, CFM	<b>175</b>	<b>225</b>	<b>275</b>	<b>325</b>	<b>375</b>	<b>425</b>	<b>475</b>
	Total Pressure	.042	.071	.114	.153	.208	.260	.323
	Static Pressure	.038	.045	.076	.099	.127	.166	.209
	Noise Criteria	–	15	21	27	31	35	40
	Throw	3-7-17	5-11-21	8-13-23	10-16-25	12-18-27	14-20-29	15-22-31
<b>10" Oval Inlet</b>	Airflow, CFM	<b>225</b>	<b>300</b>	<b>375</b>	<b>450</b>	<b>525</b>	<b>600</b>	<b>675</b>
	Total Pressure	.044	.078	.121	.175	.238	.310	.393
	Static Pressure	.033	.059	.092	.132	.180	.235	.298
	Noise Criteria	–	16	23	29	34	38	42
	Throw	5-11-21	10-14-24	12-18-27	14-21-30	17-23-32	19-24-34	21-26-36
<b>12" Oval Inlet</b>	Airflow, CFM	<b>280</b>	<b>360</b>	<b>440</b>	<b>520</b>	<b>600</b>	<b>680</b>	<b>760</b>
	Total Pressure	.046	.076	.114	.159	.211	.272	.339
	Static Pressure	.038	.062	.093	.130	.173	.222	.277
	Noise Criteria	–	15	21	27	31	35	40
	Throw	9-14-23	12-18-27	14-22-30	16-24-32	19-26-34	22-28-36	25-30-39

**3 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>120</b>	<b>180</b>	<b>240</b>	<b>280</b>	<b>340</b>	<b>390</b>
	Total Pressure	.023	.051	.115	.204	.278	.410	.540
	Static Pressure	.012	.028	.063	.111	.152	.224	.294
	Noise Criteria	–	–	17	25	30	36	39
	Throw	2-3-11	4-9-17	8-13-21	11-16-24	13-18-26	16-20-29	17-22-31
<b>8" Round Inlet</b>	Airflow, CFM	<b>140</b>	<b>200</b>	<b>260</b>	<b>320</b>	<b>380</b>	<b>440</b>	<b>500</b>
	Total Pressure	.022	.045	.077	.116	.163	.219	.283
	Static Pressure	.012	.024	.041	.062	.088	.118	.152
	Noise Criteria	–	–	17	23	29	34	38
	Throw	4-7-15	6-9-19	9-12-22	11-15-25	14-18-28	17-20-31	20-23-34
<b>10" Oval Inlet</b>	Airflow, CFM	<b>200</b>	<b>280</b>	<b>360</b>	<b>440</b>	<b>520</b>	<b>600</b>	<b>680</b>
	Total Pressure	.028	.054	.090	.134	.188	.250	.321
	Static Pressure	.020	.038	.063	.095	.132	.176	.226
	Noise Criteria	–	–	18	25	30	35	39
	Throw	7-10-21	10-12-23	12-15-26	14-17-29	17-20-32	19-23-35	22-26-37
<b>12" Oval Inlet</b>	Airflow, CFM	<b>250</b>	<b>350</b>	<b>430</b>	<b>520</b>	<b>610</b>	<b>700</b>	<b>800</b>
	Total Pressure	.031	.061	.092	.135	.186	.245	.320
	Static Pressure	.025	.048	.073	.107	.147	.194	.253
	Noise Criteria	–	–	18	24	29	33	37
	Throw	11-17-25	16-21-29	19-23-32	21-25-36	22-27-39	24-29-41	25-31-44

See page C73 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5700**

**MODEL: 5710(I) • 1" (25) SLOT WIDTH**

**4 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>100</b>	<b>140</b>	<b>180</b>	<b>220</b>	<b>260</b>	<b>300</b>
	Total Pressure	.014	.039	.077	.127	.190	.265	.353
	Static Pressure	.008	.023	.045	.074	.111	.155	.207
	Noise Criteria	–	–	16	24	31	36	38
	Throw	2-3-12	2-5-14	4-10-20	7-13-25	10-15-31	12-18-34	13-20-35
<b>8" Round Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>
	Total Pressure	.046	.081	.127	.183	.249	.326	.412
	Static Pressure	.034	.061	.095	.137	.187	.244	.309
	Noise Criteria	–	16	23	29	34	38	42
	Throw	5-10-20	8-13-27	11-17-32	13-20-35	15-23-38	17-26-40	19-29-43
<b>10" Round Inlet</b>	Airflow, CFM	<b>175</b>	<b>250</b>	<b>325</b>	<b>400</b>	<b>450</b>	<b>500</b>	<b>550</b>
	Total Pressure	.038	.078	.132	.199	.252	.311	.377
	Static Pressure	.032	.066	.111	.169	.213	.264	.319
	Noise Criteria	–	16	24	31	34	38	41
	Throw	7-12-24	12-18-33	16-25-39	19-28-42	21-31-44	23-33-47	26-35-49

**4 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>140</b>	<b>170</b>	<b>200</b>	<b>230</b>	<b>260</b>	<b>290</b>	<b>320</b>
	Total Pressure	.053	.078	.108	.143	.182	.227	.276
	Static Pressure	.044	.066	.091	.120	.153	.191	.232
	Noise Criteria	–	–	20	24	28	31	35
	Throw	2-5-13	3-7-16	4-10-19	6-11-21	7-12-23	8-14-25	9-16-27
<b>8" Round Inlet</b>	Airflow, CFM	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.046	.073	.105	.142	.186	.235	.290
	Static Pressure	.025	.040	.057	.078	.102	.129	.159
	Noise Criteria	–	15	21	26	30	34	37
	Throw	3-7-17	5-10-21	7-13-24	9-15-26	11-17-28	13-19-30	15-21-32
<b>10" Oval Inlet</b>	Airflow, CFM	<b>250</b>	<b>330</b>	<b>410</b>	<b>490</b>	<b>570</b>	<b>650</b>	<b>730</b>
	Total Pressure	.041	.072	.111	.158	.214	.278	.351
	Static Pressure	.028	.048	.075	.107	.144	.188	.237
	Noise Criteria	–	15	22	28	33	37	40
	Throw	5-10-21	8-14-25	12-17-28	14-21-31	16-24-34	18-25-36	20-27-38
<b>12" Oval Inlet</b>	Airflow, CFM	<b>275</b>	<b>375</b>	<b>475</b>	<b>575</b>	<b>675</b>	<b>775</b>	<b>875</b>
	Total Pressure	.034	.063	.101	.148	.204	.269	.343
	Static Pressure	.025	.047	.075	.110	.152	.200	.255
	Noise Criteria	–	15	20	26	31	36	40
	Throw	7-13-25	12-17-28	14-21-32	17-24-34	20-26-37	22-28-39	24-30-42

**4 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>160</b>	<b>200</b>	<b>265</b>	<b>315</b>	<b>370</b>	<b>425</b>
	Total Pressure	.020	.051	.080	.140	.198	.273	.360
	Static Pressure	.004	.009	.015	.026	.037	.051	.067
	Noise Criteria	–	–	17	26	29	34	38
	Throw	1-3-10	1-3-11	2-4-13	3-7-17	5-11-19	6-12-20	8-14-22
<b>8" Round Inlet</b>	Airflow, CFM	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.036	.057	.082	.111	.145	.184	.227
	Static Pressure	.016	.025	.036	.048	.063	.080	.099
	Noise Criteria	–	–	18	23	27	30	33
	Throw	2-4-13	3-7-17	4-9-18	6-12-20	7-13-21	10-16-23	12-18-25
<b>10" Oval Inlet</b>	Airflow, CFM	<b>225</b>	<b>325</b>	<b>425</b>	<b>525</b>	<b>625</b>	<b>725</b>	<b>825</b>
	Total Pressure	.023	.049	.084	.128	.181	.243	.315
	Static Pressure	.015	.031	.053	.081	.114	.154	.199
	Noise Criteria	–	15	20	27	33	37	41
	Throw	2-5-16	6-12-20	9-15-22	12-17-24	14-19-26	16-21-28	18-23-30
<b>12" Oval Inlet</b>	Airflow, CFM	<b>300</b>	<b>400</b>	<b>500</b>	<b>600</b>	<b>700</b>	<b>800</b>	<b>900</b>
	Total Pressure	.032	.057	.089	.128	.174	.228	.288
	Static Pressure	.023	.041	.063	.091	.124	.162	.206
	Noise Criteria	–	–	18	24	29	34	37
	Throw	4-10-19	7-13-21	11-17-24	13-18-26	16-20-28	17-21-30	18-23-32

See page C73 for performance data notes.

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PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5700**

**MODEL: 5715(I) • 1 1/2" (38) SLOT WIDTH**

**1 Slot • 24" (610) Long**

	Airflow, CFM	30	50	70	90	110	130	150
<b>6" Round Inlet</b>	Total Pressure	.014	.038	.075	.124	.185	.258	.344
	Static Pressure	.012	.034	.067	.111	.166	.232	.308
	Noise Criteria	–	–	–	22	28	33	38
	Throw	2-3-18	4-9-15	6-10-16	10-14-20	11-15-22	12-16-24	14-17-25
<b>8" Round Inlet</b>	Airflow, CFM	<b>50</b>	<b>70</b>	<b>90</b>	<b>110</b>	<b>130</b>	<b>150</b>	<b>170</b>
	Total Pressure	.028	.054	.089	.133	.186	.248	.318
	Static Pressure	.026	.051	.085	.127	.177	.236	.303
	Noise Criteria	–	16	17	23	29	33	37
<b>10" Round Inlet</b>	Airflow, CFM	<b>70</b>	<b>90</b>	<b>110</b>	<b>130</b>	<b>150</b>	<b>170</b>	<b>190</b>
	Total Pressure	.040	.067	.100	.140	.186	.239	.298
	Static Pressure	.039	.065	.097	.133	.181	.232	.290
	Noise Criteria	–	15	20	26	30	34	38
<b>Throw</b>		6-10-16	10-14-20	11-15-22	12-16-24	14-17-25	16-19-27	18-20-28

**1 Slot • 48" (1219) Long**

	Airflow, CFM	75	100	125	150	175	200	225
<b>6" Round Inlet</b>	Total Pressure	.031	.055	.086	.124	.169	.220	.279
	Static Pressure	.022	.039	.061	.087	.119	.155	.196
	Noise Criteria	–	–	15	23	27	32	36
	Throw	3-6-15	5-11-20	8-13-21	10-15-24	12-18-25	14-20-28	15-21-29
<b>8" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>130</b>	<b>160</b>	<b>190</b>	<b>220</b>	<b>250</b>	<b>280</b>
	Total Pressure	.034	.057	.087	.122	.164	.211	.265
	Static Pressure	.029	.048	.073	.103	.139	.179	.224
	Noise Criteria	–	–	19	24	29	33	37
<b>10" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.035	.055	.080	.109	.142	.180	.222
	Static Pressure	.032	.051	.073	.099	.130	.164	.203
	Noise Criteria	–	–	19	24	28	32	35
<b>12" Oval Inlet</b>	Airflow, CFM	<b>140</b>	<b>180</b>	<b>220</b>	<b>260</b>	<b>300</b>	<b>340</b>	<b>380</b>
	Total Pressure	.036	.059	.088	.123	.164	.211	.264
	Static Pressure	.034	.056	.083	.116	.155	.199	.249
	Noise Criteria	–	16	22	28	32	36	40
<b>Throw</b>		9-14-23	12-18-26	14-20-29	18-24-34	19-26-36	20-27-38	21-28-40

**1 Slot • 60" (1524) Long**

	Airflow, CFM	100	130	160	190	220	250	280
<b>6" Round Inlet</b>	Total Pressure	.044	.075	.113	.159	.214	.276	.346
	Static Pressure	.028	.047	.072	.101	.135	.175	.219
	Noise Criteria	–	–	20	25	30	32	38
	Throw	6-10-16	8-11-18	10-14-20	12-15-21	13-16-23	14-17-25	15-18-26
<b>8" Round Inlet</b>	Airflow, CFM	<b>125</b>	<b>160</b>	<b>195</b>	<b>230</b>	<b>265</b>	<b>300</b>	<b>335</b>
	Total Pressure	.041	.067	.099	.138	.183	.235	.293
	Static Pressure	.033	.054	.080	.111	.148	.189	.236
	Noise Criteria	–	–	20	25	30	34	38
<b>10" Oval Inlet</b>	Airflow, CFM	<b>140</b>	<b>180</b>	<b>220</b>	<b>260</b>	<b>300</b>	<b>340</b>	<b>380</b>
	Total Pressure	.038	.063	.094	.131	.174	.224	.280
	Static Pressure	.033	.055	.082	.114	.152	.195	.244
	Noise Criteria	–	–	20	25	30	34	37
<b>12" Oval Inlet</b>	Airflow, CFM	<b>180</b>	<b>230</b>	<b>280</b>	<b>330</b>	<b>380</b>	<b>430</b>	<b>480</b>
	Total Pressure	.047	.077	.114	.158	.210	.269	.335
	Static Pressure	.044	.071	.105	.146	.194	.248	.309
	Noise Criteria	–	18	24	30	34	38	42
<b>Throw</b>		12-15-21	14-17-24	15-18-26	16-20-28	18-21-30	19-23-32	20-24-34

See page C73 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5700**

**MODEL: 5715(I) • 1 1/2" (38) SLOT WIDTH**

**2 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>
	Total Pressure	.021	.046	.082	.129	.185	.252	.330
	Static Pressure	.015	.033	.059	.092	.133	.181	.236
	Noise Criteria	–	–	15	23	28	33	38
	Throw	2-4-13	5-10-20	8-13-23	11-17-28	13-19-27	15-21-30	18-29-32
<b>8" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>125</b>	<b>160</b>	<b>195</b>	<b>230</b>	<b>265</b>	<b>300</b>
	Total Pressure	.029	.056	.091	.136	.189	.251	.322
	Static Pressure	.025	.048	.079	.117	.162	.215	.276
	Noise Criteria	–	–	19	25	30	35	39
	Throw	4-9-17	9-13-23	11-17-25	13-20-28	17-22-32	19-25-34	23-29-38
<b>10" Round Inlet</b>	Airflow, CFM	<b>125</b>	<b>160</b>	<b>195</b>	<b>230</b>	<b>265</b>	<b>300</b>	<b>335</b>
	Total Pressure	.053	.087	.129	.179	.238	.305	.381
	Static Pressure	.050	.081	.121	.168	.223	.286	.357
	Noise Criteria	–	16	21	26	31	35	39
	Throw	9-13-23	11-17-25	13-20-28	17-22-32	19-25-34	23-29-38	24-30-40

**2 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>110</b>	<b>150</b>	<b>190</b>	<b>230</b>	<b>270</b>	<b>310</b>	<b>350</b>
	Total Pressure	.043	.081	.129	.190	.261	.345	.439
	Static Pressure	.024	.044	.071	.104	.143	.189	.241
	Noise Criteria	–	–	16	22	27	31	36
	Throw	3-7-17	4-9-21	8-14-28	11-18-31	13-20-33	16-23-36	18-27-38
<b>8" Round Inlet</b>	Airflow, CFM	<b>180</b>	<b>225</b>	<b>270</b>	<b>315</b>	<b>360</b>	<b>405</b>	<b>450</b>
	Total Pressure	.060	.093	.135	.183	.239	.303	.374
	Static Pressure	.045	.070	.101	.137	.179	.226	.280
	Noise Criteria	–	–	20	26	29	34	37
	Throw	7-13-27	11-18-31	13-20-33	16-23-36	19-28-39	20-28-40	23-30-42
<b>10" Oval Inlet</b>	Airflow, CFM	<b>230</b>	<b>280</b>	<b>330</b>	<b>380</b>	<b>430</b>	<b>480</b>	<b>530</b>
	Total Pressure	.064	.095	.132	.175	.224	.280	.341
	Static Pressure	.051	.076	.106	.140	.180	.224	.273
	Noise Criteria	–	17	22	27	31	34	37
	Throw	11-18-31	14-21-34	17-26-38	19-28-39	21-29-41	24-31-43	26-32-45
<b>12" Oval Inlet</b>	Airflow, CFM	<b>220</b>	<b>280</b>	<b>340</b>	<b>400</b>	<b>460</b>	<b>520</b>	<b>580</b>
	Total Pressure	.039	.063	.093	.128	.170	.217	.270
	Static Pressure	.032	.052	.077	.107	.141	.180	.224
	Noise Criteria	–	–	20	25	29	33	37
	Throw	9-16-30	14-21-34	17-26-38	20-28-40	23-30-42	26-32-45	29-34-48

**2 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>135</b>	<b>180</b>	<b>225</b>	<b>270</b>	<b>315</b>	<b>360</b>	<b>405</b>
	Total Pressure	.060	.107	.167	.241	.328	.428	.542
	Static Pressure	.031	.055	.085	.123	.167	.219	.277
	Noise Criteria	–	–	17	23	28	33	40
	Throw	3-7-17	4-8-20	7-13-27	11-17-30	12-19-32	14-22-35	17-26-38
<b>8" Round Inlet</b>	Airflow, CFM	<b>175</b>	<b>230</b>	<b>285</b>	<b>340</b>	<b>395</b>	<b>450</b>	<b>505</b>
	Total Pressure	.050	.086	.132	.188	.254	.329	.415
	Static Pressure	.034	.059	.090	.128	.173	.225	.283
	Noise Criteria	–	–	18	23	27	32	36
	Throw	3-7-20	7-13-27	11-18-31	13-20-33	16-23-36	19-28-39	20-29-41
<b>10" Oval Inlet</b>	Airflow, CFM	<b>215</b>	<b>280</b>	<b>345</b>	<b>410</b>	<b>475</b>	<b>540</b>	<b>585</b>
	Total Pressure	.051	.087	.131	.185	.249	.322	.378
	Static Pressure	.040	.068	.103	.145	.195	.252	.296
	Noise Criteria	–	–	19	25	29	33	36
	Throw	7-14-28	11-18-31	14-21-34	17-26-38	19-28-39	21-29-41	23-30-42
<b>12" Oval Inlet</b>	Airflow, CFM	<b>295</b>	<b>350</b>	<b>425</b>	<b>500</b>	<b>575</b>	<b>650</b>	<b>725</b>
	Total Pressure	.054	.075	.111	.154	.203	.260	.323
	Static Pressure	.045	.063	.093	.128	.170	.217	.270
	Noise Criteria	–	15	22	27	32	35	39
	Throw	9-16-30	14-21-34	17-26-38	20-28-40	23-30-42	26-32-45	27-33-46

See page C73 for performance data notes.

**PERFORMANCE DATA • MODEL SERIES 5700**

**MODEL: 5715(I) • 1 1/2" (38) SLOT WIDTH**

**3 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>110</b>	<b>140</b>	<b>170</b>	<b>200</b>	<b>230</b>	<b>260</b>	<b>290</b>
	Total Pressure	.043	.070	.103	.143	.189	.242	.301
	Static Pressure	.025	.041	.061	.084	.111	.142	.176
	Noise Criteria	–	15	21	26	31	35	40
	Throw	2-5-15	4-9-19	6-11-23	8-13-27	10-15-31	12-17-34	14-19-37
<b>8" Round Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>
	Total Pressure	.042	.074	.115	.166	.226	.295	.374
	Static Pressure	.029	.052	.081	.116	.158	.206	.261
	Noise Criteria	–	15	22	28	33	37	41
	Throw	4-10-20	7-13-23	10-16-26	13-19-30	16-22-33	19-25-36	22-28-39
<b>10" Round Inlet</b>	Airflow, CFM	<b>225</b>	<b>275</b>	<b>325</b>	<b>375</b>	<b>425</b>	<b>475</b>	<b>525</b>
	Total Pressure	.057	.086	.120	.159	.204	.255	.312
	Static Pressure	.046	.068	.095	.127	.163	.204	.249
	Noise Criteria	–	17	23	28	32	36	40
	Throw	9-15-30	12-18-33	15-21-36	18-27-42	21-31-45	23-34-48	26-38-51

**3 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.030	.047	.068	.092	.120	.152	.188
	Static Pressure	.024	.038	.055	.075	.098	.124	.153
	Noise Criteria	–	–	–	20	24	28	36
	Throw	3-5-16	4-8-20	6-13-25	8-14-26	10-16-28	13-19-31	14-20-32
<b>8" Round Inlet</b>	Airflow, CFM	<b>180</b>	<b>235</b>	<b>290</b>	<b>345</b>	<b>400</b>	<b>455</b>	<b>510</b>
	Total Pressure	.046	.078	.118	.167	.225	.291	.366
	Static Pressure	.029	.049	.075	.106	.143	.185	.232
	Noise Criteria	–	–	18	24	28	33	36
	Throw	6-11-23	11-15-28	14-19-31	18-23-35	19-25-38	22-27-40	29-29-41
<b>10" Oval Inlet</b>	Airflow, CFM	<b>270</b>	<b>330</b>	<b>390</b>	<b>450</b>	<b>510</b>	<b>570</b>	<b>630</b>
	Total Pressure	.045	.067	.094	.125	.160	.200	.244
	Static Pressure	.030	.044	.062	.082	.106	.132	.161
	Noise Criteria	–	–	19	23	27	31	35
	Throw	14-21-34	16-24-36	19-27-37	22-28-38	24-29-41	26-31-44	27-32-46
<b>12" Oval Inlet</b>	Airflow, CFM	<b>275</b>	<b>350</b>	<b>425</b>	<b>500</b>	<b>575</b>	<b>650</b>	<b>725</b>
	Total Pressure	.030	.048	.070	.098	.129	.165	.205
	Static Pressure	.022	.035	.052	.072	.096	.122	.152
	Noise Criteria	–	–	15	20	25	29	32
	Throw	14-21-34	18-23-35	21-27-37	24-29-41	26-31-44	27-33-46	28-35-48

**3 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>170</b>	<b>200</b>	<b>230</b>	<b>260</b>	<b>290</b>	<b>320</b>	<b>350</b>
	Total Pressure	.053	.073	.096	.123	.153	.186	.223
	Static Pressure	.040	.055	.073	.094	.117	.142	.170
	Noise Criteria	–	15	21	25	30	35	40
	Throw	1-3-10	3-5-12	5-7-14	7-9-16	9-11-18	11-13-20	13-15-22
<b>8" Round Inlet</b>	Airflow, CFM	<b>230</b>	<b>280</b>	<b>330</b>	<b>380</b>	<b>430</b>	<b>480</b>	<b>530</b>
	Total Pressure	.046	.068	.095	.125	.161	.200	.244
	Static Pressure	.034	.051	.071	.094	.120	.149	.182
	Noise Criteria	–	15	20	24	28	32	36
	Throw	2-5-15	3-7-18	4-10-19	6-12-21	7-14-22	9-15-23	11-16-24
<b>10" Oval Inlet</b>	Airflow, CFM	<b>300</b>	<b>375</b>	<b>450</b>	<b>525</b>	<b>600</b>	<b>675</b>	<b>750</b>
	Total Pressure	.046	.072	.104	.141	.184	.233	.288
	Static Pressure	.034	.053	.076	.104	.136	.172	.212
	Noise Criteria	–	16	21	26	31	34	38
	Throw	4-8-18	6-12-21	8-14-23	11-17-24	13-18-26	14-19-28	16-21-29
<b>12" Oval Inlet</b>	Airflow, CFM	<b>375</b>	<b>475</b>	<b>575</b>	<b>675</b>	<b>775</b>	<b>875</b>	<b>975</b>
	Total Pressure	.046	.074	.108	.149	.197	.251	.312
	Static Pressure	.034	.054	.079	.109	.143	.183	.227
	Noise Criteria	–	15	21	26	31	36	40
	Throw	6-13-21	9-15-23	12-18-25	14-19-28	16-21-30	18-22-31	19-23-33

See page C73 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5700**

**MODEL: 5715(I) • 1 1/2" (38) SLOT WIDTH**

**4 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.041	.064	.093	.126	.165	.209	.258
	Static Pressure	.018	.028	.040	.055	.072	.091	.112
	Noise Criteria	–	15	20	26	31	35	39
	Throw	2-4-14	3-7-18	4-10-21	6-12-25	8-14-28	10-16-33	12-17-37
<b>8" Round Inlet</b>	Airflow, CFM	<b>175</b>	<b>225</b>	<b>275</b>	<b>325</b>	<b>375</b>	<b>425</b>	<b>475</b>
	Total Pressure	.044	.073	.109	.152	.203	.260	.325
	Static Pressure	.032	.052	.078	.109	.145	.186	.232
	Noise Criteria	–	15	21	27	31	35	40
	Throw	4-9-21	7-13-27	10-16-33	13-19-38	15-22-40	17-25-43	19-28-45
<b>10" Oval Inlet</b>	Airflow, CFM	<b>225</b>	<b>300</b>	<b>375</b>	<b>450</b>	<b>525</b>	<b>600</b>	<b>675</b>
	Total Pressure	.044	.078	.121	.175	.238	.310	.393
	Static Pressure	.033	.059	.092	.133	.181	.236	.299
	Noise Criteria	–	16	23	29	34	38	42
	Throw	7-13-27	12-18-36	15-22-40	18-27-44	21-31-48	24-36-51	27-38-54

**4 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.036	.056	.080	.109	.143	.181	.223
	Static Pressure	.029	.045	.065	.089	.116	.147	.181
	Noise Criteria	–	15	21	26	31	36	41
	Throw	1-2-10	2-4-14	3-5-17	4-7-19	5-8-22	6-9-25	7-10-28
<b>8" Round Inlet</b>	Airflow, CFM	<b>230</b>	<b>290</b>	<b>350</b>	<b>410</b>	<b>470</b>	<b>530</b>	<b>590</b>
	Total Pressure	.042	.067	.097	.133	.175	.223	.276
	Static Pressure	.031	.049	.071	.098	.128	.163	.202
	Noise Criteria	–	15	21	27	32	36	40
	Throw	2-5-16	4-8-20	5-12-24	7-14-28	9-16-30	13-19-30	15-21-32
<b>10" Oval Inlet</b>	Airflow, CFM	<b>320</b>	<b>400</b>	<b>480</b>	<b>560</b>	<b>640</b>	<b>720</b>	<b>800</b>
	Total Pressure	.045	.071	.102	.139	.182	.230	.284
	Static Pressure	.038	.060	.086	.117	.153	.194	.239
	Noise Criteria	–	16	22	27	31	36	40
	Throw	4-10-22	7-14-28	10-17-31	13-20-33	15-22-35	17-25-38	19-28-40
<b>12" Oval Inlet</b>	Airflow, CFM	<b>400</b>	<b>500</b>	<b>600</b>	<b>700</b>	<b>800</b>	<b>900</b>	<b>1000</b>
	Total Pressure	.051	.080	.115	.156	.204	.258	.318
	Static Pressure	.038	.060	.086	.117	.153	.193	.239
	Noise Criteria	–	16	22	27	32	36	40
	Throw	7-14-28	10-17-31	14-21-34	16-24-37	19-28-40	21-30-42	23-31-44

**4 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>	<b>330</b>	<b>360</b>	<b>390</b>
	Total Pressure	.060	.078	.099	.122	.148	.176	.206
	Static Pressure	.049	.064	.080	.099	.120	.143	.168
	Noise Criteria	15	18	22	25	26	31	33
	Throw	1-3-11	2-3-13	2-4-15	3-5-17	4-6-19	5-7-21	6-8-22
<b>8" Round Inlet</b>	Airflow, CFM	<b>320</b>	<b>370</b>	<b>420</b>	<b>470</b>	<b>520</b>	<b>570</b>	<b>620</b>
	Total Pressure	.066	.089	.114	.143	.175	.211	.249
	Static Pressure	.054	.072	.093	.116	.142	.171	.202
	Noise Criteria	15	21	24	28	32	34	37
	Throw	3-6-18	4-9-21	5-11-22	6-13-23	7-15-24	8-17-25	9-19-27
<b>10" Oval Inlet</b>	Airflow, CFM	<b>340</b>	<b>420</b>	<b>500</b>	<b>580</b>	<b>660</b>	<b>740</b>	<b>820</b>
	Total Pressure	.044	.067	.095	.128	.166	.208	.256
	Static Pressure	.037	.056	.079	.107	.138	.173	.213
	Noise Criteria	–	15	20	25	30	34	39
	Throw	3-7-19	5-11-22	7-14-24	9-16-26	12-18-27	14-20-29	16-22-31
<b>12" Oval Inlet</b>	Airflow, CFM	<b>525</b>	<b>625</b>	<b>725</b>	<b>825</b>	<b>925</b>	<b>1025</b>	<b>1125</b>
	Total Pressure	.067	.095	.128	.165	.208	.255	.307
	Static Pressure	.063	.090	.120	.156	.196	.241	.290
	Noise Criteria	15	20	25	29	33	36	40
	Throw	7-15-24	10-17-27	13-20-29	15-22-30	17-23-32	19-24-34	21-25-36

See page C73 for performance data notes.



HOW TO SPECIFY

MODELS 5775(I), 5710(I) AND 5715(I)

'WIPER BLADE' SUPPLY AIR PLENUM SLOT DIFFUSERS FOR LAY-IN T-BAR

SUGGESTED SPECIFICATION:

**Standard Lay-in T-Bar**

Furnish and install **Nailor Model** (select one) **5775(I)** (3/4" [19] slot), **5710(I)** (1" [25] slot) or **5715(I)** (1 1/2" [38] slot) **Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include an adjustable, extruded aluminum, friction pivoted 'wiper blade' style pattern deflector mounted within each slot. Multi-slot units shall include extruded aluminum center T-Bars. The pattern deflector shall be adjustable in a horizontal or vertical setting. A gasket seal at the top of the blade shall seal tightly against the inside of the diffuser plenum casing or factory supplied center T-Bar when in the horizontal setting. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500) and have one, two, three or four slots as specified. The pattern controllers and all exposed edges shall have a BK Black finish and the center T-Bars shall have an AW Appliance White finish. Models 5775I, 5710I or 5715I shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

MODELS 5775(I)-F, 5710(I)-F, 5715(I)-F, 5775(I)-F2, 5710(I)-F2 AND 5715(I)-F2

'WIPER BLADE' SUPPLY AIR PLENUM SLOT DIFFUSERS FOR NARROW REGRESSED CEILING GRIDS

SUGGESTED SPECIFICATION:

**Narrow Regressed T-Bar, Straddle Mount**

Furnish and install **Nailor Model** (select one) **5775(I)-F** (3/4" [19] slot), **5710(I)-F** (1" [25] slot) or **5715(I)-F** (1 1/2" [38] slot) **Plenum Slot Supply Diffusers for Narrow Regressed T-Bar** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall fit within a Narrow Regressed T-Bar ceiling system. The plenum shall be manufactured from corrosion-resistant steel and include an adjustable, extruded aluminum, friction pivoted 'wiper blade' style pattern deflector mounted within each slot. The pattern deflector shall be adjustable in a horizontal or vertical setting. A gasket seal at the top of the blade shall seal tightly against the inside of the diffuser plenum casing when in the horizontal setting. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 24" or 48" (600 or 1200) and have one or two slots as specified. Two slot models shall straddle the T-Bar lengthwise. The pattern controllers and all exposed edges shall have a BK Black finish. Models 5775I-F, 5710I-F or 5715I-F shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

**Narrow Regressed T-Bar, Flat Face T-Bar(s)**

Furnish and install **Nailor Model** (select one) **5775(I)-F2** (3/4" [19] slot), **5710(I)-F2** (1" [25] slot) or **5715(I)-F2** (1 1/2" [38] slot) **Plenum Slot Supply Diffusers for Narrow Regressed T-Bar** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall fit within a Narrow Regressed T-Bar ceiling system. The plenum shall be manufactured from corrosion-resistant steel and include an adjustable, extruded aluminum, friction pivoted 'wiper blade' style pattern deflector mounted within each slot. Multi-slot units shall include extruded aluminum center T-Bars. The pattern deflector shall be adjustable in a horizontal or vertical setting. A gasket seal at the top of the blade shall seal tightly against the inside of the diffuser plenum casing or factory supplied 1" (25) flat face center T-Bar when in the horizontal setting. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 24" or 48" (600 or 1200) and have one, two, three or four slots as specified. The pattern controllers and all exposed edges shall have a BK Black finish and the center T-Bars shall have an AW Appliance White finish. Models 5775I-F2, 5710I-F2 or 5715I-F2 shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**ADJUSTABLE 'ICE TONG' PATTERN CONTROLLER**

- FOR STANDARD LAY-IN T-BAR
- SUPPLY

**Uninsulated Models:**

**5850 1/2" (13) Slot Width**

**5875 3/4" (19) Slot Width**

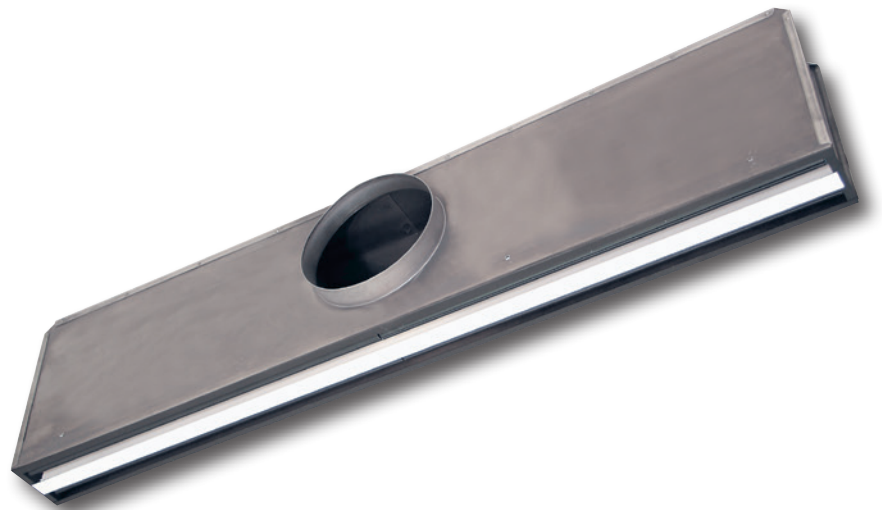
**5810 1" (25) Slot Width**

**Insulated Models:**

**5850I 1/2" (13) Slot Width**

**5875I 3/4" (19) Slot Width**

**5810I 1" (25) Slot Width**



Model 5810

Model Series 5800 Plenum Slot Ceiling Diffusers have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, so offering an extremely unobtrusive method of air distribution. Available in a wide range of sizes and capacities, the 5800 Series design offers the discerning engineer and architect premium quality construction and design features.

Model Series 5800 features the same 'ice-tong' pattern controller as used in the 5000 Series Linear Slot Diffuser, providing total flexibility in all applications. The direction of airflow is adjustable through a full 180° from the face of the diffuser, and pattern controllers may also be adjusted for volume control.

In the horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow. Therefore, the 5800 Series provides excellent performance in variable air volume applications.

**STANDARD FEATURES:**

- Full 180° pattern controller adjustment means there are no 'lefts or rights'. Pattern controllers also permit volume control.
- Available in 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500 mm) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of three slot widths.
- Choice of 1, 2, 3 or 4 parallel slots.
- Standard unit is 11" (279) in height.

- Factory installed center T-Bars on multi-slot models are standard. They are dropped slightly below the diffuser face to align flush with the ceiling grid.
- Pattern controller is split mid-way on units 36" (900) and longer, permitting a 2-way opposite blow pattern from a single slot.

**CONSTRUCTION MATERIAL:**

Corrosion-resistant steel plenum and pattern controllers. Aluminum center T-Bars.

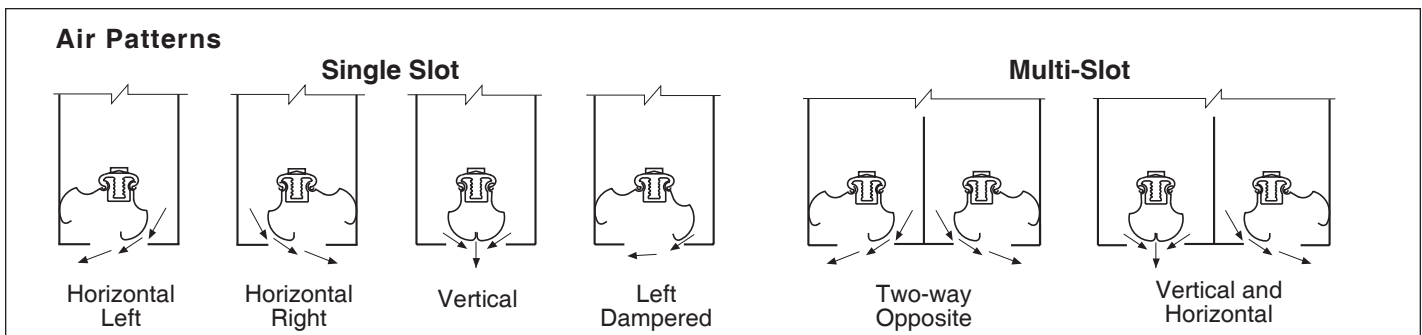
**FINISH OPTIONS:**

Black on pattern controllers and exposed surfaces. AW Appliance White on center T-Bars.

**OPTIONS AND ACCESSORIES:**

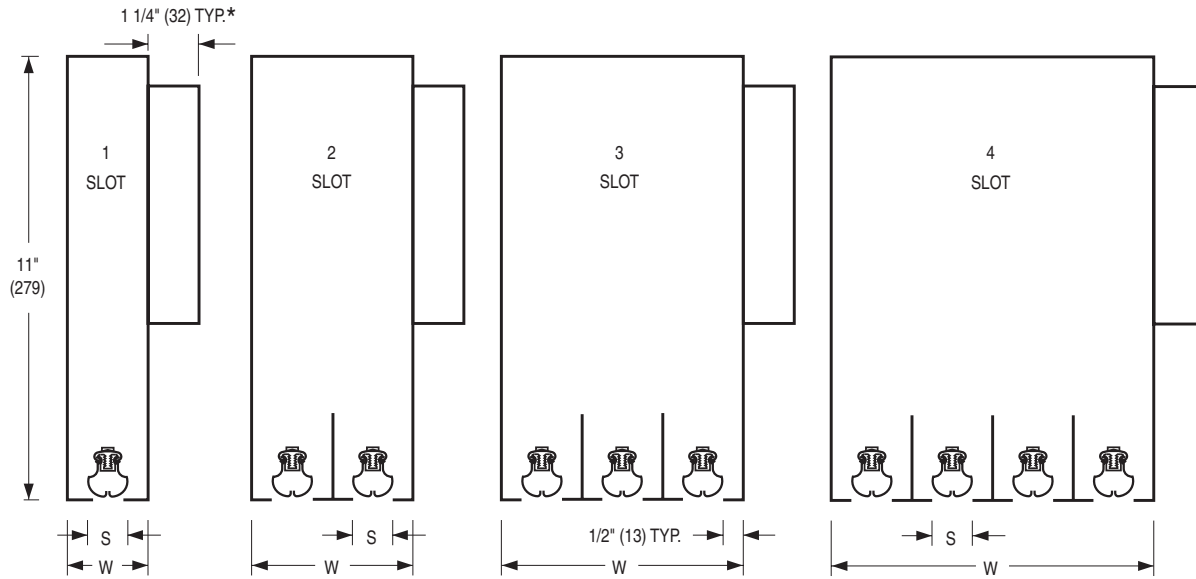
- Internal insulation (add suffix 'I' to model number).
- EIC Extended Inlet Collar (2.25" [57]) with bead.
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS



## DIMENSIONAL DATA:

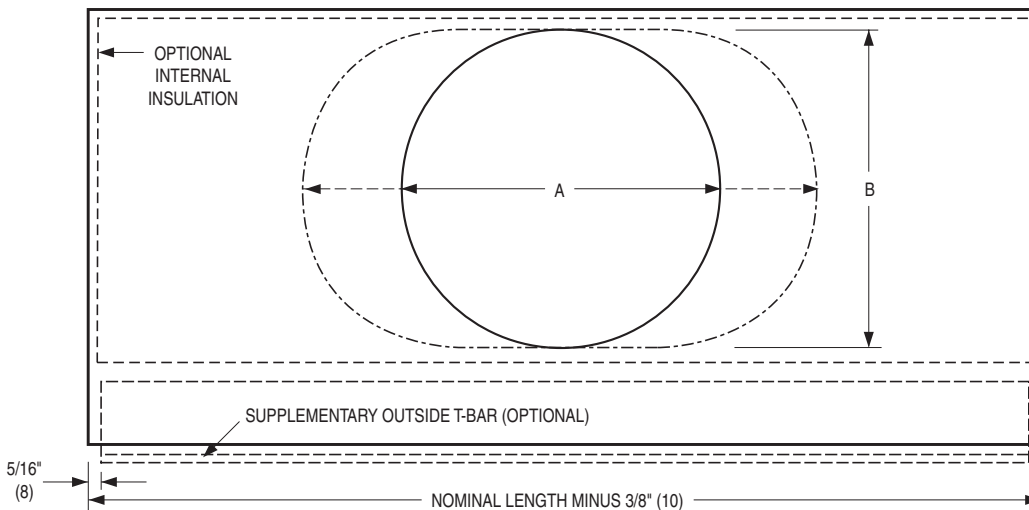
### MODEL SERIES: 5800 • STANDARD LAY-IN T-BAR MODELS



\*4" (102) WITH OPTIONAL ID INLET DAMPER

		S Slot Width		
		1/2" (13)	3/4" (19)	1" (25)
W Width	1 Slot	1 1/2" (38)	1 3/4" (44)	2" (51)
	2 Slot	3" (76)	3 1/2" (89)	4" (102)
	3 Slot	4 1/2" (114)	5 1/4" (133)	6" (152)
	4 Slot	6" (152)	7" (178)	8" (203)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	—	—	7 7/8" (200)	7 7/8" (200)



Nominal Length L	
Imperial Modules Inches (mm)	Metric Modules (mm)
20" (508)	500
24" (610)	600
30" (762)	750
36" (914)	900
48" (1219)	1200
60" (1524)	1500

## ADJUSTABLE 'ICE TONG' PATTERN CONTROLLER

- FOR NARROW REGRESSED T-BAR SUPPLY

### Straddle Mount Models:

5850(I)-F 1/2" (13) Slot Width

5875(I)-F 3/4" (19) Slot Width

5810(I)-F 1" (25) Slot Width

### Flat Face Center T-Bar Models:

5850(I)-F2 1/2" (13) Slot Width

5875(I)-F2 3/4" (19) Slot Width

5810(I)-F2 1" (25) Slot Width

- Suffix 'I' adds internal insulation



Model 5810-F2

Model Series 5800-F and 5800-F2 Plenum Slot Ceiling Diffusers have been specially developed to integrate with and compliment 'Fineline®' type suspended ceiling grids, thus offering an extremely unobtrusive method of air distribution. Available in a wide range of sizes and capacities, the design offers the optimum combination of application flexibility, high performance and low cost.

This series features an 'ice tong' pattern controller that provides total flexibility in all applications. The direction of airflow is adjustable through a full 180° from the face of the diffuser and pattern controllers may also be adjusted for volume control. In the horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow.

The single slot units, for all models, are for installation alongside a main T-Bar runner. The 5800-F Series two slot units incorporate a center hat channel and are designed to straddle, longitudinally, along a main T-Bar runner. The 5800-F2 Series multi-slot units incorporate factory installed 1" (25) flat face T-Bars.

### STANDARD FEATURES:

- Full 180° pattern controller adjustment means there are no 'lefts or rights'.
- Available in 24" or 48" (600 or 1200) nominal lengths to suit both imperial and metric ceiling systems.
- A cross notch is a recommended standard option on 48" (1200) long units which allows the plenum to be installed in a 24" x 24" (600 x 600) ceiling grid.
- Series 5800-F is available in a one or two slot configuration and Series 5800-F2 is available in a one, two, three, or four slot configurations.

- The single slot units are for installation alongside a main runner.
- 5800-F two slot unit has a center hat channel that is designed to straddle a main T-Bar runner.
- 5800-F2 multi-slot units include 1" (25) flat face T-Bars.

### CONSTRUCTION MATERIAL:

Corrosion-resistant steel. The 5800-F2 Series includes center T-Bars on multi-slot units that are extruded aluminum.

### FINISH OPTIONS:

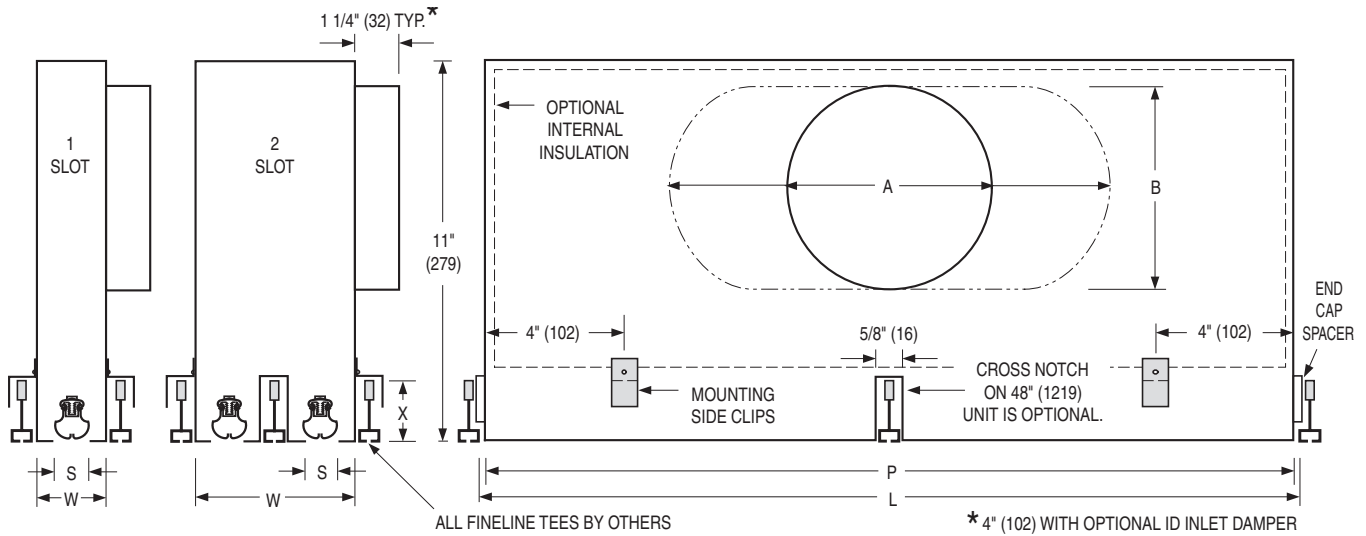
Black on pattern controllers and exposed surfaces. AW Appliance White on center T-Bars.

### OPTIONS AND ACCESSORIES:

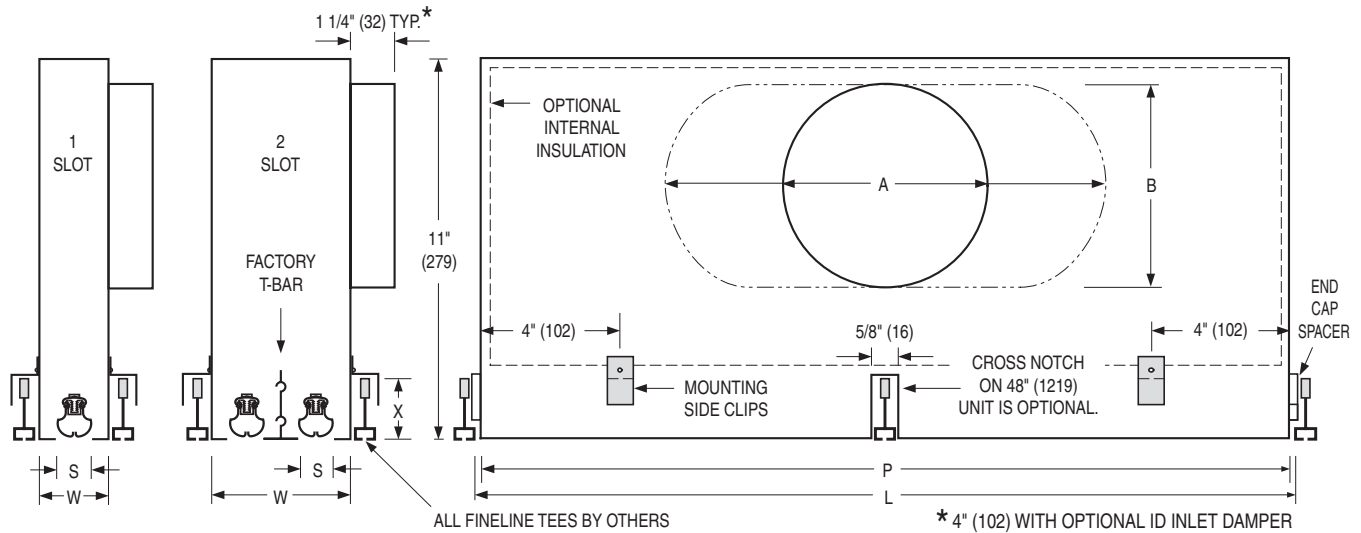
- Internal insulation (add suffix 'I' to model number).
- EIC Extended Inlet Collar (2.25" [57]) with bead.
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

## DIMENSIONAL DATA:

### MODEL SERIES: 5800-F AND 5800-F2 • NARROW REGRESSED T-BAR MODELS



**MODEL SERIES 5800-F**

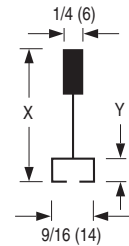


**MODEL SERIES 5800-F2**

#### Imperial Ceiling Modules (in.)    Metric Ceiling Modules (mm)

Nominal Length	Overall Length L	Plenum Length P
24	23 3/4	23 3/8
48	47 3/4	47 3/8

Nominal Length	Overall Length L	Plenum Length P
600	594	584
1200	1194	1184



**Model Series 5800-F**

Model	S Slot Width	Width W	
		1 Slot	2 Slot
5850-F	1/2" (13)	1 1/2" (38)	3 5/8" (92)
5875-F	3/4" (19)	1 3/4" (44)	4 1/8" (105)
5810-F	1" (25)	2" (51)	4 5/8" (117)

**Model Series 5800-F2**

Model	S Slot Width	Width W			
		1 Slot	2 Slot	3 Slot	4 Slot
5850-F2	1/2" (13)	1 1/2" (38)	3" (76)	4 1/2" (114)	6" (152)
5875-F2	3/4" (19)	1 3/4" (44)	3 1/2" (89)	5 1/4" (133)	7" (178)
5810-F2	1" (25)	2" (51)	4" (102)	6" (152)	8" (203)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
<b>A</b>	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
<b>B</b>	—	—	7 7/8" (200)	7 7/8" (200)

T-Bar Type (Manufacturer)	X	Y
<b>A</b> Chicago Metallic Ultraline	1 3/4" (44)	5/16" (8)
<b>C</b> Certainteed Smoothline	1 5/8" (41)	5/16" (8)
<b>D</b> Donn Finline	1 25/32" (45)	5/16" (8)

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5850(I) • 1/2" (13) SLOT WIDTH**

**1 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	<b>Airflow, CFM</b>	<b>50</b>	<b>65</b>	<b>80</b>	<b>95</b>	<b>110</b>	<b>125</b>	<b>140</b>
	Total Pressure	.120	.171	.228	.289	.356	.429	.506
	Static Pressure	.115	.164	.216	.274	.335	.401	.472
	Noise Criteria	19	25	29	33	37	40	42
	Throw	7-12-21	10-15-25	13-18-28	15-21-31	17-23-33	19-25-35	20-26-37
<b>8" Round Inlet</b>	<b>Airflow, CFM</b>	<b>55</b>	<b>70</b>	<b>85</b>	<b>105</b>	<b>120</b>	<b>135</b>	<b>150</b>
	Total Pressure	.133	.189	.251	.318	.390	.467	.550
	Static Pressure	.132	.187	.247	.312	.382	.457	.538
	Noise Criteria	18	24	28	33	36	39	41
	Throw	9-14-24	13-19-30	14-21-33	18-24-36	20-26-38	22-28-40	23-30-42

**1 Slot • 36" (914) Long**

<b>6" Round Inlet</b>	<b>Airflow, CFM</b>	<b>55</b>	<b>75</b>	<b>90</b>	<b>110</b>	<b>125</b>	<b>145</b>	<b>160</b>
	Total Pressure	.119	.169	.218	.272	.327	.385	.442
	Static Pressure	.114	.159	.204	.251	.299	.347	.397
	Noise Criteria	14	21	27	31	35	38	41
	Throw	6-10-20	9-14-24	11-17-28	13-20-31	15-22-33	16-24-35	17-26-37
<b>8" Round Inlet</b>	<b>Airflow, CFM</b>	<b>65</b>	<b>85</b>	<b>100</b>	<b>120</b>	<b>135</b>	<b>155</b>	<b>170</b>
	Total Pressure	.126	.165	.205	.245	.285	.328	.370
	Static Pressure	.123	.161	.199	.237	.276	.315	.354
	Noise Criteria	16	22	27	31	34	37	40
	Throw	8-13-23	11-16-27	13-19-30	15-22-33	17-24-35	18-25-37	20-27-39
<b>10" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>75</b>	<b>95</b>	<b>110</b>	<b>130</b>	<b>145</b>	<b>165</b>	<b>180</b>
	Total Pressure	.132	.168	.205	.243	.281	.320	.359
	Static Pressure	.131	.166	.202	.239	.276	.314	.351
	Noise Criteria	16	21	26	30	33	36	39
	Throw	8-13-24	11-17-28	13-20-31	16-22-34	17-24-36	19-26-38	20-28-40

**1 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	<b>Airflow, CFM</b>	<b>85</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>175</b>	<b>195</b>
	Total Pressure	.074	.117	.157	.202	.248	.307	.361
	Static Pressure	.068	.107	.141	.178	.216	.267	.309
	Noise Criteria	23	30	33	36	38	40	43
	Throw	4-6-14	7-10-17	6-11-18	8-13-21	9-14-24	9-15-25	11-17-26
<b>8" Round Inlet</b>	<b>Airflow, CFM</b>	<b>80</b>	<b>95</b>	<b>115</b>	<b>135</b>	<b>155</b>	<b>170</b>	<b>190</b>
	Total Pressure	.091	.127	.165	.204	.244	.283	.324
	Static Pressure	.088	.123	.159	.195	.232	.270	.307
	Noise Criteria	16	22	27	31	35	37	40
	Throw	9-10-15	9-12-17	11-14-18	13-15-19	14-18-20	15-19-23	18-22-26
<b>10" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>110</b>	<b>125</b>	<b>145</b>	<b>165</b>	<b>185</b>	<b>200</b>	<b>220</b>
	Total Pressure	.097	.129	.172	.209	.258	.299	.352
	Static Pressure	.095	.126	.169	.205	.252	.292	.343
	Noise Criteria	22	27	30	33	36	38	41
	Throw	10-11-14	11-12-16	12-13-18	12-14-20	13-15-21	14-17-23	15-18-25
<b>12" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>125</b>	<b>145</b>	<b>170</b>	<b>190</b>	<b>215</b>	<b>235</b>	<b>260</b>
	Total Pressure	.107	.142	.192	.235	.292	.341	.406
	Static Pressure	.106	.141	.190	.232	.289	.337	.401
	Noise Criteria	21	25	30	33	36	38	41
	Throw	9-11-16	12-13-17	11-15-18	13-16-20	14-17-22	15-18-24	16-20-28

See page C32 for performance data notes.



**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5850(I) • 1/2" (13) SLOT WIDTH**

**1 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>65</b>	<b>85</b>	<b>110</b>	<b>130</b>	<b>155</b>	<b>175</b>	<b>200</b>
	Total Pressure	.058	.100	.154	.203	.274	.350	.436
	Static Pressure	.050	.087	.132	.173	.231	.295	.365
	Noise Criteria	16	22	27	29	33	35	38
	Throw	3-5-10	5-7-14	7-10-17	8-11-18	9-13-20	9-14-22	10-15-23
<b>8" Round Inlet</b>	Airflow, CFM	<b>75</b>	<b>100</b>	<b>125</b>	<b>145</b>	<b>170</b>	<b>195</b>	<b>220</b>
	Total Pressure	.061	.099	.145	.196	.256	.323	.397
	Static Pressure	.058	.094	.136	.185	.240	.302	.370
	Noise Criteria	19	24	27	31	34	37	39
	Throw	6-8-15	8-11-18	9-13-21	10-14-23	12-16-25	12-17-27	13-19-29
<b>10" Oval Inlet</b>	Airflow, CFM	<b>85</b>	<b>110</b>	<b>135</b>	<b>160</b>	<b>185</b>	<b>210</b>	<b>235</b>
	Total Pressure	.065	.105	.152	.207	.269	.339	.416
	Static Pressure	.063	.102	.148	.201	.261	.328	.403
	Noise Criteria	18	24	28	32	36	39	41
	Throw	5-7-15	7-11-19	9-13-22	11-15-24	12-17-26	13-19-28	14-20-30
<b>12" Oval Inlet</b>	Airflow, CFM	<b>110</b>	<b>140</b>	<b>170</b>	<b>200</b>	<b>230</b>	<b>260</b>	<b>290</b>
	Total Pressure	.058	.094	.136	.184	.239	.301	.370
	Static Pressure	.057	.091	.132	.179	.232	.292	.358
	Noise Criteria	24	28	32	35	37	40	42
	Throw	5-8-16	7-11-20	10-14-23	11-16-26	13-18-28	14-20-30	15-22-32

**2 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>50</b>	<b>70</b>	<b>90</b>	<b>110</b>	<b>130</b>	<b>150</b>	<b>170</b>
	Total Pressure	.086	.123	.162	.204	.250	.298	.348
	Static Pressure	.090	.127	.167	.209	.252	.296	.342
	Noise Criteria	15	23	28	33	36	40	43
	Throw	8-13-22	11-17-26	14-20-30	16-23-33	18-25-36	20-27-38	21-28-40
<b>8" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.053	.088	.130	.178	.235	.298	.368
	Static Pressure	.050	.082	.121	.166	.218	.276	.341
	Noise Criteria	-	15	23	24	34	36	41
	Throw	9-15-25	13-19-30	16-22-33	19-25-37	21-27-39	23-29-42	25-31-44
<b>10" Oval Inlet</b>	Airflow, CFM	<b>85</b>	<b>110</b>	<b>135</b>	<b>160</b>	<b>185</b>	<b>210</b>	<b>220</b>
	Total Pressure	.050	.081	.119	.164	.215	.273	.337
	Static Pressure	.048	.078	.115	.158	.207	.262	.324
	Noise Criteria	15	22	26	31	34	37	40
	Throw	9-15-26	13-19-30	16-21-33	18-24-35	20-26-37	22-27-39	23-29-41

**2 Slot • 36" (914) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>
	Total Pressure	.059	.100	.150	.209	.277	.355	.443
	Static Pressure	.045	.074	.110	.152	.200	.254	.315
	Noise Criteria	11	19	25	30	34	37	40
	Throw	7-12-22	9-16-26	11-19-30	13-22-32	15-24-35	16-26-37	17-28-38
<b>8" Round Inlet</b>	Airflow, CFM	<b>105</b>	<b>135</b>	<b>165</b>	<b>200</b>	<b>235</b>	<b>265</b>	<b>300</b>
	Total Pressure	.049	.082	.122	.169	.223	.284	.353
	Static Pressure	.043	.071	.105	.145	.191	.244	.302
	Noise Criteria	-	19	25	30	34	38	41
	Throw	8-13-22	11-17-26	13-19-29	15-22-32	17-24-34	19-25-36	20-27-38
<b>10" Oval Inlet</b>	Airflow, CFM	<b>115</b>	<b>150</b>	<b>185</b>	<b>225</b>	<b>260</b>	<b>295</b>	<b>330</b>
	Total Pressure	.076	.125	.171	.227	.279	.323	.371
	Static Pressure	.073	.120	.163	.215	.263	.302	.344
	Noise Criteria	14	21	26	31	35	38	41
	Throw	10-15-26	12-18-29	14-20-32	16-22-34	18-24-36	19-25-37	20-27-39
<b>12" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>
	Total Pressure	.093	.139	.188	.234	.273	.316	.347
	Static Pressure	.091	.136	.183	.226	.263	.302	.330
	Noise Criteria	17	23	28	32	35	38	40
	Throw	9-15-25	13-19-30	16-23-34	18-25-37	20-28-40	22-30-42	23-32-44

See page C32 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5850(I) • 1/2" (13) SLOT WIDTH**

**2 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	<b>Airflow, CFM</b>	<b>100</b>	<b>135</b>	<b>170</b>	<b>210</b>	<b>245</b>	<b>280</b>	<b>315</b>
	<b>Total Pressure</b>	.061	.103	.155	.221	.294	.377	.470
	<b>Static Pressure</b>	.041	.068	.101	.141	.187	.240	.298
	<b>Noise Criteria</b>	17	24	28	33	36	39	42
	<b>Throw</b>	5-9-18	8-13-22	10-16-25	11-18-27	13-20-29	14-22-31	15-23-33
<b>8" Round Inlet</b>	<b>Airflow, CFM</b>	120	160	200	240	280	320	360
	<b>Total Pressure</b>	.045	.076	.113	.159	.211	.271	.338
	<b>Static Pressure</b>	.036	.060	.089	.125	.165	.211	.263
	<b>Noise Criteria</b>	12	19	25	30	35	38	42
	<b>Throw</b>	7-11-19	10-14-22	11-16-25	13-18-27	14-20-29	15-21-30	16-22-32
<b>10" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>135</b>	<b>180</b>	<b>225</b>	<b>265</b>	<b>310</b>	<b>355</b>	<b>400</b>
	<b>Total Pressure</b>	.043	.072	.107	.149	.198	.254	.317
	<b>Static Pressure</b>	.038	.063	.094	.131	.173	.222	.276
	<b>Noise Criteria</b>	15	22	27	31	35	39	42
	<b>Throw</b>	8-13-20	11-15-23	13-16-26	15-18-28	16-20-30	17-20-31	18-22-33
<b>12" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>165</b>	<b>220</b>	<b>275</b>	<b>335</b>	<b>390</b>	<b>430</b>	<b>450</b>
	<b>Total Pressure</b>	.043	.073	.109	.153	.204	.261	.326
	<b>Static Pressure</b>	.040	.066	.099	.138	.183	.235	.292
	<b>Noise Criteria</b>	20	28	30	34	37	41	43
	<b>Throw</b>	9-14-23	11-17-27	14-20-30	15-22-33	17-23-35	18-25-37	19-26-38

**2 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	<b>Airflow, CFM</b>	<b>135</b>	<b>170</b>	<b>205</b>	<b>245</b>	<b>280</b>	<b>315</b>	<b>350</b>
	<b>Total Pressure</b>	.118	.167	.227	.283	.346	.417	.487
	<b>Static Pressure</b>	.084	.109	.141	.162	.186	.211	.229
	<b>Noise Criteria</b>	17	22	27	30	33	36	41
	<b>Throw</b>	4-7-13	5-10-16	6-12-19	7-14-21	8-16-23	9-17-24	9-18-26
<b>8" Round Inlet</b>	<b>Airflow, CFM</b>	<b>140</b>	<b>180</b>	<b>220</b>	<b>260</b>	<b>300</b>	<b>340</b>	<b>370</b>
	<b>Total Pressure</b>	.053	.079	.112	.150	.194	.243	.298
	<b>Static Pressure</b>	.037	.055	.078	.104	.134	.168	.206
	<b>Noise Criteria</b>	15	21	26	30	33	37	40
	<b>Throw</b>	6-9-15	7-11-18	8-12-19	9-14-21	10-15-22	11-16-24	11-17-25
<b>10" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>150</b>	<b>200</b>	<b>250</b>	<b>310</b>	<b>350</b>	<b>400</b>	<b>440</b>
	<b>Total Pressure</b>	.044	.067	.094	.127	.164	.206	.251
	<b>Static Pressure</b>	.035	.053	.074	.099	.128	.160	.196
	<b>Noise Criteria</b>	18	23	28	31	34	37	39
	<b>Throw</b>	7-10-18	9-13-22	11-16-25	13-18-28	14-20-30	15-22-32	16-23-34
<b>12" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>190</b>	<b>240</b>	<b>290</b>	<b>340</b>	<b>390</b>	<b>420</b>	<b>520</b>
	<b>Total Pressure</b>	.039	.059	.083	.111	.144	.181	.229
	<b>Static Pressure</b>	.034	.051	.072	.096	.124	.155	.190
	<b>Noise Criteria</b>	22	26	30	32	35	37	38
	<b>Throw</b>	7-11-19	10-16-25	12-19-29	14-22-33	16-24-36	17-26-39	18-28-41

See page C32 for performance data notes.

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5850(I) • 1/2" (13) SLOT WIDTH**

**3 Slot • 24" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>85</b>	<b>115</b>	<b>140</b>	<b>170</b>	<b>195</b>	<b>225</b>	<b>250</b>
	Total Pressure	.108	.155	.199	.253	.301	.362	.417
	Static Pressure	.095	.132	.164	.202	.234	.273	.307
	Noise Criteria	19	25	30	34	37	40	42
	Throw	10-16-25	13-19-28	15-21-30	17-23-32	18-24-33	19-26-35	20-27-36
<b>8" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>130</b>	<b>160</b>	<b>190</b>	<b>220</b>	<b>240</b>	<b>265</b>
	Total Pressure	.084	.137	.187	.235	.289	.320	.368
	Static Pressure	.079	.128	.173	.215	.263	.289	.330
	Noise Criteria	15	22	27	31	35	37	40
	Throw	11-17-26	14-20-30	17-22-32	19-24-34	21-26-36	22-27-37	23-28-39
<b>10" Oval Inlet</b>	Airflow, CFM	<b>105</b>	<b>135</b>	<b>160</b>	<b>190</b>	<b>215</b>	<b>245</b>	<b>270</b>
	Total Pressure	.070	.116	.160	.213	.261	.303	.348
	Static Pressure	.068	.112	.154	.204	.250	.289	.330
	Noise Criteria	13	20	25	30	34	37	40
	Throw	11-16-26	14-19-29	16-21-32	18-23-34	20-25-36	22-27-37	23-28-39

**3 Slot • 36" (914) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>105</b>	<b>140</b>	<b>175</b>	<b>210</b>	<b>245</b>	<b>280</b>	<b>315</b>
	Total Pressure	.100	.107	.159	.222	.293	.373	.463
	Static Pressure	.044	.072	.105	.144	.187	.235	.288
	Noise Criteria	14	21	27	31	35	38	41
	Throw	6-10-20	9-15-25	12-18-29	14-21-32	16-24-34	17-26-36	18-28-38
<b>8" Round Inlet</b>	Airflow, CFM	<b>115</b>	<b>155</b>	<b>195</b>	<b>235</b>	<b>275</b>	<b>315</b>	<b>355</b>
	Total Pressure	.038	.064	.096	.135	.179	.230	.288
	Static Pressure	.031	.051	.075	.105	.138	.176	.219
	Noise Criteria	8	17	23	29	33	37	41
	Throw	6-10-19	9-14-24	12-17-27	14-20-30	16-22-33	18-24-35	19-26-37
<b>10" Oval Inlet</b>	Airflow, CFM	<b>135</b>	<b>180</b>	<b>225</b>	<b>265</b>	<b>310</b>	<b>355</b>	<b>400</b>
	Total Pressure	.045	.074	.107	.141	.184	.230	.282
	Static Pressure	.041	.066	.095	.124	.161	.200	.243
	Noise Criteria	17	24	28	32	35	38	41
	Throw	11-17-28	14-20-31	16-22-34	18-24-36	19-26-38	20-27-40	21-29-41
<b>12" Oval Inlet</b>	Airflow, CFM	<b>145</b>	<b>195</b>	<b>245</b>	<b>290</b>	<b>340</b>	<b>390</b>	<b>440</b>
	Total Pressure	.045	.075	.112	.156	.206	.264	.328
	Static Pressure	.042	.070	.104	.144	.191	.243	.302
	Noise Criteria	19	24	28	31	34	37	39
	Throw	10-15-26	13-19-30	16-23-34	19-25-37	21-27-39	22-29-41	24-31-43

**3 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>130</b>	<b>180</b>	<b>200</b>	<b>255</b>	<b>290</b>	<b>340</b>	<b>375</b>
	Total Pressure	.076	.133	.200	.286	.375	.482	.588
	Static Pressure	.045	.075	.110	.151	.198	.251	.309
	Noise Criteria	13	21	26	31	35	38	40
	Throw	4-8-17	7-13-22	9-16-25	12-19-28	13-21-29	15-23-31	16-24-33
<b>8" Round Inlet</b>	Airflow, CFM	<b>155</b>	<b>200</b>	<b>245</b>	<b>290</b>	<b>335</b>	<b>380</b>	<b>425</b>
	Total Pressure	.046	.075	.111	.154	.203	.258	.320
	Static Pressure	.032	.053	.079	.108	.141	.179	.221
	Noise Criteria	10	18	24	30	34	38	41
	Throw	7-11-20	9-14-24	12-17-27	13-20-29	15-21-31	16-23-33	18-25-35
<b>10" Oval Inlet</b>	Airflow, CFM	<b>175</b>	<b>230</b>	<b>290</b>	<b>345</b>	<b>405</b>	<b>450</b>	<b>500</b>
	Total Pressure	.039	.067	.102	.144	.193	.250	.313
	Static Pressure	.030	.052	.079	.112	.149	.193	.241
	Noise Criteria	16	22	28	32	35	38	40
	Throw	7-12-22	10-16-26	13-19-30	15-21-32	17-23-35	18-25-37	19-26-37
<b>12" Oval Inlet</b>	Airflow, CFM	<b>185</b>	<b>250</b>	<b>315</b>	<b>380</b>	<b>445</b>	<b>510</b>	<b>575</b>
	Total Pressure	.033	.059	.093	.135	.184	.241	.306
	Static Pressure	.028	.051	.080	.115	.157	.206	.262
	Noise Criteria	8	17	24	29	34	38	41
	Throw	9-13-22	12-17-26	15-20-30	17-22-32	19-24-35	21-26-37	22-28-38

See page C32 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5850(I) • 1/2" (13) SLOT WIDTH**

**3 Slot • 60" (1524) Long**

<b>8" Round Inlet</b>	<b>Airflow, CFM</b>	<b>180</b>	<b>235</b>	<b>285</b>	<b>340</b>	<b>390</b>	<b>445</b>	<b>495</b>
	<b>Total Pressure</b>	.053	.083	.118	.162	.211	.268	.330
	<b>Static Pressure</b>	.035	.053	.074	.099	.128	.160	.196
	<b>Noise Criteria</b>	13	20	25	30	33	36	39
	<b>Throw</b>	3-5-12	5-9-17	7-12-20	9-14-23	10-16-25	11-18-28	12-19-29
<b>10" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>200</b>	<b>265</b>	<b>325</b>	<b>385</b>	<b>445</b>	<b>510</b>	<b>580</b>
	<b>Total Pressure</b>	.044	.071	.102	.140	.184	.235	.292
	<b>Static Pressure</b>	.032	.050	.071	.096	.125	.158	.194
	<b>Noise Criteria</b>	15	19	26	30	33	36	39
	<b>Throw</b>	5-8-16	8-12-21	10-15-25	12-17-28	14-19-31	16-21-33	17-22-35
<b>12" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>220</b>	<b>290</b>	<b>360</b>	<b>430</b>	<b>500</b>	<b>570</b>	<b>665</b>
	<b>Total Pressure</b>	.036	.058	.086	.119	.157	.201	.254
	<b>Static Pressure</b>	.030	.047	.068	.093	.122	.155	.192
	<b>Noise Criteria</b>	15	21	26	30	34	37	39
	<b>Throw</b>	6-10-18	9-13-23	11-16-26	13-19-29	15-21-32	16-23-34	18-24-36

**4 Slot • 24" (1219) Long**

<b>6" Round Inlet</b>	<b>Airflow, CFM</b>	<b>100</b>	<b>125</b>	<b>155</b>	<b>180</b>	<b>205</b>	<b>215</b>	<b>240</b>
	<b>Total Pressure</b>	.100	.127	.178	.226	.279	.302	.361
	<b>Static Pressure</b>	.071	.099	.136	.169	.205	.220	.259
	<b>Noise Criteria</b>	18	24	29	33	36	37	40
	<b>Throw</b>	10-15-25	13-18-28	15-21-31	17-23-33	18-25-35	18-26-35	20-27-37
<b>8" Round Inlet</b>	<b>Airflow, CFM</b>	<b>110</b>	<b>145</b>	<b>175</b>	<b>205</b>	<b>230</b>	<b>260</b>	<b>280</b>
	<b>Total Pressure</b>	.100	.115	.154	.195	.232	.280	.314
	<b>Static Pressure</b>	.070	.104	.137	.172	.203	.243	.271
	<b>Noise Criteria</b>	18	25	30	34	37	40	42
	<b>Throw</b>	13-18-28	16-21-32	18-24-34	19-26-36	20-27-37	22-28-39	22-29-40
<b>10" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>125</b>	<b>155</b>	<b>190</b>	<b>225</b>	<b>260</b>	<b>290</b>	<b>325</b>
	<b>Total Pressure</b>	.100	.115	.145	.174	.204	.231	.263
	<b>Static Pressure</b>	.087	.109	.136	.162	.188	.211	.238
	<b>Noise Criteria</b>	20	24	29	32	35	37	40
	<b>Throw</b>	14-19-29	17-22-32	19-24-34	21-26-37	22-28-38	23-29-40	25-31-41

**4 Slot • 36" (914) Long**

<b>6" Round Inlet</b>	<b>Airflow, CFM</b>	<b>115</b>	<b>155</b>	<b>195</b>	<b>235</b>	<b>275</b>	<b>315</b>	<b>355</b>
	<b>Total Pressure</b>	.064	.109	.164	.231	.307	.393	.490
	<b>Static Pressure</b>	.040	.066	.097	.132	.172	.216	.265
	<b>Noise Criteria</b>	12	19	25	30	34	37	40
	<b>Throw</b>	6-10-20	9-15-25	12-18-28	14-21-31	16-24-33	17-26-35	19-28-37
<b>8" Round Inlet</b>	<b>Airflow, CFM</b>	<b>125</b>	<b>170</b>	<b>210</b>	<b>255</b>	<b>295</b>	<b>340</b>	<b>380</b>
	<b>Total Pressure</b>	.038	.064	.096	.135	.179	.231	.287
	<b>Static Pressure</b>	.029	.048	.072	.099	.131	.168	.208
	<b>Noise Criteria</b>	10	18	24	29	33	37	40
	<b>Throw</b>	8-12-22	11-16-26	13-19-30	15-22-32	17-24-34	19-26-37	20-28-38
<b>10" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>145</b>	<b>195</b>	<b>240</b>	<b>290</b>	<b>335</b>	<b>385</b>	<b>430</b>
	<b>Total Pressure</b>	.044	.072	.104	.138	.180	.226	.276
	<b>Static Pressure</b>	.039	.063	.091	.118	.153	.190	.231
	<b>Noise Criteria</b>	12	19	25	29	33	36	40
	<b>Throw</b>	9-14-25	12-17-28	14-20-31	16-22-34	18-24-36	19-26-38	20-27-39
<b>12" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>170</b>	<b>220</b>	<b>270</b>	<b>320</b>	<b>370</b>	<b>420</b>	<b>470</b>
	<b>Total Pressure</b>	.044	.073	.109	.151	.200	.255	.317
	<b>Static Pressure</b>	.040	.067	.099	.137	.181	.231	.287
	<b>Noise Criteria</b>	17	23	28	32	35	38	40
	<b>Throw</b>	10-16-26	14-20-31	17-23-35	20-26-38	22-29-41	24-31-43	26-33-45

See page C32 for performance data notes.

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5850(I) • 1/2" (13) SLOT WIDTH**

**4 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	155	200	245	290	335	380	425
	Total Pressure	.086	.142	.209	.287	.377	.478	.591
	Static Pressure	.044	.070	.102	.137	.177	.220	.269
	Noise Criteria	13	20	25	29	33	36	39
	Throw	5-10-19	8-14-22	10-17-24	12-19-27	14-21-28	15-23-30	17-24-31
<b>8" Round Inlet</b>	Airflow, CFM	180	230	280	330	380	430	480
	Total Pressure	.047	.076	.110	.151	.197	.248	.305
	Static Pressure	.029	.047	.068	.091	.118	.147	.179
	Noise Criteria	11	18	24	29	33	37	40
	Throw	4-8-17	6-11-21	8-14-24	10-16-27	11-18-29	12-19-31	13-21-33
<b>10" Oval Inlet</b>	Airflow, CFM	195	255	310	370	420	480	520
	Total Pressure	.040	.064	.093	.126	.164	.206	.253
	Static Pressure	.030	.049	.071	.096	.124	.154	.188
	Noise Criteria	12	20	26	31	35	39	41
	Throw	7-11-20	10-15-25	13-19-29	15-21-33	17-23-35	19-26-38	20-27-39
<b>12" Oval Inlet</b>	Airflow, CFM	225	290	355	420	485	550	615
	Total Pressure	.039	.063	.091	.124	.161	.202	.248
	Static Pressure	.032	.052	.074	.100	.129	.162	.197
	Noise Criteria	15	21	26	31	34	37	40
	Throw	8-13-23	12-18-28	15-21-32	18-24-36	20-27-39	22-29-41	24-31-44

**4 Slot • 60" (1524) Long**

<b>8" Round Inlet</b>	Airflow, CFM	200	260	320	380	440	500	560
	Total Pressure	.046	.078	.118	.167	.224	.289	.362
	Static Pressure	.025	.041	.062	.088	.118	.152	.191
	Noise Criteria	17	21	24	29	34	38	42
	Throw	3-7-13	6-10-17	8-13-21	10-16-24	11-18-26	13-20-28	14-21-30
<b>10" Oval Inlet</b>	Airflow, CFM	225	300	375	450	525	600	675
	Total Pressure	.036	.062	.094	.134	.181	.234	.295
	Static Pressure	.024	.040	.061	.085	.114	.148	.185
	Noise Criteria	14	21	26	31	35	38	41
	Throw	6-9-18	8-13-22	10-15-25	12-18-28	13-19-30	14-21-32	15-22-33
<b>12" Oval Inlet</b>	Airflow, CFM	250	340	430	520	610	700	790
	Total Pressure	.034	.058	.089	.126	.171	.221	.279
	Static Pressure	.025	.042	.064	.090	.120	.155	.195
	Noise Criteria	12	16	23	28	33	37	40
	Throw	6-10-18	9-14-22	12-16-25	13-19-27	15-21-29	16-22-31	18-24-32

**Performance Data Notes:**

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total and Static Pressure are in in. w.g..
3. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a Noise Criteria level less than 15.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5875(I) • 3/4" (19) SLOT WIDTH**

**1 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>55</b>	<b>70</b>	<b>85</b>	<b>100</b>	<b>115</b>	<b>130</b>	<b>145</b>
	Total Pressure	.108	.156	.211	.272	.341	.414	.496
	Static Pressure	.103	.149	.200	.257	.320	.389	.464
	Noise Criteria	18	24	28	32	36	38	42
	Throw	6-11-20	10-15-25	12-18-28	14-20-31	16-22-33	18-24-35	19-26-37
<b>8" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>75</b>	<b>90</b>	<b>110</b>	<b>125</b>	<b>140</b>	<b>155</b>
	Total Pressure	.120	.173	.233	.301	.375	.456	.543
	Static Pressure	.118	.170	.229	.294	.367	.445	.531
	Noise Criteria	18	24	28	33	36	39	41
	Throw	8-14-23	13-18-29	16-22-32	18-25-36	21-27-38	23-30-41	25-32-43

**1 Slot • 36" (914) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>65</b>	<b>80</b>	<b>95</b>	<b>115</b>	<b>135</b>	<b>150</b>	<b>180</b>
	Total Pressure	.075	.116	.152	.217	.270	.315	.402
	Static Pressure	.068	.105	.136	.193	.238	.276	.344
	Noise Criteria	13	18	24	29	33	36	41
	Throw	6-9-19	8-12-22	9-14-24	11-17-27	12-19-30	13-20-31	15-22-34
<b>8" Round Inlet</b>	Airflow, CFM	<b>70</b>	<b>90</b>	<b>110</b>	<b>130</b>	<b>150</b>	<b>170</b>	<b>190</b>
	Total Pressure	.053	.095	.143	.192	.239	.279	.336
	Static Pressure	.050	.091	.136	.183	.226	.263	.316
	Noise Criteria	12	21	26	31	34	38	42
	Throw	6-9-19	9-13-24	11-16-28	13-19-31	15-21-33	17-23-36	18-25-38
<b>10" Oval Inlet</b>	Airflow, CFM	<b>80</b>	<b>105</b>	<b>125</b>	<b>145</b>	<b>165</b>	<b>190</b>	<b>210</b>
	Total Pressure	.075	.122	.177	.232	.282	.311	.355
	Static Pressure	.073	.120	.173	.226	.276	.302	.344
	Noise Criteria	14	21	27	32	36	38	41
	Throw	7-12-22	11-16-27	13-19-31	15-21-34	17-24-36	18-25-38	20-26-40

**1 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>85</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>175</b>	<b>195</b>
	Total Pressure	.087	.124	.167	.217	.273	.306	.344
	Static Pressure	.080	.113	.151	.194	.241	.266	.292
	Noise Criteria	21	27	31	33	35	38	40
	Throw	2-4-13	2-6-15	3-7-16	5-9-19	6-10-22	6-11-22	7-11-22
<b>8" Round Inlet</b>	Airflow, CFM	<b>105</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>195</b>	<b>215</b>
	Total Pressure	.081	.115	.154	.198	.247	.275	.304
	Static Pressure	.078	.111	.148	.190	.236	.261	.286
	Noise Criteria	21	26	28	32	35	37	40
	Throw	2-5-15	3-7-17	4-9-19	6-11-22	8-12-25	8-13-25	9-14-26
<b>10" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>130</b>	<b>150</b>	<b>170</b>	<b>190</b>	<b>210</b>	<b>240</b>
	Total Pressure	.082	.116	.155	.199	.247	.273	.300
	Static Pressure	.080	.113	.151	.193	.240	.265	.291
	Noise Criteria	21	23	28	30	32	34	38
	Throw	8-12-16	9-13-17	11-14-19	12-15-20	13-15-22	13-17-24	15-18-26
<b>12" Oval Inlet</b>	Airflow, CFM	<b>110</b>	<b>130</b>	<b>150</b>	<b>180</b>	<b>200</b>	<b>220</b>	<b>250</b>
	Total Pressure	.039	.044	.065	.085	.132	.151	.211
	Static Pressure	.038	.041	.063	.081	.128	.149	.201
	Noise Criteria	12	18	23	28	31	34	38
	Throw	9-12-16	10-13-17	11-14-19	12-15-21	14-16-23	15-17-24	16-18-26

See page C38 for performance data notes.



**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5875(I) • 3/4" (19) SLOT WIDTH**

**1 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>115</b>	<b>135</b>	<b>155</b>	<b>175</b>	<b>190</b>	<b>210</b>
	Total Pressure	.112	.144	.171	.201	.234	.259	.289
	Static Pressure	.094	.120	.138	.158	.179	.194	.210
	Noise Criteria	23	28	31	34	37	39	41
	Throw	4-6-14	6-9-17	7-12-20	8-14-22	9-15-24	10-17-26	11-18-28
<b>8" Round Inlet</b>	Airflow, CFM	<b>120</b>	<b>145</b>	<b>165</b>	<b>190</b>	<b>210</b>	<b>235</b>	<b>255</b>
	Total Pressure	.110	.143	.166	.192	.220	.242	.265
	Static Pressure	.102	.131	.151	.172	.196	.212	.229
	Noise Criteria	23	28	32	35	38	40	42
	Throw	5-7-16	8-11-20	9-15-23	10-17-26	12-18-28	13-21-30	14-22-32
<b>10" Oval Inlet</b>	Airflow, CFM	<b>135</b>	<b>160</b>	<b>185</b>	<b>215</b>	<b>240</b>	<b>265</b>	<b>290</b>
	Total Pressure	.107	.138	.160	.185	.211	.230	.251
	Static Pressure	.103	.132	.152	.174	.197	.213	.231
	Noise Criteria	22	27	32	34	38	40	41
	Throw	6-8-17	9-13-22	11-17-25	12-19-28	14-21-31	15-24-33	16-25-35
<b>12" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>175</b>	<b>205</b>	<b>235</b>	<b>265</b>	<b>290</b>	<b>320</b>
	Total Pressure	.110	.141	.163	.187	.213	.232	.252
	Static Pressure	.107	.138	.158	.181	.205	.223	.241
	Noise Criteria	22	26	32	34	38	40	40
	Throw	6-8-17	9-13-22	12-17-24	13-19-27	15-21-30	16-24-32	17-25-34

**2 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>55</b>	<b>80</b>	<b>105</b>	<b>140</b>	<b>165</b>	<b>180</b>	<b>200</b>
	Total Pressure	.031	.063	.101	.164	.217	.275	.340
	Static Pressure	.026	.052	.081	.130	.169	.212	.259
	Noise Criteria	2	12	19	26	30	32	37
	Throw	3-7-14	7-11-19	10-14-22	13-17-25	15-19-27	16-21-29	17-22-30
<b>8" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>
	Total Pressure	.036	.059	.088	.121	.159	.202	.249
	Static Pressure	.031	.051	.075	.103	.134	.170	.209
	Noise Criteria	-	22	23	29	32	34	40
	Throw	9-15-25	13-18-28	15-20-31	17-23-33	18-24-35	20-25-36	21-26-38
<b>10" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>220</b>	<b>240</b>
	Total Pressure	.039	.065	.096	.132	.173	.219	.270
	Static Pressure	.038	.062	.091	.124	.163	.205	.253
	Noise Criteria	16	23	28	32	34	38	41
	Throw	11-17-27	15-20-31	17-23-34	20-26-36	21-27-38	23-29-39	24-30-41

**2 Slot • 36" (914) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>
	Total Pressure	.045	.077	.117	.166	.223	.288	.362
	Static Pressure	.031	.051	.077	.109	.145	.187	.234
	Noise Criteria	5	14	21	27	32	36	40
	Throw	6-11-21	9-15-26	11-18-30	13-21-34	15-23-36	16-25-39	18-27-41
<b>8" Round Inlet</b>	Airflow, CFM	<b>115</b>	<b>145</b>	<b>180</b>	<b>210</b>	<b>245</b>	<b>275</b>	<b>310</b>
	Total Pressure	.049	.080	.117	.161	.212	.270	.336
	Static Pressure	.040	.063	.092	.125	.164	.208	.257
	Noise Criteria	15	19	24	29	34	37	41
	Throw	7-13-23	11-17-28	13-20-32	16-23-34	18-25-37	18-27-39	20-29-41
<b>10" Oval Inlet</b>	Airflow, CFM	<b>135</b>	<b>170</b>	<b>205</b>	<b>240</b>	<b>275</b>	<b>310</b>	<b>345</b>
	Total Pressure	.054	.082	.116	.156	.201	.252	.309
	Static Pressure	.050	.075	.106	.142	.183	.229	.280
	Noise Criteria	17	23	28	32	35	38	41
	Throw	9-15-26	13-19-30	15-22-34	18-24-37	20-27-40	22-29-42	23-30-44
<b>12" Oval Inlet</b>	Airflow, CFM	<b>155</b>	<b>200</b>	<b>245</b>	<b>290</b>	<b>335</b>	<b>380</b>	<b>425</b>
	Total Pressure	.054	.082	.116	.156	.201	.253	.309
	Static Pressure	.050	.077	.108	.145	.186	.233	.285
	Noise Criteria	17	23	27	31	35	37	41
	Throw	9-15-25	14-19-29	16-22-33	19-24-36	21-27-39	23-29-41	24-30-43

See page C38 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5875(I) • 3/4" (19) SLOT WIDTH**

**2 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>130</b>	<b>170</b>	<b>215</b>	<b>255</b>	<b>295</b>	<b>335</b>
	Total Pressure	.060	.104	.160	.231	.311	.402	.505
	Static Pressure	.032	.055	.085	.120	.161	.208	.261
	Noise Criteria	10	18	25	30	35	38	42
	Throw	5-9-16	8-11-19	9-13-22	10-15-23	12-16-25	12-18-27	13-19-28
<b>8" Round Inlet</b>	Airflow, CFM	<b>105</b>	<b>150</b>	<b>195</b>	<b>240</b>	<b>285</b>	<b>330</b>	<b>375</b>
	Total Pressure	.036	.063	.097	.138	.186	.241	.303
	Static Pressure	.026	.045	.069	.098	.132	.170	.213
	Noise Criteria	7	16	22	28	32	36	40
	Throw	5-9-17	9-13-21	11-15-24	12-17-26	14-19-28	15-20-30	16-22-31
<b>10" Oval Inlet</b>	Airflow, CFM	<b>130</b>	<b>180</b>	<b>230</b>	<b>280</b>	<b>330</b>	<b>380</b>	<b>430</b>
	Total Pressure	.040	.069	.105	.149	.200	.260	.328
	Static Pressure	.035	.059	.090	.127	.171	.222	.279
	Noise Criteria	11	19	25	30	34	37	41
	Throw	6-7-15	7-11-20	10-14-24	10-16-26	12-18-29	13-19-31	14-21-33
<b>12" Oval Inlet</b>	Airflow, CFM	<b>170</b>	<b>225</b>	<b>285</b>	<b>345</b>	<b>405</b>	<b>460</b>	<b>520</b>
	Total Pressure	.035	.060	.092	.131	.176	.228	.288
	Static Pressure	.032	.053	.081	.115	.154	.200	.252
	Noise Criteria	15	19	24	29	34	37	40
	Throw	7-11-19	10-14-23	11-16-26	13-18-29	16-19-30	18-21-33	20-23-35

**2 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>145</b>	<b>190</b>	<b>230</b>	<b>270</b>	<b>310</b>	<b>355</b>	<b>395</b>
	Total Pressure	.077	.125	.181	.245	.319	.409	.503
	Static Pressure	.040	.061	.086	.115	.148	.184	.225
	Noise Criteria	14	21	27	31	35	38	42
	Throw	2-4-11	3-7-15	5-8-17	5-10-20	5-11-22	6-12-23	7-14-24
<b>8" Round Inlet</b>	Airflow, CFM	<b>175</b>	<b>225</b>	<b>275</b>	<b>325</b>	<b>375</b>	<b>425</b>	<b>475</b>
	Total Pressure	.053	.084	.121	.164	.213	.268	.330
	Static Pressure	.036	.056	.079	.106	.136	.170	.207
	Noise Criteria	15	22	27	32	36	39	42
	Throw	3-5-13	4-8-17	6-10-20	7-12-23	7-14-25	8-15-27	9-17-28
<b>10" Oval Inlet</b>	Airflow, CFM	<b>200</b>	<b>260</b>	<b>315</b>	<b>375</b>	<b>430</b>	<b>490</b>	<b>545</b>
	Total Pressure	.042	.067	.095	.129	.167	.211	.258
	Static Pressure	.033	.051	.071	.095	.123	.153	.186
	Noise Criteria	15	21	27	31	35	39	41
	Throw	4-6-14	5-9-19	7-11-22	8-14-25	8-16-27	9-17-29	11-19-31
<b>12" Oval Inlet</b>	Airflow, CFM	<b>210</b>	<b>270</b>	<b>330</b>	<b>395</b>	<b>455</b>	<b>515</b>	<b>575</b>
	Total Pressure	.037	.057	.081	.110	.142	.178	.218
	Static Pressure	.031	.047	.067	.089	.114	.143	.174
	Noise Criteria	14	21	26	31	34	39	40
	Throw	4-6-14	5-9-19	7-11-22	8-14-24	8-16-26	9-17-28	12-19-30

**3 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>135</b>	<b>165</b>	<b>200</b>	<b>225</b>	<b>255</b>	<b>280</b>
	Total Pressure	.045	.098	.143	.211	.292	.319	.408
	Static Pressure	.037	.081	.102	.155	.201	.215	.287
	Noise Criteria	14	22	27	32	35	38	41
	Throw	8-12-22	12-17-26	14-20-29	17-23-32	18-25-34	20-26-35	21-28-37
<b>8" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>135</b>	<b>170</b>	<b>200</b>	<b>235</b>	<b>270</b>	<b>305</b>
	Total Pressure	.050	.078	.118	.156	.200	.248	.302
	Static Pressure	.045	.068	.102	.134	.170	.209	.252
	Noise Criteria	15	19	25	30	33	37	40
	Throw	10-15-26	13-19-28	15-20-31	16-23-33	17-24-35	19-25-36	20-36-38
<b>10" Oval Inlet</b>	Airflow, CFM	<b>135</b>	<b>175</b>	<b>210</b>	<b>245</b>	<b>285</b>	<b>325</b>	<b>360</b>
	Total Pressure	.042	.066	.094	.126	.164	.207	.254
	Static Pressure	.038	.058	.083	.112	.145	.182	.223
	Noise Criteria	14	21	26	31	34	37	40
	Throw	9-14-24	12-17-28	14-20-31	16-22-33	18-24-35	19-26-37	20-27-39

See page C38 for performance data notes.

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5875(I) • 3/4" (19) SLOT WIDTH**

**3 Slot • 36" (914) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>235</b>	<b>275</b>	<b>310</b>	<b>350</b>
	Total Pressure	.057	.098	.151	.213	.285	.364	.460
	Static Pressure	.030	.050	.075	.106	.142	.182	.228
	Noise Criteria	6	16	23	28	33	37	40
	Throw	9-14-24	12-17-28	14-20-31	16-22-33	18-24-35	19-26-37	20-27-39
<b>8" Round Inlet</b>	Airflow, CFM	<b>135</b>	<b>180</b>	<b>225</b>	<b>275</b>	<b>320</b>	<b>365</b>	<b>410</b>
	Total Pressure	.052	.089	.134	.188	.250	.320	.402
	Static Pressure	.036	.060	.089	.124	.165	.211	.263
	Noise Criteria	15	19	24	29	34	37	41
	Throw	9-14-24	12-17-28	14-20-31	16-22-33	18-24-35	19-26-37	20-27-39
<b>10" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>205</b>	<b>255</b>	<b>305</b>	<b>355</b>	<b>410</b>	<b>460</b>
	Total Pressure	.046	.076	.113	.157	.209	.268	.334
	Static Pressure	.040	.066	.098	.135	.179	.228	.283
	Noise Criteria	12	20	26	30	35	38	41
	Throw	9-14-24	12-17-28	14-20-31	16-22-33	18-24-35	19-26-37	20-27-39
<b>12" Oval Inlet</b>	Airflow, CFM	<b>160</b>	<b>220</b>	<b>280</b>	<b>340</b>	<b>400</b>	<b>460</b>	<b>520</b>
	Total Pressure	.033	.060	.095	.138	.187	.244	.309
	Static Pressure	.030	.054	.085	.122	.166	.216	.272
	Noise Criteria	6	16	23	29	34	39	43
	Throw	9-14-23	13-18-28	16-21-32	18-24-35	20-26-38	22-28-40	23-29-42

**3 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>140</b>	<b>185</b>	<b>235</b>	<b>285</b>	<b>335</b>	<b>380</b>	<b>430</b>
	Total Pressure	.069	.120	.189	.273	.373	.481	.610
	Static Pressure	.034	.059	.091	.129	.173	.223	.280
	Noise Criteria	12	20	27	32	37	40	44
	Throw	2-5-13	5-10-18	8-13-22	10-16-24	11-18-27	13-20-29	14-22-31
<b>8" Round Inlet</b>	Airflow, CFM	<b>155</b>	<b>215</b>	<b>275</b>	<b>340</b>	<b>400</b>	<b>460</b>	<b>520</b>
	Total Pressure	.046	.083	.130	.189	.256	.333	.421
	Static Pressure	.033	.058	.089	.126	.169	.218	.273
	Noise Criteria	8	17	23	29	33	37	40
	Throw	3-6-15	6-12-21	10-16-26	13-20-28	14-22-31	17-25-34	18-27-36
<b>10" Oval Inlet</b>	Airflow, CFM	<b>180</b>	<b>250</b>	<b>320</b>	<b>390</b>	<b>460</b>	<b>530</b>	<b>600</b>
	Total Pressure	.041	.071	.110	.157	.213	.278	.352
	Static Pressure	.033	.056	.085	.121	.162	.211	.265
	Noise Criteria	7	17	23	29	33	36	40
	Throw	4-7-16	7-14-23	12-18-28	15-23-31	16-25-34	20-28-37	21-31-39
<b>12" Oval Inlet</b>	Airflow, CFM	<b>215</b>	<b>285</b>	<b>355</b>	<b>425</b>	<b>490</b>	<b>560</b>	<b>630</b>
	Total Pressure	.041	.070	.107	.151	.201	.259	.325
	Static Pressure	.035	.059	.090	.126	.169	.217	.271
	Noise Criteria	7	18	25	30	34	38	41
	Throw	7-11-22	11-16-28	14-19-32	17-22-36	19-25-38	21-27-41	23-29-43

**3 Slot • 60" (1524) Long**

<b>8" Round Inlet</b>	Airflow, CFM	<b>225</b>	<b>275</b>	<b>325</b>	<b>370</b>	<b>420</b>	<b>470</b>	<b>520</b>
	Total Pressure	.064	.095	.131	.172	.218	.273	.331
	Static Pressure	.036	.054	.073	.097	.122	.152	.183
	Noise Criteria	12	19	24	30	33	37	42
	Throw	7-11-22	9-14-25	11-17-28	13-18-29	15-20-31	15-22-32	17-24-34
<b>10" Oval Inlet</b>	Airflow, CFM	<b>255</b>	<b>315</b>	<b>370</b>	<b>430</b>	<b>485</b>	<b>545</b>	<b>600</b>
	Total Pressure	.048	.073	.099	.133	.168	.210	.253
	Static Pressure	.033	.049	.066	.088	.111	.139	.167
	Noise Criteria	12	19	24	29	34	38	41
	Throw	8-13-24	11-16-27	13-19-30	15-21-32	17-23-34	18-25-35	20-27-37
<b>12" Oval Inlet</b>	Airflow, CFM	<b>270</b>	<b>330</b>	<b>390</b>	<b>450</b>	<b>510</b>	<b>570</b>	<b>630</b>
	Total Pressure	.038	.056	.077	.102	.129	.162	.195
	Static Pressure	.028	.042	.056	.075	.094	.118	.142
	Noise Criteria	11	18	24	29	34	38	40
	Throw	8-13-24	12-16-26	14-19-29	16-21-31	18-23-33	19-25-34	21-27-36

See page C38 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5875(I) • 3/4" (19) SLOT WIDTH**

**4 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>120</b>	<b>155</b>	<b>195</b>	<b>235</b>	<b>270</b>	<b>300</b>	<b>330</b>
	Total Pressure	.090	.131	.182	.242	.293	.338	.386
	Static Pressure	.064	.089	.115	.145	.165	.179	.194
	Noise Criteria	16	22	27	32	35	37	39
	Throw	7-12-21	10-16-24	13-21-27	16-24-30	17-26-32	19-28-33	20-30-34
<b>8" Round Inlet</b>	Airflow, CFM	<b>145</b>	<b>180</b>	<b>220</b>	<b>260</b>	<b>290</b>	<b>335</b>	<b>365</b>
	Total Pressure	.062	.090	.121	.159	.195	.230	.266
	Static Pressure	.051	.072	.095	.122	.146	.169	.194
	Noise Criteria	15	19	26	31	34	37	39
	Throw	11-16-26	13-19-29	15-21-31	16-22-33	17-24-35	18-25-36	19-26-37
<b>10" Oval Inlet</b>	Airflow, CFM	<b>165</b>	<b>205</b>	<b>245</b>	<b>285</b>	<b>325</b>	<b>365</b>	<b>405</b>
	Total Pressure	.044	.065	.090	.119	.153	.191	.233
	Static Pressure	.038	.055	.075	.100	.127	.158	.193
	Noise Criteria	12	19	24	29	33	36	40
	Throw	6-10-20	8-13-24	10-16-27	12-18-30	14-20-32	15-22-34	16-24-36

**4 Slot • 36" (914) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>140</b>	<b>180</b>	<b>225</b>	<b>270</b>	<b>315</b>	<b>355</b>	<b>400</b>
	Total Pressure	.064	.107	.164	.233	.315	.402	.508
	Static Pressure	.029	.049	.074	.103	.138	.178	.222
	Noise Criteria	8	17	24	29	34	37	41
	Throw	6-12-21	10-16-25	13-19-28	15-22-30	16-24-32	18-26-33	19-27-35
<b>8" Round Inlet</b>	Airflow, CFM	<b>165</b>	<b>220</b>	<b>270</b>	<b>325</b>	<b>375</b>	<b>430</b>	<b>480</b>
	Total Pressure	.047	.082	.126	.180	.242	.315	.395
	Static Pressure	.032	.056	.086	.123	.165	.214	.269
	Noise Criteria	15	19	24	29	34	38	41
	Throw	7-13-23	11-17-28	13-20-32	16-23-34	18-25-37	18-27-39	20-29-41
<b>10" Oval Inlet</b>	Airflow, CFM	<b>190</b>	<b>250</b>	<b>305</b>	<b>360</b>	<b>415</b>	<b>475</b>	<b>530</b>
	Total Pressure	.040	.072	.111	.159	.215	.281	.353
	Static Pressure	.031	.057	.089	.128	.174	.227	.286
	Noise Criteria	8	18	24	29	34	38	41
	Throw	9-17-26	15-23-32	20-26-35	23-31-38	25-34-40	27-36-41	29-38-45
<b>12" Oval Inlet</b>	Airflow, CFM	<b>210</b>	<b>275</b>	<b>340</b>	<b>405</b>	<b>470</b>	<b>535</b>	<b>600</b>
	Total Pressure	.033	.059	.092	.132	.179	.233	.294
	Static Pressure	.027	.049	.076	.110	.149	.194	.245
	Noise Criteria	9	17	24	29	34	37	41
	Throw	9-17-25	16-23-31	21-26-34	24-31-37	26-34-39	28-36-40	30-38-44

**4 Slot • 48" (1219) Long**

<b>8" Round Inlet</b>	Airflow, CFM	<b>190</b>	<b>250</b>	<b>310</b>	<b>370</b>	<b>430</b>	<b>490</b>	<b>550</b>
	Total Pressure	.050	.086	.130	.182	.244	.314	.393
	Static Pressure	.026	.046	.070	.099	.133	.172	.216
	Noise Criteria	15	21	24	29	33	37	41
	Throw	5-10-19	8-13-22	10-15-24	13-17-26	14-19-28	16-21-29	17-22-31
<b>10" Oval Inlet</b>	Airflow, CFM	<b>225</b>	<b>290</b>	<b>360</b>	<b>430</b>	<b>500</b>	<b>565</b>	<b>635</b>
	Total Pressure	.043	.071	.108	.153	.205	.264	.332
	Static Pressure	.029	.048	.073	.104	.140	.182	.229
	Noise Criteria	13	20	24	29	33	36	39
	Throw	6-11-21	9-15-24	12-17-26	15-19-28	16-22-31	19-24-32	20-25-34
<b>12" Oval Inlet</b>	Airflow, CFM	<b>255</b>	<b>325</b>	<b>390</b>	<b>450</b>	<b>525</b>	<b>590</b>	<b>660</b>
	Total Pressure	.035	.058	.089	.125	.168	.217	.273
	Static Pressure	.026	.044	.067	.095	.128	.166	.209
	Noise Criteria	14	18	25	30	33	36	40
	Throw	6-11-21	9-15-24	13-17-25	16-19-27	17-22-30	20-24-31	21-25-33

See page C38 for performance data notes.

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5875(I) • 3/4" (19) SLOT WIDTH**

4 Slot • 60" (1524) Long

<b>8" Round Inlet</b>	<b>Airflow, CFM</b>	<b>250</b>	<b>315</b>	<b>375</b>	<b>440</b>	<b>500</b>	<b>565</b>	<b>625</b>
	<b>Total Pressure</b>	.066	.102	.142	.192	.245	.310	.376
	<b>Static Pressure</b>	.032	.048	.065	.086	.109	.136	.163
	<b>Noise Criteria</b>	16	20	26	32	35	38	42
	<b>Throw</b>	5-10-17	9-13-22	9-16-27	12-18-29	14-20-32	15-22-34	16-24-36
<b>10" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>290</b>	<b>365</b>	<b>435</b>	<b>505</b>	<b>575</b>	<b>650</b>	<b>720</b>
	<b>Total Pressure</b>	.048	.073	.101	.135	.173	.218	.265
	<b>Static Pressure</b>	.027	.041	.056	.074	.093	.116	.140
	<b>Noise Criteria</b>	20	24	30	32	35	38	42
	<b>Throw</b>	6-11-19	10-15-24	11-18-29	14-21-32	16-23-35	17-25-37	19-27-39
<b>12" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>320</b>	<b>360</b>	<b>455</b>	<b>540</b>	<b>635</b>	<b>715</b>	<b>800</b>
	<b>Total Pressure</b>	.042	.067	.099	.135	.179	.227	.283
	<b>Static Pressure</b>	.029	.045	.065	.090	.118	.150	.186
	<b>Noise Criteria</b>	18	23	26	29	34	38	41
	<b>Throw</b>	6-11-19	10-15-24	12-18-28	15-21-31	17-23-34	18-25-36	20-27-38

**Performance Data Notes:**

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total and Static Pressure are in in. w.g..
3. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a Noise Criteria level less than 15.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5810(I) • 1" (25) SLOT WIDTH**

**1 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>55</b>	<b>70</b>	<b>85</b>	<b>100</b>	<b>115</b>	<b>130</b>	<b>145</b>
	Total Pressure	.096	.141	.195	.255	.325	.400	.485
	Static Pressure	.090	.133	.184	.241	.305	.377	.455
	Noise Criteria	18	23	27	31	35	37	41
	Throw	8-13-22	10-15-25	12-18-28	14-20-30	15-21-32	16-22-34	18-24-35
<b>8" Round Inlet</b>	Airflow, CFM	<b>65</b>	<b>80</b>	<b>95</b>	<b>110</b>	<b>125</b>	<b>140</b>	<b>155</b>
	Total Pressure	.106	.157	.216	.284	.360	.444	.537
	Static Pressure	.104	.153	.211	.277	.351	.433	.524
	Noise Criteria	18	24	28	32	36	39	42
	Throw	10-16-26	13-19-29	16-22-32	18-24-35	20-26-37	21-27-39	23-29-41
<b>10" Oval Inlet</b>	Airflow, CFM	<b>75</b>	<b>90</b>	<b>110</b>	<b>125</b>	<b>145</b>	<b>160</b>	<b>180</b>
	Total Pressure	.127	.187	.258	.339	.430	.531	.642
	Static Pressure	.125	.186	.255	.335	.425	.524	.634
	Noise Criteria	18	23	28	32	36	38	42
	Throw	12-18-28	15-22-32	19-25-35	21-27-38	23-30-40	25-31-43	27-33-45

**1 Slot • 36" (914) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>55</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>165</b>	<b>200</b>
	Total Pressure	.057	.095	.143	.197	.260	.333	.411
	Static Pressure	.049	.082	.121	.167	.219	.278	.344
	Noise Criteria	11	17	23	28	31	36	40
	Throw	7-11-21	9-15-25	12-17-29	13-20-32	15-20-34	16-23-36	17-24-38
<b>8" Round Inlet</b>	Airflow, CFM	<b>65</b>	<b>85</b>	<b>110</b>	<b>130</b>	<b>150</b>	<b>180</b>	<b>200</b>
	Total Pressure	.049	.081	.121	.167	.220	.280	.346
	Static Pressure	.046	.078	.115	.158	.208	.264	.326
	Noise Criteria	9	17	23	28	32	37	39
	Throw	9-13-24	12-18-29	15-21-34	17-24-37	19-25-39	21-28-42	22-30-44
<b>10" Oval Inlet</b>	Airflow, CFM	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>	<b>225</b>
	Total Pressure	.053	.089	.131	.181	.238	.303	.374
	Static Pressure	.052	.086	.128	.176	.231	.293	.362
	Noise Criteria	13	20	26	31	35	38	41
	Throw	10-15-26	14-20-32	17-24-37	20-27-40	22-29-43	24-32-46	26-34-48

**1 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>65</b>	<b>85</b>	<b>110</b>	<b>130</b>	<b>155</b>	<b>175</b>	<b>200</b>
	Total Pressure	.024	.043	.068	.098	.133	.174	.220
	Static Pressure	.009	.016	.025	.036	.049	.063	.079
	Noise Criteria	6	15	21	28	33	36	40
	Throw	4-7-13	8-10-15	10-12-16	11-13-18	11-14-20	12-14-21	13-17-23
<b>8" Round Inlet</b>	Airflow, CFM	<b>75</b>	<b>100</b>	<b>130</b>	<b>160</b>	<b>185</b>	<b>215</b>	<b>240</b>
	Total Pressure	.020	.036	.057	.082	.111	.145	.183
	Static Pressure	.013	.022	.034	.049	.066	.085	.107
	Noise Criteria	6	15	22	28	33	37	41
	Throw	6-8-12	8-10-16	10-13-18	12-15-19	13-16-21	15-18-23	16-19-25
<b>10" Oval Inlet</b>	Airflow, CFM	<b>80</b>	<b>110</b>	<b>140</b>	<b>170</b>	<b>200</b>	<b>230</b>	<b>250</b>
	Total Pressure	.016	.028	.043	.062	.084	.109	.202
	Static Pressure	.012	.022	.034	.048	.064	.083	.105
	Noise Criteria	5	15	22	27	33	37	40
	Throw	6-9-14	7-12-16	10-14-19	12-15-21	13-17-22	15-18-24	16-20-25
<b>12" Oval Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>280</b>
	Total Pressure	.016	.028	.044	.062	.084	.109	.274
	Static Pressure	.014	.025	.038	.054	.073	.094	.118
	Noise Criteria	12	16	22	27	33	37	39
	Throw	6-9-12	9-12-16	11-14-18	12-15-22	13-16-24	14-17-25	15-19-27

See page C44 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS



**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5810(I) • 1" (25) SLOT WIDTH**

**1 Slot • 60" (1524) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>105</b>	<b>125</b>	<b>150</b>	<b>170</b>	<b>195</b>	<b>215</b>	<b>240</b>
	Total Pressure	.060	.106	.165	.237	.321	.418	.528
	Static Pressure	.020	.035	.054	.076	.103	.133	.167
	Noise Criteria	19	25	29	33	36	39	41
	Throw	4-7-13	6-10-16	8-13-18	9-15-20	10-16-22	11-18-23	12-19-25
<b>8" Round Inlet</b>	Airflow, CFM	<b>115</b>	<b>140</b>	<b>170</b>	<b>200</b>	<b>225</b>	<b>255</b>	<b>280</b>
	Total Pressure	.039	.069	.106	.152	.204	.266	.333
	Static Pressure	.022	.039	.060	.085	.114	.148	.186
	Noise Criteria	19	25	30	33	37	40	42
	Throw	5-9-15	8-12-19	10-16-21	12-18-23	13-20-26	14-22-27	16-23-29
<b>10" Oval Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>260</b>
	Total Pressure	.032	.057	.087	.124	.167	.217	.273
	Static Pressure	.023	.041	.063	.090	.121	.157	.197
	Noise Criteria	17	22	28	31	35	38	40
	Throw	6-10-16	9-14-21	12-18-23	14-21-25	15-23-28	16-25-29	19-26-32
<b>12" Oval Inlet</b>	Airflow, CFM	<b>135</b>	<b>165</b>	<b>195</b>	<b>225</b>	<b>255</b>	<b>285</b>	<b>325</b>
	Total Pressure	.031	.054	.083	.118	.159	.206	.259
	Static Pressure	.025	.043	.067	.095	.128	.166	.209
	Noise Criteria	12	18	23	27	33	37	39
	Throw	6-10-16	9-14-21	13-18-23	15-21-24	16-23-27	17-25-28	20-26-31

**2 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>50</b>	<b>70</b>	<b>90</b>	<b>110</b>	<b>150</b>	<b>185</b>	<b>200</b>
	Total Pressure	.038	.069	.106	.150	.200	.257	.320
	Static Pressure	.034	.060	.092	.128	.170	.217	.269
	Noise Criteria	7	11	15	22	29	35	40
	Throw	5-10-19	9-14-24	13-18-28	15-21-31	17-23-34	19-25-36	20-27-38
<b>8" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>110</b>	<b>140</b>	<b>170</b>	<b>200</b>	<b>215</b>	<b>240</b>
	Total Pressure	.043	.073	.110	.154	.206	.264	.330
	Static Pressure	.039	.066	.099	.139	.184	.236	.293
	Noise Criteria	7	16	23	29	34	38	43
	Throw	8-13-24	13-18-28	16-22-32	19-24-34	21-27-37	23-29-39	25-31-40
<b>10" Oval Inlet</b>	Airflow, CFM	<b>80</b>	<b>110</b>	<b>140</b>	<b>170</b>	<b>200</b>	<b>230</b>	<b>260</b>
	Total Pressure	.035	.059	.086	.118	.154	.194	.238
	Static Pressure	.033	.055	.081	.110	.143	.180	.277
	Noise Criteria	7	16	18	27	33	38	43
	Throw	10-15-24	14-19-28	17-22-32	19-24-34	21-26-36	23-28-38	26-32-42

**2 Slot • 36" (914) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>
	Total Pressure	.062	.107	.165	.235	.318	.413	.521
	Static Pressure	.036	.062	.095	.134	.180	.233	.293
	Noise Criteria	12	20	26	31	36	39	43
	Throw	7-12-22	10-17-27	12-20-31	14-23-33	16-25-36	17-27-38	18-29-40
<b>8" Round Inlet</b>	Airflow, CFM	<b>130</b>	<b>170</b>	<b>215</b>	<b>255</b>	<b>295</b>	<b>340</b>	<b>380</b>
	Total Pressure	.049	.082	.124	.172	.229	.296	.368
	Static Pressure	.039	.066	.098	.137	.182	.233	.290
	Noise Criteria	15	19	26	31	35	39	42
	Throw	8-14-24	11-19-28	14-21-34	17-24-36	19-26-38	20-29-40	21-31-42
<b>10" Oval Inlet</b>	Airflow, CFM	<b>135</b>	<b>180</b>	<b>225</b>	<b>265</b>	<b>310</b>	<b>355</b>	<b>400</b>
	Total Pressure	.047	.077	.114	.157	.207	.263	.325
	Static Pressure	.042	.070	.102	.140	.183	.232	.286
	Noise Criteria	11	19	25	30	35	38	42
	Throw	10-16-26	14-20-31	17-23-36	20-26-38	22-28-41	24-31-42	25-33-44
<b>12" Oval Inlet</b>	Airflow, CFM	<b>175</b>	<b>235</b>	<b>290</b>	<b>350</b>	<b>410</b>	<b>465</b>	<b>525</b>
	Total Pressure	.037	.063	.096	.136	.183	.237	.299
	Static Pressure	.033	.055	.084	.120	.161	.208	.261
	Noise Criteria	13	20	26	32	36	39	42
	Throw	12-17-27	16-24-33	20-28-38	22-32-40	26-35-45	27-38-47	28-41-49

See page C44 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5810(I) • 1" (25) SLOT WIDTH**

**2 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>65</b>	<b>105</b>	<b>150</b>	<b>190</b>	<b>230</b>	<b>270</b>	<b>315</b>
	Total Pressure	.078	.120	.174	.234	.302	.379	.472
	Static Pressure	.030	.046	.064	.086	.110	.138	.168
	Noise Criteria	14	20	26	30	34	37	40
	Throw	6-10-18	8-12-20	10-14-22	11-15-24	12-17-25	13-18-27	14-19-28
<b>8" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>
	Total Pressure	.056	.086	.123	.165	.214	.269	.329
	Static Pressure	.035	.052	.074	.098	.127	.158	.193
	Noise Criteria	13	20	26	31	35	38	42
	Throw	8-12-21	11-15-23	13-17-26	14-19-28	16-21-29	17-22-31	18-23-32
<b>10" Oval Inlet</b>	Airflow, CFM	<b>80</b>	<b>140</b>	<b>195</b>	<b>250</b>	<b>305</b>	<b>365</b>	<b>420</b>
	Total Pressure	.040	.069	.103	.145	.194	.251	.314
	Static Pressure	.030	.051	.078	.110	.149	.192	.242
	Noise Criteria	9	17	24	29	33	37	41
	Throw	5-8-18	8-12-22	10-15-26	12-18-29	13-20-32	15-21-34	16-23-36
<b>12" Oval Inlet</b>	Airflow, CFM	<b>180</b>	<b>240</b>	<b>300</b>	<b>360</b>	<b>420</b>	<b>480</b>	<b>540</b>
	Total Pressure	.048	.078	.113	.155	.201	.254	.312
	Static Pressure	.042	.067	.098	.133	.173	.218	.267
	Noise Criteria	14	21	26	31	35	39	42
	Throw	8-13-22	11-16-25	14-19-28	16-21-30	17-23-32	19-24-34	20-26-35

**2 Slot • 60" (1524) Long**

<b>8" Round Inlet</b>	Airflow, CFM	<b>120</b>	<b>170</b>	<b>220</b>	<b>270</b>	<b>320</b>	<b>370</b>	<b>420</b>
	Total Pressure	.049	.080	.117	.163	.217	.279	.349
	Static Pressure	.024	.039	.058	.080	.109	.140	.178
	Noise Criteria	12	20	26	31	35	39	42
	Throw	4-7-15	6-10-18	8-13-21	10-15-23	12-18-28	13-20-29	15-21-31
<b>10" Oval Inlet</b>	Airflow, CFM	<b>100</b>	<b>160</b>	<b>215</b>	<b>270</b>	<b>325</b>	<b>385</b>	<b>440</b>
	Total Pressure	.043	.071	.105	.146	.194	.250	.315
	Static Pressure	.029	.047	.070	.097	.132	.169	.215
	Noise Criteria	15	20	25	29	34	38	41
	Throw	5-8-16	7-11-20	9-15-23	12-17-25	13-19-27	14-21-29	15-22-31
<b>12" Oval Inlet</b>	Airflow, CFM	<b>200</b>	<b>260</b>	<b>320</b>	<b>380</b>	<b>440</b>	<b>500</b>	<b>560</b>
	Total Pressure	.037	.061	.091	.125	.168	.217	.273
	Static Pressure	.029	.046	.069	.095	.130	.167	.212
	Noise Criteria	10	19	25	30	34	38	42
	Throw	10-15-24	12-19-25	15-21-27	17-23-31	19-23-32	20-25-36	22-27-39

**3 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>85</b>	<b>110</b>	<b>140</b>	<b>175</b>	<b>200</b>	<b>235</b>	<b>270</b>
	Total Pressure	.039	.063	.096	.138	.180	.236	.299
	Static Pressure	.026	.041	.061	.084	.110	.139	.171
	Noise Criteria	10	15	23	28	32	36	39
	Throw	6-11-21	10-15-24	12-18-28	14-20-29	16-21-32	17-24-34	18-25-34
<b>8" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>130</b>	<b>160</b>	<b>195</b>	<b>230</b>	<b>270</b>	<b>310</b>
	Total Pressure	.036	.058	.087	.122	.161	.206	.255
	Static Pressure	.030	.047	.070	.097	.126	.160	.196
	Noise Criteria	10	16	24	28	33	37	40
	Throw	8-14-24	13-18-28	15-22-32	18-25-34	21-26-37	22-29-39	24-31-40
<b>10" Oval Inlet</b>	Airflow, CFM	<b>115</b>	<b>155</b>	<b>195</b>	<b>240</b>	<b>280</b>	<b>330</b>	<b>375</b>
	Total Pressure	.039	.063	.094	.131	.172	.219	.271
	Static Pressure	.036	.057	.085	.117	.153	.193	.238
	Noise Criteria	9	16	22	29	32	36	40
	Throw	9-16-26	15-21-31	18-25-35	21-28-37	25-30-40	26-33-43	28-35-44

See page C44 for performance data notes.

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5810(I) • 1" (25) SLOT WIDTH**

**3 Slot • 36" (914) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>130</b>	<b>170</b>	<b>210</b>	<b>250</b>	<b>290</b>	<b>330</b>	<b>370</b>
	Total Pressure	.054	.090	.134	.186	.248	.317	.396
	Static Pressure	.024	.038	.055	.075	.098	.123	.152
	Noise Criteria	10	16	24	29	33	37	41
	Throw	7-11-22	9-15-24	12-16-28	13-19-29	15-20-32	16-21-34	16-23-34
<b>8" Round Inlet</b>	Airflow, CFM	<b>140</b>	<b>190</b>	<b>235</b>	<b>280</b>	<b>325</b>	<b>375</b>	<b>420</b>
	Total Pressure	.038	.064	.094	.129	.170	.219	.271
	Static Pressure	.028	.044	.063	.086	.112	.142	.174
	Noise Criteria	10	17	25	30	34	38	42
	Throw	9-14-25	12-18-28	15-20-32	17-23-34	19-25-37	21-26-39	21-28-40
<b>10" Oval Inlet</b>	Airflow, CFM	<b>155</b>	<b>210</b>	<b>265</b>	<b>320</b>	<b>375</b>	<b>430</b>	<b>485</b>
	Total Pressure	.039	.064	.094	.129	.170	.216	.268
	Static Pressure	.033	.053	.077	.104	.136	.172	.211
	Noise Criteria	9	18	24	30	34	38	42
	Throw	10-16-27	14-20-31	17-23-35	20-26-37	22-28-40	24-30-42	25-32-44
<b>12" Oval Inlet</b>	Airflow, CFM	<b>210</b>	<b>270</b>	<b>330</b>	<b>390</b>	<b>450</b>	<b>510</b>	<b>570</b>
	Total Pressure	.035	.060	.090	.127	.168	.216	.269
	Static Pressure	.029	.050	.076	.106	.141	.181	.225
	Noise Criteria	11	19	25	30	34	37	40
	Throw	10-16-28	15-22-34	19-26-39	22-29-43	25-32-46	27-34-48	29-36-51

**3 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>170</b>	<b>220</b>	<b>275</b>	<b>315</b>	<b>360</b>	<b>400</b>	<b>440</b>
	Total Pressure	.080	.133	.202	.275	.364	.459	.572
	Static Pressure	.029	.046	.068	.092	.120	.151	.186
	Noise Criteria	18	22	28	32	36	38	41
	Throw	8-11-19	9-14-22	11-16-24	13-18-28	13-20-30	14-21-31	16-23-32
<b>8" Round Inlet</b>	Airflow, CFM	<b>190</b>	<b>250</b>	<b>310</b>	<b>365</b>	<b>425</b>	<b>485</b>	<b>520</b>
	Total Pressure	.056	.089	.128	.172	.226	.286	.354
	Static Pressure	.032	.049	.069	.092	.118	.147	.180
	Noise Criteria	6	21	26	32	36	38	41
	Throw	8-11-21	9-15-25	12-18-28	14-19-29	17-21-31	18-22-33	19-24-34
<b>10" Oval Inlet</b>	Airflow, CFM	<b>200</b>	<b>250</b>	<b>320</b>	<b>385</b>	<b>450</b>	<b>520</b>	<b>590</b>
	Total Pressure	.047	.076	.113	.154	.202	.257	.318
	Static Pressure	.033	.054	.078	.107	.139	.176	.216
	Noise Criteria	15	20	26	31	35	38	41
	Throw	9-15-23	11-17-27	14-20-30	16-22-32	18-24-34	20-25-36	20-27-37
<b>12" Oval Inlet</b>	Airflow, CFM	<b>220</b>	<b>280</b>	<b>340</b>	<b>405</b>	<b>475</b>	<b>560</b>	<b>635</b>
	Total Pressure	.044	.072	.105	.144	.189	.239	.295
	Static Pressure	.036	.058	.084	.114	.149	.188	.231
	Noise Criteria	5	20	26	30	34	38	41
	Throw	9-13-23	12-17-26	15-20-29	17-22-31	19-24-34	21-26-36	23-28-39

**3 Slot • 60" (1524) Long**

<b>8" Round Inlet</b>	Airflow, CFM	<b>210</b>	<b>260</b>	<b>310</b>	<b>370</b>	<b>425</b>	<b>480</b>	<b>535</b>
	Total Pressure	.063	.094	.131	.174	.224	.280	.342
	Static Pressure	.028	.041	.058	.078	.101	.126	.155
	Noise Criteria	15	22	27	32	35	39	42
	Throw	6-12-20	8-15-24	11-17-27	13-19-29	15-22-31	17- 25-35	20-26-37
<b>10" Oval Inlet</b>	Airflow, CFM	<b>275</b>	<b>330</b>	<b>395</b>	<b>460</b>	<b>525</b>	<b>595</b>	<b>630</b>
	Total Pressure	.056	.083	.115	.154	.197	.247	.303
	Static Pressure	.032	.047	.066	.088	.114	.143	.175
	Noise Criteria	20	24	28	34	35	40	43
	Throw	11-16-26	13-20-30	14-21-32	17-23-35	20-25-37	22-30-39	24-33-42
<b>12" Oval Inlet</b>	Airflow, CFM	<b>250</b>	<b>300</b>	<b>350</b>	<b>420</b>	<b>500</b>	<b>610</b>	<b>680</b>
	Total Pressure	.048	.072	.100	.134	.171	.215	.263
	Static Pressure	.035	.053	.074	.099	.127	.159	.195
	Noise Criteria	11	18	23	29	34	38	40
	Throw	8-14-24	11-17-26	13-19-29	15-22-31	19-26-35	22-28-37	24-30-41

See page C44 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5810(I) • 1" (25) SLOT WIDTH**

**4 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>125</b>	<b>150</b>	<b>170</b>	<b>200</b>	<b>235</b>	<b>270</b>	<b>320</b>
	Total Pressure	.046	.075	.116	.162	.220	.281	.356
	Static Pressure	.023	.035	.052	.072	.095	.121	.150
	Noise Criteria	10	20	25	28	33	36	40
	Throw	6-11-21	9-15-24	12-17-28	14-20-30	16-22-32	18-24-34	18-26-35
<b>8" Round Inlet</b>	Airflow, CFM	<b>125</b>	<b>160</b>	<b>205</b>	<b>250</b>	<b>295</b>	<b>340</b>	<b>385</b>
	Total Pressure	.035	.054	.083	.117	.157	.202	.253
	Static Pressure	.026	.040	.060	.083	.109	.139	.172
	Noise Criteria	10	17	23	29	33	37	40
	Throw	8-14-24	12-18-28	15-21-32	18-25-35	21-27-37	23-30-39	24-32-41
<b>10" Oval Inlet</b>	Airflow, CFM	<b>145</b>	<b>185</b>	<b>210</b>	<b>270</b>	<b>320</b>	<b>370</b>	<b>420</b>
	Total Pressure	.037	.056	.086	.121	.160	.205	.256
	Static Pressure	.032	.048	.072	.100	.132	.168	.208
	Noise Criteria	15	17	23	28	33	37	40
	Throw	9-16-26	14-21-31	18-24-35	21-28-38	25-31-40	27-34-43	28-36-45

**4 Slot • 36" (914) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>145</b>	<b>190</b>	<b>240</b>	<b>285</b>	<b>335</b>	<b>380</b>	<b>430</b>
	Total Pressure	.059	.099	.153	.214	.290	.371	.469
	Static Pressure	.022	.035	.051	.069	.090	.113	.139
	Noise Criteria	9	17	24	29	32	35	39
	Throw	7-11-22	8-15-24	11-16-27	12-18-28	14-20-31	15-20-32	16-21-34
<b>8" Round Inlet</b>	Airflow, CFM	<b>160</b>	<b>225</b>	<b>285</b>	<b>345</b>	<b>405</b>	<b>470</b>	<b>530</b>
	Total Pressure	.039	.068	.102	.144	.193	.251	.313
	Static Pressure	.025	.040	.058	.079	.103	.130	.160
	Noise Criteria	10	18	24	30	33	36	40
	Throw	9-14-25	11-18-28	14-20-31	16-22-33	18-24-36	20-25-37	21-26-39
<b>10" Oval Inlet</b>	Airflow, CFM	<b>190</b>	<b>265</b>	<b>335</b>	<b>405</b>	<b>475</b>	<b>550</b>	<b>620</b>
	Total Pressure	.039	.065	.097	.135	.179	.230	.286
	Static Pressure	.030	.048	.070	.096	.125	.157	.194
	Noise Criteria	9	18	24	29	33	36	40
	Throw	10-16-27	13-20-31	16-23-34	19-25-36	21-27-39	23-29-40	24-30-42
<b>12" Oval Inlet</b>	Airflow, CFM	<b>235</b>	<b>310</b>	<b>385</b>	<b>455</b>	<b>530</b>	<b>605</b>	<b>680</b>
	Total Pressure	.035	.060	.092	.129	.172	.221	.276
	Static Pressure	.027	.047	.072	.101	.134	.172	.214
	Noise Criteria	10	17	23	28	33	36	40
	Throw	10-16-26	14-20-30	17-23-33	20-25-35	22-27-38	24-29-39	25-30-41

**4 Slot • 48" (1219) Long**

<b>8" Round Inlet</b>	Airflow, CFM	<b>225</b>	<b>300</b>	<b>370</b>	<b>440</b>	<b>510</b>	<b>580</b>	<b>650</b>
	Total Pressure	.060	.101	.151	.210	.278	.356	.444
	Static Pressure	.032	.052	.076	.104	.136	.173	.213
	Noise Criteria	12	19	26	31	34	39	42
	Throw	6-12-20	10-16-27	13-18-30	15-22-33	16-25-35	18-27-37	20-28-40
<b>10" Oval Inlet</b>	Airflow, CFM	<b>240</b>	<b>320</b>	<b>400</b>	<b>480</b>	<b>565</b>	<b>645</b>	<b>730</b>
	Total Pressure	.047	.079	.117	.162	.214	.273	.340
	Static Pressure	.031	.050	.073	.100	.131	.166	.205
	Noise Criteria	15	19	26	30	34	38	41
	Throw	10-14-24	12-18-29	15-21-31	17-23-34	19-25-36	21-27-37	22-28-39
<b>12" Oval Inlet</b>	Airflow, CFM	<b>275</b>	<b>360</b>	<b>445</b>	<b>530</b>	<b>615</b>	<b>700</b>	<b>785</b>
	Total Pressure	.040	.065	.097	.133	.176	.224	.279
	Static Pressure	.030	.048	.070	.096	.125	.158	.195
	Noise Criteria	15	21	25	30	34	37	40
	Throw	10-14-24	13-18-28	16-21-30	18-23-33	20-25-35	22-27-36	23-28-38

See page C44 for performance data notes.

**PERFORMANCE DATA • MODEL SERIES 5800**

**MODEL: 5810(I) • 1" (25) SLOT WIDTH**

**4 Slot • 60" (1524) Long**

<b>8" Round Inlet</b>	<b>Airflow, CFM</b>	<b>310</b>	<b>370</b>	<b>430</b>	<b>490</b>	<b>550</b>	<b>610</b>	<b>670</b>
	<b>Total Pressure</b>	.078	.112	.154	.202	.256	.318	.386
	<b>Static Pressure</b>	.025	.038	.053	.071	.091	.115	.141
	<b>Noise Criteria</b>	18	23	28	32	36	39	42
	<b>Throw</b>	8-11-19	9-13-21	10-15-22	11-16-23	12-17-25	12-18-26	13-19-27
<b>10" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>350</b>	<b>420</b>	<b>495</b>	<b>565</b>	<b>640</b>	<b>710</b>	<b>785</b>
	<b>Total Pressure</b>	.058	.085	.119	.157	.202	.251	.308
	<b>Static Pressure</b>	.029	.043	.060	.080	.104	.130	.159
	<b>Noise Criteria</b>	15	19	26	31	35	38	41
	<b>Throw</b>	9-13-23	11-16-28	13-19-28	15-20-30	16-21-32	17-23-33	18-25-35
<b>12" Oval Inlet</b>	<b>Airflow, CFM</b>	<b>385</b>	<b>470</b>	<b>555</b>	<b>640</b>	<b>725</b>	<b>810</b>	<b>895</b>
	<b>Total Pressure</b>	.052	.078	.109	.145	.187	.233	.286
	<b>Static Pressure</b>	.032	.048	.067	.090	.116	.145	.178
	<b>Noise Criteria</b>	12	19	25	29	34	37	41
	<b>Throw</b>	11-16-28	14-19-32	16-22-34	18-24-37	20-26-39	22-28-41	23-30-42

**Performance Data Notes:**

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total and Static Pressure are in in. w.g..
3. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a Noise Criteria level less than 15.
4. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

HOW TO SPECIFY

**MODELS 5850(I), 5875(I) AND 5810(I)**  
**'ICE TONG' SUPPLY AIR PLENUM SLOT DIFFUSERS**

**SUGGESTED SPECIFICATION:**  
**Standard Lay-in T-Bar**  
 Furnish and install **Nailor Model** (select one) **5850(I)** (1/2" [13] slot), **5875(I)** (3/4" [19] slot) or **5810(I)** (1" [25] slot) **Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include an adjustable, 'ice tong' style pattern deflector mounted within each slot. The pattern deflector shall allow the direction of airflow to be adjusted through a full 180° from the face of the diffuser. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500) and have one, two, three or four slots as specified. Multi-slot units shall include extruded aluminum center T-Bars. The pattern controllers and all exposed edges shall have a BK Black finish and the center T-Bars shall have an AW Appliance White finish. Models 5850I, 5875I or 5810I shall be lined internally with insulation.  
 The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

**MODELS 5850(I)-F, 5875(I)-F, 5810(I)-F, 5850(I)-F2, 5875(I)-F2 AND 5810(I)-F2**  
**'ICE TONG' SUPPLY AIR PLENUM SLOT DIFFUSERS FOR NARROW REGRESSED CEILING GRIDS**

**SUGGESTED SPECIFICATION:**  
**Narrow Regressed T-Bar, Straddle Mount**  
 Furnish and install **Nailor Model** (select one) **5850(I)-F** (1/2" [13] slot), **5875(I)-F** (3/4" [19] slot) or **5810(I)-F** (1" [25] slot) **Plenum Slot Supply Diffusers for Narrow Regressed T-Bar** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall fit within a Narrow Regressed T-Bar ceiling system. The plenum shall be manufactured from corrosion-resistant steel and include an adjustable 'ice tong' style pattern deflector mounted within each slot. The pattern deflector shall allow the direction of airflow to be adjusted through a full 180° from the face of the diffuser. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 24" or 48" (600 or 1200) and have one or two slots as specified. Two slot models shall straddle the T-Bar lengthwise. The pattern controllers and all exposed edges shall have a BK Black finish. Models 5850I-F, 5875I-F or 5810I-F shall be lined internally with insulation.  
 The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.  
**Narrow Regressed T-Bar, Flat Face T-Bar(s)**  
 Furnish and install **Nailor Model** (select one) **5850(I)-F2** (1/2" [13] slot), **5875(I)-F2** (3/4" [19] slot) or **5810(I)-F2** (1" [25] slot) **Plenum Slot Supply Diffusers for Narrow Regressed T-Bar** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall fit within a Narrow Regressed T-Bar ceiling system. The plenum shall be manufactured from corrosion-resistant steel and include an adjustable, 'ice tong' style pattern deflector mounted within each slot. The pattern deflector shall allow the direction of airflow to be adjusted through a full 180° from the face of the diffuser. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 24" or 48" (600 or 1200) and have one, two, three or four slots as specified. Multi-slot units shall include extruded aluminum center T-Bars. The pattern controllers and all exposed edges shall have a BK Black finish and the center T-Bars shall have an AW Appliance White finish. Models 5850I-F2, 5875I-F2 or 5810I-F2 shall be lined internally with insulation.  
 The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

C  
 PLENUM SLOT AND LIGHT TROFFER DIFFUSERS



**ADJUSTABLE 'FLIP FLOP' PATTERN CONTROLLER**

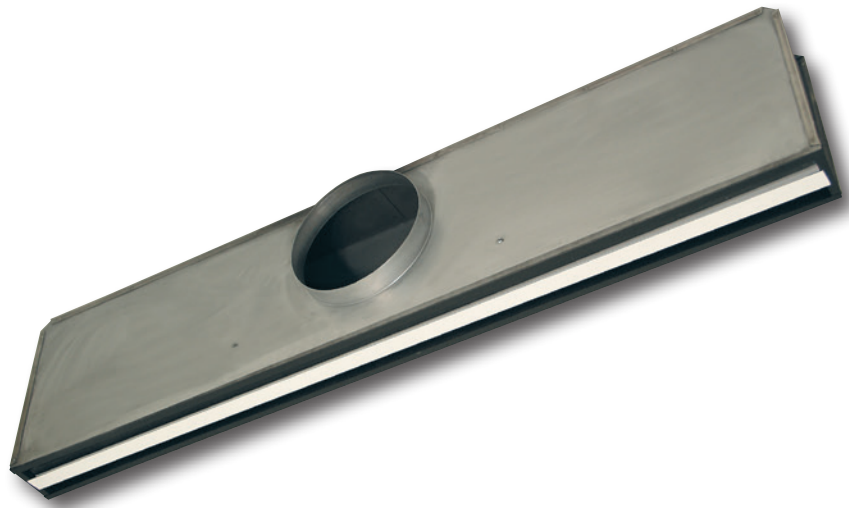
- FOR STANDARD LAY-IN T-BAR
- SUPPLY

**Uninsulated Models:**

- 5675 3/4" (19) Slot Width
- 5610 1" (25) Slot Width

**Insulated Models:**

- 5675I 3/4" (19) Slot Width
- 5610I 1" (25) Slot Width



Model Series 5600 Plenum Slot Ceiling Diffusers have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, so offering an extremely unobtrusive method of air distribution. Designed with the popular 3/4" (19) or 1" (25) slot spacing, the 5600 Series design offers high performance and extremely good value, where budgetary restraints are a consideration.

Model Series 5600 features a roll-formed curved blade pattern controller in each slot. Aerodynamically designed to produce a fixed horizontal discharge pattern, the controller is pivoted at either end and may be simply rotated with fingers from the diffuser face for either a left or right discharge direction.

In either horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow. Factory furnished center tees are dropped below the diffuser face to match the ceiling grid. Therefore, the 5600 Series provides excellent performance in variable air volume applications.

**STANDARD FEATURES:**

- Simple 'Flip Flop' pattern controller adjustment, from face of diffuser for left or right blow pattern.
- Available in 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500 mm) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of 1, 2, 3 or 4 parallel slots.
- Standard unit is 11" (279) in height.

- Factory installed center T-Bars on multi-slot models are standard.
- Blades are shipped locked. They may be set for left or right airflow pattern after installation.

**CONSTRUCTION MATERIAL:**

Corrosion-resistant steel.

**FINISH OPTIONS:**

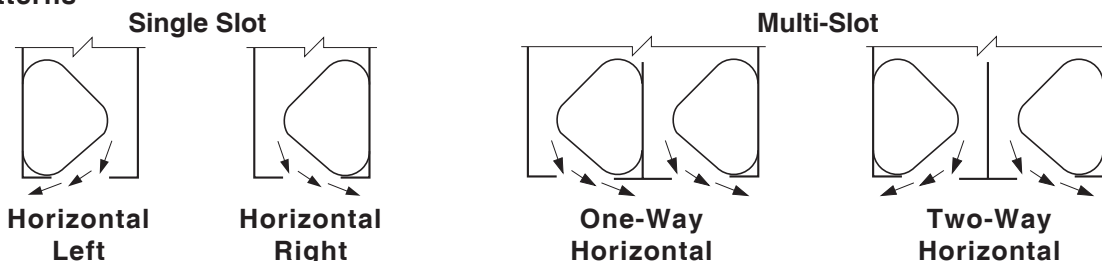
Black on pattern controllers and exposed surfaces. AW Appliance White on center T-Bars.

**OPTIONS AND ACCESSORIES:**

- Internal insulation (add suffix 'I' to model number).
- EIC Extended Inlet Collar (2.25" [57]) with bead.
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

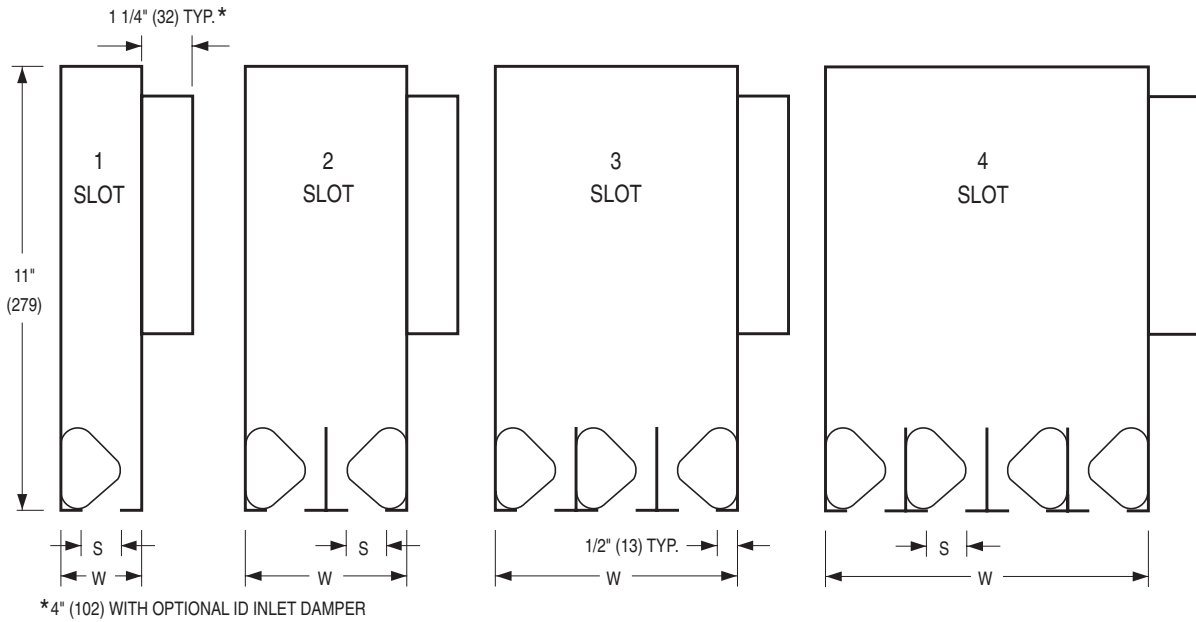
PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**Air Patterns**



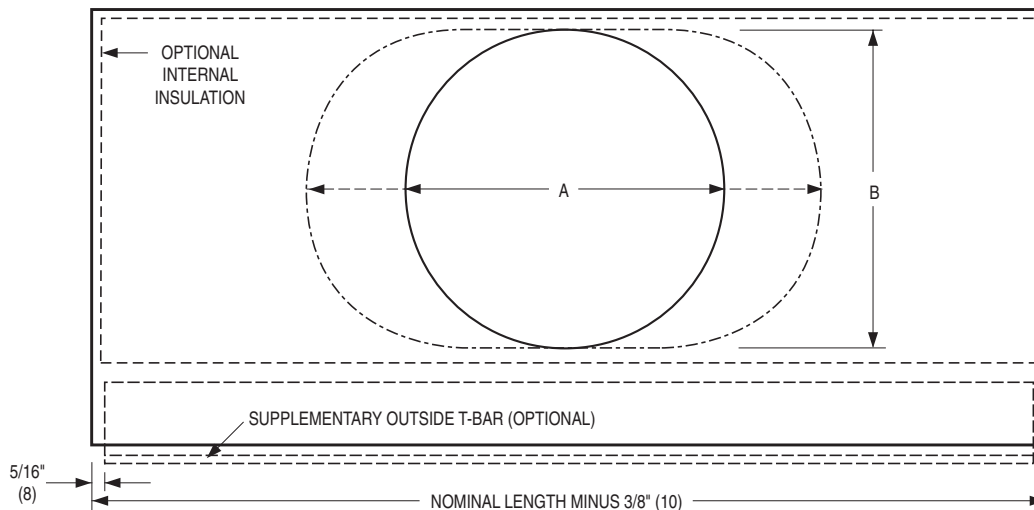
## DIMENSIONAL DATA:

### MODEL SERIES: 5600 • STANDARD LAY-IN T-BAR MODELS



		S Slot Width	
		3/4" (19)	1" (25)
W Width	1 Slot	1 3/4" (44)	2" (51)
	2 Slot	3 1/2" (89)	4" (102)
	3 Slot	5 1/4" (133)	6" (152)
	4 Slot	7" (178)	8" (203)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	—	—	7 7/8" (200)	7 7/8" (200)



Nominal Length L	
Imperial Modules Inches (mm)	Metric Modules (mm)
20" (508)	500
24" (610)	600
30" (762)	750
36" (914)	900
48" (1219)	1200
60" (1524)	1500

**ADJUSTABLE 'FLIP FLOP' PATTERN CONTROLLER**

- FOR NARROW REGRESSED T-BAR SUPPLY

**Straddle Mount Models:**

5675(I)-F 3/4" (19) Slot Width

5610(I)-F 1" (25) Slot Width

- Suffix 'I' adds internal insulation



Model 5610-F

Model Series 5600-F Plenum Slot Ceiling Diffusers have been specially developed to integrate with and compliment 'Fineline®' type suspended ceiling grids, thus offering an extremely unobtrusive method of air distribution. Available in a wide range of sizes and capacities, the design offers the optimum combination of application flexibility, high performance and low cost.

This series features a 'Flip Flop' roll-formed curved blade pattern controller in each slot. Aerodynamically designed to produce a fixed horizontal discharge pattern, the controller is pivoted at either end and may be rotated with fingers from the diffuser face for either a left or right discharge direction. Either horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow.

The single slot units, for all models, are for installation alongside a main T-Bar runner. The 5600-F Series two slot units incorporate a center hat channel and are designed to straddle, longitudinally, along a main T-Bar runner.

**STANDARD FEATURES:**

- Simple 'Flip Flop' pattern controller adjustment, from face of diffuser for left or right blow pattern.
- Available in 24" or 48" (600 or 1200) nominal lengths to suit both imperial and metric ceiling systems.
- A cross notch is a recommended standard option on 48" (1200) long units which allows the plenum to be installed in a 24" x 24" (600 x 600) ceiling grid.
- Series 5600-F is available in a one or two slot configuration.

- The single slot units are for installation alongside a main runner.
- 5600-F two slot unit has a center hat channel that is designed to straddle a main T-Bar runner.

**CONSTRUCTION MATERIAL:**

Corrosion-resistant steel.

**FINISH OPTIONS:**

Black on pattern controllers and exposed surfaces. AW Appliance White on center T-Bars.

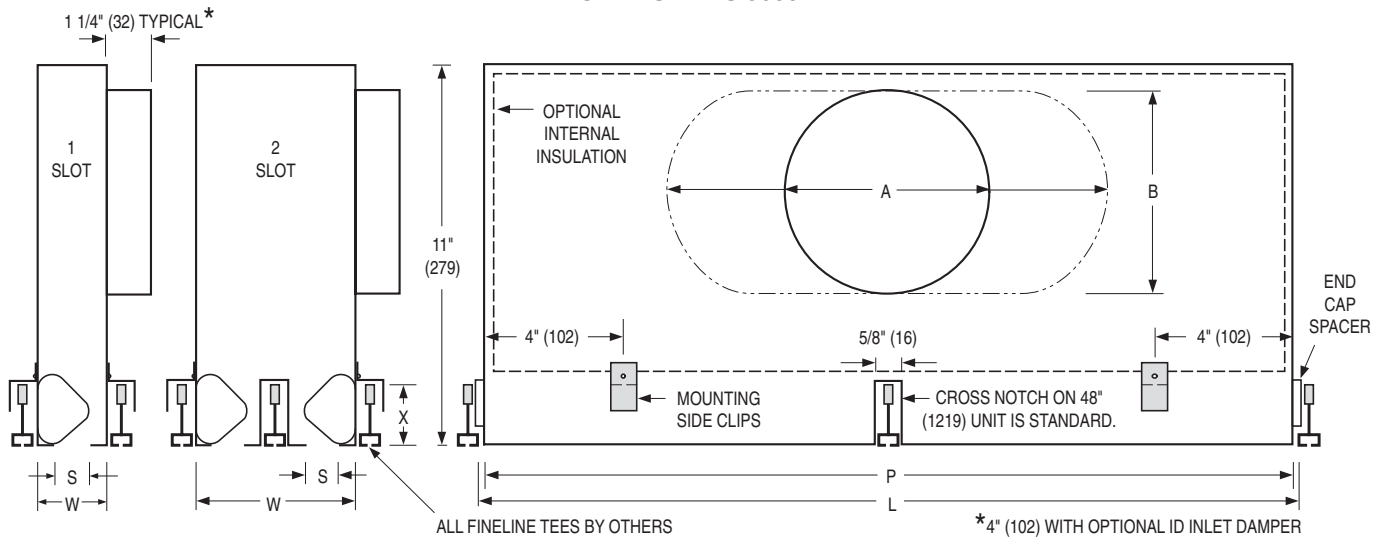
**OPTIONS AND ACCESSORIES:**

- Internal insulation (add suffix 'I' to model number).
- EIC Extended Inlet Collar (2.25" [57]) with bead.
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

## DIMENSIONAL DATA:

### MODEL SERIES: 5600-F • NARROW REGRESSED T-BAR MODELS

#### MODEL SERIES 5600-F

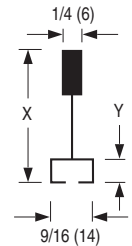


#### Imperial Ceiling Modules (in.)

Nominal Length	Overall Length L	Plenum Length P
24	23 3/4	23 3/8
48	47 3/4	47 3/8

#### Metric Ceiling Modules (mm)

Nominal Length	Overall Length L	Plenum Length P
600	594	584
1200	1194	1184



#### Model Series 5600-F

Model	S Slot Width	Width W	
		1 Slot	2 Slot
5675-F	3/4" (19)	1 3/4" (44)	4 1/8" (105)
5610-F	1" (25)	2" (51)	4 5/8" (117)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
<b>A</b>	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
<b>B</b>	—	—	7 7/8" (200)	7 7/8" (200)

T-Bar Type (Manufacturer)		X	Y
<b>A</b>	Chicago Metallic Ultraline	1 3/4" (44)	5/16" (8)
<b>C</b>	Certainteed Smoothline	1 5/8" (41)	5/16" (8)
<b>D</b>	Donn Finline	1 25/32" (45)	5/16" (8)

C PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5600**

**MODEL: 5675(I) • 3/4" (19) SLOT WIDTH**

**1 Slot • 24" (610) Long, 6" (152) Inlet • 48" (1219) Long, 8" (203) Inlet**

<b>Airflow, CFM/FT.</b>	<b>20</b>	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>
<b>Static Pressure</b>	.027	.059	.104	.153	.228	.307
<b>Noise Criteria</b>	20	23	27	30	33	35
<b>Throw 1</b>	3.3	6.3	8.0	9.5	10.7	11.7
<b>Throw 2</b>	11.5	15.0	19.0	21.0	23.0	24.5

**2 Slot • 24" (610) Long, 8" (203) Inlet • 48" (1219) Long, 10" (254) Inlet**

<b>Airflow, CFM/FT.</b>	<b>40</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>
<b>Static Pressure</b>	.028	.061	.115	.165	.240	.335
<b>Noise Criteria</b>	20	24	29	33	36	38
<b>Throw 1</b>	3.7	7.7	9.0	10.5	12.0	13.0
<b>Throw 2</b>	12.5	16.0	19.0	22.0	24.0	25.5

**3 Slot • 24" (610) Long, 8" (203) Inlet • 48" (1219) Long, 10" (254) Inlet**

<b>Airflow, CFM/FT.</b>	<b>60</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>
<b>Static Pressure</b>	.030	.064	.120	.184	.265	.350
<b>Noise Criteria</b>	21	25	30	35	39	42
<b>Throw 1</b>	4.5	9.0	10.2	11.5	13.0	14.0
<b>Throw 2</b>	12.7	17.0	20.0	23.0	25.2	27.5

**4 Slot • 24" (610) Long, 10" (254) Inlet • 48" (1219) Long, 12" (305) Inlet**

<b>Airflow, CFM/FT.</b>	<b>80</b>	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>
<b>Static Pressure</b>	.034	.071	.134	.203	.292	.392
<b>Noise Criteria</b>	22	26	31	37	41	45
<b>Throw 1</b>	5.2	10.0	11.2	12.0	13.5	15.0
<b>Throw 2</b>	13.5	17.7	21.0	24.5	26.5	29.0

**Performance Notes:**

- Throws are given at 150 and 50 fpm terminal velocities under isothermal conditions.  
Throw 1 is Throw @ 150 feet per minute terminal velocity at 9'-0" ceiling height.  
Throw 2 is Throw @ 50 feet per minute terminal velocity at 9'-0" ceiling height.
- All Pressures are in inches w.g..
- Throw data is for one-way blow in opposite direction to inlet collar under isothermal conditions.
- Noise Criteria [NC] values based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a Noise Criteria level less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.031	.039
2	.059	.079
3	.083	.117
4	.108	.156

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5600**

**MODEL: 5610(I) • 1" (25) SLOT WIDTH**

**1 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>50</b>	<b>75</b>	<b>95</b>	<b>120</b>	<b>140</b>	<b>165</b>	<b>185</b>
	Total Pressure	.046	.093	.141	.216	.287	.390	.483
	Static Pressure	.042	.083	.125	.191	.252	.342	.423
	Noise Criteria	–	18	23	29	32	36	38
	Throw	6-11-20	11-16-25	14-19-28	17-22-31	19-24-33	21-26-35	23-27-37
<b>8" Round Inlet</b>	Airflow, CFM	<b>50</b>	<b>80</b>	<b>105</b>	<b>135</b>	<b>160</b>	<b>190</b>	<b>215</b>
	Total Pressure	.044	.102	.162	.248	.332	.446	.554
	Static Pressure	.043	.098	.156	.238	.318	.427	.529
	Noise Criteria	–	17	23	29	33	37	40
	Throw	4-8-16	9-13-22	12-17-25	15-19-29	17-21-31	19-23-33	20-25-35
<b>10" Oval Inlet</b>	Airflow, CFM	<b>60</b>	<b>85</b>	<b>110</b>	<b>135</b>	<b>160</b>	<b>185</b>	<b>210</b>
	Total Pressure	.056	.103	.162	.232	.314	.408	.513
	Static Pressure	.055	.101	.159	.228	.308	.400	.503
	Noise Criteria	–	15	22	27	31	35	38
	Throw	5-10-19	10-15-25	13-19-29	16-22-33	19-24-35	21-26-38	22-28-40

**1 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>80</b>	<b>120</b>	<b>155</b>	<b>195</b>	<b>230</b>	<b>270</b>	<b>305</b>
	Total Pressure	.040	.109	.175	.256	.334	.428	.516
	Static Pressure	.029	.084	.133	.190	.241	.300	.353
	Noise Criteria	–	17	24	30	35	39	43
	Throw	6-11-20	11-16-26	14-20-30	17-23-34	19-25-36	21-27-38	23-29-40
<b>8" Round Inlet</b>	Airflow, CFM	<b>100</b>	<b>140</b>	<b>180</b>	<b>220</b>	<b>260</b>	<b>300</b>	<b>340</b>
	Total Pressure	.043	.084	.138	.204	.283	.375	.479
	Static Pressure	.038	.074	.120	.178	.246	.326	.416
	Noise Criteria	–	15	22	28	32	36	40
	Throw	8-11-19	11-15-23	14-18-26	16-20-29	17-22-31	19-24-33	20-25-34
<b>10" Oval Inlet</b>	Airflow, CFM	<b>100</b>	<b>145</b>	<b>190</b>	<b>235</b>	<b>280</b>	<b>325</b>	<b>370</b>
	Total Pressure	.036	.076	.128	.191	.265	.350	.447
	Static Pressure	.034	.071	.119	.177	.246	.325	.414
	Noise Criteria	–	18	24	29	32	36	39
	Throw	3-6-14	6-10-19	9-14-23	11-16-26	13-19-28	15-20-30	16-22-32
<b>12" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>170</b>	<b>220</b>	<b>270</b>	<b>320</b>	<b>370</b>	<b>420</b>
	Total Pressure	.049	.097	.160	.238	.331	.439	.562
	Static Pressure	.047	.093	.153	.228	.317	.421	.538
	Noise Criteria	–	20	26	31	35	39	42
	Throw	5-11-21	10-16-26	14-20-30	17-23-33	20-25-36	22-27-38	24-29-40

**Performance Notes:**

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All Pressures are in inches w.g..
3. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
4. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (–) in space denotes a Noise Criteria level less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.031	.039
2	.059	.079



**PERFORMANCE DATA • MODEL SERIES 5600**

**MODEL: 5610(I) • 1" (25) SLOT WIDTH**

**2 Slot • 24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>125</b>	<b>160</b>	<b>195</b>	<b>230</b>	<b>265</b>	<b>300</b>
	Total Pressure	.051	.097	.156	.228	.313	.412	.524
	Static Pressure	.037	.069	.111	.161	.220	.288	.366
	Noise Criteria	–	21	27	32	36	40	43
	Throw	11-15-25	15-20-29	18-23-33	21-26-36	23-28-38	25-30-40	26-31-42
<b>8" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>130</b>	<b>170</b>	<b>210</b>	<b>250</b>	<b>290</b>	<b>330</b>
	Total Pressure	.041	.070	.111	.166	.233	.313	.405
	Static Pressure	.037	.061	.096	.142	.199	.267	.346
	Noise Criteria	–	19	25	30	35	38	41
	Throw	8-13-21	13-17-26	16-20-29	18-23-32	20-25-34	22-26-36	23-28-38
<b>10" Oval Inlet</b>	Airflow, CFM	<b>100</b>	<b>145</b>	<b>190</b>	<b>235</b>	<b>280</b>	<b>325</b>	<b>370</b>
	Total Pressure	.042	.071	.116	.178	.257	.353	.465
	Static Pressure	.040	.066	.107	.165	.238	.327	.432
	Noise Criteria	–	17	25	31	36	40	43
	Throw	10-15-24	14-20-29	18-23-33	21-26-36	23-28-39	25-30-41	27-32-43

**2 Slot • 48" (1219) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>150</b>	<b>185</b>	<b>220</b>	<b>255</b>	<b>290</b>	<b>325</b>	<b>360</b>
	Total Pressure	.092	.133	.183	.242	.310	.387	.472
	Static Pressure	.053	.073	.098	.128	.162	.201	.244
	Noise Criteria	–	–	21	26	31	36	39
	Throw	7-10-16	8-12-18	10-13-19	11-14-21	12-16-22	13-17-23	13-17-24
<b>8" Round Inlet</b>	Airflow, CFM	<b>160</b>	<b>220</b>	<b>280</b>	<b>340</b>	<b>400</b>	<b>460</b>	<b>520</b>
	Total Pressure	.049	.089	.140	.201	.274	.357	.450
	Static Pressure	.035	.063	.097	.138	.186	.241	.303
	Noise Criteria	–	15	23	29	34	39	43
	Throw	9-14-20	13-18-25	15-20-29	18-22-31	19-24-34	21-26-36	22-27-38
<b>10" Oval Inlet</b>	Airflow, CFM	<b>180</b>	<b>250</b>	<b>320</b>	<b>390</b>	<b>460</b>	<b>530</b>	<b>600</b>
	Total Pressure	.042	.077	.126	.188	.263	.352	.454
	Static Pressure	.034	.062	.101	.151	.213	.285	.367
	Noise Criteria	–	16	24	30	35	39	43
	Throw	10-14-22	13-18-26	16-20-29	19-23-32	20-24-34	22-26-35	23-27-37
<b>12" Oval Inlet</b>	Airflow, CFM	<b>200</b>	<b>285</b>	<b>370</b>	<b>455</b>	<b>540</b>	<b>625</b>	<b>710</b>
	Total Pressure	.047	.098	.165	.247	.345	.460	.590
	Static Pressure	.042	.087	.146	.219	.306	.407	.522
	Noise Criteria	–	18	26	32	37	41	44
	Throw	9-14-22	13-18-27	16-21-31	18-24-33	20-25-36	22-27-38	23-28-40

**Performance Notes:**

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All Pressures are in inches w.g..
3. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
4. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (–) in space denotes a Noise Criteria level less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Number of Slots	Ak Factor per foot	
	Supply	Return
1	.031	.039
2	.059	.079

**HOW TO SPECIFY**

**MODELS 5675(I) AND 5610(I)**

**'FLIP FLOP' SUPPLY AIR PLENUM SLOT DIFFUSERS**

**SUGGESTED SPECIFICATION:**

**Standard Lay-in T-Bar**

Furnish and install **Nailor Models 5675(I)** (3/4" [19] slot) or **5610(I)** (1" [25] slot) **Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a roll-formed, curved blade, 'flip flop' style pattern controller in each slot. The pattern deflector shall be adjustable from the face of the diffuser for a left or right blow pattern. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500) and have one, two, three or four slots as specified. Multi-slot units shall include extruded aluminum center T-Bars. The pattern controllers and all exposed edges shall have a BK Black finish and the center T-Bars shall have an AW Appliance White finish. Models 5675I or 5610I shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

**MODELS 5675(I)-F AND 5610(I)-F**

**'FLIP FLOP' SUPPLY AIR PLENUM SLOT DIFFUSERS FOR NARROW REGRESSED CEILING GRIDS**

**SUGGESTED SPECIFICATION:**

**Narrow Regressed T-Bar, Straddle Mount**

Furnish and install **Nailor Models 5675(I)-F** (3/4" [19] slot) or **5610(I)-F** (1" [25] slot) **Plenum Slot Supply Diffusers for Narrow Regressed T-Bar** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall fit within a Narrow Regressed T-Bar ceiling system. The plenum shall be manufactured from corrosion-resistant steel and include a roll-formed, curved blade, 'flip flop' style pattern controller in each slot. The pattern deflector shall be adjustable from the face of the diffuser for a left or right blow pattern. The plenum shall have a side inlet with a neck not less than 1 1/4" (32) deep for connection to the duct. The diffuser shall be supplied in nominal standard lengths of 24" or 48" (600 or 1200) and have one or two as specified. Two slot models shall straddle the T-Bar lengthwise. The pattern controllers and all exposed edges shall have a BK Black finish and the center T-Bars shall have an AW Appliance White finish. Models 5675I-F or 5610I-F shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.



PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**RETURN AIR PLENUMS**

- FOR STANDARD LAY-IN T-BAR
- COMPLIMENTS THE SUPPLY SERIES
- INCLUDES LIGHT BARRIERS

**5700R Series:**

- 5775R(I) 3/4" (19) Slot Width
- 5710R(I) 1" (25) Slot Width
- 5715R(I) 1 1/2" (38) Slot Width

**5800R Series:**

- 5850R(I) 1/2" (13) Slot Width
- 5875R(I) 3/4" (19) Slot Width
- 5810R(I) 1" (25) Slot Width

**5600R Series:**

- 5675R(I) 3/4" (19) Slot Width
- 5610R(I) 1" (25) Slot Width
- Suffix 'I' adds internal insulation



Models 5675R, 5775R

These models have been designed as a matching return to compliment their respective supply models. They return room air to the ceiling plenum and are designed for ductless return applications.

The design incorporates a light shield which blocks any stray light in the ceiling plenum, emitted from the rear of the light fixtures, from emerging through the face. At the same time, it prevents see-through in the opposite direction.

**STANDARD FEATURES:**

- Available in 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500 mm) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of 1, 2, 3 or 4 parallel slots.
- Standard height is 7" (178) for 1 and 2 slot units and 11" (279) for 3 and 4 slot units.
- Factory installed center T-Bars on multi-slot models are standard. They are dropped slightly below the diffuser face to align flush with the ceiling grid.

- Series 5700R is available in 3 slot widths.
- Series 5800R is available in 3 slot widths.
- Series 5600R is available in 2 slot widths.

**CONSTRUCTION MATERIAL:**

Corrosion-resistant steel plenum casing, extruded aluminum center T-Bars.

**FINISH OPTIONS:**

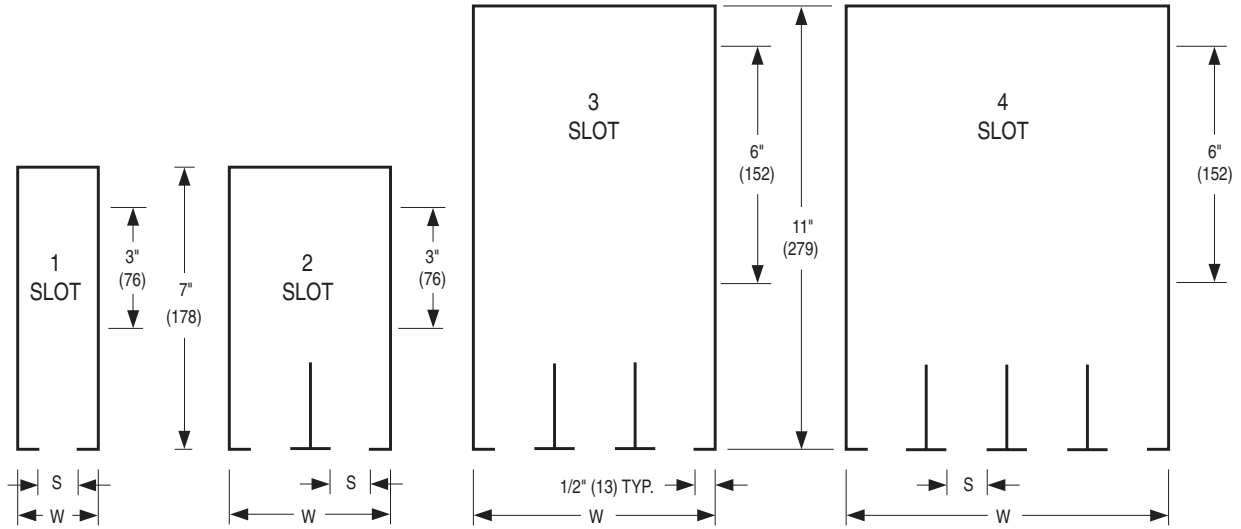
Black on exposed surfaces. AW Appliance White on center T-Bars.

**OPTIONS AND ACCESSORIES:**

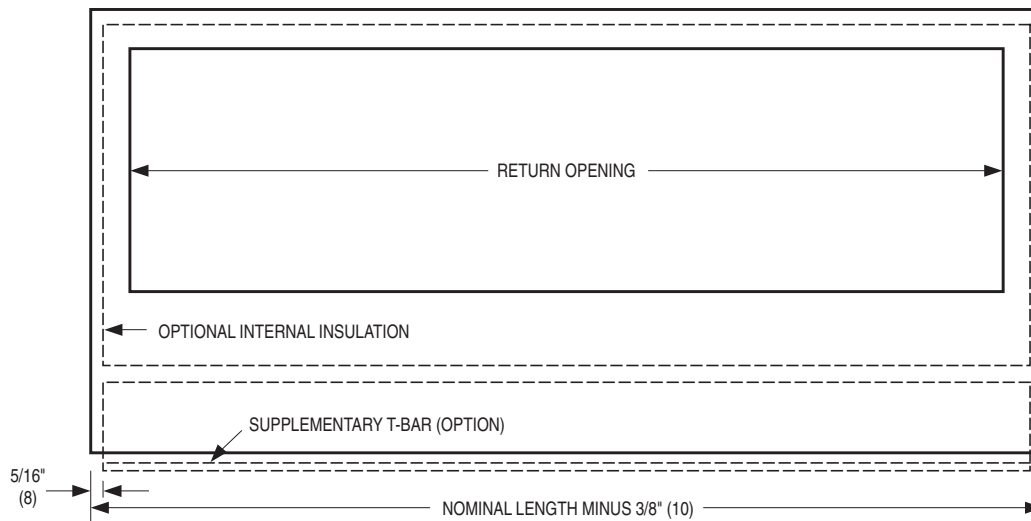
- Internal insulation (add suffix 'I' to model number).
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

## DIMENSIONAL DATA:

### MODEL SERIES: 5700R, 5800R, 5600R • STANDARD LAY-IN T-BAR MODELS



		Models							
		5675R(I)	5610R(I)	5850R(I)	5875R(I)	5810R(I)	5775R(I)	5710R(I)	5715R(I)
<b>S Slot Width</b>		1/2" (13)	3/4" (19)	1" (25)	1 1/2" (38)				
<b>W Width</b>	1 Slot	1 1/2" (38)	1 3/4" (44)	2" (51)	2 1/2" (64)				
	2 Slot	3" (76)	3 1/2" (89)	4" (102)	5" (127)				
	3 Slot	4 1/2" (115)	5 1/4" (133)	6" (152)	7 1/2" (191)				
	4 Slot	6" (152)	7" (178)	8" (203)	10" (254)				



Nominal Length L	
Imperial Modules Inches (mm)	Metric Modules (mm)
20" (508)	500
24" (610)	600
30" (762)	750
36" (914)	900
48" (1219)	1200
60" (1524)	1500

## RETURN AIR PLENUMS

- FOR NARROW REGRESSED T-BAR
- COMPLIMENTS THE SUPPLY SERIES
- INCLUDES LIGHT BARRIERS

### Straddle Style:

- 5850R(I)-F 1/2" (13) Slot Width
- 5775R(I)-F 3/4" (19) Slot Width
- 5875R(I)-F 3/4" (19) Slot Width
- 5710R(I)-F 1" (25) Slot Width
- 5810R(I)-F 1" (25) Slot Width
- 5715R(I)-F 1 1/2" (38) Slot Width

### 1" (25) Flat Face T-Bar Styles:

- 5850R(I)-F2 1/2" (13) Slot Width
- 5775R(I)-F2 3/4" (19) Slot Width
- 5875R(I)-F2 3/4" (19) Slot Width
- 5710R(I)-F2 1" (25) Slot Width
- 5810R(I)-F2 1" (25) Slot Width
- 5715R(I)-F2 1 1/2" (38) Slot Width

- Suffix 'I' adds internal insulation



Models 5810R-F, 5775R-F2

These models have been designed as a matching return to compliment their respective supply models. They return room air to the ceiling plenum and are designed for ductless return applications.

The design incorporates a light shield which blocks any stray light in the ceiling plenum, emitted from the rear of the light fixtures, from emerging through the face. At the same time, it prevents see-through in the opposite direction.

The single slot units, for all models, are for installation alongside a main T-Bar runner. Model Series 5700R-F and 5800R-F two slot units incorporate a center hat channel and are designed to straddle, longitudinally, a main T-Bar runner. The Model Series 5700R-F2 and 5800R-F2 multi-slot units incorporate factory installed 1" (25) flat face T-Bars.

### STANDARD FEATURES:

- Available in 24" (600) or 48" (1200) nominal lengths, to suit both imperial and metric ceiling grids.
- A cross notch is a recommended option on 48" (1200) long units which allows the plenum to be installed in a 24" x 24" (600 x 600) ceiling grid.
- Series 5700R-F and 5800R-F are available in one or two slot configurations.
- Series 5700R-F2 and 5800R-F2 are available in one, two, three or four slot configurations.

- The single slot units are for installation alongside a main T-Bar runner.
- 5700R-F and 5800R-F two slot unit has a center hat channel that is designed to straddle a main T-Bar runner.
- 5700R-F2 and 5800R-F2 multi-slot units include 1" (25) flat face tees.

### CONSTRUCTION MATERIAL:

Corrosion-resistant steel. Series 5700-F2 and 5800-F2 include extruded aluminum center T-Bars on multi-slot units.

### FINISH OPTIONS:

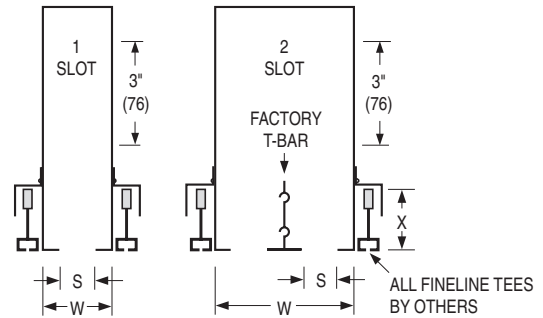
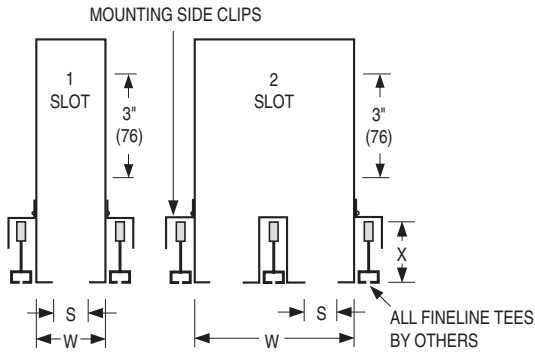
Black on exposed surfaces. AW Appliance White on center T-Bars.

### OPTIONS AND ACCESSORIES:

- Internal insulation (add suffix 'I' to model number).
- EQT Earthquake Tabs.
- For additional options and accessories, see page C61.

## DIMENSIONAL DATA:

### MODEL SERIES: 5700R-F, 5700R-F2, 5800R-F AND 5800R-F2 • NARROW REGRESSED T-BAR

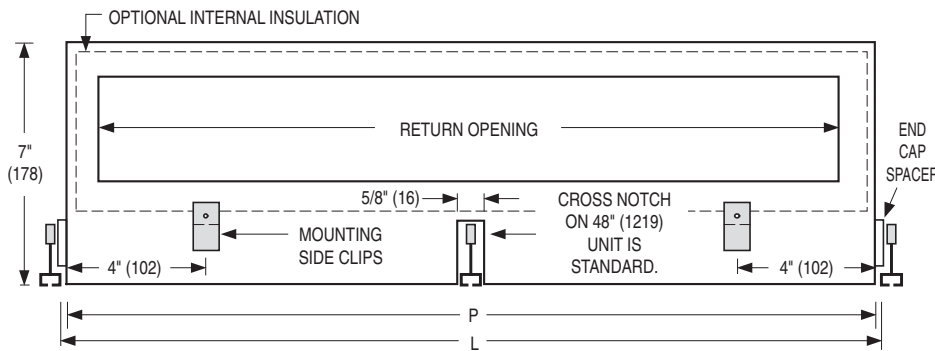


MODEL SERIES 5700R-F AND 5800R-F

MODEL SERIES 5700R-F2 AND 5800R-F2

		Models				
		5850R(I)-F	5875R(I)-F	5810R(I)-F		
			5775R(I)-F	5710R(I)-F	5715R(I)-F	
<b>S Slot Width</b>		1/2" (13)	3/4" (19)	1" (25)	1 1/2" (38)	
<b>W Width</b>	1 Slot	1 1/2" (38)	1 3/4" (44)	2" (51)	2 1/2" (64)	
	2 Slot	3 5/8" (92)	4 1/8" (105)	4 5/8" (117)	5 5/8" (143)	

		Models				
		5850R(I)-F2	5875R(I)-F2	5810R(I)-F2		
			5775R(I)-F2	5710R(I)-F2	5715R(I)-F2	
<b>S Slot Width</b>		1/2" (13)	3/4" (19)	1" (25)	1 1/2" (38)	
<b>W Width</b>	1 Slot	1 1/2" (38)	1 3/4" (44)	2" (51)	2 1/2" (64)	
	2 Slot	3" (76)	3 1/2" (89)	4" (102)	5" (127)	
	3 Slot	4 1/2" (114)	5 1/4" (133)	6" (152)	7 1/2" (191)	
	4 Slot	6" (152)	7" (178)	8" (203)	10" (254)	



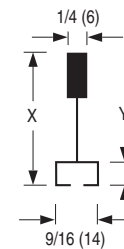
### Imperial Ceiling Modules (inches)

Nominal Length	Overall Length L	Plenum Length P
24	23 3/4	23 3/8
48	47 3/4	47 3/8

### Metric Ceiling Modules (mm)

Nominal Length	Overall Length L	Plenum Length P
600	594	584
1200	1194	1184

T-Bar Type (Manufacturer)	X	Y
<b>A</b> Chicago Metallic Ultraline	1 3/4" (44)	5/16" (8)
<b>C</b> Certainteed Smoothline	1 5/8" (41)	5/16" (8)
<b>D</b> Donn Finline	1 25/32" (45)	5/16" (8)



PLENUM SLOT AND LIGHT TROFFER DIFFUSERS



**PERFORMANCE DATA • MODEL SERIES 5700R**

**MODEL: 5775R(I)**

**3/4" (19) Slot • 24" (610) Long**

<b>1 Slot</b>	Airflow, CFM	<b>30</b>	<b>45</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>105</b>	<b>120</b>	<b>135</b>	<b>150</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>60</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

**3/4" (19) Slot • 48" (1219) Long**

<b>1 Slot</b>	Airflow, CFM	<b>60</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>120</b>	<b>180</b>	<b>240</b>	<b>300</b>	<b>360</b>	<b>420</b>	<b>480</b>	<b>540</b>	<b>600</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

**MODEL: 5710R(I)**

**1" (25) Slot • 24" (610) Long**

<b>1 Slot</b>	Airflow, CFM	<b>40</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>80</b>	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

**1" (25) Slot • 48" (1219) Long**

<b>1 Slot</b>	Airflow, CFM	<b>80</b>	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>160</b>	<b>240</b>	<b>320</b>	<b>400</b>	<b>480</b>	<b>560</b>	<b>640</b>	<b>720</b>	<b>800</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

**MODEL: 5715R(I)**

**1 1/2" (38) Slot • 24" (610) Long**

<b>1 Slot</b>	Airflow, CFM	<b>60</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>120</b>	<b>180</b>	<b>240</b>	<b>300</b>	<b>360</b>	<b>420</b>	<b>480</b>	<b>540</b>	<b>600</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

**1 1/2" (38) Slot • 48" (1219) Long**

<b>1 Slot</b>	Airflow, CFM	<b>120</b>	<b>180</b>	<b>240</b>	<b>300</b>	<b>360</b>	<b>420</b>	<b>480</b>	<b>540</b>	<b>600</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>240</b>	<b>360</b>	<b>480</b>	<b>600</b>	<b>720</b>	<b>840</b>	<b>960</b>	<b>1080</b>	<b>1200</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

**Performance Notes:**

1. Neg. Static Pressure is in inches w.g..
2. Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
3. Dash (-) in space indicates an Noise Criteria level of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA • MODEL SERIES 5800R**

**MODEL: 5850R(I)**

**1/2" (13) Slot • 24" (610) Long**

<b>1 Slot</b>	Airflow, CFM	<b>20</b>	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>40</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35
<b>3 Slot</b>	Airflow, CFM	<b>60</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	17	23	27	31	34	37
<b>4 Slot</b>	Airflow, CFM	<b>80</b>	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	18	24	28	32	35	38

**1/2" (13) Slot • 48" (1219) Long**

<b>1 Slot</b>	Airflow, CFM	<b>40</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>80</b>	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35
<b>3 Slot</b>	Airflow, CFM	<b>120</b>	<b>180</b>	<b>240</b>	<b>300</b>	<b>360</b>	<b>420</b>	<b>480</b>	<b>540</b>	<b>600</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	17	23	27	31	34	37
<b>4 Slot</b>	Airflow, CFM	<b>160</b>	<b>240</b>	<b>320</b>	<b>400</b>	<b>480</b>	<b>560</b>	<b>640</b>	<b>720</b>	<b>800</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	18	24	28	32	35	38

**MODEL: 5875R(I)**

**3/4" (19) Slot • 24" (610) Long**

<b>1 Slot</b>	Airflow, CFM	<b>30</b>	<b>45</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>105</b>	<b>120</b>	<b>135</b>	<b>150</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>60</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35
<b>3 Slot</b>	Airflow, CFM	<b>90</b>	<b>135</b>	<b>180</b>	<b>225</b>	<b>270</b>	<b>315</b>	<b>360</b>	<b>405</b>	<b>450</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	17	23	27	31	34	37
<b>4 Slot</b>	Airflow, CFM	<b>120</b>	<b>180</b>	<b>240</b>	<b>300</b>	<b>360</b>	<b>420</b>	<b>480</b>	<b>540</b>	<b>600</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	18	24	28	32	35	38

**3/4" (19) Slot • 48" (1219) Long**

<b>1 Slot</b>	Airflow, CFM	<b>60</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>120</b>	<b>180</b>	<b>240</b>	<b>300</b>	<b>360</b>	<b>420</b>	<b>480</b>	<b>540</b>	<b>600</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35
<b>3 Slot</b>	Airflow, CFM	<b>180</b>	<b>270</b>	<b>360</b>	<b>450</b>	<b>540</b>	<b>630</b>	<b>720</b>	<b>810</b>	<b>900</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	17	23	27	31	34	37
<b>4 Slot</b>	Airflow, CFM	<b>240</b>	<b>360</b>	<b>480</b>	<b>600</b>	<b>720</b>	<b>840</b>	<b>960</b>	<b>1080</b>	<b>1200</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	18	24	28	32	35	38

**Performance Notes:**

1. Neg. Static Pressure is in inches w.g..
2. Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
3. Dash (–) in space indicates an Noise Criteria level of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

**PERFORMANCE DATA • MODEL SERIES 5800R**

**MODEL: 5810R(I)**

**1" (25) Slot • 24" (610) Long**

<b>1 Slot</b>	Airflow, CFM	<b>40</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>80</b>	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35
<b>3 Slot</b>	Airflow, CFM	<b>120</b>	<b>180</b>	<b>240</b>	<b>300</b>	<b>360</b>	<b>420</b>	<b>480</b>	<b>540</b>	<b>600</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	17	23	27	31	34	37
<b>4 Slot</b>	Airflow, CFM	<b>160</b>	<b>240</b>	<b>320</b>	<b>400</b>	<b>480</b>	<b>560</b>	<b>640</b>	<b>720</b>	<b>800</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	18	24	28	32	35	38

**1" (25) Slot • 48" (1219) Long**

<b>1 Slot</b>	Airflow, CFM	<b>80</b>	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>160</b>	<b>240</b>	<b>320</b>	<b>400</b>	<b>480</b>	<b>560</b>	<b>640</b>	<b>720</b>	<b>800</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35
<b>3 Slot</b>	Airflow, CFM	<b>240</b>	<b>360</b>	<b>480</b>	<b>600</b>	<b>720</b>	<b>840</b>	<b>960</b>	<b>1080</b>	<b>1200</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	17	23	27	31	34	37
<b>4 Slot</b>	Airflow, CFM	<b>320</b>	<b>480</b>	<b>640</b>	<b>800</b>	<b>960</b>	<b>1120</b>	<b>1280</b>	<b>1440</b>	<b>1600</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	18	24	28	32	35	38

**PERFORMANCE DATA • MODEL SERIES 5600R**

**MODEL: 5675R(I)**

**3/4" (19) Slot • 24" (610) Long**

<b>1 Slot</b>	Airflow, CFM	<b>30</b>	<b>45</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>105</b>	<b>120</b>	<b>135</b>	<b>150</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>60</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

**3/4" (19) Slot • 48" (1219) Long**

<b>1 Slot</b>	Airflow, CFM	<b>60</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	–	18	22	26	29	32
<b>2 Slot</b>	Airflow, CFM	<b>120</b>	<b>180</b>	<b>240</b>	<b>300</b>	<b>360</b>	<b>420</b>	<b>480</b>	<b>540</b>	<b>600</b>
	Negative Static Pressure	.010	.021	.038	.059	.085	.116	.152	.192	.238
	Noise Criteria	–	–	–	15	21	25	29	32	35

**Performance Notes:**

1. Neg. Static Pressures is in inches w.g..
2. Noise Criteria [NC] values based on 10 dB room absorption, re 10<sup>-12</sup> watts.
3. Dash (–) in space indicates an Noise Criteria level of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**Options and Accessories**

**MODEL SERIES: 5600, 5700, 5800 – SUPPLY AND 5600R, 5700R, 5800R – RETURN**

**PF SLOT DIFFUSER PLASTER FRAME**

The PF Plaster Frame, for plenum slot diffusers enables the installation of Lay-in T-Bar style diffusers to be installed in drywall or plaster ceilings. Installation of the frame in the ceiling is by others.

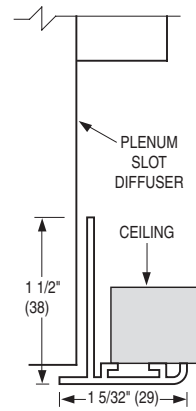
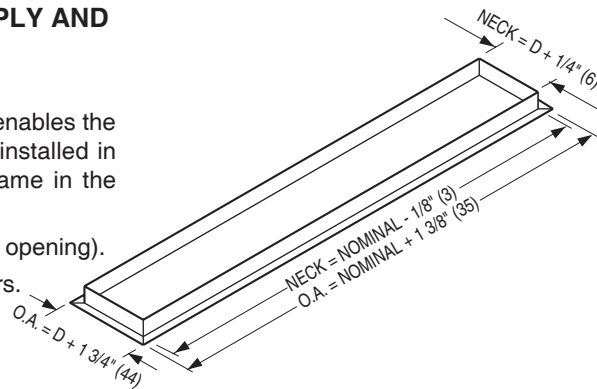
**(Note:** Diffuser will not fit through a plaster frame opening).

**Material:** Extruded aluminum with mitered corners.

Recommended Ceiling Opening dimensions:

Width = Diffuser Width (D) + 1/2" (13)

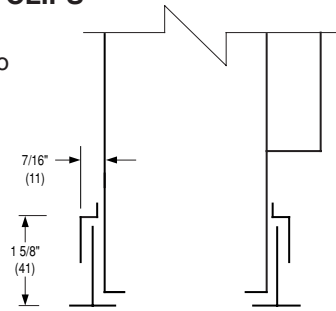
Length = Nominal Diffuser Length + 1/4" (6)



**T-BAR MOUNTING CLIPS**

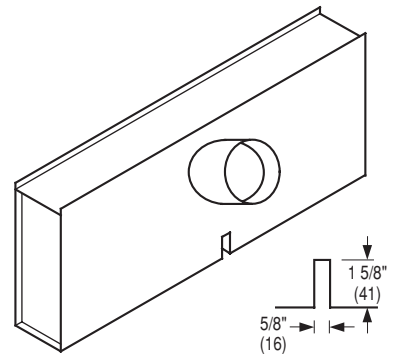
The factory installed mounting clips assist to reinforce and stabilize the plenum during and after installation.

- M1** One Side (2 supplied opposite inlet side)
- M2** Both sides (4 total supplied)



**CN CROSS DAMPER**

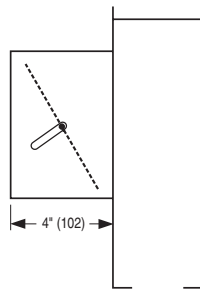
The CN Cross Notch option allows a 48" (1200) plenum unit to be installed in a 24" x 24" (600 x 600) ceiling grid. Available on both supply and return models.



**ID INLET DAMPER**

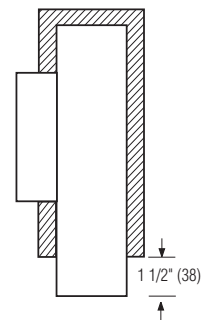
(Supply models only)

This single blade damper is an economical factory installed option that permits air balancing of the device at the plenum inlet. Ceiling access is required.



**EX EXTERNAL FOIL BACK INSULATION**

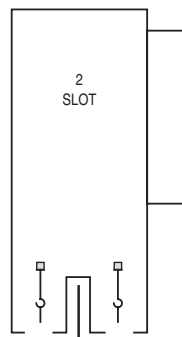
1/2" (13) thick fiberglass blanket with a reinforced aluminum foil scrim-kraft (FSK) facing that provides a vapor barrier. The insulation is wrapped around the outside of the plenum. It is an option on all non-insulated models.



**ST STRADDLE T-BAR**

The ST Straddle T-Bar option is a center channel that allows the plenum to straddle the T-Bar.

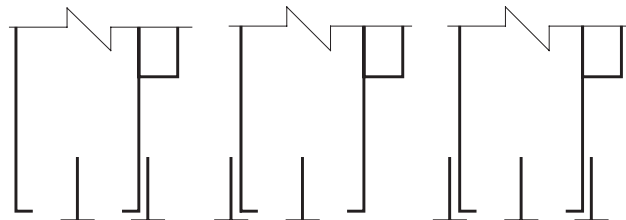
It is an option on both 2 or 4 slot units. (The T-Bar is supplied by others).



**SUPPLEMENTARY T-BARS**

- T1** One on inlet side
- T0** One opposite inlet side
- T2** Two on both sides

As standard, multiple slot plenums include factory installed center T-Bars. However, if required, supplementary T-Bars can be ordered as an optional accessory for either one side or both sides of the plenum.



C

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**HOW TO ORDER**

**MODEL SERIES: 5600, 5700 AND 5800**

**PLENUM SLOT DIFFUSERS**

**EXAMPLE: 5675I - 48 x 2 - 08 - ID - CN**

**1. Model Series**

**Supply**

- 5675(I) "Flip Flop" Pattern Controller 3/4" (19) Slot Width
  - 5610(I) "Flip Flop" Pattern Controller 1" (25) Slot Width
  - 5775(I) "Wiper Blade" Pattern Controller 3/4" (19) Slot Width
  - 5710(I) "Wiper Blade" Pattern Controller 1" (25) Slot Width
  - 5715(I) "Wiper Blade" Pattern Controller 1 1/2" (38) Slot Width
  - 5850(I) "Ice Tong" Pattern Controller 1/2" (13) Slot Width
  - 5875(I) "Ice Tong" Pattern Controller 3/4" (19) Slot Width
  - 5810(I) "Ice Tong" Pattern Controller 1" (25) Slot Width
- (Add suffix "I" for optional internal insulation)

**Return**

- 5675R(I) "Flip Flop" Pattern Controller 3/4" (19) Slot Width
  - 5775R(I) "Wiper Blade" Pattern Controller 3/4" (19) Slot Width
  - 5710R(I) "Wiper Blade" Pattern Controller 1" (25) Slot Width
  - 5715R(I) "Wiper Blade" Pattern Controller 1 1/2" (38) Slot Width
  - 5850R(I) "Ice Tong" Pattern Controller 1/2" (13) Slot Width
  - 5875R(I) "Ice Tong" Pattern Controller 3/4" (19) Slot Width
  - 5810R(I) "Ice Tong" Pattern Controller 1" (25) Slot Width
- (Add suffix "I" for optional internal insulation)

**2. Nominal Length**

**Imperial Sizes**

- inches (mm's)  
 20, 24, 30, 36, 48, 60  
 (508, 610, 762, 914, 1219, 1524)

**Metric Sizes**

- (mm's)  
 500 , 600, 750, 900, 1200, 1500

**3. Number of Slots**

- 1 One
- 2 Two
- 3 Three
- 4 Four

**4. Inlet Size (supply only)**

- 04 4" (102) Round
- 05 5" (127) Round
- 06 6" (152) Round
- 07 7" (178) Round
- 08 8" (203) Round
- 09 9" (229) Oval
- 10 10" (254) Oval
- 12 12" (305) Oval

**5. Options & Accessories:**

**(Default is 'None' unless noted otherwise)**

- ID Inlet Damper (supply only)
- CN Cross Notch
- PF Plaster Frame
- ST Straddle T-Bar  
(available with 2 slot and 4 slot models only)

**Supplementary T-Bars**

- T1 One (inlet side)
- T0 One (opposite inlet side)
- T2 Two (both sides)
- M1 Mounting Clips - one side (2)
- M2 Mounting Clips - both sides (4)
- EX External Foil Back Insulation R-4.2 (installed)
- EIC Extended Inlet Collar (2.25" [57]) with bead \*
- EQT Earthquake Tabs

**Internal Insulation**

- ("I" models only)
- FGI 1/4" (6.35) Coated fiberglass (default)
  - FFI 3/8" (9.53) Fiber-free foam

**Notes:**

1. **Model Series 5600** and **5800** are not available in a 1 1/2" (38) slot width.
2. If more than one accessory is desired, list in order.
3. Standard internal insulation ("I" suffix models) is 1/4" (6.35) coated fiberglass.
- 4.\*Extended Inlet Collar option is available with 5600(I), 5700(I) and 5800(I) supply models only.

**HOW TO ORDER**

**MODEL SERIES: 5700-F(2) AND 5800-F(2)**

**PLENUM SLOT DIFFUSERS FOR NARROW REGRESSED (FINELINE TYPE) CEILING GRIDS**

**EXAMPLE: 5775I-F - 48 x 2 - 08 - ID - CN - ST - M2 - D - -**

**1. Model Series**

**Supply**

**(Straddle Mount)**

- 5675(I)-F "Flip Flop" Pattern Controller 3/4" (19) Slot Width
- 5610(I)-F "Flip Flop" Pattern Controller 1" (25) Slot Width
- 5775(I)-F "Wiper Blade" Pattern Controller 3/4" (19) Slot Width
- 5710(I)-F "Wiper Blade" Pattern Controller 1" (25) Slot Width
- 5715(I)-F "Wiper Blade" Pattern Controller 1 1/2" (38) Slot Width
- 5850(I)-F "Ice Tong" Pattern Controller 1/2" (13) Slot Width
- 5875(I)-F "Ice Tong" Pattern Controller 3/4" (19) Slot Width
- 5810(I)-F "Ice Tong" Pattern Controller 1" (25) Slot Width

(Add suffix "I" for optional internal insulation)

**(Flat Face T-Bars)**

- 5775(I)-F2 "Wiper Blade" Pattern Controller 3/4" (19) Slot Width
- 5710(I)-F2 "Wiper Blade" Pattern Controller 1" (25) Slot Width
- 5715(I)-F2 "Wiper Blade" Pattern Controller 1 1/2" (38) Slot Width
- 5850(I)-F2 "Ice Tong" Pattern Controller 1/2" (13) Slot Width
- 5875(I)-F2 "Ice Tong" Pattern Controller 3/4" (19) Slot Width
- 5810(I)-F2 "Ice Tong" Pattern Controller 1" (25) Slot Width

(Add suffix "I" for optional internal insulation)

**Return**

**(Straddle Mount)**

- 5775R(I)-F "Wiper Blade" Pattern Controller 3/4" (19) Slot Width
- 5710R(I)-F "Wiper Blade" Pattern Controller 1" (25) Slot Width
- 5715R(I)-F "Wiper Blade" Pattern Controller 1 1/2" (38) Slot Width
- 5850R(I)-F "Ice Tong" Pattern Controller 1/2" (13) Slot Width
- 5875R(I)-F "Ice Tong" Pattern Controller 3/4" (19) Slot Width
- 5810R(I)-F "Ice Tong" Pattern Controller 1" (25) Slot Width

(Add suffix "I" for optional internal insulation)

**(Flat Face T-Bars)**

- 5775R(I)-F2 "Wiper Blade" Pattern Controller 3/4" (19) Slot Width
- 5710R(I)-F2 "Wiper Blade" Pattern Controller 1" (25) Slot Width
- 5715R(I)-F2 "Wiper Blade" Pattern Controller 1 1/2" (38) Slot Width
- 5850R(I)-F2 "Ice Tong" Pattern Controller 1/2" (13) Slot Width
- 5875R(I)-F2 "Ice Tong" Pattern Controller 3/4" (19) Slot Width
- 5810R(I)-F2 "Ice Tong" Pattern Controller 1" (25) Slot Width

(Add suffix "I" for optional internal insulation)

**2. Nominal Length**

**Imperial Sizes**

- inches (mm's)
- 24, 48
- (610, 1219)

**Metric Sizes**

- (mm's)
- 600, 1200

**3. Number of Slots**

- 1 One
- 2 Two
- 3 Three
- 4 Four

**4. Inlet Size (supply only)**

- 04 4" (102) Round
- 05 5" (127) Round
- 06 6" (152) Round
- 07 7" (178) Round
- 08 8" (203) Round
- 09 9" (229) Oval
- 10 10" (254) Oval
- 12 12" (305) Oval

**5. Cross Notch**

- 00 None
- CN Cross Notch on 48" (1219 or 1200) unit (default)

**6. Included Accessories**

- ST Straddle T-Bar on -F two slot models only (default)
- M2 T-Bar Mounting Clips - (4) (default)

**7. Specified T-Bar \***

- A 1 3/4" (44) high
- C 1 5/8" (41) high
- D 1 25/32" (45) high

**8. Optional Accessories:**

**(Default is 'None' unless noted otherwise)**

- ID Inlet Damper (supply only)
- EX External Foil Back Insulation R-4.2 (installed)
- EIC Extended Inlet Collar (2.25" [57]) with bead \*\*
- EQT Earthquake Tabs

**Internal Insulation**

- ("I" models only)
- FGI 1/4" (6.35) Coated fiberglass (default)
- FFI 3/8" (9.53) Fiber-free foam

**Notes:**

1. **Model Series 5700-F(2)** is not available with a 1/2" (13) slot width. **Model Series 5800-F(2)** is not available with a 1 1/2" (38) slot width.
2. -F models are available in a 1, or 2 slot configuration. -F2 models are available in a 1, 2, 3 or 4 slot configuration.
3. \*Specified T-Bar: Type A Chicago Metallic Ultralite. Type C Certainteed Smoothline. Type D USG Donn Finline.
4. Standard Internal Insulation ("I" suffix models) is 1/4" (6.35) coated fiberglass.
5. \*\*Extended Inlet Collar option is available with 5600(I)-F, 5700(I)-F(2) and 5800(I)-F(2) supply models only.

**PLENUM SLOT AND LIGHT TROFFER DIFFUSERS**



**59N SERIES**

- FOR STANDARD LAY-IN T-BAR
- PREMIUM PERFORMANCE
- SUPPLY AND SUPPLY/RETURN

**Supply Models:**

- 59N(I) Horizontal Discharge
- 59ND(I) Horizontal/Vertical Discharge

**Supply/Return Models:**

- 59NR(I) Horizontal Discharge
- 59NDR(I) Horizontal/Vertical Discharge

- Suffix 'I' adds internal insulation



Models 59ND and 59NDR

The 59N Series Plenum Slot Diffusers have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, offering an extremely unobtrusive method of air distribution. This series provides premium performance and is available in a supply and a supply/return combination. This series is suitable for variable air volume, heating and cooling applications.

All diffusers include an aerodynamic extruded aluminum pattern controller that provides a fixed horizontal discharge that produces a tight blanket of air into the room, maximizing coanda effect and induction of room air. In addition, Models 59ND and 59NDR include a central down-blow section, which incorporates two pattern controllers (shipped in wide open position), that provide an adjustable vertical discharge along the wall or glass in perimeter applications.

An integral return air section, which returns room air in the ceiling plenum with minimal short-circuiting of supply air is provided on Models 59NR and 59NDR.

**STANDARD FEATURES:**

- Choice of horizontal or horizontal/vertical discharge with either a supply or a supply/return combination.
- An aerodynamic, extruded aluminum pattern controller provides a fixed horizontal discharge.
- Available in 24", 36", 48" and 60" (600, 900, 1200 and 1500 mm) nominal lengths, to suit both imperial and metric ceiling grids.

- Standard H9 plenum height is 9" (229).
- Standard inlet sizes are 6" (152) round, 8" (203) and 10" (254) flat oval.
- Standard unit size is 9" (229) in height.

**CONSTRUCTION MATERIAL:**

Corrosion-resistant steel plenum, extruded aluminum pattern controllers.

**FINISH OPTIONS:**

Black on pattern controllers and exposed surfaces.

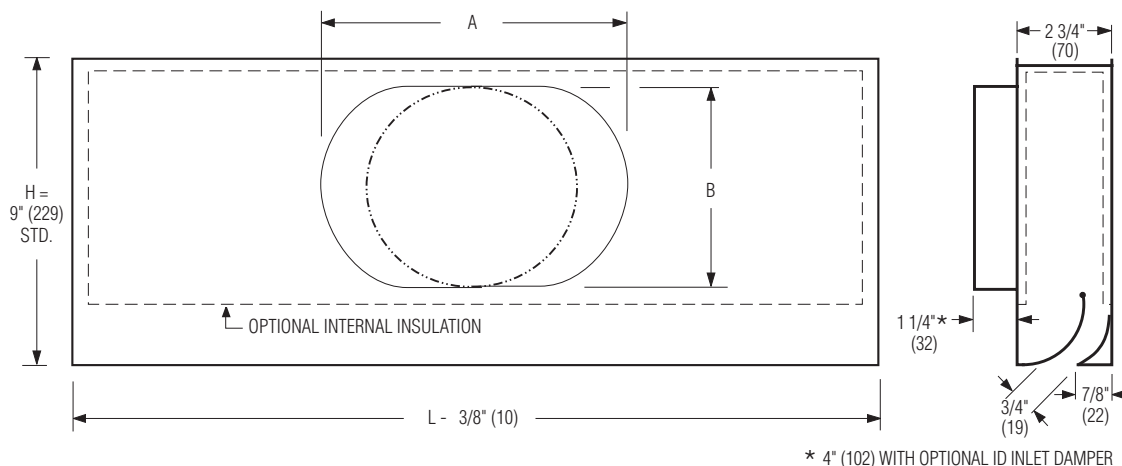
**OPTIONS AND ACCESSORIES:**

- Internal insulation (add suffix 'I' to model number).
- EQT Earthquake Tabs.
- Low height 7" (178) option when space is a restriction.
- High profile 11" (279) height option.
- Extended 3" (76) inlet collar with bead. The extended collar is also available with a Diamond Flow Sensor.
- For additional options and accessories, see page C79.

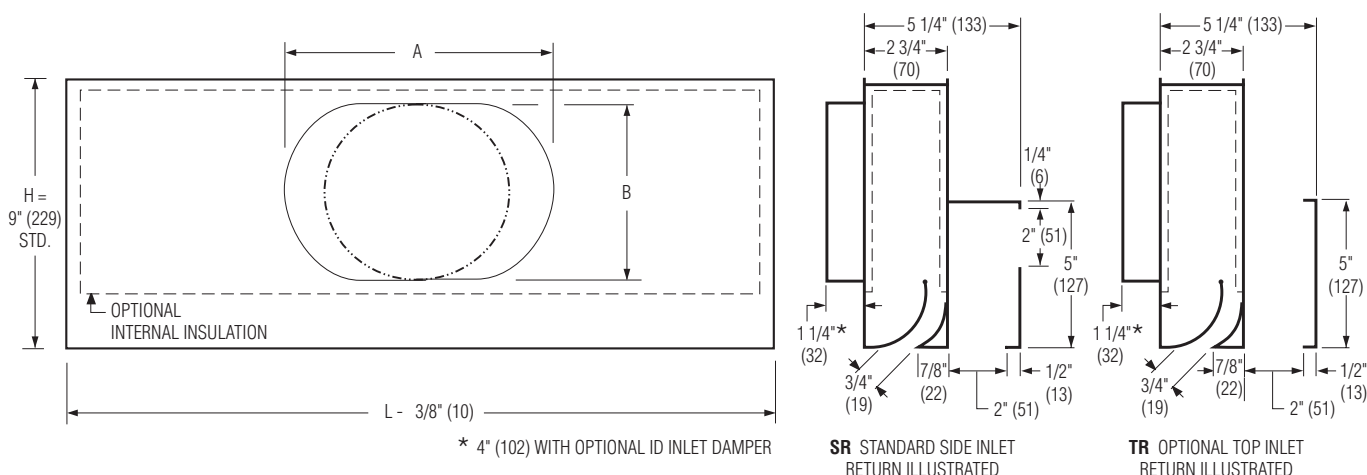
## DIMENSIONAL DATA:

### MODELS: 59N(I) AND 59NR(I)

#### Supply • Models 59N(I)



#### Supply/Return • Models 59NR(I)



Nominal Length L		Available Inlet Sizes
Imperial Modules	Metric Modules	
24 (610)	600	6, 8, 10 (152, 203, 254)
36 (914)	900	
48 (1219)	1200	
60 (1524)	1500	

Nominal Inlet Size	Std. Dimension H = 9		Opt. Dimension H = 11		Opt. Dimension H = 7	
	A	B	A	B	A	B
6 (152)	—	5 7/8 (149)	—	5 7/8 (149)	7 (178)	4 (102)
8 (203)	9 (229)	5 7/8 (149)	—	7 7/8 (200)	10 1/8 (257)	4 (102)
10 (254)	12 1/8 (308)	5 7/8 (149)	11 (279)	7 7/8 (200)	13 1/4 (337)	4 (102)

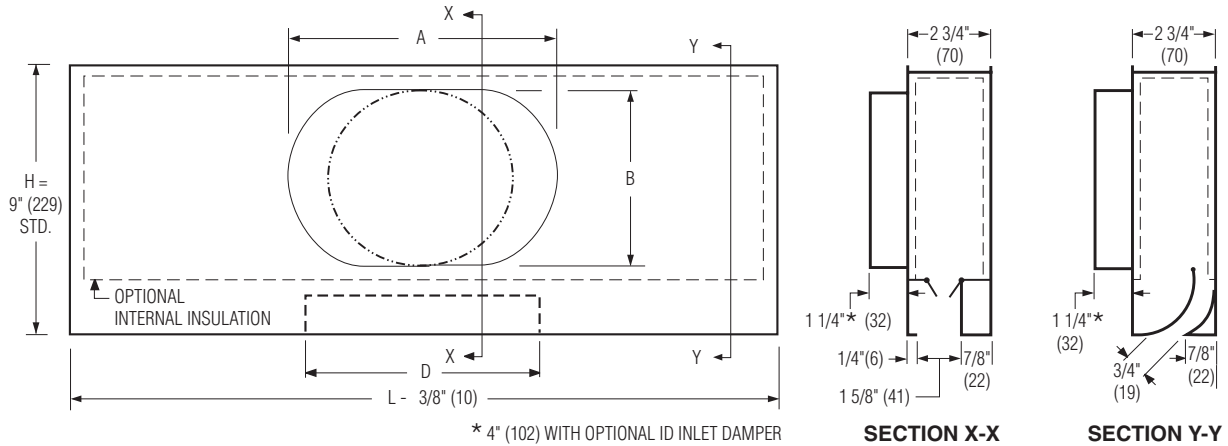
Inlets are round or oval as dimensioned.

Dimensions are in inches (mm).

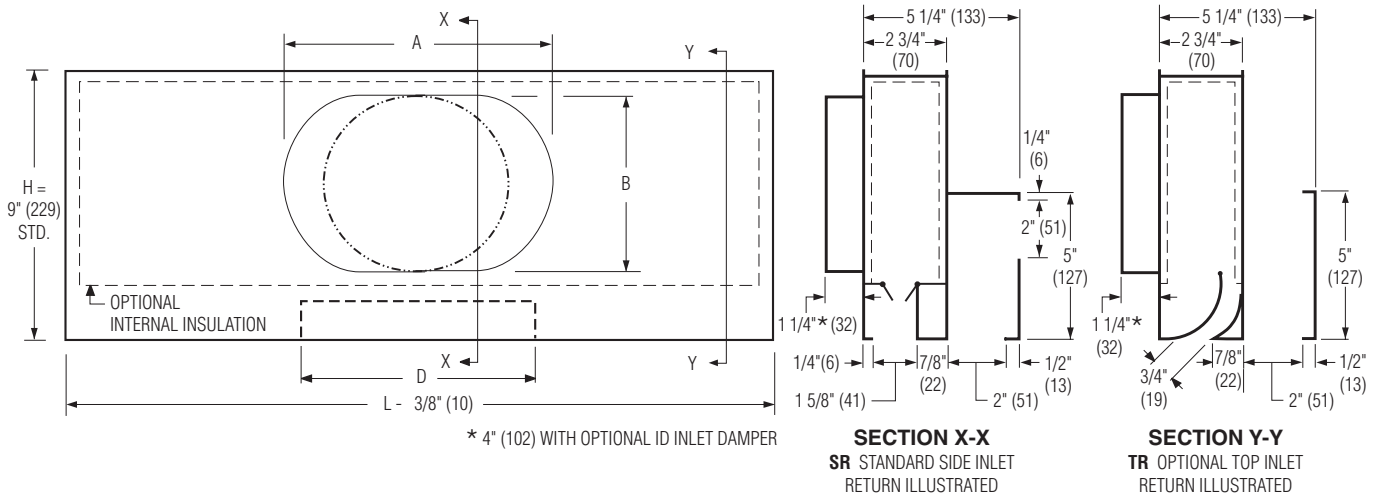
## DIMENSIONAL DATA:

### MODELS: 59ND(I) AND 59NDR(I)

#### Supply • Models 59ND(I)



#### Supply/Return • Models 59NDR(I)



Nominal Length L		Available Down-Blow Slot Dim. D	Available Inlet Sizes
Imperial Modules	Metric Modules		
24 (610)	600	8, 12 (203, 305)	6, 8, 10 (152, 203, 254)
36 (914)	900	12, 15 (305, 381)	
48 (1219)	1200	12, 15, 18 (305, 381, 457)	
60 (1524)	1500	15, 18, 21 (381, 457, 533)	

Nominal Inlet Size	Std. Dimension H = 9		Opt. Dimension H = 11		Opt. Dimension H = 7	
	A	B	A	B	A	B
6 (152)	—	5 7/8 (149)	—	5 7/8 (149)	7 (178)	4 (102)
8 (203)	9 (229)	5 7/8 (149)	—	7 7/8 (200)	10 1/8 (257)	4 (102)
10 (254)	12 1/8 (308)	5 7/8 (149)	11 (279)	7 7/8 (200)	13 1/4 (337)	4 (102)

Inlets are round or oval as dimensioned.

Dimensions are in inches (mm).

**PERFORMANCE DATA**

**MODELS 59N(I) AND 59NR(I) • HORIZONTAL PATTERN • 9" (229) HIGH PLENUM (STD.)**

**24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.039	.070	.110	.158	.215	.281	.355	.439
	Static Pressure	.033	.059	.093	.134	.182	.238	.303	.372
	Noise Criteria	–	16	22	27	31	34	36	39
	Horizontal Throw	3-5-13	5-9-15	6-11-17	8-12-19	10-15-20	11-14-21	12-16-23	13-17-24
<b>8" Oval Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.023	.041	.064	.092	.125	.163	.207	.255
	Static Pressure	.021	.038	.059	.084	.115	.150	.190	.234
	Noise Criteria	–	–	17	23	26	29	31	34
	Horizontal Throw	3-5-13	5-9-15	6-11-17	8-12-19	10-15-20	11-14-21	13-16-23	13-17-24

**36" (914) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.057	.101	.157	.227	.309	.403	.511	.630
	Static Pressure	.044	.078	.121	.174	.237	.310	.393	.484
	Noise Criteria	–	20	26	29	32	35	39	43
	Horizontal Throw	4-8-16	7-11-18	8-13-21	11-16-23	12-17-25	13-18-26	15-19-27	16-20-29
<b>8" Oval Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.035	.062	.096	.139	.189	.247	.312	.386
	Static Pressure	.030	.053	.082	.118	.161	.211	.267	.329
	Noise Criteria	–	–	22	25	28	32	35	39
	Horizontal Throw	4-8-16	7-11-18	8-13-21	11-16-23	12-17-25	13-18-26	15-19-27	16-20-29

**48" (1219) Long**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.039	.069	.107	.155	.211	.275	.348	.430
	Static Pressure	.030	.053	.083	.119	.162	.211	.268	.330
	Noise Criteria	–	–	20	24	29	33	36	40
	Horizontal Throw	5-9-18	8-13-22	10-15-24	13-18-26	16-20-28	17-21-30	18-22-32	20-24-33
<b>10" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.028	.050	.079	.113	.154	.201	.255	.315
	Static Pressure	.024	.042	.066	.095	.130	.169	.214	.264
	Noise Criteria	–	–	18	22	27	30	33	37
	Horizontal Throw	5-9-18	8-13-22	10-15-24	13-18-26	16-20-28	17-21-30	18-22-32	20-24-33

**60" (1524) Long**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.048	.085	.133	.191	.260	.340	.430	.532
	Static Pressure	.034	.060	.094	.135	.184	.241	.305	.376
	Noise Criteria	–	17	23	27	32	36	39	43
	Horizontal Throw	8-12-20	10-15-24	13-19-26	14-20-29	18-22-31	19-23-33	20-25-35	22-27-36
<b>10" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.034	.061	.095	.137	.187	.244	.309	.381
	Static Pressure	.027	.048	.075	.108	.148	.193	.244	.301
	Noise Criteria	–	15	20	24	29	32	35	39
	Horizontal Throw	8-12-20	10-15-24	13-19-26	14-20-29	18-22-31	19-23-33	20-25-35	22-27-36

**Return Section**

<b>R Models</b>	Airflow, CFM/ft.	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

**Performance Data Notes:**

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g..
3. Tested with one-way fixed horizontal discharge in the direction of the inlet and center down-blow deflector full open. Straight flexible duct connection.
4. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (–) in space denotes a Noise Criteria level less than 15.
5. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

**PERFORMANCE DATA:**

**MODELS 59ND(I) & 59NDR(I) • HORIZONTAL/VERTICAL PATTERN • 9" (229) HIGH PLENUM (STD.)**

**24" (610) Long with 8" (203) Down-Blow**

<b>6" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.035	.059	.089	.122	.162	.205	.253	.307
	Static Pressure	.029	.048	.071	.097	.127	.160	.196	.236
	Noise Criteria	–	–	16	21	26	31	34	37
	Horizontal Throw	4-8-7	7-11-20	9-15-23	12-17-25	14-20-28	16-21-29	18-23-31	19-23-32
	Vertical Throw	1-3-7	2-4-9	3-6-10	4-7-12	5-8-13	6-9-14	7-10-14	8-11-15
<b>8" Oval Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.024	.041	.061	.085	.111	.142	.175	.213
	Static Pressure	.022	.037	.055	.076	.099	.126	.155	.188
	Noise Criteria	–	–	–	18	21	25	28	31
	Horizontal Throw	4-8-7	7-11-20	9-15-23	12-17-25	14-20-28	16-21-29	18-23-31	19-23-32
	Vertical Throw	1-3-7	2-4-9	3-6-10	4-7-12	5-8-13	6-9-14	7-10-14	8-11-15

**36" (914) Long with 12" (305) Down-Blow**

<b>6" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.057	.095	.143	.198	.262	.333	.413	.501
	Static Pressure	.043	.070	.103	.141	.184	.231	.284	.342
	Noise Criteria	18	22	27	31	35	38	42	45
	Horizontal Throw	2-5-13	4-8-17	6-11-20	8-14-23	10-16-25	12-18-27	14-20-28	15-21-29
	Vertical Throw	2-5-12	4-7-15	6-10-18	8-12-21	9-14-23	10-16-25	12-17-27	13-19-28
<b>8" Oval Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.032	.054	.082	.115	.155	.198	.248	.302
	Static Pressure	.027	.045	.068	.095	.127	.162	.202	.246
	Noise Criteria	–	–	18	23	27	30	34	37
	Horizontal Throw	2-5-13	4-8-17	6-11-20	8-14-23	10-16-25	12-18-27	14-20-28	15-21-29
	Vertical Throw	2-5-12	4-7-15	6-10-18	8-12-21	9-14-23	10-16-25	12-17-27	13-19-28

**48" (1219) Long with 12" (305) Down-Blow**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.044	.077	.118	.167	.224	.290	.364	.446
	Static Pressure	.035	.061	.093	.131	.175	.226	.283	.346
	Noise Criteria	–	19	24	28	32	36	39	42
	Horizontal Throw	4-8-16	6-11-20	9-14-23	11-17-26	13-19-29	15-21-31	16-23-32	18-24-34
	Vertical Throw	3-6-14	5-8-17	7-11-21	8-13-24	10-16-26	12-18-29	13-20-30	15-22-32
<b>10" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.041	.069	.106	.148	.198	.255	.318	.389
	Static Pressure	.036	.061	.093	.130	.173	.222	.277	.338
	Noise Criteria	–	–	16	22	26	30	34	37
	Horizontal Throw	4-8-16	6-11-20	9-14-23	11-17-26	13-19-29	15-21-31	16-23-32	18-24-34
	Vertical Throw	3-6-14	5-8-17	7-11-21	8-13-24	10-16-26	12-18-29	13-20-30	15-22-32

**60" (1524) Long with 15" (381) Down-Blow**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.050	.088	.135	.192	.260	.337	.424	.521
	Static Pressure	.036	.063	.096	.136	.184	.237	.298	.365
	Noise Criteria	–	20	26	31	36	40	43	46
	Horizontal Throw	4-6-13	5-8-17	7-11-21	8-13-24	10-15-26	11-17-28	13-19-30	14-21-31
	Vertical Throw	5-8-17	7-12-21	10-15-25	12-18-28	14-20-30	16-22-32	18-24-34	20-25-35
<b>10" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.052	.087	.129	.179	.235	.299	.369	.447
	Static Pressure	.045	.074	.109	.150	.196	.248	.305	.368
	Noise Criteria	–	18	23	27	31	35	39	42
	Horizontal Throw	4-6-13	5-8-17	7-11-21	8-13-24	10-15-26	11-17-28	13-19-30	14-21-31
	Vertical Throw	5-8-17	7-12-21	10-15-25	12-18-28	14-20-30	16-22-32	18-24-34	20-25-35

**Return Section**

<b>R Models</b>	Airflow, CFM/ft.	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

See page C73 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA:**

**MODELS 59ND(I) & 59NDR(I) • HORIZONTAL/VERTICAL PATTERN • 9" (229) HIGH PLENUM (STD.)**

**36" (914) Long with 15" (381) Down-Blow**

<b>6" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.050	.086	.132	.184	.247	.317	.396	.483
	Static Pressure	.036	.061	.092	.127	.169	.215	.267	.324
	Noise Criteria	15	21	26	30	35	38	42	44
	Horizontal Throw	2-5-13	4-8-17	6-10-21	7-13-24	9-15-27	11-17-29	13-19-31	14-21-33
	Vertical Throw	2-5-13	4-8-16	6-10-18	8-13-20	10-15-22	12-17-23	14-19-23	16-21-23
<b>8" Oval Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.030	.051	.079	.111	.150	.193	.243	.296
	Static Pressure	.025	.042	.065	.091	.122	.157	.197	.240
	Noise Criteria	–	15	20	24	28	32	35	37
	Horizontal Throw	2-5-13	4-8-17	6-10-21	7-13-24	9-15-27	11-17-29	13-19-31	14-21-33
	Vertical Throw	2-5-13	4-8-16	6-10-18	8-13-20	10-15-22	12-17-23	14-19-23	16-21-23

**48" (1219) Long with 15" (381) Down-Blow**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.039	.068	.104	.148	.199	.258	.323	.396
	Static Pressure	.030	.052	.079	.112	.150	.194	.242	.296
	Noise Criteria	–	15	21	26	30	34	37	40
	Horizontal Throw	3-6-12	5-8-15	6-9-19	8-11-21	9-13-24	10-15-26	11-17-28	13-19-29
	Vertical Throw	3-6-15	5-9-18	7-12-22	9-15-25	11-17-27	13-19-30	14-21-31	16-23-32
<b>10" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.037	.063	.095	.133	.179	.230	.286	.350
	Static Pressure	.032	.055	.082	.115	.154	.197	.245	.299
	Noise Criteria	–	–	19	23	27	31	34	38
	Horizontal Throw	3-6-12	5-8-15	6-9-19	8-11-21	9-13-24	10-15-26	11-17-28	13-19-29
	Vertical Throw	3-6-15	5-9-18	7-12-22	9-15-25	11-17-27	13-19-30	14-21-31	16-23-32

**48" (1219) Long with 18" (457) Down-Blow**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.038	.066	.102	.145	.194	.251	.315	.387
	Static Pressure	.029	.050	.077	.109	.145	.187	.234	.287
	Noise Criteria	–	16	21	26	30	34	37	40
	Horizontal Throw	4-6-11	5-7-15	6-9-19	7-11-22	9-13-25	10-15-27	11-17-29	12-19-31
	Vertical Throw	2-5-14	5-8-18	7-11-21	8-14-24	10-16-26	12-18-28	14-20-30	15-22-31
<b>10" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.039	.065	.099	.138	.184	.236	.293	.357
	Static Pressure	.034	.057	.086	.120	.159	.203	.252	.306
	Noise Criteria	–	15	20	24	28	32	35	38
	Horizontal Throw	4-6-11	5-7-15	6-9-19	7-11-22	9-13-25	10-15-27	11-17-29	12-19-31
	Vertical Throw	2-5-14	5-8-18	7-11-21	8-14-24	10-16-26	12-18-28	14-20-30	15-22-31

**60" (1524) Long with 18" (457) Down-Blow**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.051	.090	.139	.198	.268	.348	.438	.539
	Static Pressure	.037	.065	.100	.142	.192	.248	.312	.383
	Noise Criteria	15	21	26	31	36	40	43	46
	Horizontal Throw	5-8-16	7-11-20	9-14-23	11-16-26	13-19-28	15-20-30	16-22-32	18-23-33
	Vertical Throw	3-6-12	5-8-16	6-10-20	8-12-23	9-14-26	11-16-28	12-18-30	13-20-32
<b>10" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.043	.076	.115	.163	.218	.281	.351	.430
	Static Pressure	.036	.063	.095	.134	.179	.230	.287	.351
	Noise Criteria	–	15	21	27	32	36	39	42
	Horizontal Throw	5-8-16	7-11-20	9-14-23	11-16-26	13-19-28	15-20-30	16-22-32	18-23-33
	Vertical Throw	3-6-12	5-8-16	6-10-20	8-12-23	9-14-26	11-16-28	12-18-30	13-20-32

**Return Section**

<b>R Models</b>	Airflow, CFM/ft.	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

See page C73 for performance data notes.



**PERFORMANCE DATA**

**MODELS 59ND(I) & 59NDR(I) • HORIZONTAL/VERTICAL PATTERN • 7" (178) HIGH PLENUM (OPT.)**

**24" (610) Long with 8" Down-Blow**

<b>6" Oval Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.050	.082	.119	.162	.209	.263	.321	.385
	Static Pressure	.043	.068	.098	.131	.168	.208	.252	.300
	Noise Criteria	–	–	23	26	29	33	37	40
	Horizontal Throw	2-4-11	4-7-14	5-9-17	7-11-20	9-13-22	10-15-24	12-17-26	13-18-27
	Vertical Throw	2-3-11	4-6-14	5-8-16	6-10-18	7-12-20	8-13-22	10-15-23	11-16-24
<b>8" Oval Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.036	.059	.086	.118	.154	.194	.238	.287
	Static Pressure	.033	.053	.077	.104	.135	.170	.208	.249
	Noise Criteria	–	–	20	23	26	29	33	36
	Horizontal Throw	2-4-11	4-7-14	5-9-17	7-11-20	9-13-22	10-15-24	12-17-26	13-18-27
	Vertical Throw	2-3-11	4-6-14	5-8-16	6-10-18	7-12-20	8-13-22	10-15-23	11-16-24

**36" (914) Long with 12" Down-Blow**

<b>6" Oval Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.054	.093	.141	.198	.264	.340	.424	.518
	Static Pressure	.037	.062	.093	.129	.170	.217	.269	.326
	Noise Criteria	–	22	26	30	34	38	41	46
	Horizontal Throw	3-5-11	4-7-15	6-9-18	7-11-21	8-13-24	10-14-26	11-16-28	12-17-30
	Vertical Throw	2-4-11	3-6-15	5-9-19	6-11-14	8-9-16	9-10-17	11-11-19	8-11-20
<b>8" Oval Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.048	.082	.122	.170	.224	.286	.355	.430
	Static Pressure	.041	.068	.101	.139	.183	.231	.286	.345
	Noise Criteria	–	–	22	26	30	33	37	40
	Horizontal Throw	3-5-11	4-7-15	6-9-19	7-11-21	8-13-24	10-14-26	11-16-28	12-17-30
	Vertical Throw	2-4-11	3-6-15	5-9-19	6-11-14	8-9-16	9-10-17	11-11-19	8-11-20

**48" (1219) Long with 12" Down-Blow**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.063	.108	.164	.232	.310	.400	.501	.613
	Static Pressure	.049	.084	.127	.177	.236	.303	.379	.462
	Noise Criteria	–	20	24	28	32	36	40	43
	Horizontal Throw	7-11-20	9-14-24	11-16-27	12-19-30	14-21-32	16-23-34	17-25-36	19-26-37
	Vertical Throw	3-5-11	5-7-14	7-10-17	8-12-19	10-14-22	12-16-23	13-18-24	15-19-25
<b>10" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.047	.083	.128	.183	.248	.322	.406	.500
	Static Pressure	.039	.069	.107	.153	.207	.268	.338	.416
	Noise Criteria	–	–	21	25	29	33	37	41
	Horizontal Throw	7-11-20	9-14-24	11-16-27	12-19-30	14-21-32	16-23-34	17-25-36	19-26-37
	Vertical Throw	3-5-11	5-7-14	7-10-17	8-12-19	10-14-22	12-16-23	13-18-24	15-19-25

**60" (1524) Long with 15" Down-Blow**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.078	.136	.207	.292	.392	.506	.635	.778
	Static Pressure	.057	.098	.148	.207	.277	.355	.444	.542
	Noise Criteria	–	24	29	33	37	41	45	48
	Horizontal Throw	4-8-15	7-11-19	9-14-22	11-16-25	13-18-27	15-20-29	16-22-31	18-23-32
	Vertical Throw	3-5-13	5-8-16	7-11-19	9-14-22	11-16-25	13-18-27	15-20-28	16-22-29
<b>10" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.071	.123	.188	.267	.358	.462	.579	.709
	Static Pressure	.059	.102	.155	.219	.293	.377	.472	.577
	Noise Criteria	–	21	26	30	34	38	42	45
	Horizontal Throw	4-8-15	7-11-19	9-14-22	11-16-25	13-18-27	15-20-29	16-22-31	18-23-32
	Vertical Throw	3-5-13	5-8-16	7-11-19	9-14-22	11-16-25	13-18-27	15-20-28	16-22-29

**Return Section**

<b>R Models</b>	Airflow, CFM/ft.	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

See page C73 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**PERFORMANCE DATA**

**MODELS 59ND(I) & 59NDR(I) • HORIZONTAL/VERTICAL PATTERN • 7" (178) HIGH PLENUM (OPT.)**

**36" (914) Long with 15" Down-Blow**

<b>6" Oval Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.060	.102	.153	.213	.281	.359	.446	.541
	Static Pressure	.043	.071	.105	.144	.187	.236	.290	.349
	Noise Criteria	–	–	23	27	31	35	38	42
	Horizontal Throw	2-3-10	3-5-14	4-7-17	5-8-19	6-10-22	7-12-24	9-13-26	10-15-28
	Vertical Throw	1-3-9	2-3-10	3-4-15	4-5-18	5-7-20	6-8-22	6-9-24	7-10-25
<b>8" Oval Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.046	.078	.116	.161	.213	.271	.336	.407
	Static Pressure	.038	.064	.095	.131	.171	.217	.267	.322
	Noise Criteria	–	–	22	26	30	33	36	40
	Horizontal Throw	2-3-10	3-5-14	4-7-17	5-8-19	6-10-22	7-12-24	9-13-26	10-15-28
	Vertical Throw	1-3-9	2-3-10	3-4-15	4-5-18	5-7-20	6-8-22	6-9-24	7-10-25

**48" (1219) Long with 15" Down-Blow**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.057	.099	.150	.211	.281	.362	.452	.552
	Static Pressure	.044	.074	.112	.156	.207	.265	.330	.401
	Noise Criteria	–	–	23	27	31	34	38	42
	Horizontal Throw	7-10-17	9-13-21	10-15-24	12-17-27	13-19-29	15-21-31	16-23-33	17-24-34
	Vertical Throw	2-4-11	4-6-14	6-9-17	7-11-20	9-13-22	11-15-23	12-17-25	14-19-25
<b>10" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.050	.086	.131	.184	.245	.315	.394	.481
	Static Pressure	.043	.073	.110	.153	.204	.262	.326	.397
	Noise Criteria	–	–	22	26	29	33	37	40
	Horizontal Throw	7-10-17	9-13-21	10-15-24	12-17-27	13-19-29	15-21-31	16-23-33	17-24-34
	Vertical Throw	2-4-11	4-6-14	6-9-17	7-11-20	9-13-22	11-15-23	12-17-25	14-19-25

**48" (1219) Long with 18" Down-Blow**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.056	.096	.146	.205	.273	.350	.437	.533
	Static Pressure	.042	.072	.108	.150	.199	.254	.314	.382
	Noise Criteria	–	20	24	27	31	35	38	42
	Horizontal Throw	2-4-11	4-6-14	5-9-18	7-11-21	8-13-23	10-14-26	11-16-28	12-18-29
	Vertical Throw	2-3-7	4-4-9	3-6-12	5-7-14	5-9-15	7-9-17	7-11-19	8-12-19
<b>10" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.052	.089	.134	.188	.249	.318	.396	.482
	Static Pressure	.045	.076	.113	.157	.208	.265	.328	.398
	Noise Criteria	–	–	22	25	29	33	36	40
	Horizontal Throw	2-4-11	4-6-14	5-9-18	7-11-21	8-13-23	10-14-26	11-16-28	12-18-29
	Vertical Throw	2-3-7	4-4-9	3-6-12	5-7-14	5-9-15	7-9-17	7-11-19	8-12-19

**60" (1524) Long with 18" Down-Blow**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.072	.124	.189	.267	.357	.460	0.576	0.705
	Static Pressure	.051	.086	.130	.182	.242	.309	0.385	0.469
	Noise Criteria	–	23	28	32	37	40	44	48
	Horizontal Throw	7-19-17	8-14-21	10-15-24	14-18-27	14-20-29	16-22-32	18-23-34	20-25-35
	Vertical Throw	3-6-14	5-9-17	7-12-20	9-14-23	11-16-25	13-18-27	14-20-28	16-22-29
<b>10" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.064	.110	.167	.234	.312	.401	0.501	0.612
	Static Pressure	.052	.089	.134	.187	.248	.317	0.395	0.480
	Noise Criteria	–	21	25	30	34	38	42	45
	Horizontal Throw	7-19-17	8-14-21	10-15-24	14-18-27	14-20-29	16-22-32	18-23-34	20-25-35
	Vertical Throw	3-6-14	5-9-17	7-12-20	9-14-23	11-16-25	13-18-27	14-20-28	16-22-29

**Return Section**

<b>R Models</b>	Airflow, CFM/ft.	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

See page C73 for performance data notes.

**PERFORMANCE DATA:**

**MODELS 59ND(I) & 59NDR(I) • HORIZONTAL/VERTICAL PATTERN • 11" (279) HIGH PLENUM (OPT.)  
24" (610) Long with 8" (203) Down-Blow**

<b>6" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.028	.050	.078	.112	.152	.199	.251	.310
	Static Pressure	.022	.039	.061	.088	.120	.157	.199	.245
	Noise Criteria	–	–	15	20	25	30	33	36
	Horizontal Throw	4-8-7	7-11-20	9-15-23	12-17-25	14-20-28	16-21-29	18-23-31	19-23-32
	Vertical Throw	1-3-7	2-4-9	3-6-10	4-7-12	5-8-13	6-9-14	7-10-14	8-11-15
<b>8" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.019	.034	.053	.076	.104	.136	.172	.212
	Static Pressure	.017	.031	.048	.069	.094	.123	.155	.192
	Noise Criteria	–	–	–	15	20	25	28	31
	Horizontal Throw	4-8-7	7-11-20	9-15-23	12-17-25	14-20-28	16-21-29	18-23-31	19-23-32
	Vertical Throw	1-3-7	2-4-9	3-6-10	4-7-12	5-8-13	6-9-14	7-10-14	8-11-15

**36" (914) Long with 12" (305) Down-Blow**

<b>6" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.040	.070	.110	.159	.216	.282	.357	.441
	Static Pressure	.027	.047	.074	.107	.145	.190	.240	.296
	Noise Criteria	–	15	21	26	31	34	38	41
	Horizontal Throw	2-5-13	4-8-17	6-11-20	8-14-23	10-16-25	12-18-27	14-20-28	15-21-29
	Vertical Throw	2-5-12	4-7-15	6-10-18	8-12-21	9-14-23	10-16-25	12-17-27	13-19-28
<b>8" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.023	.040	.063	.090	.123	.160	.203	.250
	Static Pressure	.018	.033	.051	.073	.100	.131	.165	.204
	Noise Criteria	–	–	15	20	25	28	32	35
	Horizontal Throw	2-5-13	4-8-17	6-11-20	8-14-23	10-16-25	12-18-27	14-20-28	15-21-29
	Vertical Throw	2-5-12	4-7-15	6-10-18	8-12-21	9-14-23	10-16-25	12-17-27	13-19-28

**48" (1219) Long with 12" (305) Down-Blow**

<b>8" Round Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.037	.065	.102	.147	.200	.261	.331	.408
	Static Pressure	.029	.052	.082	.118	.160	.209	.264	.327
	Noise Criteria	–	16	21	25	29	33	36	39
	Horizontal Throw	4-8-16	6-11-20	9-14-23	11-17-26	13-19-29	15-21-31	16-23-32	18-24-34
	Vertical Throw	3-6-14	5-8-17	7-11-21	8-13-24	10-16-26	12-18-29	13-20-30	15-22-32
<b>10" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.024	.043	.067	.097	.132	.172	.217	.268
	Static Pressure	.021	.038	.059	.084	.115	.150	.190	.235
	Noise Criteria	–	–	–	19	23	27	31	34
	Horizontal Throw	4-8-16	6-11-20	9-14-23	11-17-26	13-19-29	15-21-31	16-23-32	18-24-34
	Vertical Throw	3-6-14	5-8-17	7-11-21	8-13-24	10-16-26	12-18-29	13-20-30	15-22-32

**60" (1524) Long with 15" (381) Down-Blow**

<b>8" Round Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.039	.069	.108	.156	.213	.278	.352	.434
	Static Pressure	.028	.049	.076	.110	.150	.196	.248	.306
	Noise Criteria	–	–	20	25	30	34	37	40
	Horizontal Throw	4-6-13	5-8-17	7-11-21	8-13-24	10-15-26	11-17-28	13-19-30	14-21-31
	Vertical Throw	5-8-17	7-12-21	10-15-25	12-18-28	14-20-30	16-22-32	18-24-34	20-25-35
<b>10" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.026	.047	.073	.106	.144	.188	.188	.293
	Static Pressure	.022	.039	.060	.087	.118	.154	.154	.241
	Noise Criteria	–	–	–	21	26	30	33	36
	Horizontal Throw	4-6-13	5-8-17	7-11-21	8-13-24	10-15-26	11-17-28	13-19-30	14-21-31
	Vertical Throw	5-8-17	7-12-21	10-15-25	12-18-28	14-20-30	16-22-32	18-24-34	20-25-35

**Return Section**

<b>R Models</b>	Airflow, CFM/ft.	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>
	Negative Static Pressure	–.010	–.018	–.027	–.038	–.050	–.063	–.079	–.098

See page C73 for performance data notes.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

## PERFORMANCE DATA NOTES:

### Model Series 5700

#### Performance Data Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g..
3. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
4. Noise Criteria [NC] values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes an Noise Criteria level less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

### Models 59ND(I),59NDR(I)

#### Performance Data Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. Total and Static Pressure are in inches w.g.
3. Noise Criteria (values) based on 10 dB room absorption, re 10<sup>-12</sup> watts.
4. Dash ( — ) in space indicates an NC level of less than 15.
5. Tested with one-way fixed horizontal discharge in the direction of the inlet and center down-blow deflector full open. Straight flexible duct connection.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70–2006.

**59BS SERIES**

- FOR STANDARD LAY-IN T-BAR
- PREMIUM PERFORMANCE
- ADJUSTABLE VERTICAL DISCHARGE

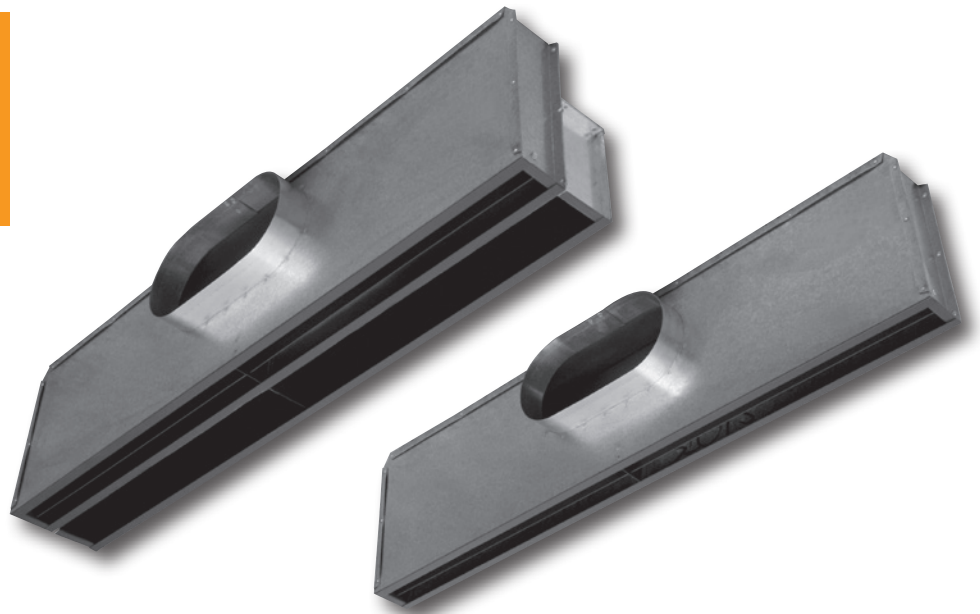
**Supply Model:**

**59BS(I)**

**Supply/Return Model:**

**59BSR(I)**

- Suffix 'I' adds internal insulation



Models 59BSR and 59BS

Model Series 59BS Plenum Slot Diffusers have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, offering an extremely unobtrusive method of air distribution. This series provides premium performance in perimeter curtain wall applications and is available in a supply and a supply/return combination. This series is suitable for variable air volume, heating and cooling applications.

All diffusers include extruded aluminum pattern controllers that provide an adjustable vertical discharge along the wall or glass in perimeter applications.

An integral return air section, which returns room air in the ceiling plenum with minimal short-circuiting of supply air is provided on Models 59BSR and 59BSRI.

**STANDARD FEATURES:**

- Adjustable pattern controller that provides a vertical discharge.
- Choice of either a supply or a supply/return combination.
- Available in 24", 36", 48" and 60" (600, 900, 1200 and 1500 mm) nominal lengths, to suit both imperial and metric ceiling grids.

- Standard H9 plenum height is 9" (229).
- Standard inlet sizes are 6" (152) round, 8" (203) and 10" (254) flat oval.

**CONSTRUCTION MATERIAL:**

Corrosion-resistant steel plenum, extruded aluminum pattern controllers.

**FINISH OPTIONS:**

Black on pattern controllers and exposed surfaces.

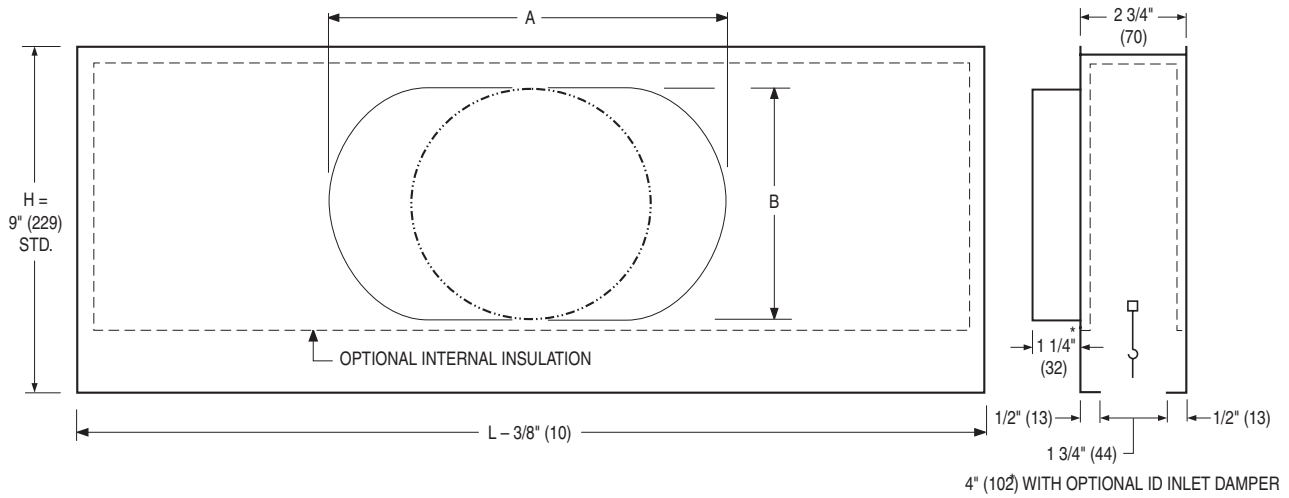
**OPTIONS AND ACCESSORIES:**

- Internal insulation (add suffix 'I' to model number).
- EQT Earthquake Tabs.
- Low height 7" (178) option when space is a restriction.
- High profile 11" (279) height option.
- Extended 3" (76) inlet collar with bead. The extended collar is also available with a Diamond Flow Sensor.
- For additional options and accessories, see page C79.

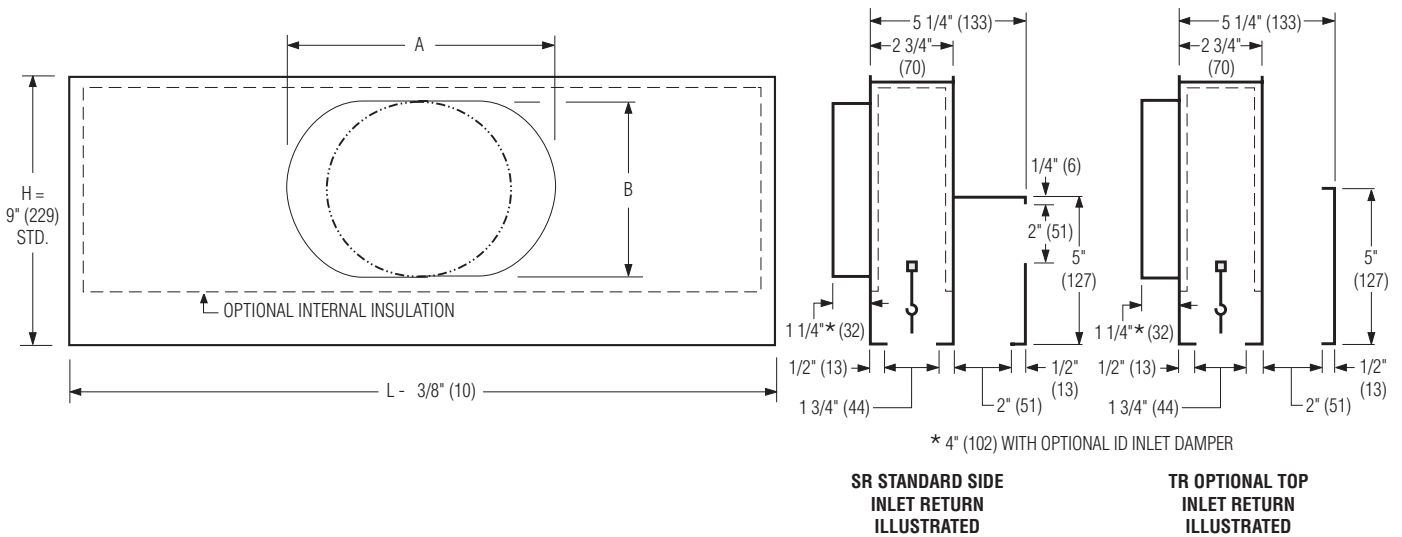
## DIMENSIONAL DATA:

### MODELS: 59BS(I) AND 59BSR(I)

#### Supply • Models 59BS(I)



#### Supply/Return • Models 59BSR(I)



\* 4" (102) WITH OPTIONAL ID INLET DAMPER

SR STANDARD SIDE  
INLET RETURN  
ILLUSTRATED

TR OPTIONAL TOP  
INLET RETURN  
ILLUSTRATED

Nominal Length L		Available Inlet Sizes
Imperial Modules	Metric Modules	
24 (610)	600	6, 8, 10 (152, 203, 254)
36 (914)	900	
48 (1219)	1200	
60 (1524)	1500	

Nominal Inlet Size	Std. Dimension H = 9		Opt. Dimension H = 11		Opt. Dimension H = 7	
	A	B	A	B	A	B
6 (152)	—	5 7/8 (149)	—	5 7/8 (149)	7 (178)	4 (102)
8 (203)	9 (229)	5 7/8 (149)	—	7 7/8 (200)	10 1/8 (257)	4 (102)
10 (254)	12 1/8 (308)	5 7/8 (149)	11 (279)	7 7/8 (200)	13 1/4 (337)	4 (102)

Inlets are round or oval as dimensioned.



**PERFORMANCE DATA:**

**MODELS: 59BS(I) and 59BSR(I) • VERTICAL PATTERN**

**24" (610) Long**

<b>6" Round Inlet</b>	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>
	Total Pressure	.018	.033	.051	.073	.100	.130	.165	.204
	Static Pressure	.012	.022	.035	.050	.068	.088	.112	.138
	Noise Criteria	–	–	–	–	–	20	25	29
	Vertical Throw	5	6	7	8	9	9	10	11

**36" (914) Long**

<b>8" Round Inlet</b>	Airflow, CFM	<b>90</b>	<b>120</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>240</b>	<b>270</b>	<b>300</b>
	Total Pressure	.016	.028	.043	.062	.085	.111	.140	.173
	Static Pressure	.011	.020	.032	.046	.062	.081	.103	.127
	Noise Criteria	–	–	–	–	–	20	23	27
	Vertical Throw	6	7	8	9	10	11	12	13

**48" (1219) Long**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>120</b>	<b>160</b>	<b>200</b>	<b>240</b>	<b>280</b>	<b>320</b>	<b>360</b>	<b>400</b>
	Total Pressure	.024	.042	.066	.094	.129	.168	.212	.262
	Static Pressure	.016	.029	.045	.065	.088	.115	.146	.180
	Noise Criteria	–	–	–	–	20	24	26	31
	Vertical Throw	7	9	10	11	12	13	14	15

**60" (1524) Long**

<b>8" Oval Inlet</b>	Airflow, CFM	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	Total Pressure	.029	.051	.080	.115	.157	.205	.259	.320
	Static Pressure	.017	.031	.048	.069	.094	.123	.156	.192
	Noise Criteria	–	–	–	–	22	27	32	37
	Vertical Throw	8	10	11	12	13	14	15	17

**Return Section**

<b>R Models</b>	Airflow, CFM/Ft.	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

**Performance Notes:**

- Vertical throws are given at 50 fpm terminal velocities for a free jet under isothermal conditions.
- Throw correction factors for different  $\Delta T$ 's.  
 20°F cooling x 1.40  
 10°F heating x 0.85  
 15°F heating x 0.72  
 20°F heating x 0.60
- All pressures are in inches w.g..
- Tested with pattern controller set fully open for vertical discharge. Straight flexible duct connection.
- Noise Criteria [NC] values based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (–) in space denotes an Noise Criteria level less than 15.
- Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**HOW TO ORDER OR TO SPECIFY**

**MODEL SERIES: 59N 'N-SLOT' AND 59BS 'BS-SLOT' PLENUM SLOT DIFFUSERS**

**EXAMPLE: 59NDR - 48 - 08 - H9 - D15 - SR - -**

**1. Model Series**

- 59N(I) Supply
  - 59NR(I) Supply/Return
  - 59ND(I) Supply with Down Blow
  - 59NDR(I) Supply/Return with Down Blow
  - 59NDR-SPL Supply/Return with Down Blow
  - 59BS(I) Supply
  - 59BSR(I) Supply/Return
- (Add suffix "I" for optional internal insulation)

**2. Nominal Length**

- Imperial Sizes**  
 inches (mm's)  
 24, 36, 48, 60  
 (610, 914, 1219, 1524)
- Metric Sizes**  
 (mm's)  
 (600, 900, 1200, 1500)

**3. Inlet Size**

- 06 6" (152) Round
- 08 8" (203) Round
- 10 10" (254) Oval

**4. Height**

- H9 9" (229) (default)
- H7 7" (178)
- H11 11" (279)

**5. Down Blow (Length) Selection**

- (Models 59ND(I) and 59NDR(I) only)**
- D8, D12 24" (600)
  - D12, D15 36" (900)
  - D12, D15, D18 48" (1200)
  - D15, D18, D21 60" (1500)

**6. Return Inlet Selection**

- (Models 59NR(I), 59NDR(I), 59BSR(I) only)**
- SR Side Return (default)
  - TR Top Return

**7. Options and Accessories**

- None (default)
  - ID Inlet Damper
  - PF Plaster Frame
- Supplementary T-Bars**
- T1 One (inlet side)
  - T0 One (opposite inlet side)
  - T2 Two (both sides)
- M1 T-Bar Mounting Clips (2)  
 M2 T-Bar Mounting Clips (4)
- EX External Foil Back Insulation
- EQT Earthquake Tabs
- EC Extended Inlet Collar with Bead 3" (76)
- FS Diamond Flow Sensor with Extended Inlet Collar and Bead\*
- RBK Return section painted black internally

**Internal Insulation**

- ("I" models only)
- FGI 1/4" (6.35) Coated fiberglass (default)
  - FFI 3/8" (9.53) Fiber-free foam

**Fineline T-Bar\*\***

- (Only available on 24" & 48" lengths)
- FNLA 1 3/4" (44) High
  - FNLC 1 5/8" (41) High
  - FNLD 1 25/32" (45) High

**Notes:**

1. **Model 59NDR-SPL** is a special application design. 13 1/2" (343) high with insulated cross-talk return. No height options on this model. No return inlet option.
2. \*FS Diamond Flow Sensor is only available with 6" (152) and 8" (203) round inlet sizes. Requires H11 11" (279) high plenum option. FS option is not available on internally insulated (I) models. Not available when ID Inlet Damper is selected.
3. Standard internal insulation ("I" suffix models) is 1/4" (6.35) coated fiberglass.
4. \*\*Fineline® T-Bar options are not available with supplementary T-Bars T1, T0, T2 or mounting clips M1 or M2.

**MODELS 59BS(I) AND 59BSR(I) • 'BS SLOT' PLENUM DIFFUSERS**

**SUGGESTED SPECIFICATION:**

**Vertical Discharge, Supply**

Furnish and install **Nailor Model** (select one) **59BS** or **59BSI Adjustable Vertical Discharge Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a side inlet for connection to the duct. The plenum shall have an extruded aluminum adjustable pattern controller within a 1 3/4" (44) opening. The plenum diffuser shall be supplied in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59BSI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

**Vertical Discharge, Supply/Return**

Furnish and install **Nailor Model** (select one) **59BSR** or **59BSRI Vertical Discharge Plenum Slot Supply/Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and incorporate a supply air and return air section. The supply plenum shall have an extruded aluminum adjustable pattern controller within a 1 3/4" (44) opening and a side inlet for connection to the supply air duct. The return air plenum shall have a rectangular return opening on the side that also functions as a light shield (top return opening is optional). The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controllers and all exposed edges shall have a BK Black finish. Model 59BSRI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

HOW TO SPECIFY

MODELS 59N(I), 59NR(I), 59ND(I) AND 59NDR(I) • 'N SLOT' PLENUM DIFFUSERS

**SUGGESTED SPECIFICATION:**

**Horizontal Discharge, Supply**

Furnish and install **Nailor Model** (select one) **59N** or **59NI Horizontal Discharge Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a side inlet for connection to the duct. The plenum shall have an extruded aluminum fixed pattern controller within a 3/4" (19) slot. The plenum diffuser shall be supplied in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59NI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

**Horizontal Discharge, Supply/Return**

Furnish and install **Nailor Model** (select one) **59NR** or **59NRI Horizontal Discharge Plenum Slot Supply/Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and incorporate a supply air and return air section. The supply plenum shall have an extruded aluminum fixed pattern controller within a 3/4" (19) slot and a side inlet for connection to the supply air duct. The return air section shall have a rectangular return opening on the side that functions as a light shield (top return opening is optional). The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59NRI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

**Horizontal/Vertical Discharge, Supply**

Furnish and install **Nailor Model** (select one) **59ND** or **59NDI Horizontal/Vertical Discharge Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a side inlet for connection to the duct. The plenum shall have a central vertical down-blow section that has two hinged pattern controllers within a 1 5/8" (41) slot. The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59NDI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

**Horizontal/Vertical Discharge, Supply/Return**

Furnish and install **Nailor Model** (select one) **59NDR** or **59NDRI Horizontal/Vertical Discharge Plenum Slot Supply/Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and incorporate a supply air and integral return air section. The supply plenum shall have a central vertical down-blow section that has two hinged pattern controllers within a 1 5/8" (41) slot opening, the end sections shall incorporate an extruded aluminum fixed horizontal pattern controller within a 3/4" (19) slot. The supply plenum shall include a side inlet for connection to the duct. The return air plenum shall have a rectangular return opening on the side that also functions as a light shield (top return opening is optional). The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controllers and all exposed edges shall have a BK Black finish. Model 59NDRI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

**Options and Accessories**

**MODEL SERIES: 59N AND 59BS**

**PF SLOT DIFFUSER PLASTER FRAME**

Slot diffuser mounting frames allow plenum slot diffusers to be installed in drywall or plaster ceilings. Installation of the frame in the ceiling is by others.

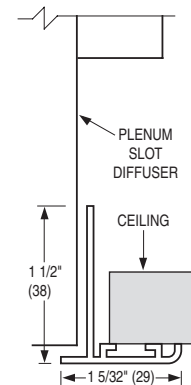
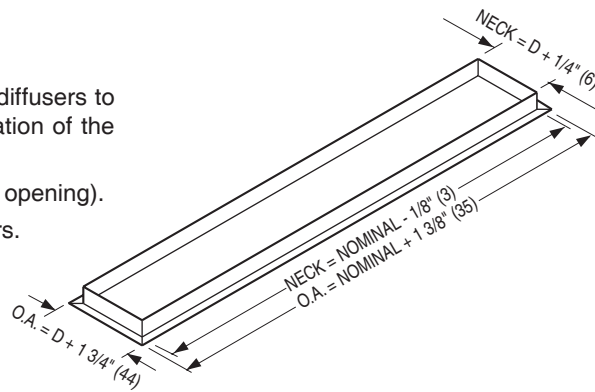
(Note: Diffuser will not fit through a plaster frame opening).

**Material:** Extruded aluminum with mitered corners.

Recommended Ceiling Opening dimensions:

Width = Diffuser Width (D) + 1/2" (13)

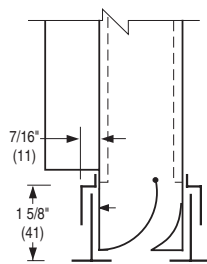
Length = Nominal Diffuser Length + 1/4" (6)



**MOUNTING CLIPS**

**M1** One Side  
(2 opposite inlet side)

**M2** Both sides (4)



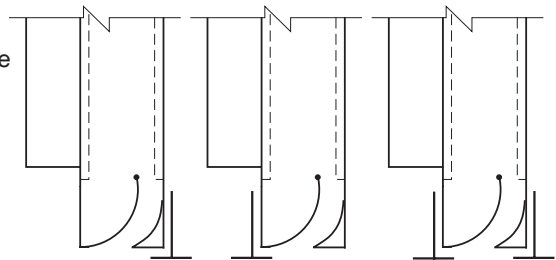
**SUPPLEMENTARY T-BARS**

**T1** One on inlet side

**T0** One opposite inlet side

**T2** Two on both sides

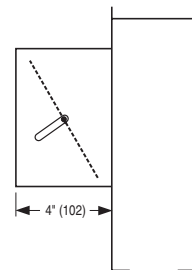
Note: Center T-Bars are supplied by Nailor as standard.



**ID INLET DAMPER**

(Supply models only)

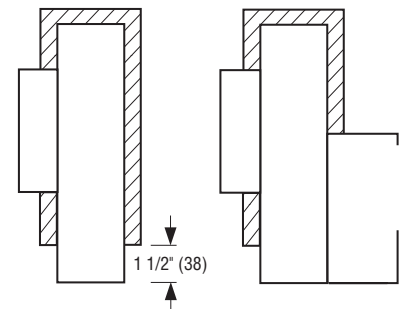
The single blade damper is an economical factory installed option that permits air balancing of the device at the plenum inlet. Ceiling access is required.



**EXTERNAL FOIL BACK INSULATION**

**EX** 1/2" (13) thick

1/2" (13) thick fiberglass blanket with a reinforced aluminum foil scrim-craft (FSK) facing, providing a vapor barrier.



**FINELINE/BOLT-SLOT T-BAR CEILING CONSTRUCTION**

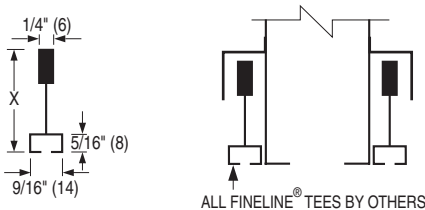
(24" [610] and 48" [1219] Nominal length only)

Plenum length = Nominal - 5/8" (16)

**FNLA** Armstrong Silhouette

**FNLC** Chicago Metallic Ultraline

**FNLD** Donn Finline



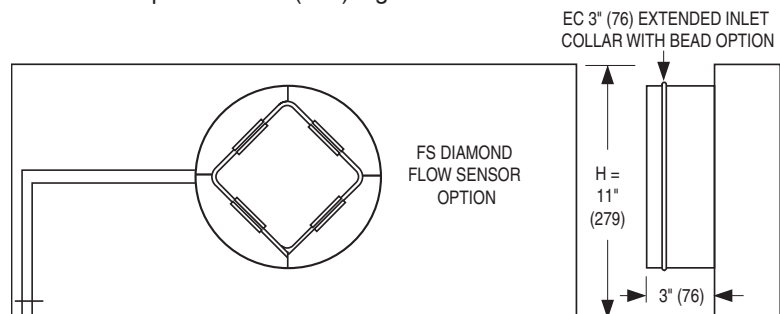
T-Bar Type (Manufacturer)	X
FNLA Armstrong Silhouette	1 3/4" (44)
FNLC Chicago Metallic Ultraline	1 5/8" (41)
FNLD Donn Finline	1 25/32" (45)

**EC EXTENDED INLET COLLAR WITH BEAD**

**FS DIAMOND FLOW SENSOR WITH EXTENDED INLET COLLAR AND BEAD**

Optional multi-point Diamond Flow sensor provides accurate field balancing. Gauge taps are conveniently located flush in the slot face eliminating the need for ceiling access. Includes 3" (76) extended inlet collar. 6" (152) and 8" (203) round inlet sizes only.

Units with FS option are 11" (279) high.



Finline® is a registered trademark of USG Interiors Inc.

PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

## LIGHT TROFFER DIFFUSERS

- SINGLE OR DOUBLE SIDE
- SUPPLY AND RETURN

### Models:

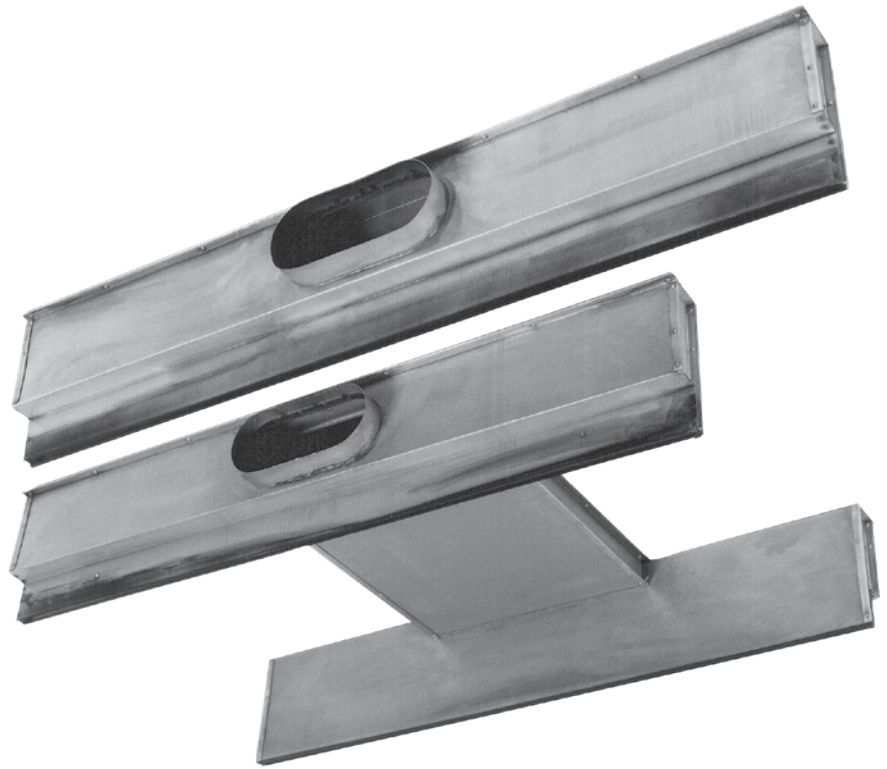
### Supply:

5410 Single Side

5420 Double Side

### Return:

5410R Single Side



Models 5410 and 5420

Model Series 5400 Light Troffer Diffusers have been designed to provide an inconspicuous appearance with high engineering performance.

Model Series 5400 Diffusers attach easily to standard air handling fluorescent light troffers. Custom fabrication is available to suit individual light troffer designs. Lighting and air distribution are provided through a single ceiling opening. The air opening is an unobtrusive slot at the side of the light troffer.

### STANDARD FEATURES:

- Diffusers are available in single or double side configurations.
- Standard design is for use with flush slot type (non-regressed) light troffers and fits most models.
- Custom fabrication is available to suit individual light troffer designs.
- Available to suit light troffer lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) for both imperial and metric ceiling grids.
- Adjustable piano-type hinge pattern controllers.

- Top inlet or low profile side inlet models.
- Inlet collars are sized for nominal duct connection.
- Return models are available.
- Available with adjustable telescopic cross-over for field sizing to suit light troffer (low profile models only).
- Units are shipped knocked down for field assembly.

### CONSTRUCTION MATERIAL:

Corrosion-resistant steel construction.

### FINISH OPTIONS:

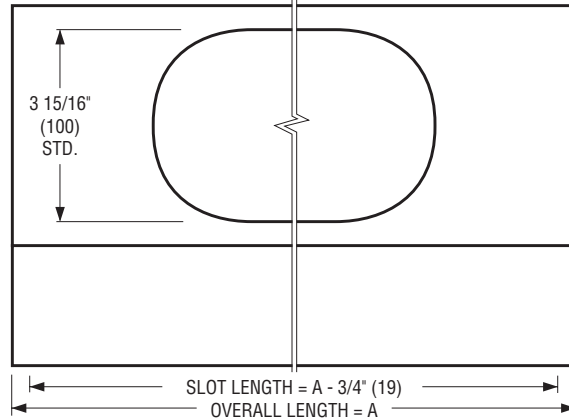
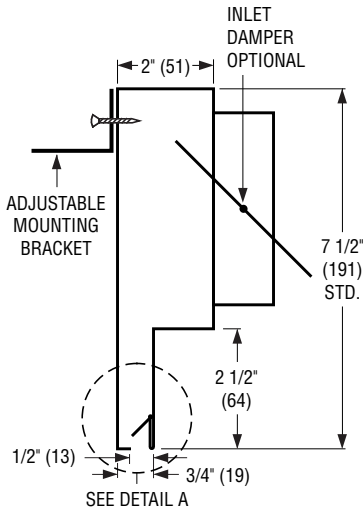
BK Black on exposed surfaces.

### OPTIONS AND ACCESSORIES:

- RS Regressed slot option (pattern controller and horizontal lip are reversed).
- IN Internal insulation.
- EX External foil back insulation.
- HC High clearance option on double side units.
- TE Telescopic adjustable cross-over.
- ID Inlet damper (side inlets only).

## DIMENSIONAL DATA:

MODEL: 5410 • SUPPLY • SINGLE SIDE

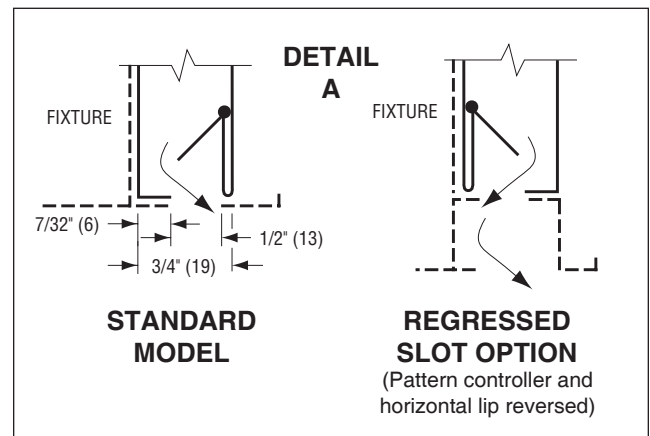


### INLET SELECTION:

- Side Inlet
- S4 4" (102) Round
- S5 5" (127) Oval
- S6 6" (152) Oval

### Standard Dimensional Data:

Troffer Size (Ceiling Module)			
Imperial Modules (inches)		Metric Modules (mm)	
Fixture Nominal L	A	Fixture Nominal L	A
24	17 1/2	600	445
36	25 3/4	900	654
48	41 1/2	1200	1054
60	49 3/4	1500	1264



### SPECIFY:

'A' dimension  
(if non-standard) \_\_\_\_\_ .

### NOTE:

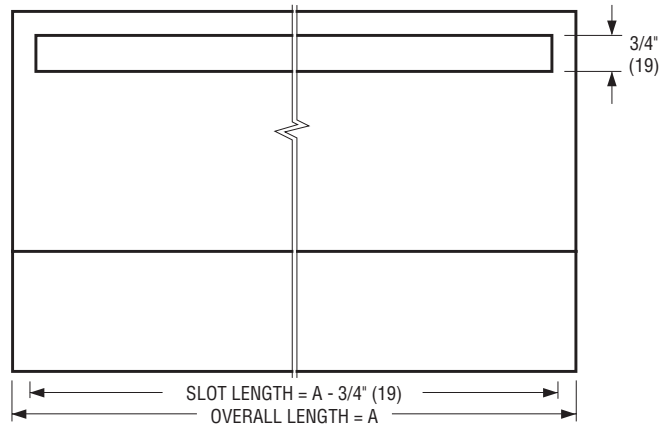
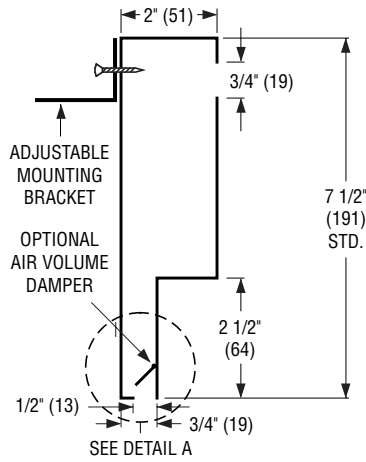
The light troffer manufacturer should provide an approved fully dimensioned drawing to ensure compatibility. In some cases, a sample light fixture will be required to be sent to the factory.

Dimensions are in inches (mm).



## DIMENSIONAL DATA:

MODEL: 5410R • RETURN • SINGLE SIDE



### Standard Dimensional Data:

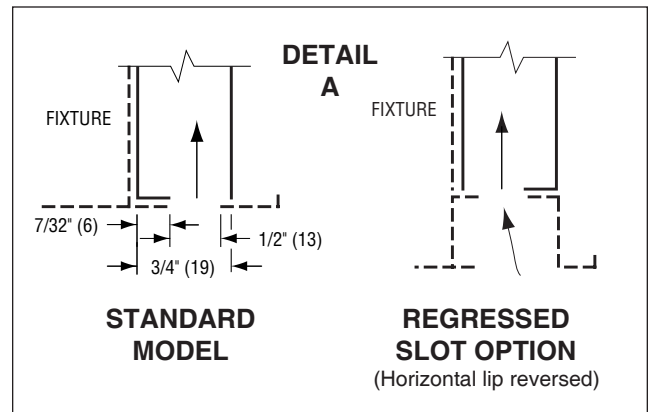
Troffer Size (Ceiling Module)			
Imperial Modules (inches)		Metric Modules (mm)	
Fixture Size W	A	Fixture Size W	A
24	17 1/2	600	445
36	25 3/4	900	654
48	41 1/2	1200	1054
60	49 3/4	1500	1264

### SPECIFY:

'A' dimension  
(if non-standard) \_\_\_\_\_ .

### NOTE:

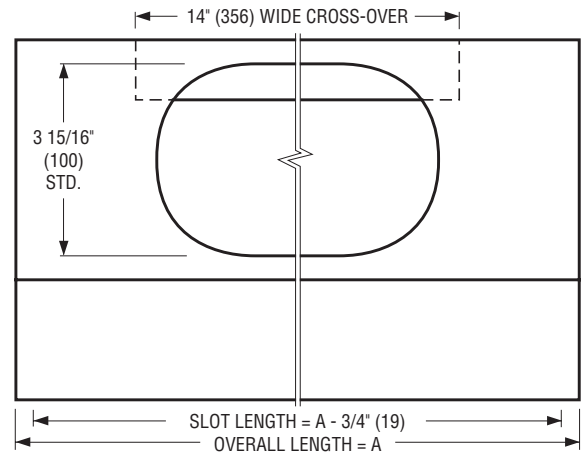
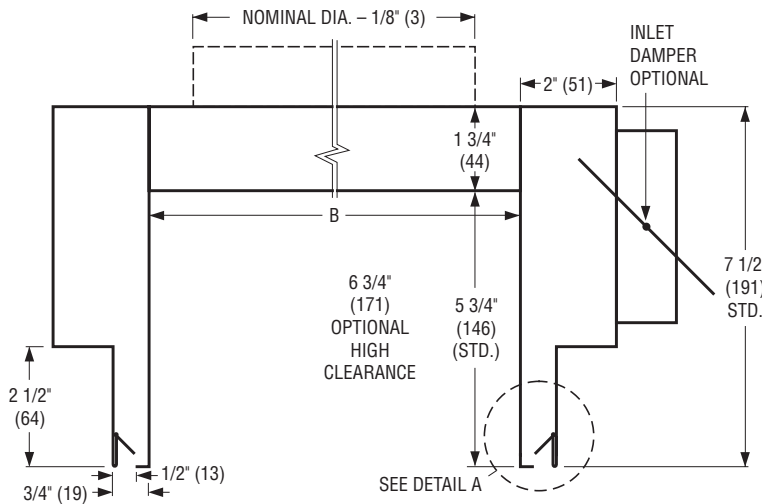
The light troffer manufacturer should provide an approved fully dimensioned drawing to ensure compatibility. In some cases, a sample light fixture will be required to be sent to the factory.



Dimensions are in inches (mm).

## DIMENSIONAL DATA:

### MODEL: 5420 • SUPPLY • DOUBLE SIDE (SADDLE)

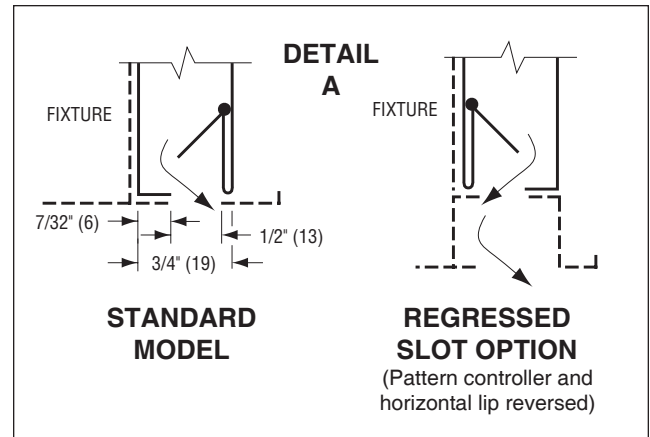


### INLET SELECTION:

Side Inlet		Top Inlet	
S4	4" (102) Round	T4	4" (102) Round
S5	5" (127) Oval	T5	5" (127) Round
S6	6" (152) Oval	T6	6" (152) Round
S8	8" (203) Oval	T7	7" (178) Round
		T8	8" (203) Round

### Standard Dimensional Data:

Troffer Size (Ceiling Module)			
Imperial Modules (inches)		Metric Modules (mm)	
Fixture Size W x L	A	Fixture Size W x L	A
12 x 48	41 1/2	300 x 1200	1054
20 x 60	41 1/2	500 x 1500	1054
24 x 24	17 1/2	600 x 600	445
24 x 48	41 1/2	600 x 1200	1054
30 x 30	23 1/2	750 x 750	597
36 x 36	25 3/4	900 x 900	654



### SPECIFY:

'B' dimension (always required unless TE Telescopic adjustable cross-over option specified) \_\_\_\_\_ .

'A' dimension (if non-standard) \_\_\_\_\_ .

### TE Telescopic Option:

Unit Width	"B" Dimension Adjustment
20" (500)	15" – 18" (381 – 457)
24" (600)	19" – 22" (483 – 559)
30" (750)	25" – 28" (635 – 711)
36" (900)	31" – 34" (787 – 864)

### NOTE:

The light troffer manufacturer should provide an approved fully dimensioned drawing to ensure compatibility. In some cases, a sample light fixture will be required to be sent to the factory.



PLENUM SLOT AND LIGHT TROFFER DIFFUSERS

## PERFORMANCE DATA:

### MODEL: 5410

#### Single Side • 24" Long Light Troffer • 5" Oval Inlet

Airflow, CFM	30	40	50	60	70	80	90
Total Pressure	.040	.060	.100	.130	.170	.220	.360
Static Pressure	.030	.050	.090	.120	.150	.200	.330
Noise Criteria	15	23	29	34	38	43	46
Throw	2-5	3-7	4-8	5-10	6-11	7-12	8-13

#### Single Side • 36" Long Light Troffer • 5" Oval Inlet

Airflow, CFM	40	50	60	70	80	90	100	110
Total Pressure	.050	.070	.110	.140	.180	.220	.260	.320
Static Pressure	.040	.060	.100	.120	.160	.190	.230	.280
Noise Criteria	–	20	25	29	33	37	40	43
Throw	3-6	3-7	4-8	5-10	6-12	6-14	8-15	9-16

#### Single Side • 48" and 60" Long Light Troffer • 6" Oval Inlet

Airflow, CFM	40	50	60	70	80	90	100	110	120
Total Pressure	.030	.060	.080	.110	.130	.160	.220	.280	.300
Static Pressure	.030	.050	.070	.100	.120	.150	.200	.260	.280
Noise Criteria	–	–	17	21	25	29	34	36	40
Throw	2-5	3-7	4-7	5-9	6-11	7-12	7-14	8-15	9-16

#### Performance Notes:

1. Performance data is based on typical samples of light troffers. Performance may vary with other makes and models of light troffers.
2. Throws are given at 150 and 50 fpm terminal velocities, under isothermal conditions.
3. All pressures are in inches w.g..
4. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (–) in space denotes an Noise Criteria level less than 15.
5. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

Length in feet	Ak Factor per foot	
	Single	Double
2	.057	.093
3	.089	.145
4	.120	.197

## PERFORMANCE DATA:

MODEL: 5420

### Double Side • 24" Long Light Troffer • 5" Round Inlet • Top Inlet

Airflow, CFM	60	70	80	100	120	140	160	180	200
Total Pressure	.070	.100	.120	.170	.250	.340	.370	.410	.450
Static Pressure	.060	.090	.100	.140	.200	.260	.280	.300	.310
Noise Criteria	–	23	26	30	34	36	40	41	42
Throw	2-4	2-5	3-7	4-8	5-9	5-10	6-11	7-12	7-12

### Double Side • 48" and 60" Long Light Troffer • 8" Round Inlet • Top Inlet

Airflow, CFM	60	80	100	120	140	160	180	200	220
Total Pressure	.030	.070	.080	.090	.130	.180	.230	.270	.350
Static Pressure	.030	.060	.070	.080	.120	.170	.210	.250	.320
Noise Criteria	–	–	–	18	23	26	28	29	35
Throw	1-3	2-5	3-6	4-7	4-8	5-9	5-11	6-13	7-15

### Double Side • 24" Long Light Troffer • 6" Oval Inlet • Side Inlet

Airflow, CFM	60	70	80	100	120	140	160	180	200
Total Pressure	.080	.110	.120	.170	.250	.320	.350	.370	.400
Static Pressure	.070	.100	.110	.150	.230	.290	.310	.320	.340
Noise Criteria	22	25	27	33	35	37	42	43	45
Throw	2-4	2-5	3-7	4-8	5-9	5-10	6-11	7-12	7-12

### Double Side • 48" and 60" Long Light Troffer • 6" Oval Inlet • Side Inlet

Airflow, CFM	60	80	100	120	140	160	180	200	220
Total Pressure	.040	.070	.090	.110	.160	.210	.280	.330	.410
Static Pressure	.030	.060	.080	.090	.140	.180	.240	.280	.352
Noise Criteria	–	–	–	22	27	29	32	34	37
Throw	1-3	2-5	3-6	4-7	4-8	5-9	5-11	6-13	7-15

#### Performance Notes:

- Performance data is based on typical samples of light troffers. Performance may vary with other makes and models of light troffers.
- Throws are given at 150 and 50 fpm terminal velocities, under isothermal conditions.
- All pressures are in inches w.g..
- Noise Criteria [NC] values based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (–) in space denotes an Noise Criteria level less than 15.
- Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

Length in feet	Ak Factor per foot	
	Single	Double
2	.057	.093
3	.089	.145
4	.120	.197

**HOW TO ORDER**

**MODEL SERIES: 5400**

**LIGHT TROFFER DIFFUSERS**

**EXAMPLE: 5420 - S6 - 2448 - AD = 41.5" - BD = 21.0"**

**1. Model Series**

**Supply**

- 5410 Single Side
- 5420 Double Side

**Return**

- 5410R Single Side

**2. Inlet Type/Size (Supply)**

**Side Inlet:**

- S4 4" (102) Oval
- S5 5" (127) Oval
- S6 6" (152) Oval
- S8 8" (203) Oval

**Top Inlet:**

- T4 4" (102) Round
- T5 5" (127) Round
- T6 6" (152) Round
- T7 7" (178) Round
- T8 8" (203) Round

(Returns are non-ducted)

**3. Ceiling Module (Fixture) Size (Width x Length)**

**Double Side**

- |                   |               |
|-------------------|---------------|
| Imperial (inches) | Metric (mm's) |
| 1248 12" x 48"    | 300 x 1200    |
| 2060 20" x 60"    | 500 x 1500    |
| 2424 24" x 24"    | 600 x 600     |
| 2448 24" x 48"    | 600 x 1200    |
| 3030 30" x 30"    | 750 x 750     |
| 3636 36" x 36"    | 900 x 900     |

**Single Side**

- |                   |               |
|-------------------|---------------|
| Imperial (inches) | Metric (mm's) |
| 24 24"            | 600           |
| 36 36"            | 900           |
| 48 48"            | 1200          |
| 60 60"            | 1500          |

**Options and Accessories**

**4. Insulation**

- None (default)
- EX External Foil Back Insulation (installed) R-4.2
- IN Internal Fiberglass

**5. Inlet Damper**

- None (default)
- ID Inlet Damper with HLQ (Side Inlet Only)

**6. High Clearance**

- None (default)
- HC High Clearance

**7. Telescopic**

- None (default)
- TE Telescopic Cross-over (5420, Side Inlet Only)

**8. Regressed Slot**

- None (default)
- RS Regressed Slot Light Fixture

**9. 'A' Dimension Overall Length**

**(See Chart for Standard Dimension)**

- 17 Standard Size "A" = 17.5 (445)
- 23 Standard Size "A" = 23.5 (597)
- 25 Standard Size "A" = 25.75 (654)
- 41 Standard Size "A" = 41.5 (1054)
- AD A Dimension. Specify if not standard, inches (mm's)

**10. 'B' Dimension Straddle Width**

**(Model 5420 Only)**

- BD B Dimension. Specify, inches (mm's)
- Telescopic Option Only:
- TE20 15" – 18" (381 – 457)
- TE24 19" – 22" (483 – 559)
- TE30 25" – 28" (635 – 711)
- TE36 31" – 34" (787 – 864)
- AD A Dimension. Specify if not standard, inches (mm's)

**Notes:**

1. Specify 'A' dimension (overall length) if non-standard (see table). Active Slot Length = A - 3/4" (19).
2. Specify 'B' dimension for double side units (refer to submittal units (refer to submittal drawing). Troffer straddle width always required unless TE option specified.
3. In all cases the light troffer manufacturer should supply an approved fully dimensioned drawing to ensure compatibility. In some cases (recommended), a sample light fixture will be required to be sent to the factory.
4. Double side (saddle) units are shipped knocked-down for field assembly.

**Standard Dimensional Data:**

'A' Dim. Code	Troffer Size (Ceiling Module)			
	Imperial Modules (inches)		Metric Modules (mm)	
	Fixture Size W x L	A Overall Length	Fixture Size W x L	A Overall Length
41	12 x 48	41 1/2	300 x 1200	1054
41	20 x 60	41 1/2	500 x 1500	1054
17	24 x 24	17 1/2	600 x 600	445
41	24 x 48	41 1/2	600 x 1200	1054
23	30 x 30	23 1/2	750 x 750	597
25	36 x 36	25 3/4	900 x 900	654

**TE Telescopic Option:**

"B" Dim. Code	Unit Width	"B" Dimension Adjustment
TE20	20" (500)	15" – 18" (381 – 457)
TE24	24" (600)	19" – 22" (483 – 559)
TE30	30" (750)	25" – 28" (635 – 711)
TE36	36" (900)	31" – 34" (787 – 864)

Not available on 12" (300) width.

**HOW TO SPECIFY**

**MODELS 5410, 5410R AND 5420 • LIGHT TROFFER DIFFUSERS**

**SUGGESTED SPECIFICATION:**

**Single Side, Supply**

Furnish and install **Nailor Model 5410 Light Troffer Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a side inlet. The slot opening shall incorporate a piano-type hinge pattern controller. The diffuser shall fit a flush slot type light troffer (RS regressed slot is optional). The pattern controller and all exposed surfaces shall have a BK Black finish.

The manufacturer shall provide published performance data for the light troffer supply diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

**Double Side, Supply**

Furnish and install **Nailor Model 5420 Double Side Light Troffer Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a top or side inlet as specified. The slot openings shall incorporate piano-type hinge pattern controllers. The diffuser shall fit a flush slot type light troffer (RS regressed slot is optional). The pattern controller and all exposed surfaces shall have a BK Black finish.

The manufacturer shall provide published performance data for the light troffer supply diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

**Single Side Return**

Furnish and install **Nailor Model 5410R Single Side Light Troffer Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and have a rectangular return opening. The diffuser shall fit a flush slot type light troffer (RS regressed slot is optional). All exposed surfaces shall have a BK Black finish.

The manufacturer shall provide published performance data for the light troffer return diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.



**PLENUM SLOT AND LIGHT TROFFER DIFFUSERS**



# **CEILING DIFFUSERS**



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4320CBAA • Aluminum • Flush Face	D166
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**CEILING DIFFUSERS**



## GENERAL PRODUCT OVERVIEW

### Ceiling Diffusers

Quality Assured Products, unobtrusive clean lines for appearance, careful engineering and professional workmanship with the backing of an industry leader - these add up to true value; prime reasons for specifying Nailor Ceiling Diffusers.

Architectural excellence and engineering selections demand high quality products and shipping schedules demand service, all part of the package.

#### SQUARE AND RECTANGULAR PATTERN

Nailor's pattern diffusers are typically used in applications where considerable volumes of air are required while maintaining relatively low noise levels and pressure drops. A full range of models are available and consist of a choice of corrosion-resistant steel or aluminum construction, fixed and adjustable patterns, as well as extra high capacity models. Induction vanes are also available for those jobs that require quick equalization of cool and warm air such as in VAV systems with high cooling loads. The louvered cores are removable and are available in an assortment of patterns.

#### Steel High Capacity Construction – Fiberglass Plenum

Fixed Pattern Model 6500FP **Page D18**

#### Steel Construction –

Fixed Pattern Model 6500 **Page D14**

Adjustable Pattern Model 6550 **Page D14**

Induction Vane Model 6500IV **Page D39**

Suffix '-O' adds a steel OBD

#### Aluminum Construction –

Fixed Pattern Model 6200 **Page D14**

Adjustable Pattern Model 6250 **Page D14**

Induction Vane Model 6200IV **Page D39**

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

#### Aluminum High Capacity Construction –

100% Aluminum Model 6200-MRI **Page D20**

Fixed Pattern Model 6400 **Page D46**

Induction Vane Model 6400IV **Page D65**

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD



Models 6500, 6500IV, 6400, 6550



Models RNS, ARNSA, RNS2

#### STAMPED SQUARE

These diffusers are a very popular choice for general air distribution applications. The diffusers are designed to provide high performance at a cost effective price. The stamped one-piece cones and die-formed clean curves supply a 360° diffusion pattern and provide the high performance necessary in VAV systems. Integral round necks provide a secure connection for flexible duct applications. Nailor's "classic" four-cone, removable core design is available in most ceiling module sizes, a choice of corrosion-resistant steel or aluminum, and an option of fixed or adjustable patterns. A two and three cone fixed pattern diffuser also accompanies this series.

#### Steel Construction –

Fixed Pattern Model RNS **Page D87**

Adjustable Pattern Model RNSA **Page D91**

Fixed Pattern 3 Cone Model RNS3 **Page D95**

Fixed Pattern 2 Cone Model RNS2 **Page D98**

#### Aluminum Construction –

Fixed Pattern Model ARNS **Page D87**

Adjustable Pattern Model ARNSA **Page D91**

Fixed Pattern 3 Cone Model ARNS3 **Page D95**



## "TWISTER" HIGH INDUCTION STAMPED FACE

The "Twister" diffuser is engineered to optimize air distribution effectiveness. This next generation diffuser has a high induction, 360° swirl pattern for a superior coanda effect. It is available for a 2' x 2' (600 x 600) ceiling module with a choice of five round neck sizes.

### Steel Construction – High Induction

Fixed Pattern      Model TWR "Twister" Swirl Pattern      **Page D101**



Model TWR



Models UNI, 5000CTD, UNI-PD

## ARCHITECTURAL SQUARE

Designed with the architect in mind, the diffusers in this series are fashioned to blend in with most ceiling types in order to create the ultimate in aesthetic looks. Nailor has accomplished this while still offering a variety of diffuser designs that provide flexibility in both style, selection and engineering performance.

### Flat Panel

Steel Construction –	Model UNI	<b>Page D104</b>
Aluminum Construction –	Model AUNI	<b>Page D104</b>
Steel with Ceiling Tile –	Model UNI-RC	<b>Page D106</b>

### Downblast –

Steel Fixed Perforated –	Model UNI-PD	<b>Page D115</b>
Steel Adjustable –	Model UNI-AD	<b>Page D118</b>
Steel Round Plaque Face –	Model UNI-RP	<b>Page D121</b>

### Ceiling Tile Slot –

Supply	Model Series 5000CTD	<b>Page D128</b>
Return	Model Series 5000RCTD	<b>Page D128</b>

### Plaque Face

Steel Construction –	Model UNI2	<b>Page D112</b>
Aluminum Construction –	Model AUNI2	<b>Page D112</b>
Steel Construction –	Model 6600	<b>Page D134</b>

### Plaque Face with Perimeter Slots

Steel Construction –	Model 66UNI	<b>Page D139</b>
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## ROUND

Nailor's round diffusers are available in steel or aluminum construction, with adjustable or fixed patterns. Included in this series of diffusers is a 'Plaque' style for architectural ceilings and a 'Downblast' type for high ceiling areas.

### Adjustable Horizontal Pattern

Steel Construction –	Model RNR	<b>Page D143</b>
Aluminum Construction –	Model ARNR	<b>Page D143</b>

### Adjustable Horizontal to Vertical Pattern

Steel Construction –	Model RNRA1	<b>Page D146</b>
Aluminum Construction –	Model ARNRA1	<b>Page D146</b>

### Fully Adjustable Horizontal/Vertical Pattern

Aluminum Construction –	Model 6300R	<b>Page D148</b>
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### Plaque Face Horizontal Pattern

Steel Construction –	Model RUNI	<b>Page D150</b>
Aluminum Construction –	Model ARUNI	<b>Page D150</b>

### Downblast Adjustable Horizontal/Vertical Pattern

Steel Construction –	Model RDB	<b>Page D152</b>
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Models RUNI, RNR, RDB

## Perforated Ceiling Diffusers

Nailor manufactures a full range of supply air and matching return air Perforated Ceiling Diffusers. The perforated face is available in both corrosion-resistant steel and aluminum, with 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. As standard, backpans are available in corrosion-resistant steel with an option of aluminum, and some premium models are available with extruded aluminum frames. The diffusers can be selected to suit most common ceiling types, and are available with both flush and drop face styles. A variety of pattern controllers and deflector core styles are offered, allowing for a selection to be made based upon style, performance, and budgetary considerations. Match the supply air with the corresponding return air and the results will be a smooth, aesthetically balanced ceiling appearance.

### Supply Air

#### ADJUSTABLE PATTERN DEFLECTORS ON FACE

The stamped deflectors for this series of models are mounted in a 4-way discharge pattern on the rear of the perforated face and can be easily field adjusted to a 1, 2, or 3-way pattern. These diffusers are available with round or square necks. For the matching return, see Model Series 4360/4365.

##### Flush Face

Steel –	Model 4320	<b>Page D156</b>
Aluminum Face –	Model 4320A	<b>Page D156</b>
Aluminum –	Model 4320AA	<b>Page D156</b>

##### Drop Face

Steel –	Model 4325	<b>Page D156</b>
Aluminum Face –	Model 4325A	<b>Page D156</b>
Aluminum –	Model 4325AA	<b>Page D156</b>



Model 4320



Model 4320CB

#### CURVED BLADE PATTERN CONTROLLERS

The curved blade pattern controllers are individually adjustable and available as standard in a 4-way discharge pattern. The blades are mounted directly beneath the neck of the diffuser. A 1, 2, or 3-way discharge pattern is available as an option. These diffusers are offered with round or square necks. For the matching return, see Model Series 4360/4365.

##### Flush Face

Steel –	Model 4320CB	<b>Page D166</b>
Aluminum Face –	Model 4320CBA	<b>Page D166</b>
Aluminum –	Model 4320CBAA	<b>Page D166</b>

##### Drop Face

Steel –	Model 4325CB	<b>Page D166</b>
Aluminum Face –	Model 4325CBA	<b>Page D166</b>
Aluminum –	Model 4325CBAA	<b>Page D166</b>

#### FULL FACE CURVED BLADE PATTERN CONTROLLERS

This grille frame style, full face diffuser features curved blade pattern controllers with extruded aluminum frames and blades, and a perforated face that is offered in either corrosion-resistant steel or aluminum. The curved blade pattern controllers are individually adjustable and are in a 4-way discharge pattern as standard. A 1, 2, or 3-way discharge pattern is available as an option. These diffusers are available with square necks only. For the matching return, see Model Series 4340R.

##### Flush Face

Steel –	Model 4340CB	<b>Page D174</b>
Aluminum –	Model 4340CBA	<b>Page D174</b>



Model 4340CB

## ADJUSTABLE DISCHARGE PATTERN

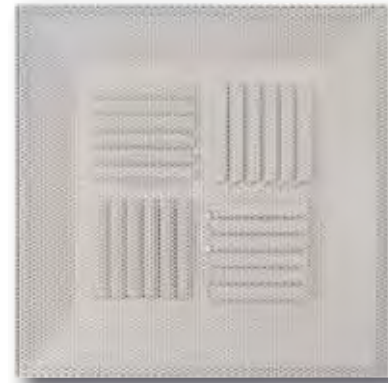
This diffuser has pattern controllers that are factory set in a fixed 4-way discharge pattern. The controllers can be field adjusted to a 1, 2 or 3-way pattern as required. These diffusers are available with round or square necks. For the matching return, see Model Series 4360/4365.

### Flush Face

Steel Face/Steel Backpan –	Model 4320F	<b>Page D182</b>
Aluminum Face/Steel Backpan –	Model 4320FA	<b>Page D182</b>
Aluminum Face/Aluminum Backpan –	Model 4320FAA	<b>Page D182</b>

### Drop Face

Steel Face/Steel Backpan –	Model 4325F	<b>Page D182</b>
Aluminum Face/Steel Backpan –	Model 4325FA	<b>Page D182</b>
Aluminum Face/Aluminum Backpan –	Model 4325FAA	<b>Page D182</b>



Model 4320F



Model 4320M

## MODULAR CORE, SQUARE NECK

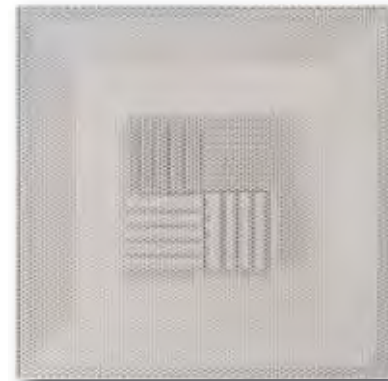
This perforated diffuser has four individual, corrosion-resistant steel, spring-loaded modular pattern controllers that are mounted in the neck of the diffuser. They are shipped in a 4-way discharge pattern and can easily be field adjusted to provide a 1, 2, or 3-way discharge pattern. These diffusers are available with square necks. For the matching return, see Model Series 4360/4365.

### Flush Face

Steel –	Model 4320M	<b>Page D188</b>
Aluminum Face –	Model 4320MA	<b>Page D188</b>

### Drop Face

Steel –	Model 4325M	<b>Page D188</b>
Aluminum Face –	Model 4325MA	<b>Page D188</b>



Model 4320MR

## MODULAR CORE, ROUND NECK, LOW PROFILE

This model has a low profile backpan that includes an integral round neck. It incorporates four individual, corrosion-resistant steel, spring loaded modular pattern controllers that are mounted inside the backpan. The modular cores are shipped in a 4-way pattern and can easily be field adjusted to provide a 1, 2, or 3-way discharge pattern. These diffusers are available with round necks only. For the matching return, see Model Series 4360/4365.

### Flush Face

Steel –	Model 4320MR	<b>Page D192</b>
Aluminum Face –	Model 4320MRA	<b>Page D192</b>

### Drop Face

Steel –	Model 4325MR	<b>Page D192</b>
Aluminum Face –	Model 4325MRA	<b>Page D192</b>



Model 4320S

## ADJUSTABLE STAR PATTERN, ROUND OR SQUARE NECK

This diffusers features four individually stamped pattern controllers mounted directly under the neck that produces a long throw 4-way 'star pattern'. The factory set pattern controller is easily rotated from side throw to corner throw in the field. Individual vanes can be field adjusted to suit the desired air pattern. For the matching return, see Model Series 4360/4365.

### Flush Face

Steel –	Model 4320S	<b>Page D198</b>
Aluminum Face –	Model 4320SA	<b>Page D198</b>
Aluminum –	Model 4320SAA	<b>Page D198</b>

### Drop Face

Steel –	Model 4325S	<b>Page D198</b>
Aluminum Face –	Model 4325SA	<b>Page D198</b>
Aluminum –	Model 4325SAA	<b>Page D198</b>



## FULL FACE MODULAR CORE

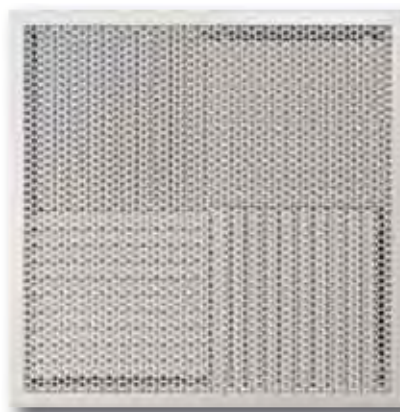
This grille frame style, full face diffuser, features an extruded aluminum frame with a corrosion-resistant steel modular core. The modular core is shipped in a 4-way pattern and can easily be field adjusted to provide a 1, 2, or 3-way pattern. These diffusers are available with square necks only. For the matching return, see Model Series 4340R.

### Flush Face

Steel Face – Model 4340M  
 Aluminum Face – Model 4340MA

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Model 4340M



Model 4330

## PREMIUM ARCHITECTURAL, ADJUSTABLE DEFLECTORS ON FACE

The perforated diffusers in this series have an extruded aluminum frame with a narrow border that is visible within the T-Bar module. The stamped steel deflectors are mounted in a 4-way discharge pattern and can be easily field adjusted to a 1, 2 or 3-way pattern. The diffusers are available with round or square necks. For the matching return, see Model Series 4330R.

### Flush Face

Steel Face – Model 4330  
 Aluminum Face – Model 4330A  
 Aluminum – Model 4330AA

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## PREMIUM ARCHITECTURAL, CURVED BLADE PATTERN CONTROLLERS

The perforated diffusers in this series have an extruded aluminum frame with a narrow border that is visible within the T-Bar module. The extruded aluminum curved blade pattern controllers are individually adjustable and are in a 4-way discharge pattern as standard. A 1, 2, or 3-way discharge pattern is available as an option. For the matching return, see Model 4330R.

### Flush Face

Steel Face – Model 4330CB  
 Aluminum Face – Model 4330CBA  
 Aluminum – Model 4330CBAA

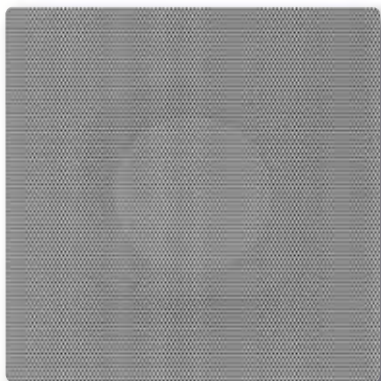
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Model 4330CB



Model 4310A

## ALL ALUMINUM PERFORATED FOR MRI ROOMS

This diffuser is 100% aluminum and can be used for MRI rooms. It features a smooth, contoured wrap-around perforated face. The supply air diffuser includes a round disc pattern deflector that provides a true 360° radial horizontal air pattern. The matching return air diffuser is suitable for ducted return applications.

### Flush Face

Supply Air – Model 4310A  
 Return Air – Model 4310AR

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Page D222

## PERFORATED

This perforated supply and return model with a corrosion-resistant steel diffuser face with a one-piece, pre-scored, molded fiberglass plenum with a foil-back vapour barrier and a 4-way discharge pattern. An extruded aluminum frame with a narrow border that is visible within the T-Bar module. See Model Series 4330 and 4330CB for the matching supply air diffusers.

### Supply

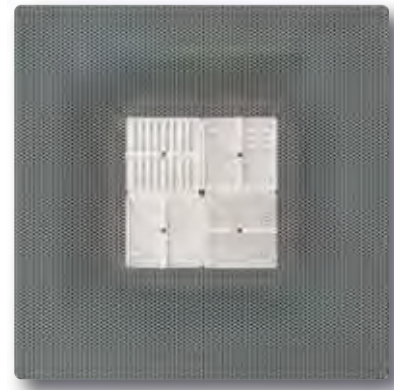
Steel – Model 4350

Page D225

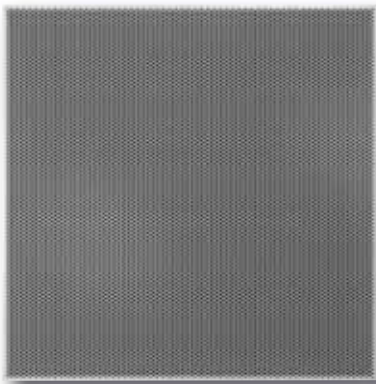
### Return

Steel – Model 4350R

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Model 4350



Model 4360

## Return Air

### STANDARD BACKPAN DESIGN

This perforated return diffuser is designed with a backpan that allows for both ducted and non-ducted applications. Available with a round or square neck for ducted applications and a full face design, square neck for either ducted or non-ducted applications. See Model Series 4320/4325, 4320CB/4325CB, 4320F/4325F and 4320M/ 4325M for the matching supply air diffusers.

#### Flush Face

Steel – Model 4360  
 Aluminum Face – Model 4360A  
 Aluminum – Model 4360AA

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#### Drop Face

Steel – Model 4365  
 Aluminum Face – Model 4365A  
 Aluminum – Model 4365AA

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## EXTRUDED FRAME

This grille frame style, full face diffuser has an extruded aluminum frame and is offered with a choice of a corrosion-resistant steel or an aluminum perforated face. The diffusers are available with square necks only and can be used in both ductless and ducted applications. See Model Series 4340CB and 4340M for the matching supply diffusers.

### Flush Face

Steel Face – Model 4340R  
 Aluminum Face – Model 4340RA

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Model 4340R



Model 4302-DF

## PANELS

This economical perforated return panel is for use in a ductless return or as an exhaust grille in exposed grid T-Bar ceiling systems. When installed, the appearance matches that of the 4320/4325, 4320CB/4325CB, 4320F/ 4325F and 4320M/4325M supply diffusers.

### Flush Face

Steel – Model 4302  
 Aluminum – Model 4302A

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### Drop Face

Steel – Model 4302-DF

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### Fineline®

Steel – Model 4302-F

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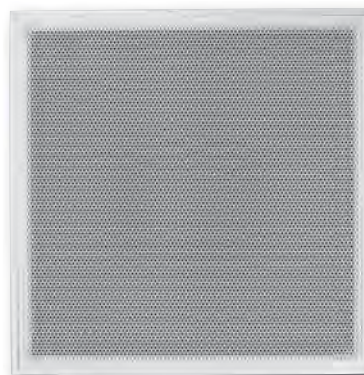
## PREMIUM

This perforated return has an extruded aluminum frame with a narrow border that is visible within the T-Bar module. See Model Series 4330 and 4330CB for the matching supply air diffusers.

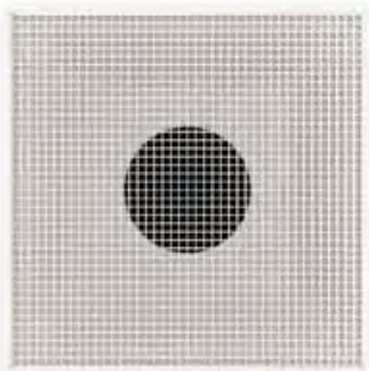
### Flush Face

Steel Face – Model 4330R  
 Aluminum Face – Model 4330RA

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Model 4330R



Model 4260

## EGGCRATE RETURN

This aluminum face return diffuser features 1/2" x 1/2" x 1/2" (13 x 13 x 13) eggcrate that provides a high free area. It is offered with either a round or square neck for ducted return applications. The backpan or frame is available in both corrosion-resistant steel and aluminum construction.

### Return

Steel Frame/Backpan – Model 4260  
 Aluminum Face – Model 4260AA

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## SQUARE MODULAR CORE

This steel diffuser has four individual, corrosion-resistant steel, spring-loaded modular pattern controllers. The pattern controllers are shipped in a 4-way discharge pattern and can easily be field adjusted to provide a 1, 2, or 3-way discharge pattern. They are available with square necks and optional round transitions.

### Modular Core

Steel – Model 7500  
 Aluminum – Model 7200  
 Suffix '-O' adds a steel OBD

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Model 7500



Model 61CC

## CURVED BLADE

The curved blade deflectors for this diffuser are individually adjustable and integrated in a modular sized panel to suit many ceiling systems. If ordered with directional vanes a 1 or 2-way discharge pattern is available. If directional vanes are not required, the curved blade deflectors are offered in a 1, 2, 3, or 4-way discharge pattern.

### Steel Construction

Directional Vanes – Model 61CCD Page D250  
 No Directional Vanes – Model 61CC Page D250

### Aluminum Construction

Directional Vanes – Model 51CCD Page D250  
 No Directional Vanes – Model 51CC Page D250

## OPTIONS & ACCESSORIES

Nailor offers an extensive selection of accessories for ceiling diffusers. Air balancing devices, air extractors and a selection of mounting frames are several of the accessories available. **Pages D255 – D267**



## EXCLUSIVE WARRANTY FOR NAILOR STEEL GRILLES, REGISTERS AND DIFFUSERS

LIMITED WARRANTY – SERIES 61C, 6100, 61EC, 61F, RNS, RNS2,  
UNI, 4300, 6500, 7500 AND 61CC

Nailor Industries Inc. ('Nailor') warrants to the original and each subsequent owner of a new Nailor Series Grille, Register or Ceiling Air Diffuser in the model series titled above, constructed of corrosion-resistant steel that should rust become visible on the exposed portion of any individual product covered by this agreement Nailor will replace the rusted unit. Any diffuser affected by chemicals or misuse, including, without limitation, the failure to perform reasonable and necessary maintenance, will not be covered by this warranty. This warranty is for sixty (60) months from the date of the shipment by Nailor.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

The rusted unit will be shipped by the owner at its cost to Nailor for replacement. The cost of the replacement, including the cost of shipment to the owner, but excluding any costs for either the removal or preparation for shipment of the rusted unit and the re-installation of the replacement unit, will be borne by Nailor. A reasonable time should be allowed after shipment to Nailor for the replacement of the rusted unit.

***This is the only warranty given with the purchase. Any warranties implied by law are limited to sixty (60) months from the date of shipment by Nailor. Nailor neither assumes nor authorizes any person to assume for it any other liability in connection with any diffuser covered by this agreement.***

***No payment or other compensation will be made for indirect or consequential damage such as, damage or injury to person or property or loss of revenue or profit which might be paid, incurred or sustained by reason of the use or inability to use a Nailor product listed above, even if such loss or damage could have been foreseen by Nailor.***

Some states do not allow the exclusion of limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above may not apply to you.

## SQUARE & RECTANGULAR PATTERN CEILING DIFFUSERS

- LOUVERED FACE
- HIGH CAPACITY
- SQUARE, RECTANGULAR OR ROUND NECKS



Models 6500 and 6550

### Steel Models:

- 6500 Fixed Pattern
- 6550 Adjustable Pattern

### Aluminum Models:

- 6200 Fixed Pattern
- 6250 Adjustable Pattern

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper (available on aluminum models only)

Model Series 6500 and 6200 Pattern Ceiling Diffusers have been specially designed to provide a high capacity louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. An engineered blade design with a 1/4" (6) horizontal lip on all angular discharge louvers creates a stable horizontal air pattern that is tight to the ceiling. Ideal for applications in VAV systems, these diffusers create a strong ceiling coanda effect at typical maximum and minimum airflow rates and ensure draft free air distribution.

Available with a wide variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirement. Many frame types are also available to suit almost any mounting condition including surface mount (flat, beveled or deep drop face) and T-Bar panel types (Standard 1" (25), Fineline®, Spline, Tegular or Metal Snap-in). These models offer a great degree of design flexibility.

Model Series 6550 and 6250 Adjustable Pattern Ceiling Diffusers offer the same features as the 6500 and 6200 Series, however, they feature four hinged, individually adjustable deflecting vanes. These vanes allow air pattern adjustment from horizontal to vertical and further enhance the flexibility of the diffuser. Ideal for applications with higher ceiling heights or for heating applications to minimize stratification.

### STANDARD FEATURES:

- Spring loaded core. It is removable without the use of tools.
- High neck collars for solid connection.
- Secure core attachment.
- A wide variety of frame styles to suit most ceiling applications.
- Extended panels to suit modular ceiling systems. PLS (steel) or PLA (aluminum).
- Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a wide selection of square and rectangular neck sizes (see page D22).
- Clean lines with no unsightly visible screws.
- Opposed blade damper with screwdriver slot operator.

### CONSTRUCTION MATERIAL:

6500 Series – Corrosion-resistant steel.  
6200 Series – Heavy-gauge aluminum extrusions.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### AVAILABLE SIZES:

Unit size is determined by duct dimensions. Diffuser necks are undersized to suit ductwork.

Duct Sizes are available in 3" (76) increments.

Minimum size:

6" x 6" (152 x 152) square neck. 9" x 6" (229 x 152) rectangular neck (most core styles).

Maximum size:

Types S, B and D: 36" x 36" (914 x 914) or 36" x 24" (914 x 610) with opposed blade damper.

Types L, SP, DL, TL, M and F: see next page.

### OPTIONS & ACCESSORIES:

EX External Foil-Back Insulation (installed) – R-4.2.

MIB Molded Insulation Blanket R-6.0.

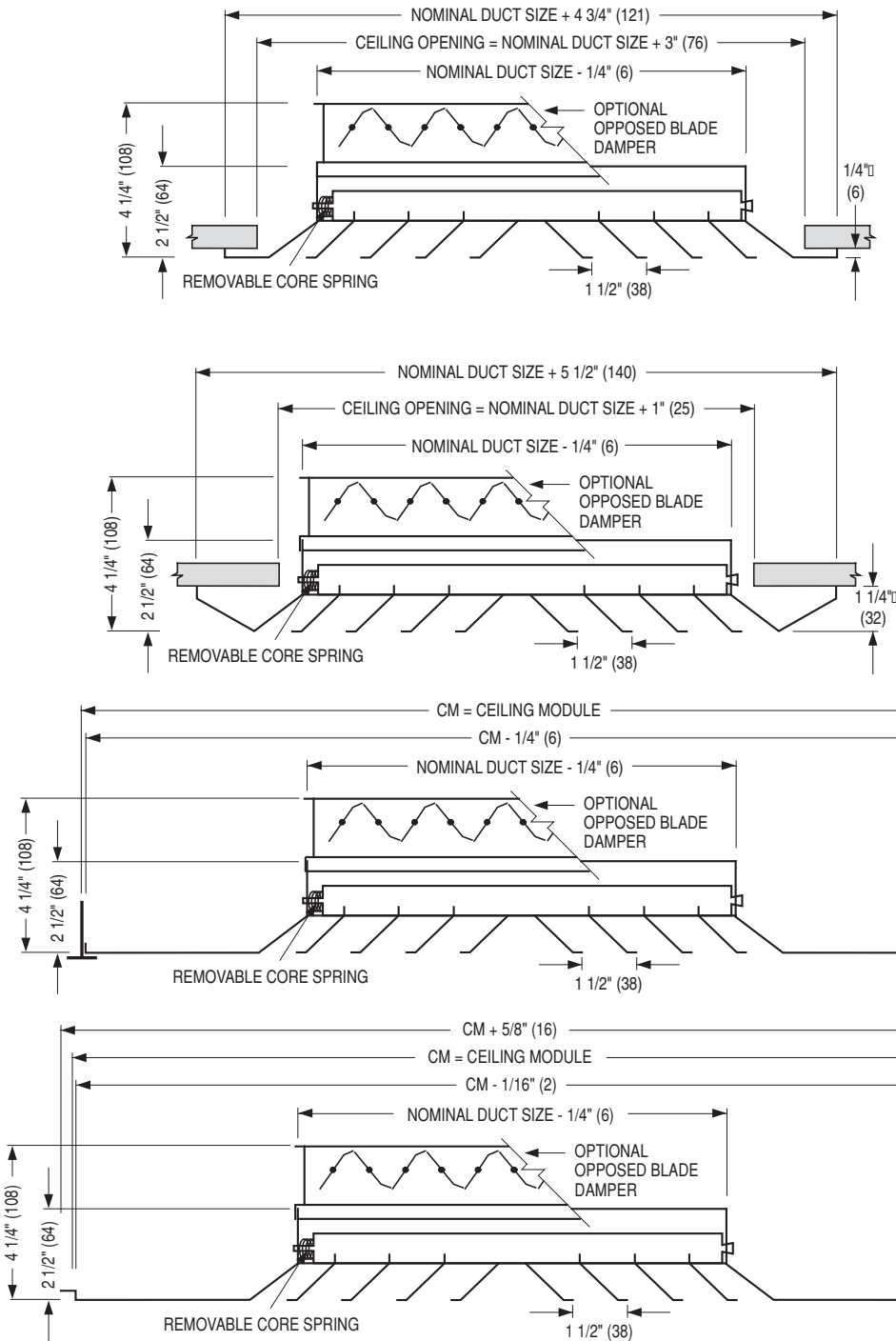
SR Square-to-round transition adaptors are available (SR04 - SR24 option [4" - 24" diameter]). See page D257.

EQT Earthquake Tabs

For additional options and accessories; see page D255.

## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL SERIES 6500 AND 6200



SPLINE TYPE DIFFUSER FOR ONE-DIRECTIONAL EXPOSED T-BAR LAY-IN GRID OR FOR CONCEALED T-BAR GRID.  
 (SPLINES ON TWO OPPOSITE SIDES. STEEL LIFT BRACKETS ON THE OTHER TWO SIDES).

**Type S - Surface Mount Frame**



**Type B - Beveled Drop Face Frame**



**Type L - Lay-In T-Bar Frame**



**Type SP - Spline Frame**



D

CEILING DIFFUSERS

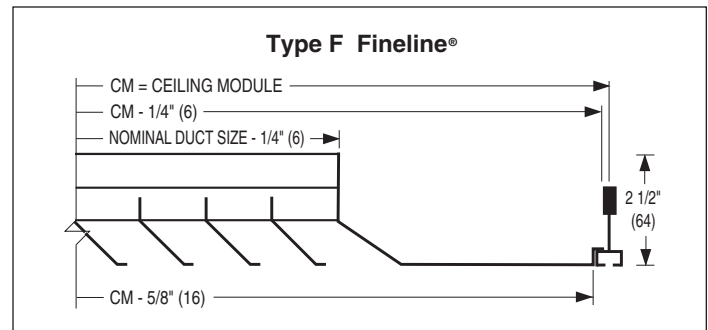
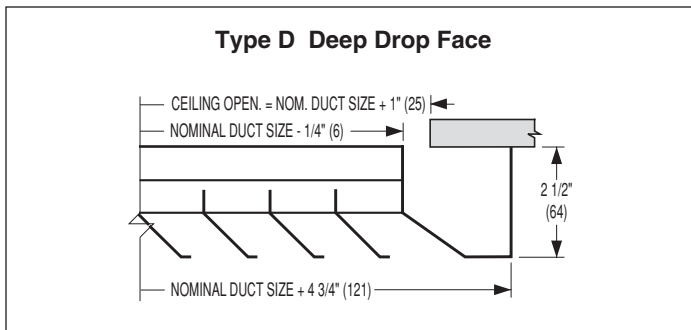
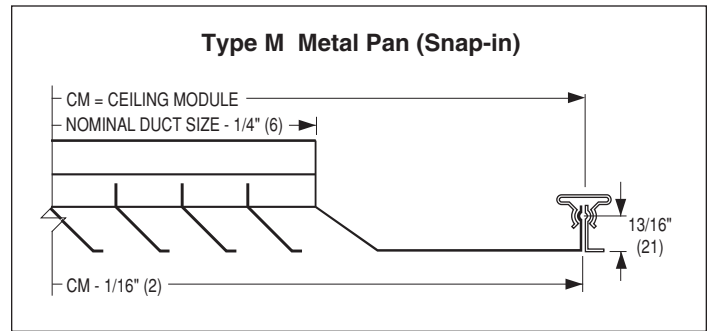
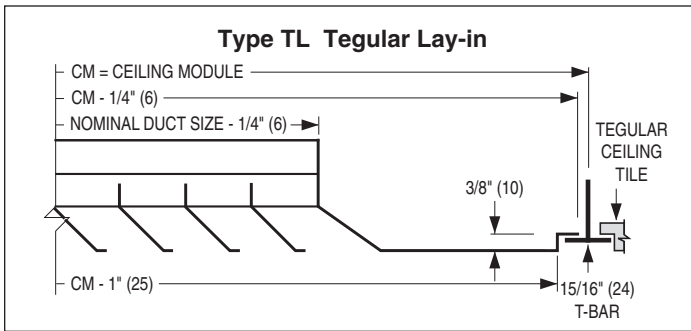
### Extended Panel Diffusers Frame Types L, SP, TL, M and F

If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a steel module-sized extended panel will be added. Aluminum is available as an option. See the table at right for the maximum duct size for each module size.

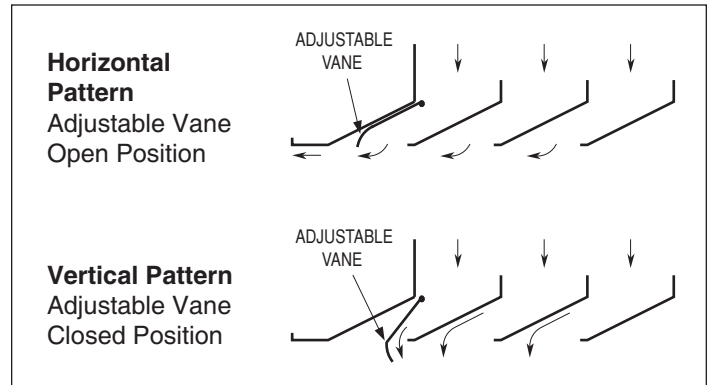
Table 1		
Ceiling Module Size	Maximum Duct Size Frames L, SP and M	Maximum Duct Size Frames TL and F
12 x 12 (305 x 305)	9 x 9 (229 x 229)	6 x 6 (152 x 152)
20 x 20 (508 x 508)	15 x 15 (381 x 381)	—
24 x 12 (610 x 305)	21 x 9 (533 x 229)	18 x 6 (457 x 152)
24 x 24 (610 x 610)	21 x 21 (533 x 533)	18 x 18 (457 x 457)
48 x 24 (1219 x 610)	45 x 21 (1143 x 533)	—

## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL SERIES 6500 AND 6200



## ADJUSTABLE DISCHARGE PATTERN: MODELS 6550 AND 6250



**Models 6550 and 6250** Adjustable Diffusers provide continuous adjustment – from horizontal to vertical – on each face of the diffuser. They feature four hinged, independently adjustable control vanes attached to the outer cone.

### FEATURES:

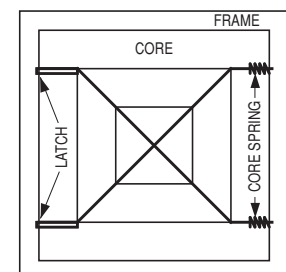
- Unit size is determined by duct dimensions. Diffuser necks are under sized to suit ductwork.
- Square or rectangular 1, 2, 3 or 4-way core style diffusers up to and including 24" x 24" (610 x 610) neck size.
- Square duct sizes are recommended.
- Discharge patterns on all sides are independently adjustable.
- No tools required to adjust pattern.
- Can be adjusted from diffuser face without removing core.

### REMOVABLE CORE

- Standard feature of **Models 6500, 6550, 6200 and 6250.**
- Engineered design allows easy removal without the need for tools, yet remains securely in place.

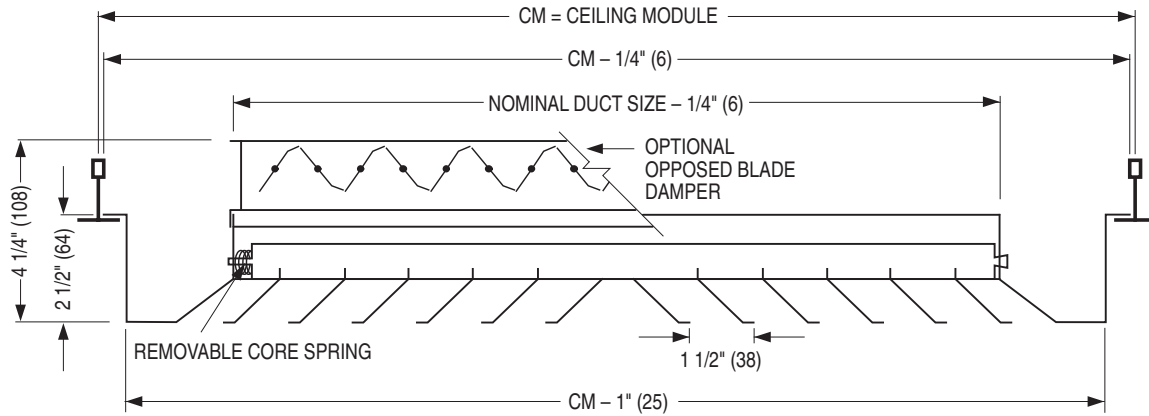
### HOW TO REMOVE

To remove diffuser core, lift the complete core assembly to disengage the latch, push the core against the core spring, pull down the core slightly and remove. Reverse procedure to re-install.



## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL SERIES 6500 TYPE DL DROPPED FACE LAY-IN T-BAR MOUNT



#### AVAILABLE SIZES:

Imperial Modules				Metric Modules	
Imperial Units (in.)		Metric Units (mm)		Metric Units (mm)	
Ceiling Module Size	Maximum Duct Size	Ceiling Module Size	Maximum Duct Size	Ceiling Module Size	Maximum Duct Size
24 x 24	18 x 18	610 x 610	457 x 457	600 x 600	457 x 457
48 x 24	42 x 18	1219 x 610	1067 x 457	1200 x 600	1067 x 457
48 x 48	42 x 42	1219 x 1219	1067 x 1067	1200 x 1200	1067 x 1067

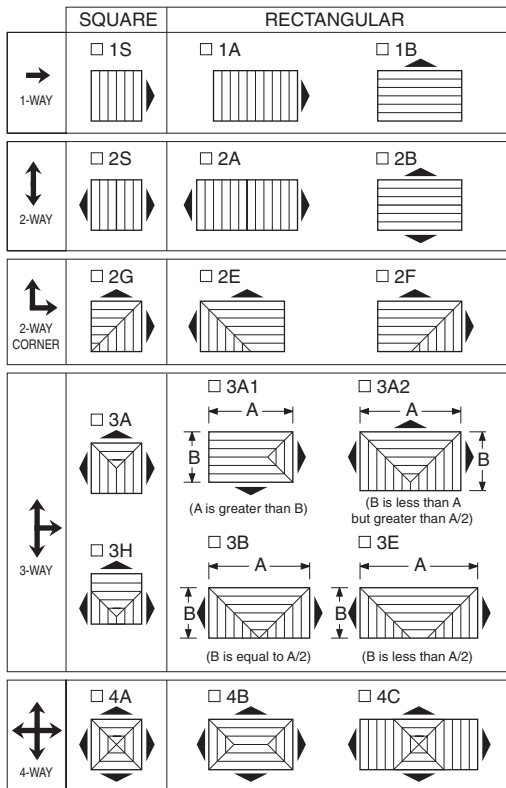
Minimum duct (neck) size: 6" x 6" (152 x 152).

Maximum duct (neck) size: see table.

Available in 3" (76) increments only.

D  
CEILING DIFFUSERS

#### CORE STYLE SELECTION



Patterns are shown in plan view (looking down into inlet).

## SQUARE PATTERN CEILING DIFFUSERS

- LOUVERED FACE
- HIGH CAPACITY
- FIBERGLASS PLENUM
- STEEL FACE

### Model:

**6500FP Steel Face with Fiberglass  
Plenum**



Model 6500FP

Model 6500FP Pattern Ceiling Diffusers have been specially designed to provide a high capacity louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. An engineered blade design with a 1/4" (6) horizontal lip on all angular discharge louvers creates a stable horizontal air pattern that is tight to the ceiling. Ideal for applications in VAV systems, these diffusers create a strong ceiling coanda effect at typical maximum and minimum airflow rates and ensure draft free air distribution.

### STANDARD FEATURES:

- Spring loaded 15" x 15" (381 x 381) removable core.
- 4-way discharge pattern.
- Pre-scored plenum for 6", 8", 10", 12", 14" or 15" (152, 203, 254, 305, 356 or 381) diameter spin-in or tab back inlet collar (by others).

### CONSTRUCTION MATERIAL:

- Corrosion-resistant steel diffuser face and core assembly.
- One piece molded fiberglass backpan with foil back vapor barrier R-6.0 value.

### FINISH OPTIONS:

Standard finish is AW Appliance White (optional finishes are available).

### AVAILABLE SIZES:

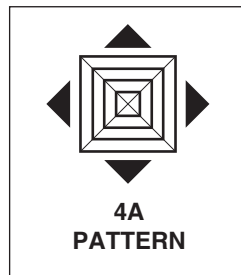
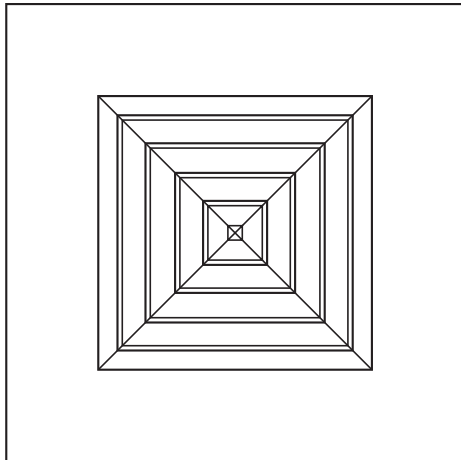
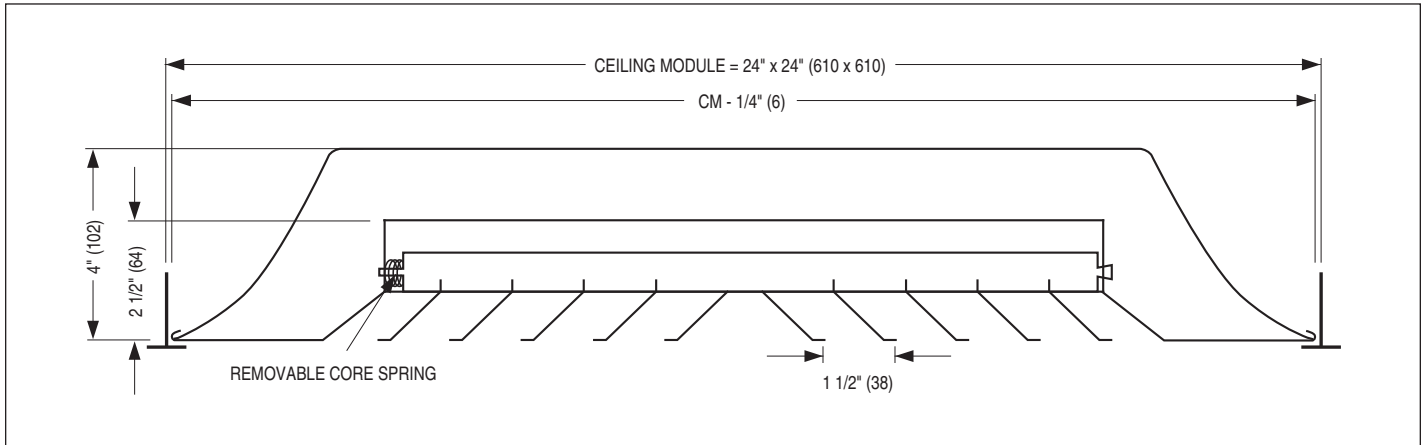
Ceiling Module size 24" x 24" (610 x 610) for Type L Lay-in T-Bar ceilings.

For additional options and accessories; see page D255.



## DIMENSIONAL DATA AND FRAME TYPE:

### MODEL 6500FP TYPE L LAY-IN T-BAR



## PATTERN CEILING DIFFUSERS

- SUITABLE FOR MRI
- 100% ALUMINUM
- HIGH CAPACITY
- SQUARE NECK

**Model:**

**6200-MRI Aluminum**



Model 6200-MRI

D

CEILING DIFFUSERS

Model 6200-MRI Pattern Ceiling Diffusers is a high capacity louvered face directional diffuser that has been designed to supply large volumes of air at relatively low sound levels and pressure drops. An engineered blade design with a 1/4" (6) horizontal lip on all angular discharge louvers creates a stable horizontal air pattern that is tight to the ceiling. Ideal for applications in VAV systems, these diffusers create a strong ceiling coanda effect at typical maximum and minimum airflow rates and ensure draft free air distribution.

Available with a wide variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirement. Model 6200-MRI Ceiling Diffusers are available in 1, 2, 3 or 4-way directional blow patterns with fixed pattern discharge louvers for a horizontal throw pattern. The diffusers are constructed entirely from aluminum and suitable for MRI applications.

**STANDARD FEATURES:**

- A wide variety of frame styles to suit most ceiling applications.
- Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a wide selection of square and rectangular neck sizes.
- Clean lines with no unsightly visible screws.
- Fixed core.

**CONSTRUCTION MATERIAL:**

- 100% Aluminum.

**AVAILABLE SIZES:**

- Unit size is determined by duct dimensions. Diffuser necks are undersized to suit ductwork.
- Duct sizes are available in 3" (76) increments.
- If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a module sized extended panel will be added.

**MINIMUM DUCT SIZE:**

- 6" x 6" (152 x 152).

**MAXIMUM DUCT SIZE:**

See dimensional table on next page.

**FINISH OPTIONS:**

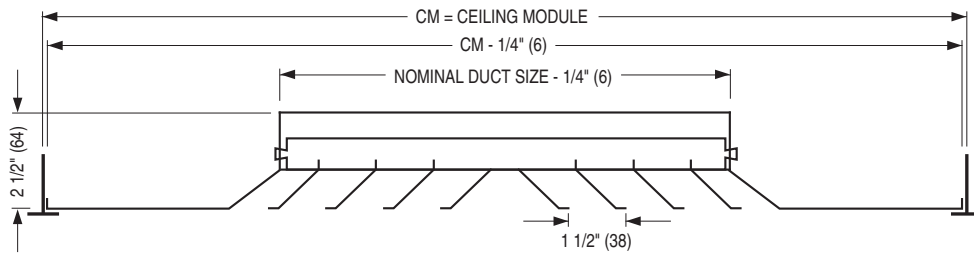
Standard finish is AW Appliance White (optional finishes are available).

**OPTIONS & ACCESSORIES:**

- EX External Foil-Back Insulation (installed) – R-4.2.

## DIMENSIONAL DATA AND FRAME TYPE:

### MODEL 6200-MRI TYPE L LAY-IN T-BAR

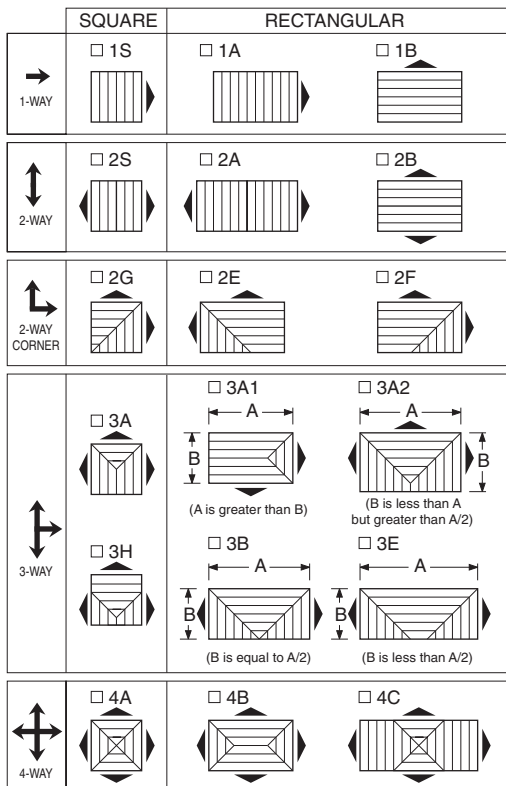


#### AVAILABLE SIZES:

Imperial Modules				Metric Modules	
Imperial Units (in.)		Metric Units (mm)		Metric Units (mm)	
Ceiling Module Size	Maximum Duct Size	Ceiling Module Size	Maximum Duct Size	Ceiling Module Size	Maximum Duct Size
12 x 12	9 x 9	305 x 305	229 x 229	300 x 300	152 x 152
20 x 20	15 x 15	508 x 508	381 x 381	500 x 500	381 x 381
24 x 12	21 x 9	610 x 305	533 x 229	600 x 300	457 x 152
24 x 24	21 x 21	610 x 610	533 x 533	600 x 600	457 x 457
48 x 24	45 x 12	1219 x 610	1143 x 533	1200 x 600	1067 x 457

If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a module sized extended panel will be added.  
 Minimum duct size: 6 x 6 (152 x 152).  
 Maximum duct size: see table.  
 Available in 3" (76) increments only.

#### CORE STYLE SELECTION



Patterns are shown in plan view (looking down into inlet).




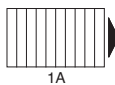
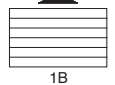




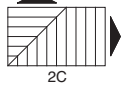
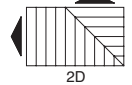
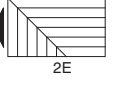
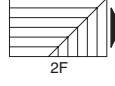



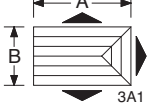
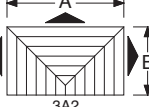

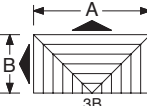

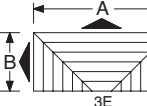








D  
CEILING DIFFUSERS

## STANDARD CORE STYLES:

### MODEL SERIES 6500 AND 6200

Contact factory for special core configurations.

#### SIZES AVAILABLE

	SQUARE	RECTANGULAR	CORE	MINIMUM	MAXIMUM			
 <b>Type 1S</b>	 1-WAY	 1S	 1A	 1B	1S 6 x 6 (152 x 152) 1A 9 x 6 (229 x 152) 1B 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)		
		 2S	 2A	 2B	2S 6 x 6 (152 x 152) 2A 9 x 6 (229 x 152) 2B 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)		
		 2G	 2C	 2D	 2E	 2F	2G 6 x 6 (152 x 152) 2C 9 x 6 (229 x 152) 2D 9 x 6 (229 x 152) 2E 9 x 6 (229 x 152) 2F 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
 <b>Type 3A</b>	 3-WAY	 3A	 3A1	 3A2	3A 6 x 6 (152 x 152) 3A1 9 x 6 (229 x 152) 3A2 9 x 6 (229 x 152) 3B 12 x 6 (305 x 152) 3C 9 x 6 (229 x 152) 3E 15 x 6 (381 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 18 (914 x 457) 36 x 33 (914 x 838) 36 x 15 (914 x 381) 36 x 36 (914 x 914)		
		 3H	 3B	 3C	 3E	(A is greater than B) (B is less than A but greater than A/2) (B is equal to A/2) (B is less than A/2)	3H 6 x 6 (152 x 152)	36 x 36 (914 x 914)
		 <b>Type 4A</b>	 4-WAY	 4A	 4B	 4C	4A 6 x 6 (152 x 152) 4B 9 x 6 (229 x 152) 4C 12 x 6 (305 x 152) 4E 15 x 6 (381 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 30 (914 x 762) 36 x 27 (914 x 686)
		 4B		 4C	 4E	X X	4E 15 x 6 (381 x 152)	36 x 36 (914 x 914)

Dimensions are in inches (mm).

#### Notes:

1. Duct sizes are available in 3" (76) increments.
2. Unless otherwise specified, the "x" dimension on 3C and 4E patterns will be such that cataloged flow division is obtained.
3. Patterns are shown in plan view (looking down into inlet).

D  
CEILING DIFFUSERS

## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • SQUARE NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033	400 .058	500 .090	600 .130	700 .177	800 .231	900 .293
6 x 6  .25 SQ. FT.	RETURN FACTORS —SP=1.1 TP NC + 1	CFM NC	75 —	100 10	125 17	150 22	175 26	200 31	225 35
	4A	CFM/SIDE THROW, FT.	19 4-5-8	25 4-6-10	31 6-8-10	37 6-8-11	44 8-9-12	50 8-9-12	56 9-10-13
	3A	CFM/SIDE THROW, FT.	19 28 4-5-8 5-8-11	25 38 4-6-10 6-9-12	31 47 6-8-10 8-10-14	37 56 6-8-11 8-11-15	44 66 8-9-12 9-12-16	50 75 8-9-12 9-12-17	56 85 9-10-13 10-13-18
	2S  2G	CFM/SIDE THROW, FT.	37 8-9-12	50 9-10-14	62 10-11-16	75 11-12-17	88 12-13-18	100 12-13-19	113 12-14-20
	1S	CFM/SIDE THROW, FT.	75 9-11-15	100 10-12-17	125 11-14-19	150 12-15-22	175 13-16-22	200 14-17-24	225 15-18-25
9 x 9  .56 SQ. FT.	RETURN FACTORS —SP=1.2 TP NC + 2	CFM NC	170 —	225 14	280 20	340 26	395 31	450 35	505 38
	4A	CFM/SIDE THROW, FT.	42 6-8-12	56 7-10-14	70 10-11-15	84 10-12-16	98 11-12-17	112 11-14-19	126 12-15-20
	3A	CFM/SIDE THROW, FT.	42 63 6-8-12 9-11-14	56 85 7-10-14 10-12-17	70 106 10-11-15 11-13-19	84 127 10-12-16 12-14-20	98 148 11-12-17 13-15-21	112 169 11-14-19 13-16-22	126 190 12-15-20 14-18-24
	2S  2G	CFM/SIDE THROW, FT.	84 9-10-15	112 11-13-18	141 12-15-20	169 13-16-22	197 14-17-23	225 15-18-25	253 16-19-28
	1S	CFM/SIDE THROW, FT.	169 12-15-20	225 14-17-23	282 16-19-26	338 17-22-29	394 18-22-31	450 19-24-33	507 22-25-35
12 x 12  1.0 SQ. FT.	RETURN FACTORS —SP=1.3 TP NC + 4	CFM NC	300 10	400 17	500 23	600 28	700 33	800 36	900 39
	4A	CFM/SIDE THROW, FT.	75 8-13-15	100 11-14-18	125 13-15-21	150 14-17-22	175 14-18-24	200 15-20-25	225 17-21-27
	3A	CFM/SIDE THROW, FT.	75 112 8-13-15 11-14-19	100 150 11-14-18 12-15-21	125 187 13-15-21 14-17-24	150 225 14-17-22 15-19-26	175 262 14-18-24 16-20-27	200 300 15-20-25 17-21-30	225 338 17-21-27 19-22-31
	2S  2G	CFM/SIDE THROW, FT.	150 12-15-20	200 15-17-25	250 17-19-27	300 18-20-29	350 19-21-31	400 20-25-34	450 21-25-36
	1S	CFM/SIDE THROW, FT.	300 16-20-28	400 18-22-32	500 21-25-37	600 22-26-39	700 23-28-41	800 25-29-41	900 28-33-47
15 x 15  1.56 SQ. FT.	RETURN FACTORS —SP=1.8 TP NC + 4	CFM NC	465 10	625 19	780 25	935 30	1090 33	1250 39	1400 41
	4A	CFM/SIDE THROW, FT.	117 13-16-21	156 14-18-24	195 16-19-27	234 18-21-29	273 19-22-30	312 20-24-33	350 21-26-35
	3A	CFM/SIDE THROW, FT.	117 175 13-16-21 14-17-23	156 234 14-18-24 17-19-29	195 292 16-19-27 19-22-31	234 351 18-21-29 21-23-34	273 409 19-22-30 22-25-36	312 468 19-24-35 22-29-39	350 527 21-26-35 25-29-42
	2S  2G	CFM/SIDE THROW, FT.	234 16-20-27	312 19-22-31	390 21-25-36	468 22-27-40	546 24-29-42	625 27-31-45	700 27-35-47
	1S	CFM/SIDE THROW, FT.	467 21-25-36	625 23-29-42	780 26-32-47	935 29-36-51	1090 30-39-55	1250 32-42-57	1400 36-44-61
18 x 18  2.25 SQ. FT.	RETURN FACTORS —SP=2.1 TP NC + 6	CFM NC	675 12	900 21	1125 27	1350 31	1575 36	1800 39	2025 42
	4A	CFM/SIDE THROW, FT.	168 15-19-25	225 17-20-29	281 19-24-32	337 20-25-36	394 22-27-37	450 24-29-41	506 25-31-43
	3A	CFM/SIDE THROW, FT.	168 253 15-19-25 17-22-29	225 338 17-20-29 20-25-33	281 422 19-24-32 23-27-38	337 506 20-25-36 25-32-42	394 590 22-27-37 26-32-45	450 675 24-29-41 27-35-48	506 760 25-31-43 32-36-51
	2S  2G	CFM/SIDE THROW, FT.	337 19-23-32	450 22-26-38	562 24-30-43	675 26-31-46	787 30-34-49	900 30-35-53	1012 32-39-55
	1S	CFM/SIDE THROW, FT.	675 25-33-45	900 30-36-51	1125 34-42-58	1350 36-45-61	1575 39-48-66	1800 43-52-70	2025 46-55-75

For performance notes, see page D37.

## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • SQUARE NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033	400 .058	500 .090	600 .130	700 .177	800 .231	900 .293
21 x 21  3.06 SQ. FT.	RETURN FACTORS —SP=2.6 TP NC + 8	CFM NC	915 14	1225 22	1530 28	1835 32	2140 37	2450 40	2750 43
	4A	CFM/SIDE THROW, FT.	230 18-21-30	306 19-25-34	382 21-28-39	460 23-30-41	535 25-32-44	612 26-34-46	688 28-39-51
	3A	CFM/SIDE THROW, FT.	230 345 15-19-26 20-25-34	306 460 17-22-29 23-28-39	382 573 19-25-34 26-31-45	460 688 20-26-36 28-34-50	535 802 22-28-39 29-36-53	612 918 23-29-40 34-39-56	688 1030 25-34-45 34-43-59
	2S  2G	CFM/SIDE THROW, FT.	458 22-27-39	612 25-31-45	765 28-35-50	917 31-39-55	1070 32-42-59	1225 35-45-62	1375 39-48-66
	1S	CFM/SIDE THROW, FT.	917 29-37-51	1225 34-43-59	1530 39-50-67	1835 43-53-71	2140 46-56-77	2450 50-60-82	2750 53-64-88
24 x 24  4.0 SQ. FT.	RETURN FACTORS —SP=2.7 TP NC + 8	CFM NC	1200 15	1600 23	2000 29	2400 33	2800 37	3200 41	3600 44
	4A	CFM/SIDE THROW, FT.	300 20-24-33	400 24-27-40	500 27-31-44	600 29-33-47	700 31-35-51	800 33-40-55	900 35-40-58
	3A	CFM/SIDE THROW, FT.	300 450 20-24-33 23-28-39	400 600 24-27-40 26-31-46	500 750 27-31-44 29-36-52	600 900 29-33-47 31-38-56	700 1050 31-33-51 36-41-59	800 1200 33-40-55 36-43-64	900 1350 35-40-58 39-47-67
	2S  2G	CFM/SIDE THROW, FT.	600 25-33-45	800 30-36-51	1000 34-42-58	1200 36-45-61	1400 39-48-66	1600 43-52-70	1800 46-55-75
	1S	CFM/SIDE THROW, FT.	1200 35-40-59	1600 38-48-67	2000 45-54-77	2400 48-58-82	2800 51-62-90	3200 54-67-93	3600 59-70-101
30 x 30  6.25 SQ. FT.	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1875 16	2500 24	3125 30	3750 35	4375 39	5000 42	5625 46
	4A	CFM/SIDE THROW, FT.	469 25-31-42	625 29-36-48	782 34-40-55	937 36-44-61	1093 38-46-65	1250 40-50-69	1406 46-52-73
	3A	CFM/SIDE THROW, FT.	469 703 25-31-42 28-34-49	625 938 29-36-48 32-39-57	782 1172 34-40-55 35-44-64	937 1405 36-44-61 39-49-69	1093 1640 38-46-65 41-49-74	1250 1875 40-50-69 44-57-78	1406 2110 46-52-73 49-60-83
	2S  2G	CFM/SIDE THROW, FT.	937 32-40-55	1250 37-47-63	1562 42-53-72	1875 47-57-77	2187 50-60-83	2500 53-65-88	2812 57-68-95
	1S	CFM/SIDE THROW, FT.	1875 42-53-72	2500 49-60-83	3125 56-69-93	3750 60-72-102	4375 63-77-109	5000 69-83-116	5625 72-88-123
36 x 36  9.0 SQ. FT.	RETURN FACTORS —SP=3.6 TP NC + 9	CFM NC	2700 18	3600 25	4500 31	5400 36	6300 40	7200 44	8100 48
	4A	CFM/SIDE THROW, FT.	675 30-37-51	900 34-41-57	1125 39-46-67	1350 41-51-74	1575 44-53-78	1800 51-57-83	2025 51-64-87
	3A	CFM/SIDE THROW, FT.	675 1010 30-37-51 34-44-60	900 1350 34-41-57 40-48-68	1125 1687 39-46-67 46-56-78	1350 2025 41-51-74 48-60-82	1575 2362 44-53-78 52-64-88	1800 2700 51-57-83 58-70-94	2025 3038 51-64-87 62-74-100
	2S  2G	CFM/SIDE THROW, FT.	1350 40-45-67	1800 43-54-76	2250 50-61-86	2700 54-65-92	3150 58-70-101	3600 61-76-104	4050 67-79-113
	1S	CFM/SIDE THROW, FT.	2700 49-61-85	3600 59-70-99	4500 66-80-114	5400 72-85-122	6300 76-91-131	7200 82-97-142	8100 87-106-150

For performance notes, see page D37.



## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • ROUND NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	400 .026	600 .058	800 .103	900 .130	1000 .161	1200 .231	1400 .315
18 x 18 6" ROUND	RETURN FACTORS —SP=0.7 TP NC + 0	CFM NC	78 —	118 11	157 19	176 21	196 25	235 30	274 35
	4A	CFM/SIDE THROW, FT.	20 2-4-6	29 4-7-10	39 6-8-11	44 7-8-12	49 7-8-13	59 8-9-14	69 8-10-15
	3A	CFM/SIDE THROW, FT.	20 29 2-4-6 2-4-7	29 44 4-7-10 4-8-11	39 59 6-8-11 7-9-12	44 66 7-8-12 8-9-13	49 74 7-8-13 8-9-14	59 88 8-9-14 9-10-15	69 103 8-10-15 9-11-17
	2S  2G	CFM/SIDE THROW, FT.	39 3-4-9	59 5-6-13	78 6-9-15	88 6-10-16	98 7-11-17	118 8-13-18	137 9-14-20
	1S	CFM/SIDE THROW, FT.	78 4-7-14	118 6-10-18	157 9-14-21	176 10-15-23	196 11-16-24	235 12-18-26	274 13-19-28
18 x 18 8" ROUND	RETURN FACTORS —SP=0.8 TP NC + 0	CFM NC	140 —	209 13	279 21	314 23	349 27	419 32	489 37
	4A	CFM/SIDE THROW, FT.	35 4-8-10	52 6-9-13	70 8-10-15	79 9-11-15	87 9-12-17	105 10-13-19	122 11-14-20
	3A	CFM/SIDE THROW, FT.	35 52 4-8-10 4-9-11	52 79 6-9-13 7-10-14	70 105 8-10-15 9-11-17	79 118 9-11-15 10-12-17	87 131 9-12-17 10-13-19	105 157 10-13-19 11-14-21	122 183 11-14-0 12-15-22
	2S  2G	CFM/SIDE THROW, FT.	70 5-17-14	105 6-9-17	140 8-13-20	157 9-14-22	175 10-15-23	209 12-17-25	244 10-13-1
	1S	CFM/SIDE THROW, FT.	140 7-12-19	209 9-14-24	279 13-19-28	314 14-21-30	349 15-22-32	419 16-24-34	489 17-26-37
18 x 18 10" ROUND	RETURN FACTORS —SP=0.9 TP NC + 2	CFM NC	218 —	327 16	436 24	491 26	545 30	654 35	763 40
	4A	CFM/SIDE THROW, FT.	55 4-8-12	82 8-11-17	109 10-13-19	123 11-14-20	136 12-15-21	164 12-16-23	191 13-17-24
	3A	CFM/SIDE THROW, FT.	55 82 4-8-12 4-9-13	82 123 8-11-17 9-12-19	109 164 10-13-19 11-14-21	123 184 11-14-20 12-15-22	136 204 12-15-21 13-17-23	164 245 12-16-23 13-18-25	191 286 13-17-24 14-19-26
	2S  2G	CFM/SIDE THROW, FT.	109 5-7-15	164 7-11-22	218 10-15-25	245 12-17-27	273 13-19-28	327 14-21-30	382 15-23-34
	1S	CFM/SIDE THROW, FT.	218 7-12-22	327 12-17-31	436 15-23-25	491 17-26-37	545 19-27-39	654 20-29-42	763 22-32-45
18 x 18 12" ROUND	RETURN FACTORS —SP=1.0 TP NC + 3	CFM NC	314 —	471 18	628 26	707 28	785 32	942 37	1099 42
	4A	CFM/SIDE THROW, FT.	79 6-9-15	118 8-11-18	157 10-15-23	177 13-17-24	196 14-18-25	236 15-20-28	275 17-21-30
	3A	CFM/SIDE THROW, FT.	79 118 6-9-15 7-10-17	118 177 8-11-18 9-12-20	157 236 10-15-23 11-17-25	177 265 13-17-24 14-19-26	196 294 14-18-25 15-20-28	236 353 15-20-28 17-23-31	275 412 17-21-30 19-23-33
	2S  2G	CFM/SIDE THROW, FT.	157 6-9-19	236 9-14-26	314 11-16-29	353 14-21-32	393 15-23-34	471 16-24-38	550 18-27-40
	1S	CFM/SIDE THROW, FT.	314 9-14-28	471 14-21-37	628 19-28-42	707 21-32-45	785 23-34-47	942 24-36-51	1099 27-39-55
18 x 18 14" ROUND	RETURN FACTORS —SP=1.1 TP NC + 4	CFM NC	427 —	641 20	854 28	961 30	1068 34	1282 39	1495 44
	4A	CFM/SIDE THROW, FT.	107 7-10-19	160 10-15-23	214 14-19-26	240 15-20-29	267 17-21-30	320 19-23-32	374 21-26-38
	3A	CFM/SIDE THROW, FT.	107 160 7-10-19 8-11-21	160 240 10-15-23 11-17-25	214 320 14-19-26 15-21-29	240 360 15-20-29 17-22-32	267 401 17-21-30 19-23-33	320 481 19-23-32 21-25-35	374 561 21-26-38 23-29-42
	2S  2G	CFM/SIDE THROW, FT.	214 7-11-22	320 11-16-31	427 14-22-36	481 16-24-38	534 18-27-40	641 19-28-43	748 21-31-47
	1S	CFM/SIDE THROW, FT.	427 11-16-32	641 16-24-42	854 24-33-50	961 24-37-52	1068 27-39-55	1282 29-42-60	1495 33-45-65
18 x 18 16" ROUND	RETURN FACTORS —SP=1.3 TP NC + 6	CFM NC	558 —	837 22	1116 30	1256 32	1395 36	1674 41	1953 46
	4A	CFM/SIDE THROW, FT.	140 8-12-21	209 12-19-26	279 17-21-31	314 19-23-32	349 20-25-35	419 22-28-42	488 24-30-48
	3A	CFM/SIDE THROW, FT.	140 209 8-12-21 9-13-23	209 314 12-19-26 13-21-29	279 419 17-21-31 19-23-34	314 471 19-23-32 21-25-35	349 523 20-25-35 22-28-39	419 628 22-28-42 24-31-46	488 732 24-30-48 26-33-53
	2S  2G	CFM/SIDE THROW, FT.	279 8-13-25	419 13-19-35	558 16-25-41	628 19-28-43	698 20-30-45	837 23-34-49	977 26-37-54
	1S	CFM/SIDE THROW, FT.	558 13-19-38	837 19-28-49	1116 25-38-57	1256 28-42-60	1395 31-44-63	1674 36-48-69	1953 42-52-75

D  
CEILING DIFFUSERS

For performance notes, see page D37.

## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
			CFM NC	A B	A B	A B	A B	A B	A B	A B	A B	A B				
9 x 6  .375 SQ. FT.	RETURN FACTORS —SP=1.2 TP NC + 0	CFM NC	110 —	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	
	4B	CFM/SIDE THROW, FT.	37 18	7-11-13 5-6-10	50 25	10-12-16 6-7-11	62 31	11-13-18 7-10-12	75 37	12-14-19 7-10-13	87 44	12-16-20 10-11-14	100 50	13-17-22 10-12-15	112 56	14-18-23 11-12-16
	3A1	CFM/SIDE THROW, FT.	47 18	10-11-14 5-6-10	62 25	11-12-17 6-7-11	78 31	12-13-19 7-10-12	94 37	13-14-20 7-10-13	109 44	14-16-22 10-11-14	125 50	14-17-23 10-12-15	140 56	16-18-26 11-12-16
	3A2	CFM/SIDE THROW, FT.	42 35	8-12-14 6-8-13	55 47	10-13-17 8-10-14	70 58	12-14-19 10-12-16	84 70	13-16-21 10-13-17	98 82	13-17-22 12-13-18	112 94	14-18-23 12-14-19	126 105	16-19-25 13-16-21
	2A 2B	CFM/SIDE THROW, FT.	56	11-12-16	75	12-14-19	93	13-16-22	112	14-18-23	131	16-19-24	150	17-20-26	168	18-22-29
	2C 2E  2D 2F	CFM/SIDE THROW, FT.	75 37	12-14-19 8-12-14	100 50	13-16-22 10-13-17	125 62	14-18-25 12-14-19	150 75	16-19-29 13-16-21	175 87	17-21-29 13-17-25	200 100	18-22-31 14-18-23	225 112	20-23-33 16-20-25
1A 1B	CFM/SIDE THROW, FT.	112	14-17-23	150	17-19-29	187	19-22-31	225	21-23-34	262	22-25-36	300	23-29-39	337	25-29-42	
12 x 6  .50 SQ. FT.	RETURN FACTORS —SP=1.6 TP NC + 1	CFM NC	150 —	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	
	4B  4C	CFM/SIDE THROW, FT.	56 18	11-13-17 5-6-10	75 25	12-14-19 6-7-11	94 31	13-17-22 7-10-12	113 37	14-18-23 7-10-13	131 44	16-19-26 10-11-14	150 50	17-20-26 10-11-14	169 56	18-22-29 11-12-16
	3A1	CFM/SIDE THROW, FT.	66 18	11-13-18 5-6-10	87 25	12-14-20 6-7-11	109 31	13-17-23 7-10-12	131 37	14-18-26 7-10-13	153 44	16-19-26 10-11-14	175 50	17-20-29 10-11-14	197 56	18-22-30 11-12-16
	3B	CFM/SIDE THROW, FT.	75 37	11-16-20 8-12-14	100 50	14-18-23 10-13-17	126 62	16-20-27 12-14-19	150 75	18-22-29 13-16-21	176 87	18-23-31 13-17-25	200 100	20-25-32 14-18-23	226 112	22-27-34 16-20-25
	2A 2B	CFM/SIDE THROW, FT.	75	11-13-18	100	12-14-20	125	13-17-23	150	14-18-26	175	16-19-26	200	17-20-29	225	18-22-30
	2C 2E  2D 2F	CFM/SIDE THROW, FT.	112 37	14-17-23 8-12-14	150 50	17-19-29 10-13-17	188 62	19-22-31 12-14-19	225 75	21-23-34 13-16-21	263 87	22-25-36 13-17-25	300 100	23-29-39 14-18-23	338 112	25-29-42 16-20-25
1A 1B	CFM/SIDE THROW, FT.	150	14-17-23	200	17-19-29	250	19-22-31	300	21-23-34	350	22-25-36	400	23-29-39	450	25-29-42	
15 x 6  .625 SQ. FT.	RETURN FACTORS —SP=1.9 TP NC + 1	CFM NC	190 —	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	
	4B  4C	CFM/SIDE THROW, FT.	75 18	11-13-18 5-6-10	100 25	12-14-20 6-7-11	125 31	13-17-23 7-10-12	150 37	14-18-26 7-10-13	175 44	16-19-26 10-11-14	200 50	17-20-29 10-11-14	225 56	18-22-30 11-12-16
	4E	CFM/SIDE THROW, FT.	56 37	11-12-16 10-11-14	75 50	12-14-19 11-12-17	94 62	12-17-22 12-13-19	113 75	14-18-23 13-14-20	131 87	16-19-26 14-16-22	150 100	16-20-26 14-17-23	169 112	18-22-29 16-18-26
	3A1	CFM/SIDE THROW, FT.	84 18	12-13-19 5-6-10	112 25	13-16-22 6-7-11	140 31	14-18-24 7-10-12	169 37	16-19-26 7-10-13	197 44	17-20-28 10-11-14	225 50	18-22-30 10-11-14	253 56	19-23-34 11-12-16
	2A 2B	CFM/SIDE THROW, FT.	94	12-14-20	125	13-16-23	156	14-19-26	187	16-20-28	219	17-22-30	250	18-23-31	281	19-26-35
	2C 2E  2D 2F	CFM/SIDE THROW, FT.	150 37	14-17-23 8-12-14	200 50	17-19-29 10-13-17	250 62	19-22-31 12-14-19	300 75	21-23-34 13-16-21	350 87	22-25-36 13-17-22	400 100	23-29-39 14-18-23	450 112	25-29-42 16-20-25
1A 1B	CFM/SIDE THROW, FT.	188	16-19-26	250	18-22-30	312	21-25-34	375	22-29-38	438	23-29-40	500	25-31-43	563	29-32-45	

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

D  
CEILING DIFFUSERS

## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
			CFM NC	— —	A	B	A	B	A	B	A	B	A	B	A	B
18 x 6  .75 SQ. FT.	RETURN FACTORS —SP=2.6 TP NC + 2	CFM NC	225 —	—	300 16	—	375 22	—	450 28	—	525 33	—	600 37	—	675 41	—
	4B  4C	CFM/SIDE THROW, FT.	94 18	125 25	156 31	188 37	218 44	250 50	281 56	12-14-20 5-6-10	13-17-23 6-7-11	14-19-25 7-10-12	16-20-28 7-10-13	17-22-30 10-11-14	18-23-31 10-11-14	19-26-35 11-12-16
	4E	CFM/SIDE THROW, FT.	56 56	75 75	94 94	113 113	131 131	150 150	169 169	11-13-17 11-13-17	12-14-19 12-14-19	13-17-22 13-17-22	14-18-23 14-18-23	16-19-26 16-19-26	17-20-26 17-20-26	18-22-29 18-22-29
	3A1	CFM/SIDE THROW, FT.	103 18	137 25	172 31	206 37	240 44	275 50	309 56	12-14-20 5-6-10	13-17-23 6-7-11	14-19-25 7-10-12	16-20-28 7-10-13	17-22-30 10-11-14	18-23-31 10-11-14	19-26-35 11-12-16
	2A 2B	CFM/SIDE THROW, FT.	112	150	187	225	262	300	337	13-16-22	16-18-26	18-20-29	19-22-31	20-23-34	22-26-36	23-26-38
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	187 37	250 50	313 62	375 75	438 87	500 100	563 112	16-19-26 8-12-14	18-22-30 10-13-17	21-25-34 12-14-19	22-29-38 13-16-21	23-29-40 13-17-22	25-31-43 14-18-23	29-32-45 16-19-25
	1A 1B	CFM/SIDE THROW, FT.	225	300	375	450	525	600	675	17-21-29	19-23-32	22-26-38	23-29-42	25-30-44	29-32-47	29-36-52
21 x 6  .875 SQ. FT.	RETURN FACTORS —SP=3.2 TP NC + 3	CFM NC	260 —	—	350 16	—	435 22	—	525 29	—	610 33	—	700 38	—	785 41	—
	4B  4C	CFM/SIDE THROW, FT.	112 18	150 25	187 31	225 37	262 44	300 50	337 56	13-16-22 5-6-10	16-18-26 6-7-11	18-20-29 7-10-12	19-22-31 7-10-13	20-23-34 10-11-14	22-26-36 10-11-14	23-26-38 11-12-16
	4E	CFM/SIDE THROW, FT.	75 56	100 75	125 94	150 113	175 131	200 150	225 169	11-13-18 11-13-17	12-14-20 12-14-19	13-17-23 13-17-22	14-18-26 14-18-23	16-19-26 16-19-26	17-20-29 17-20-26	18-22-30 18-22-29
	3A1	CFM/SIDE THROW, FT.	122 18	162 25	203 31	244 37	284 44	325 50	365 56	13-16-22 5-6-10	16-18-26 6-7-11	18-20-29 7-10-12	19-22-31 7-10-13	20-23-34 10-11-14	22-26-36 10-11-14	23-26-38 11-12-16
	2A 2B	CFM/SIDE THROW, FT.	131	175	218	262	306	350	393	13-16-22	16-18-26	18-20-29	19-22-31	20-23-34	22-26-36	23-26-38
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	225 37	300 50	375 62	450 75	525 87	600 100	675 112	17-21-29 8-12-14	19-23-32 10-13-17	22-26-38 12-14-19	23-29-42 13-16-21	25-30-44 13-17-22	29-32-47 14-18-23	29-36-49 16-19-25
	1A 1B	CFM/SIDE THROW, FT.	262	350	437	525	612	700	787	17-21-29	19-23-32	22-26-38	23-29-42	25-30-44	29-32-47	29-36-49
24 x 6  1.0 SQ. FT.	RETURN FACTORS —SP=3.9 TP NC + 4	CFM NC	300 —	—	400 16	—	500 23	—	600 30	—	700 34	—	800 39	—	900 42	—
	4B  4C	CFM/SIDE THROW, FT.	131 18	175 25	219 31	263 37	306 44	350 50	394 56	13-16-22 5-6-10	16-18-26 6-7-11	18-20-29 7-10-12	19-22-31 7-10-13	20-23-34 10-11-14	22-26-36 10-11-14	23-26-38 11-12-16
	4E	CFM/SIDE THROW, FT.	75 75	100 100	125 125	150 150	175 175	200 200	225 225	11-13-18 11-13-18	12-14-20 12-14-20	13-17-23 13-17-23	14-18-26 14-18-26	16-19-26 16-19-26	17-20-29 17-20-29	18-22-30 18-22-30
	3A1	CFM/SIDE THROW, FT.	141 18	187 25	234 31	281 37	328 44	375 50	422 56	13-16-22 5-6-10	16-18-26 6-7-11	18-20-29 7-10-12	19-22-31 7-10-13	20-23-34 10-11-14	22-26-36 10-11-14	23-26-38 11-12-16
	2A 2B	CFM/SIDE THROW, FT.	150	200	250	300	350	400	450	13-16-22	16-18-26	18-20-29	19-22-31	20-23-34	22-26-36	23-26-38
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	260 37	350 50	438 62	525 75	613 87	700 100	788 112	17-21-29 8-12-14	19-23-32 10-13-17	22-26-38 12-14-19	23-29-42 13-16-21	25-30-44 13-17-22	29-32-47 14-18-23	29-36-49 16-19-25
	1A 1B	CFM/SIDE THROW, FT.	300	400	500	600	700	800	900	18-22-31	21-25-36	23-29-42	25-30-44	29-32-47	29-34-51	31-38-53

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
			CFM NC	375 —	500 17	625 24	750 30	875 35	1000 40	1125 43	A	B	A	B	A	B
30 x 6  1.25 SQ. FT.	RETURN FACTORS —SP=3.2 TP NC + 3	CFM NC	375 —		500 17		625 24		750 30		875 35		1000 40		1125 43	
	4B  4C	CFM/SIDE THROW, FT.	169	18	225	25	281	31	338	37	393	44	450	50	506	56
	4E	CFM/SIDE THROW, FT.	94	94	125	125	156	156	188	188	219	219	250	250	282	282
	3A1	CFM/SIDE THROW, FT.	178	18	237	25	297	31	356	37	415	44	475	50	534	56
	2A 2B	CFM/SIDE THROW, FT.	187		250		312		375		437		500		562	
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	337	37	450	50	563	62	675	75	788	87	900	100	1013	112
1A 1B	CFM/SIDE THROW, FT.	375		500		625		750		875		1000		1125		
12 x 9  .75 SQ. FT.	RETURN FACTORS —SP=3.9 TP NC + 4	CFM NC	225 —		300 17		375 23		450 28		525 33		600 36		675 40	
	4B  4C	CFM/SIDE THROW, FT.	70	42	94	56	117	70	141	84	164	98	188	112	211	126
	3A1	CFM/SIDE THROW, FT.	91	42	121	56	152	70	183	84	213	98	244	112	274	126
	3A2	CFM/SIDE THROW, FT.	75	75	100	100	125	125	150	150	175	175	200	200	225	225
	2A 2B	CFM/SIDE THROW, FT.	112		150		187		225		262		300		337	
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	141	84	188	112	234	141	281	169	328	197	375	225	422	253
1A 1B	CFM/SIDE THROW, FT.	225		300		375		450		525		600		675		
15 x 9  .93 SQ. FT.	RETURN FACTORS —SP=1.7 TP NC + 3	CFM NC	280 —		375 18		470 24		565 29		655 34		750 37		845 41	
	4B  4C	CFM/SIDE THROW, FT.	98	42	131	56	165	70	198	84	230	98	263	112	296	126
	4E	CFM/SIDE THROW, FT.	70	70	94	94	117	117	141	141	164	164	188	188	211	211
	3A1	CFM/SIDE THROW, FT.	120	42	159	56	200	70	240	84	279	98	319	112	359	126
	3A2	CFM/SIDE THROW, FT.	117	82	155	110	196	137	233	165	272	192	312	219	351	247
	2A 2B	CFM/SIDE THROW, FT.	140		187		235		281		328		375		422	
2C  2D 2E  2F	CFM/SIDE THROW, FT.	197	84	263	112	329	141	394	169	459	197	525	225	592	253	
1A 1B	CFM/SIDE THROW, FT.	281		375		470		563		656		750		845		

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D37.

D  
CEILING DIFFUSERS

## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
			CFM NC	— —	A	B	A	B	A	B	A	B	A	B	A	B
18 x 9  1.125 SQ. FT.	RETURN FACTORS —SP=2.1 TP NC + 3	CFM NC	335	—	450	19	560	25	675	30	790	35	900	38	1010	42
	4B  4C	CFM/SIDE THROW, FT.	126 42	169 56	211 70	254 84	296 98	338 112	380 126							
	4E	CFM/SIDE THROW, FT.	99 70	132 94	164 117	197 141	230 164	263 188	296 211							
	3A1	CFM/SIDE THROW, FT.	147 42	197 56	246 70	295 84	345 98	394 112	443 126							
	3B	CFM/SIDE THROW, FT.	168 84	225 112	281 141	337 169	394 197	450 225	506 253							
	2A  2B	CFM/SIDE THROW, FT.	163	225	281	337	394	450	506							
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	253 84	338 112	421 141	506 169	591 197	675 225	759 253							
1A  1B	CFM/SIDE THROW, FT.	337	450	562	675	788	900	1012								
21 x 9  1.125 SQ. FT.	RETURN FACTORS —SP=2.5 TP NC + 4	CFM NC	395	—	525	19	655	25	785	31	915	36	1050	38	1180	42
	4B  4C	CFM/SIDE THROW, FT.	154 42	206 56	258 70	309 84	360 98	413 112	464 126							
	4E	CFM/SIDE THROW, FT.	98 98	131 131	163 163	196 196	229 229	261 261	294 294							
	3A1	CFM/SIDE THROW, FT.	175 42	234 56	292 70	351 84	410 98	468 112	527 126							
	2A  2B	CFM/SIDE THROW, FT.	196	262	327	393	458	525	590							
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	308 84	412 112	514 141	617 169	720 197	825 225	927 253							
	1A  1B	CFM/SIDE THROW, FT.	393	524	655	786	917	1050	1180							
24 x 9  1.5 SQ. FT.	RETURN FACTORS —SP=2.9 TP NC + 4	CFM NC	450	—	600	19	750	25	900	31	1050	36	1200	38	1350	43
	4B  4C	CFM/SIDE THROW, FT.	183 42	244 56	305 70	366 84	427 98	488 112	549 126							
	4E	CFM/SIDE THROW, FT.	126 99	169 132	211 164	253 197	295 230	337 263	379 296							
	3A1	CFM/SIDE THROW, FT.	204 42	272 56	340 70	408 84	476 98	544 112	612 126							
	2A  2B	CFM/SIDE THROW, FT.	225	300	375	450	525	600	675							
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	365 84	488 112	609 141	731 169	853 197	975 225	1097 253							
	1A  1B	CFM/SIDE THROW, FT.	450	600	750	900	1050	1200	1350							

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D37.

## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
			CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC
30 x 9 1.875 SQ. FT.	RETURN FACTORS —SP=3.9 TP NC + 5	CFM NC	560 —		750 20		935 26		1125 32		1310 37		1500 39		1685 44	
	4B  4C	CFM/SIDE THROW, FT.	238 42	7-8-14	319 56	8-11-15	398 70	11-13-17	478 84	11-14-18	557 98	13-14-20	638 112	13-15-21	716 126	14-17-22
	4E	CFM/SIDE THROW, FT.	155 126	15-18-25	206 169	20-24-32	258 211	22-27-36	310 253	24-31-41	361 295	25-31-42	413 337	27-34-46	465 379	27-31-45
	3A1	CFM/SIDE THROW, FT.	259 42	7-8-14	347 56	8-11-15	433 70	11-13-17	520 84	11-14-18	606 98	13-14-20	694 112	13-15-21	779 126	14-17-22
	2A  2B	CFM/SIDE THROW, FT.	281	20-24-34	375	22-27-39	468	25-31-45	562	27-32-48	655	29-35-50	750	31-36-55	842	34-41-57
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	476 84	13-15-20	638 112	14-17-22	796 141	15-20-25	956 169	17-21-27	1113 197	18-22-31	1275 225	20-24-31	1432 253	21-25-34
	1A  1B	CFM/SIDE THROW, FT.	562	22-27-39	750	25-31-45	937	28-35-50	1125	31-39-55	1310	32-42-59	1500	35-45-62	1685	39-48-66
36 x 9 2.25 SQ. FT.	RETURN FACTORS —SP=5.0 TP NC + 6	CFM NC	675 —		900 21		1125 27		1350 33		1575 38		1800 40		2025 44	
	4B  4C	CFM/SIDE THROW, FT.	295 42	7-8-14	394 56	8-11-15	492 70	11-13-17	591 84	11-14-18	689 98	13-14-20	788 112	13-15-21	886 126	14-17-22
	4E	CFM/SIDE THROW, FT.	183 155	17-21-28	244 206	20-24-32	305 258	22-27-36	366 310	24-31-41	427 361	25-31-42	488 413	27-34-46	549 465	31-35-49
	3A1	CFM/SIDE THROW, FT.	316 42	7-8-14	422 56	8-11-15	527 70	11-13-17	633 84	11-14-18	738 98	13-14-20	844 112	13-15-21	949 126	14-17-22
	2A  2B	CFM/SIDE THROW, FT.	337	20-24-34	450	22-27-39	562	25-31-45	675	27-32-48	787	29-35-50	900	31-36-55	1012	34-41-57
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	590 84	13-15-20	788 112	14-17-22	984 141	15-20-25	1181 169	17-21-27	1378 197	18-22-29	1575 225	20-24-31	1772 253	21-25-34
	1A  1B	CFM/SIDE THROW, FT.	675	24-31-42	900	28-34-48	1125	32-39-55	1350	34-42-57	1575	36-45-62	1800	41-49-66	2025	43-52-70
15 x 12 1.25 SQ. FT.	RETURN FACTORS —SP=1.6 TP NC + 2	CFM NC	375 —		500 19		625 25		750 30		875 34		1000 38		1125 41	
	4B  4C	CFM/SIDE THROW, FT.	112 75	8-13-15	150 100	11-14-18	187 125	13-15-21	225 150	14-17-22	262 175	14-18-24	300 200	15-20-25	337 225	17-21-27
	3A1	CFM/SIDE THROW, FT.	150 75	8-13-15	200 100	18-21-31	250 125	11-14-18	300 150	14-17-22	350 175	14-18-24	400 200	15-20-25	450 225	17-21-27
	3A2	CFM/SIDE THROW, FT.	117 129	14-15-22	156 172	13-15-21	195 215	14-17-24	234 258	18-22-31	273 301	17-20-27	312 344	20-24-32	351 387	18-22-31
	2A  2B	CFM/SIDE THROW, FT.	187	17-21-28	250	20-24-32	312	22-27-36	375	24-29-41	437	25-31-43	500	27-34-46	567	31-35-49
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	225 150	14-17-24	300 200	15-20-27	375 250	17-22-31	450 300	18-24-32	525 350	20-25-35	600 400	21-27-36	675 450	22-31-41
	1A  1B	CFM/SIDE THROW, FT.	375	21-25-35	500	24-31-42	625	27-34-48	750	29-36-50	875	31-39-55	1000	34-42-59	1125	35-45-62

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D37.

**D** CEILING DIFFUSERS



## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
			CFM NC	450 —	600 20	750 26	900 31	1050 35	1200 39	1350 42						
18 x 12 1.5 SQ. FT.	RETURN FACTORS —SP=1.9 TP NC + 3	CFM NC	450 —		600 20		750 26		900 31		1050 35		1200 39		1350 42	
		CFM/SIDE THROW, FT.	150 75	200 100	250 125	300 150	350 175	400 200	450 225							
		CFM/SIDE THROW, FT.	187 75	250 100	312 125	375 150	437 175	500 200	562 225							
		CFM/SIDE THROW, FT.	168 141	225 187	281 234	337 281	394 328	450 375	506 422							
		CFM/SIDE THROW, FT.	225	300	375	450	525	600	675							
		CFM/SIDE THROW, FT.	300 150	400 200	500 250	600 300	700 350	800 400	900 450							
21 x 12 1.75 SQ. FT.	RETURN FACTORS —SP=2.2 TP NC + 5	CFM NC	525 —		700 20		875 26		1050 31		1225 35		1400 39		1575 42	
		CFM/SIDE THROW, FT.	187 75	250 100	312 125	375 150	437 175	500 200	562 225							
		CFM/SIDE THROW, FT.	150 112	200 150	250 187	300 225	350 262	400 300	450 337							
		CFM/SIDE THROW, FT.	225 75	300 100	375 125	450 150	525 175	600 200	675 225							
		CFM/SIDE THROW, FT.	230 148	306 197	382 246	460 295	535 345	612 394	688 443							
		CFM/SIDE THROW, FT.	262	350	437	525	612	700	787							
24 x 12 2.0 SQ. FT.	RETURN FACTORS —SP=2.6 TP NC + 5	CFM NC	600 12		800 21		1000 27		1200 32		1400 36		1600 40		1800 43	
		CFM/SIDE THROW, FT.	225 75	300 100	375 125	450 150	525 175	600 200	675 225							
		CFM/SIDE THROW, FT.	150 150	200 200	250 250	300 300	350 350	400 400	450 450							
		CFM/SIDE THROW, FT.	262 75	350 100	437 175	525 150	612 175	700 200	787 225							
		CFM/SIDE THROW, FT.	300 150	400 200	500 250	600 300	700 350	800 400	900 450							
		CFM/SIDE THROW, FT.	300	400	500	600	700	800	900							

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

D

CEILING DIFFUSERS

## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293		
			CFM NC	300 15	400 23	500 29	600 33	700 37	800 41	900 43	A	B	A	B	A	B	A
30 x 12  2.5 SQ. FT.	RETURN FACTORS —SP=3.3 TP NC + 6	CFM NC	750 15	1000 23	1250 29	1500 33	1750 37	2000 41	2250 43								
	4B  4C	CFM/SIDE THROW, FT.	300 75 20-24-34 8-13-15	400 100 22-27-39 11-14-18	500 125 25-31-45 13-15-21	600 150 27-32-48 14-17-22	700 175 29-35-50 14-18-24	800 200 31-36-55 15-20-25	900 225 34-41-57 17-21-27								
	4E	CFM/SIDE THROW, FT.	183 183 17-21-28 17-21-28	250 250 20-24-32 20-24-32	313 313 22-27-36 22-27-36	375 375 24-31-41 24-31-41	437 437 25-31-43 25-31-43	500 500 27-34-46 27-34-46	562 562 31-35-49 31-35-49								
	3A1	CFM/SIDE THROW, FT.	337 75 20-24-34 8-13-15	450 100 22-27-39 11-14-18	562 125 25-31-45 13-15-21	675 150 27-32-48 14-17-22	787 175 29-35-50 14-18-24	900 200 31-36-55 15-20-25	1012 225 34-41-57 17-21-27								
	2A  2B	CFM/SIDE THROW, FT.	375 21-25-35	500 24-31-42	625 27-34-48	750 29-36-50	875 31-39-55	1000 34-42-59	1125 35-45-62								
	2C  2D  2E  2F	CFM/SIDE THROW, FT.	600 150 24-31-41 14-17-24	800 200 28-34-48 15-20-27	1000 250 32-39-55 17-22-31	1200 300 34-42-57 18-24-32	1400 350 36-45-62 20-25-35	1600 400 41-49-66 21-27-36	1800 450 43-52-70 22-31-41								
1A  1B	CFM/SIDE THROW, FT.	750 25-31-45	1000 31-35-50	1250 34-41-57	1500 36-45-62	1750 39-48-66	2000 42-50-70	2250 45-53-74									
36 x 12  3.0 SQ. FT.	RETURN FACTORS —SP=4.0 TP NC + 7	CFM NC	900 16	1200 25	1500 30	1800 34	2100 38	2400 42	2700 44								
	4B  4C	CFM/SIDE THROW, FT.	375 75 21-25-35 8-13-15	500 100 24-31-42 11-14-18	625 125 27-34-48 13-15-21	750 150 29-36-50 14-17-22	875 175 31-39-55 14-18-24	1000 200 34-42-59 15-20-25	1125 225 35-45-62 17-21-27								
	4E	CFM/SIDE THROW, FT.	225 225 18-22-31 18-22-31	300 300 21-25-35 21-25-35	375 375 24-28-41 24-28-41	450 450 25-31-45 25-31-45	525 525 27-32-48 27-32-48	600 600 29-35-50 29-35-50	675 675 31-39-53 31-39-53								
	3A1	CFM/SIDE THROW, FT.	412 75 21-25-35 8-13-15	550 100 24-31-42 11-14-18	687 125 27-34-48 13-15-21	825 150 29-36-50 14-17-22	962 175 31-39-55 14-18-24	1100 200 34-42-59 15-20-25	1237 225 35-45-62 17-21-27								
	2A  2B	CFM/SIDE THROW, FT.	450 21-25-35	600 24-31-42	750 27-34-48	900 29-36-50	1050 31-39-55	1200 34-42-59	1350 35-45-62								
	2C  2D  2E  2F	CFM/SIDE THROW, FT.	750 150 25-31-45 14-17-24	1000 200 31-35-50 15-20-27	1250 250 34-41-57 17-22-31	1500 300 36-45-62 18-24-32	1750 350 39-48-66 20-25-35	2000 400 42-50-70 21-27-36	2250 450 45-53-74 22-31-41								
1A  1B	CFM/SIDE THROW, FT.	900 27-34-46	1200 31-39-53	1500 35-45-60	1800 39-48-64	2100 42-50-70	2400 45-55-74	2700 48-57-80									
18 x 15  1.875 SQ. FT.	RETURN FACTORS —SP=2.0 TP NC + 4	CFM NC	560 14	750 21	935 28	1125 32	1310 36	1500 39	1685 43								
	4B  4C	CFM/SIDE THROW, FT.	164 117 14-17-24 11-14-18	219 156 15-20-27 13-15-21	273 195 17-22-31 14-17-24	328 234 18-24-32 15-18-25	383 273 20-25-35 17-20-27	438 312 21-27-36 17-21-31	492 351 22-31-41 18-22-31								
	3A1	CFM/SIDE THROW, FT.	222 117 18-22-31 11-14-18	297 156 21-25-35 13-15-21	371 195 24-28-41 14-17-24	445 234 25-31-45 15-18-25	519 273 31-39-55 17-20-27	594 312 31-35-50 17-21-31	668 351 31-39-53 18-22-31								
	3A2	CFM/SIDE THROW, FT.	168 197 13-16-22 18-22-30	225 262 15-18-25 21-25-34	281 328 16-21-28 24-28-39	337 394 18-22-33 25-33-43	394 459 19-24-33 27-33-46	450 525 21-25-36 28-36-49	506 590 22-27-37 33-37-52								
	2A  2B	CFM/SIDE THROW, FT.	281 20-24-34	375 22-27-39	468 25-31-45	562 27-32-48	656 29-35-50	750 31-36-55	843 34-41-57								
	2C  2D  2E  2F	CFM/SIDE THROW, FT.	329 234 25-33-45 18-22-30	438 312 30-36-51 21-25-34	547 390 34-42-58 24-28-39	657 468 36-45-61 25-31-43	766 546 39-48-66 27-33-46	876 624 43-52-70 28-36-49	985 702 46-55-75 33-37-52								
1A  1B	CFM/SIDE THROW, FT.	562 24-28-42	750 27-33-48	937 30-37-54	1125 33-42-58	1312 34-45-63	1500 37-48-66	1687 42-51-70									

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D37.

## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
			CFM NC	A	B	A	B	A	B	A	B	A	B	A	B	A
21 x 15  2.185 SQ. FT.	RETURN FACTORS —SP=2.1 TP NC + 5	CFM NC	655 14		875 21		1090 28		1310 33		1530 36		1750 39		1970 43	
	4B  4C	CFM/SIDE THROW, FT.	210	117	281	156	361	195	422	234	493	273	563	312	634	351
	4E	CFM/SIDE THROW, FT.	164	164	218	218	273	273	327	327	382	382	437	437	491	491
	3A1	CFM/SIDE THROW, FT.	269	117	359	156	448	195	539	234	629	273	719	312	809	351
	3A2	CFM/SIDE THROW, FT.	230	213	306	284	382	355	460	426	535	498	612	569	688	641
	2A 2B	CFM/SIDE THROW, FT.	327		437		596		656		766		875		985	
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	422	234	563	312	702	390	844	468	966	546	1126	624	1268	702
	1A 1B	CFM/SIDE THROW, FT.	655		875		1092		1312		1532		1750		1970	
24 x 15  2.5 SQ. FT.	RETURN FACTORS —SP=2.6 TP NC + 6	CFM NC	750 14		1000 22		1250 29		1500 34		1750 37		2000 39		2250 44	
	4B  4C	CFM/SIDE THROW, FT.	258	117	344	156	430	195	516	234	602	273	688	312	774	351
	4E	CFM/SIDE THROW, FT.	164	211	218	281	273	352	327	422	382	492	437	563	491	633
	3A1	CFM/SIDE THROW, FT.	316	117	422	156	527	195	633	234	738	273	844	312	949	351
	3A2	CFM/SIDE THROW, FT.	300	225	400	300	500	375	600	450	700	525	800	600	900	675
	2A 2B	CFM/SIDE THROW, FT.	375		500		625		750		875		1000		1125	
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	516	234	688	312	860	390	1032	468	1204	546	1376	624	1548	702
	1A 1B	CFM/SIDE THROW, FT.	750		1000		1250		1500		1750		2000		2250	
30 x 15  3.125 SQ. FT.	RETURN FACTORS —SP=3.1 TP NC + 7	CFM NC	935 14		1250 23		1565 30		1875 36		2190 39		2500 40		2810 45	
	4B  4C	CFM/SIDE THROW, FT.	351	117	469	156	587	195	703	234	822	273	938	312	1054	351
	4E	CFM/SIDE THROW, FT.	258	211	344	281	430	352	516	422	602	492	688	583	775	633
	3A1	CFM/SIDE THROW, FT.	410	117	547	156	685	195	820	234	958	273	1094	312	1224	351
	3B	CFM/SIDE THROW, FT.	468	234	625	312	782	391	937	469	1095	547	1250	625	1406	702
	2A 2B	CFM/SIDE THROW, FT.	468		625		782		937		1095		1250		1405	
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	702	234	938	312	1175	390	1407	468	1644	546	1876	624	2108	702
	1A 1B	CFM/SIDE THROW, FT.	937		1250		1565		1875		2190		2500		2810	

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D37.

## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293		
			CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC	CFM NC
36 x 15  3.75 SQ. FT.	RETURN FACTORS —SP=3.8 TP NC + 7	CFM NC	1125 13	1500 23	1875 31	2250 37	2625 40	3000 41	3375 46								
	4B  4C	CFM/SIDE THROW, FT.	446 117 22-27-37 12-15-19	594 156 25-33-45 13-16-22	742 195 28-36-51 15-18-25	891 234 33-39-54 16-19-27	1039 273 33-45-58 18-21-28	1188 312 36-45-63 18-22-30	1336 351 37-48-66 19-24-33								
	4E	CFM/SIDE THROW, FT.	306 258 21-25-36 19-24-33	408 344 24-28-42 22-27-37	510 430 27-33-48 25-30-43	612 516 28-34-51 27-33-48	714 602 33-37-54 28-34-51	816 688 33-39-58 33-37-54	918 775 36-43-61 33-42-57								
	3A1	CFM/SIDE THROW, FT.	504 117 24-28-42 12-15-19	672 156 27-33-48 13-16-22	840 195 30-37-54 15-18-25	1008 234 33-45-58 16-19-27	1176 273 34-45-63 18-21-28	1344 312 37-48-66 18-22-30	1512 351 42-51-70 19-24-33								
	2A  2B	CFM/SIDE THROW, FT.	562 24-28-42	750 27-33-48	937 30-37-54	1125 33-42-58	1312 34-45-63	1500 37-48-66	1682 42-51-70								
	2C  2D  2E  2F	CFM/SIDE THROW, FT.	890 234 28-36-49 18-22-30	1188 312 33-42-49 21-25-34	1485 390 37-48-64 24-28-39	1782 468 42-51-69 25-33-43	2079 546 45-54-75 27-33-46	2376 624 48-58-79 28-36-49	2873 702 51-61-85 33-37-52								
	1A  1B	CFM/SIDE THROW, FT.	1125 30-37-52	1500 34-43-60	1875 39-48-67	2250 42-52-73	2625 46-57-78	3000 49-60-85	3375 52-64-90								
21 x 18  2.625 SQ. FT.	RETURN FACTORS —SP=2.2 TP NC + 5	CFM NC	785 14	1050 21	1310 27	1575 32	1840 36	2100 40	2360 43								
	4B  4C	CFM/SIDE THROW, FT.	225 169 16-19-27 13-16-22	300 225 19-22-33 15-18-25	375 280 22-25-36 16-21-28	450 337 24-27-40 18-22-30	526 394 25-28-42 19-24-33	600 450 27-33-45 21-25-36	674 506 28-33-48 22-27-37								
	3A1	CFM/SIDE THROW, FT.	309 169 21-25-36 13-16-22	412 225 24-28-42 15-18-25	514 281 27-33-48 16-21-28	619 337 28-34-51 18-22-30	723 394 33-37-54 19-24-33	825 450 33-39-58 21-25-36	927 506 36-43-61 22-27-37								
	3A2	CFM/SIDE THROW, FT.	279 230 21-25-36 15-18-25	372 306 24-28-42 16-21-28	464 382 27-33-48 18-24-33	557 460 28-34-51 19-25-34	652 535 33-37-54 21-27-37	744 612 33-39-58 22-28-39	836 688 36-43-61 24-33-43								
	2A  2B	CFM/SIDE THROW, FT.	393 22-27-37	525 25-33-42	655 28-36-46	787 30-39-54	920 33-42-58	1050 36-45-63	1180 37-48-66								
	2C  2D  2E  2F	CFM/SIDE THROW, FT.	450 338 22-27-37 19-24-33	600 450 25-33-42 22-27-37	750 560 28-36-46 25-30-43	900 675 30-39-54 27-33-48	1060 790 33-42-58 28-34-51	1200 900 36-45-63 33-37-54	1350 1010 37-48-66 33-42-57								
	1A  1B	CFM/SIDE THROW, FT.	787 29-35-51	1050 35-40-58	1310 38-46-66	1575 42-51-70	1840 45-54-75	2100 48-58-80	2360 51-61-85								
24 x 18  3.0 SQ. FT.	RETURN FACTORS —SP=2.5 TP NC + 6	CFM NC	900 15	1200 22	1500 28	1800 33	2100 37	2400 40	2700 43								
	4B  4C	CFM/SIDE THROW, FT.	281 169 22-27-38 14-18-24	375 225 26-30-45 16-19-27	469 281 29-35-51 18-22-30	563 337 30-37-54 19-24-33	656 394 33-40-58 21-26-35	750 450 35-42-62 22-27-38	844 506 38-46-66 24-29-40								
	4E	CFM/SIDE THROW, FT.	225 225 21-26-35 21-26-35	300 300 24-29-40 24-29-40	375 375 27-32-46 27-32-46	450 450 29-35-51 29-35-51	525 525 30-37-54 30-37-54	600 600 33-40-58 33-40-58	675 675 35-45-61 35-45-61								
	3A1	CFM/SIDE THROW, FT.	366 169 24-29-40 14-18-24	487 225 27-35-48 16-19-27	609 281 30-38-54 18-22-30	731 337 35-42-58 19-24-33	853 394 35-45-62 21-26-35	975 450 38-48-67 22-27-38	1098 506 40-51-70 24-29-40								
	3A2	CFM/SIDE THROW, FT.	300 300 25-31-43 20-23-32	400 400 29-34-50 23-27-40	500 500 32-40-58 27-31-43	600 600 34-41-61 29-32-47	700 700 40-45-65 31-34-50	800 800 40-47-70 32-40-54	900 900 43-52-74 34-40-58								
	2A  2B	CFM/SIDE THROW, FT.	450 24-29-40	600 27-35-48	750 30-38-54	900 35-42-58	1050 35-45-62	1200 38-48-67	1350 40-51-70								
	2C  2D  2E  2F	CFM/SIDE THROW, FT.	562 338 26-30-45 21-26-35	750 450 29-35-51 24-29-40	938 562 32-40-58 27-32-46	1125 675 35-45-62 29-35-51	1313 787 37-48-67 30-37-54	1500 900 40-51-70 33-40-58	1688 1012 45-54-75 35-45-61								
1A  1B	CFM/SIDE THROW, FT.	900 30-38-53	1200 35-45-61	1500 40-51-69	1800 45-54-74	2100 48-58-80	2400 51-62-85	2700 54-66-91									

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D37.

## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
			CFM NC	A B	A B	A B	A B	A B	A B	A B	A B	A B				
30 x 18 SQ. FT.	RETURN FACTORS —SP=3.1 TP NC + 7	CFM NC	1125 15		1500 23		1875 29		2250 34		2625 38		3000 42		3375 45	
	4B  4C	CFM/SIDE THROW, FT.	394 169	525 225	657 281	788 337	918 394	1050 450	1181 506	1418 566	1550 622	1681 688	1812 754	1943 820	2074 886	2205 952
	4E	CFM/SIDE THROW, FT.	281 281	375 375	469 469	563 563	657 657	750 750	845 845	939 939	1033 1033	1127 1127	1221 1221	1315 1315	1409 1409	1503 1503
	3A1	CFM/SIDE THROW, FT.	478 169	637 225	797 281	956 337	1115 394	1275 450	1434 506	1593 562	1752 618	1911 674	2070 730	2229 786	2388 842	2547 898
	3A2	CFM/SIDE THROW, FT.	469 327	625 437	782 546	937 656	1093 766	1250 875	1406 984	1563 1093	1720 1202	1877 1311	2034 1420	2191 1529	2348 1638	2505 1747
	2A 2B	CFM/SIDE THROW, FT.	562	750	937	1125	1312	1500	1687	1875	2062	2250	2437	2625	2812	3000
	2C 2E  2D 2F	CFM/SIDE THROW, FT.	787 337	1050 450	1313 562	1575 675	1838 787	2100 900	2363 1012	2625 1124	2888 1236	3150 1348	3412 1460	3675 1572	3937 1684	4200 1796
1A 1B	CFM/SIDE THROW, FT.	1125	1500	1875	2250	2625	3000	3375	3750	4125	4500	4875	5250	5625	6000	
36 x 18 SQ. FT.	RETURN FACTORS —SP=3.6 TP NC + 8	CFM NC	1350 16		1800 24		2250 30		2700 35		3150 39		3600 42		4050 45	
	4B  4C	CFM/SIDE THROW, FT.	506 169	675 225	844 281	1013 337	1181 394	1350 450	1519 506	1688 562	1857 618	2025 674	2194 730	2363 786	2531 842	2700 898
	4E	CFM/SIDE THROW, FT.	339 339	452 452	565 565	678 678	791 791	904 904	1020 1020	1133 1133	1246 1246	1359 1359	1472 1472	1585 1585	1698 1698	1811 1811
	3A1	CFM/SIDE THROW, FT.	591 169	787 225	984 281	1181 337	1378 394	1575 450	1772 506	1969 562	2166 618	2363 674	2560 730	2757 786	2954 842	3151 898
	3B	CFM/SIDE THROW, FT.	675 337	900 450	1125 562	1350 675	1575 787	1800 900	2025 1012	2250 1124	2475 1236	2700 1348	2925 1460	3150 1572	3375 1684	3600 1796
	2A 2B	CFM/SIDE THROW, FT.	675	900	1125	1350	1575	1800	2025	2250	2475	2700	2925	3150	3375	3600
	2C 2E  2D 2F	CFM/SIDE THROW, FT.	1010 337	1350 450	1688 562	2025 675	2363 787	2700 900	3038 1012	3375 1124	3712 1236	4050 1348	4388 1460	4725 1572	5062 1684	5400 1796
1A 1B	CFM/SIDE THROW, FT.	1350	1800	2250	2700	3150	3600	4050	4500	4950	5400	5850	6300	6750	7200	
24 x 21 SQ. FT.	RETURN FACTORS —SP=2.1 TP NC + 7	CFM NC	1050 15		1400 22		1750 28		2100 33		2450 37		2800 41		3150 44	
	4B  4C	CFM/SIDE THROW, FT.	295 230	394 306	493 382	590 460	690 535	788 612	887 688	986 754	1085 820	1184 886	1283 952	1382 1018	1481 1084	1580 1150
	3A1	CFM/SIDE THROW, FT.	410 230	547 306	684 382	820 460	957 535	1094 612	1231 688	1368 764	1505 840	1642 916	1779 992	1916 1068	2053 1144	2190 1220
	3A2	CFM/SIDE THROW, FT.	375 300	500 400	625 500	750 600	875 700	1000 800	1125 900	1250 984	1375 1068	1500 1152	1625 1236	1750 1320	1875 1404	2000 1488
	2A 2B	CFM/SIDE THROW, FT.	525	700	875	1050	1225	1400	1575	1750	1925	2100	2275	2450	2625	2800
	2C 2E  2D 2F	CFM/SIDE THROW, FT.	591 459	788 612	986 764	1180 920	1380 1070	1576 1224	1774 1376	1972 1524	2170 1672	2368 1820	2566 1968	2764 2116	2962 2264	3160 2412
	1A 1B	CFM/SIDE THROW, FT.	1050	1400	1750	2100	2450	2800	3150	3500	3850	4200	4550	4900	5250	5600

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D37.

## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
			CFM NC	1310 16	A B	1750 23	A B	2185 29	A B	2625 34	A B	3060 38	A B	3500 41	A B	3935 44
30 x 21 4.375 SQ. FT.	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1310 16	A B	1750 23	A B	2185 29	A B	2625 34	A B	3060 38	A B	3500 41	A B	3935 44	A B
	4B  4C	CFM/SIDE THROW, FT.	425 230	25-31-42 17-20-29	569 306	24-37-51 19-24-32	710 382	32-41-58 20-27-37	852 460	37-44-61 22-29-39	995 535	37-48-66 24-31-42	1138 612	41-51-71 25-32-44	1279 688	42-54-75 27-37-49
	4E	CFM/SIDE THROW, FT.	360 295	24-29-41	480 394	27-32-48	600 492	31-37-54	720 591	32-39-58	840 690	37-42-61	960 788	37-44-66	1080 887	41-49-70
	3A1	CFM/SIDE THROW, FT.	540 230	27-32-48 17-20-29	722 306	31-37-54 19-24-32	901 382	34-42-61 20-27-37	1082 460	37-48-66 22-29-39	1262 535	39-51-71 24-31-42	1444 612	42-54-75 25-32-44	1623 688	48-58-80 27-37-49
	3A2	CFM/SIDE THROW, FT.	468 422	25-31-42 20-25-34	625 562	29-37-51 24-29-39	782 701	32-41-58 27-32-44	937 844	37-44-61 29-37-49	1093 983	37-48-66 31-37-53	1250 1125	41-51-71 32-41-56	1406 1264	42-54-75 37-42-61
	2A  2B	CFM/SIDE THROW, FT.	655	29-37-51	875	34-41-58	1092	39-48-66	1312	41-51-70	1530	44-54-75	1750	49-59-80	1968	53-63-85
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	853 457	31-37-54 24-29-41	1138 612	37-42-61 27-32-48	1421 764	41-49-70 31-37-54	1705 920	44-54-75 32-39-58	1990 1070	48-58-80 37-42-61	2276 1224	51-61-85 37-44-66	2559 1376	54-65-90 41-49-70
1A  1B	CFM/SIDE THROW, FT.	1310	37-42-63	1750	41-51-71	2185	48-58-82	2625	51-61-87	3060	54-66-95	3500	58-71-99	3935	63-75-107	
36 x 21 5.25 SQ. FT.	RETURN FACTORS —SP=3.4 TP NC + 8	CFM NC	1575 16	A B	2100 24	A B	2625 30	A B	3150 34	A B	3675 38	A B	4200 42	A B	4725 45	A B
	4B  4C	CFM/SIDE THROW, FT.	558 230	27-32-48 17-20-29	744 306	31-37-54 19-24-32	930 382	34-42-61 20-27-37	1115 460	37-48-66 22-29-39	1306 535	39-51-71 24-31-42	1488 612	42-54-75 25-32-44	1674 688	48-58-80 27-37-49
	4E	CFM/SIDE THROW, FT.	427 360	25-31-42 25-31-42	568 480	29-37-61 29-37-51	710 600	32-41-58 32-41-58	852 720	37-44-61 37-44-61	945 840	37-48-66 37-48-66	1135 960	41-51-71 41-51-71	1280 1080	42-54-75 42-54-75
	3A1	CFM/SIDE THROW, FT.	672 230	29-37-51 17-20-29	897 306	34-41-58 19-24-32	1121 382	39-48-66 20-27-37	1345 460	41-51-70 22-29-39	1570 535	44-54-75 24-31-42	1794 612	49-59-80 25-32-44	2018 688	53-63-85 27-37-49
	3A2	CFM/SIDE THROW, FT.	675 450	25-31-42 22-27-37	900 600	29-37-51 25-31-42	1125 750	32-41-58 29-34-49	1350 900	37-44-61 31-37-54	1575 1050	37-48-66 32-39-58	1800 1200	41-51-71 34-42-61	2025 1350	42-54-75 37-48-65
	2A  2B	CFM/SIDE THROW, FT.	787	31-37-54	1050	37-42-61	1312	41-49-70	1575	44-54-75	1837	48-58-80	2100	51-61-85	2362	54-65-90
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	1115 460	34-42-59 24-29-41	1488 612	39-49-68 27-32-48	1861 764	44-56-76 31-37-54	2230 920	49-59-83 32-39-58	2605 1070	53-65-88 37-42-61	2976 1224	56-68-97 37-44-66	3349 1376	59-73-102 41-49-70
1A  1B	CFM/SIDE THROW, FT.	1575	41-51-70	2100	39-58-80	2625	54-66-90	3150	58-70-99	3675	61-75-105	4200	66-80-114	4725	70-85-122	
30 x 24 5.0 SQ. FT.	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1500 17	A B	2000 25	A B	2500 30	A B	3000 35	A B	3500 39	A B	4000 43	A B	4500 46	A B
	4B  4C	CFM/SIDE THROW, FT.	450 300	25-31-42 19-22-31	600 400	29-37-51 22-25-37	750 500	32-41-58 25-29-41	900 600	33-44-61 27-31-44	1050 700	37-48-66 29-32-48	1200 800	41-51-71 31-37-51	1350 900	42-54-75 32-37-54
	4E	CFM/SIDE THROW, FT.	375 375	25-31-42 25-31-42	500 500	29-37-51 29-37-51	625 625	32-41-58 32-41-58	750 750	33-44-61 37-44-61	875 875	37-48-66 37-48-66	1000 1000	41-51-71 41-51-71	1125 1125	42-54-75 42-54-75
	3A1	CFM/SIDE THROW, FT.	600 300	29-37-51 19-22-31	800 400	34-41-58 22-25-37	1000 500	39-48-66 25-29-41	1200 600	41-51-70 27-31-44	1400 700	44-54-75 29-32-48	1600 800	49-59-80 31-37-51	1800 900	53-63-85 32-37-54
	3A2	CFM/SIDE THROW, FT.	515 470	31-37-54 25-31-42	687 625	37-42-61 29-37-51	859 782	41-49-70 32-41-58	1031 937	44-54-75 33-44-61	1203 1093	48-58-80 37-48-66	1375 1250	51-61-85 41-51-71	1548 1406	54-65-90 42-54-75
	2A  2B	CFM/SIDE THROW, FT.	750	32-41-56	1000	37-48-65	1250	42-54-73	1500	48-58-78	1750	51-61-85	2000	54-66-90	2250	58-70-97
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	900 600	37-42-63 29-37-51	1200 800	41-51-71 34-41-58	1500 1000	48-58-82 39-48-66	1800 1200	51-61-87 41-51-70	2100 1400	54-66-85 44-54-75	2400 1600	58-71-99 49-59-80	2700 1800	63-75-107 53-63-85
1A  1B	CFM/SIDE THROW, FT.	1500	38-47-67	2000	45-54-76	2500	48-61-85	3000	54-65-95	3500	58-72-99	4000	62-76-106	4500	66-79-113	

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D37.

D  
CEILING DIFFUSERS



## PERFORMANCE DATA:

### MODELS 6500 AND 6200 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .033		400 .058		500 .090		600 .130		700 .177		800 .231		900 .293	
			CFM NC	1800 18	2400 25	3000 31	3600 36	4200 40	4800 43	5400 46						
36 x 24 6.0 SQ. FT.	RETURN FACTORS —SP=3.3 TP NC + 8	CFM NC	1800 18	2400 25	3000 31	3600 36	4200 40	4800 43	5400 46							
	4B  4C	CFM/SIDE THROW, FT.	600 300 29-37-51 19-22-31	800 400 34-41-58 22-25-37	1000 500 39-48-66 25-29-41	1200 600 41-51-70 27-31-44	1400 700 44-54-75 29-32-48	1600 800 49-59-80 31-37-51	1800 900 53-63-85 32-37-54							
	4E	CFM/SIDE THROW, FT.	450 450 25-31-42 24-31-42	600 600 29-37-51 29-37-51	750 750 32-41-58 32-41-58	900 900 35-44-61 35-44-61	1050 1050 37-48-66 37-48-66	1200 1200 41-51-71 41-51-71	1350 1350 42-54-75 42-54-75							
	3A1	CFM/SIDE THROW, FT.	750 300 31-37-54 19-22-31	1000 400 37-42-61 22-25-37	1250 500 41-49-70 25-29-41	1500 600 44-54-75 27-31-44	1750 700 48-58-80 29-32-48	2000 800 51-61-85 31-37-51	2250 900 54-65-90 32-37-54							
	3A2	CFM/SIDE THROW, FT.	676 562 27-32-48 24-29-41	900 750 34-37-54 27-32-48	1125 937 34-42-61 31-37-54	1350 1125 37-48-66 32-39-58	1575 1312 39-51-71 35-42-61	1800 1500 42-54-75 37-44-66	2025 1687 48-58-80 41-49-70							
	2A	CFM/SIDE THROW, FT.	900 32-41-56	1200 37-48-65	1500 42-54-73	1800 48-58-78	2100 51-61-85	2400 54-66-90	2700 58-70-97							
	2B	CFM/SIDE THROW, FT.	900 32-41-56	1200 37-48-65	1500 42-54-73	1800 48-58-78	2100 51-61-85	2400 54-66-90	2700 58-70-97							
	2C  2D	CFM/SIDE THROW, FT.	1200 600 37-42-63 25-31-42	1600 800 41-51-71 29-37-51	2000 1000 48-58-82 32-41-58	2400 1200 51-61-87 35-44-61	2800 1400 54-66-95 37-48-66	3200 1600 58-71-99 41-51-71	3600 1800 63-75-107 42-54-75							
	2E	CFM/SIDE THROW, FT.	1200 600 37-42-63 25-31-42	1600 800 41-51-71 29-37-51	2000 1000 48-58-82 32-41-58	2400 1200 51-61-87 35-44-61	2800 1400 54-66-95 37-48-66	3200 1600 58-71-99 41-51-71	3600 1800 63-75-107 42-54-75							
	1A  1B	CFM/SIDE THROW, FT.	1800 41-51-70	2400 48-58-80	3000 54-66-90	3600 58-70-99	4200 61-75-105	4800 66-80-114	5400 70-85-122							
36 x 30 7.5 SQ. FT.	RETURN FACTORS —SP=3.4 TP NC + 8	CFM NC	2250 19	3000 26	3750 32	4500 37	5250 41	6000 44	6750 47							
	4B  4C	CFM/SIDE THROW, FT.	657 468 29-37-51 20-25-34	875 625 34-41-58 24-29-39	1093 782 39-48-66 27-32-44	1313 937 41-51-70 29-37-49	1532 1093 44-54-75 31-37-53	1750 1250 49-59-80 32-41-56	1969 1406 53-63-85 37-42-59							
	3A1	CFM/SIDE THROW, FT.	890 468 32-41-56 20-25-34	1187 625 37-48-65 24-29-39	1484 782 42-54-73 27-32-44	1781 937 48-58-78 29-37-49	2078 1093 51-61-85 31-37-53	2375 1250 54-66-90 32-41-56	2672 1406 58-70-97 37-42-59							
	3A2	CFM/SIDE THROW, FT.	787 675 31-37-54 22-27-37	1050 900 37-42-61 25-31-42	1312 1125 41-49-70 29-34-49	1575 1350 44-54-75 31-37-54	1837 1575 48-58-80 32-39-58	2100 1800 51-61-85 37-42-61	2362 2025 54-65-90 37-48-65							
	2A	CFM/SIDE THROW, FT.	1125 34-42-59	1500 39-49-68	1875 44-56-76	2250 49-59-83	2625 53-65-88	3000 56-68-97	3375 59-73-102							
	2B	CFM/SIDE THROW, FT.	1125 34-42-59	1500 39-49-68	1875 44-56-76	2250 49-59-83	2625 53-65-88	3000 56-68-97	3375 59-73-102							
	2C  2D	CFM/SIDE THROW, FT.	1312 938 37-42-63 29-37-51	1750 1250 41-51-71 34-41-58	2188 1562 48-58-82 39-48-66	2625 1875 51-61-87 41-51-70	3063 2187 54-66-95 44-54-75	3500 2500 58-71-99 49-59-80	3938 2812 63-75-107 53-63-85							
	2E	CFM/SIDE THROW, FT.	1312 938 37-42-63 29-37-51	1750 1250 41-51-71 34-41-58	2188 1562 48-58-82 39-48-66	2625 1875 51-61-87 41-51-70	3063 2187 54-66-95 44-54-75	3500 2500 58-71-99 49-59-80	3938 2812 63-75-107 53-63-85							
	1A  1B	CFM/SIDE THROW, FT.	2250 48-60-82	3000 56-68-94	3750 64-78-106	4500 68-82-116	5250 72-88-124	6000 78-94-134	6750 82-100-144							

#### Notes:

- Core style 4E is sized to give equal flow as near as possible in directions A and B.
- For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

**CFM** - cubic feet per minute  
**TP** - total pressure - inches w.g.  
**T** - throw in feet  
**NC** - Noise Criteria (values) based on 10 dB room absorption, re  $10^{-12}$  watts.  
**Neck Velocity** – feet per minute

#### Performance Notes:

- Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.
- Sound levels in performance tables are for steel construction – **Model 6500**. Apply the following corrections for aluminum construction – **Model 6200**.  
 TP = Listed value x 1.25.  
 NC = Listed value + 4.
- Performance data as tabulated is for supply air conditions. Correction factors for return air application - see next page.
- Correction factors for adjustable models - see next page.
- Correction factors for round inlets - see next page.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA CORRECTIONS:

### MODELS 6500 AND 6200

#### CORRECTION FACTORS FOR RETURN INLET

If the unit is used as a return inlet, the performance data is obtained by applying the return corrections, as follows:

- Add the NC correction at the left side of the table to the NC value listed in the performance table.
- Multiply the listed SP factor at the left side of the table by the total pressure (TP) listed at the top of the table.

#### CORRECTION FACTORS FOR MODELS 6550 AND 6250 (ADJUSTABLE PATTERN CONTROLLERS) – TABLE 2

Refer to the performance data for the **Models 6500 and 6200**. Apply the corrections from Table 2 to the data for square, 4-way core styles, as follows:

- NC = listed + correction
- Total Pressure = listed x factor
- Horizontal Throw = listed
- Vertical Throw = listed x factor

Apply the throw factor to the 50 fpm terminal velocity throw only.

#### Example:

18" x 18", **Model 6500**, 1350 cfm, 20°F temperature difference heating, vertical projection, (Page D23).

- NC = 31 + 6 = 37
- TP = .13 x 2.1 = .273
- Throw = 36 x .9 = 32.4 feet @ 50 fpm terminal velocity.

#### CORRECTION FACTORS WITH SQUARE TO ROUND INLET ADAPTOR – TABLE 3

- Add the NC correction factor from Table 3 and the NC value listed in the performance tables.
- Multiply the correction factor from Table 3 by the listed total pressure in the performance tables.
- Multiply the correction factor from Table 3 by the listed throws in the performance tables.

#### Example:

12" x 12" unit with 10" round adaptor handling 500 cfm supply air. (Page D23).

- NC = 23 + 7 = 30
- Total Pressure = .09 x 1.65 = 0.149
- Throw = 21 x 1.15 = 24.15 feet @ 50 fpm terminal velocity.

#### Example:

12" x 12" unit handling 600 cfm of return air. (Page D23).

- Return NC = 28 + 4 = 32.
- Return negative SP = 1.3 x (-.13) = -.169.

TABLE 2 Correction Factors 6550/6250 Adjustable

NECK SIZE	NC (add)		TOTAL PRESSURE (multiply)		VERTICAL THROW (multiply)			
					COOLING, ΔT		HEATING, ΔT	
	H	V	H	V	20°F	0°F	20°F	40°F
6 x 6	2	6	1.2	1.5	1.3	1.1	0.8	0.6
9 x 9	2	6	1.4	2.1	1.5	1.2	0.9	0.6
12 x 12	2	6	1.4	2.1	1.6	1.3	1.0	0.6
15 x 15	2	6	1.4	2.1	1.7	1.3	1.0	0.6
18 x 18	2	6	1.4	2.1	1.7	1.3	0.9	0.6
21 x 21	2	6	1.4	2.1	1.7	1.3	0.8	0.5
24 x 24	2	6	1.6	2.2	1.5	1.1	0.7	0.3

TABLE 3 Correction Factors for SR Adaptors

SQUARE INLET	ROUND INLET	NC (add)	TP (multiply)	THROW (multiply)		
				150	100	50
6 x 6	5	7	1.65	1.10	1.10	1.15
9 x 9	6	17	3.50	1.15	1.15	1.20
9 x 9	8	4	1.40	1.10	1.10	1.10
12 x 12	8	17	3.50	1.15	1.15	1.20
12 x 12	10	7	1.65	1.10	1.10	1.15
15 x 15	10	17	3.50	1.15	1.15	1.20
15 x 15	12	9	1.90	1.10	1.10	1.15
15 x 15	14	3	1.25	1.05	1.05	1.10
18 x 18	12	17	3.50	1.15	1.15	1.20
18 x 18	14	10	2.00	1.10	1.10	1.15
18 x 18	16	5	1.45	1.10	1.10	1.10
21 x 21	14	17	3.70	1.15	1.15	1.20
21 x 21	16	11	2.25	1.10	1.10	1.15
21 x 21	18	6	1.60	1.10	1.10	1.10
21 x 21	20	3	1.20	1.05	1.05	1.10
24 x 24	16	17	3.50	1.15	1.15	1.20
24 x 24	18	12	2.35	1.10	1.10	1.15
24 x 24	20	7	1.65	1.10	1.10	1.15
24 x 24	22	4	1.33	1.05	1.05	1.10

## SQUARE & RECTANGULAR INDUCTION VANE CEILING DIFFUSERS

- INDUCTION VANES
- LOUVERED FACE
- HIGH CAPACITY
- SQUARE, RECTANGULAR OR ROUND NECKS

### Steel Model:

6500IV Fixed Pattern

### Aluminum Model:

6200IV Fixed Pattern

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper (available on aluminum models only)



Model 6500IV – front and back view

Model Series 6500IV and 6200IV Pattern Ceiling Diffusers have been specially designed to provide a high capacity, high induction, louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. An engineered blade design with a 1/4" (6) horizontal lip on all angular discharge louvers creates a stable horizontal air pattern that is tight to the ceiling.

Induction vanes mounted behind the louvers create counter-flowing jets of primary air that promote rapid mixing of the cool primary air with the warm room air. This high induction characteristic is ideal for VAV applications involving high cooling loads as it quickly equalizes the air temperature, reduces the throw and minimizes the potential for uncomfortable drafts.

Available in a wide variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirement. Many frame types are also available to suit almost any mounting condition including surface mount (flat, beveled or deep drop face) and T-Bar panel types (Standard 1" (25), Fineline®, Spline, Tegular or Metal Pan Snap-in). These models therefore offer a great degree of design flexibility.

### STANDARD FEATURES:

- Spring loaded core. It is removable without the use of tools.
- High neck collars for solid connection.
- Secure core attachment.
- A wide variety of frame styles to suit most ceiling applications.
- Extended panels to suit modular ceiling systems. PLS (steel) or PLA (aluminum).
- Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a wide selection of square and rectangular neck sizes (see page D42).
- Clean lines with no unsightly visible screws.
- Opposed blade damper with screwdriver slot operator.

### CONSTRUCTION MATERIAL:

6500IV Series – Corrosion-resistant steel. 6200IV Series – Heavy-gauge aluminum extrusions.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### AVAILABLE SIZES:

Unit size is determined by duct dimensions. Diffuser necks are undersized to suit ductwork.

Duct Sizes are available in 3" (76) increments.

Minimum size:

6" x 6" (152 x 152) square neck. 9" x 6" (229 x 152) rectangular neck (most core styles).

Maximum size:

Types S, B and D: 36" x 36" (914 x 914) or 36" x 24" (914 x 610) with opposed blade damper.

Types L, SP, TL, M and F: see next page.

### OPTIONS & ACCESSORIES:

EX External Foil-Back Insulation (installed) – R-4.2.

MIB Molded Insulation Blanket R-6.0.

SR Square-to-round transition adaptors are available (SR04 - SR24 option [4" - 24" diameter]). See page D257.

ONA Offset Neck Adaptor:

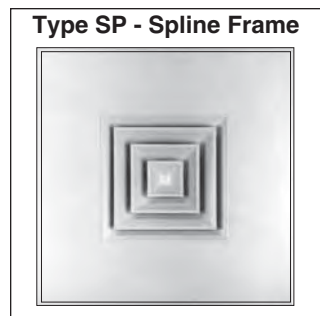
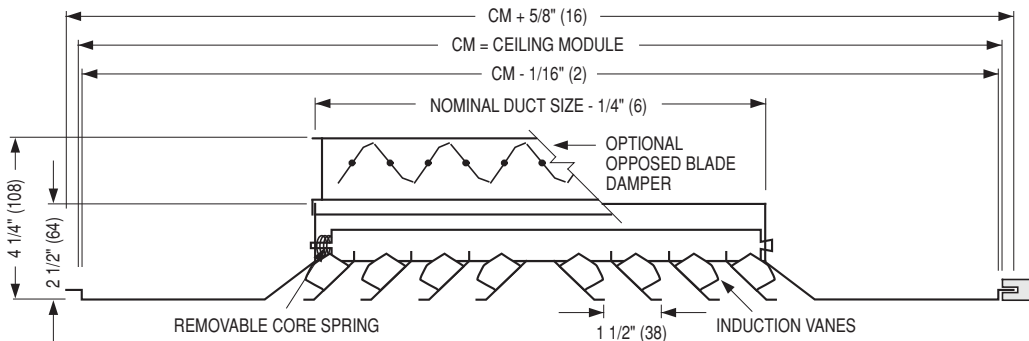
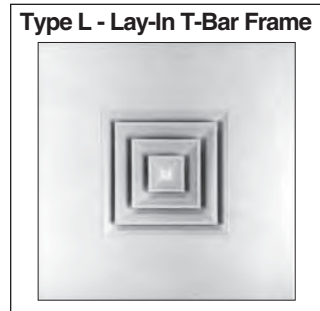
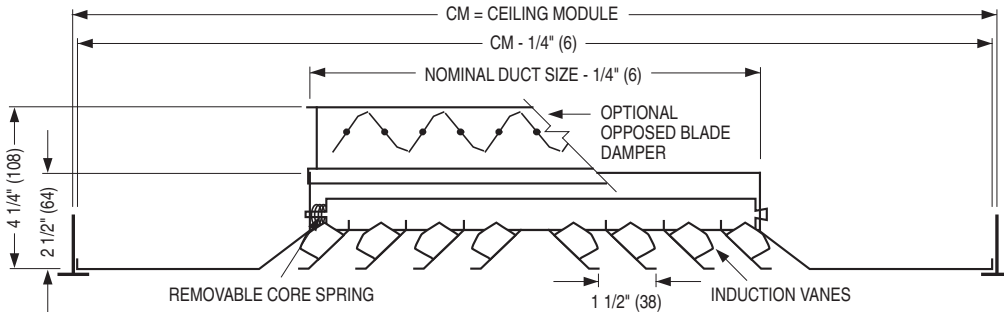
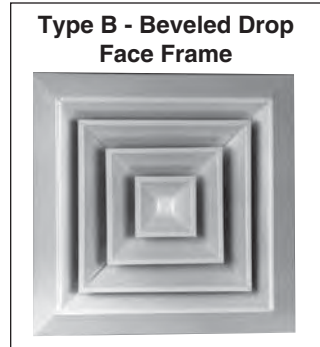
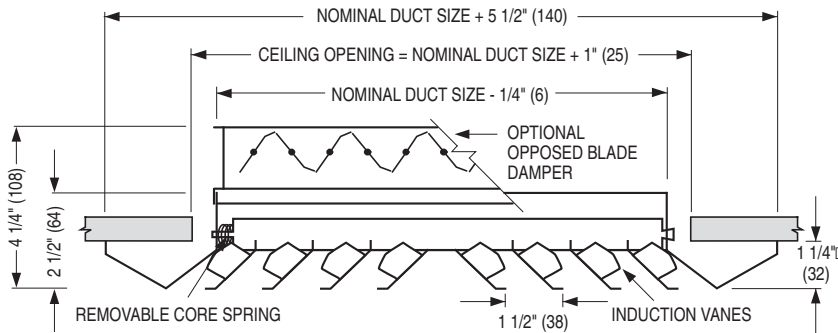
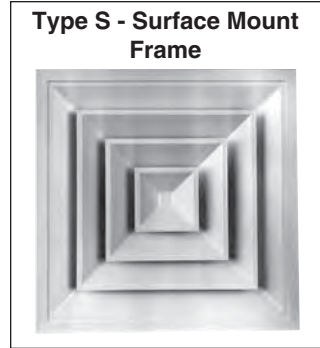
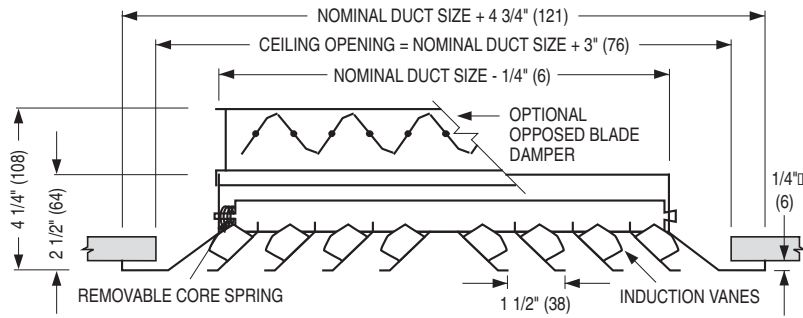
Fits outside duct and is available for square and rectangular necks (if a damper is required, order separately for remote mount. See Model OBDD). For detail drawing; see page D41.

EQT Earthquake Tabs

For additional options and accessories; see page D255.

## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL SERIES 6500IV AND 6200IV



SPLINE TYPE DIFFUSER FOR ONE-DIRECTIONAL EXPOSED T-BAR LAY-IN GRID OR FOR CONCEALED T-BAR GRID. (SPLINES ON TWO OPPOSITE SIDES. STEEL LIFT BRACKETS ON THE OTHER TWO SIDES).

### Extended Panel Diffusers Frame Types L, SP, TL, M and F

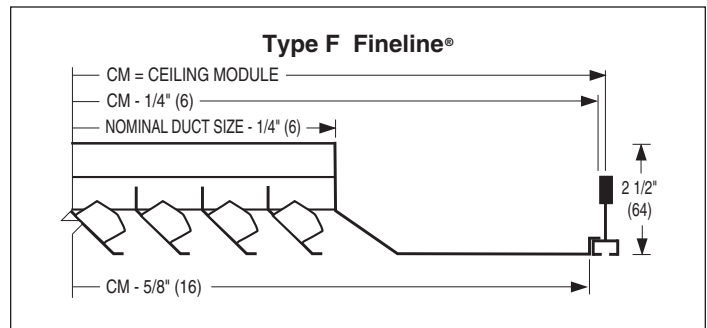
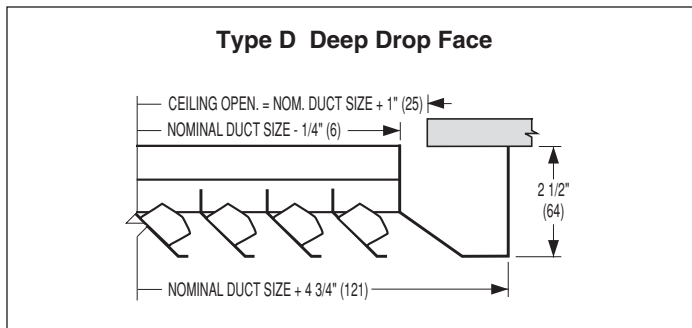
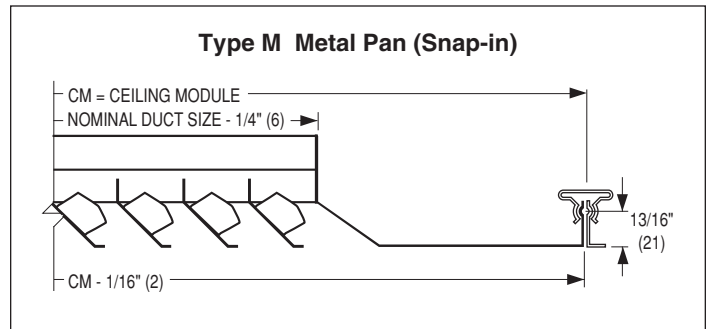
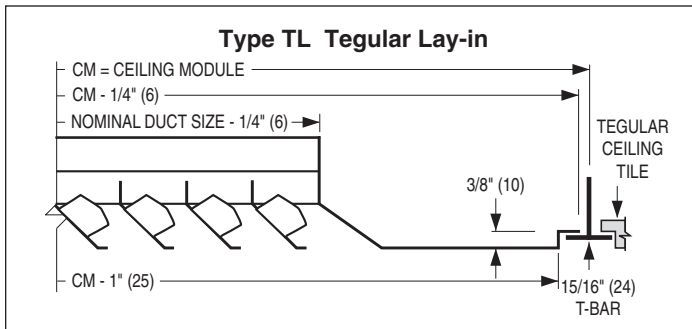
If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a steel module-sized extended panel will be added. Aluminum is available as an option. See the table at right for the maximum duct size for each module size.

Table 1		
Ceiling Module Size	Maximum Duct Size Frames L, SP and M	Maximum Duct Size Frames TL and F
12 x 12 (305 x 305)	9 x 9 (229 x 229)	6 x 6 (152 x 152)
20 x 20 (508 x 508)	15 x 15 (381 x 381)	—
24 x 12 (610 x 305)	21 x 9 (533 x 229)	18 x 6 (457 x 152)
24 x 24 (610 x 610)	21 x 21 (533 x 533)	18 x 18 (457 x 457)
48 x 24 (1219 x 610)	45 x 21 (1143 x 533)	—

D  
CEILING DIFFUSERS

## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL SERIES 6500IV AND 6200IV

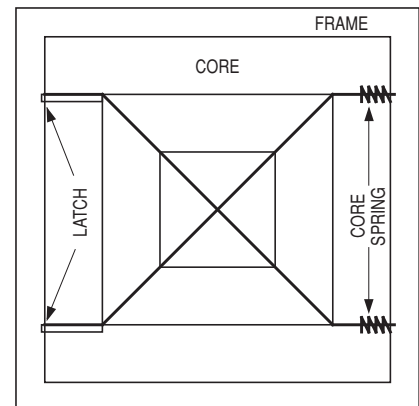


### REMOVABLE CORE

- Standard feature of **Models 6500IV and 6200IV**.
- Engineered design allows easy removal without the need for tools, yet remains securely in place.

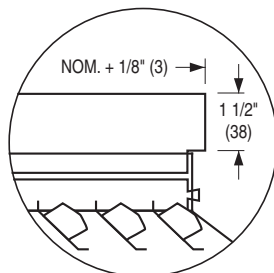
### HOW TO REMOVE "REMOVABLE" CORE

To remove diffuser core, lift the complete core assembly to disengage the latch, push the core against the core spring, pull down the core slightly and remove. Reverse procedure to re-install.



### OFFSET NECK ADAPTOR

ONA – Offset Neck Adaptor. Fits outside duct (if a damper is required; order separately for remote mount. See Model OBDD).



## STANDARD CORE STYLES:

## MODEL SERIES 6500IV AND 6200IV

Contact factory for special core configurations.

### SIZES AVAILABLE

	SQUARE	RECTANGULAR	CORE	MINIMUM	MAXIMUM
 1-WAY	 1S	 1A 1B	1S 1A 1B	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
 2-WAY	 2S	 2A 2B	2S 2A 2B	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
 2-WAY CORNER	 2G	 2E 2F	2G 2E 2F	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
 3-WAY	 3A 3H	 3A1 (A is greater than B) 3A2 (B is less than A but greater than A/2) 3B (B is equal to A/2) 3E (B is less than A/2)	3A 3A1 3A2 3B 3E 3H	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 12 x 6 (305 x 152) 15 x 6 (381 x 152) 6 x 6 (152 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 18 (914 x 457) 36 x 15 (914 x 381) 36 x 36 (914 x 914)
 4-WAY	 4A	 4B 4C	4A 4B 4C	6 x 6 (152 x 152) 9 x 6 (229 x 152) 12 x 6 (305 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 30 (914 x 762)

Dimensions are in inches (mm).

### Notes:

1. Duct sizes are available in 3" (76) increments.
2. Patterns are shown in plan view (looking down into inlet).

D

CEILING DIFFUSERS



## PERFORMANCE DATA:

### MODELS 6500IV AND 6200IV • SQUARE NECK • INDUCTION VANES

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .035	400 .062	500 .097	600 .140	700 .191	800 .249	900 .316
6 x 6  .25 SQ. FT.	RETURN FACTORS —SP=1.1 TP NC + 1	CFM NC	75 —	100 14	125 21	150 26	175 30	200 35	225 39
	4A	CFM/SIDE THROW, FT.	19 3-4-6	25 3-5-8	31 5-6-8	37 5-6-9	44 6-7-10	50 6-7-10	56 7-8-10
	3A	CFM/SIDE THROW, FT.	19 28 3-4-6 4-6-9	25 38 3-5-8 5-7-10	31 47 5-6-8 6-8-11	37 56 5-6-9 6-9-12	44 66 6-7-10 7-10-13	50 75 6-7-10 7-10-14	56 85 7-8-10 8-10-14
	2S  2G	CFM/SIDE THROW, FT.	37 6-7-10	50 7-8-11	62 8-9-13	75 9-10-14	88 10-10-14	100 10-10-15	113 10-11-16
	1S	CFM/SIDE THROW, FT.	75 7-9-12	100 8-10-14	125 9-11-15	150 10-12-18	175 10-13-18	200 11-14-19	225 12-14-20
9 x 9  .56 SQ. FT.	RETURN FACTORS —SP=1.2 TP NC + 2	CFM NC	170 —	225 18	280 24	340 30	395 35	450 39	505 42
	4A	CFM/SIDE THROW, FT.	42 5-6-10	56 6-8-11	70 8-9-12	84 8-10-13	98 9-10-14	112 9-11-15	126 10-12-16
	3A	CFM/SIDE THROW, FT.	42 63 5-6-10 7-9-11	56 85 6-8-11 8-10-14	70 106 8-9-12 9-10-15	84 127 8-10-13 10-11-16	98 148 9-10-14 10-12-17	112 169 9-11-15 10-13-18	126 190 10-12-16 11-14-19
	2S  2G	CFM/SIDE THROW, FT.	84 7-8-12	112 9-10-14	141 10-12-16	169 10-13-18	197 11-14-18	225 12-14-20	253 13-15-22
	1S	CFM/SIDE THROW, FT.	169 10-12-16	225 11-14-18	282 13-15-21	338 14-18-23	394 14-18-25	450 15-19-26	507 18-20-28
12 x 12  1.0 SQ. FT.	RETURN FACTORS —SP=1.3 TP NC + 4	CFM NC	300 14	400 21	500 27	600 32	700 37	800 40	900 43
	4A	CFM/SIDE THROW, FT.	75 6-10-12	100 9-11-14	125 10-12-17	150 11-14-18	175 11-14-19	200 12-16-20	225 14-17-22
	3A	CFM/SIDE THROW, FT.	75 112 6-10-12 9-11-15	100 150 9-11-14 11-13-17	125 187 10-12-17 11-14-19	150 225 11-14-18 12-15-21	175 262 11-14-19 13-16-22	200 300 12-16-20 14-17-24	225 338 14-17-22 15-18-25
	2S  2G	CFM/SIDE THROW, FT.	150 10-12-16	200 12-14-20	250 14-15-22	300 14-16-23	350 15-17-25	400 16-20-27	450 17-20-29
	1S	CFM/SIDE THROW, FT.	300 13-16-22	400 14-18-26	500 17-20-30	600 18-21-31	700 18-22-33	800 20-23-33	900 22-26-38
15 x 15  1.56 SQ. FT.	RETURN FACTORS —SP=1.8 TP NC + 4	CFM NC	465 14	625 23	780 29	935 34	1090 37	1250 43	1400 45
	4A	CFM/SIDE THROW, FT.	117 10-13-17	156 11-14-19	195 13-15-22	234 14-17-23	273 15-18-24	312 16-19-26	350 17-21-28
	3A	CFM/SIDE THROW, FT.	117 175 10-13-17 11-14-18	156 234 11-14-19 14-18-23	195 292 13-15-22 15-18-25	234 351 14-17-23 17-18-27	273 409 15-18-24 18-20-29	312 468 16-19-26 18-23-31	350 527 17-21-28 20-23-34
	2S  2G	CFM/SIDE THROW, FT.	234 13-16-22	312 15-18-25	390 17-20-29	468 18-22-32	546 19-23-34	625 22-25-36	700 22-28-38
	1S	CFM/SIDE THROW, FT.	467 17-20-29	625 18-23-34	780 21-26-38	935 23-29-41	1090 24-31-44	1250 26-34-46	1400 29-35-49
18 x 18  2.25 SQ. FT.	RETURN FACTORS —SP=2.1 TP NC + 6	CFM NC	675 16	900 25	1125 31	1350 35	1575 40	1800 43	2025 46
	4A	CFM/SIDE THROW, FT.	168 12-15-20	225 14-16-23	281 15-19-26	337 16-20-29	394 18-22-30	450 19-23-33	506 20-25-34
	3A	CFM/SIDE THROW, FT.	168 253 12-15-20 14-18-23	225 338 14-16-23 16-20-26	281 422 15-19-26 18-22-30	337 506 16-20-29 20-26-34	394 590 18-22-30 21-26-36	450 675 19-23-33 22-28-38	506 760 20-25-34 26-29-41
	2S  2G	CFM/SIDE THROW, FT.	337 15-18-26	450 18-21-30	562 19-24-34	675 21-25-37	787 24-27-39	900 24-28-42	1012 26-31-44
	1S	CFM/SIDE THROW, FT.	675 20-26-36	900 24-29-41	1125 27-34-46	1350 29-36-49	1575 31-38-53	1800 34-42-56	2025 37-44-60

For performance notes, see D44.

D

CEILING DIFFUSERS

## PERFORMANCE DATA:

### MODELS 6500IV AND 6200IV • SQUARE NECK • INDUCTION VANES

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VELOCITY TP	300 .035	400 .062	500 .097	600 .140	700 .191	800 .249	900 .316
21 x 21  3.06 SQ. FT.	RETURN FACTORS —SP=2.6 TP NC + 8	CFM NC	915 18	1225 26	1530 32	1835 36	2140 41	2450 44	2750 47
			A B	A B	A B	A B	A B	A B	A B
	4A	CFM/SIDE THROW, FT.	230 14-17-24	306 15-20-27	382 17-22-31	460 18-24-33	535 20-27-35	612 21-27-37	688 22-31-41
	3A	CFM/SIDE THROW, FT.	230 345 12-15-21 16-20-27	306 460 14-18-23 18-22-31	382 573 15-20-27 21-25-36	460 688 16-21-29 22-27-40	535 802 18-22-31 23-29-42	612 918 18-23-32 27-31-45	688 1030 20-27-36 27-34-47
24 x 24  4.0 SQ. FT.	RETURN FACTORS —SP=2.7 TP NC + 8	CFM NC	1200 19	1600 27	2000 33	2400 37	2800 41	3200 45	3600 48
			A B	A B	A B	A B	A B	A B	A B
	4A	CFM/SIDE THROW, FT.	300 16-19-26	400 19-22-32	500 22-25-35	600 23-26-38	700 25-28-41	800 26-32-44	900 28-32-46
	3A	CFM/SIDE THROW, FT.	300 450 16-19-26 18-22-31	400 600 19-22-32 19-25-37	500 750 22-25-35 23-29-42	600 900 23-26-38 25-30-45	700 1050 25-28-41 29-33-47	800 1200 26-32-44 29-34-51	900 1350 28-32-46 31-38-54
30 x 30  6.25 SQ. FT.	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1875 20	2500 28	3125 34	3750 39	4375 43	5000 46	5625 50
			A B	A B	A B	A B	A B	A B	A B
	4A	CFM/SIDE THROW, FT.	469 20-25-34	625 23-29-38	782 27-32-44	937 29-35-49	1093 30-37-52	1250 32-40-55	1406 37-42-58
	3A	CFM/SIDE THROW, FT.	469 703 20-25-34 22-27-39	625 938 23-29-38 26-31-46	782 1172 27-32-44 28-35-51	937 1405 29-35-49 31-39-55	1093 1640 30-37-52 33-39-59	1250 1875 32-40-55 35-46-62	1406 2110 37-42-58 39-48-66
36 x 36  9.0 SQ. FT.	RETURN FACTORS —SP=3.6 TP NC + 9	CFM NC	2700 22	3600 29	4500 35	5400 40	6300 44	7200 48	8100 52
			A B	A B	A B	A B	A B	A B	A B
	4A	CFM/SIDE THROW, FT.	675 24-30-41	900 27-33-46	1125 31-37-54	1350 33-41-59	1575 35-42-62	1800 41-46-66	2025 41-51-70
	3A	CFM/SIDE THROW, FT.	675 1010 24-30-41 27-35-46	900 1350 27-33-46 32-38-54	1125 1687 31-37-54 37-45-62	1350 2025 33-41-59 38-48-66	1575 2362 35-42-62 42-51-70	1800 2700 41-46-66 46-56-75	2025 3038 41-51-70 50-59-80

D  
CEILING DIFFUSERS

CFM - cubic feet per minute  
 Neck Velocity - feet per minute  
 TP - total pressure - inches w.g.  
 NC - Noise Criteria (values) based on 10 dB room absorption, re 10<sup>-12</sup> watts.

#### Performance Notes:

1. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.
2. Sound levels in performance tables are for steel construction – **Model 6500IV**. Apply the following corrections for aluminum construction – **Model 6200IV**.  
 TP = Listed value x 1.25.  
 NC = Listed value + 4.

3. Performance data as tabulated is for supply air conditions. Correction factors for return air application - see next page.
4. Correction factors for round inlets - see next page.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA CORRECTIONS :

### MODEL SERIES 6500IV AND 6200IV

#### CORRECTION FACTORS FOR RETURN INLET

If the unit is used as a return inlet, the performance data is obtained by applying the return corrections, as follows:

- Add the NC correction at the left side of the table to the NC value listed in the performance table.
- Multiply the listed SP factor at the left side of the table by the total pressure (TP) listed at the top of the table.

#### Example:

12" x 12" unit handling 600 cfm of return air. (Page D43).

- Return NC = 32 + 4 = 36.
- Return negative SP = 1.3 x (- .14) = - .182.

#### CORRECTION FACTORS WITH SQUARE TO ROUND INLET ADAPTOR

- Add the NC correction factor from Table 2 and the NC value listed in the performance tables.
- Multiply the correction factor from Table 2 by the listed total pressure in the performance tables.
- Multiply the correction factor from Table 2 by the listed throws in the performance tables.

#### Example:

12" x 12" unit with 10" round adaptor handling 500 cfm supply air. (Page D43).

- NC = 27 + 7 = 34
- Total Pressure = .097 x 1.65 = 0.160
- Throw = 17 x 1.15 = 19.55 feet @ 50 fpm terminal velocity.

TABLE 2 Correction Factors for SR Adaptors

SQUARE INLET	ROUND INLET	NC (add)	TP (multiply)	THROW (multiply)		
				150	100	50
6 x 6	5	7	1.65	1.10	1.10	1.15
9 x 9	6	17	3.50	1.15	1.15	1.20
9 x 9	8	4	1.40	1.10	1.10	1.10
12 x 12	8	17	3.50	1.15	1.15	1.20
12 x 12	10	7	1.65	1.10	1.10	1.15
15 x 15	10	17	3.50	1.15	1.15	1.20
15 x 15	12	9	1.90	1.10	1.10	1.15
15 x 15	14	3	1.25	1.05	1.05	1.10
18 x 18	12	17	3.50	1.15	1.15	1.20
18 x 18	14	10	2.00	1.10	1.10	1.15
18 x 18	16	5	1.45	1.10	1.10	1.10
21 x 21	14	17	3.70	1.15	1.15	1.20
21 x 21	16	11	2.25	1.10	1.10	1.15
21 x 21	18	6	1.60	1.10	1.10	1.10
21 x 21	20	3	1.20	1.05	1.05	1.10
24 x 24	16	17	3.50	1.15	1.15	1.20
24 x 24	18	12	2.35	1.10	1.10	1.15
24 x 24	20	7	1.65	1.10	1.10	1.15
24 x 24	22	4	1.33	1.05	1.05	1.10

## SQUARE AND RECTANGULAR PATTERN CEILING DIFFUSERS

- LOUVERED FACE
- EXTRA HIGH CAPACITY
- SQUARE, RECTANGULAR OR ROUND NECKS
- ALUMINUM

### Aluminum Model:

#### 6400 Fixed Pattern

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 6400

D

CEILING DIFFUSERS

Model Series 6400 Fixed Pattern Ceiling Diffusers have been specially designed to provide an extra high capacity louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. The Model 6400 differs from the 6200 Series diffuser only in that the leading edge on all angular discharge louvers is straight, without the horizontal lip. This results in a relatively deeper primary air stream emanating from the diffuser, which produces shorter throws and slightly lower sound levels. The 6400 Series relies on the ceiling coanda effect in order to maintain the catalogued throws for engineered air distribution and performance and is recommended for applications with higher ceiling heights or for heating applications to minimize stratification.

Available with a wide variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirement. Many frame types are also available to suit almost any mounting condition including surface mount (flat, beveled or deep drop face) and T-Bar panel types (Standard 1" (25), Finline®, Spline, Tegular or Metal Snap-in). These models therefore offer a great degree of design flexibility.

### STANDARD FEATURES:

- Spring loaded core. It is removable without the use of tools.
- High neck collars for solid connection.
- Secure core attachment.
- A wide variety of frame styles to suit most ceiling applications.
- Extended panels to suit modular ceiling systems. PLS (steel) or PLA (aluminum).
- Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a wide selection of square and rectangular neck sizes (see page D49).
- Clean lines with no unsightly visible screws.
- Opposed blade damper with screwdriver slot operator.

### CONSTRUCTION MATERIAL:

Aluminum.

### AVAILABLE SIZES:

Unit size is determined by duct dimensions. Diffuser necks are undersized to suit ductwork.

Duct Sizes are available in 3" (76) increments.

Minimum size:

6" x 6" (152 x 152) square neck. 9" x 6" (229 x 152) rectangular neck (most core styles).

Maximum size:

Types S and B: 36" x 36" (914 x 914) or 36" x 24" (914 x 610) with opposed blade damper.

Types L, SP, TL, M and F: see next page.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

EX External Foil-Back Insulation (installed) – R-4.2.

MIB Molded Insulation Blanket R-6.0.

SR Square-to-round transition adaptors are available (SR04 - SR24 option [4" - 24" diameter]). See page D257.

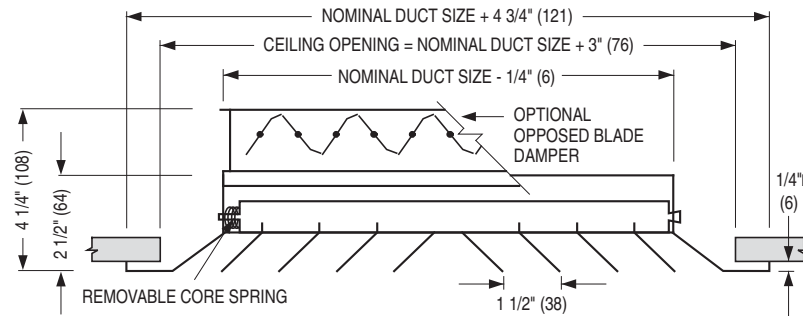
EQT Earthquake Tabs

For additional options and accessories; see page D255.

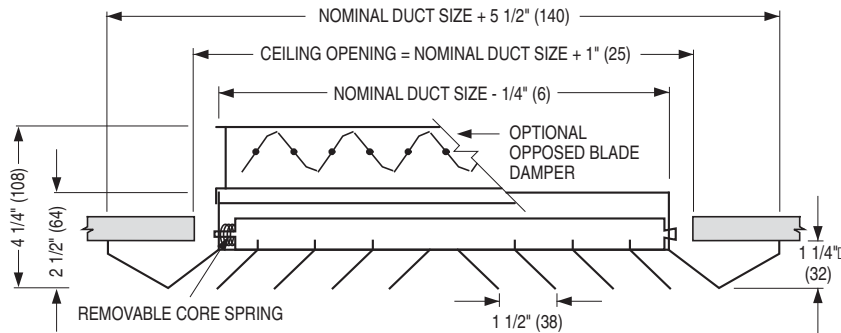
## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL SERIES 6400

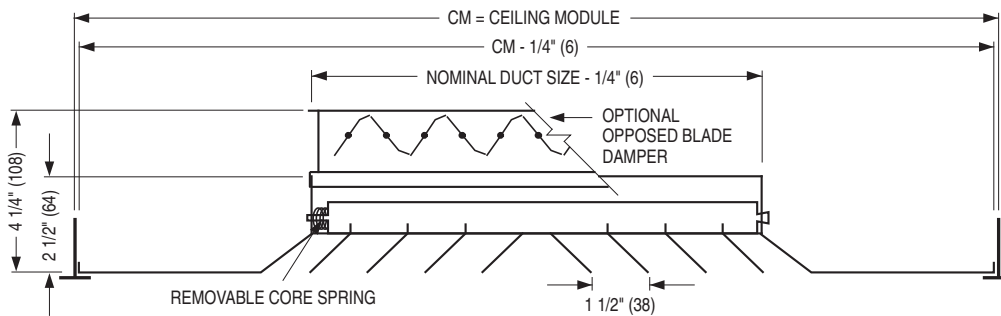
**Type S**  
Surface Mount  
Frame



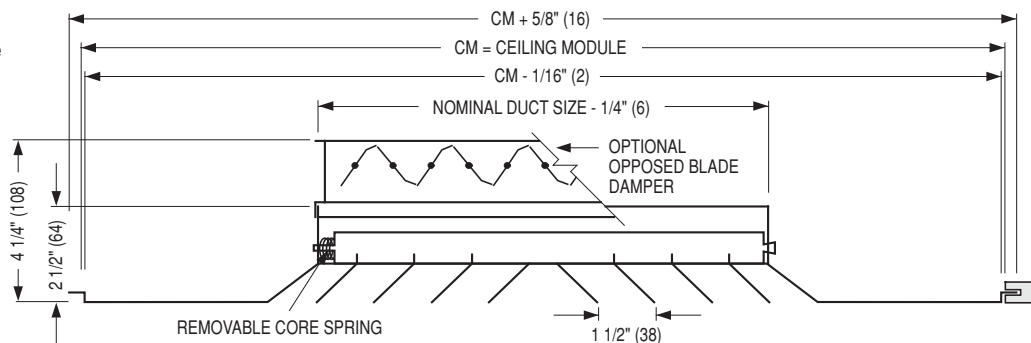
**Type B**  
Beveled Drop  
Face Frame



**Type L**  
Lay-In  
T-Bar Frame



**Type SP**  
Spline Frame



SPLINE TYPE DIFFUSER FOR ONE-DIRECTIONAL EXPOSED T-BAR LAY-IN GRID OR FOR CONCEALED T-BAR GRID.  
(SPLINES ON TWO OPPOSITE SIDES. STEEL LIFT BRACKETS ON THE OTHER TWO SIDES.)

### Extended Panel Diffusers Frame Types L, SP, TL, M and F

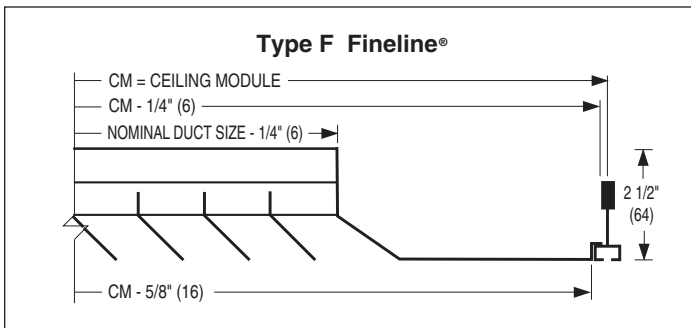
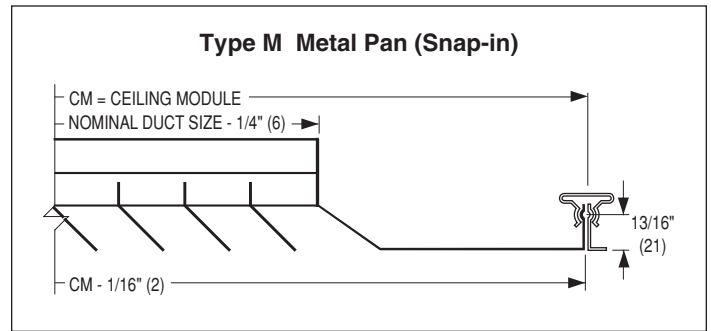
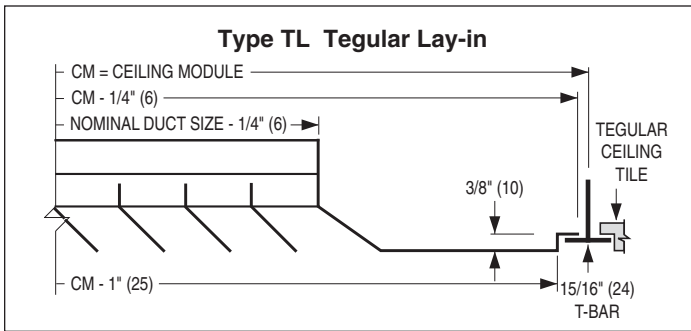
If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a steel module-sized extended panel will be added. Aluminum is available as an option.

See the table at right for the maximum duct size for each module size.

Table 1		
Ceiling Module Size	Maximum Duct Size Frames L, SP and M	Maximum Duct Size Frames TL and F
12 x 12 (305 x 305)	9 x 9 (229 x 229)	6 x 6 (152 x 152)
20 x 20 (508 x 508)	15 x 15 (381 x 381)	—
24 x 12 (610 x 305)	21 x 9 (533 x 229)	18 x 6 (457 x 152)
24 x 24 (610 x 610)	21 x 21 (533 x 533)	18 x 18 (457 x 457)
48 x 24 (1219 x 610)	45 x 21 (1143 x 533)	—

## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL SERIES 6400

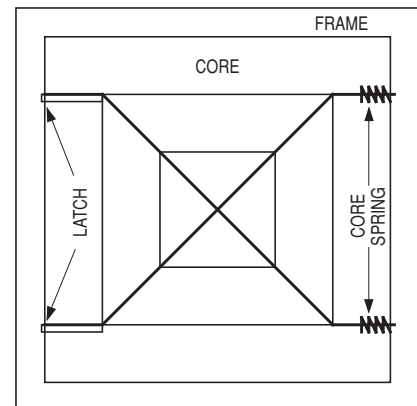


### REMOVABLE CORE

- Standard feature of **Model 6400**.
- Engineered design allows easy removal without the need for tools, yet remains securely in place.

### HOW TO REMOVE "REMOVABLE" CORE

To remove diffuser core, lift the complete core assembly to disengage the latch, push the core against the core spring, pull down the core slightly and remove. Reverse procedure to re-install.





## STANDARD CORE STYLES:

### MODEL SERIES 6400

Contact factory for special core configurations.

#### SIZES AVAILABLE



Type 1S



Type 2S



Type 2G



Type 3A



Type 4A

	SQUARE	RECTANGULAR	CORE	MINIMUM	MAXIMUM
→ 1-WAY		 	1S 1A 1B	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
↕ 2-WAY		 	2S 2A 2B	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
↗ 2-WAY CORNER		   	2G 2C 2D 2E 2F	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 33 (914 x 838)
↕ 3-WAY		    	3A 3A1 3A2 3B 3C 3E 3H	6 x 6 (152 x 152) 9 x 6 (229 x 152) 9 x 6 (229 x 152) 12 x 6 (305 x 152) 9 x 6 (229 x 152) 15 x 6 (381 x 152) 6 x 6 (152 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 33 (914 x 838) 36 x 18 (914 x 457) 36 x 33 (914 x 838) 36 x 15 (914 x 381) 36 x 36 (914 x 914)
↕ 4-WAY		  	4A 4B 4C 4E	6 x 6 (152 x 152) 9 x 6 (229 x 152) 12 x 6 (305 x 152) 15 x 6 (381 x 152)	36 x 36 (914 x 914) 36 x 33 (914 x 838) 36 x 30 (914 x 762) 36 x 27 (914 x 686)

Dimensions are in inches (mm).

#### Notes:

1. Duct sizes are available in 3" (76) increments.
2. Unless otherwise specified, the "x" dimension on 3C and 4E patterns will be such that cataloged flow division is obtained.
3. Patterns are shown in plan view (looking down into inlet).

## PERFORMANCE DATA:

### MODEL 6400 • SQUARE NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300		400		500		600		700		800		900	
			.006 .029		.010 .051		.016 .080		.022 .116		.031 .157		.040 .205		.050 .260	
6 x 6  .25 SQ. FT.	RETURN FACTORS —SP=1.1 TP NC + 1	CFM NC	75 —		100 10		125 17		150 22		175 26		200 31		225 35	
	4A	CFM/SIDE THROW, FT.	19 4-5-8		25 5-6-9		31 6-8-10		37 6-8-11		44 8-9-12		50 8-9-12		56 9-10-13	
	3A	CFM/SIDE THROW, FT.	19 28 4-5-8 5-8-11		25 38 5-6-9 6-9-12		31 47 6-8-10 8-10-14		37 56 6-8-11 8-11-15		44 66 8-9-12 9-12-16		50 75 8-9-12 9-12-17		56 85 9-10-13 10-13-18	
	2S  2G	CFM/SIDE THROW, FT.	37 8-9-12		50 9-10-14		62 10-11-16		75 11-12-17		88 12-13-18		100 12-14-19		113 13-15-22	
	1S	CFM/SIDE THROW, FT.	75 9-11-15		100 10-12-17		125 11-14-19		150 12-15-22		175 13-16-22		200 14-17-24		225 15-18-25	
9 x 9  .56 SQ. FT.	RETURN FACTORS —SP=1.2 TP NC + 2	CFM NC	170 —		225 14		280 20		340 26		395 31		450 35		505 38	
	4A	CFM/SIDE THROW, FT.	42 5-6-10		56 6-8-11		70 8-9-12		84 8-10-13		98 9-10-14		112 9-11-15		126 10-12-16	
	3A	CFM/SIDE THROW, FT.	42 63 5-6-10 8-10-13		56 85 6-8-11 9-11-15		70 106 8-9-12 10-12-17		84 127 8-10-13 11-13-18		98 148 9-10-14 12-14-19		112 169 9-11-15 12-15-22		126 190 10-12-16 13-16-22	
	2S  2G	CFM/SIDE THROW, FT.	84 9-10-15		112 11-13-18		141 12-15-20		169 13-16-22		197 14-17-23		225 15-18-25		253 16-19-28	
	1S	CFM/SIDE THROW, FT.	169 12-15-20		225 14-17-23		282 16-19-26		338 17-22-29		394 18-22-31		450 19-24-33		507 22-25-35	
12 x 12  1.0 SQ. FT.	RETURN FACTORS —SP=1.3 TP NC + 4	CFM NC	300 10		400 17		500 23		600 28		700 33		800 36		900 39	
	4A	CFM/SIDE THROW, FT.	75 6-9-11		100 8-10-13		125 9-11-15		150 10-12-16		175 10-13-17		200 11-14-18		225 12-15-19	
	3A	CFM/SIDE THROW, FT.	75 112 6-9-11 9-11-15		100 150 8-10-13 10-12-17		125 187 9-11-15 11-14-19		150 225 10-12-16 12-15-22		175 262 10-13-17 13-16-22		200 300 11-14-18 14-17-24		225 338 12-15-19 15-18-25	
	2S  2G	CFM/SIDE THROW, FT.	150 11-13-18		200 13-15-22		250 15-17-24		300 16-18-26		350 17-19-28		400 18-22-30		450 19-22-32	
	1S	CFM/SIDE THROW, FT.	300 14-17-24		400 16-19-28		500 18-22-32		600 19-23-34		700 22-25-36		800 23-27-38		900 24-29-41	
15 x 15  1.56 SQ. FT.	RETURN FACTORS —SP=1.8 TP NC + 4	CFM NC	465 10		625 19		780 25		935 30		1090 33		1250 38		1400 41	
	4A	CFM/SIDE THROW, FT.	117 8-10-13		156 9-11-15		195 10-12-17		234 11-13-18		273 12-14-19		312 12-15-22		350 13-16-24	
	3A	CFM/SIDE THROW, FT.	117 175 8-10-13 11-13-18		156 234 9-11-15 13-15-22		195 292 10-12-17 15-17-24		234 351 11-13-18 16-18-26		273 409 12-14-19 17-19-28		312 468 12-15-22 18-22-30		350 527 13-16-24 19-22-32	
	2S  2G	CFM/SIDE THROW, FT.	234 13-16-22		312 15-18-25		390 17-20-29		468 18-22-32		546 19-23-34		625 22-25-36		700 22-28-38	
	1S	CFM/SIDE THROW, FT.	467 16-19-28		625 18-22-32		780 20-25-36		935 22-28-39		1090 23-30-42		1250 25-32-44		1400 28-34-47	
18 x 18  2.25 SQ. FT.	RETURN FACTORS —SP=2.1 TP NC + 6	CFM NC	675 12		900 21		1125 27		1350 31		1575 36		1800 39		2025 42	
	4A	CFM/SIDE THROW, FT.	168 9-11-15		225 10-12-17		281 11-14-19		337 12-15-21		394 13-16-22		450 14-17-24		506 15-18-25	
	3A	CFM/SIDE THROW, FT.	168 253 9-11-15 12-15-20		225 338 10-12-17 14-17-23		281 422 11-14-19 16-19-26		337 506 12-15-21 17-22-29		394 590 13-16-22 18-22-31		450 675 14-17-24 19-24-33		506 760 15-18-25 22-25-35	
	2S  2G	CFM/SIDE THROW, FT.	337 14-17-24		450 16-19-28		562 18-22-32		675 19-23-34		787 22-25-36		900 22-26-39		1012 24-29-41	
	1S	CFM/SIDE THROW, FT.	675 17-22-30		900 20-24-34		1125 23-28-39		1350 24-30-41		1575 26-32-44		1800 29-35-47		2025 31-37-50	

For performance notes, see page D63.

## PERFORMANCE DATA:

### MODEL 6400 • SQUARE NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300		400		500		600		700		800		900			
			.006 .029		.010 .051		.016 .080		.022 .116		.031 .157		.040 .205		.050 .260			
21 x 21  3.06 SQ. FT.	RETURN FACTORS	—SP=2.6 TP NC + 8	CFM NC		915 14		1225 22		1530 28		1835 32		2140 37		2450 40		2750 43	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	4A	CFM/SIDE THROW, FT.	230		306		382		460		535		612		688			
	3A	CFM/SIDE THROW, FT.	230	345	306	460	382	573	460	688	535	802	612	918	688	1030		
24 x 24  4.0 SQ. FT.	RETURN FACTORS	—SP=2.7 TP NC + 8	CFM NC		1200 15		1600 23		2000 29		2400 33		2800 37		3200 41		3600 44	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	4A	CFM/SIDE THROW, FT.	300		400		500		600		700		800		900			
	3A	CFM/SIDE THROW, FT.	300	450	400	600	500	750	600	900	700	1050	800	1200	900	1350		
30 x 30  6.25 SQ. FT.	RETURN FACTORS	—SP=3.1 TP NC + 8	CFM NC		1875 16		2500 24		3125 30		3750 35		4375 39		5000 42		5625 46	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	4A	CFM/SIDE THROW, FT.	469		625		782		937		1093		1250		1406			
	3A	CFM/SIDE THROW, FT.	469	703	625	938	782	1172	937	1405	1093	1640	1250	1875	1406	2110		
36 x 36  9.0 SQ. FT.	RETURN FACTORS	—SP=3.6 TP NC + 9	CFM NC		2700 18		3600 25		4500 31		5400 36		6300 40		7200 44		8100 48	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	4A	CFM/SIDE THROW, FT.	675		900		1125		1350		1575		1800		2025			
	3A	CFM/SIDE THROW, FT.	675	1010	900	1350	1125	1687	1350	2025	1575	2362	1800	2700	2025	3038		

For performance notes, see page D63.

## PERFORMANCE DATA:

### MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300	400	500	600	700	800	900
			.006 .029	.010 .051	.016 .080	.022 .116	.031 .157	.040 .205	.050 .260
9 x 6  .375 SQ. FT.	RETURN FACTORS —SP=1.2 TP NC + 0	CFM NC	110 —	150 14	185 20	225 25	260 29	300 33	335 37
	4B	CFM/SIDE THROW, FT.	37 18 6-9-11 4-5-8	50 25 8-10-13 5-6-9	62 31 9-11-15 6-8-10	75 37 10-12-16 6-8-11	87 44 10-13-17 8-9-12	100 50 11-14-18 8-9-12	112 56 12-15-19 9-10-13
	3A1	CFM/SIDE THROW, FT.	47 18 8-9-12 4-5-8	62 25 9-10-14 5-6-9	78 31 10-11-16 6-8-10	94 37 11-12-17 6-8-11	109 44 12-13-18 8-9-12	125 50 12-14-19 8-9-12	140 56 13-15-22 9-10-13
	3A2	CFM/SIDE THROW, FT.	42 35 6-9-11 5-6-10	55 47 8-10-13 6-8-11	70 58 9-11-15 8-9-12	84 70 10-12-16 8-10-13	98 82 10-13-17 9-10-14	112 94 11-14-18 9-11-15	126 105 12-15-19 10-12-16
	2A 2B	CFM/SIDE THROW, FT.	56 9-11-14	75 10-12-16	93 11-14-18	112 12-15-19	131 13-16-22	150 14-17-22	168 15-18-24
	2C 2E	CFM/SIDE THROW, FT.	75 37 9-11-15 6-9-11	100 50 10-12-17 8-10-13	125 62 11-14-19 9-11-15	150 75 12-15-22 10-12-16	175 87 13-16-22 10-13-19	200 100 14-17-24 11-14-18	225 112 15-18-25 12-15-19
	1A 1B	CFM/SIDE THROW, FT.	112 11-13-18	150 13-15-22	187 15-17-24	225 16-18-26	262 17-19-28	300 18-22-30	337 19-22-32
12 x 6  .50 SQ. FT.	RETURN FACTORS —SP=1.6 TP NC + 1	CFM NC	150 —	200 14	250 20	300 26	350 31	400 35	450 39
	4B	CFM/SIDE THROW, FT.	56 18 9-11-14 4-5-8	75 25 10-12-16 5-6-9	94 31 11-14-18 6-8-10	113 37 12-15-19 6-8-11	131 44 13-16-22 8-9-12	150 50 14-17-22 8-9-12	169 56 15-18-24 9-10-13
	3A1	CFM/SIDE THROW, FT.	66 18 9-11-15 4-5-8	87 25 10-12-17 5-6-9	109 31 11-14-19 6-8-10	131 37 12-15-22 6-8-11	153 44 13-16-22 8-9-12	175 50 14-17-24 8-9-12	197 56 15-18-25 9-10-13
	3B	CFM/SIDE THROW, FT.	75 37 6-9-11 6-9-11	100 50 8-10-13 8-10-13	126 62 9-11-15 9-11-15	150 75 10-12-16 10-12-16	176 87 10-13-17 10-13-17	200 100 11-14-18 11-14-18	226 112 12-15-19 12-15-19
	2A 2B	CFM/SIDE THROW, FT.	75 9-11-15	100 10-12-17	125 11-14-19	150 12-15-22	175 13-16-22	200 14-17-24	225 15-18-25
	2C 2E	CFM/SIDE THROW, FT.	112 37 11-13-18 6-9-11	150 50 13-15-22 8-10-13	188 62 15-17-24 9-11-15	225 75 16-18-26 10-12-16	263 87 17-19-28 10-13-17	300 100 18-22-30 11-14-18	338 112 19-22-32 12-15-19
	1A 1B	CFM/SIDE THROW, FT.	150 11-13-18	200 13-15-22	250 15-17-24	300 16-18-26	350 17-19-28	400 18-22-30	450 19-22-32
15 x 6  .625 SQ. FT.	RETURN FACTORS —SP=1.9 TP NC + 1	CFM NC	190 —	250 15	310 21	375 27	440 32	500 36	565 40
	4B	CFM/SIDE THROW, FT.	75 18 9-11-15 4-5-8	100 25 10-12-17 5-6-9	125 31 11-14-19 6-8-10	150 37 12-15-22 6-8-11	175 44 13-16-22 8-9-12	200 50 14-17-24 8-9-12	225 56 15-18-25 9-10-13
	4E	CFM/SIDE THROW, FT.	56 37 9-11-14 8-9-12	75 50 10-12-16 9-10-14	94 62 11-14-18 10-11-16	113 75 12-15-19 11-12-17	131 87 13-16-22 12-13-18	150 100 14-17-22 12-14-19	169 112 15-18-24 13-15-22
	3A1	CFM/SIDE THROW, FT.	84 18 10-11-16 4-5-8	112 25 11-13-18 5-6-9	140 31 12-15-20 6-8-10	169 37 13-16-22 6-8-11	197 44 14-17-23 8-9-12	225 50 15-18-25 8-9-12	253 56 16-19-28 9-10-13
	2A 2B	CFM/SIDE THROW, FT.	94 10-12-17	125 11-14-19	156 12-16-22	187 13-17-23	219 14-18-25	250 15-19-26	281 16-22-29
	2C 2E	CFM/SIDE THROW, FT.	150 37 11-13-18 6-9-11	200 50 13-15-22 8-10-13	250 62 15-17-24 9-11-15	300 75 16-18-26 10-12-16	350 87 17-19-28 10-13-17	400 100 18-22-30 11-14-18	450 112 19-22-32 12-15-19
	1A 1B	CFM/SIDE THROW, FT.	188 12-15-20	250 14-17-23	312 16-19-26	375 17-22-29	438 18-22-31	500 19-24-33	563 22-25-35

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

D  
CEILING DIFFUSERS

## PERFORMANCE DATA:

### MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 6  .75 SQ. FT.	RETURN FACTORS —SP=2.6 TP NC + 2	CFM NC	225 —		300 16		375 22		450 28		525 33		600 37		675 41	
	4B  4C	CFM/SIDE THROW, FT.	94	18	125	25	156	31	188	37	218	44	250	50	281	56
	4E	CFM/SIDE THROW, FT.	56	56	75	75	94	94	113	113	131	131	150	150	169	169
	3A1	CFM/SIDE THROW, FT.	103	18	137	25	172	31	206	37	240	44	275	50	309	56
	2A 2B	CFM/SIDE THROW, FT.	112		150		187		225		262		300		337	
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	187	37	250	50	313	62	375	75	438	87	500	100	563	112
	1A 1B	CFM/SIDE THROW, FT.	225		300		375		450		525		600		675	
21 x 6  .875 SQ. FT.	RETURN FACTORS —SP=3.2 TP NC + 3	CFM NC	260 —		350 16		435 22		525 29		610 33		700 38		785 41	
	4B  4C	CFM/SIDE THROW, FT.	112	18	150	25	187	31	225	37	262	44	300	50	337	56
	4E	CFM/SIDE THROW, FT.	75	56	100	75	125	94	150	113	175	131	200	150	225	169
	3A1	CFM/SIDE THROW, FT.	122	18	162	25	203	31	244	37	284	44	325	50	365	56
	2A 2B	CFM/SIDE THROW, FT.	131		175		218		262		306		350		393	
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	225	37	300	50	375	62	450	75	525	87	600	100	675	112
	1A 1B	CFM/SIDE THROW, FT.	262		350		437		525		612		700		787	
24 x 6  1.0 SQ. FT.	RETURN FACTORS —SP=3.9 TP NC + 4	CFM NC	300 —		400 16		500 23		600 30		700 34		800 39		900 42	
	4B  4C	CFM/SIDE THROW, FT.	131	18	175	25	219	31	263	37	306	44	350	50	394	56
	4E	CFM/SIDE THROW, FT.	75	75	100	100	125	125	150	150	175	175	200	200	225	225
	3A1	CFM/SIDE THROW, FT.	141	18	187	25	234	31	281	37	328	44	375	50	422	56
	2A 2B	CFM/SIDE THROW, FT.	150		200		250		300		350		400		450	
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	260	37	350	50	438	62	525	75	613	87	700	100	788	112
	1A 1B	CFM/SIDE THROW, FT.	300		400		500		600		700		800		900	

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D63.

## PERFORMANCE DATA:

### MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260								
			CFM NC	A	B	A	B	A	B	A	B	A	B	A	B	A	B						
30 x 6 1.25 SQ. FT.	RETURN FACTORS —SP=3.2 TP NC + 3	CFM NC	375 —		500 17		625 24		750 30		875 35		1000 40		1125 43								
	4B  4C	CFM/SIDE THROW, FT.	169 18	12-15-20	4-5-8	225 25	14-17-23	5-6-9	281 31	16-19-26	6-8-10	338 37	17-22-29	6-8-11	393 44	18-22-31	8-9-12	450 50	19-24-33	8-9-12	506 56	21-25-35	9-10-13
	4E	CFM/SIDE THROW, FT.	94 94	10-12-17	10-12-17	125 125	11-14-19	11-14-19	156 156	12-16-22	12-16-22	188 188	13-17-23	13-17-23	219 219	14-18-25	14-18-25	250 250	15-19-26	15-19-26	282 282	16-22-29	16-22-29
	3A1	CFM/SIDE THROW, FT.	178 18	12-15-20	4-5-8	237 25	14-17-23	5-6-9	297 31	16-19-26	6-8-10	356 37	17-22-29	6-8-11	415 44	18-22-31	8-9-12	475 50	19-24-33	8-9-12	534 56	21-25-35	9-10-13
	2A 2B	CFM/SIDE THROW, FT.	187	12-15-20		250	14-17-23		312	16-19-26		375	17-22-29		437	18-22-31		500	19-24-33		562	21-25-35	
	2C 2E  2D 2F	CFM/SIDE THROW, FT.	337 37	14-17-24	6-9-11	450 50	16-19-28	8-10-13	563 62	18-22-32	9-11-15	675 75	19-23-34	10-12-16	788 87	22-25-36	10-13-17	900 100	22-26-39	11-14-18	1013 112	24-29-41	12-15-19
1A 1B	CFM/SIDE THROW, FT.	375	15-18-25		500	17-22-30		625	19-24-34		750	22-26-36		875	22-28-39		1000	24-30-42		1125	25-32-44		
12 x 9 .75 SQ. FT.	RETURN FACTORS —SP=3.9 TP NC + 4	CFM NC	225 —		300 17		375 23		450 28		525 33		600 36		675 40								
	4B  4C	CFM/SIDE THROW, FT.	70 42	8-10-13	5-6-10	94 56	9-11-15	6-8-11	117 70	10-12-17	8-9-12	141 84	11-13-18	8-10-13	164 98	12-14-19	9-10-14	188 112	12-15-22	9-11-15	211 126	13-16-22	10-12-16
	3A1	CFM/SIDE THROW, FT.	91 42	10-12-17	5-6-10	121 56	11-14-19	6-8-11	152 70	12-16-22	8-9-12	183 84	13-17-23	8-10-13	213 98	14-18-25	9-10-14	244 112	15-19-26	9-11-15	274 126	16-22-29	10-12-16
	3A2	CFM/SIDE THROW, FT.	75 75	9-11-14	9-11-14	100 100	10-12-16	10-12-16	125 125	11-14-18	11-14-18	150 150	12-15-19	12-15-19	175 175	13-16-22	13-16-22	200 200	14-17-22	14-17-22	225 225	15-18-24	15-18-24
	2A 2B	CFM/SIDE THROW, FT.	112	11-13-18		150	13-15-22		187	15-17-24		225	16-18-26		262	17-19-28		300	18-22-30		337	19-22-32	
	2C 2E  2D 2F	CFM/SIDE THROW, FT.	141 84	11-13-18	9-11-14	188 112	13-15-22	10-12-16	234 141	15-17-24	11-14-18	281 169	16-18-26	12-15-19	328 197	17-19-28	13-16-22	375 225	18-22-30	14-17-22	422 253	19-22-32	15-18-24
1A 1B	CFM/SIDE THROW, FT.	225	13-16-22		300	15-18-25		375	17-20-29		450	18-22-32		525	19-23-34		600	22-25-36		675	22-28-38		
15 x 9 .93 SQ. FT.	RETURN FACTORS —SP=1.7 TP NC + 3	CFM NC	280 —		375 18		470 24		565 29		655 34		750 37		845 41								
	4B  4C	CFM/SIDE THROW, FT.	98 42	10-12-17	5-6-10	131 56	11-14-19	6-8-11	165 70	12-16-22	8-9-12	198 84	13-17-23	8-10-13	230 98	14-18-25	9-10-14	263 112	15-19-26	9-11-15	296 126	16-22-29	10-12-16
	4E	CFM/SIDE THROW, FT.	70 70	9-11-15	9-11-15	94 94	10-12-17	10-12-17	117 117	11-14-19	11-14-19	141 141	12-15-22	12-15-22	164 164	13-16-22	13-16-22	188 188	14-17-24	14-17-24	211 211	15-18-25	15-18-25
	3A1	CFM/SIDE THROW, FT.	120 42	11-13-18	5-6-10	159 56	13-15-22	6-8-11	200 70	15-17-24	8-9-12	240 84	16-18-26	8-10-13	279 98	17-19-28	9-10-14	319 112	18-22-30	9-11-15	359 126	19-22-32	10-12-16
	3A2	CFM/SIDE THROW, FT.	117 82	10-11-16	8-10-13	155 110	11-13-18	9-11-15	196 137	12-15-20	10-12-17	233 165	13-16-22	11-13-18	272 192	14-17-23	12-14-19	312 219	15-18-25	12-15-22	351 247	16-19-28	13-16-22
	2A 2B	CFM/SIDE THROW, FT.	140	11-13-18		187	13-15-22		235	15-17-24		281	16-18-26		328	17-19-28		375	18-22-30		422	19-22-32	
2C 2E  2D 2F	CFM/SIDE THROW, FT.	197 84	12-15-20	9-11-14	263 112	14-17-23	10-12-16	329 141	16-19-26	11-14-18	394 169	17-22-29	12-15-19	459 197	18-22-31	13-16-22	525 225	19-24-33	14-17-22	592 253	22-25-35	15-18-24	
1A 1B	CFM/SIDE THROW, FT.	281	14-17-24		375	16-19-28		470	18-22-32		563	19-23-34		656	22-25-36		750	22-26-39		845	24-29-41		

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D63.



## PERFORMANCE DATA:

### MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 9  1.125 SQ. FT.	RETURN FACTORS —SP=2.1 TP NC + 3	CFM NC	335		450		560		675		790		900		1010	
	4B  4C	CFM/SIDE THROW, FT.	126	42	169	56	211	70	254	84	296	98	338	112	380	126
	4E	CFM/SIDE THROW, FT.	99	70	132	94	164	117	197	141	230	164	263	188	296	211
	3A1	CFM/SIDE THROW, FT.	147	42	197	56	246	70	295	84	345	98	394	112	443	126
	3B	CFM/SIDE THROW, FT.	168	84	225	112	281	141	337	169	394	197	450	225	506	253
	2A  2B	CFM/SIDE THROW, FT.	163		225		281		337		394		450		506	
	2C  2D  2E	CFM/SIDE THROW, FT.	253	84	338	112	421	141	506	169	591	197	675	225	759	253
1A  1B	CFM/SIDE THROW, FT.	337		450		562		675		788		900		1012		
21 x 9  1.125 SQ. FT.	RETURN FACTORS —SP=2.5 TP NC + 4	CFM NC	395		525		655		785		915		1050		1180	
	4B  4C	CFM/SIDE THROW, FT.	154	42	206	56	258	70	309	84	360	98	413	112	464	126
	4E	CFM/SIDE THROW, FT.	98	98	131	131	163	163	196	196	229	229	261	261	294	294
	3A1	CFM/SIDE THROW, FT.	175	42	234	56	292	70	351	84	410	98	468	112	527	126
	2A  2B	CFM/SIDE THROW, FT.	196		262		327		393		458		525		590	
	2C  2D  2E	CFM/SIDE THROW, FT.	308	84	412	112	514	141	617	169	720	197	825	225	927	253
	1A  1B	CFM/SIDE THROW, FT.	393		524		655		786		917		1050		1180	
24 x 9  1.5 SQ. FT.	RETURN FACTORS —SP=2.9 TP NC + 4	CFM NC	450		600		750		900		1050		1200		1350	
	4B  4C	CFM/SIDE THROW, FT.	183	42	244	56	305	70	366	84	427	98	488	112	549	126
	4E	CFM/SIDE THROW, FT.	126	99	169	132	211	164	253	197	295	230	337	263	379	296
	3A1	CFM/SIDE THROW, FT.	204	42	272	56	340	70	408	84	476	98	544	112	612	126
	2A  2B	CFM/SIDE THROW, FT.	225		300		375		450		525		600		675	
	2C  2D  2E	CFM/SIDE THROW, FT.	365	84	488	112	609	141	731	169	853	197	975	225	1097	253
	1A  1B	CFM/SIDE THROW, FT.	450		600		750		900		1050		1200		1350	

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D63.

## PERFORMANCE DATA:

### MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
			CFM NC	—SP=3.9 TP NC + 5	A	B	A	B	A	B	A	B	A	B	A	B
30 x 9  1.875 SQ. FT.		CFM/SIDE THROW, FT.	238 13-16-22	42 5-6-10	319 15-18-25	56 6-8-11	398 17-20-29	70 8-9-12	478 18-22-32	84 8-10-13	557 19-23-34	98 9-10-14	638 22-25-36	112 9-11-15	716 22-28-38	126 10-12-16
		CFM/SIDE THROW, FT.	155 12-15-20	126 11-13-18	206 14-17-23	169 13-15-22	258 16-19-26	211 15-17-24	310 17-22-29	253 16-18-26	361 18-22-30	295 17-19-28	413 19-24-33	337 18-22-30	465 22-25-35	379 19-22-32
		CFM/SIDE THROW, FT.	259 13-16-22	42 5-6-10	347 15-18-25	56 6-8-11	433 17-20-29	70 8-9-12	520 18-22-32	84 8-10-13	606 19-23-34	98 9-10-14	694 22-25-36	112 9-11-15	779 22-28-38	126 10-12-16
		CFM/SIDE THROW, FT.	281 14-17-24		375 16-19-28		468 18-22-32		562 19-23-34		655 22-25-36		750 22-26-39		842 24-29-41	
		CFM/SIDE THROW, FT.	476 16-19-28	84 9-11-14	638 18-22-32	112 10-12-16	796 20-25-36	141 11-14-18	956 22-28-39	169 12-15-19	1113 23-30-42	197 13-16-22	1275 25-32-44	225 14-17-22	1432 28-34-47	253 15-18-24
		CFM/SIDE THROW, FT.	562 16-19-28		750 18-22-32		937 20-25-36		1125 22-28-39		1310 23-30-42		1500 25-32-44		1685 28-34-47	
36 x 9  2.25 SQ. FT.		CFM/SIDE THROW, FT.	295 14-17-24	42 5-6-10	394 16-19-28	56 6-8-11	492 18-22-32	70 8-9-12	591 19-23-34	84 8-10-13	689 22-25-36	98 9-10-14	788 22-26-39	112 9-11-15	886 24-29-41	126 10-12-16
		CFM/SIDE THROW, FT.	183 12-15-20	155 12-15-20	244 14-17-23	206 14-17-23	305 16-19-26	258 16-19-26	366 17-22-29	310 17-22-29	427 18-22-31	361 18-22-31	488 19-24-33	413 19-24-33	549 22-25-35	465 22-25-35
		CFM/SIDE THROW, FT.	316 14-17-24	42 5-6-10	422 16-19-28	56 6-8-11	527 18-22-32	70 8-9-12	633 19-23-34	84 8-10-13	738 22-25-36	98 9-10-14	844 22-26-39	112 9-11-15	949 24-29-41	126 10-12-16
		CFM/SIDE THROW, FT.	337 14-17-24		450 16-19-28		562 18-22-32		675 19-23-34		787 22-25-36		900 22-26-39		1012 24-29-41	
		CFM/SIDE THROW, FT.	590 17-22-30	84 9-11-14	788 20-24-34	112 10-12-16	984 23-28-39	141 11-14-18	1181 24-30-41	169 12-15-19	1378 26-32-44	197 13-16-22	1575 29-35-47	225 14-17-22	1772 31-37-50	253 15-18-24
		CFM/SIDE THROW, FT.	675 17-22-30		900 20-24-34		1125 23-28-39		1350 24-30-41		1575 26-32-44		1800 29-35-47		2025 31-37-50	
15 x 12  1.25 SQ. FT.		CFM/SIDE THROW, FT.	112 9-11-15	75 6-9-11	150 10-12-17	100 8-10-13	187 11-14-19	125 9-11-15	225 12-15-22	150 10-12-16	262 13-16-22	175 10-13-17	300 14-17-24	200 11-14-18	337 15-18-25	225 12-15-19
		CFM/SIDE THROW, FT.	150 11-13-18	75 6-9-11	200 13-15-22	100 8-10-13	250 15-17-24	125 9-11-15	300 16-18-26	150 10-12-16	350 17-19-28	175 10-13-17	400 18-22-30	200 11-14-18	450 19-22-32	225 12-15-19
		CFM/SIDE THROW, FT.	117 8-10-13	129 10-11-16	156 9-11-15	172 11-13-18	195 10-12-17	215 12-15-20	234 11-13-18	258 13-16-22	273 12-14-19	301 14-17-23	312 12-15-22	344 15-18-25	351 13-16-22	387 16-19-28
		CFM/SIDE THROW, FT.	187 12-15-20		250 14-17-23		312 16-19-26		375 17-22-29		437 18-22-31		500 19-24-33		567 22-25-35	
		CFM/SIDE THROW, FT.	225 13-16-22	150 10-12-17	300 15-18-25	200 11-14-19	375 17-20-29	250 12-16-22	450 18-22-32	300 13-17-23	525 19-23-34	350 14-18-25	600 22-25-36	400 15-19-26	675 22-28-38	450 16-22-29
		CFM/SIDE THROW, FT.	375 15-18-25		500 17-22-30		625 19-24-34		750 22-26-36		875 22-28-39		1000 24-30-42		1125 25-32-44	

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

**D**  
CEILING DIFFUSERS

## PERFORMANCE DATA:

### MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 12  1.5 SQ. FT.	RETURN FACTORS —SP=1.9 TP NC + 3	CFM NC	450 —		600 20		750 26		900 31		1050 35		1200 39		1350 42	
	4B  4C	CFM/SIDE THROW, FT.	150 11-13-18	75 6-9-11	200 13-15-22	100 8-10-13	250 15-17-24	125 9-11-15	300 16-18-26	150 10-12-16	350 17-19-28	175 10-13-17	400 18-22-30	200 11-14-18	450 19-22-32	225 12-15-19
	3A1	CFM/SIDE THROW, FT.	187 12-15-20	75 6-9-11	250 14-17-23	100 8-10-13	312 16-19-26	125 9-11-15	375 17-22-29	150 10-12-16	437 18-22-31	175 10-13-17	500 19-24-33	200 11-14-18	562 22-25-35	225 12-15-1
	3A2	CFM/SIDE THROW, FT.	168 10-12-17	141 9-11-15	225 11-14-19	187 10-12-17	281 12-16-22	234 11-14-19	337 13-17-23	281 12-15-22	394 14-18-25	328 13-16-22	450 15-19-26	375 14-17-24	506 16-22-29	422 15-18-25
	2A 2B	CFM/SIDE THROW, FT.	225 13-16-22		300 15-18-25		375 17-20-29		450 18-22-32		525 19-23-34		600 22-25-36		675 22-28-38	
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	300 14-17-24	150 10-12-17	400 16-19-28	200 11-14-19	500 18-22-32	250 12-16-22	600 19-23-34	300 13-17-23	700 22-25-36	350 14-18-25	800 22-26-39	400 15-19-26	900 24-29-41	450 16-22-29
	1A 1B	CFM/SIDE THROW, FT.	450 15-18-25		600 17-22-30		750 19-24-34		900 22-26-36		1050 22-28-39		1200 24-30-42		1350 25-32-44	
21 x 12  1.75 SQ. FT.	RETURN FACTORS —SP=2.2 TP NC + 5	CFM NC	525 —		700 20		875 26		1050 31		1225 35		1400 39		1575 42	
	4B  4C	CFM/SIDE THROW, FT.	187 12-15-20	75 6-9-11	250 14-17-23	100 8-10-13	312 16-19-26	125 9-11-15	375 17-22-29	150 10-12-16	437 18-22-31	175 10-13-17	500 19-24-33	200 11-14-18	562 22-25-35	225 12-15-19
	4E	CFM/SIDE THROW, FT.	150 11-13-18	112 11-13-18	200 13-15-22	150 13-15-22	250 15-17-24	187 15-17-24	300 16-18-26	225 16-18-26	350 17-19-28	262 17-19-28	400 18-22-30	300 18-22-30	450 19-22-32	337 19-22-32
	3A1	CFM/SIDE THROW, FT.	225 13-16-22	75 6-9-11	300 15-18-25	100 8-10-13	375 17-20-29	125 9-11-15	450 18-22-32	150 10-12-16	525 19-23-34	175 10-13-17	600 22-25-36	200 11-14-18	675 22-28-38	225 12-15-19
	3A2	CFM/SIDE THROW, FT.	148 10-12-17	230 10-12-17	197 11-14-19	306 11-14-19	246 12-16-22	382 12-16-22	295 13-17-23	460 13-17-23	345 14-18-25	535 14-18-25	394 15-19-26	612 15-19-26	443 16-22-29	688 16-22-29
	2A 2B	CFM/SIDE THROW, FT.	262 13-16-22		350 15-18-25		437 17-20-29		525 18-22-32		612 19-23-34		700 22-25-36		787 22-28-38	
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	375 15-18-25	150 10-12-17	500 17-22-30	200 11-14-19	625 19-24-34	250 12-16-22	750 22-26-36	300 13-17-23	875 22-28-39	350 14-18-25	1000 24-30-42	400 15-19-26	1125 25-32-44	450 16-22-29
1A 1B	CFM/SIDE THROW, FT.	525 16-19-28		700 18-22-32		875 20-25-36		1050 22-28-39		1225 23-30-42		1400 25-32-44		1575 28-34-47		
24 x 12  2.0 SQ. FT.	RETURN FACTORS —SP=2.6 TP NC + 5	CFM NC	600 12		800 21		1000 27		1200 32		1400 36		1600 40		1800 43	
	4B  4C	CFM/SIDE THROW, FT.	225 13-16-22	75 6-9-11	300 15-18-25	100 8-10-13	375 17-20-29	125 9-11-15	450 18-22-32	150 10-12-16	525 19-23-34	175 10-13-17	600 22-25-36	200 11-14-18	675 22-28-38	225 12-15-19
	4E	CFM/SIDE THROW, FT.	150 11-13-18	150 11-13-18	200 13-15-22	200 13-15-22	250 15-17-24	250 15-17-24	300 16-18-26	300 16-18-26	350 17-19-28	350 17-19-28	400 18-22-30	400 18-22-30	450 19-22-32	450 19-22-32
	3A1	CFM/SIDE THROW, FT.	262 13-16-22	75 6-9-11	350 15-18-25	100 8-10-13	437 17-20-29	175 9-11-15	525 18-22-32	150 10-12-16	612 19-23-34	175 10-13-17	700 22-25-36	200 11-14-18	787 22-28-38	225 12-15-19
	3B	CFM/SIDE THROW, FT.	300 11-13-18	150 10-12-17	400 13-15-22	200 11-14-19	500 15-17-24	250 12-16-22	600 16-18-26	300 13-17-23	700 17-19-28	350 14-18-25	800 18-22-30	400 15-19-26	900 19-22-32	450 16-22-29
	2A 2B	CFM/SIDE THROW, FT.	300 14-17-24		400 16-19-28		500 18-22-32		600 19-23-34		700 22-25-36		800 22-26-39		900 24-29-41	
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	450 15-18-25	150 10-12-17	600 17-22-30	200 11-14-19	750 19-24-34	250 12-16-22	900 22-26-36	300 13-17-23	1050 22-28-39	350 14-18-25	1200 24-30-42	400 15-19-26	1350 25-32-44	450 16-22-29
1A 1B	CFM/SIDE THROW, FT.	600 17-22-30		800 20-24-34		1000 23-28-39		1200 24-30-41		1400 26-32-44		1600 29-35-47		1800 31-37-50		

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

## PERFORMANCE DATA:

### MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260		
			CFM NC	A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 12 2.5 SQ. FT.	RETURN FACTORS —SP=3.3 TP NC + 6	CFM NC	750 15	1000 23	1250 29	1500 33	1750 37	2000 41	2250 43								
	4B	CFM/SIDE THROW, FT.	300 75 14-17-24 6-9-11	400 100 16-19-28 8-10-13	500 125 18-22-32 9-11-15	600 150 19-23-34 10-12-16	700 175 21-25-36 10-13-17	800 200 22-26-39 11-14-18	900 225 24-29-41 12-15-19								
	4C	CFM/SIDE THROW, FT.	183 183 12-15-20 12-15-20	250 250 14-17-23 14-17-23	313 313 16-19-26 16-19-26	375 375 17-22-29 17-22-29	437 437 18-22-31 18-22-31	500 500 19-24-33 19-24-33	562 562 22-25-35 22-25-35								
	4E	CFM/SIDE THROW, FT.	337 75 14-17-24 6-9-11	450 100 16-19-28 8-10-13	562 125 18-22-32 9-11-15	675 150 19-23-34 10-12-16	787 175 21-25-36 10-13-17	900 200 22-26-39 11-14-18	1012 225 24-29-41 12-15-19								
	3A1	CFM/SIDE THROW, FT.	375 15-18-25	500 17-22-30	625 19-24-34	750 22-26-36	875 22-28-39	1000 24-30-42	1125 25-32-44								
	2A 2B	CFM/SIDE THROW, FT.	600 150 17-22-30 10-12-17	800 200 20-24-34 11-14-19	1000 250 23-28-39 12-16-22	1200 300 24-30-41 13-17-23	1400 350 26-32-44 14-18-25	1600 400 29-35-47 15-19-26	1800 450 31-37-50 16-22-29								
2C 2E	CFM/SIDE THROW, FT.	750 18-22-32	1000 22-25-36	1250 24-29-41	1500 26-32-44	1750 28-34-47	2000 30-36-50	2250 32-38-53									
1A 1B	CFM/SIDE THROW, FT.	900 19-24-33	1200 22-28-38	1500 25-32-43	1800 28-34-46	2100 30-36-50	2400 32-39-53	2700 34-41-57									
36 x 12 3.0 SQ. FT.	RETURN FACTORS —SP=4.0 TP NC + 7	CFM NC	900 16	1200 25	1500 30	1800 34	2100 38	2400 42	2700 44								
	4B	CFM/SIDE THROW, FT.	375 75 15-18-25 6-9-11	500 100 17-22-30 8-10-13	625 125 19-24-34 9-11-15	750 150 22-26-36 10-12-16	875 175 22-28-39 10-13-17	1000 200 24-30-42 11-14-18	1125 225 25-32-44 12-15-19								
	4C	CFM/SIDE THROW, FT.	225 225 13-16-22 13-16-22	300 300 15-18-25 15-18-25	375 375 17-20-29 17-20-29	450 450 18-22-32 18-22-32	525 525 19-23-34 19-23-34	600 600 22-25-36 22-25-36	675 675 22-28-38 22-28-38								
	4E	CFM/SIDE THROW, FT.	412 75 15-18-25 6-9-11	550 100 17-22-30 8-10-13	687 125 19-24-34 9-11-15	825 150 22-26-36 10-12-16	962 175 22-28-39 10-13-17	1100 200 24-30-42 11-14-18	1237 225 25-32-44 12-15-19								
	3A1	CFM/SIDE THROW, FT.	450 15-18-25	600 17-22-30	750 19-24-34	900 22-26-36	1050 22-28-39	1200 24-30-42	1350 25-32-44								
	2A 2B	CFM/SIDE THROW, FT.	750 150 18-22-32 10-12-17	1000 200 22-25-36 11-14-19	1250 250 24-29-41 12-16-22	1500 300 26-32-44 13-17-23	1750 350 28-34-47 14-18-25	2000 400 30-36-50 15-19-26	2250 450 32-38-53 16-22-29								
2C 2E	CFM/SIDE THROW, FT.	900 19-24-33	1200 22-28-38	1500 25-32-43	1800 28-34-46	2100 30-36-50	2400 32-39-53	2700 34-41-57									
1A 1B	CFM/SIDE THROW, FT.	560 14	750 21	935 28	1125 32	1310 36	1500 39	1685 43									
18 x 15 1.875 SQ. FT.	RETURN FACTORS —SP=2.0 TP NC + 4	CFM NC	560 14	750 21	935 28	1125 32	1310 36	1500 39	1685 43								
	4B	CFM/SIDE THROW, FT.	164 117 10-12-17 8-10-13	219 156 11-14-19 9-11-15	273 195 12-16-22 10-12-17	328 234 13-17-23 11-13-18	383 273 14-18-25 12-14-19	438 312 15-19-26 12-15-22	492 351 16-22-29 13-16-22								
	4C	CFM/SIDE THROW, FT.	222 117 13-16-22 8-10-13	297 156 15-18-25 9-11-15	371 195 17-20-29 10-12-17	445 234 18-22-32 11-13-18	519 273 19-23-34 12-14-19	594 312 22-25-36 12-15-22	668 351 22-28-38 13-16-22								
	3A1	CFM/SIDE THROW, FT.	168 197 9-11-15 12-15-20	225 262 10-12-17 14-17-23	281 328 11-14-19 16-19-26	337 394 12-15-22 17-22-29	394 459 13-16-22 18-22-31	450 525 14-17-24 19-24-33	506 590 15-18-25 22-25-35								
	3A2	CFM/SIDE THROW, FT.	281 14-17-24	375 16-19-28	468 18-22-32	562 19-23-34	656 22-25-36	750 22-26-39	843 24-29-41								
	2A 2B	CFM/SIDE THROW, FT.	329 234 17-22-30 12-15-20	438 312 20-24-34 14-17-23	547 390 23-28-39 16-19-26	657 468 24-30-41 17-22-29	766 546 26-32-44 18-22-31	876 624 29-35-47 19-24-33	985 702 31-37-50 22-25-35								
2C 2E	CFM/SIDE THROW, FT.	562 16-19-28	750 18-22-32	937 20-25-36	1125 22-28-39	1312 23-30-42	1500 25-32-44	1687 28-34-47									
1A 1B	CFM/SIDE THROW, FT.	562 16-19-28	750 18-22-32	937 20-25-36	1125 22-28-39	1312 23-30-42	1500 25-32-44	1687 28-34-47									

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

## PERFORMANCE DATA:

### MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300		400		500		600		700		800		900	
			.006 .029		.010 .051		.016 .080		.022 .116		.031 .157		.040 .205		.050 .260	
21 x 15  2.185 SQ. FT.	RETURN FACTORS —SP=2.1 TP NC + 5	CFM NC	655 12		875 21		1090 28		1310 33		1530 36		1750 39		1970 43	
	4B  4C	CFM/SIDE THROW, FT.	210 13-16-22	117 8-10-13	281 15-18-25	156 9-11-15	361 17-20-29	195 10-12-17	422 18-22-32	234 11-13-18	493 19-23-34	273 12-14-19	563 22-25-36	312 12-15-22	634 22-28-38	351 13-16-22
	4E	CFM/SIDE THROW, FT.	164 12-15-20	164 12-15-20	218 14-17-24	218 14-17-24	273 16-19-26	273 16-19-26	327 17-22-29	327 17-22-29	382 18-22-31	382 18-22-31	437 19-24-33	437 19-24-33	491 22-25-35	491 22-25-35
	3A1	CFM/SIDE THROW, FT.	269 13-16-22	117 8-10-13	359 15-18-25	156 9-11-15	448 17-20-29	195 10-12-17	539 18-22-32	234 11-13-18	629 19-23-34	273 12-14-19	719 22-25-36	312 12-15-22	809 22-28-38	351 13-16-22
	3A2	CFM/SIDE THROW, FT.	230 11-13-18	213 10-12-17	306 13-15-22	284 11-14-19	382 15-17-24	355 12-16-22	460 16-18-26	426 13-17-23	535 17-19-28	498 14-18-25	612 18-22-30	569 15-19-26	688 19-22-32	641 16-22-29
	2A  2B	CFM/SIDE THROW, FT.	327 14-17-24		437 16-19-28		596 18-22-32		656 19-23-34		766 22-25-36		875 22-26-39		985 24-29-41	
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	422 15-18-25	234 12-15-20	563 17-22-30	312 14-17-23	702 19-24-34	390 16-19-26	844 22-26-36	468 17-22-29	966 22-28-39	546 18-22-31	1126 24-30-42	624 19-24-33	1268 25-32-44	702 22-25-35
	1A  1B	CFM/SIDE THROW, FT.	655 17-22-30		875 20-24-34		1092 23-28-39		1312 24-30-41		1532 26-32-44		1750 29-35-47		1970 31-37-50	
24 x 15  2.5 SQ. FT.	RETURN FACTORS —SP=2.6 TP NC + 6	CFM NC	750 14		1000 22		1250 29		1500 34		1750 37		2000 39		2250 44	
	4B  4C	CFM/SIDE THROW, FT.	258 13-16-22	117 8-10-13	344 15-18-25	156 9-11-15	430 17-20-29	195 10-12-17	516 18-22-32	234 11-13-18	602 19-23-34	273 12-14-19	688 22-25-36	312 12-15-22	774 22-28-38	351 13-16-22
	4E	CFM/SIDE THROW, FT.	211 13-16-22	164 12-15-20	281 15-18-25	218 14-17-24	352 17-20-29	273 16-19-26	422 18-22-32	327 17-22-29	492 19-23-34	382 18-22-31	563 22-25-36	437 19-24-33	633 22-28-38	491 22-25-35
	3A1	CFM/SIDE THROW, FT.	316 14-17-24	117 8-10-13	422 16-19-28	156 9-11-15	527 18-22-32	195 10-12-17	633 19-23-34	234 11-13-18	738 22-25-36	273 12-14-19	844 22-26-39	312 12-15-22	949 24-29-41	351 13-16-22
	3A2	CFM/SIDE THROW, FT.	300 13-16-22	225 11-13-18	400 15-18-25	300 13-15-22	500 17-20-29	375 15-17-24	600 18-22-32	450 16-18-26	700 19-23-34	525 17-19-28	800 22-25-36	600 18-22-30	900 22-28-38	675 19-22-32
	2A  2B	CFM/SIDE THROW, FT.	375 15-18-25		500 17-22-30		625 19-24-34		750 22-26-36		875 22-28-39		1000 24-30-42		1125 25-32-44	
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	516 16-19-28	234 12-15-20	688 18-22-32	312 14-17-23	860 20-25-36	390 16-19-26	1032 22-28-39	468 17-22-29	1204 23-30-42	546 18-22-31	1376 25-32-44	624 19-24-33	1548 28-34-47	702 22-25-35
	1A  1B	CFM/SIDE THROW, FT.	750 18-22-32		1000 22-25-36		1250 24-29-41		1500 26-32-44		1750 28-34-47		2000 30-36-50		2250 32-38-53	
30 x 15  3.125 SQ. FT.	RETURN FACTORS —SP=3.1 TP NC + 7	CFM NC	935 14		1250 23		1565 30		1875 36		2190 39		2500 40		2810 45	
	4B  4C	CFM/SIDE THROW, FT.	351 14-17-24	117 8-10-13	469 16-19-28	156 9-11-15	587 18-22-32	195 10-12-17	703 19-23-34	234 11-13-18	822 22-25-36	273 12-14-19	938 22-26-39	312 12-15-22	1054 24-29-41	351 13-16-22
	4E	CFM/SIDE THROW, FT.	258 13-16-22	211 13-16-22	344 15-18-25	281 15-18-25	430 17-20-29	352 17-20-29	516 18-22-32	422 18-22-32	602 19-23-34	492 19-23-34	688 22-25-36	583 22-25-36	775 22-28-38	633 22-28-38
	3A1	CFM/SIDE THROW, FT.	410 15-18-25	117 8-10-13	547 17-22-30	156 9-11-15	685 19-24-34	195 10-12-17	820 22-26-36	234 11-13-18	958 22-28-39	273 12-14-19	1094 24-30-42	312 12-15-22	1224 25-32-44	351 13-16-22
	3B	CFM/SIDE THROW, FT.	468 12-15-20	234 12-15-20	625 14-17-23	312 14-17-23	782 16-19-26	391 16-19-26	937 17-22-29	469 17-22-29	1095 18-22-31	547 18-22-31	1250 19-24-33	625 19-24-33	1406 22-25-35	702 22-25-35
	2A  2B	CFM/SIDE THROW, FT.	468 16-19-28		625 18-22-32		782 20-25-36		937 22-28-39		1095 23-30-42		1250 25-32-44		1405 28-34-47	
	2C  2D 2E  2F	CFM/SIDE THROW, FT.	702 17-22-30	234 12-15-20	938 20-24-34	312 14-17-23	1175 23-28-39	390 16-19-26	1407 24-30-41	468 17-22-29	1644 26-32-44	546 18-22-31	1876 29-35-47	624 19-24-33	2108 34-37-50	702 22-25-35
	1A  1B	CFM/SIDE THROW, FT.	937 19-24-33		1250 22-28-38		1565 25-32-43		1875 28-34-46		2190 30-36-50		2500 32-39-53		2810 34-41-57	

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D63.

## PERFORMANCE DATA:

### MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
			CFM NC	A	B	A	B	A	B	A	B	A	B	A	B	A
36 x 15 3.75 SQ. FT.	RETURN FACTORS —SP=3.8 TP NC + 7	CFM NC	1125 13		1500 23		1875 31		2250 37		2625 40		3000 41		3375 46	
	4B  4C	CFM/SIDE THROW, FT.	446 117 15-18-25 8-10-13	594 156 17-22-30 9-11-15	742 195 19-24-34 10-12-17	891 234 22-26-36 11-13-18	1039 273 22-30-39 12-14-19	1188 312 24-30-42 12-15-22	1336 351 25-32-44 13-16-22							
	4E	CFM/SIDE THROW, FT.	306 258 14-17-24 13-16-22	408 344 16-19-28 15-18-25	510 430 18-22-32 17-20-29	612 516 19-23-34 18-22-32	714 602 22-25-36 19-23-34	816 688 22-26-39 22-25-36	918 775 24-29-41 22-28-38							
	3A1	CFM/SIDE THROW, FT.	504 117 16-19-28 8-10-13	672 156 18-22-32 9-11-15	840 195 20-25-36 10-12-17	1008 234 22-30-39 11-13-18	1176 273 23-30-42 12-14-19	1344 312 25-32-44 12-15-22	1512 351 28-34-47 13-16-22							
	2A  2B	CFM/SIDE THROW, FT.	562 16-19-28	750 18-22-32	937 20-25-36	1125 22-28-39	1312 23-30-42	1500 25-32-44	1682 28-34-47							
	2C  2D  2E  2F	CFM/SIDE THROW, FT.	890 234 19-24-33 12-15-20	1188 312 22-28-33 14-17-23	1485 390 25-32-43 16-19-26	1782 468 28-34-46 17-22-29	2079 546 30-36-50 18-22-31	2376 624 32-39-53 19-24-33	2873 702 34-41-57 22-25-35							
1A  1B	CFM/SIDE THROW, FT.	1125 20-25-35	1500 23-29-40	1875 26-32-45	2250 28-35-49	2625 31-38-52	3000 33-40-57	3375 35-43-60								
21 x 18 2.625 SQ. FT.	RETURN FACTORS —SP=2.2 TP NC + 5	CFM NC	785 14		1050 21		1310 27		1575 32		1840 36		2100 40		2360 43	
	4B  4C	CFM/SIDE THROW, FT.	225 169 11-13-18 9-11-15	300 225 13-15-22 10-12-17	375 280 15-17-24 11-14-19	450 337 16-18-27 12-15-22	526 394 17-19-28 13-16-22	600 450 18-22-30 14-17-24	674 506 19-22-32 15-18-25							
	3A1	CFM/SIDE THROW, FT.	309 169 14-17-24 9-11-15	412 225 16-19-28 10-12-17	514 281 18-22-32 11-14-19	619 337 19-23-34 12-15-22	723 394 22-25-36 13-16-22	825 450 22-26-39 14-17-24	927 506 24-29-41 15-18-25							
	3A2	CFM/SIDE THROW, FT.	279 230 14-17-24 10-12-17	372 306 16-19-28 11-14-19	464 382 18-22-32 12-16-22	557 460 19-23-34 13-17-23	652 535 22-25-36 14-18-25	744 612 22-26-39 15-19-26	836 688 24-29-41 16-22-29							
	2A  2B	CFM/SIDE THROW, FT.	393 15-18-25	525 17-22-30	655 19-24-31	787 22-26-36	920 22-28-39	1050 24-30-42	1180 25-32-44							
	2C  2D  2E  2F	CFM/SIDE THROW, FT.	450 338 15-18-25 13-16-22	600 450 17-22-30 15-18-25	750 560 19-24-31 17-20-29	900 675 22-26-36 18-22-32	1060 790 22-28-39 19-23-34	1200 900 24-30-42 22-25-36	1350 1010 25-32-44 22-28-38							
1A  1B	CFM/SIDE THROW, FT.	787 18-22-32	1050 22-25-36	1310 24-29-41	1575 26-32-44	1840 28-34-47	2100 30-36-50	2360 32-38-53								
24 x 18 3.0 SQ. FT.	RETURN FACTORS —SP=2.5 TP NC + 6	CFM NC	900 15		1200 22		1500 28		1800 33		2100 37		2400 40		2700 43	
	4B  4C	CFM/SIDE THROW, FT.	281 169 14-17-24 9-11-15	375 225 16-19-28 10-12-17	469 281 18-22-32 11-14-19	563 337 19-23-34 12-15-22	656 394 22-25-36 13-16-22	750 450 22-26-39 14-17-24	844 506 24-29-41 15-18-25							
	4E	CFM/SIDE THROW, FT.	225 225 13-16-22 13-16-22	300 300 15-18-25 15-18-25	375 375 17-20-29 17-20-29	450 450 18-22-32 18-22-32	525 525 19-23-34 19-23-34	600 600 22-25-36 22-25-36	675 675 22-28-38 22-28-38							
	3A1	CFM/SIDE THROW, FT.	366 169 15-18-25 9-11-15	487 225 17-22-30 10-12-17	609 281 19-24-34 11-14-19	731 337 22-26-36 12-15-22	853 394 22-28-39 13-16-22	975 450 24-30-42 14-17-24	1098 506 25-32-44 15-18-25							
	3A2	CFM/SIDE THROW, FT.	300 300 14-17-24 11-13-18	400 400 16-19-28 13-15-22	500 500 18-22-32 15-17-24	600 600 19-23-34 16-18-26	700 700 22-25-36 17-19-28	800 800 22-26-39 18-22-30	900 900 24-29-41 19-22-32							
	2A  2B	CFM/SIDE THROW, FT.	450 15-18-25	600 17-22-30	750 19-24-34	900 22-26-36	1050 22-28-39	1200 24-30-42	1350 25-32-44							
2C  2D  2E  2F	CFM/SIDE THROW, FT.	562 338 16-19-28 13-16-22	750 450 18-22-32 15-18-25	938 562 20-25-36 17-20-29	1125 675 22-28-39 18-22-32	1313 787 23-30-42 19-23-34	1500 900 25-32-44 22-25-36	1688 1012 28-34-47 22-28-38								
1A  1B	CFM/SIDE THROW, FT.	900 19-24-33	1200 22-28-38	1500 25-32-43	1800 28-34-46	2100 30-36-50	2400 32-39-53	2700 34-41-57								

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D63.



## PERFORMANCE DATA:

### MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300	400	500	600	700	800	900
			.006 .029	.010 .051	.016 .080	.022 .116	.031 .157	.040 .205	.050 .260
30 x 18  3.75 SQ. FT.	RETURN FACTORS —SP=3.1 TP NC + 7	CFM NC	1125 15	1500 23	1875 29	2250 34	2625 38	3000 42	3375 45
	4B  4C	CFM/SIDE THROW, FT.	394 169 15-18-25 9-11-15	525 225 17-22-30 10-12-17	657 281 19-24-34 11-14-19	788 337 22-26-36 12-15-22	918 394 22-28-39 13-16-22	1050 450 24-30-42 14-17-24	1181 506 25-32-44 15-18-25
	4E	CFM/SIDE THROW, FT.	281 281 14-17-24 14-17-24	375 375 16-19-28 16-19-28	469 469 18-22-32 18-22-32	563 563 19-23-34 19-23-34	657 657 22-25-36 22-25-36	750 750 22-26-39 22-26-39	845 845 24-29-41 24-29-41
	3A1	CFM/SIDE THROW, FT.	478 169 16-19-28 9-11-15	637 225 18-22-32 10-12-17	797 281 20-25-36 11-14-19	956 337 22-28-39 12-15-22	1115 394 23-30-42 13-16-22	1275 450 25-32-44 14-17-24	1434 506 28-34-47 15-18-25
	3A2	CFM/SIDE THROW, FT.	469 327 14-17-24 12-15-20	625 437 16-19-28 14-17-23	782 546 18-22-32 16-19-26	937 656 19-23-34 17-22-29	1093 766 22-25-36 18-22-31	1250 875 22-26-39 19-24-33	1406 984 24-29-41 22-25-35
	2A 2B	CFM/SIDE THROW, FT.	562 16-19-28	750 18-22-32	937 20-25-36	1125 22-28-39	1312 23-30-42	1500 25-32-44	1687 28-34-47
	2C 2E	CFM/SIDE THROW, FT.	787 337 18-22-32 13-16-22	1050 450 22-25-36 15-18-25	1313 562 24-29-41 17-20-29	1575 675 26-32-44 18-22-32	1838 787 28-34-47 19-23-34	2100 900 30-36-50 22-25-36	2363 1012 32-38-53 22-28-38
	1A 1B	CFM/SIDE THROW, FT.	1125 20-25-35	1500 23-29-39	1875 26-33-45	2250 29-35-49	2625 31-38-52	3000 33-40-57	3375 35-43-60
36 x 18  4.5 SQ. FT.	RETURN FACTORS —SP=3.6 TP NC + 8	CFM NC	1350 16	1800 24	2250 30	2700 35	3150 39	3600 42	4050 45
	4B  4C	CFM/SIDE THROW, FT.	506 169 16-19-28 9-11-15	675 225 18-22-32 10-12-17	844 281 22-25-36 11-14-19	1013 337 22-28-39 12-15-22	1181 394 23-30-42 13-16-22	1350 450 25-32-44 14-17-24	1519 506 28-34-47 15-18-25
	4E	CFM/SIDE THROW, FT.	339 339 14-17-24 14-17-24	452 452 16-19-28 16-19-28	565 565 18-22-32 18-22-32	678 678 19-23-34 19-23-34	791 791 22-25-36 22-25-36	904 904 22-26-39 22-26-39	1020 1020 24-29-41 24-29-41
	3A1	CFM/SIDE THROW, FT.	591 169 17-22-30 9-11-15	787 225 20-24-34 10-12-17	984 281 23-28-39 11-14-19	1181 337 24-30-41 12-15-22	1378 394 26-32-44 13-16-22	1575 450 29-35-47 14-17-24	1772 506 31-37-50 15-18-25
	3B	CFM/SIDE THROW, FT.	675 337 13-16-22 13-16-22	900 450 15-18-25 15-18-25	1125 562 17-20-29 17-20-29	1350 675 18-22-32 18-22-32	1575 787 19-23-34 19-23-34	1800 900 22-25-36 22-25-36	2025 1012 22-28-38 22-28-38
	2A 2B	CFM/SIDE THROW, FT.	675 17-22-30	900 20-24-34	1125 23-28-39	1350 24-30-41	1575 26-32-44	1800 29-35-47	2025 31-37-50
	2C 2E	CFM/SIDE THROW, FT.	1010 337 20-25-35 13-16-22	1350 450 23-29-40 15-18-25	1688 562 26-33-45 17-20-29	2025 675 29-35-49 18-22-32	2363 787 31-38-52 19-23-34	2700 900 33-40-57 22-25-36	3038 1012 35-43-60 22-28-38
	1A 1B	CFM/SIDE THROW, FT.	1350 22-25-37	1800 24-30-42	2250 28-34-48	2700 30-36-51	3150 32-39-56	3600 34-42-58	4050 37-44-63
24 x 21  3.5 SQ. FT.	RETURN FACTORS —SP=2.1 TP NC + 7	CFM NC	1050 15	1400 22	1750 28	2100 33	2450 37	2800 41	3150 44
	4B  4C	CFM/SIDE THROW, FT.	295 230 12-15-20 10-12-17	394 306 14-17-23 11-14-19	493 382 16-19-26 12-16-22	590 460 17-22-29 13-17-23	690 535 18-22-31 14-18-25	788 612 19-24-33 15-19-26	887 688 22-25-35 16-22-29
	3A1	CFM/SIDE THROW, FT.	410 230 15-18-25 10-12-17	547 306 17-22-30 11-14-19	684 382 19-24-34 12-16-22	820 460 22-26-36 13-17-23	957 535 22-28-39 14-18-25	1094 612 24-30-42 15-19-26	1231 688 25-32-44 16-22-29
	3A2	CFM/SIDE THROW, FT.	375 300 15-18-25 11-13-18	500 400 17-22-30 13-15-22	625 500 19-24-34 15-17-24	750 600 22-26-36 16-18-26	875 700 22-28-39 17-19-28	1000 800 24-30-42 18-22-30	1125 900 25-32-44 19-22-32
	2A 2B	CFM/SIDE THROW, FT.	525 16-19-28	700 18-22-32	875 20-25-36	1050 22-28-39	1225 23-30-42	1400 25-32-44	1575 28-34-47
	2C 2E	CFM/SIDE THROW, FT.	591 459 17-22-30 14-17-24	788 612 20-24-34 16-19-28	986 764 23-28-39 18-22-32	1180 920 24-30-41 19-23-34	1380 1070 26-32-44 22-25-36	1576 1224 29-35-47 22-26-39	1774 1376 31-37-50 24-29-41
	1A 1B	CFM/SIDE THROW, FT.	1050 20-25-35	1400 23-29-40	1750 26-33-45	2100 29-35-49	2450 31-38-52	2800 33-40-51	3150 35-43-60

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

For performance notes, see page D63.

## PERFORMANCE DATA:

### MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
			CFM NC	A	B	A	B	A	B	A	B	A	B	A	B	A
30 x 21 4.375 SQ. FT.	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1310 16		1750 23		2185 29		2625 34		3060 38		3500 41		3935 44	
	4B  4C	CFM/SIDE THROW, FT.	425 230	15-18-25 10-12-17	569 306	17-22-30 11-14-19	710 382	19-24-34 12-16-22	852 460	22-26-36 13-17-23	995 535	22-28-39 14-18-25	1138 612	24-30-42 15-19-26	1279 688	25-32-44 16-22-29
	4E	CFM/SIDE THROW, FT.	360 295	14-17-24 14-17-24	480 394	16-19-28 16-19-28	600 492	18-22-32 18-22-32	720 591	19-23-34 19-23-34	840 690	22-25-36 22-25-36	960 788	22-26-39 22-26-39	1080 887	24-29-41 24-29-41
	3A1	CFM/SIDE THROW, FT.	540 230	16-19-28 10-12-17	722 306	18-22-32 11-14-19	901 382	20-25-36 12-16-22	1082 460	22-28-39 13-17-23	1262 535	23-30-42 14-18-25	1444 612	25-32-44 15-19-26	1623 688	28-34-47 16-22-29
	3A2	CFM/SIDE THROW, FT.	468 422	15-18-25 12-15-20	625 562	17-22-30 14-17-23	782 701	19-24-34 16-19-26	937 844	22-26-36 17-22-29	1093 983	22-28-39 18-22-31	1250 1125	24-30-42 19-24-33	1406 1264	25-32-44 22-25-36
	2A  2B	CFM/SIDE THROW, FT.	655	17-22-30	875	20-24-34	1092	23-28-39	1312	24-30-41	1530	26-32-44	1750	29-35-47	1968	31-37-50
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	853 457	18-22-32 14-17-24	1138 612	22-25-36 16-19-28	1421 764	24-29-41 18-22-32	1705 920	26-32-44 19-23-34	1990 1070	28-34-47 22-25-36	2276 1224	30-36-50 22-26-39	2559 1376	32-38-53 24-29-41
	1A  1B	CFM/SIDE THROW, FT.	1310	22-25-37	1750	24-30-42	2185	28-34-48	2625	30-36-51	3060	32-39-56	3500	34-42-58	3935	37-44-63
36 x 21 5.25 SQ. FT.	RETURN FACTORS —SP=3.4 TP NC + 8	CFM NC	1575 16		2100 24		2625 30		3150 34		3675 38		4200 42		4725 45	
	4B  4C	CFM/SIDE THROW, FT.	558 230	16-19-28 10-12-17	744 306	18-22-32 11-14-19	930 382	20-25-36 12-16-22	1115 460	22-28-39 13-17-23	1306 535	23-30-42 14-18-25	1488 612	25-32-44 15-19-26	1674 688	28-34-47 16-22-29
	4E	CFM/SIDE THROW, FT.	427 360	15-18-25 15-18-25	568 480	17-22-30 17-22-30	710 600	19-24-34 19-24-34	852 720	22-26-36 22-26-36	945 840	22-28-39 22-28-39	1135 960	24-30-42 24-30-42	1280 1080	25-32-44 25-32-44
	3A1	CFM/SIDE THROW, FT.	672 230	17-22-30 10-12-17	897 306	20-24-34 11-14-19	1121 382	23-28-39 12-16-22	1345 460	24-30-41 13-17-23	1570 535	26-32-44 14-18-25	1794 612	29-35-47 15-19-26	2018 688	31-37-50 16-22-29
	3A2	CFM/SIDE THROW, FT.	675 450	15-18-25 13-16-22	900 600	17-22-30 15-18-25	1125 750	19-24-34 17-20-29	1350 900	22-26-36 18-22-32	1575 1050	22-28-39 19-23-34	1800 1200	24-30-42 22-25-36	2025 1350	25-32-44 22-28-38
	2A  2B	CFM/SIDE THROW, FT.	787	18-22-32	1050	22-25-36	1312	24-29-41	1575	26-32-44	1837	28-34-47	2100	30-36-50	2362	32-38-53
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	1115 460	20-25-35 14-17-24	1488 612	23-29-40 16-19-28	1861 764	26-33-45 18-22-32	2230 920	29-35-49 19-23-34	2605 1070	31-38-52 22-25-36	2976 1224	33-40-57 22-26-39	3349 1376	35-43-60 24-29-41
	1A  1B	CFM/SIDE THROW, FT.	1575	24-30-41	2100	23-34-47	2625	32-39-53	3150	34-41-58	3675	36-44-62	4200	39-47-67	4725	41-50-72
30 x 24 5.0 SQ. FT.	RETURN FACTORS —SP=3.1 TP NC + 8	CFM NC	1500 17		2000 25		2500 30		3000 35		3500 39		4000 43		4500 46	
	4B  4C	CFM/SIDE THROW, FT.	450 300	15-18-25 11-13-18	600 400	17-22-30 13-15-22	750 500	19-24-34 15-17-24	900 600	22-26-36 16-18-26	1050 700	22-28-39 17-19-28	1200 800	24-30-42 18-22-30	1350 900	25-32-44 19-22-32
	4E	CFM/SIDE THROW, FT.	375 375	15-18-25 15-18-25	500 500	17-22-30 17-22-30	625 625	19-24-34 19-24-34	750 750	22-26-36 22-26-36	875 875	22-28-39 22-28-39	1000 1000	24-30-42 24-30-42	1125 1125	25-32-44 25-32-44
	3A1	CFM/SIDE THROW, FT.	600 300	17-22-30 11-13-18	800 400	20-24-34 13-15-22	1000 500	23-28-39 15-17-24	1200 600	24-30-41 16-18-26	1400 700	26-32-44 17-19-28	1600 800	29-35-47 18-22-30	1800 900	31-37-50 19-22-32
	3A2	CFM/SIDE THROW, FT.	515 470	18-22-32 15-18-25	687 625	22-25-36 17-22-30	859 782	24-29-41 19-24-34	1031 937	26-32-44 22-26-36	1203 1093	28-34-47 22-28-39	1375 1250	30-36-50 24-30-42	1548 1406	32-38-53 25-32-44
	2A  2B	CFM/SIDE THROW, FT.	750	19-24-33	1000	22-28-38	1250	25-32-43	1500	28-34-46	1750	30-36-50	2000	32-39-53	2250	34-41-57
	2C  2E  2D  2F	CFM/SIDE THROW, FT.	900 600	22-25-37	1200 800	24-30-42	1500 1000	28-34-48	1800 1200	30-36-51	2100 1400	32-39-56	2400 1600	34-42-58	2700 1800	37-44-63
	1A  1B	CFM/SIDE THROW, FT.	1500	35-43-61	2000	41-49-69	2500	44-55-77	3000	49-59-86	3500	53-65-90	4000	56-69-96	4500	60-72-103

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

For performance notes, see page D63.

## PERFORMANCE DATA:

### MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300	400	500	600	700	800	900	
			.006 .029	.010 .051	.016 .080	.022 .116	.031 .157	.040 .205	.050 .260	
36 x 24  6.0 SQ. FT.	RETURN FACTORS —SP=3.4 TP NC + 8	CFM NC	1800 18	2400 25	3000 31	3600 36	4200 40	4800 43	5400 46	
	4B  4C	CFM/SIDE THROW, FT.	600 300 17-22-30 11-13-18	800 400 20-24-34 13-15-22	1000 500 23-28-39 15-17-24	1200 600 24-30-41 16-18-26	1400 700 26-32-44 17-19-28	1600 800 29-35-47 18-22-30	1800 900 31-37-50 19-22-32	
	4E	CFM/SIDE THROW, FT.	450 450 15-18-25 15-18-25	600 600 17-22-30 17-22-30	750 750 19-24-34 19-24-34	900 900 22-26-36 22-26-36	1050 1050 22-28-39 22-28-39	1200 1200 24-30-42 24-30-42	1350 1350 25-32-41 25-32-44	
	3A1	CFM/SIDE THROW, FT.	750 300 18-22-32 11-13-18	1000 400 22-25-36 13-15-22	1250 500 24-29-41 15-17-24	1500 600 26-32-44 16-18-26	1750 700 28-34-47 17-19-28	2000 800 30-36-50 18-22-30	2250 900 32-38-53 19-22-32	
	3A2	CFM/SIDE THROW, FT.	676 562 16-19-28 14-17-24	900 750 18-22-32 16-19-28	1125 937 20-25-36 18-22-32	1350 1125 22-28-39 19-23-34	1575 1312 23-30-42 22-25-36	1800 1500 25-32-44 22-26-39	2025 1687 28-34-47 24-29-41	
	2A	CFM/SIDE THROW, FT.	900 19-24-33	1200 22-28-38	1500 25-32-43	1800 28-34-46	2100 30-36-50	2400 32-39-53	2700 34-41-57	
	2B	CFM/SIDE THROW, FT.	1200 600 22-25-37 15-18-25	1600 800 24-30-42 17-22-30	2000 1000 28-34-48 19-24-34	2400 1200 30-36-51 22-26-36	2800 1400 32-39-56 22-28-39	3200 1600 34-42-58 24-30-42	3600 1800 37-44-63 25-32-44	
	2C  2D	CFM/SIDE THROW, FT.	1800 24-30-41	2400 28-34-47	3000 32-39-53	3600 34-41-58	4200 36-44-62	4800 39-47-67	5400 41-50-72	
	2E	CFM/SIDE THROW, FT.	1200 600 22-25-37 15-18-25	1600 800 24-30-42 17-22-30	2000 1000 28-34-48 19-24-34	2400 1200 30-36-51 22-26-36	2800 1400 32-39-56 22-28-39	3200 1600 34-42-58 24-30-42	3600 1800 37-44-63 25-32-44	
	1A	CFM/SIDE THROW, FT.	1800 24-30-41	2400 28-34-47	3000 32-39-53	3600 34-41-58	4200 36-44-62	4800 39-47-67	5400 41-50-72	
	1B	CFM/SIDE THROW, FT.	1800 24-30-41	2400 28-34-47	3000 32-39-53	3600 34-41-58	4200 36-44-62	4800 39-47-67	5400 41-50-72	
	36 x 30  7.5 SQ. FT.	RETURN FACTORS —SP=3.4 TP NC + 8	CFM NC	2250 19	3000 26	3750 32	4500 37	5250 41	6000 44	6750 47
		4B  4C	CFM/SIDE THROW, FT.	657 468 17-22-30 12-15-20	875 625 20-24-34 14-17-23	1093 782 23-28-39 16-19-26	1313 937 24-30-41 17-22-29	1532 1093 26-32-44 18-22-31	1750 1250 29-35-47 19-24-33	1969 1406 31-37-50 22-25-35
		3A1	CFM/SIDE THROW, FT.	890 468 19-24-33 12-15-20	1187 625 22-28-38 14-17-23	1484 782 25-32-43 16-19-26	1781 937 28-34-46 17-22-29	2078 1093 30-36-50 18-22-31	2375 1250 32-39-53 19-24-33	2672 1406 34-41-57 22-25-35
3A2		CFM/SIDE THROW, FT.	787 675 18-22-32 13-16-22	1050 900 22-25-36 15-18-25	1312 1125 24-29-41 17-20-29	1575 1350 26-32-44 18-22-32	1837 1575 28-34-47 19-23-34	2100 1800 30-36-50 22-25-36	2362 2025 32-38-53 22-28-38	
2A		CFM/SIDE THROW, FT.	1125 20-25-35	1500 23-29-40	1875 26-33-45	2250 29-35-49	2625 31-38-52	3000 33-40-57	3375 35-43-60	
2B		CFM/SIDE THROW, FT.	1312 938 22-25-37 17-22-30	1750 1250 24-30-42 20-24-34	2188 1562 28-34-48 23-28-39	2625 1875 30-36-51 24-30-41	3063 2187 32-39-56 26-32-44	3500 2500 34-42-58 29-35-47	3938 2812 37-44-63 31-37-50	
2C  2D		CFM/SIDE THROW, FT.	2250 24-30-41	3000 28-34-47	3750 32-39-53	4500 34-41-58	5250 36-44-62	6000 39-47-67	6750 41-50-72	
2E	CFM/SIDE THROW, FT.	2250 24-30-41	3000 28-34-47	3750 32-39-53	4500 34-41-58	5250 36-44-62	6000 39-47-67	6750 41-50-72		

#### Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is:  $A \times .82 = B$ .

- CFM** - cubic feet per minute  
**VP** - velocity pressure - inches w.g.  
**TP** - total pressure - inches w.g.  
**T** - throw in feet  
**NC** - Noise Criteria (values) based on 10 dB room absorption, re  $10^{-12}$  watts.  
**Neck Velocity** - feet per minute

#### Performance Notes:

1. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 30% with a downward projection of approximately 30 degrees.
2. Performance data as tabulated is for supply air conditions. Correction factors for return air application - see next page.
3. Correction factors for round inlets - see next page.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA CORRECTIONS:

### MODEL 6400

#### CORRECTION FACTORS WITH SQUARE TO ROUND INLET ADAPTOR – TABLE 2

- Add the NC correction factor from Table 2 and the NC value listed in the performance tables.
- Multiply the correction factor from Table 2 by the listed total pressure in the performance tables.
- Multiply the correction factor from Table 2 by the listed throws in the performance tables.

#### Example:

12" x 12" unit with 10" round adaptor handling 500 cfm supply air. (Page D50).

- $NC = 23 + 7 = 30$
- Total Pressure =  $.08 \times 1.65 = 0.132$
- Throw =  $15 \times 1.15 = 17.25$  feet @ 50 fpm terminal velocity.

TABLE 2 Correction Factors for SR Adaptors

SQUARE INLET	ROUND INLET	NC (add)	TP (multiply)	THROW (multiply)		
				150	100	50
6 x 6	5	7	1.65	1.10	1.10	1.15
9 x 9	6	17	3.50	1.15	1.15	1.20
9 x 9	8	4	1.40	1.10	1.10	1.10
12 x 12	8	17	3.50	1.15	1.15	1.20
12 x 12	10	7	1.65	1.10	1.10	1.15
15 x 15	10	17	3.50	1.15	1.15	1.20
15 x 15	12	9	1.90	1.10	1.10	1.15
15 x 15	14	3	1.25	1.05	1.05	1.10
18 x 18	12	17	3.50	1.15	1.15	1.20
18 x 18	14	10	2.00	1.10	1.10	1.15
18 x 18	16	5	1.45	1.10	1.10	1.10
21 x 21	14	17	3.70	1.15	1.15	1.20
21 x 21	16	11	2.25	1.10	1.10	1.15
21 x 21	18	6	1.60	1.10	1.10	1.10
21 x 21	20	3	1.20	1.05	1.05	1.10
24 x 24	16	17	3.50	1.15	1.15	1.20
24 x 24	18	12	2.35	1.10	1.10	1.15
24 x 24	20	7	1.65	1.10	1.10	1.15

#### CORRECTION FACTORS FOR RETURN INLET

If the unit is used as a return inlet, the performance data is obtained by applying the return corrections, as follows:

- Add the NC correction at the left side of the table to the NC value listed in the performance table.
- Multiply the SP factor at the left side of the table by the total pressure (TP) listed at the top of the table.

#### Example:

12" x 12" unit handling 600 cfm of return air. (Page D50).

- Return NC =  $28 + 4 = 32$ .
- Return negative SP =  $1.3 \times (-.116) = -.151$ .

#### RECOMMENDED MAXIMUM AIRFLOW – TABLE 3

Diffuser mounting height and air temperature differential ( $\Delta T$ ) are both to be considered when selecting diffusers. As air travels from a diffuser, room air is entrained into the supply air stream and the delivery pattern thickens.

If the volume or throw requirement is too great, the lower part of the supply air stream can intrude into the occupied zone causing objectionable drafts. Consult Table 3 to verify selection.

TABLE 3 Maximum Recommended Airflow

CEILING HEIGHT (ft.)	MAX. AIRFLOW PER DIFFUSER (CFM)				MAX. REC. COOLING TEMP. DIFFERENTIAL $\Delta T$
	4-way	3-way	2-way (2A, 2B)	1-way & 2S	
7	400	300	200	100	15°F
8	600	450	300	150	20°F
9	1200	900	600	300	25°F
10	1800	1350	900	450	25°F
12	3200	2400	1600	800	30°F
14	4800	3600	2400	1200	30°F
16	6000	4500	3000	1500	30°F

## SQUARE AND RECTANGULAR INDUCTION VANE CEILING DIFFUSERS

- INDUCTION VANES
- LOUVERED FACE
- EXTRA HIGH CAPACITY
- 1, 2, 3 OR 4-WAY BLOW PATTERN
- SQUARE, RECTANGULAR OR ROUND NECKS
- EXTRUDED ALUMINUM

### Extruded Aluminum Model:

#### 6400IV Fixed Pattern

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 6400IV – face and rear

Model Series 6400IV Induction Vane Pattern Ceiling Diffuser has been specially designed for optimum performance in both heating and cooling applications. The 6400IV is a high capacity, high induction, louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops.

The diffuser features aerodynamically designed straight angled louvers on 1 1/2" (38) centers. The induction vanes, mounted on the back of each louver are also spaced on 1 1/2" (38) centers and angled at 45 degrees. Vane sets on adjacent parallel louvers run in opposite directions and cause primary air to emerge from each louver at alternating angles. The induction vanes create counter-flowing jets of turbulent discharge air that promote high induction rates and rapid temperature equalization. This high induction characteristic is ideal for VAV applications involving both high cooling and heating loads, producing superior room air mixing while minimizing the potential for uncomfortable drafts in the occupied space.

Available in a wide variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirement. Many frame types are also available to suit almost any mounting condition including surface mount (flat, beveled or deep drop face) and T-Bar panel types (Standard 1" (25), Fineline®, Spline, Tegular or Metal Pan Snap-in). These models therefore offer a great degree of design flexibility.

### STANDARD FEATURES:

- Spring loaded core. It is removable without the use of tools.
- High neck collars for solid connection.
- Secure core attachment.
- A wide variety of frame styles to suit most ceiling applications.
- Extended panels to suit modular ceiling systems. PLS (steel) or PLA (aluminum).
- Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a wide selection of square and rectangular neck sizes (see page D68).
- Clean lines with no unsightly visible screws.
- Opposed blade damper with screwdriver slot operator for square and rectangular necks.

### CONSTRUCTION MATERIAL:

Extruded aluminum.

### AVAILABLE SIZES:

Unit size is determined by duct dimensions. Diffuser necks are undersized to suit ductwork.

Duct Sizes are available in 3" (76) increments.

Minimum size:

6" x 6" (152 x 152) square neck. 9" x 6" (229 x 152) rectangular neck (most core styles).

Maximum size:

Types S, B and D: 36" x 36" (914 x 914) or 36" x 24" (914 x 610) with OBD.

Types L, SP, TL, M and F: see next page.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- EX External Foil-Back Insulation (installed) – R-4.2.
- MIB Molded Insulation Blanket R-6.0.
- SR Square-to-round transition adaptors are available (SR04 - SR24 option [4" - 24" diameter]). See page D257.

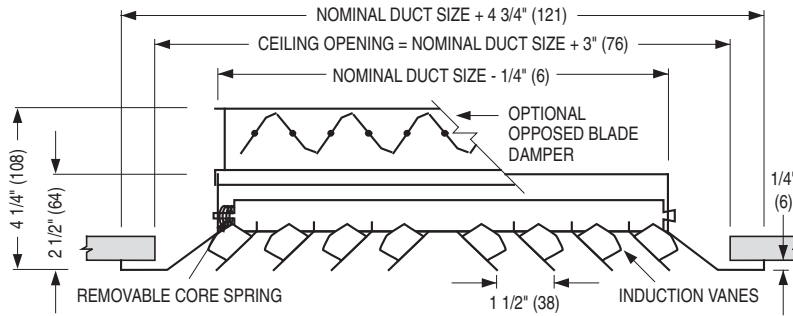
EQT Earthquake Tabs

For additional options and accessories; see page D255.

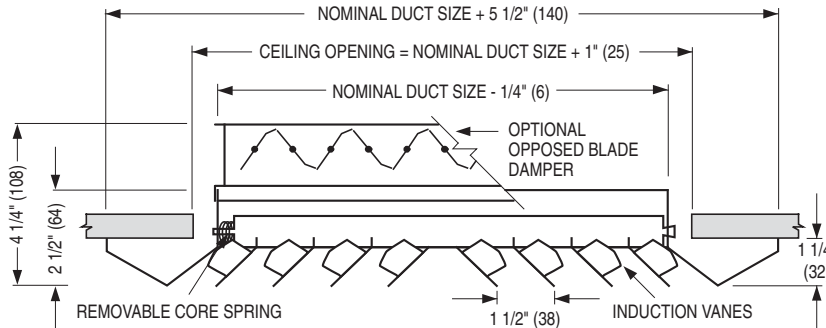
## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL SERIES 6400

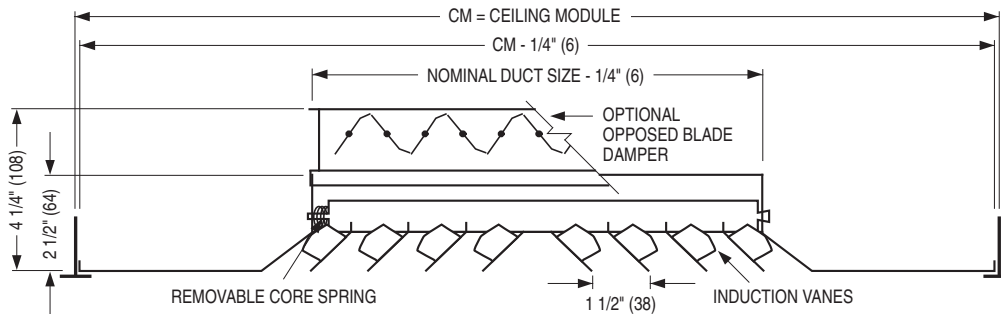
**Type S**  
Surface Mount  
Frame



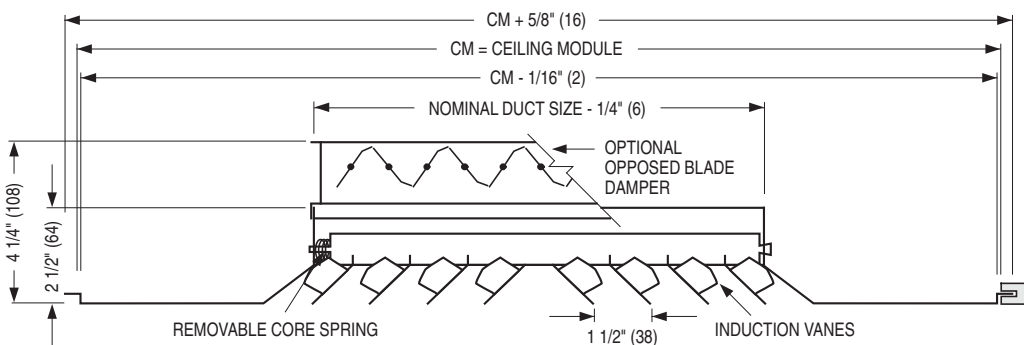
**Type B**  
Beveled Drop  
Face Frame



**Type L**  
Lay-In  
T-Bar Frame



**Type SP**  
Spline Frame



SPLINE TYPE DIFFUSER FOR ONE-DIRECTIONAL EXPOSED T-BAR LAY-IN GRID OR FOR CONCEALED T-BAR GRID. (SPLINES ON TWO OPPOSITE SIDES. STEEL LIFT BRACKETS ON THE OTHER TWO SIDES).

### Extended Panel Diffusers Frame Types L, SP, TL, M and F

If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a steel module-sized extended panel will be added. Aluminum is available as an option.

See the table at right for the maximum duct size for each module size.

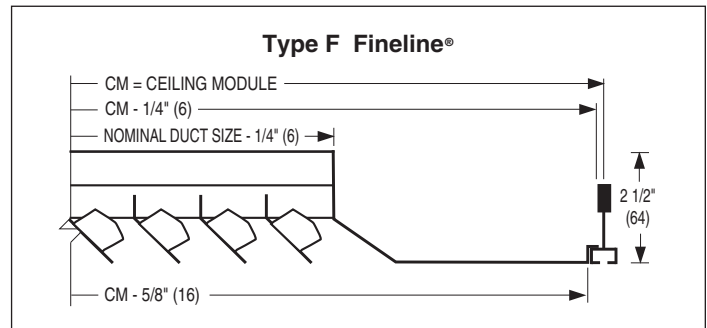
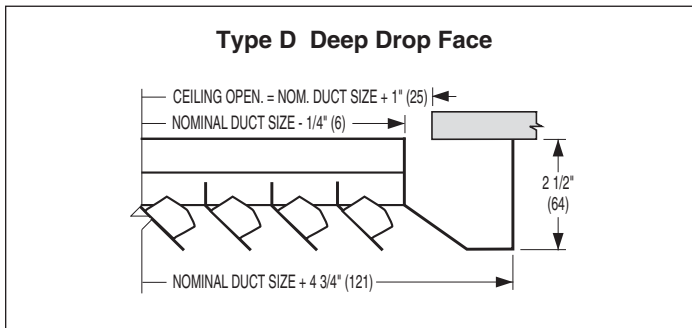
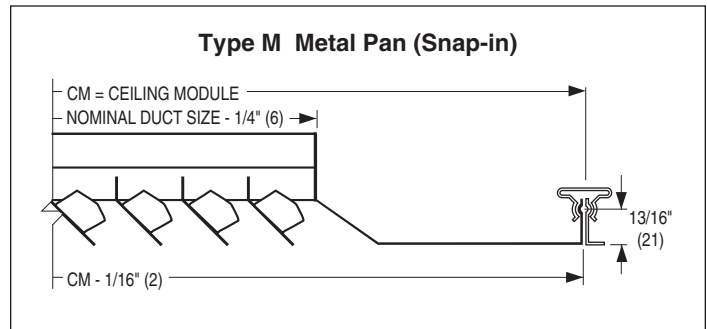
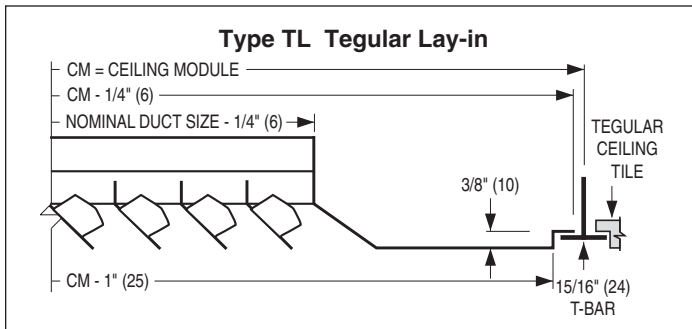
**Table 1**

Ceiling Module Size	Maximum Duct Size Frames L, SP and M	Maximum Duct Size Frames TL and F
12 x 12 (305 x 305)	9 x 9 (229 x 229)	6 x 6 (152 x 152)
20 x 20 (508 x 508)	15 x 15 (381 x 381)	—
24 x 12 (610 x 305)	21 x 9 (533 x 229)	18 x 6 (457 x 152)
24 x 24 (610 x 610)	21 x 21 (533 x 533)	18 x 18 (457 x 457)
48 x 24 (1219 x 610)	45 x 21 (1143 x 533)	—



## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL SERIES 6400IV

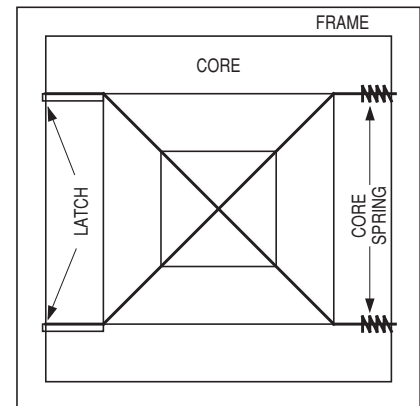


#### SPRING LOADED REMOVABLE CORE

- Standard feature of **Model 6400IV**.
- Engineered design permits fast and easy removal for speedy "through the neck" installation in hard duct drops and for access to optional air balancing devices.
- No tools required.
- No unsightly, retaining screws visible to spoil smooth aesthetic lines.
- Latching mechanism ensures core remains securely in place.

#### HOW TO REMOVE CORE

To remove diffuser core, lift the complete core assembly to disengage the latch, push the core sideways against the core springs, pull down the core slightly and remove. Reverse procedure to re-install.




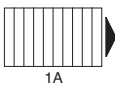

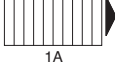
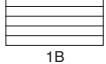
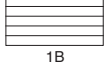











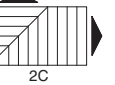
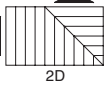

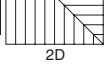
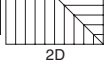
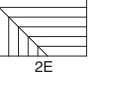
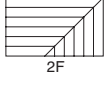
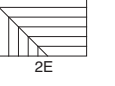
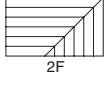
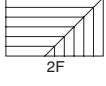
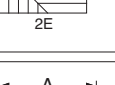


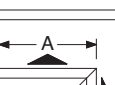
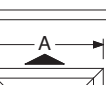



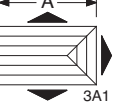
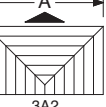

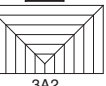
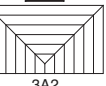
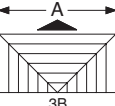
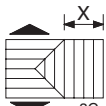
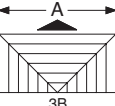
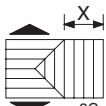
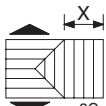
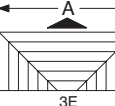
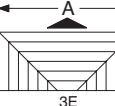




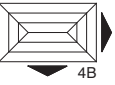
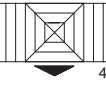




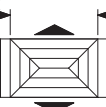

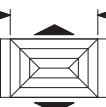
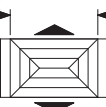
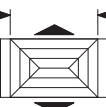


## STANDARD CORE STYLES:

### MODEL 6400IV

Contact factory for special core configurations.

#### SIZES AVAILABLE

	SQUARE	RECTANGULAR		CORE	MINIMUM	MAXIMUM
 <b>Type 1S</b>	 1-WAY	 1S	 1A	 1B	1S 6 x 6 (152 x 152)	36 x 36 (914 x 914)
		 1A	 1B	1A 9 x 6 (229 x 152)	36 x 33 (914 x 838)	
		 1B	1B 9 x 6 (229 x 152)	36 x 33 (914 x 838)		
 <b>Type 2S</b>	 2-WAY	 2S	 2A	 2B	2S 6 x 6 (152 x 152)	36 x 36 (914 x 914)
		 2A	 2B	2A 9 x 6 (229 x 152)	36 x 33 (914 x 838)	
		 2B	2B 9 x 6 (229 x 152)	36 x 33 (914 x 838)		
 <b>Type 2G</b>	 2-WAY CORNER	 2G	 2C	 2D	2G 6 x 6 (152 x 152)	36 x 36 (914 x 914)
		 2C	 2D	2C 9 x 6 (229 x 152)	36 x 33 (914 x 838)	
		 2D	 2E	 2F	2D 9 x 6 (229 x 152)	36 x 33 (914 x 838)
		 2E	 2F	2E 9 x 6 (229 x 152)	36 x 33 (914 x 838)	
		 2F	 2E	 2F	2F 9 x 6 (229 x 152)	36 x 33 (914 x 838)
		 2F	 2E	 2F	2F 9 x 6 (229 x 152)	36 x 33 (914 x 838)
 <b>Type 3A</b>	 3-WAY	 3A	 3A1	 3A2	3A 6 x 6 (152 x 152)	36 x 36 (914 x 914)
		 3A1	 3A2	3A1 9 x 6 (229 x 152)	36 x 33 (914 x 838)	
		 3A2	 3B	 3C	3A2 9 x 6 (229 x 152)	36 x 33 (914 x 838)
		 3B	 3C	3B 12 x 6 (305 x 152)	36 x 18 (914 x 457)	
		 3C	 3E	3E 9 x 6 (229 x 152)	36 x 33 (914 x 838)	
		 3E	 3H	3H 15 x 6 (381 x 152)	36 x 15 (914 x 381)	
 <b>Type 4A</b>	 4-WAY	 4A	 4B	 4C	4A 6 x 6 (152 x 152)	36 x 36 (914 x 914)
		 4B	 4C	4B 9 x 6 (229 x 152)	36 x 33 (914 x 838)	
		 4C	 4E	 4E	4C 12 x 6 (305 x 152)	36 x 30 (914 x 762)
		 4E	 4E	4E 15 x 6 (381 x 152)	36 x 27 (914 x 686)	
		 4E	 4E	4E 15 x 6 (381 x 152)	36 x 27 (914 x 686)	

Dimensions are in inches (mm).

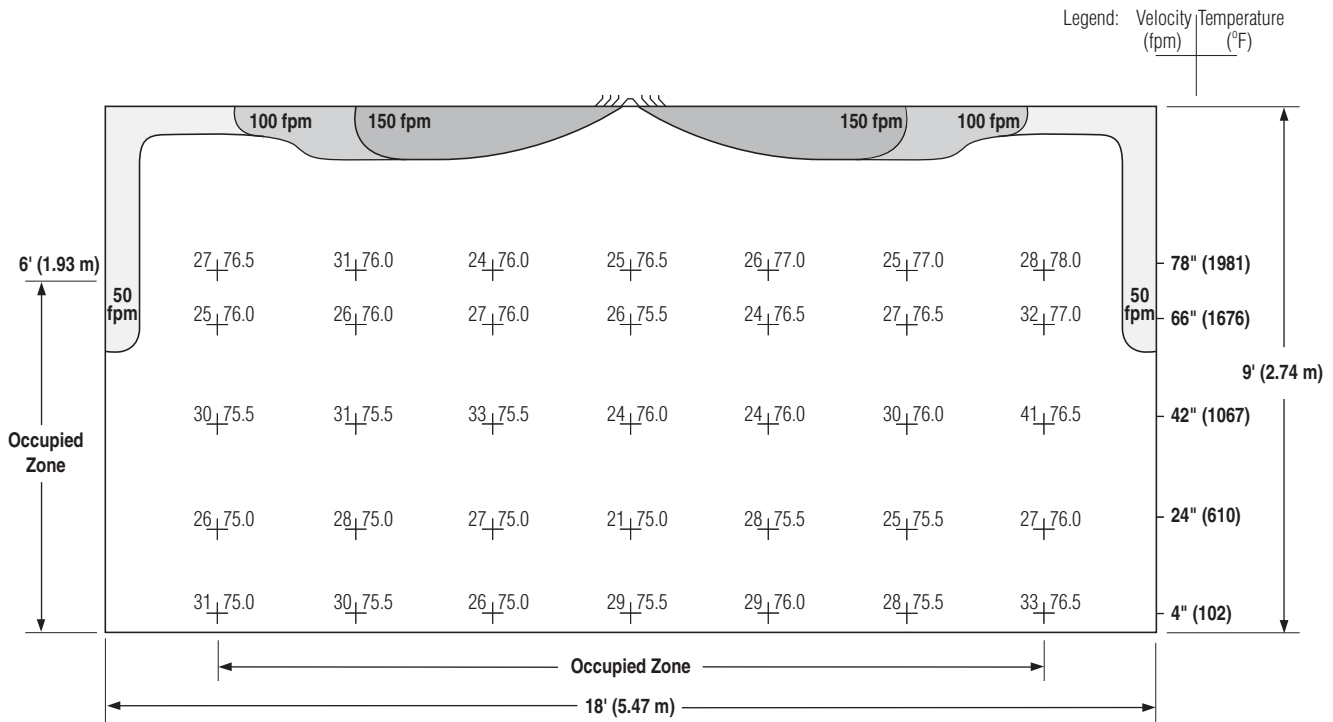
#### Notes:

1. Duct sizes are available in 3" (76) increments.
2. Specify the "x" dimension for 3C and 4E patterns.  
These are non-standard, custom fabrication core styles.
3. Patterns are shown in plan view (looking down into inlet).

D  
CEILING DIFFUSERS

## ADPI – AIR DIFFUSION PERFORMANCE INDEX ANALYSIS

### ROOM TEMPERATURE/VELOCITY TRAVERSE



**Figure 1. ADPI Analysis.**

Air Diffusion Performance Index (ADPI) is a single number rating of air diffuser performance when in cooling mode. ADPI relates the space conditions of local traverse temperatures and velocities to occupants' thermal comfort.

Extensive studies have determined relationships between local temperatures, velocities and comfort reaction. On the basis of the temperature and velocity at a specific point, an effective draft temperature can be calculated for that location.

Equation for Effective Draft Temperature:

$$\varnothing = (t_x - t_c) - 0.07 (V_x - 30)$$

where:  $\varnothing$  = effective draft temperature

$t_x$  = local air temperature (°F).

$t_c$  = ambient temperature (setpoint, °F).

$V_x$  = local air velocity (fpm).

Research has shown that a high percentage of people are comfortable when the effective draft temperature is between -3 and +2 at a velocity less than 70 fpm. ADPI is defined as the percentage of locations in the occupied space, which meet this comfort criteria and therefore represents the overall comfort level of an occupied space. The higher the ADPI number, the higher the comfort level in the space. For most commercial applications including offices, ADPI values of 80 or higher are desired.

ADPI values vary as the ratio of the throw (T) to the characteristic length (L) vary, for a particular diffuser and flow rate. Throw values (T) at 50 fpm terminal velocity are used for diffusers in most commercial and institutional buildings. Length (L) is measured from the center of the diffuser to the closest wall, or to the meeting point with the throw of another diffuser.

Ranges of T/L to yield desired values of the ADPI for various types of supply air outlet are provided in the Space Air Diffusion Chapter in the ASHRAE Fundamentals Handbook. Using louvered ceiling diffusers, for an ADPI greater than 80, the suggested range of  $T_{50}/L$  is 1.0 – 3.4.

These T/L guideline values were developed from testing a particular air outlets' ADPI at several cooling room loads via the method reported in ANSI/ASHRAE Standard 113 1990, "Method of Testing for Room Air Diffusion." The ADPI T/L technique uses isothermal throw data as cataloged and determined under ANSI/ASHRAE Standard 70 "Method of Testing for Rating the Performance of Air Outlets and Inlets."

Figure 1 is an example in a single plane of a temperature and velocity traverse to determine the ADPI for a space, based upon the method prescribed in ANSI/ASHRAE Standard 113.

#### Notes on Figure 1.

Test Room Size: 18' x 24' x 9'

Diffuser: 6400IV, 12" x 12" neck, 4-way pattern.

Supply Air: 400 cfm @ 56°F

Setpoint: 76°F (  $\Delta T = 20^\circ F$  )

Cooling Load: 20.1 Btuh/sq.ft.

Throw: 13 ft. (@50 fpm terminal velocity)

$T_{50}/L = 1.45$

ADPI = 100

## APPLICATION AND AIR PATTERN GUIDELINES

The use of overhead ceiling diffusers is currently far and away the most popular and economical way to introduce conditioned air into an occupied space. Commercial buildings require cooling a predominant amount of the time and overhead cooling is a well understood science. Most ceiling diffusers perform extremely well, even in variable volume applications during the cooling mode.

Ceiling diffusers take advantage of a phenomenon known as the coanda or ceiling effect. A low pressure zone is developed at the ceiling and the air projection tends to stick to or hug the ceiling as its travels away from the diffuser. This characteristic of non-free air jets usually enables the ventilation of conditioned spaces without undesirable cold air drafts dropping into the occupied zone during the cooling mode. High levels of occupant comfort and satisfaction can therefore be achieved.

Conversely, overhead heating which may be required intermittently, particularly in the perimeter of a building is usually more of a compromise. The natural buoyancy of warm heating air tends to keep the air pattern up at or near the ceiling. If the air is too warm, stratification and short circuiting may result, where the air does not have an opportunity to mix well with the room air and the warmth therefore does not reach the occupied space. ASHRAE recommends a maximum temperature differential of 15°F ΔT for comfort heating.

Figure 2 illustrates a traditional pattern diffuser (e.g. Nailor Model 6400) with angled louvers, developed for high capacity at low sound levels. A distinct directional (4-way) air pattern is produced with a partial downblow component, but at low flows as typically encountered in VAV systems, the air may fall away from the

ceiling or dump, producing drafts in the occupied space during cooling. Air emanates from this diffuser design at an angle of approximately 20 degrees down from the ceiling. It is therefore not recommended for ceiling heights below 10' 6" due to the possibility of excessive velocities in the occupied space. Figure 3 illustrates the currently popular pattern diffuser, which features the addition of a horizontal lip on the leading edge of the louvers (e.g. Nailor Models 6200 and 6500). This feature was added by most manufacturers to help maintain good ceiling effect at low flows during cooling when VAV systems became predominant. However this design increases the risk of stratification and short circuiting during the heating mode.

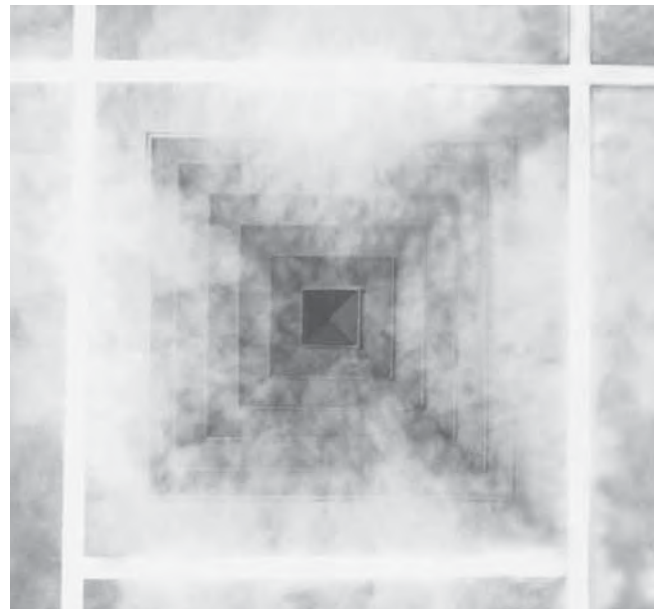
The Nailor 6400IV Induction Vane Diffuser has been designed to optimize performance in both heating and cooling applications. Figure 4 illustrates a typical isovel envelope for the Nailor 6400IV diffuser. The depth of the envelope is somewhere between the aforementioned diffuser designs. Induction vanes increase turbulence as the conditioned air enters the space, resulting in an increase in room air induction and more rapid temperature equalization. Notice that the induction vanes also produce an increase in the spread of the air stream. This produces a more evenly distributed air pattern with shorter throws. Diffuser placement flexibility is therefore increased and the potential for opposing diffuser air streams colliding and entering the occupied space is reduced.

The Nailor 6400IV diffuser is therefore the perfect choice for commercial applications where comfort cooling and heating is desired.

D  
CEILING DIFFUSERS

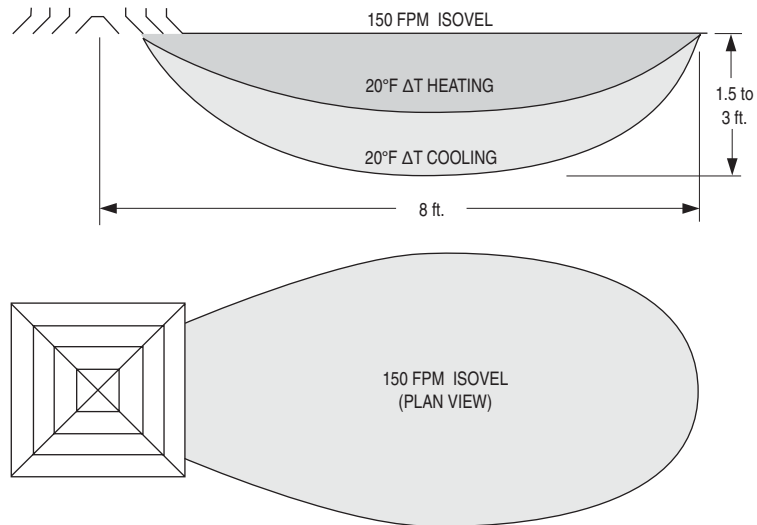
### 6400IV Diffuser Air Pattern Smoke Test

The photo in Figure 5 illustrates how the induction vanes on a 4-way blow pattern generate turbulence and increase room air induction at the point of discharge. Rapid mixing of primary and room air and temperature equalization is achieved; resulting in gentle, draftless air movement in the occupied space, ensuring a high degree of occupant comfort.

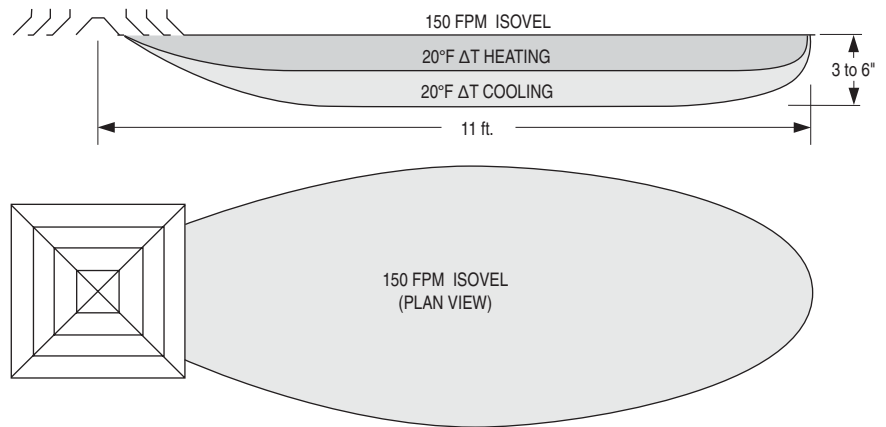


**Figure 5. Laboratory Smoke Test.**  
6400IV Induction Vane Diffuser, 4-way Blow Pattern.

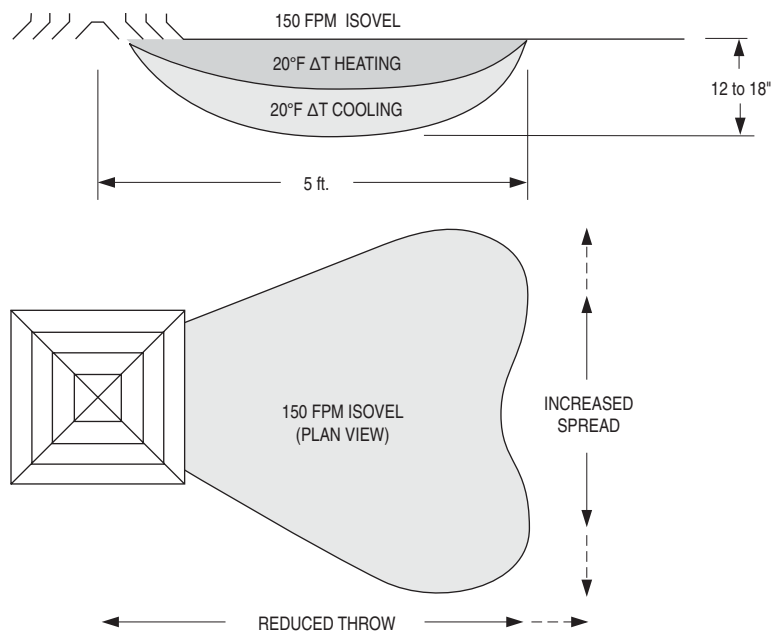
**Figure 2.**  
Traditional Pattern Diffuser.



**Figure 3.**  
Pattern Diffuser with Horizontal Lip on Louvers.



**Figure 4.**  
6400IV Series  
Induction Vane Diffuser



**Note:**

These illustrations are provided for guidance purposes in order to illustrate the relative difference between pattern ceiling diffusers with and without induction vanes. The 150 fpm throw isovel for a 12" x 12" neck @ 400 cfm is illustrated. A 4-way diffuser is shown, but the airstream projection is only shown in one direction for reasons of space and is the same for the other three sides.

## PERFORMANCE DATA:

### MODEL 6400IV • SQUARE NECK

#### Core Style 4A • 4-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw	1-2-2	2-2-4	2-3-5	3-5-7	3-6-8	4-6-10	4-7-12
	Noise Criteria	—	—	—	—	15	21	26
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw	2-2-3	2-3-5	3-5-7	4-5-9	4-6-11	5-8-13	6-9-16
	Noise Criteria	—	—	—	—	18	24	29
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-2-4	3-4-7	4-5-10	5-7-13	6-8-16	7-10-19	8-11-22
	Noise Criteria	—	—	—	13	20	27	32
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw	2-3-5	3-5-8	4-6-12	6-8-15	7-10-19	8-12-23	9-14-26
	Noise Criteria	—	—	—	15	22	29	34
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw	3-3-6	4-6-10	6-8-15	7-10-19	9-12-24	10-15-28	12-17-33
	Noise Criteria	—	—	—	16	23	30	35
21 x 21	Airflow, CFM	306	613	919	1225	1531	1838	2144
	Throw	3-4-6	4-6-11	6-9-17	8-11-22	10-14-27	11-17-32	13-19-37
	Noise Criteria	—	—	—	18	25	31	36
24 x 24	Airflow, CFM	400	800	1200	1600	2000	2400	2800
	Throw	3-4-7	5-7-12	7-10-18	9-12-24	10-15-29	12-18-35	14-21-41
	Noise Criteria	—	—	12	19	26	32	37

#### Performance Notes:

1. All pressures are in inches w.g..

2. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.

3. Tests conducted on diffuser only without damper using ideal straight rigid inlet condition. Other inlet conditions may affect performance.

Correction factors for addition of a neck mounted opposed blade damper (fully open):

Total Pressure: Multiply catalog value by x 1.20.

Noise Criteria: Add + 4 to catalog value.

4. Correction factor for round inlets, see next page.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.

6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



## PERFORMANCE DATA:

### MODEL 6400IV • SQUARE NECK

#### Core Style 3A • 3-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw, Side A	1-1-2 (6)	2-2-4 (13)	2-3-5 (19)	3-4-7 (25)	3-5-8 (31)	4-5-10 (37)	4-6-11 (44)
	Throw, Side B	2-2-3 (9)	2-3-5 (19)	3-4-6 (28)	3-5-8 (38)	4-5-10 (47)	5-6-12 (56)	5-7-14 (66)
	Noise Criteria	—	—	—	—	15	21	26
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw, Side A	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11(70)	5-7-13 (84)	6-8-15 (99)
	Throw, Side B	2-2-4 (21)	3-4-7 (43)	4-5-9 (64)	5-7-12 (84)	6-8-15 (105)	7-9-18 (127)	8-11-21 (148)
	Noise Criteria	—	—	—	—	18	24	29
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw, Side A	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-19 (150)	8-11-22 (175)
	Throw, Side B	2-3-5 (38)	3-5-8 (75)	5-6-12 (113)	6-8-16 (150)	7-10-19 (188)	8-12-23 (225)	10-14-27 (263)
	Noise Criteria	—	—	—	13	20	27	32
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw, Side A	2-3-5 (39)	3-5-8 (78)	4-6-12 (117)	6-8-15 (156)	7-10-19 (195)	8-12-23 (235)	9-14-26 (273)
	Throw, Side B	3-3-6 (59)	4-6-10 (117)	6-8-15 (176)	7-10-20 (234)	9-13-24 (293)	10-15-29 (352)	12-17-34 (410)
	Noise Criteria	—	—	—	15	22	29	34
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw, Side A	3-3-6 (56)	4-6-10 (113)	6-8-15 (169)	7-10-19 (225)	9-12-24 (281)	10-15-28 (338)	12-17-33 (394)
	Throw, Side B	3-4-6 (84)	5-6-12 (169)	6-9-17 (253)	8-12-22 (338)	10-14-28 (422)	12-17-33 (506)	13-20-38 (591)
	Noise Criteria	—	—	—	16	23	30	35

#### Core Style 2S • 2-way opposite blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw	2-2-3	2-3-5	3-4-7	4-5-10	5-6-12	5-7-14	6-9-16
	Noise Criteria	—	—	—	—	17	23	28
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw	2-3-4	3-4-7	4-6-11	5-7-14	6-9-17	7-11-20	8-12-23
	Noise Criteria	—	—	—	13	20	27	32
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-3-5	4-5-9	5-7-13	6-9-16	7-11-20	9-13-24	10-14-28
	Noise Criteria	—	—	—	15	22	29	34
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw	3-3-6	4-6-10	6-8-15	7-10-20	9-13-24	10-15-29	12-17-33
	Noise Criteria	—	—	—	17	24	31	36
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw	3-4-6	4-6-11	6-9-17	8-11-22	10-14-27	11-17-32	13-19-37
	Noise Criteria	—	—	—	18	25	32	37
21 x 21	Airflow, CFM	306	613	919	1225	1531	1838	2144
	Throw	3-4-7	5-7-13	7-10-18	9-13-24	11-15-30	13-18-36	15-21-42
	Noise Criteria	—	—	13	20	27	33	38
24 x 24	Airflow, CFM	400	800	1200	1600	2000	2400	2800
	Throw	3-4-7	5-7-13	7-10-20	9-13-26	11-16-32	13-20-38	15-23-44
	Noise Criteria	—	—	14	21	28	34	39

For performance notes, see page D79.

## PERFORMANCE DATA:

### MODEL 6400IV • SQUARE NECK

#### Core Style 2G • 2-way corner blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw	2-2-3	2-3-5	3-5-7	4-5-10	5-6-12	5-7-14	4-9-16
	Noise Criteria	—	—	—	—	17	23	28
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw	2-3-4	3-4-7	4-6-11	5-7-14	6-9-17	7-11-20	8-12-23
	Noise Criteria	—	—	—	13	20	27	32
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-3-5	4-5-9	5-7-13	6-9-16	7-11-20	9-13-24	10-14-28
	Noise Criteria	—	—	—	15	22	29	34
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw	3-3-6	4-6-10	6-8-15	7-10-20	9-13-24	10-15-29	12-17-33
	Noise Criteria	—	—	—	17	24	31	36
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw	3-4-6	4-6-11	6-9-17	8-11-22	10-14-27	11-17-32	13-19-37
	Noise Criteria	—	—	—	18	25	32	37

#### Core Style 1S • 1-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw	2-3-4	3-4-7	4-6-10	5-7-13	6-9-18	7-10-20	5-12-23
	Noise Criteria	—	—	—	—	17	23	28
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw	2-3-5	4-5-9	5-7-13	6-9-17	8-11-21	9-13-25	10-15-29
	Noise Criteria	—	—	—	13	20	27	32
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-3-5	4-5-10	5-8-13	7-10-19	8-12-23	10-14-28	11-17-32
	Noise Criteria	—	—	—	15	22	29	34
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw	3-3-6	4-6-11	6-8-16	8-11-21	9-13-26	11-16-31	13-18-36
	Noise Criteria	—	—	—	17	24	31	36
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw	3-4-6	5-6-12	6-9-17	8-12-23	10-15-28	12-17-33	14-20-39
	Noise Criteria	—	—	—	18	25	32	37
21 x 21	Airflow, CFM	306	613	919	1225	1531	1838	2144
	Throw	3-4-7	5-7-13	7-10-19	9-13-25	11-16-31	13-19-38	15-22-44
	Noise Criteria	—	—	13	20	27	33	38
24 x 24	Airflow, CFM	400	800	1200	1600	2000	2400	2800
	Throw	3-4-7	5-7-14	7-11-20	10-14-27	12-17-33	14-20-40	16-24-46
	Noise Criteria	—	—	14	21	28	34	39

For performance notes, see page D79.

## PERFORMANCE DATA:

### MODEL 6400IV • RECTANGULAR NECK

#### Core Style 4B • 4-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.01	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw, Side A	2-2-3 (13)	2-3-5 (25)	3-4-7 (38)	4-5-10 (50)	5-6-12 (63)	5-7-14 (75)	6-9-16 (88)
	Throw, Side B	1-2-2 (6)	2-2-4 (12)	2-3-5 (18)	3-4-7 (25)	3-5-8 (31)	4-8-10 (37)	4-6-11 (43)
	Noise Criteria	—	—	—	11	22	26	29
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw, Side A	2-3-4 (19)	2-4-7 (37)	4-5-10 (56)	5-7-12 (75)	6-8-15 (94)	7-10-18 (113)	8-11-21 (131)
	Throw, Side B	1-2-2 (6)	2-2-4 (13)	2-3-5 (18)	3-4-7 (25)	3-5-8 (31)	4-5-10 (37)	4-6-11 (44)
	Noise Criteria	—	—	—	12	19	25	30
12 x 9	Airflow, CFM	75	150	225	300	375	450	525
	Throw, Side A	2-3-4 (24)	3-4-7 (47)	4-6-11 (70)	5-7-14 (94)	6-9-17 (117)	7-11-20 (141)	8-12-23 (164)
	Throw, Side B	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11 (70)	5-7-13 (84)	6-8-15 (98)
	Noise Criteria	—	—	—	13	20	27	32
15 x 9	Airflow, CFM	94	188	281	375	469	563	656
	Throw, Side A	2-3-4 (33)	3-4-8 (65)	4-6-11 (98)	6-8-15 (131)	7-10-18 (165)	8-11-20 (198)	9-13-25 (230)
	Throw, Side B	2-2-3 (14)	2-3-5 (28)	3-4-7 (48)	4-5-9 (56)	4-6-11 (70)	5-7-13 (84)	6-8-15 (98)
	Noise Criteria	—	—	—	14	21	28	32
18 x 9	Airflow, CFM	113	225	338	450	563	675	788
	Throw, Side A	2-3-5 (42)	3-5-8 (85)	5-7-12 (126)	6-8-16 (169)	7-10-19 (211)	8-12-23 (254)	10-14-27 (296)
	Throw, Side B	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11 (70)	5-7-13 (84)	6-8-15 (98)
	Noise Criteria	—	—	—	15	22	29	33
21 x 9	Airflow, CFM	131	263	394	525	656	788	919
	Throw, Side A	2-3-4 (51)	4-5-9 (103)	5-7-13 (154)	6-9-17 (206)	8-11-21 (258)	9-13-25 (309)	10-15-29 (360)
	Throw, Side B	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11 (70)	5-7-13 (84)	6-8-15 (98)
	Noise Criteria	—	—	—	16	23	30	34
15 x 12	Airflow, CFM	125	250	375	500	625	750	875
	Throw, Side A	2-3-5 (38)	4-5-9 (75)	5-7-12 (112)	6-9-16 (150)	7-11-20 (187)	9-12-24 (225)	10-14-28 (262)
	Throw, Side B	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-19 (150)	8-11-22 (175)
	Noise Criteria	—	—	—	15	22	29	34
18 x 12	Airflow, CFM	<b>5-29-0</b>	<b>10-26-0</b>	<b>3-25-1</b>	<b>8-22-1</b>	<b>1-19-2</b>	<b>6-18-2</b>	<b>11-15-2</b>
	Throw, Side A	2-3-5 (50)	4-5-9 (100)	5-7-13 (150)	6-9-17 (200)	8-11-21 (250)	9-13-25 (300)	10-15-28 (351)
	Throw, Side B	2-2-4 (25)	3-4-7 (50)	3-5-10 (74)	5-7-13 (99)	6-8-16 (124)	7-10-19 (149)	8-11-22 (173)
	Noise Criteria	—	—	—	16	23	30	35
21 x 12	Airflow, CFM	175	350	525	700	875	1050	1225
	Throw, Side A	2-3-5 (53)	4-5-9 (125)	5-7-13 (187)	7-9-18 (250)	8-11-22 (312)	9-13-26 (375)	11-15-30 (437)
	Throw, Side B	2-2-4 (35)	3-4-7 (50)	4-5-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-19 (150)	8-11-22 (175)
	Noise Criteria	—	16	—	16	23	31	36
24 x 12	Airflow, CFM	200	400	600	800	1000	1200	1400
	Throw, Side A	3-3-6 (75)	4-6-10 (150)	6-8-15 (225)	7-10-19 (300)	9-12-24 (375)	10-15-28 (450)	12-17-33 (525)
	Throw, Side B	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-19 (150)	8-11-22 (175)
	Noise Criteria	—	17	—	17	24	31	36
18 x 15	Airflow, CFM	186	375	563	750	938	1125	1313
	Throw, Side A	2-3-5 (54)	4-5-9 (110)	5-7-12 (164)	6-9-16 (219)	7-10-19 (273)	9-12-24 (328)	10-14-28 (383)
	Throw, Side B	2-3-5 (39)	3-5-8 (78)	5-6-12 (117)	6-8-15 (156)	7-11-20 (195)	8-12-22 (234)	9-14-26 (273)
	Noise Criteria	—	16	—	17	24	31	37
21 x 18	Airflow, CFM	263	525	785	1050	1310	1575	1840
	Throw, Side A	3-3-6 (76)	4-6-10 (200)	6-8-15 (225)	7-10-19 (300)	9-12-24 (375)	10-15-28 (450)	12-17-33 (526)
	Throw, Side B	3-3-6 (56)	4-6-10 (112)	6-8-15 (169)	7-10-19 (225)	9-12-24 (280)	10-15-28 (337)	12-17-33 (394)
	Noise Criteria	—	18	13	19	26	33	38
24 x 18	Airflow, CFM	300	600	900	1200	1500	1800	2100
	Throw, Side A	3-4-6 (94)	4-6-11 (187)	6-9-16 (281)	8-11-21 (375)	9-14-26 (469)	11-16-32 (563)	13-19-37 (656)
	Throw, Side B	3-3-6 (56)	4-6-10 (112)	6-8-15 (169)	7-10-19 (225)	9-10-24 (280)	10-15-28 (337)	12-17-33 (394)
	Noise Criteria	—	—	14	20	27	34	39

For performance notes, see page D79.

## PERFORMANCE DATA:

### MODEL 6400IV • RECTANGULAR NECK

#### Core Style 3B • 3-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw, Side A	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-19 (150)	8-12-22 (175)
	Throw, Side B	2-2-3 (13)	2-3-5 (25)	3-4-7 (38)	4-5-10 (50)	5-6-12 (63)	5-7-14 (75)	6-8-15 (88)
	Noise Criteria	—	—	—	12	19	27	30
18 x 9	Airflow, CFM	113	225	338	450	563	675	788
	Throw, Side A	3-3-6 (57)	3-6-10 (113)	6-8-15 (169)	7-10-19 (225)	9-12-24 (282)	10-15-28 (338)	12-17-33 (394)
	Throw, Side B	2-3-4 (28)	3-4-7 (56)	4-6-11 (84)	5-7-14 (113)	6-9-17 (141)	7-11-20 (169)	8-12-23 (199)
	Noise Criteria	—	—	—	15	22	29	23
24 x 12	Airflow, CFM	200	400	600	800	1000	1200	1400
	Throw, Side A	3-4-6 (100)	4-6-11 (200)	6-9-17 (300)	8-11-22 (400)	10-14-27 (500)	11-17-32 (600)	13-19-37 (700)
	Throw, Side B	2-3-5 (50)	4-5-9 (100)	5-7-13 (150)	6-9-16 (200)	7-11-20 (250)	9-13-24 (300)	10-14-28 (350)
	Noise Criteria	—	—	—	17	24	31	36

#### Core Style 3A2 • 3-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw, Side A	2-2-3 (15)	2-3-5 (28)	3-4-7 (42)	4-5-10 (56)	5-6-12 (70)	5-7-14 (84)	6-9-16 (98)
	Throw, Side B	2-2-3 (12)	2-3-5 (23)	3-4-7 (35)	4-5-9 (47)	4-6-11 (58)	5-7-13 (70)	6-8-15 (82)
	Noise Criteria	—	—	—	11	22	26	29
12 x 9	Airflow, CFM	75	150	225	300	375	450	525
	Throw, Side A	2-3-4 (25)	3-4-6 (50)	4-5-10 (75)	5-7-13 (100)	6-9-16 (125)	7-10-19 (150)	8-12-23 (175)
	Throw, Side B	2-2-4 (25)	3-4-7 (50)	4-6-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-20 (150)	8-11-22 (175)
	Noise Criteria	—	—	—	13	20	27	32
15 x 9	Airflow, CFM	94	188	281	375	469	563	656
	Throw, Side A	2-3-5 (39)	3-5-8 (78)	5-6-12 (117)	6-8-15 (156)	7-10-19 (196)	8-12-22 (235)	9-14-26 (274)
	Throw, Side B	2-3-4 (27)	3-4-7 (55)	4-6-11 (82)	5-7-14 (109)	6-9-17 (137)	7-11-20 (164)	8-12-23 (191)
	Noise Criteria	—	—	—	14	21	28	32
15 x 12	Airflow, CFM	125	250	375	500	625	750	875
	Throw, Side A	2-3-5 (39)	3-5-8 (78)	5-6-12 (117)	6-8-15 (156)	7-10-19 (195)	8-12-23 (234)	9-14-26 (273)
	Throw, Side B	2-3-5 (43)	3-5-8 (86)	5-6-12 (129)	6-8-15 (172)	7-10-19 (215)	8-12-23 (258)	9-14-26 (301)
	Noise Criteria	—	—	—	15	22	29	34
18 x 15	Airflow, CFM	188	375	563	750	938	1125	1313
	Throw, Side A	3-3-6 (56)	4-6-10 (113)	6-8-15 (168)	7-10-19 (225)	9-12-24 (281)	10-15-28 (338)	12-17-33 (394)
	Throw, Side B	4-4-7 (66)	5-7-12 (131)	7-9-17 (197)	8-11-21 (262)	10-13-26 (328)	11-16-30 (394)	13-18-35 (459)
	Noise Criteria	—	—	—	17	24	31	37

#### Performance Notes:

1. All pressures are in inches w.g.  
 2. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.

3. Tests conducted on diffuser only without damper using ideal straight rigid inlet condition. Other inlet conditions may affect performance. Correction factors for addition of a neck mounted opposed blade damper (fully open):  
 Total Pressure: Multiply catalog value by x 1.20.  
 Noise Criteria: Add + 4 to catalog value.

4. Correction factor for round inlets, see next page.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.

6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA:

### MODEL 6400IV • RECTANGULAR NECK

#### Core Style 3E • 3-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
15 x 6	Airflow, CFM	63	125	188	250	313	375	438
	Throw, Side A	2-3-5 (38)	4-5-9 (75)	5-7-12 (113)	6-9-16 (150)	7-11-20 (188)	9-12-24 (225)	10-14-28 (263)
	Throw, Side B	2-2-3 (13)	2-3-5 (25)	3-4-7 (38)	4-5-10 (50)	5-6-12 (63)	5-7-14 (75)	6-9-16 (88)
	Noise Criteria	—	—	—	12	19	26	31
21 x 9	Airflow, CFM	131	263	394	525	656	788	919
	Throw, Side A	2-3-5 (75)	4-5-9 (150)	5-7-13 (225)	6-9-17 (300)	8-11-21 (375)	9-13-25 (450)	10-15-29 (525)
	Throw, Side B	2-3-4 (28)	3-4-7 (56)	4-6-11 (84)	5-7-14 (113)	6-9-17 (141)	7-11-20 (169)	8-12-23 (197)
	Noise Criteria	—	—	—	16	23	30	34
24 x 9	Airflow, CFM	150	300	450	600	750	900	1050
	Throw, Side A	2-3-5 (94)	4-5-10 (188)	5-8-14 (281)	7-10-19 (375)	8-12-23 (469)	10-14-28 (563)	11-17-32 (656)
	Throw, Side B	2-3-4 (28)	3-4-7 (56)	4-6-11 (84)	5-7-14 (113)	6-9-17 (141)	7-11-20 (169)	8-12-23 (197)
	Noise Criteria	—	—	—	17	24	31	36

#### Core Style 3A1 • 3-way blow pattern



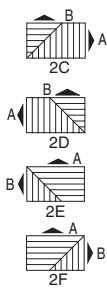
Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw, Side A	2-2-3 (16)	3-3-6 (31)	3-5-8 (47)	4-6-10 (62)	5-7-13 (78)	6-8-15 (93)	7-9-18 (109)
	Throw, Side B	1-2-2 (6)	2-2-4 (12)	2-3-5 (19)	3-4-7 (25)	3-5-8 (31)	4-5-10 (37)	4-6-11 (44)
	Noise Criteria	—	—	—	11	22	26	29
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw, Side A	2-2-4 (22)	3-4-6 (44)	4-5-9 (66)	5-6-12 (88)	6-8-15 (109)	6-9-17 (131)	7-11-20 (153)
	Throw, Side B	1-2-2 (6)	2-2-4 (13)	2-3-5 (19)	3-4-7 (25)	3-5-8 (32)	4-5-10 (38)	4-6-11 (44)
	Noise Criteria	—	—	—	12	19	26	30
12 x 9	Airflow, CFM	75	150	225	300	375	450	525
	Throw, Side A	2-3-4 (30)	3-4-7 (61)	4-6-11 (91)	5-7-14 (122)	6-9-17 (152)	7-11-20 (183)	8-12-23 (213)
	Throw, Side B	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11 (70)	5-7-13 (84)	6-8-15 (98)
	Noise Criteria	—	—	—	13	20	27	32
15 x 9	Airflow, CFM	94	188	281	375	469	563	656
	Throw, Side A	2-3-5 (40)	3-5-8 (80)	5-7-12 (119)	6-8-16 (159)	7-10-19 (199)	8-12-23 (239)	10-14-27 (279)
	Throw, Side B	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11 (70)	5-7-13 (84)	6-8-15 (98)
	Noise Criteria	—	—	—	14	21	28	32
15 x 12	Airflow, CFM	125	250	375	500	625	750	875
	Throw, Side A	2-3-5 (50)	4-5-9 (100)	5-7-13 (150)	6-9-17 (200)	8-11-21 (250)	9-13-25 (300)	10-15-29 (350)
	Throw, Side B	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-12 (100)	6-8-15 (125)	7-10-18 (150)	8-11-21 (175)
	Noise Criteria	—	—	—	15	22	29	34
18 x 12	Airflow, CFM	150	300	450	600	750	900	1050
	Throw, Side A	2-3-5 (63)	4-5-9 (125)	5-7-13 (188)	7-9-18 (250)	8-11-22 (313)	9-13-26 (375)	11-15-30 (437)
	Throw, Side B	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-12 (100)	6-8-15 (125)	7-10-18 (150)	8-11-21 (175)
	Noise Criteria	—	—	—	16	23	30	35
18 x 15	Airflow, CFM	186	375	563	750	938	1125	1313
	Throw, Side A	3-3-6 (74)	4-6-10 (149)	6-8-15 (223)	8-12-24 (297)	9-12-24 (371)	10-15-28 (445)	12-17-33 (520)
	Throw, Side B	2-3-5 (39)	3-5-8 (78)	5-6-12 (117)	6-8-15 (156)	7-10-19 (195)	8-12-22 (234)	9-14-26 (273)
	Noise Criteria	—	—	—	17	24	31	37

For performance notes, see page D79.

## PERFORMANCE DATA:

### MODEL 6400IV • RECTANGULAR NECK

#### Core Styles 2C, 2D, 2E and 2F • 2-way corner blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw, Side A	2-3-4 (25)	3-4-7 (50)	4-6-10 (75)	5-7-14 (100)	6-9-17 (125)	7-10-20 (150)	8-12-23 (175)
	Throw, Side B	2-2-3 (13)	2-3-5 (25)	3-4-7 (38)	4-5-10 (50)	5-6-12 (63)	5-7-14 (75)	6-9-16 (88)
	Noise Criteria	—	—	—	11	18	25	29
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw, Side A	2-3-5 (38)	4-5-9 (75)	5-7-12 (113)	6-9-16 (150)	7-11-20 (188)	9-12-24 (225)	10-14-28 (263)
	Throw, Side B	2-2-3 (13)	2-3-5 (25)	3-4-7 (38)	4-5-10 (50)	5-6-12 (63)	5-7-14 (75)	6-9-16 (88)
	Noise Criteria	—	—	—	12	19	26	30
12 x 9	Airflow, CFM	75	150	225	300	375	450	525
	Throw, Side A	2-3-5 (47)	4-5-9 (94)	5-7-13 (140)	6-9-17 (188)	8-11-21 (234)	9-13-25 (281)	10-15-29 (328)
	Throw, Side B	2-3-4 (28)	3-4-7 (56)	4-6-11 (84)	5-7-14 (112)	6-9-17 (140)	7-11-20 (169)	8-12-23 (197)
	Noise Criteria	—	—	—	13	20	27	32
15 x 9	Airflow, CFM	94	188	281	375	469	563	656
	Throw, Side A	2-3-5 (66)	4-5-9 (132)	5-7-13 (197)	7-9-18 (262)	8-11-22 (328)	9-13-26 (394)	11-15-30 (459)
	Throw, Side B	2-3-4 (28)	3-4-7 (56)	4-6-11 (84)	5-7-14 (113)	6-9-17 (141)	7-11-20 (169)	8-12-23 (197)
	Noise Criteria	—	—	—	14	21	28	32
18 x 9	Airflow, CFM	113	225	338	450	563	675	788
	Throw, Side A	2-3-5 (85)	4-5-10 (169)	5-8-14 (254)	7-10-19 (338)	8-12-23 (421)	10-14-27 (506)	11-16-32 (591)
	Throw, Side B	2-3-4 (28)	3-4-7 (56)	4-6-11 (85)	5-7-14 (113)	6-9-17 (141)	7-11-20 (169)	8-12-23 (197)
	Noise Criteria	—	—	—	15	22	29	33
15 x 12	Airflow, CFM	125	250	375	500	625	750	875
	Throw, Side A	2-3-5 (75)	4-5-9 (150)	5-7-13 (225)	6-9-17 (300)	8-11-21 (375)	9-13-25 (450)	9-15-29 (525)
	Throw, Side B	2-3-5 (50)	4-5-9 (100)	5-7-13 (150)	6-9-17 (200)	8-11-21 (250)	9-13-25 (300)	10-15-29 (350)
	Noise Criteria	—	—	—	15	22	29	34
18 x 12	Airflow, CFM	150	300	450	600	750	900	1050
	Throw, Side A	2-3-5 (100)	4-5-10 (200)	5-8-14 (300)	7-10-19 (400)	8-12-23 (500)	10-14-29 (600)	11-17-32 (700)
	Throw, Side B	2-3-5 (50)	4-5-9 (100)	5-9-13 (150)	6-9-17 (200)	8-11-21 (250)	9-13-25 (300)	10-15-29 (350)
	Noise Criteria	—	—	—	18	25	31	36

#### Core Style 2A • 2-way opposite blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
15 x 9	Airflow, CFM	94	188	281	375	469	563	656
	Throw, Side	2-3-5 (47)	3-5-8 (94)	5-6-12 (141)	6-8-15 (188)	7-10-19 (234)	8-12-23 (282)	9-14-26 (328)
	Noise Criteria	—	—	—	14	21	28	32
18 x 9	Airflow, CFM	113	225	338	450	563	675	788
	Throw, Side	2-3-5 (57)	4-5-9 (113)	5-7-12 (169)	6-9-16 (225)	7-11-20 (282)	9-12-24 (338)	10-14-28 (394)
	Noise Criteria	—	—	—	15	22	29	33
21 x 9	Airflow, CFM	131	263	394	525	656	788	919
	Throw, Side	2-3-5 (66)	3-5-9 (132)	5-7-13 (197)	6-9-17 (263)	8-11-21 (328)	9-13-26 (394)	11-15-30 (460)
	Noise Criteria	—	—	—	15	23	30	34
15 x 12	Airflow, CFM	125	250	375	500	625	750	875
	Throw, Side	2-3-5 (63)	4-5-10 (125)	5-7-14 (188)	7-10-18 (250)	8-12-23 (313)	10-14-27 (375)	11-16-31 (438)
	Noise Criteria	—	—	—	15	22	29	34
18 x 12	Airflow, CFM	150	300	450	600	750	900	1050
	Throw, Side	3-3-6 (75)	4-6-10 (150)	6-8-15 (225)	7-10-20 (300)	9-13-24 (375)	10-15-29 (450)	12-17-33 (525)
	Noise Criteria	—	—	—	16	23	30	35
21 x 12	Airflow, CFM	175	350	525	700	875	1050	1225
	Throw, Side	3-3-6 (88)	4-6-11 (175)	6-8-16 (263)	8-11-21 (350)	9-13-25 (438)	11-16-30 (525)	12-18-35 (613)
	Noise Criteria	—	16	—	17	24	31	36
24 x 12	Airflow, CFM	200	400	600	800	1000	1200	1400
	Throw, Side	3-4-6 (100)	4-6-11 (200)	6-9-17 (300)	8-11-22 (400)	10-14-27 (500)	11-17-32 (600)	13-19-37 (700)
	Noise Criteria	—	—	—	18	25	31	36

For performance notes, see page D79.



## PERFORMANCE DATA:

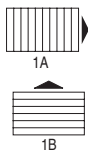
### MODEL 6400IV • RECTANGULAR NECK

#### Core Style 2B • 2-way opposite blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw	2-2-4 (19)	3-4-7 (38)	4-5-10 (57)	5-7-12 (75)	6-8-15 (94)	7-10-18 (113)	8-11-21 (132)
	Noise Criteria	—	—	—	11	18	26	29
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw	2-3-4 (25)	3-4-7 (50)	4-6-11 (75)	5-7-14 (100)	6-9-17 (125)	7-11-20 (150)	8-12-23 (175)
	Noise Criteria	—	—	—	12	19	26	30
12 x 9	Airflow, CFM	75	150	225	300	375	450	525
	Throw	2-3-4 (38)	3-4-8 (75)	4-6-11 (113)	6-8-15 (150)	7-10-18 (188)	8-11-21 (225)	9-13-25 (263)
	Noise Criteria	—	—	—	15	23	30	34

#### Core Styles 1A and 1B • 1-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw	2-3-4	4-5-9	5-7-12	6-9-16	7-11-20	9-12-24	10-14-28
	Noise Criteria	—	—	—	11	18	26	29
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw	2-3-5	4-5-9	5-7-13	6-9-17	8-11-21	9-13-25	10-15-29
	Noise Criteria	—	—	—	13	20	27	32
15 x 6	Airflow, CFM	63	125	188	250	313	375	438
	Throw	2-3-5	4-5-9	5-7-13	6-9-17	8-11-21	9-13-25	10-15-29
	Noise Criteria	—	—	—	12	19	26	31
18 x 6	Airflow, CFM	75	150	225	300	375	450	525
	Throw	2-3-5	4-5-9	5-7-13	6-9-17	8-11-21	9-13-26	11-15-30
	Noise Criteria	—	—	—	12	20	27	32
21 x 6	Airflow, CFM	88	175	263	350	438	525	613
	Throw	2-3-5	4-5-10	5-7-14	7-10-18	8-12-22	10-14-27	11-16-31
	Noise Criteria	—	—	—	13	21	28	33
24 x 6	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-3-5	4-5-10	5-8-14	7-10-19	8-12-23	10-14-28	11-20-32
	Noise Criteria	—	—	—	15	22	28	33
21 x 9	Airflow, CFM	131	263	394	525	656	788	919
	Throw	3-3-6	4-6-10	6-8-15	7-10-20	9-13-25	10-15-29	12-18-34
	Noise Criteria	—	—	—	16	23	30	35
24 x 9	Airflow, CFM	150	300	450	600	750	900	1050
	Throw	3-4-6	4-6-11	6-9-16	8-11-21	9-14-26	11-16-31	13-19-36
	Noise Criteria	—	—	—	17	24	31	36

#### Performance Notes:

1. All pressures are in inches w.g..
2. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.

3. Tests conducted on diffuser only without damper using ideal straight rigid inlet condition. Other inlet conditions may affect performance. Correction factors for addition of a neck mounted opposed blade damper (fully open):  
Total Pressure: Multiply catalog value by x 1.20.  
Noise Criteria: Add + 4 to catalog value.

4. Correction factor for round inlets, see next page.
5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA CORRECTIONS:

### MODEL 6400IV

#### Correction Factors For Round Necks (Square to Round Inlet Adaptors).

- Add the NC correction factor from Table 1 and the NC value listed in the performance tables.
- Multiply the correction factor from Table 1 by the listed total pressure in the performance tables.
- Multiply the correction factor from Table 1 by the listed throws in the performance tables.

#### Example:

12" x 12" unit with a 4A core and a 10" round adaptor handling 500 cfm supply air. (Page D72).

- $NC = 20 + 7 = 27$
- Total Pressure =  $.072 \times 1.65 = 0.119$
- Throw =  $16 \times 1.15 = 18.40$  feet @ 50 fpm terminal velocity.

TABLE 1 Correction Factors for SR Adaptors

SQUARE INLET	ROUND INLET	NC (add)	TP (multiply)	THROW (multiply)		
				150	100	50
6 x 6	5	7	1.65	1.10	1.10	1.15
9 x 9	6	17	3.50	1.15	1.15	1.20
9 x 9	8	4	1.40	1.10	1.10	1.10
12 x 12	8	17	3.50	1.15	1.15	1.20
12 x 12	10	7	1.65	1.10	1.10	1.15
15 x 15	10	17	3.50	1.15	1.15	1.20
15 x 15	12	9	1.90	1.10	1.10	1.15
15 x 15	14	3	1.25	1.05	1.05	1.10
18 x 18	12	17	3.50	1.15	1.15	1.20
18 x 18	14	10	2.00	1.10	1.10	1.15
18 x 18	16	5	1.45	1.10	1.10	1.10
21 x 21	14	17	3.70	1.15	1.15	1.20
21 x 21	16	11	2.25	1.10	1.10	1.15
21 x 21	18	6	1.60	1.10	1.10	1.10
21 x 21	20	3	1.20	1.05	1.05	1.10
24 x 24	16	17	3.50	1.15	1.15	1.20
24 x 24	18	12	2.35	1.10	1.10	1.15
24 x 24	20	7	1.65	1.10	1.10	1.15

TABLE 2 Maximum Recommended Airflow

CEILING HEIGHT (ft.)	MAX. AIRFLOW PER DIFFUSER (CFM)				MAX. REC. COOLING TEMP. DIFFERENTIAL ΔT
	4-way	3-way	2-way (2A, 2B)	1-way & 2S	
7	400	300	200	100	15°F
8	600	450	300	150	20°F
9	1200	900	600	300	25°F
10	1800	1350	900	450	25°F
12	3200	2400	1600	800	30°F
14	4800	3600	2400	1200	30°F
16	6000	4500	3000	1500	30°F

#### Recommended Maximum Airflow

Diffuser mounting height and air temperature differential (ΔT) are both to be considered when selecting diffusers. As air travels from a diffuser, room air is entrained into the supply air stream and the delivery pattern thickens.

If the volume or throw requirement is too great, the lower part of the supply air stream can intrude into the occupied zone causing objectionable drafts. Consult Table 2 to verify selection.

## HOW TO ORDER

### STEEL PATTERN CEILING DIFFUSERS

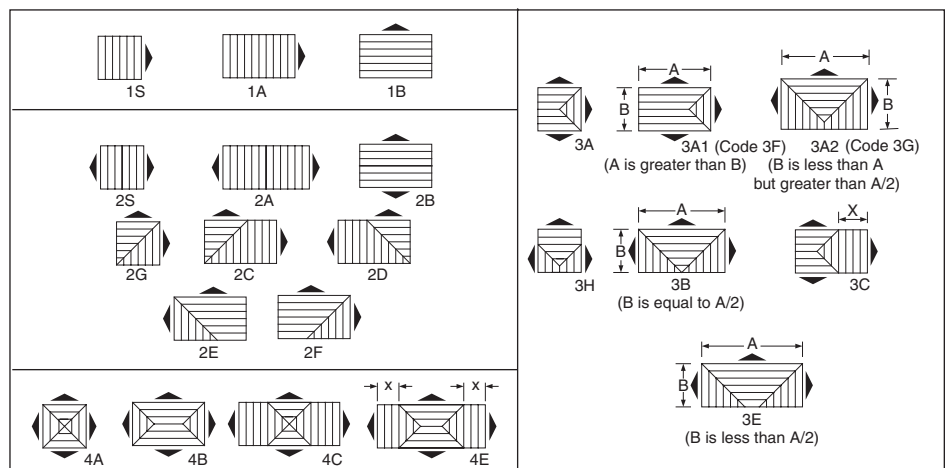
#### MODEL SERIES 6500, 6550 AND 6500IV

**EXAMPLE: 6500 - O - 9 x 9 - 24 x 24 - L - AW - 4A - SR08**

- |   |  |   |
|---|--|---|
| <p><b>1. Model</b><br/>         6500 Fixed Pattern<br/>         6550 Adjustable Pattern<br/>         6500IV Induction Vanes</p> <p><b>2. Damper</b><br/>         (model suffix)<br/>         – None<br/>         O Steel (standard)</p> <p><b>3. Neck Size</b><br/>         Width x Height (inches)</p> <p><b>4. Ceiling Module Size</b><br/> <b>Panel Size</b><br/>         (Types L, SP, M, TL, F and DL only)<br/> <b>Imperial (inches)</b><br/>         12 x 12, 20 x 20, 24 x 12, 24 x 24,<br/>         48 x 24<br/> <b>Metric (mm)</b><br/>         300 x 300, 500 x 500, 600 x 300,<br/>         600 x 600, 1200 x 600</p> <p><b>5. Frame Type</b><br/>         S Surface Mount Flat<br/>         B Surface Mount Bevelled<br/>         D Deep Drop<br/>         L Lay-in T-Bar<br/>         SP Spline<br/>         M Metal Pan<br/>         TL Tegular (Drop Face)<br/>         F Finline®<br/>         DL Drop Face Lay-in</p> | <p><b>6. Finish</b><br/>         AW Appliance White (default)<br/>         AL Aluminum<br/>         BK Black<br/>         BW British White<br/>         PC Prime Coat Paint<br/>         MI Mill<br/>         SP Special Custom Color</p> <p><b>7. Core Style</b><br/>         See below</p> <p><b>OPTIONS AND ACCESSORIES:</b></p> <p><b>8. Transition Collar</b><br/>         (Square to round)<br/>         SR04 to SR24<br/>         4" to 24" dia.<br/>         *ONA Offset Neck Adaptor</p> <p><b>9. Earthquake Tabs</b><br/>         EQT Earthquake Tabs</p> <p><b>10. External Insulation</b><br/>         EX Foil-back (installed), R-4.2<br/>         *MIB Molded Insulation Blanket,<br/>         R-6.0</p> | <p><b>11. Air Balancing Devices</b><br/>         (order separately)<br/> <b>Rectangular Neck:</b><br/>         EGL Equalizing Grid (long)<br/>         EGS Equalizing Grid (short)<br/>         DEGL Damper/Equalizing Grid<br/>         (long)<br/>         DEGS Damper/Equalizing Grid<br/>         (short)<br/> <b>Round Neck:</b><br/>         4250 Radial Sliding Damper<br/>         4275 Radial Opposed Blade Damper<br/>         4675 Butterfly Damper<br/>         EGR Equalizing Grid<br/>         DEGR Damper/Equalizing Grid</p> <p><b>Notes:</b></p> <p>1. Consult submittal pages as to limitations of module, neck size and core style combinations.</p> <p>2. *ONA Offset Neck Adaptor is for Model Series 6500IV and 6200IV. Not available on models with -O opposed blade damper.</p> <p>3. *MIB Molded Insulation Blanket is available for Frame Types L, TL and F with a 24 x 24 cm only, 15 x 15 maximum neck size and "SR" square-to-round transition collar.</p> |
|---|--|---|

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CEILING DIFFUSERS

**PATTERNS ARE SHOWN IN PLAN VIEW (LOOKING DOWN INTO INLET)**



## HOW TO ORDER OR TO SPECIFY

### STEEL PATTERN CEILING DIFFUSER WITH FIBERGLASS PLENUM

#### MODEL SERIES 6500

EXAMPLE: 6500FP - 15 x 15 - 24 x 24 - L - AW - 4A

- Model**  
6500FP Fixed Pattern
- Core Size**  
**Imperial**  
inches (mm)  
15" x 15" (381 x 381) (default)
- Ceiling Module Size**  
**Panel Size**  
**Imperial**  
inches (mm)  
24" x 24" (610 x 610) (default)  
**Metric**  
mm  
600 mm x 600 mm
- Frame Type**  
L Lay-in T-Bar (default)
- Finish**  
AW Appliance White (default)  
AL Aluminum  
BK Black  
BW British White  
PC Prime Coat Paint  
MI Mill  
SP Special Custom Color
- Core Style**  
4A 4-way (default)

## HOW TO ORDER

### ALUMINUM PATTERN CEILING DIFFUSERS

#### MODEL SERIES 6200, 6250, 6200IV AND 6200-MRI

EXAMPLE: 6200 - O - 9 x 9 - 24 x 24 - L - AW - 4A - PLS - SR08

1. **Model**  
 6200 Fixed Pattern  
 6250 Adjustable Pattern  
 6200IV Induction Vanes  
 6200-MRI 100% Aluminum
2. **Damper**  
 (model suffix)  
 – None  
 O Steel (standard)  
 OA Aluminum  
 (Damper not available on 6200-MRI)
3. **Neck Size**  
 Width x Height (inches)
4. **Ceiling Module Size**  
**Panel Size**  
 (Types L, SP, M, TL and F)  
**Imperial (inches)**  
 12 x 12, 20 x 20, 24 x 12, 24 x 24,  
 48 x 24  
**Metric (mm)**  
 300 x 300, 500 x 500, 600 x 300,  
 600 x 600, 1200 x 600
5. **Frame Type**  
 S Surface Mount Flat  
 B Surface Mount Bevelled  
 L Lay-in T-Bar  
 SP Spline  
 M Metal Pan  
 TL Tegular (Drop Face)  
 F Fineline®

7. **Core Style**  
 See below
- OPTIONS AND ACCESSORIES:**
8. **Transition Collar**  
 (Square to round)  
 SR04 to SR24  
 4" to 24" dia.  
 (Transition Collar not available on the Model 6200-MRI)  
 \*ONA Offset Neck Adaptor
9. **Earthquake Tabs**  
 EQT Earthquake Tabs
10. **External Insulation**  
 EX Foil-back (installed), R-4.2  
 \*MIB Molded Insulation Blanket,  
 R-6.0
11. **Extended Panel\***  
 PLS Steel (default)  
 PLA Aluminum
12. **Air Balancing Devices**  
 (order separately)  
**Rectangular Neck:**  
 EGL Equalizing Grid (long)  
 EGS Equalizing Grid (short)  
 DEGL Damper/Equalizing Grid  
 (long)  
 DEGS Damper/Equalizing Grid  
 (short)

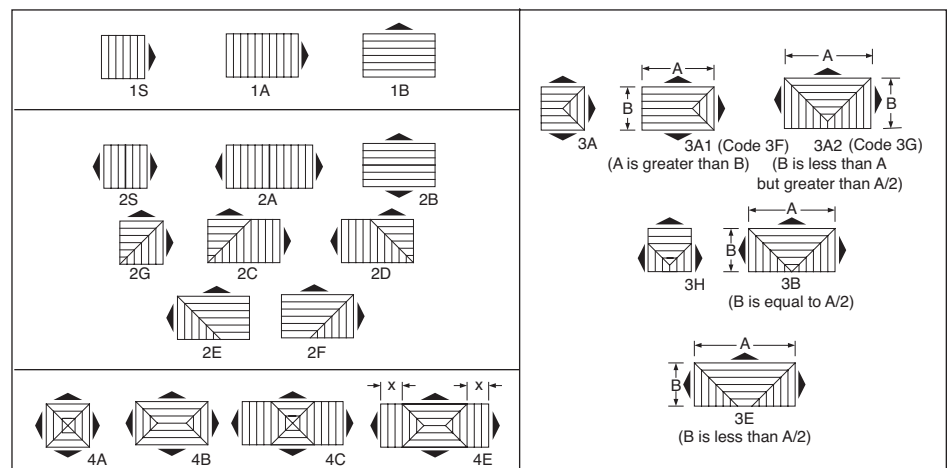
- Round Neck:**
- 4250 Radial Sliding Damper
  - 4275 Radial Opposed Blade Damper
  - 4675 Butterfly Damper
  - EGR Equalizing Grid
  - DEGR Damper/Equalizing Grid

**Notes:**

1. Consult price pages as to limitations of module, neck size and core style combinations.
2. \*Where required, a steel extended modular panel is standard when the ceiling module is more than 3 larger than the neck in either or both dimensions. Aluminum is available as an option with the exception of Model 6200-MRI which includes as standard, an aluminum extended modular panel. Applicable to Frame Type L, SP, M, TL and F.
3. \*ONA Offset Neck Adaptor is for Model Series 6500IV and 6200IV. Not available on models with -O opposed blade damper.
4. \*MIB Molded Insulation Blanket is available for Frame Types L, TL and F with a 24 x 24 ceiling module only, 15 x 15 maximum neck size and "SR" square-to-round transition collar.

6. **Finish**  
 AW Appliance White (default)  
 AL Aluminum  
 BK Black  
 BW British White  
 MI Mill  
 PC Prime Coat  
 PPA Paint Prepared  
 SP Special Custom Color

**PATTERNS ARE SHOWN IN PLAN VIEW (LOOKING DOWN INTO INLET)**



## HOW TO ORDER

### ALUMINUM PATTERN CEILING DIFFUSERS

#### MODEL SERIES 6400 AND 6400IV

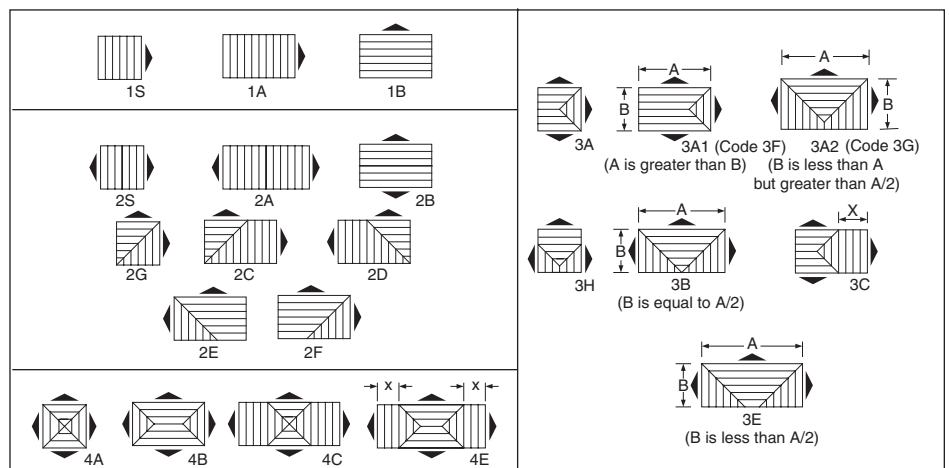
EXAMPLE: 6400 - O - 9 x 9 - 24 x 24 - L - AW - 4A - SR08 - PLS

- |   |   |   |
|---|---|---|
| <p>1. <b>Model</b><br/>6400 Fixed Pattern<br/>6400IV Induction Vanes</p> <p>2. <b>Damper</b><br/>(model suffix)<br/>– None<br/>O Steel (standard)<br/>OA Aluminum</p> <p>3. <b>Neck Size</b><br/>Width x Height (inches)</p> <p>4. <b>Ceiling Module Size</b><br/><b>Panel Size</b><br/>(Types L, SP, M, TL, F and DL only)<br/><b>Imperial (inches)</b><br/>12 x 12, 20 x 20, 24 x 12, 24 x 24,<br/>48 x 24<br/><b>Metric (mm)</b><br/>300 x 300, 500 x 500, 600 x 300,<br/>600 x 600, 1200 x 600</p> <p>5. <b>Frame Type</b><br/>S Surface Mount Flat<br/>B Surface Mount Bevelled<br/>D Deep Drop<br/>L Lay-in T-Bar<br/>SP Spline<br/>M Metal Pan<br/>TL Tegular (Drop Face)<br/>F Finline®</p> | <p>6. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>MI Mill<br/>PC Prime Coat<br/>PPA Paint Prepared Aluminum<br/>SP Special Custom Color</p> <p>7. <b>Core Style</b><br/>See below</p> <p><b>OPTIONS AND ACCESSORIES:</b></p> <p>8. <b>Transition Collar</b><br/>(Square to round)<br/>SR04 to SR24<br/>4" to 24" dia.</p> <p>9. <b>Earthquake Tabs</b><br/>EQT Earthquake Tabs</p> <p>10. <b>External Insulation</b><br/>EX Foil-back (installed), R-4.2<br/>*MIB Molded Insulation Blanket,<br/>R-6.0</p> <p>11. <b>Extended Panel**</b><br/>PLS Steel (default)<br/>PLA Aluminum</p> | <p>12. <b>Air Balancing Devices</b><br/>(order separately)<br/><b>Rectangular Neck:</b><br/>EGL Equalizing Grid (long)<br/>EGS Equalizing Grid (short)<br/>DEGL Damper/Equalizing Grid<br/>(long)<br/>DEGS Damper/Equalizing Grid<br/>(short)</p> <p><b>Round Neck:</b><br/>4250 Radial Sliding Damper<br/>4275 Radial Opposed Blade Damper<br/>4675 Butterfly Damper<br/>EGR Equalizing Grid<br/>DEGR Damper/Equalizing Grid</p> |
|---|---|---|

#### Notes:

- Consult price pages as to limitations of module, neck size and core style combinations.
- \*MIB Molded Insulation Blanket is available for Frame Types L, TL and F with a 24 x 24 ceiling module only, 15 x 15 maximum neck size and "SR" square-to-round transition collar.
- \*\*Extended modular panels where required are steel construction as standard. Aluminum is available as an option. Applicable to Frame Types L, SP, M, TL, F and DL only.

#### PATTERNS ARE SHOWN IN PLAN VIEW (LOOKING DOWN INTO INLET)





## HOW TO SPECIFY

### SUGGESTED SPECIFICATION:

#### 6500 and 6550 – Steel Construction

Furnish and install **Nailor** (select one) **Model 6500 or 6550** (steel) **Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 6500 shall incorporate fixed pattern discharge louvers for a horizontal throw pattern. Model 6550 shall incorporate fixed pattern discharge louvers and adjustable vanes for a vertical or horizontal throw pattern. The entire core assembly shall be removable without the use of tools. The directional pattern shall be supplied as a 4, 3, 2 or 1-way discharge pattern as specified. The core is to be interchangeable with all other frame styles of equal size. The square or rectangular duct connection collar shall be an integral part of the frame assembly. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

### SUGGESTED SPECIFICATION:

#### 6500IV – Steel Construction

Furnish and install **Nailor Model 6500IV** (steel) **Induction Vane Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The core assembly shall have a fixed pattern for horizontal throw and shall include induction vanes for rapid mixing of supply air with room air. The entire core assembly shall be removable without the use of tools. The directional pattern shall be supplied as a 4, 3, 2 or 1-way discharge pattern as specified. The core is to be interchangeable with all other frame styles of equal size. The square or rectangular duct connection collar shall be an integral part of the frame assembly. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

### SUGGESTED SPECIFICATION:

#### 6500FP – Steel Construction Face and Fiberglass Backpan

Furnish and install **Nailor** (select one or more) **Model 6500FP** (steel) **Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The face of the diffuser and core assembly shall be constructed of corrosion-resistant steel. All units shall include a one piece molded fiberglass backpan with foil back vapor barrier of 6.0 R-value. The ceiling diffuser shall be high capacity with a 4-way discharge pattern that provides a tight horizontal pattern from maximum to minimum airflow. The spring-loaded core shall be fully removable in the field without the use of tools for the purpose of installation or cleaning. The pre-scored diffuser plenum shall accommodate spin-in or tab-lock inlet collars (by others). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

### SUGGESTED SPECIFICATION:

#### 6200 and 6250 – Aluminum Construction

Furnish and install **Nailor** (select one) **Model 6200 or 6250** (aluminum) **Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 6200 shall incorporate fixed pattern discharge louvers for a horizontal throw pattern. Model 6250 shall incorporate fixed pattern discharge louvers and adjustable vanes for a vertical or horizontal throw pattern. If an extended panel is required; the material shall be constructed of heavy gauge, corrosion-resistant steel (aluminum is optional). The entire core assembly shall be removable without the use of tools. The directional pattern shall be supplied as a 4, 3, 2 or 1-way discharge pattern as specified. The core is to be interchangeable with all other frame styles of equal size. The square or rectangular duct connection collar shall be an integral part of the frame assembly. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel (aluminum is optional) shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

**SUGGESTED SPECIFICATION:**

**6200IV – Aluminum Construction**

Furnish and install **Nailor Model 6200IV** (aluminum) **Induction Vane Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The core assembly shall have a fixed pattern for horizontal throw and shall include induction vanes for rapid mixing of supply air with room air. If an extended panel is required; the material shall be constructed of heavy gauge, corrosion-resistant steel (aluminum is optional). The entire core assembly shall be removable without the use of tools. The directional pattern shall be supplied as a 4, 3, 2 or 1-way discharge pattern as specified. The core is to be interchangeable with all other frame styles of equal size. The square or rectangular duct connection collar shall be an integral part of the frame assembly. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel (aluminum is optional) shall be provided with all units. The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

**SUGGESTED SPECIFICATION:**

**6200-MRI – 100% Aluminum Construction**

Furnish and install **Nailor Model 6200-MRI** (aluminum) **Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 6200-MRI shall incorporate fixed pattern discharge louvers for a horizontal throw pattern. The core assembly shall be fixed and is non-removable. The directional pattern shall be supplied as a 4, 3, 2 or 1-way discharge pattern as specified. The square or rectangular duct connection collar shall be an integral part of the frame assembly. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

**SUGGESTED SPECIFICATION:**

**6400 – Aluminum Construction**

Furnish and install **Nailor Model 6400** (aluminum) **High Capacity Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The units shall be constructed from extruded aluminum with miscellaneous steel components. Blades and frame shall have reinforced staked mitered corners for high quality appearance and function. Diffusers shall consist of an outer frame assembly to suit any application shown, which includes an integral collar for connection to the square or rectangular duct size indicated. If an extended panel is required; the material shall be constructed of heavy gauge, corrosion-resistant steel (aluminum is optional). A square to round transition collar shall be supplied where indicated to facilitate attachment of round duct.

An inner core assembly consisting of fixed deflection louvers capable of producing the airflow discharge indicated on the plans shall be securely held in place by a spring loaded mechanism without the need for visible screws. The core shall be fully removable in the field without the use of tools for the purpose of installation, cleaning or damper adjustment.

The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel (aluminum is optional) shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

**SUGGESTED SPECIFICATION:**

**6400IV – Aluminum Construction**

Furnish and install **Nailor Model 6400IV** (aluminum) **High Capacity Induction Vane Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Diffusers shall be designed for optimum performance in both heating and cooling applications. The diffusers shall be constructed from extruded aluminum with miscellaneous steel components. Blades and frame shall have reinforced staked mitered corners for high quality appearance and function. Diffusers shall consist of an outer frame assembly to suit any application shown, which includes an integral collar for connection to the square or rectangular duct size indicated. If an extended panel is required; the material shall be constructed of heavy gauge, corrosion-resistant steel (aluminum is optional). A square to round transition collar shall be supplied where indicated to facilitate attachment of round duct.

An inner core assembly consisting of fixed deflection louvers on 1 1/2" (38) centers, capable of producing either a 4, 3, 2 or 1-way horizontal airflow discharge pattern as indicated on the plans shall be securely held in place by a spring loaded mechanism without the need for visible screws. The deflection angle of each louver shall be constant (diffuser designs with a horizontal lip at the point of discharge are not acceptable). Aluminum induction vanes on 1 1/2" (38) centers shall be mounted in extrusion slots and welded to the rear of each louver of the inner core. The vanes shall be orientated at 45° in opposite direction on alternating louvers to promote rapid temperature equalization and ensure high induction and rapid mixing of the primary and room air. The core shall be fully removable in the field without the use of tools for the purpose of installation, cleaning or damper adjustment. Diffuser finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel (aluminum is optional) shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

## STAMPED SQUARE CEILING DIFFUSERS

- FIXED AIR PATTERN
- HIGH PERFORMANCE
- SQUARE FACE
- ROUND NECK
- 4 CONE

### Models:

- RNS Steel  
ARNS Aluminum



Model RNS

Model Series RNS Square Ceiling Air Diffusers have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. For these reasons the RNS Series diffuser is the most popular choice for general applications.

The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance. The stepped down core design increases capacity and minimizes streaking and smudging of the ceiling.

The diffusers provide stable diffusion and mixing patterns under constant and changing load conditions and are particularly suitable for variable air volume systems.

The diffusers are available with various frame/border designs to suit many ceiling systems including surface mount, T-Bar lay-in, and panel applications. Standard finish is a high quality baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

### STANDARD FEATURES:

- Spring loaded core is securely held in position and is removable without the use of tools.
- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- All 12" x 12" (300 x 300) and 24" x 24" (600 x 600) modules feature four cones in all neck sizes, providing a uniform and balanced appearance. The 20" x 20" (500 x 500) module has three cones.
- Screwdriver adjustment of the optional balancing damper is achieved through the inner cone assembly.

### CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel or aluminum with miscellaneous steel components.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

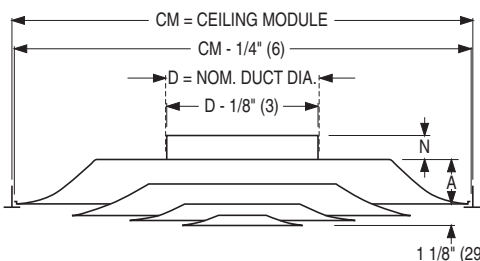
### OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper  
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper  
5" – 15" (127 – 381).
- 4675 Butterfly Damper  
6" – 14" (152 – 356).

- QB Quadrant Blanks for 1, 2 and 3-way blow. (See page D267).
  - EX External Foil-Back Insulation (installed) – R-4.2.
  - EXB External Foil-Back Insulation (loose) – R-4.2.
  - MIB Molded Insulation Blanket – R-6.0.
  - EIC Extended Inlet Collar (2 1/4" [57]) with bead (Model RNS only).
  - EQT Earthquake Tabs
- For more options and accessories, see page D255.

### Type L Lay-in, T-Bar Frame

12 x 12 (300 x 300) and  
24 x 24 (600 x 600) modules



### Dimensional Data

Ceiling Module CM		Imperial Units (inches)					Metric Units (mm)				
Imperial Modules	Metric Modules	Duct Size D	N	A	B	F	Duct Size D	N	A	B	F
12 x 12	300 x 300	4*	3 1/4	1	11	13	102*	83	25	279	330
		5, 6, 7, 8	1 1/4				127, 152, 178, 203	32			
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	24 3/4	152, 203, 254, 305, 356, 381	32	59	559	629

\* Supplied with a reducer.

## DIMENSIONAL DATA AND FRAME TYPES:

### MODELS RNS AND ARNS

D

CEILING DIFFUSERS

#### Type L Lay-in T-Bar

20" x 20" (500 x 500) module

Ceiling Module CM		Imperial Units (inches)		Metric Units (mm)	
Imperial Modules	Metric Modules	Duct Size D	B	Duct Size D	B
20 x 20	500 x 500	6, 8, 10	18 1/2	152, 203, 254	470

The 20 x 20 (500 x 500) module is only available in this frame style.

#### Type PL Panel Mounted Lay-in T-Bar

Ceiling Module CM		Imperial Units (inches)				Metric Units (mm)			
Imperial Modules	Metric Modules	Face Size	Duct Size D	N	A	Face Size	Duct Size D	N	A
24 x 24	600 x 600	12	4*	3 1/4	1	300	102,	83	25
24 x 12	600 x 300	x	5, 6,			x	127, 152,		
20 x 20	500 x 500	12	7, 8			300	178, 203,		
30 x 30	750	24	6, 8,	1 1/4	2 5/16	600	152, 203,	32	59
	x	x	10, 12,			x	254, 305,		
48 x 24	750	24	14, 15	1 1/4	2 5/16	600	356, 381	32	59
	x	x	6, 8,			x	152, 203,		
600	600	24	10, 12,	1 1/4	2 5/16	600	254, 305,	32	59
	x	x	14, 15			600	356, 381		

\* Supplied with a reducer. Panel mount is available with Model RNS only.

#### Type L Surface Mount

Hard duct connection recommended.

#### Type L Surface Mount with DFA

Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

#### Type S Surface Mount

Hard duct connection recommended.

#### Type F Fineline®

#### Type M Metal Pan (Snap-in)

#### Type SP Spline

For one directional exposed T-bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

Note: Model ARNS is available only in frame types L and F.

Fineline® is a registered trademark of USG Interiors Inc.

## PERFORMANCE DATA:

### Models RNS and ARNS • 12 x 12 (300 x 300) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
4" Dia.	Total Pressure	.014	.022	.032	.043	.056	.071	.088	.126	.172	.224
	Airflow, CFM	35	44	52	61	70	79	87	105	122	140
	Throw	1-2-4	2-2-5	2-3-5	2-3-6	2-4-7	3-4-7	3-5-7	4-5-8	4-6-9	5-7-9
	Noise Criteria	—	—	—	—	—	11	19	25	30	35
5" Dia.	Total Pressure	.017	.026	.038	.051	.067	.085	.105	.151	.206	.269
	Airflow, CFM	55	68	82	95	109	123	136	164	191	218
	Throw	2-2-5	2-3-6	2-4-6	2-4-7	2-5-8	3-6-9	4-6-9	5-7-10	5-8-11	6-8-11
	Noise Criteria	—	—	—	—	—	14	22	28	33	38
6" Dia.	Total Pressure	.018	.029	.043	.060	.079	.100	.128	.175	.250	.325
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-2-4	1-2-5	1-3-6	2-3-6	2-4-8	3-4-8	3-4-10	4-5-10	4-6-14	5-8-14
	Noise Criteria	—	—	11	16	20	22	24	31	38	41
7" Dia.	Total Pressure	.022	.035	.050	.068	.089	.112	.138	.199	.271	.354
	Airflow, CFM	107	134	160	187	214	241	267	321	374	428
	Throw	2-4-8	3-5-9	4-6-10	4-7-11	5-8-12	5-9-13	6-10-14	7-10-14	9-11-15	10-12-16
	Noise Criteria	—	—	12	17	20	24	27	33	39	42
8" Dia.	Total Pressure	.031	.047	.065	.087	.110	.140	.168	.235	.310	.395
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	3-5-9	4-5-11	5-7-13	5-8-14	6-9-14	6-10-15	7-11-16	8-12-17	10-13-18	11-14-18
	Noise Criteria	—	—	13	18	22	26	29	35	40	44

### Models RNS and ARNS • 20 x 20 (500 x 500) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.015	.023	.033	.045	.058	.074	.091	.130	.176	.230
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-1-3	1-2-4	1-2-4	1-3-5	2-3-6	2-3-6	2-4-7	3-5-8	3-5-8	4-6-9
	Noise Criteria	—	—	14	18	21	26	29	34	38	41
8" Dia.	Total Pressure	.018	.028	.041	.055	.072	.091	.112	.161	.219	.286
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	1-2-5	2-3-6	2-4-6	3-4-7	3-5-7	4-5-8	4-6-8	5-6-9	6-7-10	6-8-11
	Noise Criteria	—	11	16	20	23	28	31	36	40	43
10" Dia.	Total Pressure	.023	.036	.052	.071	.092	.117	.144	.207	.281	.367
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Throw	2-4-6	3-4-7	4-5-8	4-6-9	5-6-9	5-7-10	6-7-10	6-8-11	7-9-12	8-9-13
	Noise Criteria	—	13	18	22	25	30	33	38	42	45

#### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
- All pressures are in inches w.g..
- The addition of quadrant blanks reduces the effective area and for a given air volume, increases the discharge velocity. This will result in an increase in throw, pressure drop and sound level. To determine throw, select the diffuser as if it were supplying a larger volume of air. The table shows the percentage increase required to determine selection of diffuser size and throw. To correct pressure drop and Noise Criteria, use correction factors as shown for 4-way blow values.

- Noise Criteria (NC) are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (—) in space denotes a Noise Criteria level less than 10.
- Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.131
8	12 x 12	.202
6	24 x 24	.180
8	24 x 24	.227
10	24 x 24	.331
12	24 x 24	.450
14	24 x 24	.511
15	24 x 24	.625

Quadrant Blanks (Blow)	% Increase in Air Volume for Throw Determination	% Increase in Static Pressure Drop	NC Sound Level Increase
1 (3-way)	35	125	8
2 (2-way)	100	450	19

## PERFORMANCE DATA:

### Models RNS and ARNS • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.015	.023	.035	.045	.060	.076	.095	.135	.186	.240
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-1-4	1-2-5	1-2-6	1-3-7	2-4-9	2-5-9	3-6-11	3-6-12	4-7-14	6-8-15
	Noise Criteria	—	—	—	13	17	21	24	27	32	36
8" Dia.	Total Pressure	.021	.033	.047	.063	.082	.105	.128	.183	.245	.325
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	1-1-5	1-2-6	1-3-8	2-4-8	3-5-10	3-6-10	4-6-13	5-8-13	6-8-16	7-10-17
	Noise Criteria	—	—	13	17	20	25	28	33	37	40
10" Dia.	Total Pressure	.024	.037	.047	.074	.097	.123	.150	.215	.293	.372
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Throw	1-3-6	2-4-8	3-5-9	4-6-12	5-6-12	5-7-14	6-9-15	6-10-15	8-13-17	9-13-18
	Noise Criteria	—	11	16	20	23	28	31	36	40	43
12" Dia.	Total Pressure	.026	.039	.057	.075	.097	.127	.150	.245	.310	.410
	Airflow, CFM	315	390	470	550	630	705	785	990	1100	1255
	Throw	2-3-7	3-4-9	3-5-10	4-6-13	5-7-13	5-8-15	5-8-16	7-9-18	9-11-18	10-12-19
	Noise Criteria	—	13	18	21	24	29	32	37	41	44
14" Dia.	Total Pressure	.030	.050	.070	.100	.110	.160	.200	.240	.390	.490
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	3-4-9	4-5-11	4-7-13	5-7-16	6-9-16	7-11-16	7-11-19	9-13-19	11-16-19	11-16-27
	Noise Criteria	—	14	19	22	25	29	32	37	42	45
15" Dia.	Total Pressure	.033	.054	.072	.100	.127	.163	.204	.280	.395	.500
	Airflow, CFM	490	615	735	860	985	1110	1230	1470	1720	1970
	Throw	5-7-10	6-8-11	7-9-14	8-10-17	8-13-18	10-15-19	11-16-22	12-18-27	13-20-32	15-22-34
	Noise Criteria	—	15	20	23	26	30	33	38	43	46

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
2. All pressures are in inches w.g..
3. The addition of quadrant blanks reduces the effective area and for a given air volume, increases the discharge velocity. This will result in an increase in throw, pressure drop and sound level. To determine throw, select the diffuser as if it were supplying a larger volume of air. The table shows the percentage increase required to determine selection of diffuser size and throw. To correct pressure drop and Noise Criteria, use correction factors as shown for 4-way blow values.

4. Noise Criteria (NC) are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (—) in space denotes a Noise Criteria level less than 10.
5. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	0.131
8	12 x 12	0.202
6	24 x 24	0.180
8	24 x 24	0.227
10	24 x 24	0.331
12	24 x 24	0.450
14	24 x 24	0.511
15	24 x 24	0.625

Quadrant Blanks (Blow)	% Increase in Air Volume for Throw Determination	% Increase in Static Pressure Drop	NC Sound Level Increase
1 (3-way)	35	125	8
2 (2-way)	100	450	19



## ADJUSTABLE STAMPED SQUARE CEILING DIFFUSERS

- HIGH PERFORMANCE
- SQUARE FACE
- ROUND NECK
- HORIZONTAL TO VERTICAL ADJUSTABLE DISCHARGE PATTERN



Model RNSA

### Models:

RNSA Steel

ARNSA Aluminum

Model Series RNSA and ARNSA Adjustable Square Ceiling Air Diffusers have been specially designed to provide both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. They provide the flexibility of a standard horizontal discharge or near vertical discharge pattern, useful in high ceiling applications where better air penetration or spot heating may be desired. The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance.

The adjustable diffusers provide stable diffusion and mixing patterns under constant and changing load conditions and are particularly suitable for variable air volume systems. They are available to suit many situations including surface mount, T-Bar lay-in and panel applications. Standard finish is a high quality baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

### STANDARD FEATURES:

- Removable core.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- All 12" x 12" (305 x 305) and 24" x 24" (610 x 610) modules feature four cones in all neck sizes, providing a uniform and balanced appearance. The 20" x 20" (508 x 508) module has three cones.
- Compatible with Model 4275 Radial Opposed Blade Damper (option). Other dampers may need adaptors.
- Screwdriver adjustment of the optional balancing damper through the core.

### CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel or aluminum with miscellaneous steel components.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### ADJUSTMENT:

The unique design permits gradual adjustment of air pattern from horizontal flow with the inner cone assembly extended to vertical flow by retracting the inner cone assembly. Available as Type 1 or 2. (ARNSA is available in Type 1 only).

### OPTIONS & ACCESSORIES:

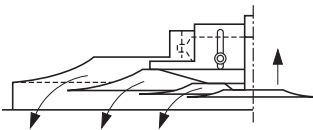
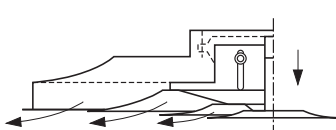
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
  - QB Quadrant Blanks for 1, 2 and 3-way blow. (See page D267).
  - EX External Foil-Back Insulation (installed) – R-4.2.
  - EXB External Foil-Back Insulation (loose) – R-4.2.
  - EQT Earthquake Tabs
- For additional options and accessories; see page D255.

#### Type 1 'Sliding Type'

Adjusted by sliding the inner cone assembly up or down. Core is securely retained by a spring loaded friction arrangement. Steel or aluminum construction.

#### Horizontal Air Pattern

#### Vertical Air Pattern

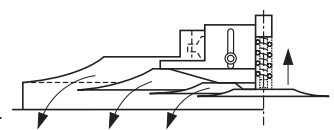
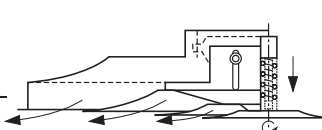


#### Type 2 'Rotating Type'

A unique 'screw type' arrangement where the angle of discharge is varied by rotating the center cone. Steel construction only.

#### Horizontal Air Pattern

#### Vertical Air Pattern

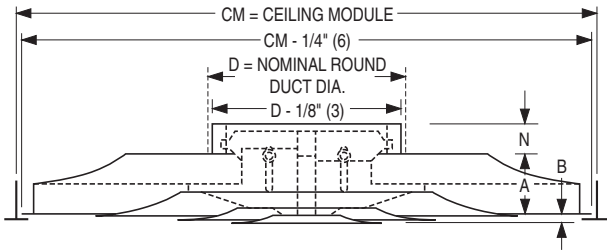


## DIMENSIONAL DATA AND FRAME TYPES:

### MODELS RNSA AND ARNSA

#### Type L Lay-in T-Bar

12 x 12 (300 x 300) and 24 x 24 (600 x 600) modules

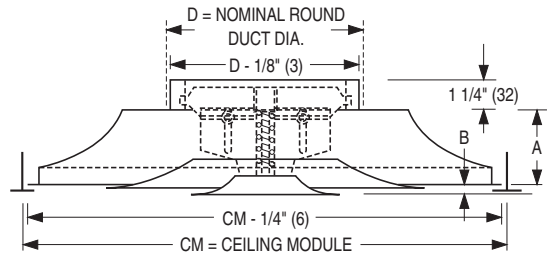


Ceiling Module CM		Imperial Units (inches)				Metric Units (mm)			
Imperial Modules	Metric Modules	Duct Size D	N	A	B	Duct Size D	N	A	B
12 x 12	300 x 300	4*, 5*	3 1/4	2 1/4	0	102*, 127*	83	57	0
		6, 7, 8	1 1/4			152, 178, 203			
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	3 3/4	0	152, 203, 254, 305, 356, 381	32	95	0

\* Supplied with a reducer.

#### Type L Lay-in T-Bar\*\*

20 x 20 (500 x 500) module

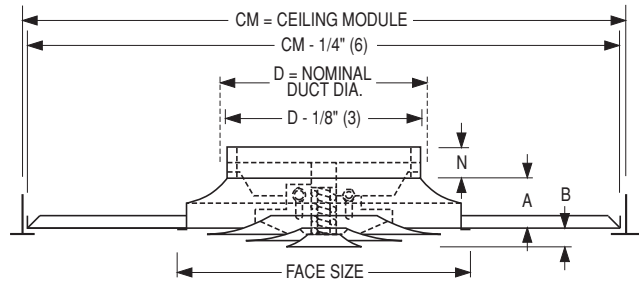


Listed Neck Size	Imperial Modules		SI Units (mm)		SI Units (mm)	
	Imperial Units (inches)	SI Units (mm)	SI Units (mm)	SI Units (mm)	SI Units (mm)	
	CM = 20 x 20	CM = 508 x 508	CM = 500 x 500			
6 (152)		o	0		0	
8 (203)	3 1/8	to 3/8	79	to 10	79	
10 (254)						

#### Type PL Panel Mounted Lay-in T-Bar

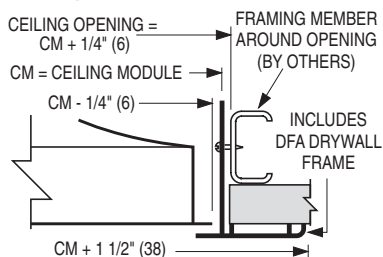
Listed Neck Size	Imperial Modules (inches)				SI Units (mm)			
	D	N	A	B	D	N	A	B
4*	4	3 1/4	2 1/4	0	102	83	57	0
					127			
					152			
					178			
8	8	1 1/4	3 3/4	0	203	32	95	0

\* Supplied with a reducer.

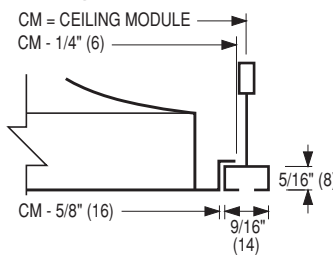


Available Ceiling Modules CM		
Imperial Units (inches)	SI Units (mm)	SI Units (mm)
Face Size 12 x 12 (305 x 305)		
Listed Neck Sizes 4, 5, 6, 7, 8 (102, 127, 152, 178, 203)		
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600
Face Size 24 x 24 (610 x 610)		
Listed Neck Sizes 6, 8, 10, 12, 14, 15 (152, 203, 254, 305, 356, 381)		
30 x 30	762 x 762	750 x 750
48 x 24	1219 x 610	1200 x 600

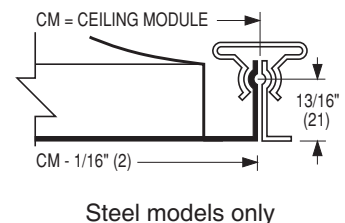
#### Type S Surface Mount



#### Type F Fineline®



#### Type M Metal Pan (Snap-in)



Steel models only

## PERFORMANCE DATA:

### Models RNSA and ARNSA • 12 x 12 (300 x 300) Face Size

Nominal Neck Size	Neck Velocity, FPM		400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure		.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	Horizontal	.019	.028	.039	.057	.074	.093	.121	.150	.192	.247
		Vertical	.023	.034	.057	.086	.110	.146	.168	.246	.316	.415
	Airflow, CFM		80	100	120	140	160	180	200	235	275	315
	Throw	Horizontal	1-2-4	2-3-6	2-3-6	3-4-7	3-5-7	4-5-8	4-6-10	6-7-11	6-8-11	6-9-12
		Vertical	1-1-2	2-2-5	2-2-6	2-3-5	2-3-5	3-5-6	3-4-7	4-5-8	5-6-9	5-7-10
Noise Criteria	Horizontal	—	—	12	17	21	23	24	32	38	41	
	Vertical	—	—	16	21	25	27	28	36	42	45	
8" Dia.	Total Pressure	Horizontal	.020	.031	.043	.059	.071	.090	.110	.150	.200	.259
		Vertical	.032	.052	.063	.096	.12	.159	.186	.258	.342	.443
	Airflow, CFM		140	175	210	245	280	315	350	420	490	560
	Throw	Horizontal	2-3-6	3-5-8	4-5-8	4-7-10	5-7-12	6-9-14	8-9-15	8-10-16	10-12-18	11-14-20
		Vertical	2-2-3	3-4-7	3-5-6	4-6-9	4-6-9	5-7-10	6-8-11	7-9-12	8-9-13	9-10-14
Noise Criteria	Horizontal	—	11	17	22	25	27	29	36	44	47	
	Vertical	—	—	21	26	29	31	33	40	48	51	

### Models RNSA and ARNSA • 20 x 20 (500 x 500) Face Size

Nominal Neck Size	Neck Velocity, FPM		400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure		.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	Horizontal	.017	.026	.038	.051	.067	.085	.105	.149	.202	.264
		Vertical	.023	.036	.052	.070	.091	.116	.143	.201	.274	.359
	Airflow, CFM		80	100	120	140	160	180	200	235	275	315
	Throw	Horizontal	1-2-4	2-2-5	2-3-6	2-4-6	3-5-6	4-5-7	4-5-7	4-6-8	5-6-8	5-7-9
		Vertical	1-1-2	2-2-3	2-2-4	2-3-5	2-4-5	3-5-6	3-5-7	4-5-8	4-6-9	5-7-10
Noise Criteria	Horizontal	—	12	17	22	25	29	32	37	41	45	
	Vertical	—	17	22	26	29	32	35	40	44	48	
8" Dia.	Total Pressure	Horizontal	.019	.031	.044	.059	.077	.098	.120	.173	.235	.307
		Vertical	.031	.049	.070	.094	.122	.155	.192	.275	.373	.489
	Airflow, CFM		140	175	210	245	280	315	350	420	490	560
	Throw	Horizontal	2-3-5	2-3-7	3-4-8	3-5-8	3-5-9	4-6-9	4-7-10	5-8-11	6-8-12	7-9-12
		Vertical	1-1-4	1-2-5	2-3-6	3-4-6	3-4-8	4-5-8	4-6-9	4-7-10	5-7-10	6-8-12
Noise Criteria	Horizontal	—	—	15	20	24	28	31	38	43	47	
	Vertical	14	19	24	29	32	35	38	44	48	52	
10" Dia.	Total Pressure	Horizontal	.024	.039	.056	.076	.098	.125	.153	.220	.299	.391
		Vertical	.041	.065	.094	.127	.165	.209	.258	.370	.502	.657
	Airflow, CFM		220	270	330	380	435	490	545	655	765	875
	Throws	Horizontal	2-4-7	3-5-8	4-6-9	4-7-10	5-7-10	6-8-11	6-8-12	7-9-13	8-10-14	9-11-15
		Vertical	1-2-4	1-3-6	3-5-7	3-5-8	4-5-9	4-6-10	5-6-10	5-7-11	6-8-12	7-9-12
Noise Criteria	Horizontal	—	—	16	21	26	30	33	39	45	49	
	Vertical	—	20	25	29	33	36	39	44	48	52	

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g..
3. Horizontal throws are with ceiling coanda effect. For exposed duct mounting, multiply table values by x 0.7. Vertical throw is a free jet.
4. Noise Criteria (NC) are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (—) in space denotes a Noise Criteria level less than 10.
5. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

## PERFORMANCE DATA:

### Models RNSA and ARNSA • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM		400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure		.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	Horizontal	.016	.024	.034	.047	.061	.078	.098	.129	.182	.240
		Vertical	.020	.031	.052	.080	.097	.124	.151	.218	.289	.390
	Airflow, CFM		<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>235</b>	<b>275</b>	<b>315</b>
	Throw	Horizontal	1-2-5	2-3-5	2-3-6	3-4-7	3-5-8	4-5-8	4-6-9	6-8-10	6-10-11	7-10-12
		Vertical	1-1-2	2-2-3	2-2-4	2-3-5	2-4-5	3-5-6	3-5-7	4-5-8	4-6-9	5-7-10
	Noise Criteria	Horizontal	—	—	—	13	17	20	22	28	32	36
Vertical		—	—	—	15	19	22	24	30	34	38	
8" Dia.	Total Pressure	Horizontal	.017	.026	.037	.049	.062	.08	.102	.131	.185	.243
		Vertical	.025	.04	.057	.077	.1	.126	.153	.221	.297	.393
	Airflow, CFM		<b>140</b>	<b>175</b>	<b>210</b>	<b>245</b>	<b>280</b>	<b>315</b>	<b>350</b>	<b>420</b>	<b>490</b>	<b>560</b>
	Throw	Horizontal	1-2-5	2-4-6	3-5-7	3-5-8	4-6-9	4-7-10	4-7-11	5-8-12	6-9-13	7-10-14
		Vertical	1-1-4	1-2-5	2-3-6	3-4-6	3-4-8	4-5-8	4-6-9	5-7-10	5-7-11	6-8-12
	Noise Criteria	Horizontal	—	—	13	18	21	22	26	32	38	42
Vertical		—	—	17	20	25	26	30	36	42	46	
10" Dia.	Total Pressure	Horizontal	.014	.021	.030	.039	.052	.065	.080	.112	.152	.194
		Vertical	.030	.048	.070	.092	.120	.161	.196	.264	.360	.450
	Airflow, CFM		<b>220</b>	<b>270</b>	<b>330</b>	<b>380</b>	<b>435</b>	<b>490</b>	<b>545</b>	<b>655</b>	<b>765</b>	<b>870</b>
	Throw	Horizontal	1-4-6	3-5-9	3-6-9	4-7-10	5-7-11	5-9-13	6-10-14	7-11-15	8-11-16	9-12-17
		Vertical	1-2-4	1-3-6	3-5-7	3-5-8	4-5-9	4-6-10	5-6-10	5-7-11	6-8-12	7-9-12
	Noise Criteria	Horizontal	—	10	15	21	26	30	33	38	43	45
Vertical		—	14	19	25	31	34	37	42	47	49	
12" Dia.	Total Pressure	Horizontal	.016	.025	.032	.043	.056	.072	.085	.129	.163	.216
		Vertical	.045	.069	.088	.120	.155	.204	.240	.360	.455	.585
	Airflow, CFM		<b>315</b>	<b>390</b>	<b>470</b>	<b>550</b>	<b>630</b>	<b>705</b>	<b>785</b>	<b>950</b>	<b>1100</b>	<b>1255</b>
	Throw	Horizontal	2-3-7	3-6-9	4-7-10	5-8-12	6-9-14	6-10-15	7-10-16	8-11-17	9-12-18	10-14-19
		Vertical	2-3-5	2-4-6	3-6-7	5-6-9	5-7-10	5-7-10	6-7-12	7-8-12	8-10-14	8-9-15
	Noise Criteria	Horizontal	—	15	22	25	30	33	36	43	45	48
Vertical		12	18	25	28	33	36	39	46	48	51	
14" Dia.	Total Pressure	Horizontal	.022	.037	.049	.057	.073	.092	.115	.147	.208	.262
		Vertical	.063	.101	.135	.160	.203	.261	.326	.411	.583	.640
	Airflow, CFM		<b>425</b>	<b>530</b>	<b>635</b>	<b>745</b>	<b>855</b>	<b>960</b>	<b>1070</b>	<b>1285</b>	<b>1500</b>	<b>1710</b>
	Throw	Horizontal	2-4-8	4-5-8	5-6-10	6-8-12	7-10-14	8-10-16	9-11-17	10-11-18	11-12-20	12-14-21
		Vertical	2-3-5	4-4-6	4-5-9	5-7-10	6-9-12	7-9-13	8-9-14	9-10-15	10-11-16	10-13-18
	Noise Criteria	Horizontal	—	16	22	25	29	33	36	40	42	48
Vertical		11	19	25	28	32	36	39	43	45	51	
15" Dia.	Total Pressure	Horizontal	.030	.041	.054	.062	.080	.100	.128	.155	.224	.308
		Vertical	.068	.110	.143	.165	.210	.271	.330	.425	.590	.660
	Airflow, CFM		<b>490</b>	<b>615</b>	<b>735</b>	<b>860</b>	<b>985</b>	<b>1110</b>	<b>1230</b>	<b>1470</b>	<b>1720</b>	<b>1965</b>
	Throw	Horizontal	5-6-8	5-8-9	8-9-11	9-10-12	10-10-13	11-12-15	12-12-16	12-14-18	14-15-20	15-17-23
		Vertical	3-4-6	3-4-7	5-6-8	6-7-9	6-8-10	8-9-11	10-11-12	11-12-14	11-14-16	12-16-18
	Noise Criteria	Horizontal	10	18	24	30	34	37	40	42	48	51
Vertical		13	21	27	33	37	40	43	45	51	54	

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g..

3. Horizontal throws are with ceiling coanda effect. For exposed duct mounting, multiply table values by x 0.7. Vertical throw is a free jet.

4. Noise Criteria (NC) are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (—) in space denotes a Noise Criteria level less than 10.

5. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

**D**  
CEILING DIFFUSERS

## STAMPED SQUARE CEILING DIFFUSERS

- FIXED AIR PATTERN
- SQUARE FACE
- ROUND NECK
- 3 CONE

### Models:

**RNS3** Steel

**ARNS3** Aluminum



Model RNS3

Model Series RNS3 and ARNS3 Square Ceiling Air Diffusers have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. For these reasons the RNS3 Series diffuser is the most popular choice for general applications.

The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance. The stepped down core design increases capacity and minimizes streaking and smudging of the ceiling.

The diffusers provide stable diffusion and mixing patterns under constant and changing load conditions and are particularly suitable for variable air volume systems.

The diffusers are available with a frame/border design to suit a lay-in T-bar ceiling and can also be surface mounted using the optional drywall diffuser frame. Standard finish is a high quality baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

### STANDARD FEATURES:

- Features 3 cones in all neck sizes, providing a uniform and balanced appearance.
- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Non-removable core.
- Screwdriver adjustment of the optional balancing damper is achieved through the inner cone assembly.

### CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel or aluminum with miscellaneous steel components.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper  
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper  
5" – 24" (127 – 610).
- 4675 Butterfly Damper  
6" – 14" (152 – 356).
- QB Quadrant Blanks for 1, 2 and 3-way blow. (See page D266).
- EX External Foil-Back Insulation (installed) -R-4.2.
- EXB External Foil-Back Insulation (loose) -R-4.2.
- MIB Molded Insulation Blanket – R-6.0.
- EIC Extended Inlet Collar (2 1/4" [57]) with bead (Model RNS3 only).
- EQT Earthquake Tabs

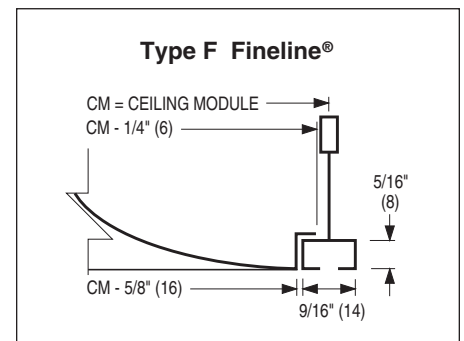
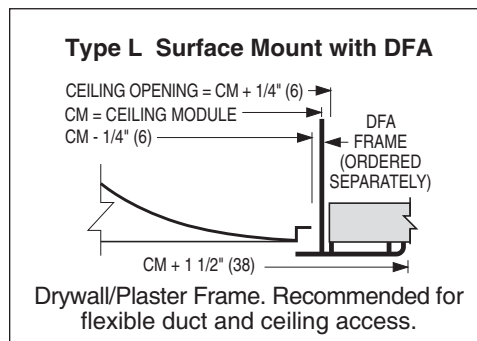
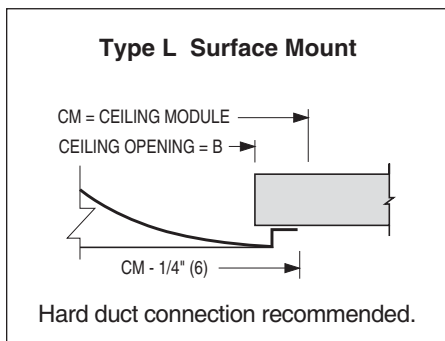
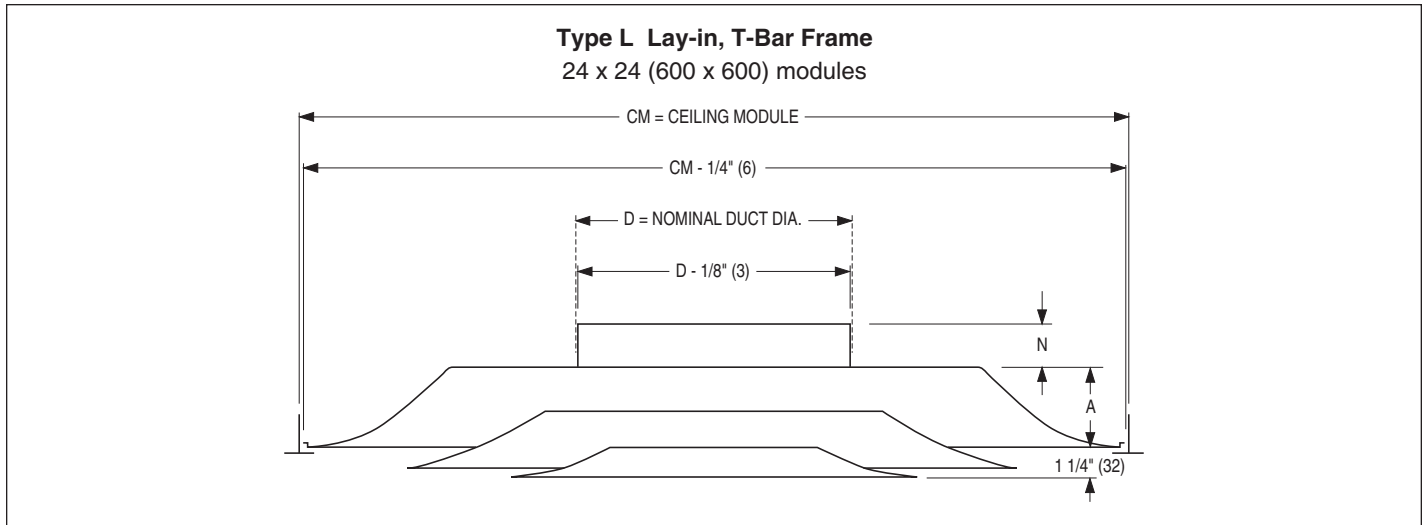
For additional options and accessories; see page D255.

## DIMENSIONAL DATA AND FRAME TYPES:

### MODELS RNS3 AND ARNS3

D

CEILING DIFFUSERS



### Dimensional Data

Ceiling Module CM		Imperial Units (inches)				Metric Units (mm)			
Imperial Modules	Metric Modules	Duct Size D	N	A	B	Duct Size D	N	A	B
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	152, 203, 254, 305, 356, 381	32	59	559



## PERFORMANCE DATA:

### Models RNS3 and ARNS3 • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.017	.027	.038	.052	.068	.086	.106	.153	.208	.272
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-1-4	1-2-5	1-2-6	1-3-7	2-4-9	2-5-9	3-6-11	3-6-12	4-7-14	6-8-15
	Noise Criteria	—	—	—	—	16	19	23	29	34	37
8" Dia.	Total Pressure	.019	.029	.042	.057	.075	.095	.117	.169	.230	.300
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	1-1-5	1-2-6	1-3-8	2-4-8	3-5-10	3-6-10	4-6-13	5-8-13	6-8-16	7-10-17
	Noise Criteria	—	—	—	15	19	22	26	32	37	40
10" Dia.	Total Pressure	.021	.032	.046	.063	.083	.104	.129	.186	.253	.330
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Throw	1-3-6	2-4-8	3-5-9	4-6-12	5-6-12	5-7-14	6-9-15	6-10-15	8-13-17	9-13-18
	Noise Criteria	—	—	—	17	22	25	29	35	39	43
12" Dia.	Total Pressure	.023	.036	.052	.071	.093	.118	.146	.210	.286	.373
	Airflow, CFM	315	390	470	550	630	705	785	990	1100	1255
	Throw	2-3-7	3-4-9	3-5-10	4-6-13	5-7-13	5-8-15	5-8-16	7-9-18	9-11-18	10-12-19
	Noise Criteria	—	—	15	20	25	28	31	37	41	44
14" Dia.	Total Pressure	.027	.042	.060	.082	.107	.136	.168	.241	.328	.429
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	3-4-9	4-5-11	4-7-13	5-7-16	6-9-16	7-11-16	7-11-19	9-13-19	11-16-19	11-16-27
	Noise Criteria	—	—	19	24	27	31	34	39	43	47
15" Dia.	Total Pressure	.029	.045	.065	.089	.116	.147	.182	.262	.356	.465
	Airflow, CFM	490	615	735	860	985	1110	1230	1470	1720	1970
	Throw	5-7-10	6-8-11	7-9-14	8-10-17	8-13-18	10-15-19	11-16-22	12-18-27	13-20-32	15-22-34
	Noise Criteria	—	15	21	25	28	32	35	40	44	48

#### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- If the diffuser is mounted on an exposed duct, multiply throw values by x 0.70.
- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- The addition of quadrant blanks reduces the effective area and for a given air volume, increases the discharge velocity. This will result in an increase in throw, pressure drop and sound level. To determine throw, select the diffuser as if it were supplying a larger volume of air. The table shows the percentage increase required to determine selection of diffuser size and throw. To correct pressure drop and Noise Criteria, use correction factors as shown for 4-way blow values.

- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	24 x 24	0.16
8	24 x 24	0.26
10	24 x 24	0.37
12	24 x 24	0.49
14	24 x 24	0.62
15	24 x 24	0.68

Quadrant Blanks (Blow)	% Increase in Air Volume for Throw Determination	% Increase in Static Pressure Drop	NC Sound Level Increase
1 (3-way)	35	125	8
2 (2-way)	100	450	19

## STAMPED SQUARE CEILING DIFFUSERS

- HIGH PERFORMANCE
- SQUARE FACE
- ROUND NECK
- STEEL

### Models:

RNS2 Steel



Model RNS2

Model Series RNS2 Square Ceiling Air Diffuser has been specially designed to provide the mechanical engineer with the most cost effective engineered diffuser currently available in the industry. It combines the high performance expected from a louvered face type ceiling diffuser with a cost as low as any lesser performing commercial diffuser currently available. The RNS2 has a 360° diffusion pattern at minimum NC levels required for high engineering performance. The diffuser provides stable diffusion and mixing patterns under constant and changing load conditions and is eminently suitable for variable air volume systems. It can accommodate a turn down of 80% without losing the ceiling coanda effect and dumping. The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance.

Model RNS2 diffusers are available to suit many situations including surface mount, T-Bar lay-in and panel applications. Standard finish is a high quality, baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

### STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- With 2 cones in all sizes, the diffusers provide a uniform appearance.
- Screwdriver adjustment of the optional balancing damper is achieved through the inner cone assembly.

### CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

### FINISH OPTIONS:

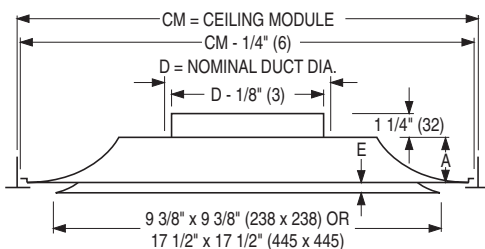
AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper  
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper  
5" – 24" (127 – 610).
- 4675 Butterfly Damper  
6" – 14" (152 – 356).

- QB Quadrant Blanks for 1, 2 and 3-way blow. (See page D267).
  - EX External Foil-Back Insulation (installed) – R-4.2.
  - EXB External Foil-Back Insulation (loose) – R-4.2.
  - MIB Molded Insulation Blanket – R-6.0.
  - EQT Earthquake Tabs
- For additional options and accessories; see page D255.

### Type L Lay-in, T-Bar Frame



### Dimensional Data

Ceiling Module CM		Imperial Units (inches)					Metric Units (mm)				
Imperial Modules	Metric Modules	Duct Size D	A	B	E	F	Duct Size D	A	B	E	F
12 x 12	300 x 300	6, 8	1	11	1 5/16	13	152, 203	25	279	33	330
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	2 5/16	22	15/16	24 3/4	152, 203, 254, 305, 356, 381	59	559	24	629

## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL RNS2

**Type PL Panel Mounted Lay-in T-Bar**

**Dimensional Data**

Ceiling Module CM		Imperial Units (inches)			Metric Units (mm)				
Imperial Modules	Metric Modules	Face Size	Duct Size D	A	E	Face Size	Duct Size D	A	E
24 x 24	600 x 600	12	6, 8	1	1 5/16	300	152, 203	25	33
24 x 12	600 x 300	x				x			
20 x 20	500 x 500	12				x			

**Type L Surface Mount**

Hard duct connection recommended.

**Type L Surface Mount with DFA**

Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

**Type S Surface Mount**

Hard duct connection recommended.

**Type F Fineline®**

**Type M Metal Pan (Snap-in)**

**Type SP Spline**

For one directional exposed T-bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

**D**  
CEILING DIFFUSERS

Fineline® is a registered trademark of USG Interiors Inc.

## PERFORMANCE DATA:

### Model RNS2 • 12 x 12 (300 x 300) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.021	.032	.045	.060	.080	.100	.120	.167	.220	.290
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-2-6	2-3-8	2-4-10	3-5-11	3-6-12	4-7-13	5-9-14	7-10-15	8-11-17	9-13-18
	Noise Criteria	—	—	—	—	—	—	—	14	24	34
8" Dia.	Total Pressure	.025	.037	.052	.070	.091	.113	.138	.195	.260	.340
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	2-4-10	3-6-13	4-8-15	5-9-16	7-11-17	8-12-19	9-14-20	11-16-22	13-17-23	15-18-26
	Noise Criteria	—	—	—	—	—	—	10	19	27	34

### Model RNS2 • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.026	.040	.058	.080	.104	.131	.190	.262	.350	.500
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-2-4	1-2-5	2-2-6	2-3-7	2-4-8	2-4-9	3-5-9	4-6-10	5-7-12	6-8-13
	Noise Criteria	—	—	—	11	14	18	21	27	33	38
8" Dia.	Total Pressure	.043	.065	.092	.125	.165	.210	.257	.400	.540	.740
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	1-3-5	2-3-6	2-4-7	3-4-8	3-5-9	4-5-10	5-6-11	6-7-13	6-8-14	7-9-15
	Noise Criteria	—	11	16	20	23	27	30	37	42	47
10" Dia.	Total Pressure	.045	.069	.098	.137	.176	.225	.274	.421	.568	.774
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Throw	1-3-6	2-3-7	2-4-8	3-4-10	4-5-11	5-6-12	5-7-13	6-8-14	7-9-15	8-10-16
	Noise Criteria	10	15	20	24	28	32	35	40	45	50
12" Dia.	Total Pressure	.046	.070	.100	.140	.180	.230	.280	.430	.580	.790
	Airflow, CFM	315	390	470	550	630	705	785	990	1100	1255
	Throw	3-4-7	4-5-9	4-6-10	5-7-11	6-8-12	7-9-13	7-10-14	8-11-15	9-12-16	10-13-17
	Noise Criteria	11	16	21	25	29	33	36	41	46	51
14" Dia.	Total Pressure	.047	.072	.104	.145	.185	.240	.285	.440	.590	.805
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	3-4-7	4-5-9	4-6-10	5-7-11	6-8-12	7-9-13	7-10-14	8-11-15	9-12-16	10-13-17
	Noise Criteria	13	18	23	27	31	34	37	43	53	57
15" Dia.	Total Pressure	.048	.075	.110	.150	.195	.250	.300	.455	.610	.825
	Airflow, CFM	490	615	735	860	985	1110	1230	1470	1720	1970
	Throw	4-5-8	4-6-10	5-7-11	6-8-12	6-9-13	7-10-14	8-10-15	9-12-16	10-13-17	11-14-18
	Noise Criteria	14	19	24	29	32	36	39	45	56	60

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.  
 2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.  
 4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.157
	12 x 12	.232
6	24 x 24	.185
	24 x 24	.226
10	24 x 24	.285
12	24 x 24	.382
14	24 x 24	.505
15	24 x 24	.577

## "TWISTER" STAMPED CEILING SWIRL DIFFUSERS

- HIGH PERFORMANCE
- HIGH INDUCTION
- ROUND NECK

### Model:

TWR Steel



Model TWR

Model Series TWR "Twister" Stamped Square Ceiling Diffuser is a high performance ceiling diffuser that is ideal for VAV applications. The name "Twister" is given to this diffuser because of its tight horizontal 360° swirl air pattern. The contemporary architectural radial vane design produces an unmatched high induction swirl pattern engineered to optimize occupant comfort by minimizing stratification over a wide range of air volumes. The "Twister's" superior coanda effect air pattern eliminates dumping and is ideal for VAV applications.

The diffuser features the popular 2' x 2' (600 x 600) module size and is available with frame/border styles to suit all ceiling systems. The round neck design includes a full 1 1/4" (32) high collar for an easy, secure connection.

### STANDARD FEATURES:

- Constructed from heavy gauge corrosion-resistant steel.
- Stamped face design allows for uniformity of the radial vanes.
- Superior coanda effect air pattern, eliminates dumping and is ideal for VAV applications.
- 24" x 24" (600 x 600) ceiling module size available with frame/border types to suit all ceiling systems.
- Engineered 'swirl' air diffusion pattern.

- Designed for 60 – 750 cfm; available in five neck sizes 6" – 14" (152 – 356).
- High neck collars for solid connection.
- Removable plug for screwdriver adjustment of the optional damper from below the face.

### CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

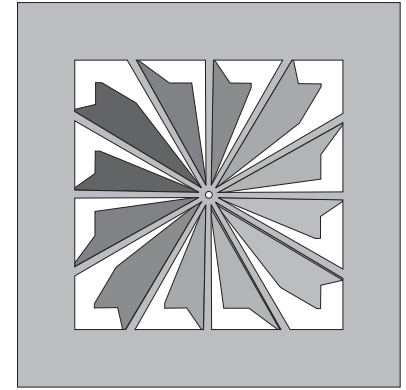
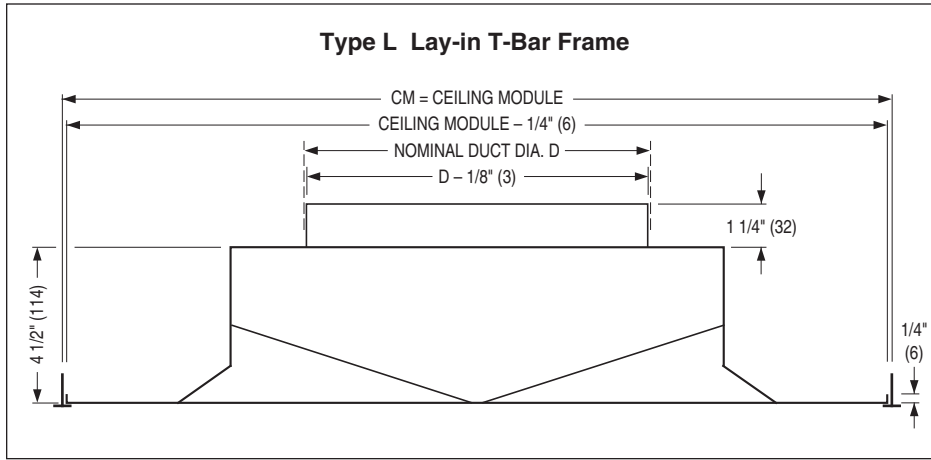
- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- 4675 Butterfly Damper 6" – 14" (152 – 356).

EQT Earthquake Tabs

For additional options and accessories; see page D255.

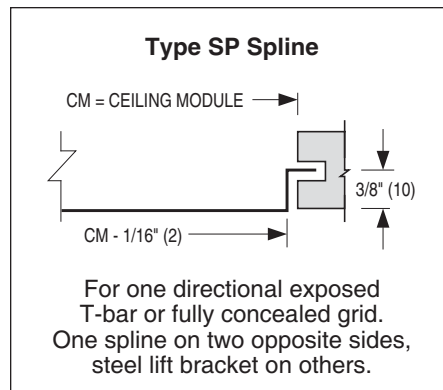
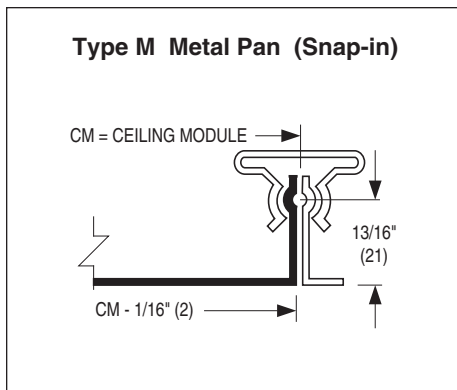
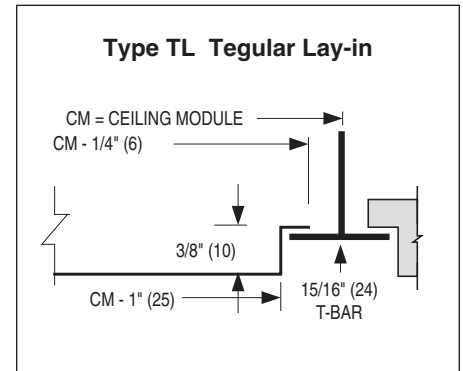
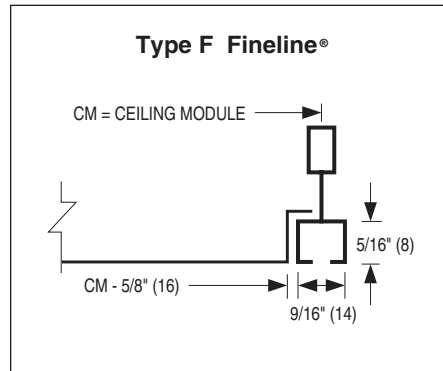
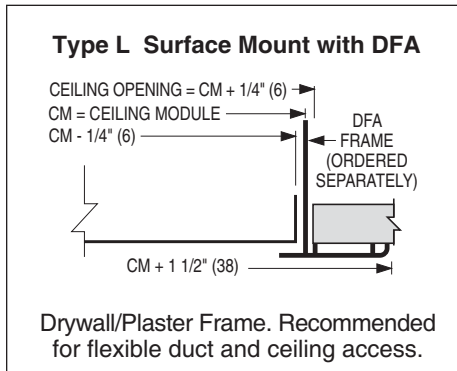
## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL TWR



**FACE VIEW**

D  
CEILING DIFFUSERS



### Dimensional Data

Ceiling Module CM		Nominal Duct Size D	
Imperial Modules (in.)	Metric Modules (mm)	Imperial Units (in.)	Metric Units (mm)
24 x 24	600 x 600	6, 8, 10, 12, 14	152, 203, 254, 305, 356



## PERFORMANCE DATA:

### Model "TWR" Twister • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.006	.011	.018	.025	.034	.044	.056	.069	.098	.133	.174
	Airflow, CFM	60	80	100	120	140	160	180	200	235	275	315
	Throw	1-1-2	1-1-2	1-2-3	1-2-4	1-2-5	2-3-6	2-3-7	2-3-8	3-4-9	3-6-10	3-7-11
	Noise Criteria	—	—	—	—	—	—	—	15	23	32	34
8" Dia.	Total Pressure	.011	.016	.026	.036	.049	.063	.080	.097	.144	.186	.250
	Airflow, CFM	105	140	175	210	245	280	315	350	420	490	560
	Throw	1-2-3	1-2-4	2-3-5	2-3-7	3-4-8	3-4-9	3-5-9	4-5-10	4-7-11	5-8-12	6-9-12
	Noise Criteria	—	—	—	—	—	—	16	22	28	34	37
10" Dia.	Total Pressure	.013	.023	.035	.050	.067	.087	.108	.132	.197	.244	.309
	Airflow, CFM	165	220	270	330	380	435	490	545	655	765	870
	Throw	2-3-6	2-3-7	3-4-8	3-5-8	4-6-9	4-6-10	5-6-11	5-7-13	6-7-14	7-8-15	8-11-16
	Noise Criteria	—	—	—	—	—	16	20	23	30	38	45
12" Dia.	Total Pressure	.017	.029	.043	.062	.084	.108	.134	.163	.251	.300	.377
	Airflow, CFM	235	315	390	470	550	630	705	785	990	1100	1255
	Throw	2-4-7	3-4-9	3-5-10	4-6-11	5-7-13	5-8-13	6-8-14	7-9-14	8-11-16	10-13-18	12-15-19
	Noise Criteria	—	—	—	—	16	20	24	27	34	40	47
14" Dia.	Total Pressure	.022	.033	.053	.073	.099	.125	.158	.192	.272	.367	.472
	Airflow, CFM	320	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	2-3-9	3-6-11	5-7-13	6-9-14	7-10-15	8-11-16	9-12-17	10-13-17	11-14-19	12-15-21	13-16-21
	Noise Criteria	—	—	16	22	25	27	32	34	39	44	47

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	24 x 24	0.181
8	24 x 24	0.264
10	24 x 24	0.330
12	24 x 24	0.458
14	24 x 24	0.521

## ARCHITECTURAL CEILING DIFFUSERS

- HIGH PERFORMANCE
- SQUARE FACE
- ROUND NECK

### Models:

- UNI Steel**  
**AUNI Aluminum**



Model UNI

Model Series 'UNI' Square Ceiling Air Diffuser has been specially designed to provide both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. The stamped one-piece outer cone eliminates mitered corners and the die-formed curves provide consistent quality and performance.

UNI diffuser complements any decor, blending beautifully with virtually any architectural style or requirement. The UNI diffuser provides stable diffusion and mixing patterns under constant and changing load conditions and is particularly suitable for variable air volume systems.

UNI diffusers are available to suit many situations including surface mount, T-Bar lay-in and panel applications. Standard finish is a high quality baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

### STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Removable inner core.
- Face panel is virtually flush with the ceiling line.
- Face panel is double-skinned for rigidity and strength and features a hemmed edge for a professional finish.
- Unique neck bracketry is virtually invisible from most angles.
- An optional radial opposed blade damper with an operating arm to adjust the damper without removing the core is available.

### CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel or aluminum with miscellaneous steel components.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

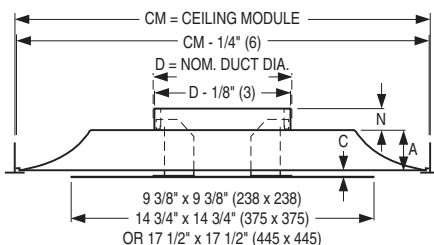
### OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper  
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper  
5" – 24" (127 – 610).
- 4675 Butterfly Damper  
6" – 14" (152 – 356).

- QB Quadrant Blanks for 1, 2 and 3-way blow. (See page D264).
- EX External Foil-Back Insulation (installed) -R-4.2.
- EXB External Foil-Back Insulation (loose) -R-4.2.
- MIB Molded Insulation Blanket R-6.0.
- EIC Extended Inlet Collar (2 1/4" [57] with bead (Model UNI only).
- EQT Earthquake Tabs
- RC Retaining Channel only
- RCCF Retaining Channel with Tile Cut and Fitted (see page D106).

For additional options and accessories; see page D255.

### Type L Lay-in, T-Bar Frame



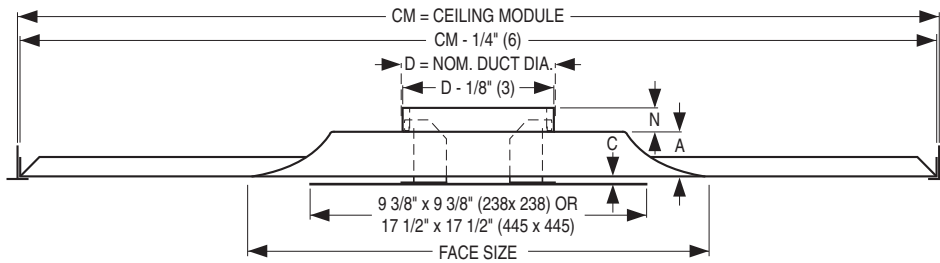
### Dimensional Data

Ceiling Module CM		Imperial Units (inches)						Metric Units (mm)					
Imperial Modules	Metric Modules	Duct Size D	N	A	B	C	F	Duct Size D	N	A	B	C	F
12 x 12	300 x 300	4*	3 1/4	1	11	5/8	13	102*	83	25	279	16	330
		5, 6, 7, 8	1 1/4					127, 152, 178, 203	32				
20 x 20	500 x 500	6, 8, 10	1 1/4	2 1/4	18 1/2	7/16	N/A	152, 203, 254	32	57	470	11	N/A
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	24 3/4	152, 203, 254, 305, 356, 381	32	59	559	10	629

\* Supplied with a reducer.

## DIMENSIONAL DATA AND FRAME TYPES: MODELS UNI AND AUNI

**Type PL  
Panel Mounted  
Lay-in T-Bar**

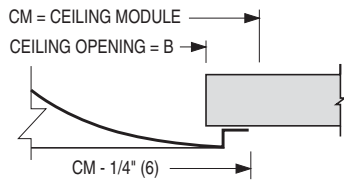


**Dimensional Data**

Ceiling Module CM		Imperial Units (inches)				Metric Units (mm)					
Imperial Modules	Metric Modules	Face Size	Duct Size D	N	A	C	Face Size	Duct Size D	N	A	C
20 x 20	500 x 500	12 x 12	4*	3 1/4	1	5/8	300 x 300	102*	83	25	16
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
24 x 12	600 x 300		4*	3 1/4				102*	83		
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
24 x 24	600 x 600		4*	3 1/4				102*	83		
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32		
30 x 30	750 x 750	24 x 24	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	3/8	600 x 600	152, 203, 254, 305, 356, 381	32	59	10
48 x 24	1200 x 600	24 x 24	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	3/8	600 x 600	152, 203, 254, 305, 356, 381	32	59	10

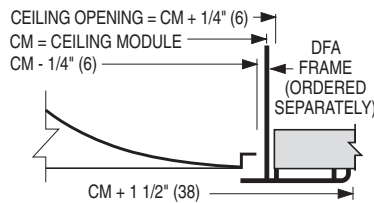
\* Supplied with a reducer.

**Type L Surface Mount**



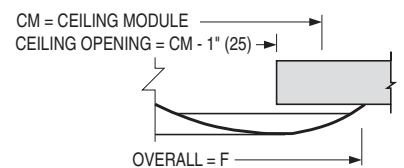
Hard duct connection recommended.

**Type L Surface Mount with DFA**



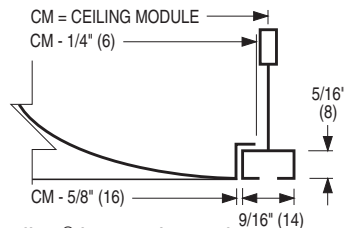
Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

**Type S Surface Mount**



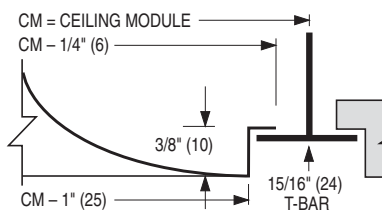
Aluminum model (AUNI) is only available in 12 x 12 (300 x 300) module for Type S. Hard duct connection recommended.

**Type F Fineline®**

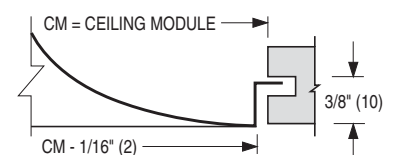


Fineline® is a registered trademark of USG Interiors Inc.

**Type TL Tegular Lay-in**

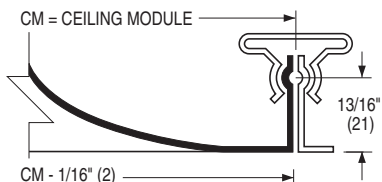


**Type SP Spline**



Steel models only. For one directional exposed T-Bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

**Type M Metal Pan (Snap-in)  
Steel models only**



**Directional Blow Option • QB Quadrant Blanks**

- Converts **UNI** from standard 4-way (360°) blow pattern to 1, 2 or 3-way.
- Supplied factory installed when specified or available loose for simple field installation.
- Installs between outer cone and face panel and locates between neck bracketry.
- Positive full depth blank-off follows neck circumference; see page D264.

**Blow Patterns**



## ARCHITECTURAL OPTION

**Model:**  
UNI with optional  
RC (retaining angle)



Model UNI-RC

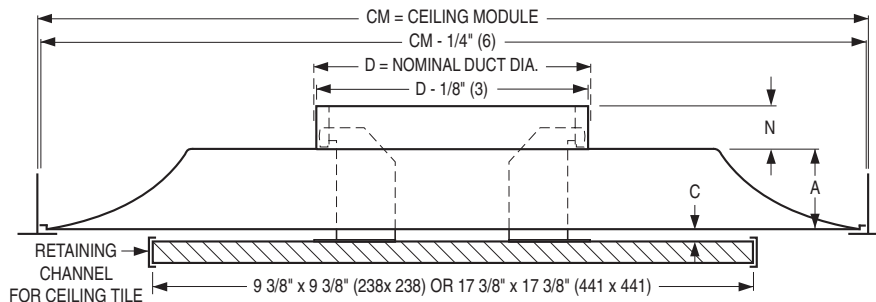
For a unique 'custom' appearance, specify the UNI diffuser with the optional RC Retaining Channel. The retaining channel is shipped separately for field installation of a ceiling tile. Simply cut the tile to size and install it directly on the face panel assembly.

The RC Retaining Channel is supplied in two pieces with pop rivets for field assembly as standard.

The result is a high performance diffuser that blends harmoniously with the specified architectural ceiling design.

Tiles (supplied by others) can also be factory installed at additional cost.

### \*Type L Lay-in T-Bar Frame



### Dimensional Data

Ceiling Module CM		Imperial Units (inches)						Metric Units (mm)					
Imperial Modules	Metric Modules	Duct Size D	N	A	B	C	F	Duct Size D	N	A	B	C	F
12 x 12	300 x 300	4*	3 1/4	1	11	5/8	13	102*	83	25	279	16	330
		5, 6, 7, 8	1 1/4					127, 152, 178, 203	32				
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	24 3/4	152, 203, 254, 305, 356, 381	32	59	559	10	629

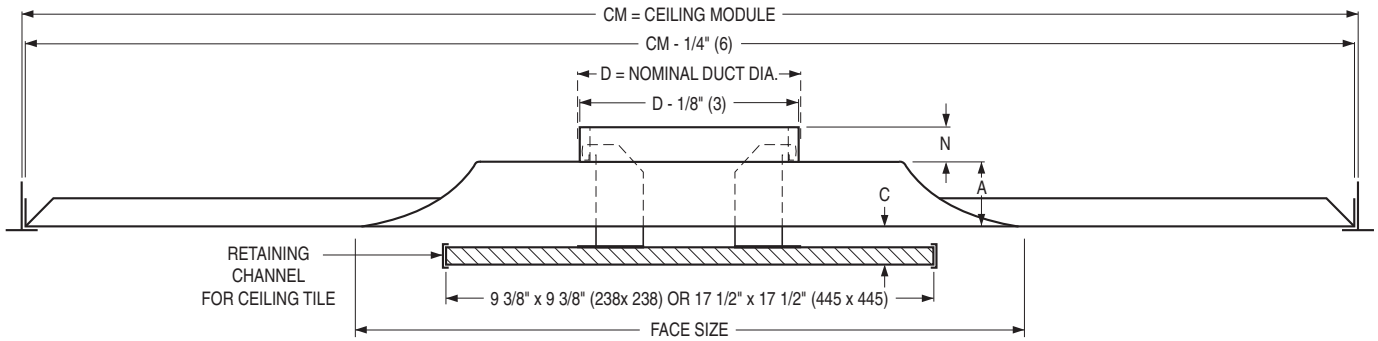
\* Supplied with a reducer.

\* Refer to previous page for other frame types and installations.

## DIMENSIONAL DATA AND FRAME TYPES:

### MODELS UNI WITH OPTIONAL RC & UNI TYPE PL

\*Type PL Panel Mounted, Lay-in T-Bar with RC Retaining Channel for Ceiling Tile



#### Dimensional Data

Ceiling Module CM		Imperial Units (inches)					Metric Units (mm)										
Imperial Modules	Metric Modules	Face Size	Duct Size D	N	A	C	Face Size	Duct Size D	N	A	C						
20 x 20	500 x 500	12 x 12	4*	3 1/4	1	1 3/8	300 x 300	102*	83	25	35						
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32								
24 x 12	600 x 300		4*	3 1/4				102*	83								
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32								
24 x 24	600 x 600		4*	3 1/4				102*	83								
			5, 6, 7, 8	1 1/4				127, 152, 178, 203	32								
30 x 30	750 x 750		24 x 24	6, 8, 10, 12, 14, 15				1 1/4	2 5/16			1 1/8	600 x 600	152, 203, 254, 305, 356, 381	32	59	29
48 x 24	1200 x 600			6, 8, 10, 12, 14, 15				152, 203, 254, 305, 356, 381									

\* Supplied with a reducer.

## PERFORMANCE DATA:

### Models UNI and AUNI • 12 x 12 (300 x 300) Face Size • 4-way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
4" Dia.	Total Pressure	.023	.036	.051	.070	.091	.115	.142	.205	.279	.364
	Airflow, CFM	35	45	50	60	70	80	85	105	120	140
	Throw	1-2-3	1-2-4	2-2-5	2-3-6	2-3-6	2-4-7	3-4-7	3-5-7	4-6-7	5-7-8
	Noise Criteria	—	—	—	13	17	21	24	30	35	40
5" Dia.	Total Pressure	.027	.043	.061	.083	.109	.138	.170	.245	.334	.436
	Airflow, CFM	55	70	80	95	110	125	135	165	190	220
	Throw	2-2-4	2-3-5	2-3-6	3-4-7	3-5-8	4-6-9	4-7-9	4-8-10	5-8-10	6-9-11
	Noise Criteria	—	—	—	14	18	22	25	31	36	41
6" Dia.	Total Pressure	.033	.052	.074	.101	.131	.166	.205	.295	.402	.525
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	2-3-5	3-4-6	3-5-7	4-5-8	5-6-9	5-7-10	5-8-10	6-9-11	7-10-12	7-10-13
	Noise Criteria	—	—	10	15	19	23	26	32	37	42
7" Dia.	Total Pressure	.056	.089	.127	.172	.225	.285	.352	.506	.689	.900
	Airflow, CFM	105	135	160	190	215	240	265	320	375	430
	Throw	3-4-6	3-5-7	4-6-9	4-7-10	5-8-10	6-8-11	6-9-12	7-10-13	8-11-14	9-12-15
	Noise Criteria	—	—	11	16	20	24	27	33	38	43
8" Dia.	Total Pressure	.067	.105	.160	.205	.268	.340	.418	.600	.821	1.070
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	3-5-7	4-6-9	5-7-10	6-8-11	6-9-12	7-9-13	7-10-14	8-11-15	9-12-16	9-12-17
	Noise Criteria	—	—	12	17	21	25	28	34	39	44

### Models UNI and AUNI • 20 x 20 (500 x 500) Face Size • 4-way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.014	.021	.031	.042	.055	.070	.086	.124	.168	.220
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-3-5	2-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	Noise Criteria	—	—	—	—	14	18	22	28	34	39
8" Dia.	Total Pressure	.019	.029	.042	.057	.074	.094	.116	.167	.227	.296
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	Noise Criteria	—	—	—	13	18	22	26	32	38	43
10" Dia.	Total Pressure	.031	.049	.071	.096	.126	.159	.196	.283	.385	.503
	Airflow, CFM	220	270	330	380	435	490	545	655	765	875
	Throw	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	6-8-12	7-9-14	8-11-15	10-12-17	11-13-18
	Noise Criteria	—	—	10	16	21	25	29	35	41	46

#### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- Return Applications:  
Use the following correction factors with the supply data.  
Noise Criteria = + 3 Noise Criteria (NC)  
Negative Static Pressure = Total Pressure x .45

- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.105
8	12 x 12	.129
6	24 x 24	.206
8	24 x 24	.248
10	24 x 24	.315
12	24 x 24	.384
14	24 x 24	.437
15	24 x 24	.485



## PERFORMANCE DATA:

### Models UNI and AUNI • 24 x 24 (600 x 600) Face Size • 4-way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.010	.020	.030	.041	.053	.068	.084	.120	.164	.214
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-3-4	1-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	Noise Criteria	—	—	—	—	14	18	22	28	34	39
8" Dia.	Total Pressure	.018	.028	.037	.056	.072	.092	.112	.162	.220	.288
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	Noise Criteria	—	—	—	13	18	22	26	32	38	43
10" Dia.	Total Pressure	.031	.048	.069	.093	.122	.155	.191	.275	.375	.489
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Throw	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	5-8-12	7-9-14	8-11-15	10-12-17	11-13-18
	Noise Criteria	—	—	10	16	21	25	29	35	41	46
12" Dia.	Total Pressure	.040	.063	.090	.123	.161	.203	.251	.361	.492	.643
	Airflow, CFM	315	390	470	550	630	705	785	940	1100	1255
	Throw	4-5-10	4-7-13	5-8-14	7-9-16	8-11-17	8-12-17	10-14-19	11-15-20	14-17-23	16-18-25
	Noise Criteria	—	—	13	19	24	28	32	38	44	49
14" Dia.	Total Pressure	.054	.083	.120	.163	.214	.270	.334	.481	.655	.855
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	5-7-14	6-9-16	7-11-18	10-13-20	11-15-23	11-17-23	14-19-26	16-21-28	19-22-31	20-24-33
	Noise Criteria	—	—	15	21	26	30	34	40	46	51
15" Dia.	Total Pressure	.065	.102	.147	.200	.260	.330	.408	.588	.799	1.044
	Airflow, CFM	490	615	735	860	985	1110	1230	1470	1720	1970
	Throw	6-9-17	7-11-19	9-13-21	11-16-24	14-19-26	14-20-27	16-21-30	19-24-33	23-26-35	23-27-38
	Noise Criteria	—	—	16	22	27	31	35	41	47	52

#### Performance Notes:

- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- Return Applications:  
Use the following correction factors with the supply data.  
Noise Criteria = + 3 Noise Criteria (NC)  
Negative Static Pressure = Total Pressure x .45

- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.105
8	12 x 12	.129
6	24 x 24	.206
8	24 x 24	.248
10	24 x 24	.315
12	24 x 24	.384
14	24 x 24	.437
15	24 x 24	.485

## PERFORMANCE DATA:

### Models UNI and AUNI • 12 x 12 (300 x 300) Face Size • 3-way Blow

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
6" Dia.	Total Pressure	.035	.061	.096	.138	.188	.245	.311	.383	.529	.725
	Airflow, CFM	60	80	100	120	140	160	180	200	235	275
	Throw	2-4-6	3-6-9	5-7-9	5-8-10	6-9-12	7-9-13	7-10-14	8-11-15	8-12-16	9-13-17
	Noise Criteria	—	—	12	18	23	27	31	34	40	45
8" Dia.	Total Pressure	.076	.135	.211	.304	.414	.540	.684	.844	1.215	1.654
	Airflow, CFM	105	140	175	210	245	280	315	350	420	490
	Throw	3-5-7	5-7-10	5-8-11	6-9-12	7-10-13	7-10-14	8-11-15	9-12-16	9-12-17	10-13-18
	Noise Criteria	—	—	14	20	25	29	33	36	42	47

### Models UNI and AUNI • 24 x 24 (600 x 600) Face Size • 3-Way Blow

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
6" Dia.	Total Pressure	.010	.018	.028	.041	.055	.072	.091	.113	.155	.213
	Airflow, CFM	60	80	100	120	140	160	180	200	235	275
	Throw	1-3-4	1-3-4	2-4-5	2-5-6	3-4-7	4-5-8	4-6-9	4-6-10	5-6-10	6-7-11
	Noise Criteria	—	—	—	11	17	22	26	30	36	42
8" Dia.	Total Pressure	.016	.028	.043	.062	.085	.111	.140	.173	.249	.339
	Airflow, CFM	105	140	175	210	245	280	315	350	420	490
	Throw	2-2-4	2-3-6	3-4-8	3-5-8	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13	9-11-14
	Noise Criteria	—	—	—	15	21	26	30	34	40	46
10" Dia.	Total Pressure	.032	.057	.085	.127	.169	.221	.281	.347	.501	.684
	Airflow, CFM	165	220	270	330	380	435	490	545	655	765
	Throw	3-4-7	3-5-9	4-6-10	5-7-11	5-8-12	7-10-13	8-11-15	9-12-16	11-13-18	12-14-19
	Noise Criteria	—	—	—	18	24	29	33	37	43	49
12" Dia.	Total Pressure	.043	.077	.118	.171	.235	.308	.386	.478	.686	.939
	Airflow, CFM	235	315	390	470	550	630	705	785	940	1100
	Throw	4-5-10	5-7-13	6-9-15	8-11-17	9-13-18	10-14-19	11-15-20	13-16-22	16-18-25	18-21-28
	Noise Criteria	—	—	12	21	27	32	36	40	46	52
14" Dia.	Total Pressure	.060	.106	.165	.237	.326	.425	.536	.661	.949	1.306
	Airflow, CFM	320	425	530	635	745	850	955	1060	1270	1490
	Throw	5-7-14	6-9-16	9-12-19	11-15-23	12-18-24	14-19-26	16-21-28	19-21-30	20-24-33	21-26-35
	Noise Criteria	—	—	14	23	29	34	38	42	48	54
15" Dia.	Total Pressure	.074	.130	.205	.293	.401	.526	.668	.820	1.172	1.604
	Airflow, CFM	370	490	615	735	860	985	1110	1230	1470	1720
	Throw	6-9-17	8-12-20	11-16-24	14-19-26	14-20-27	17-22-31	19-24-33	22-25-35	23-27-38	24-29-40
	Noise Criteria	—	—	15	24	30	35	39	43	49	55

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.  
 2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.  
 4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.079
8	12 x 12	.098
6	24 x 24	.155
8	24 x 24	.186
10	24 x 24	.236
12	24 x 24	.288
14	24 x 24	.328
15	24 x 24	.364

## PERFORMANCE DATA:

### Models UNI and AUNI • 12 x 12 (300 x 300) Face Size • 2-way Blow

Nominal Neck Size	Neck Velocity, FPM	200	300	400	500	600	700	800	900	1000	1200
	Velocity Pressure	.003	.006	.010	.016	.023	.031	.040	.051	.063	.090
6" Dia.	Total Pressure	.032	.071	.126	.198	.284	.387	.506	.640	.790	1.091
	Airflow, CFM	40	60	80	100	120	140	160	180	200	235
	Throw	2-4-6	4-6-9	5-8-10	6-9-12	7-9-13	8-11-15	8-12-16	9-12-17	9-13-18	10-13-19
	Noise Criteria	—	—	16	22	25	30	34	38	41	47
8" Dia.	Total Pressure	.074	.166	.294	.460	.662	.902	1.178	1.491	1.840	2.650
	Airflow, CFM	70	105	140	175	210	245	280	315	350	420
	Throw	3-5-7	5-7-10	6-9-12	7-10-14	8-11-15	9-12-16	9-12-17	10-12-18	10-13-19	11-14-20
	Noise Criteria	—	11	18	24	27	32	36	40	43	49

### Models UNI and AUNI • 24 x 24 (600 x 600) Face Size • 2-Way Blow

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
6" Dia.	Total Pressure	.007	.016	.028	.043	.063	.085	.111	.141	.174	.240
	Airflow, CFM	40	60	80	100	120	140	160	180	200	235
	Throw	1-3-4	2-4-5	2-5-6	3-4-7	4-6-9	4-6-10	5-6-10	6-7-11	6-8-12	7-9-13
	Noise Criteria	—	—	—	12	18	24	29	33	37	43
8" Dia.	Total Pressure	.013	.028	.050	.078	.113	.153	.200	.253	.313	.450
	Airflow, CFM	70	105	140	175	210	245	280	315	350	420
	Throw	2-2-4	2-3-7	3-5-9	5-7-9	6-8-11	7-9-12	8-10-13	9-11-14	10-12-15	11-13-17
	Noise Criteria	—	—	—	16	22	28	33	37	41	47
10" Dia.	Total Pressure	.029	.065	.115	.174	.259	.344	.451	.572	.707	1.022
	Airflow, CFM	110	165	220	270	330	380	435	490	545	655
	Throw	3-4-7	3-5-10	5-7-13	7-9-14	8-11-15	10-12-17	11-13-18	11-14-18	12-15-19	13-17-22
	Noise Criteria	—	—	12	19	25	31	36	41	44	50
12" Dia.	Total Pressure	.042	.09	.162	.248	.36	.493	.647	.811	1.005	1.441
	Airflow, CFM	160	235	315	390	470	550	630	705	785	940
	Throw	4-5-10	5-8-14	8-11-17	10-14-19	11-15-20	14-17-23	16-18-25	16-19-25	18-21-27	19-22-29
	Noise Criteria	—	—	15	22	28	34	39	43	47	53
14" Dia.	Total Pressure	.056	.130	.229	.356	.511	.704	.916	1.156	1.425	2.045
	Airflow, CFM	210	320	425	530	635	745	850	955	1060	1270
	Throw	5-7-14	7-11-18	11-15-23	14-19-26	16-21-28	19-22-31	20-24-33	20-26-33	23-28-36	25-30-38
	Noise Criteria	—	—	17	24	30	36	41	45	49	55
15" Dia.	Total Pressure	.071	.161	.283	.446	.637	.872	1.144	1.453	1.784	2.548
	Airflow, CFM	245	370	490	615	735	860	985	1110	1230	1470
	Throw	6-9-17	9-13-21	14-19-26	16-21-30	19-24-33	23-26-35	23-27-38	23-28-39	25-29-42	28-31-42
	Noise Criteria	—	10	18	25	31	37	42	46	50	56

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.053
8	12 x 12	.065
6	24 x 24	.103
8	24 x 24	.124
10	24 x 24	.158
12	24 x 24	.192
14	24 x 24	.219
15	24 x 24	.243

## ARCHITECTURAL CEILING DIFFUSERS

- HIGH PERFORMANCE
- SQUARE FACE
- ROUND NECK
- CORNER POSTS

### Model:

UNI2 Steel

AUNI2 Aluminum



Model UNI2

Model 'UNI2' Square Plaque Ceiling Air Diffuser has been specially designed to provide both the unobtrusive appearance required for architectural excellence and engineering performance. The diffuser delivers a tight 360° radial horizontal pattern allowing high turn down ratios with no dumping. The stamped one-piece outer cone eliminates mitered corners and the die-formed curves provide consistent quality and performance.

UNI2 diffusers complements any decor, blending beautifully with virtually any architectural style or requirement. The diffuser provides stable diffusion and mixing patterns under constant and changing load conditions and is particularly suitable for variable air volume systems.

UNI2 diffusers are available to suit multiple applications such as Lay-in T-Bar as well as surface mount where hard duct connection is required and Drywall/Plaster frame recommended for flexible duct connection and ceiling access. Standard finish is a high quality baked enamel for long life and easy cleaning. A variety of neck sizes are available to suit your system design. The collar is a full 1 1/4" (32) in height for easy, secure connection.

### STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Removable inner core.
- Face panel is virtually flush with the ceiling line.
- Face panel is double-skinned for rigidity and strength and features a hemmed edge for a professional finish.
- Hemmed edge mechanically captures the hanger brackets and the design eliminates welding, ensuring a clean, smooth and blemish free painted finish.

- Face panel is held in place by four hook corner posts that positively engage into slots in the back pan.
- Panel is removable from the backpan for diffuser installation and access to provide optional inlet damper.

### CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper  
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper  
5" – 24" (127 – 610).
- 4675 Butterfly Damper  
6" – 14" (152 – 356).
- QB Quadrant Blanks for 1, 2 and 3-way blow. (See page D265).
- EX External Foil-Back Insulation (installed) – R-4.2.
- EXB External Foil-Back Insulation (loose) – R-4.2.
- MIB Molded Insulation Blanket R-6.0.
- EIC Extended Inlet Collar (2 1/4" [57] with bead (Model UNI2 only).
- MRI 100% Aluminum Construction (MRI room compatible) (Model AUNI2 only).
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

## DIMENSIONAL DATA AND FRAME TYPES:

### MODELS UNI2 AND AUNI2

**Type L Lay-in T-Bar**

**Dimensional Data**

CM		Imperial Units (inches)					Metric Units (mm)				
Imperial Modules	Metric Modules	Duct Size D	N	A	B	C	Duct Size D	N	A	B	C
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	152, 203, 254, 305, 356, 381	32	59	559	10

**Type L Surface Mount**

Hard duct connection recommended.

**Type L Surface Mount with DFA**

Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

**Type F Finline®**

Finline® is a registered trademark of USG Interiors Inc.

## PERFORMANCE DATA:

### Models UNI2 and AUNI2 • 24 x 24 (600 x 600) Face Size • 4-Way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.010	.020	.030	.041	.053	.068	.084	.120	.164	.214
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Throw	1-3-4	1-3-4	2-4-5	2-4-6	2-5-6	3-4-7	3-5-8	4-6-9	4-6-10	5-6-10
	Noise Criteria	—	—	—	—	14	18	22	28	34	39
8" Dia.	Total Pressure	.018	.028	.037	.056	.072	.092	.112	.162	.220	.288
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Throw	2-2-4	2-3-5	2-3-7	3-4-8	3-5-9	4-6-9	5-7-10	6-8-11	7-9-12	8-10-13
	Noise Criteria	—	—	—	13	18	22	26	32	38	43
10" Dia.	Total Pressure	.031	.048	.069	.093	.122	.155	.191	.275	.375	.489
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Throw	3-4-7	3-5-9	3-5-10	4-6-12	5-7-13	5-8-13	7-9-14	8-11-15	10-12-17	11-13-18
	Noise Criteria	—	—	10	16	21	25	29	35	41	46
12" Dia.	Total Pressure	.040	.063	.090	.123	.161	.203	.251	.361	.492	.643
	Airflow, CFM	315	390	470	550	630	705	785	940	1100	1255
	Throw	4-5-10	4-7-13	5-8-14	7-9-16	8-11-17	8-12-17	10-14-19	11-15-20	14-17-23	16-18-25
	Noise Criteria	—	—	13	19	24	28	32	38	44	49
14" Dia.	Total Pressure	.054	.083	.120	.163	.214	.270	.334	.481	.655	.855
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	5-7-14	6-9-16	7-11-18	10-13-20	11-15-23	11-17-23	14-19-26	16-21-28	19-22-31	20-24-33
	Noise Criteria	—	—	15	21	26	30	34	40	46	51
15" Dia.	Total Pressure	.065	.102	.147	.200	.260	.330	.408	.588	.799	1.044
	Airflow, CFM	490	615	735	860	985	1110	1230	1470	1720	1970
	Throw	6-9-17	7-11-19	9-13-21	11-16-24	14-19-26	14-20-27	16-21-30	19-24-33	23-26-35	23-27-38
	Noise Criteria	—	—	16	22	27	31	35	41	47	52

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	24 x 24	.206
8	24 x 24	.248
10	24 x 24	.315
12	24 x 24	.384
14	24 x 24	.437
15	24 x 24	.485



## FIXED PERFORATED DOWNBLAST DIFFUSER

- ARCHITECTURAL
- HIGH PERFORMANCE
- THEATER APPLICATIONS
- SQUARE FACE
- ROUND NECK

### Models:

UNI-PD Steel



Model UNI-PD

Model 'UNI-PD' Fixed Perforated Downblast Square Ceiling Diffuser has been specially designed to provide both the unobtrusive appearance for architectural excellence and the high airflow at minimum NC levels needed in theater, auditorium and other high ceiling applications. A circular perforated aperture in the diffuser face provides both a horizontal and vertical apportion of the airflow. The horizontal portion provides a tight 360° ceiling diffusion pattern and the vertical portion provides a true and long downward projection. Model UNI-PD heavy duty ceiling diffusers are designed for effective heating and spot cooling applications where conditions and floor to ceiling heights are variable.

Designed to integrate with the popular lay-in type ceiling grid system, this diffuser offers simple installation and a highly economical alternative to the more expensive round spun downblast diffuser design.

### STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Fixed inner core.
- Suitable for theaters, auditoriums, factories, warehouses, convention halls, coliseums, shopping malls and other high ceiling applications.
- 360° horizontal discharge pattern.

- Heavy gauge face plate features a hemmed edge for a professional, clean finish. Perforated face has 3/8" (10) diameter holes on 5/8" (16) staggered centers.

### CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

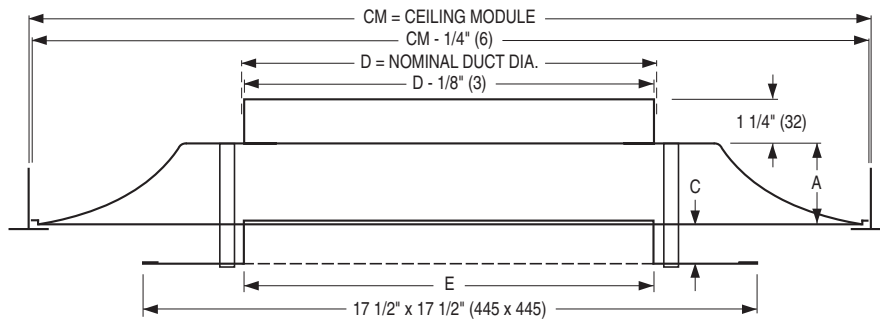
### OPTIONS & ACCESSORIES:

- EX External Foil-Back Insulation (installed) -R-4.2.
  - EXB External Foil-Back Insulation (loose) -R-4.2.
  - MIB Molded Insulation Blanket – R-6.0.
  - EQT Earthquake Tabs
- For additional options and accessories; see page D255.

## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL UNI-PD

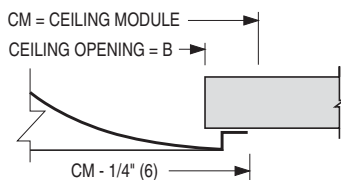
#### Type L Lay-in, T-Bar Frame



#### Dimensional Data

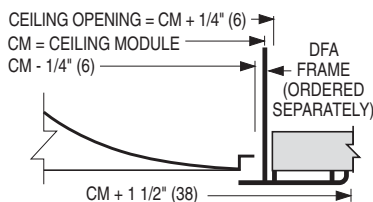
CM		Imperial Units (inches)						Metric Units (mm)					
Imperial Modules	Metric Modules	Duct Size D	E	A	B	C	F	Duct Size D	E	A	B	C	F
24 x 24	600 x 600	12, 14	11 1/4	2 5/16	22	1 3/16	24 3/4	305, 356	285	59	559	30	629

#### Type L Surface Mount



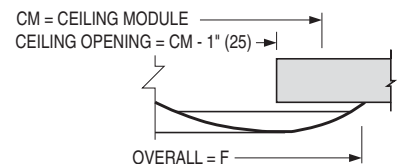
Hard duct connection recommended.

#### Type L Surface Mount with DFA

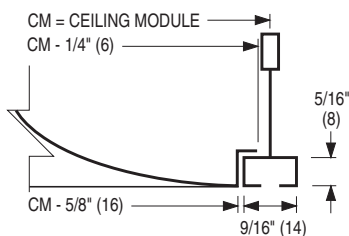


Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

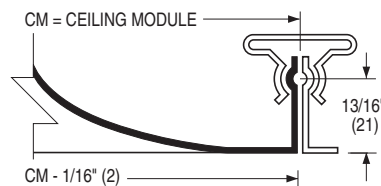
#### Type S Surface Mount



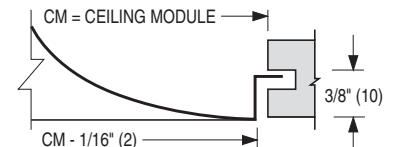
#### Type F Fineline®



#### Type M Metal Pan (Snap-in)



#### Type SP Spline



For one directional exposed T-Bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

## PERFORMANCE DATA:

### Models UNI-PD • 24 x 24 (600 x 600) Face Size • 4-way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
12" Dia.	Total Pressure	.018	.028	.041	.055	.072	.092	.113	.163	.221	.289
	Airflow, CFM	315	390	470	550	630	705	785	990	1100	1255
	Horizontal Throws, Ft. H	2-3-4	3-5-7	3-5-8	4-6-8	5-6-10	5-7-11	6-8-10	6-9-12	8-11-13	9-12-16
	Vertical Projections, Ft. V	6-9	8-10	8-10	9-12	10-13	12-14	15-17	16-18	17-19	20-21
	Noise Criteria	—	—	—	13	18	22	26	34	38	42
14" Dia.	Total Pressure	.023	.036	.051	.070	.092	.116	.143	.206	.280	.366
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Horizontal Throws, Ft. H	2-4-5	3-5-6	4-5-7	5-6-7	5-6-8	6-7-8	6-7-9	7-9-11	8-10-13	9-11-14
	Vertical Projections, Ft. V	8-11	9-12	9-13	10-14	11-15	12-16	13-17	15-19	17-21	19-23
	Noise Criteria	—	—	—	15	20	24	28	36	40	44

#### Performance Notes:

1. Horizontal throws are given at a terminal velocity of 150, 100 and 50 fpm under isothermal conditions.

Horizontal throws for non-isothermal air are determined by applying the following correction factors to the cataloged values:

$\Delta T$	Factor
- 20°F clg.	x 1.20
+ 20°F htg.	x 0.85

Vertical projections are given at a terminal velocity of 50 fpm. Minimum projections are for a 20°F heating temperature differential and maximum projections are for a 20°F cooling differential.

2. Horizontal/Vertical apportion of the airflow:

12" neck approximately 60/40%.

14" neck approximately 65/35%.

3. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## ADJUSTABLE DOWNBLAST DIFFUSER

- HIGH PERFORMANCE
- THEATER APPLICATIONS
- VERTICAL-TO-HORIZONTAL DISCHARGE PATTERNS
- SQUARE FACE
- ROUND NECK

### Models:

UNI-AD Steel



Model UNI-AD

Model 'UNI-AD' Adjustable Downblast Square Ceiling Diffuser has been specially designed to provide both the unobtrusive appearance for architectural excellence and the high airflow at minimum NC levels needed in theater, auditorium and other high ceiling applications. Radial vanes in the adjustable face damper permit air pattern adjustment from full horizontal to approximately 50/50 horizontal/vertical. Full adjustment requires only a half turn and is easily accomplished from the floor using the ring operator and a pole (by others).

Model UNI-AD heavy duty ceiling diffusers are designed for effective heating and spot cooling applications where conditions and floor to ceiling heights are variable. At the full vertical setting, they provide a true and long downward projection. At full horizontal setting, they produce the tight ceiling pattern that is required for excellent VAV performance.

Designed to integrate with the popular lay-in type ceiling grid system, this diffuser offers simple installation and a highly economical alternative to the more expensive round spun downblast diffuser design.

### STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- High neck collars for solid connection.
- Fixed inner core.
- Suitable for theaters, auditoriums, factories, warehouses, convention halls, coliseums, shopping malls and other high ceiling applications.
- 360° horizontal discharge pattern.
- 0 – 50% airflow vertical projection capability.

- Ring operator can be adjusted using a pole.
- Heavy gauge face plate features a hemmed edge for a professional, clean finish.

### CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- EX External Foil-Back Insulation (installed) -R-4.2.
  - EXB External Foil-Back Insulation (loose) -R-4.2.
  - MIB Molded Insulation Blanket R-6.0.
  - EQT Earthquake Tabs
- For additional options and accessories; see page D255.

## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL UNI-AD

**Type L Lay-in, T-Bar Frame**

CM = CEILING MODULE  
 CM - 1/4" (6)  
 D = NOMINAL DUCT DIA.  
 D - 1/8" (3)  
 1 1/4" (32)  
 ADJUSTABLE DOWNBLAST DAMPER  
 RING OPERATOR  
 1 1/4" (32)  
 E  
 17 1/2" x 17 1/2" (445 x 445)

**Dimensional Data**

CM		Imperial Units (inches)					Metric Units (mm)						
Imperial Modules	Metric Modules	Duct Size D	E	A	B	C	F	Duct Size D	E	A	B	C	F
24 x 24	600 x 600	12, 14	8, 10	2 5/16	22	1 3/16	24 3/4	305, 356	203, 254	59	559	30	629

**D**  
CEILING DIFFUSERS

**Type L Surface Mount**

CM = CEILING MODULE  
 CEILING OPENING = B  
 CM - 1/4" (6)

Hard duct connection recommended.

**Type L Surface Mount with DFA**

CEILING OPENING = CM + 1/4" (6)  
 CM = CEILING MODULE  
 CM - 1/4" (6)  
 DFA FRAME (ORDERED SEPARATELY)  
 CM + 1 1/2" (38)

Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

**Type S Surface Mount**

CM = CEILING MODULE  
 CEILING OPENING = CM - 1" (25)  
 OVERALL = F

**Type F Fineline®**

CM = CEILING MODULE  
 CM - 1/4" (6)  
 5/16" (8)  
 CM - 5/8" (16)  
 9/16" (14)

**Type M Metal Pan (Snap-in)**  
 Steel models only

CM = CEILING MODULE  
 CM - 1/16" (2)  
 13/16" (21)

**Type SP Spline**

CM = CEILING MODULE  
 CM - 1/16" (2)  
 3/8" (10)

For one directional exposed T-Bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

Fineline® is a registered trademark of USG Interiors Inc.

## PERFORMANCE DATA:

### Models UNI-AD • 24 x 24 (600 x 600) Face Size • 4-way Blow (360° Pattern)

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
12" Dia.	Total Pressure	.040	.063	.090	.123	.161	.203	.251	.361	.492	.643
	Airflow, CFM	315	390	470	550	630	705	785	940	1100	1255
	Horizontal Throws, Ft. H	5	7	8	9	11	12	14	15	17	18
	Vertical Projections, Ft. V	3-13	4-16	5-20	7-22	8-28	8-32	9-34	10-36	15-59	19-62
	Noise Criteria	—	—	13	16	21	25	29	35	41	46
14" Dia.	Total Pressure	.054	.083	.120	.163	.214	.270	.334	.481	.655	.855
	Airflow, CFM	425	530	635	745	850	955	1060	1270	1490	1695
	Horizontal Throws, Ft. H	7	9	11	13	15	17	19	21	22	24
	Vertical Projections, Ft. V	5-14	5-16	6-20	6-24	8-30	9-32	10-34	14-57	20-65	25-75
	Noise Criteria	—	—	14	18	23	27	30	37	43	48

#### Performance Notes:

1. Horizontal throws are given at a terminal velocity of 50 fpm and a 20°F cooling temperature differential.

Vertical projections are given at a terminal velocity of 50 fpm. Minimum projections are for a 40°F heating temperature differential and maximum projections are for a 20°F cooling differential.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Noise Criteria values shown are for the horizontal discharge pattern. For downblast (damper open), deduct 5. Dash (—) in space indicates a Noise Criteria of less than 10.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



## ARCHITECTURAL SQUARE CEILING DIFFUSERS

- HIGH PERFORMANCE
- ROUND PLAQUE FACE
- ROUND NECK

### Models:

UNI-RP Steel



Model UNI-RP

Model Series 'UNI-RP' Architectural Square Ceiling Diffusers have been designed to provide both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. The stamped one-piece outer cone eliminates mitered corners and the round inner face panel provide a clean appearance.

Model 'UNI-RP' diffusers offer an aesthetically pleasing design that suits virtually any architectural style or requirement. The 'UNI-RP' diffuser provides stable diffusion and mixing patterns under constant and changing load conditions and is particularly suitable for variable air volume systems.

'UNI-RP' diffusers are available to suit many applications including surface mount, lay-in T-Bar and panel types. A variety of neck sizes are available to suit various system designs. The collar is a full 1 1/4" (32) in height for easy, secure connection.

### STANDARD FEATURES:

- Engineered air diffusion patterns.
- Steel stamped shapes for uniformity.
- Round Plaque Face.
- High neck collars for solid connection.
- Round Neck.
- Removable inner core.
- Unique neck bracketry is virtually invisible from a normal viewing position.
- No visible corner posts for aesthetics.

- An optional radial opposed blade damper with an operating arm to adjust the damper without removing the core is available.

### CONSTRUCTION MATERIAL:

Heavy gauge, corrosion-resistant steel.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

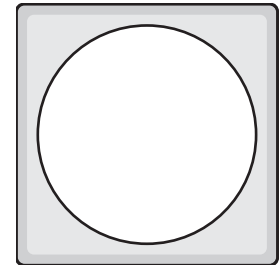
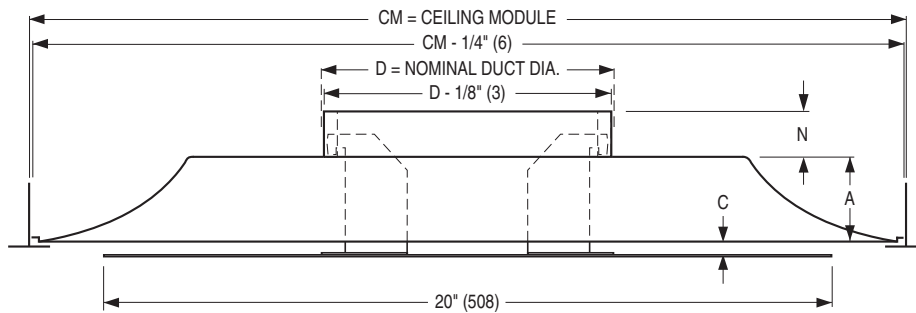
- 4250 Radial Sliding Blade Damper  
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper  
5" – 24" (127 – 610).
- 4675 Butterfly Damper  
6" – 14" (152 – 356).
- EX External Foil-Back Insulation  
(installed) -R-4.2.
- EXB External Foil-Back Insulation  
(loose) -R-4.2.
- MIB Molded Insulation Blanket - R-6.0.
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

## DIMENSIONAL DATA AND FRAME TYPES:

### MODELS UNI-RP

#### Type L Lay-in, T-Bar Frame

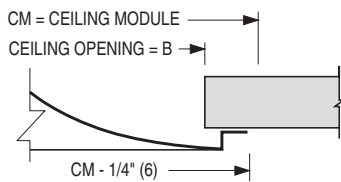


FACE VIEW

#### Dimensional Data

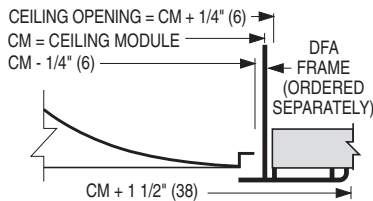
CM		Imperial Units (inches)						Metric Units (mm)					
Imperial Modules	Metric Modules	Duct Size D	N	A	B	C	F	Duct Size D	N	A	B	C	F
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	1 1/4	2 5/16	22	3/8	24 3/4	152, 203, 254, 305, 356, 381	32	59	559	10	629

#### Type L Surface Mount



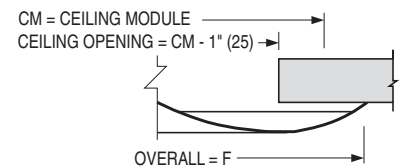
Hard duct connection recommended.

#### Type L Surface Mount with DFA

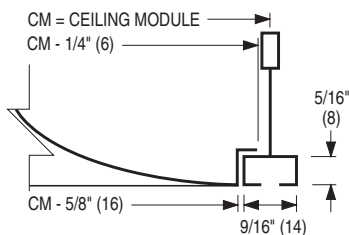


Drywall/Plaster Frame. Recommended for flexible duct and ceiling access.

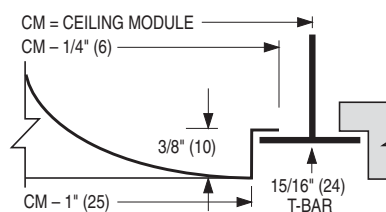
#### Type S Surface Mount



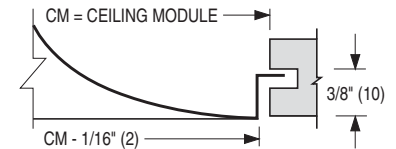
#### Type F Fineline®



#### Type TL Tegular Lay-in



#### Type SP Spline



For one directional exposed T-Bar or fully concealed grid. One spline on two opposite sides, steel lift bracket on others.

## PERFORMANCE DATA:

### Models UNI-RP • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200	1400
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.075	.090	.122
6" Dia.	Total Pressure	.019	.028	.040	.052	.067	.084	.102	.122	.147	.193
	Airflow, CFM	80	100	120	135	155	175	195	215	235	275
	Throw	1-1-4	1-2-5	2-2-5	2-3-5	2-3-6	2-3-7	2-4-7	3-4-7	3-5-8	4-6-8
	Noise Criteria	—	—	—	15	20	24	28	31	34	37
8" Dia.	Total Pressure	.023	.035	.047	.066	.085	.106	.132	.161	.190	.258
	Airflow, CFM	140	175	210	245	280	315	350	385	420	490
	Throw	2-3-7	2-4-7	3-4-8	3-5-9	4-6-9	4-6-10	5-7-11	5-8-11	6-8-12	7-10-13
	Noise Criteria	—	—	—	16	20	25	29	32	35	39
10" Dia.	Total Pressure	.030	.047	.066	.092	.120	.152	.186	.225	.267	.365
	Airflow, CFM	220	275	325	380	435	490	545	600	655	765
	Throw	3-4-9	3-5-10	4-6-11	5-7-12	5-8-13	6-8-14	6-9-15	7-10-15	8-11-16	9-13-17
	Noise Criteria	—	—	15	20	22	26	31	35	38	43
12" Dia.	Total Pressure	.045	.075	.103	.140	.184	.233	.283	.339	.411	.552
	Airflow, CFM	315	395	470	550	630	705	785	865	940	1100
	Throw	3-5-11	4-6-13	5-7-14	5-8-15	6-9-16	7-10-17	8-11-18	8-12-19	9-13-20	10-16-21
	Noise Criteria	—	19.000	22	25	30	35	38	42	45	51
14" Dia.	Total Pressure	.069	.111	.159	.211	.278	.352	.426	.516	.616	.842
	Airflow, CFM	430	535	640	750	855	960	1070	1175	1285	1495
	Throw	4-6-12	5-8-14	6-9-15	7-11-16	8-12-17	9-13-18	10-14-19	11-15-20	12-16-21	14-18-23
	Noise Criteria	15	21	24	30	35	39	42	46	49	56
15" Dia.	Total Pressure	.077	.134	.186	.260	.343	.436	.532	.646	.773	1.075
	Airflow, CFM	490	615	735	860	980	1105	1225	1350	1475	1720
	Throw	5-7-13	6-9-15	7-10-16	8-11-18	9-12-19	11-15-20	12-16-21	13-17-22	14-18-23	16-20-26
	Noise Criteria	17	23	26	32	38	41	45	48	51	60

#### Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## HOW TO ORDER

### STAMPED SQUARE CEILING DIFFUSERS

#### MODEL SERIES RNS, ARNS, UNI, AUNI AND TWR

EXAMPLE: RNS - 08 - 24 x 24 - L - AW - -

**1. Models**

**Louvered Face**

- RNS Steel, Fixed, 4 Cone
- RNS3 Steel, Fixed, 3 Cone
- RNS2 Steel, Fixed, 2 Cone
- RNSA1 Steel, Adjustable, Sliding Type
- RNSA2 Steel, Adjustable, Rotating Type

- ARNS Aluminum, Fixed
- ARNS3 Aluminum, Fixed, 3 Cone, Non-removable
- ARNSA Aluminum, Adjustable

**Architectural**

- UNI Steel, Concealed Bracketry
- UNI2 Steel, Corner Posts
- UNI-RP Steel, Round Plaque
- AUNI Aluminum, Concealed Bracketry
- AUNI2 Aluminum, Four Corner Posts

**Downblast**

- UNI-AD Adjustable
- UNI-PD Fixed, Perforated

**High Induction**

- TWR Twister

**2. Neck Size (inches)**

- 04, 05, 06, 07, 08, 10, 12, 14, 15

**3. Ceiling Module Size**

**Imperial (inches)**

- 12 x 12, 20 x 20, 24 x 12, 24 x 24 (default), 30 x 30, 48 x 24

**Metric (mm)**

- 300 x 300, 500 x 500, 600 x 300, 600 x 600, 750 x 750, 1200 x 600

**4. Frame Type**

- L Lay-in T-Bar/Surface Mount
- S Surface Mount
- PL Panel Lay-in T-Bar
- SP Spline
- M Metal Pan
- F Fineline®
- TL Tegular Lay-in

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime Coat Paint
- PPA Paint Prepared Aluminum
- SP Special Custom Color

**OPTIONS & ACCESSORIES:**

(Default is none unless noted otherwise)

**6. MRI Option (AUNI2 only)\***

- MRI MRI Compatible (100% Aluminum)

**7. Damper**

- 4250 Radial Sliding, 6" - 14"
- 4275 Radial Opposed Blade, 5" - 24"
- 4675 Butterfly, 6" - 14"

**8. Quadrant Blanks**

- QB3 3-way blow
- QB2 2-way opposite blow
- QC2 2-way corner blow
- QB1 1-way blow

**9. External Insulation**

- EX Foil-back (installed), R-4.2
- EXB Foil-back (loose), R-4.2
- MIB Molded Insulation Blanket R-6.0

**10. Extended Inlet Collar \*\***

- EIC Extended Inlet Collar (2.25") with bead

**11. Earthquake Tabs**

- EQT Earthquake Tabs

**OTHER OPTIONS & ACCESSORIES:**

**Ceiling Tile Option:**

- (UNI, AUNI only)
- RC Retaining Channel only
- RCCF Retaining Channel + Tile Cut & Fitted

**Air Balancing Devices**

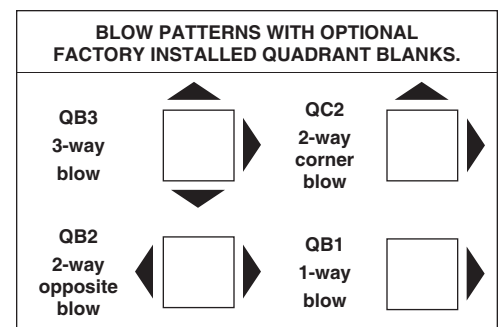
- (order separately)
- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

**Notes:**

1. Consult price pages as to limitations of module, frame type, neck size and accessories combinations.
2. Face size 20" x 20" (500 x 500) is available only in Frame Type L.
3. MIB Molded Insulation Blanket is not available on Models RNSA1, RNSA2, and ARNSA.
4. Butterfly damper (4675) is not compatible with Model RNSA.
5. PPA Finish is available on Aluminum models only.
6. \*Dampers are not available on Model AUNI2 when MRI option is selected.
7. \*\*Extended Inlet Collar is available for steel models RNS, RNS3, UNI and UNI2 only.

D  
CEILING DIFFUSERS

NOMINAL ROUND NECK (DUCT) SIZE	FACE SIZE	CEILING MODULE
4, 5, 6, 7, 8	12 x 12	12 x 12 20 x 20 24 x 12 24 x 24
6, 8, 10	20 x 20	20 x 20
6, 8, 10, 12, 14, 15	24 x 24	24 x 24 30 x 30 48 x 24



## HOW TO SPECIFY

### SUGGESTED SPECIFICATION:

#### RNS – Steel Construction

Furnish and install **Nailor Model RNS Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and have four concentric cones in all sizes, except the 20" x 20" (500 x 500) module size which will consist of three cones. The inner cone assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

#### ARNS – Aluminum Construction

Furnish and install **Nailor Model ARNS Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have four die-formed aluminum concentric cones in all sizes, except the 20" x 20" (500 x 500) module size which will consist of three cones. The inner cone assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

### SUGGESTED SPECIFICATION:

#### RNSA1, RNSA2 – Steel Construction

Furnish and install **Nailor Model (select one) RNSA1 or RNSA2 Adjustable Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and have four concentric cones in all sizes, except the 20" x 20" (500 x 500) module size which will consist of three cones. Model RNSA1 shall have an adjustable sliding type inner cone assembly that is securely retained by a spring loaded friction arrangement. Model RNSA2 shall have an adjustable rotating type inner cone assembly that is adjusted by rotating the center cone. The inner cone assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

#### ARNSA – Aluminum Construction

Furnish and install **Nailor Model ARNSA Adjustable Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have four die-formed aluminum concentric cones in all sizes, except the 20" x 20" (500 x 500) module size which will consist of three cones. The diffuser shall have an adjustable sliding type inner cone assembly that is securely retained by a spring loaded friction arrangement. The inner cone assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

## HOW TO SPECIFY

### SUGGESTED SPECIFICATION:

#### RNS3 and ARNS3 – Steel or Aluminum Construction

Furnish and install **Nailor Model** (select one) **RNS3** (steel) or **ARNS3** (aluminum) **Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model RNS3 shall be manufactured from corrosion-resistant steel and have three die-formed concentric cones in all sizes. Model ARNS3 shall be manufactured from aluminum with corrosion-resistant steel bracketry. The inner cone assembly is to be non-removable. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

### SUGGESTED SPECIFICATION:

#### RNS2 – Steel Construction

Furnish and install **Nailor Model RNS2 Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and incorporate two die-formed concentric cones. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

### SUGGESTED SPECIFICATION:

#### TWR 'Twister' – Steel Construction

Furnish and install **Nailor Model TWR 'Twister' Ceiling Swirl Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from heavy gauge corrosion-resistant steel. Radial induction vanes shall be one-piece stamped construction. The diffuser is to be sizes to suit a 24" x 24" (600 x 600) ceiling suspension system. The round duct connection collar shall be an integral part of the diffuser assembly and be not less than 1 1/4" (32) high. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

### SUGGESTED SPECIFICATION:

#### UNI – Steel Construction

Furnish and install **Nailor Model UNI Square Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a corrosion-resistant steel, stamped outer cone. The inner core shall have a plaque style face. The face shall be double skinned with a hemmed edge. The inner core assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

#### AUNI – Aluminum Construction

Furnish and install **Nailor Model AUNI Square Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge aluminum, stamped outer cone. The inner core shall have a plaque style face. The face shall be double skinned with a hemmed edge. The inner core assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.



## HOW TO SPECIFY

D  
CEILING DIFFUSERS

**SUGGESTED SPECIFICATION:**  
**UNI2 – Steel Construction**  
 Furnish and install **Nailor Model UNI2 Square Plaque Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be constructed of corrosion-resistant steel and have a stamped one-piece outer cone backpan. The inner core shall have a plaque style face. The face shall be double skinned with a hemmed edge. The face panel shall be held into place by four hook corner posts that positively engage into slots in the backpan. The panel is to be removable from the backpan, permitting quick, easy removal for diffuser installation and access to the optional inlet damper. The finish shall be AW Appliance White (optional finishes are available).  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

**SUGGESTED SPECIFICATION:**  
**AUNI2 – Aluminum Construction**  
 Furnish and install **Nailor Model AUNI2 Square Plaque Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be constructed of aluminum with corrosion-resistant steel bracketry and have a stamped one-piece outer cone backpan. The inner core shall have a plaque style face. The face shall be double skinned with a hemmed edge. The face panel shall be held into place by four hook corner posts that positively engage into slots in the backpan. The panel is to be removable from the backpan, permitting quick, easy removal for diffuser installation and access to the optional inlet damper. The finish shall be AW Appliance White (optional finishes are available).  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

**SUGGESTED SPECIFICATION:**  
**UNI-PD – Perforated Downblast**  
 Furnish and install **Nailor Model UNI-PD Square Perforated Downblast Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a stamped one-piece construction outer cone with an inner core that has a square face plate that includes perforated holes in a spherical pattern. The perforations shall be 3/8" (10) diameter holes on 5/8" (16) centers. The finish shall be AW Appliance White (optional finishes are available).  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

**SUGGESTED SPECIFICATION:**  
**UNI-AD – Adjustable Downblast**  
 Furnish and install **Nailor Model UNI-AD Square Adjustable Downblast Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a stamped one-piece construction outer cone with an inner core that has a square face plate and includes a round, easily adjustable radial vane in the center. The radial vane shall have a ring operator that allows for pole operation. The finish shall be AW Appliance White (optional finishes are available).  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

**SUGGESTED SPECIFICATION:**  
**UNI-RP – Steel Construction**  
 Furnish and install **Nailor Model UNI-RP Square Ceiling Diffuser with Round Plaque Face Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a stamped one-piece outer cone. The inner core shall have a round plaque style face. The inner core assembly is to be removable using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70-2006.

## ARCHITECTURAL CEILING TILE SLOT DIFFUSER

- 'ICE TONG' PATTERN CONTROLLERS
- SQUARE FACE
- ROUND NECK (SUPPLY)

### Models:

#### Supply

5075CTD 3/4" (19) Slot

5010CTD 1" (25) Slot

5075CTD-F 3/4" (19) Slot

5010CTD-F 1" (25) Slot

#### Return

5075RCTD 3/4" (19) Slot

5010RCTD 1" (25) Slot

5075RCTD-F 3/4" (19) Slot

5010RCTD-F 1" (25) Slot



Model 5075CTD

Model Series 5000CTD(-F) Series Diffusers have been designed with the architect in mind to provide an unobtrusive high performance ceiling diffuser that incorporates a center ceiling tile (by others) that matches the surrounding ceiling system. This product is available in a nominal size of 24" x 24" (600 x 600) to suit both imperial and metric exposed grid suspended ceiling systems. The 4-way blow linear slot design utilizes the 'ice-tong' premium quality pattern controller, providing a tight horizontal air pattern, which can accommodate high turn down ratios and is therefore eminently suitable for variable air volume systems.

### STANDARD FEATURES:

- Factory precision welding on all mitered corners.
- Pattern controllers are individually adjustable for each slot with 180° air pattern adjustment from horizontal to vertical providing volume control.
- Discharge patterns are fully field adjustable for 1-way, 2-way corner, 2-way opposite, 3-way or 4-way patterns.
- Designed for use with standard 15/16" (24) T-Bar and narrow 9/16" (14) flat T-Bar ceiling systems.

- Available in 1, 2, 3 or 4 slots.
- Choice of 3/4" (19) or 1" (25) slot width.
- Supply diffuser has a round neck for flexible duct connection.
- Matching return air unit is similar in design, but minus pattern controllers. For ductless plenum return applications, the 5000RCTD incorporates a light shield to block out light and prevent see-through.
- Plenum is secured with steel S-clips and is easily removable for installation of a field cut ceiling tile (by others) into the face of the diffuser.

### CONSTRUCTION MATERIAL:

Extruded aluminum frame, roll-formed steel pattern controllers and corrosion-resistant steel plenum.

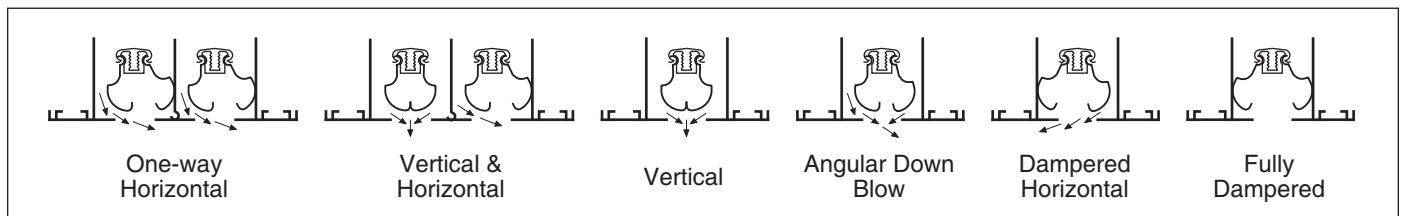
### FINISH OPTIONS:

AW Appliance White face with black pattern controllers. Other finishes are available.

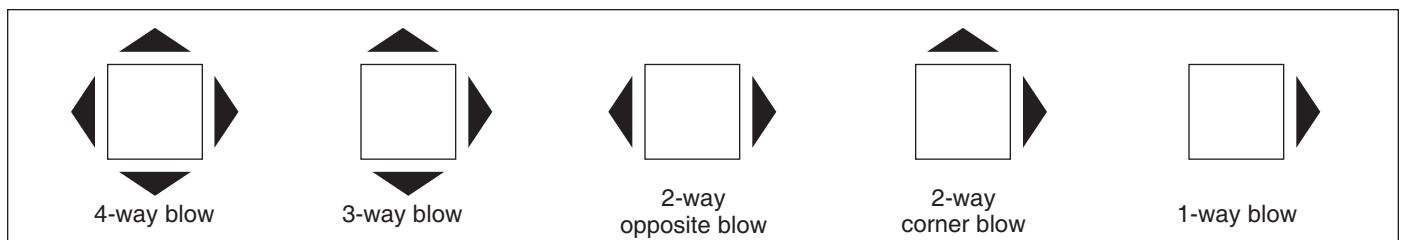
### OPTIONS & ACCESSORIES:

IN Internal Insulation (available with supply models only)

### 'Ice Tong' Pattern Controller Adjustment

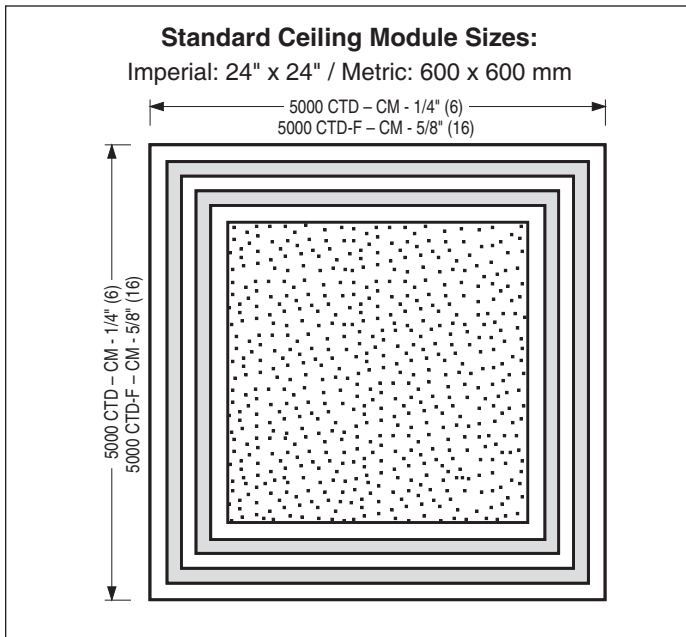


### Field Adjustable Discharge Pattern Options



## DIMENSIONAL DATA:

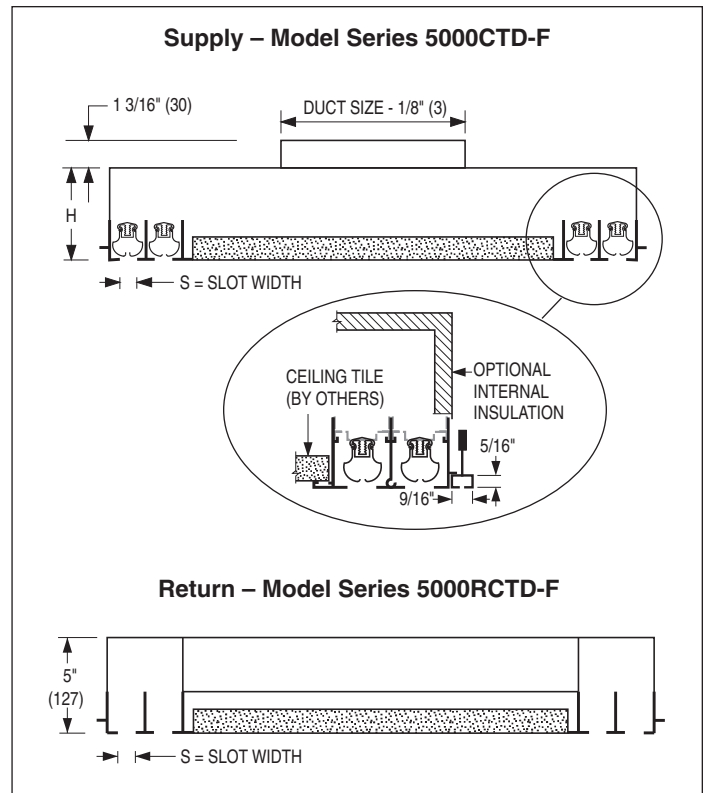
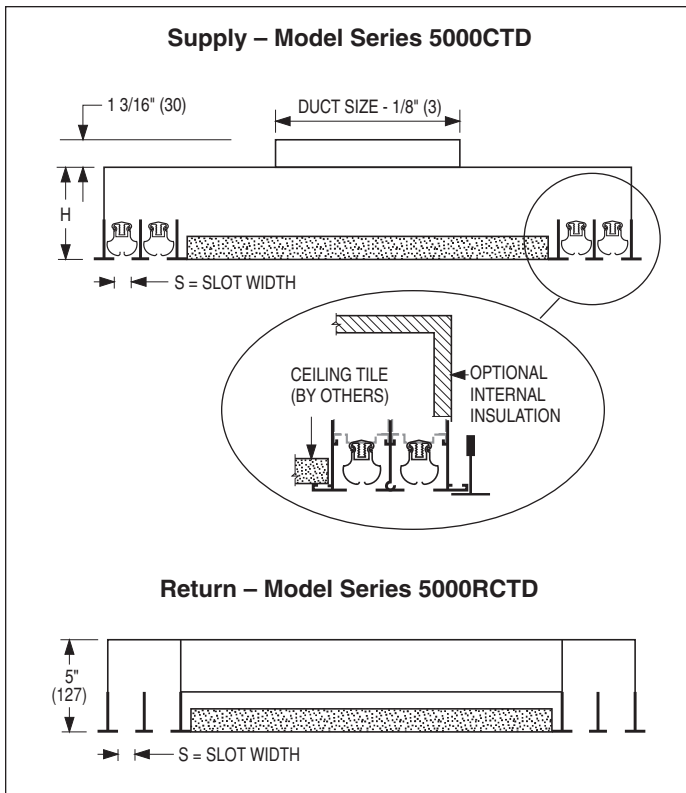
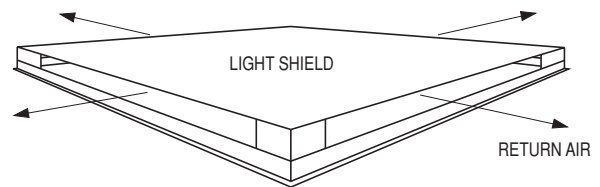
### Model Series 5000CTD, 5000RCTD, 5000CTD-F and 5000RCTD-F



### Standard Round Inlet Sizes:

Imperial: 6", 8", 10", 12" and 14" dia.

Metric: 152, 203, 254, 305 and 356 mm dia.



### 5000CTD Ceiling Tile Cutting Dimensions

No. of Slots	Imperial Units (inches)			Metric Units (mm)		
	Slot Width(s)		H	Slot Width(s)		H
	S = 3/4	S = 1		S = 19	S = 25	
1	19 1/2 x 19 1/2	19 x 19	5	495 x 495	483 x 483	127
2	16 1/2 x 16 1/2	15 1/2 x 15 1/2	5	419 x 419	394 x 394	127
3	13 1/2 x 13 1/2	12 x 12	6 3/4	343 x 343	305 x 305	171
4	10 1/2 x 10 1/2	8 1/2 x 8 1/2	6 3/4	267 x 267	216 x 216	171

### 5000CTD-F Ceiling Tile Cutting Dimensions

No. of Slots	Imperial Units (inches)			Metric Units (mm)		
	Slot Width(s)		H	Slot Width(s)		H
	S = 3/4	S = 1		S = 19	S = 25	
1	20 1/8 x 20 1/8	19 5/8 x 19 5/8	5	511 x 511	498 x 498	127
2	17 1/8 x 17 1/8	16 1/8 x 16 1/8	5	435 x 435	410 x 410	127
3	14 1/8 x 14 1/8	12 5/8 x 12 5/8	6 3/4	359 x 359	321 x 321	171
4	11 1/8 x 11 1/8	9 1/8 x 9 1/8	6 3/4	283 x 283	232 x 232	171

## PERFORMANCE DATA:

### Models 5075CTD, 5075CTD-F • 3/4" (19) Slot • Supply

Slot	Size	Neck Velocity, FPM	200	300	400	500	600	700	800	900
		Velocity Pressure	.002	.006	.010	.016	.022	.031	.040	.050
1 Slot	8" Neck Dia.	Airflow, CFM	70	105	140	175	210	245	280	315
		Total Pressure	.017	.039	.070	.109	.156	.213	.278	.351
		Throw	2-3-6	3-5-10	4-7-12	5-9-14	7-11-16	8-12-17	9-13-18	10-14-19
		Noise Criteria	—	12	22	28	32	36	40	43
2 Slot	8" Neck Dia.	Airflow, CFM	70	105	140	175	210	245	280	315
		Total Pressure	.008	.019	.033	.052	.075	.102	.134	.169
		Throw	1-2-5	2-3-7	3-5-10	4-6-13	5-7-14	6-9-15	7-11-17	8-12-18
		Noise Criteria	—	—	12	18	22	26	30	33
	10" Neck Dia.	Airflow, CFM	110	160	220	270	330	380	435	490
		Total Pressure	.017	.036	.068	.102	.153	.203	.266	.337
		Throw	2-4-8	3-6-11	5-8-14	6-10-16	8-13-18	9-15-20	10-16-21	11-17-22
		Noise Criteria	—	14	20	26	30	34	38	41
3 Slot	10" Neck Dia.	Airflow, CFM	110	160	220	270	330	380	435	490
		Total Pressure	.011	.024	.045	.068	.101	.136	.176	.224
		Throw	2-4-7	3-5-9	4-6-12	5-8-15	7-11-19	8-12-21	9-14-23	10-16-25
		Noise Criteria	—	11	17	23	27	31	35	38
	12" Neck Dia.	Airflow, CFM	155	235	315	390	470	550	630	705
		Total Pressure	.020	.045	.081	.125	.181	.248	.326	.408
		Throw	3-5-10	5-8-14	6-10-18	8-12-21	10-16-25	12-18-26	14-19-27	15-20-28
		Noise Criteria	13	20	26	32	36	40	44	47
4 Slot	12" Neck Dia.	Airflow, CFM	155	235	315	390	470	550	630	705
		Total Pressure	.015	.034	.062	.092	.138	.189	.248	.310
		Throw	3-4-9	4-6-13	6-9-17	8-11-20	8-13-22	9-16-23	12-18-25	13-19-26
		Noise Criteria	10	17	23	29	33	37	41	44
	14" Neck Dia.	Airflow, CFM	215	320	430	535	640	750	855	960
		Total Pressure	.027	.059	.106	.165	.236	.324	.420	.530
		Throw	4-6-12	6-9-18	8-12-21	10-15-23	12-18-25	14-20-27	16-21-29	17-22-31
		Noise Criteria	17	24	30	36	40	44	48	51

### Performance Notes:

- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions, using a 4-way pattern.
- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA:

### Models 5010CTD, 5010CTD-F • 1" (25) Slot • Supply

	Size	Neck Velocity, FPM	200	300	400	500	600	700	800	900
		Velocity Pressure	.002	.006	.010	.016	.022	.031	.040	.050
1 Slot	8" Neck Dia.	Airflow, CFM	70	105	140	175	210	245	280	315
		Total Pressure	.014	.031	.055	.087	.125	.170	.221	.280
		Throw	2-3-6	3-5-10	4-6-12	5-8-14	6-9-15	7-11-17	8-12-18	9-14-19
		Noise Criteria	—	11	18	24	28	32	36	39
	10" Neck Dia.	Airflow, CFM	110	160	220	270	330	380	435	490
		Total Pressure	.030	.064	.122	.184	.274	.364	.477	.605
		Throw	3-5-10	5-8-14	6-9-15	7-11-17	9-14-19	11-15-21	12-16-22	13-17-23
		Noise Criteria	—	21	28	34	38	42	46	49
2 Slot	8" Neck Dia.	Airflow, CFM	70	105	140	175	210	245	280	315
		Total Pressure	.007	.015	.027	.042	.060	.082	.106	.135
		Throw	1-2-4	2-3-6	3-4-9	3-5-11	4-6-13	4-7-15	5-9-16	7-11-19
		Noise Criteria	—	—	—	14	18	22	26	29
	10" Neck Dia.	Airflow, CFM	110	160	220	270	330	380	435	490
		Total Pressure	.013	.027	.051	.077	.115	.153	.200	.254
		Throw	2-3-7	3-5-11	4-7-13	5-9-16	7-11-19	8-14-22	9-15-23	10-16-25
		Noise Criteria	—	11	18	24	28	32	36	39
	12" Neck Dia.	Airflow, CFM	155	235	315	390	470	550	630	705
		Total Pressure	.023	.052	.094	.144	.210	.287	.377	.472
		Throw	3-5-11	5-8-15	7-11-19	8-14-21	10-16-23	12-18-25	14-18-26	15-19-28
		Noise Criteria	—	17	24	30	34	38	42	45
3 Slot	10" Neck Dia.	Airflow, CFM	110	160	220	270	330	380	435	490
		Total Pressure	.008	.018	.033	.050	.075	.099	.130	.165
		Throw	2-3-6	3-4-9	4-6-12	5-7-15	6-9-18	8-11-20	9-12-22	10-14-24
		Noise Criteria	—	—	14	20	24	28	32	35
	12" Neck Dia.	Airflow, CFM	155	235	315	390	470	550	630	705
		Total Pressure	.020	.032	.057	.088	.128	.175	.229	.287
		Throw	3-4-9	4-6-13	6-9-18	8-11-20	9-13-23	10-15-25	12-18-27	13-19-28
		Noise Criteria	—	15	21	27	31	35	39	42
4 Slot	12" Neck Dia.	Airflow, CFM	155	235	315	390	470	550	630	705
		Total Pressure	.010	.024	.042	.065	.094	.129	.170	.210
		Throw	2-4-8	4-5-11	5-8-15	7-10-20	8-12-21	9-14-23	11-15-25	12-17-27
		Noise Criteria	—	13	19	25	29	33	37	40
	14" Neck Dia.	Airflow, CFM	215	320	430	535	640	750	855	960
		Total Pressure	.017	.039	.070	.108	.154	.212	.275	.347
		Throw	3-5-10	5-8-15	7-10-21	9-14-23	11-16-25	13-18-28	15-19-30	17-20-32
		Noise Criteria	13	20	26	32	36	40	44	47

#### Performance Notes:

1. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions, using a 4-way pattern.

2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.

3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA:

### Models 5075RCTD, 5075RCTD-F • 3/4" (19) Slot • Return

No. of Slots	Negative Static Pressure	.006	.028	.065	.110	.170	.250	.350	.465
1	CFM	70	140	210	280	350	420	490	560
	Noise Criteria	—	—	16	24	30	35	39	43
2	CFM	130	260	390	520	650	780	910	1040
	Noise Criteria	—	—	19	27	33	38	42	46
3	CFM	180	360	540	720	900	1080	1260	1440
	Noise Criteria	—	10	21	29	35	40	44	48
4	CFM	220	440	660	880	1100	1320	1540	1760
	Noise Criteria	—	10	21	29	35	40	44	48

### Models 5010RCTD, 5010RCTD-F • 1" (25) Slot • Return

No. of Slots	Negative Static Pressure	.006	.028	.065	.110	.170	.250	.350	.465
1	CFM	140	210	280	350	420	490	560	700
	Noise Criteria	—	—	17	23	28	32	36	42
2	CFM	253	380	507	633	760	887	1013	1267
	Noise Criteria	—	12	20	26	31	35	39	45
3	CFM	340	510	680	850	1020	1190	1360	1700
	Noise Criteria	—	13	21	27	32	36	40	46
4	CFM	400	600	800	1000	1200	1400	1600	2000
	Noise Criteria	—	14	22	28	33	37	41	47

#### Performance Notes:

1. All pressures are in inches w.g..

2. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.

3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



## HOW TO ORDER OR TO SPECIFY

### ARCHITECTURAL CEILING TILE SLOT DIFFUSERS – MODEL SERIES 5000CTD

EXAMPLE: 5075CTD-F - 1 - 24 x 24 - AW - 08 - -

- |  |   |  |
|--|---|--|
| <p>1. <b>Models Supply</b></p> <p>5075CTD 3/4" (19)</p> <p>5010CTD 1" (25)</p> <p>5075CTD-F 3/4" (19) Fineline®</p> <p>5010CTD-F 1" (25) Fineline®</p> <p><b>Return</b></p> <p>5075RCTD 3/4" (19)</p> <p>5010RCTD 1" (25)</p> <p>5075RCTD-F 3/4" (19) Fineline®</p> <p>5010RCTD-F 1" (25) Fineline®</p> <p>2. <b>Slots</b></p> <p>1 thru 4</p> | <p>3. <b>Ceiling Module Size Imperial (inches)</b></p> <p>24 x 24</p> <p><b>Metric (mm)</b></p> <p>600 x 600</p> <p>4. <b>Finish</b></p> <p>AW Appliance White (default)</p> <p>AL Aluminum</p> <p>BK Black</p> <p>BW British White</p> <p>PC Prime Coat Paint</p> <p>SP Special Custom Color</p> | <p>5. <b>Inlet Size</b></p> <p>06 6" (152)</p> <p>08 8" (203)</p> <p>10 10" (254)</p> <p>12 12" (305)</p> <p>14 14" (356)</p> <p><b>OPTIONS &amp; ACCESSORIES:</b></p> <p>6. <b>Internal Insulation</b></p> <p>- None (default)</p> <p>IN Internal Insulation (available with supply models only)</p> <p><b>Notes:</b></p> <p>1. Inlet size specified on supply models only.</p> |
|--|---|--|

**SUGGESTED SPECIFICATION:**

**5075CTD, 5010CTD – Supply Air, Standard T-Bar**

Furnish and install **Nailor Model** (select one) **5075CTD** (3/4" (19) slot) or **Model 5010CTD** (1" (25) slot) **Ceiling Tile Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an extruded aluminum face, roll-formed steel pattern controllers, and a corrosion-resistant steel plenum. The outside face of the diffuser shall incorporate 1, 2, 3, or 4 (select the quantity) discharge air slots which integrate 'ice-tong' shaped adjustable pattern controllers. The center of the diffuser must accommodate a ceiling tile (provided by the installing contractor). The steel plenum shall be easily removable and include a round inlet collar that is not less than 1 3/16" (30) high. The diffuser shall fit a 24" x 24" (610 x 610) or 600 x 600 standard T-Bar ceiling system. (Optional) The diffuser shall have internal insulation. The finish shall be AW Appliance White finish. (Optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**5075RCTD, 5010RCTD – Return Air, Standard T-Bar**

Furnish and install **Nailor Model** (select one) **5075RCTD** (3/4" (19) slot) or **Model 5010RCTD** (1" (25) slot) **Ceiling Tile Slot Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an extruded aluminum face, and a corrosion-resistant steel plenum. The outside face of the diffuser shall incorporate 1, 2, 3, or 4 (select the quantity) return air slots to match the supply air diffuser of the same model. The center of the diffuser must accommodate a ceiling tile (provided by the installing contractor). The diffuser shall fit a 24" x 24" (610 x 610) or 600 x 600 standard T-Bar ceiling system. A removable light shield shall be factory installed on the rear of the diffuser. The finish shall be AW Appliance White finish. (Optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**5075CTD-F, 5010CTD-F – Supply Air, Narrow Regressed T-Bar**

Furnish and install **Nailor Model** (select one) **5075CTD-F** (3/4" (19) slot) or **Model 5010CTD-F** (1" (25) slot) **Ceiling Tile Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an extruded aluminum face, roll-formed steel pattern controllers, and a corrosion-resistant steel plenum. The outside face of the diffuser shall incorporate 1, 2, 3, or 4 (select the quantity) discharge air slots which integrate 'ice-tong' shaped adjustable pattern controllers. The center of the diffuser must accommodate a ceiling tile (provided by the installing contractor). The steel plenum shall be easily removable and include a round inlet collar that is not less than 1 3/16" (30) high. The diffuser shall fit a 24" x 24" (610 x 610) or 600 x 600 Narrow Regressed T-Bar ceiling system. (Optional) The diffuser shall have internal insulation. The finish shall be AW Appliance White finish. (Optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**5075RCTD-F, 5010RCTD-F – Return Air, Narrow Regressed T-Bar**

Furnish and install **Nailor Model** (select one) **5075RCTD-F** (3/4" (19) slot) or **Model 5010RCTD-F** (1" (25) slot) **Ceiling Tile Slot Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an extruded aluminum face, and a corrosion-resistant steel plenum. The outside face of the diffuser shall incorporate 1, 2, 3, or 4 (select the quantity) return air slots to match the supply air diffuser of the same model. The center of the diffuser must accommodate a ceiling tile (provided by the installing contractor). The diffuser shall fit a 24" x 24" (610 x 610) or 600 x 600 Narrow Regressed T-Bar ceiling system. A removable light shield shall be factory installed on the rear of the diffuser. The finish shall be AW Appliance White finish. (Optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## ARCHITECTURAL PLAQUE DIFFUSERS

- ADJUSTABLE OPENING
- SQUARE FACE
- SQUARE NECK



Model 6600

### Model:

6600 Steel

- Suffix '-O' adds a steel opposed blade damper

Model Series 6600 Ceiling Diffusers have been designed to satisfy both architectural and engineering criteria. The clean uncluttered face panel design complements any decor, blending beautifully with virtually any architectural style or requirement.

The face panel, which is located below the ceiling line, provides a horizontal discharge and a 360° diffusion pattern at minimum NC levels required for high engineering performance. This makes the 6600 Series ideally suitable for VAV systems. The face panel is adjustable by means of four spring-loaded countersunk screws located at the four corners of the panel which can be positioned to provide a 1/2" (13) to 1 1/4" (32) variable opening. This provides great flexibility, as the diffusers length of throw at any given air volume may be increased or decreased in order to adapt to field conditions.

The 6600 Series are designed for both surface mount and lay-in T-Bar applications with the addition of a ceiling module sized panel. The collar is a full 1 1/2" (38) in height for easy, secure duct connection.

### STANDARD FEATURES:

- Engineered air diffusion patterns.
- Square duct sizes are available in 3" (76) increments.

Minimum Size: 6" x 6" (152 x 152).

Maximum Size: 18" x 18" (457 x 457).

- High neck collar for secure connection.
- Face panel features a hemmed finish providing both strength and a professional, clean, safety edge.
- Roll-formed steel opposed blade damper available with a lever operator that permits volume control without removing face panel.

- Optional factory installed hinged air deflectors are available for 1, 2 or 3-way directional control.

### CONSTRUCTION MATERIAL:

Corrosion-resistant steel.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

EQT Earthquake Tab

SR Square to Round Transition Collars are available for round flexible duct connection. See page D257.

For additional options and accessories; see page D255.

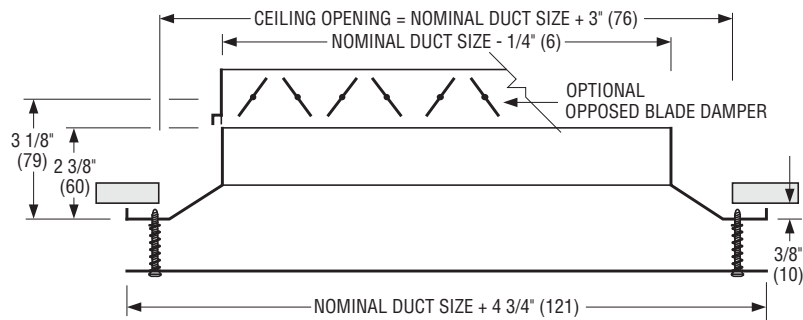
## DIMENSIONAL DATA AND FRAME TYPES:

### MODEL 6600

#### Type S Surface Mount

##### Available Duct Sizes

Inches	mm
6 x 6	152 x 152
9 x 9	229 x 229
12 x 12	305 x 305
15 x 15	381 x 381
18 x 18	457 x 457

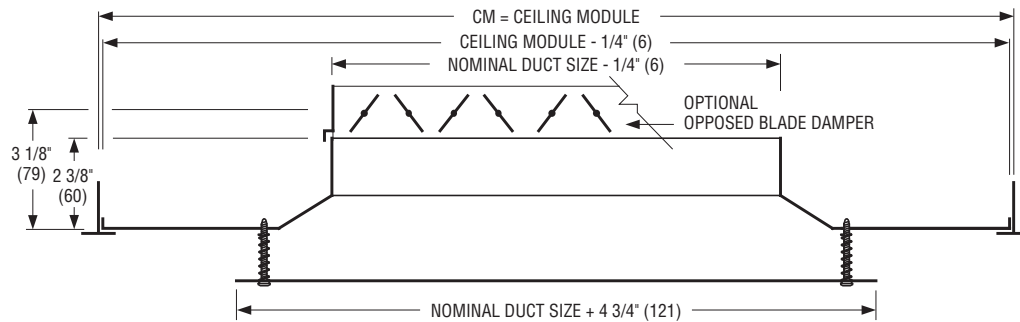


#### Type PL Panel Mounted Lay-in T-Bar

##### Available Sizes

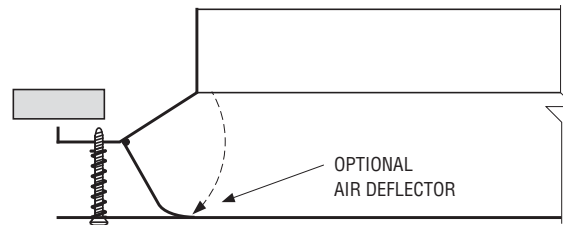
Ceiling Module Size		Duct Size			
Imperial (inches)	Metric (mm)	Minimum		Maximum	
		inches	mm	inches	mm
20 x 20	500 x 500	6 x 6	152 x 152	12 x 12	305 x 305
24 x 24	600 x 600	6 x 6	152 x 152	18 x 18	457 x 457

Duct sizes are available in 3" (76) increments.

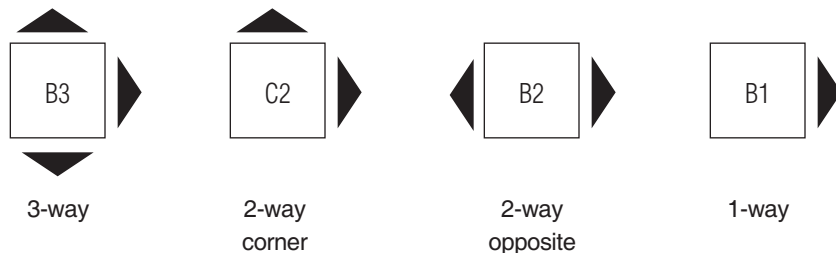


#### Directional Blow Option

- Factory installed.
- Hinged air deflector(s) for 1, 2 or 3-way blow pattern.
- Simple adjustment from face of diffuser provides field location flexibility.
- Deflector swings up or down from outer cone providing a full length blank-off.
- Finish to match diffuser.
- One, two or three deflectors are supplied and installed dependent upon blow pattern specified.



#### Blow Patterns



## PERFORMANCE DATA:

### MODEL 6600 • SQUARE NECK

Neck Size	Face Opening	Neck Velocity, FPM Velocity Pressure Airflow, CFM	160	240	320	400	600	800	1000	1200	1400
			.002 40	.004 60	.006 80	.010 100	.023 150	.040 200	.063 250	.090 300	.122 350
<b>6 x 6</b>	1 1/4"	Total Pressure				.03	.06	.10	.16	.23	.31
		Throw				1	3	5	6	7	9
		Noise Criteria				13	18	21	25	30	36
	1"	Total Pressure			.02	.03	.07	.11	.17	.26	.34
		Throw			2	2	4	6	7	8	10
		Noise Criteria			—	13	18	21	25	31	37
	3/4"	Total Pressure	.01	.01	.02	.03	.08	.13	.21	.30	.41
		Throw	2	2	3	3	5	7	8	9	10
		Noise Criteria	—	—	—	14	19	22	26	32	38
	1/2"	Total Pressure	.01	.02	.03	.05	.10	.18	.28	.41	.56
		Throw	3	3	4	4	6	8	9	10	11
		Noise Criteria	—	—	—	15	20	23	26	35	40

Neck Size	Face Opening	Neck Velocity, FPM Velocity Pressure Airflow, CFM	89	133	178	267	356	444	533	711	800
			.001 50	.001 75	.002 100	.004 150	.008 200	.012 250	.018 300	.031 400	.040 450
<b>9 x 9</b>	1 1/4"	Total Pressure				.01	.02	.04	.06	.10	.12
		Throw				2	3	5	6	8	9
		Noise Criteria				12	17	20	23	32	37
	1"	Total Pressure			.01	.02	.03	.05	.07	.12	.15
		Throw			2	4	5	6	7	10	11
		Noise Criteria			—	13	18	21	24	33	39
	3/4"	Total Pressure		.01	.01	.03	.04	.07	.10	.17	.21
		Throw		2	3	5	6	7	9	11	13
		Noise Criteria		—	—	14	19	22	25	35	40
	1/2"	Total Pressure	.01	.01	.02	.04	.07	.12	.17	.29	.37
		Throw	2	3	4	6	7	9	10	13	14
		Noise Criteria	—	—	—	15	20	23	26	37	42

Neck Size	Face Opening	Neck Velocity, FPM Velocity Pressure Airflow, CFM	50	100	150	200	250	300	400	500	600
			.001 50	.001 100	.002 150	.003 200	.004 250	.006 300	.010 400	.016 500	.023 550
<b>12 x 12</b>	1 1/4"	Total Pressure			.01	.01	.02	.03	.04	.07	.09
		Throw			3	4	6	7	9	12	13
		Noise Criteria			—	13	17	21	26	33	38
	1"	Total Pressure		.01	.01	.02	.03	.04	.06	.09	.12
		Throw		2	4	5	7	8	10	13	14
		Noise Criteria		—	—	13	17	21	26	34	38
	3/4"	Total Pressure		.01	.01	.03	.04	.06	.09	.15	.18
		Throw		3	5	6	7	9	11	14	15
		Noise Criteria		—	—	14	18	22	27	35	40
	1/2"	Total Pressure	.01	.01	.03	.05	.07	.10	.18	.28	.34
		Throw	2	4	6	7	8	10	12	15	17
		Noise Criteria	—	—	—	15	20	23	30	39	45

For performance notes, see D137.

**D**

**CEILING DIFFUSERS**

## PERFORMANCE DATA:

### MODEL 6600 • SQUARE NECK

Neck Size	Face Opening	Neck Velocity, FPM Velocity Pressure Airflow, CFM	32	64	96	128	192	256	320	384	448
			.001 50	.001 100	.001 150	.001 200	.002 300	.004 400	.006 500	.009 600	.013 700
15 X 15	1 1/4"	Total Pressure				.01	.01	.03	.05	.06	.09
		Throw				3	5	6	9	10	12
		Noise Criteria				—	18	22	27	33	39
	1"	Total Pressure			.01	.01	.02	.04	.06	.09	.12
		Throw			2	4	6	8	11	13	14
		Noise Criteria			—	13	19	23	28	35	42
	3/4"	Total Pressure		.01	.01	.02	.03	.07	.10	.14	.19
		Throw		2	4	5	8	10	13	15	17
		Noise Criteria		—	—	—	15	21	26	32	40
	1/2"	Total Pressure	.01	.01	.02	.03	.07	.13	.20	.28	.38
		Throw	2	3	5	6	9	12	15	18	21
		Noise Criteria	—	—	—	15	21	26	32	40	49

Neck Size	Face Opening	Neck Velocity, FPM Velocity Pressure Airflow, CFM	22	44	89	133	178	222	267	311	356
			.001 50	.001 100	.001 200	.001 300	.002 400	.003 500	.005 600	.006 700	.008 800
18 X 18	1 1/4"	Total Pressure			.01	.01	.02	.03	.05	.07	.08
		Throw			2	4	6	6	9	11	13
		Noise Criteria			—	14	20	23	28	33	40
	1"	Total Pressure			.01	.02	.03	.05	.07	.10	.13
		Throw			3	5	8	8	10	14	15
		Noise Criteria			—	14	20	24	29	35	43
	3/4"	Total Pressure	.01	.01	.01	.03	.05	.07	.12	.15	.20
		Throw	2	3	5	7	9	10	14	16	18
		Noise Criteria	—	—	—	15	21	25	31	37	46
	1/2"	Total Pressure	.01	.01	.02	.05	.10	.14	.22	.29	.38
		Throw	2	4	6	9	12	14	17	19	21
		Noise Criteria	—	—	10	16	22	27	33	40	50

#### Performance Notes:

- All pressures are in inches w.g..
- Throw values are given for a terminal velocity of 50 fpm under isothermal conditions.
- The addition of direction blow blank-offs reduces the effective area and for a given air volume, increases the discharge velocity with a resultant increase in throw, pressure drop and sound level. To determine throw, select the diffuser as if it were supplying a larger volume of air. The table shows the percentage increase required to determine diffuser airflow selection to determine throw.
- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Corrections to pressure drop and Noise Criteria level may be approximated by using correction factors as shown and applying them to the 4-way blow value listed in the performance tables.

Blow Pattern	% Increase in Air Volume for Throw Determination	TP Increase Correction Factor	NC Sound Level Add
3-way	35	x 1.5	+ 10
2-way	100	x 4.0	+ 15
1-way	400	x 8.0	+30

## HOW TO ORDER OR TO SPECIFY

### PLAQUE FACE DIFFUSERS – MODEL SERIES 6600

EXAMPLE: 6600 - O - 0909 - 24 x 24 - PL - AW - B4 - SR08 - -

- |  |  |
|--|--|
| <p>1a. <b>Model</b><br/>6600</p> <p>1b. <b>Damper</b><br/>(model suffix)<br/>– None<br/>–O Steel Opposed Blade Damper</p> <p>2. <b>Neck Size</b><br/>0606 6" x 6" (152 x 152)<br/>0909 9" x 9" (229 x 229)<br/>1212 12" x 12" (305 x 305)<br/>1515 15" x 15" (381 x 381)<br/>1818 18" x 18" (457 x 457)</p> <p>3. <b>Ceiling Module Size</b><br/>(Type PL only)<br/><b>Imperial (inches)</b><br/>20 x 20, 24 x 24<br/><b>Metric (mm)</b><br/>500 x 500, 600 x 600</p> <p>4. <b>Frame Type</b><br/>S Surface Mount Flat<br/>PL Panel Lay-in T-Bar</p> | <p>5. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>MI Mill<br/>PC Prime Coat Paint<br/>SP Special Custom Color</p> <p>6. <b>Blow Pattern</b><br/>B4 4-way (default)<br/>B3 3-way<br/>B2 2-way opposite<br/>C2 2-way corner<br/>B1 1-way</p> <p>7. <b>Transition Collar</b><br/>(Square to round)<br/>SR04 to SR18<br/>4" to 18" diameter</p> <p>8. <b>Earthquake Tabs</b><br/>– None (default)<br/>EQT Earthquake Tabs</p> |
|--|--|

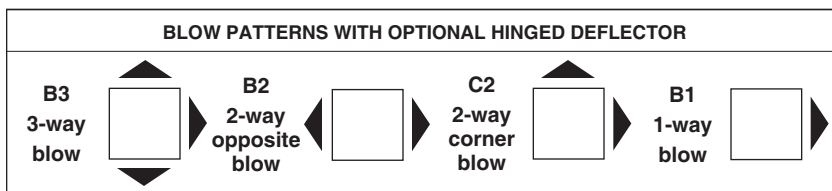
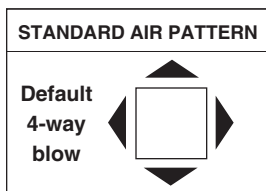
### OTHER OPTIONS & ACCESSORIES:

11. **Air Balancing Devices**  
(order separately)
- Rectangular Neck:**  
EGL Equalizing Grid (long)  
DEGL Damper/Equalizing Grid (long)
- Round Neck:**  
4250 Radial Sliding Blade Damper  
6" – 14" (152 – 356).  
4275 Radial Opposed Blade Damper  
5" – 24" (127 – 610).  
4675 Butterfly Damper  
6" – 14" (152 – 356).  
EGR Equalizing Grid  
DEGR Damper/Equalizing Grid

### Notes:

1. Consult price pages as to limitations of module, frame type, neck size and accessories combinations.

D  
CEILING DIFFUSERS



### SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 6600 Plaque Face Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a flat square face panel that can be positioned to provide an opening that is adjustable from 1/2" (13) to 1 1/4" (32). A high neck square duct connection collar shall be an integral part of the frame assembly. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel and operable from the face of the diffuser, shall be provided with all units.

(Optional) The diffuser shall incorporate factory installed hinged air deflector(s) that will provide a 1-way, 2-way corner, 2-way opposite or 3-way throw pattern (specifier to select a pattern).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



## ARCHITECTURAL SLOT PLAQUE DIFFUSER

- PERIMETER SLOT
- PLAQUE CENTER
- ROUND NECK

**Model:**  
**66UNI Steel**



Model 66UNI

Model Series 66UNI Plaque Diffuser with Perimeter Slots has been specially designed to provide an unobtrusive appearance required for architectural excellence. A plaque face that sits flush in the center of the diffuser is surrounded by a choice of 1, 2 or 3 perimeter slots. This diffuser is designed specifically to integrate with 2' x 2' (610 x 610) ceiling module suspension systems.

The 66UNI provides a tight horizontal air pattern from maximum to minimum airflow and is ideal for VAV applications. The diffuser is provided with a deep plenum backpan to provide optimum performance by minimizing pressure drop and noise.

### STANDARD FEATURES:

- Clean lines with no unsightly visible screws.
- 24" x 24" (610 x 610) ceiling module size.
- Available with a choice of 1, 2, or 3 perimeter slots.
- Deep plenum backpan for premium performance.
- Spring loaded core. Removable without the use of tools.

- High neck collar for secure connection.

### CONSTRUCTION MATERIAL:

Corrosion-resistant steel.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

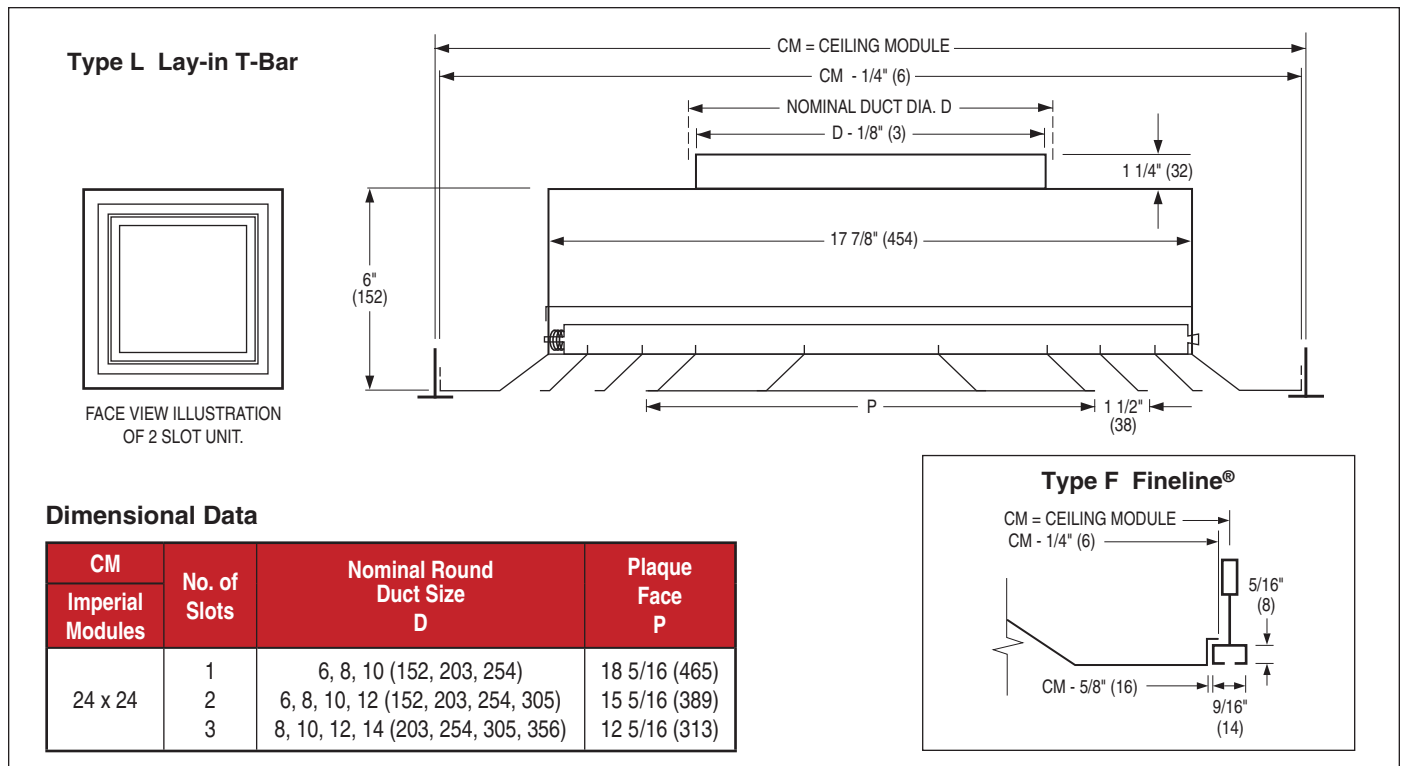
### OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper  
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper  
5" – 24" (127 – 610).
- 4675 Butterfly Damper  
6" – 14" (152 – 356).
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

D

CEILING DIFFUSERS



## PERFORMANCE DATA:

### MODEL 66UNI • 24 x 24 (610 x 610) CEILING MODULE • IMPERIAL UNITS

#### 1 Slot

<b>6" Dia. Neck</b>	Airflow, CFM	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>175</b>	<b>195</b>	<b>235</b>	<b>275</b>
	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400
	Total Pressure	.021	.033	.048	.066	.086	.108	.133	.192	.261
	Static Pressure	.011	.017	.026	.035	.046	.058	.071	.102	.139
	Throw, ft.	2-3-5	2-3-7	3-4-7	3-5-8	4-5-10	4-6-12	4-7-13	5-8-14	6-8-14
	Noise Criteria	—	—	17	21	25	28	31	35	40
<b>8" Dia. Neck</b>	Airflow, CFM	<b>140</b>	<b>165</b>	<b>190</b>	<b>220</b>	<b>245</b>	<b>270</b>	<b>295</b>	<b>325</b>	<b>350</b>
	Neck Velocity, FPM	400	475	550	625	700	775	850	925	1000
	Total Pressure	.026	.036	.048	.063	.079	.097	.117	.139	.162
	Static Pressure	.016	.022	.029	.039	.048	.060	.072	.086	.100
	Throw, ft.	3-5-8	4-5-10	4-6-12	5-6-13	5-7-13	5-8-14	6-9-14	6-10-15	7-11-15
	Noise Criteria	—	18	22	25	28	31	33	36	38
<b>10" Dia. Neck</b>	Airflow, CFM	<b>110</b>	<b>150</b>	<b>190</b>	<b>230</b>	<b>275</b>	<b>315</b>	<b>355</b>	<b>395</b>	<b>455</b>
	Neck Velocity, FPM	200	275	350	425	500	575	650	725	800
	Total Pressure	.008	.014	.023	.034	.047	.062	.080	.099	.121
	Static Pressure	.006	.009	.015	.023	.031	.041	.054	.066	.081
	Throw, ft.	2-4-6	3-5-9	4-5-12	5-7-13	5-8-14	6-10-14	7-11-15	8-12-16	9-13-17
	Noise Criteria	—	—	16	21	25	29	32	35	37

#### 2 Slot

<b>6" Dia. Neck</b>	Airflow, CFM	<b>60</b>	<b>95</b>	<b>130</b>	<b>165</b>	<b>195</b>	<b>230</b>	<b>265</b>	<b>300</b>	<b>335</b>
	Neck Velocity, FPM	300	475	650	825	1000	1175	1350	1525	1700
	Total Pressure	.010	.024	.045	.072	.105	.146	.193	.246	.305
	Static Pressure	.004	.010	.019	.030	.043	.060	.079	.101	.125
	Throw, ft.	0-1-3	1-2-4	2-3-5	2-4-7	3-5-8	4-5-10	4-5-12	5-6-13	5-7-14
	Noise Criteria	—	—	—	17	22	26	30	33	36
<b>8" Dia. Neck</b>	Airflow, CFM	<b>140</b>	<b>190</b>	<b>245</b>	<b>295</b>	<b>350</b>	<b>400</b>	<b>455</b>	<b>505</b>	<b>560</b>
	Neck Velocity, FPM	400	550	700	850	1000	1150	1300	1450	1600
	Total Pressure	.021	.039	.063	.092	.128	.169	.217	.269	.328
	Static Pressure	.011	.020	.032	.047	.066	.087	.112	.138	.168
	Throw, ft.	2-3-6	3-5-8	4-5-11	5-6-13	5-7-15	5-9-16	6-10-18	7-11-19	8-12-20
	Noise Criteria	—	—	20	25	29	33	36	39	42
<b>10" Dia. Neck</b>	Airflow, CFM	<b>220</b>	<b>275</b>	<b>325</b>	<b>380</b>	<b>435</b>	<b>490</b>	<b>545</b>	<b>600</b>	<b>655</b>
	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200
	Total Pressure	.024	.037	.053	.073	.095	.121	.149	.180	.214
	Static Pressure	.014	.021	.031	.042	.055	.071	.087	.105	.124
	Throw, ft.	3-5-9	4-6-12	5-7-14	5-8-16	6-9-17	7-11-18	8-12-19	9-13-21	9-14-22
	Noise Criteria	—	16	21	25	29	32	35	37	40
<b>12" Dia. Neck</b>	Airflow, CFM	<b>235</b>	<b>315</b>	<b>395</b>	<b>470</b>	<b>550</b>	<b>630</b>	<b>705</b>	<b>785</b>	<b>865</b>
	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1100
	Total Pressure	.015	.027	.042	.061	.083	.107	.136	.168	.203
	Static Pressure	.009	.017	.026	.039	.052	.067	.086	.106	.128
	Throw, ft.	4-5-10	5-7-14	5-8-16	7-10-18	8-12-20	9-14-21	10-15-22	12-16-23	13-17-24
	Noise Criteria	—	15	21	26	30	33	36	39	42

#### Performance Notes:

- All pressures are in inches w.g..
- Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
- Noise Criteria (NC) values are based on 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in spaces indicates a Noise Criteria level of less than 15.

- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## PERFORMANCE DATA:

### MODEL 66UNI • 24 x 24 (610 x 610) CEILING MODULE • IMPERIAL UNITS

#### 3 Slot

<b>8" Dia. Neck</b>	Airflow, CFM	<b>105</b>	<b>165</b>	<b>225</b>	<b>290</b>	<b>350</b>	<b>410</b>	<b>470</b>	<b>530</b>	<b>595</b>
	Neck Velocity, FPM	300	475	650	825	1000	1175	1350	1525	1700
	Total Pressure	.010	.024	.045	.072	.106	.146	.192	.245	.304
	Static Pressure	.004	.010	.018	.030	.043	.060	.078	.100	.124
	Throw, ft.	2-3-4	3-4-6	3-6-9	4-8-11	5-9-13	6-11-16	7-13-18	8-14-20	9-16-23
	Noise Criteria	—	—	18	22	25	28	32	35	38
<b>10" Dia. Neck</b>	Airflow, CFM	<b>165</b>	<b>230</b>	<b>300</b>	<b>370</b>	<b>435</b>	<b>505</b>	<b>575</b>	<b>640</b>	<b>710</b>
	Neck Velocity, FPM	300	425	550	675	800	925	1050	1175	1300
	Total Pressure	.010	.021	.035	.052	.074	.099	.127	.159	.195
	Static Pressure	.005	.010	.016	.024	.034	.045	.058	.073	.090
	Throw, ft.	3-5-7	4-7-10	5-8-12	6-10-14	6-11-16	7-13-18	8-14-20	9-15-22	9-16-24
	Noise Criteria	—	—	18	24	27	30	33	36	39
<b>12" Dia. Neck</b>	Airflow, CFM	<b>235</b>	<b>315</b>	<b>395</b>	<b>470</b>	<b>550</b>	<b>630</b>	<b>705</b>	<b>785</b>	<b>865</b>
	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1100
	Total Pressure	.012	.021	.034	.048	.066	.086	.110	.136	.164
	Static Pressure	.006	.011	.018	.026	.036	.047	.059	.073	.089
	Throw, ft.	4-7-10	5-9-12	6-10-15	7-12-17	8-13-19	8-15-21	9-16-23	10-17-25	11-19-27
	Noise Criteria	—	16	20	25	28	30	33	35	37
<b>14" Dia. Neck</b>	Airflow, CFM	<b>320</b>	<b>430</b>	<b>535</b>	<b>640</b>	<b>750</b>	<b>855</b>	<b>960</b>	<b>1070</b>	<b>1175</b>
	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1100
	Total Pressure	.013	.023	.037	.053	.072	.094	.119	.148	.179
	Static Pressure	.007	.013	.021	.030	.041	.054	.069	.085	.104
	Throw, ft.	5-8-12	6-10-15	7-12-17	8-14-20	9-16-23	10-17-25	11-19-27	12-21-30	13-22-32
	Noise Criteria	—	—	20	28	31	33	36	39	41

#### Performance Notes:

- All pressures are in inches w.g..
- Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.
- Noise Criteria (NC) values are based on 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in spaces indicates a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## HOW TO ORDER OR TO SPECIFY

### ARCHITECTURAL SLOT PLAQUE DIFFUSERS – MODEL SERIES 66UNI

EXAMPLE: 66UNI - 10 - 2 - 24 x 24 - L - AW - —

- |  |   |   |
|--|---|---|
| <ol style="list-style-type: none"> <li>1. <b>Model</b><br/>66UNI</li> <li>2. <b>Neck Size</b><br/>06 6" (152)<br/>08 8" (203)<br/>10 10" (254)<br/>12 12" (305)<br/>14 14" (356)</li> <li>3. <b>No. of Slots</b><br/>1 1 Slot<br/>2 2 Slot<br/>3 3 Slot</li> <li>4. <b>Ceiling Module Size</b><br/><b>Imperial (inches)</b><br/>24 x 24</li> <li>5. <b>Frame Type</b><br/>L Lay-in T-Bar<br/>F Fineline®</li> <li>6. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>MI Mill<br/>PC Prime Coat Paint<br/>SP Special Custom Color</li> </ol> | <p><b>OPTIONS &amp; ACCESSORIES:</b></p> <ol style="list-style-type: none"> <li>7. <b>Damper</b><br/>– None<br/>4250 Radial Sliding Blade<br/>6" – 14" (152 – 356).<br/>4275 Radial Opposed Blade<br/>5" – 24" (127 – 610).<br/>4675 Butterfly<br/>6" – 14" (152 – 356).</li> <li>8. <b>Earthquake Tabs</b><br/>– None (default)<br/>EQT Earthquake Tabs</li> </ol> | <p><b>OTHER OPTIONS &amp; ACCESSORIES:</b></p> <p>– None</p> <ol style="list-style-type: none"> <li>9. <b>Air Balancing Devices</b><br/>(order separately)<br/><b>Round Neck:</b><br/>EGR Equalizing Grid<br/>DEGR Damper/Equalizing Grid</li> </ol> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>1. Consult text for availability of neck sizes with "No. of Slots" selection.</li> </ol> |
|--|---|---|

**D**  
**CEILING DIFFUSERS**

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 66UNI Slot Plaque Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and include a deep plenum backpan that has a round duct connection collar. The diffuser is to be sized to suit a 24" x 24" (610 x 610) ceiling suspension system. The center of the diffuser shall have a smooth flat plaque face in which 1, 2, or 3 (select one) perimeter slot(s) surround it. The core shall be spring loaded and removable without the use of tools. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## ROUND CEILING DIFFUSERS

- ADJUSTABLE
- HORIZONTAL DISCHARGE PATTERN
- LOUVERED FACE
- ROUND NECK

### Models:

- RNR Steel  
ARNR Aluminum



Model RNR

Model Series RNR Round Ceiling Diffusers feature three concentric cones in all sizes to offer a balanced appearance where different sizes are used in the same area. The diffusers deliver the air in a true 360° radial horizontal pattern and produce excellent performance in variable air volume systems.

Models RNR and ARNR feature infinite horizontal discharge patterns that allow the diffusers to accommodate different flow rate conditions. Position A (cones down) provides maximum capacity at minimum NC levels while Position B (cones up) provides higher induction and more air movement.

### STANDARD FEATURES:

- Engineered 360° air diffusion pattern.
- High neck collars for solid connection.
- All sizes feature three cones for a uniform and balanced appearance.
- A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.
- Discharge positions are easily field set by sliding the inner cone assembly up or down. The core is securely retained by a spring loaded friction arrangement.

- Designed for both heating and cooling applications.
- Screwdriver adjustment of the optional balancing damper through the cones.

### CONSTRUCTION MATERIAL:

Corrosion-resistant steel or aluminum.

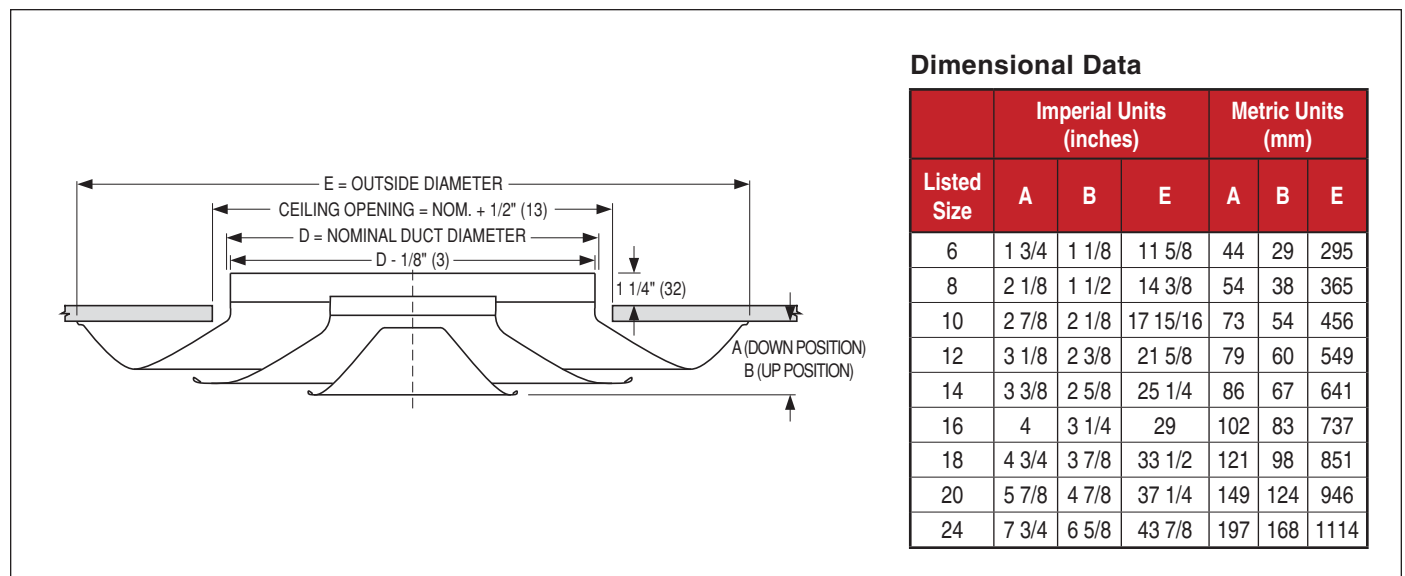
### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- SC Safety Chain
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories; see page D255.



## PERFORMANCE DATA:

### MODELS RNR AND ARNR • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.075	.090
6" Dia.	Total Pressure, Position A	.024	.038	.055	.074	.097	.123	.152	.184	.219
	Total Pressure, Position B	.039	.061	.088	.119	.156	.197	.243	.294	.350
	Airflow, CFM	79	98	118	137	157	177	196	216	236
	Noise Criteria, Position A	—	—	15	20	24	28	31	34	37
	Noise Criteria, Position B	—	16	21	26	30	34	37	40	43
	Throw, Position A	2-2-4	2-3-5	2-4-5	3-4-6	3-4-7	3-5-8	4-5-8	4-6-9	4-6-10
	Throw, Position B	3-3-5	3-4-6	3-5-6	4-5-7	4-5-8	4-6-9	5-6-9	5-7-10	5-7-12
8" Dia.	Total Pressure, Position A	.031	.048	.069	.094	.123	.156	.193	.233	.278
	Total Pressure, Position B	.049	.077	.111	.151	.198	.250	.309	.374	.445
	Airflow, CFM	140	175	209	244	279	314	349	384	419
	Noise Criteria, Position A	—	—	18	23	27	31	34	37	40
	Noise Criteria, Position B	—	19	24	29	33	37	40	43	46
	Throw, Position A	2-3-6	3-4-7	3-5-8	3-5-9	4-6-10	4-7-11	5-8-12	5-9-13	6-9-14
	Throw, Position B	3-4-7	4-5-8	4-6-9	4-6-10	5-7-12	5-8-13	6-9-14	6-10-15	7-10-16
10" Dia.	Total Pressure, Position A	.026	.040	.058	.079	.103	.130	.161	.194	.231
	Total Pressure, Position B	.041	.064	.093	.126	.165	.209	.257	.311	.371
	Airflow, CFM	218	273	327	382	436	491	545	600	654
	Noise Criteria, Position A	—	—	17	22	26	30	33	36	39
	Noise Criteria, Position B	—	18	23	28	32	36	39	42	45
	Throw, Position A	3-4-7	3-5-8	4-5-9	4-6-10	4-7-12	5-8-13	5-9-14	6-10-16	7-11-17
	Throw, Position B	4-5-9	4-6-10	5-6-11	5-7-12	5-9-14	6-10-15	6-11-16	7-12-18	8-13-19
12" Dia.	Total Pressure, Position A	.025	.039	.056	.076	.100	.126	.156	.189	.225
	Total Pressure, Position B	.040	.063	.090	.123	.160	.203	.250	.303	.360
	Airflow, CFM	314	393	471	550	628	707	785	864	942
	Noise Criteria, Position A	—	—	16	21	25	29	32	35	38
	Noise Criteria, Position B	—	17	22	27	31	35	38	41	44
	Throw, Position A	3-5-9	4-6-10	4-7-11	5-8-13	5-8-14	6-10-16	7-11-18	8-12-19	9-13-21
	Throw, Position B	4-6-10	5-7-12	5-8-13	6-9-15	6-10-17	7-12-18	8-13-21	9-14-22	10-15-24
14" Dia.	Total Pressure, Position A	.034	.053	.077	.105	.137	.173	.214	.259	.308
	Total Pressure, Position B	.055	.086	.123	.168	.219	.278	.343	.415	.494
	Airflow, CFM	428	535	641	748	855	962	1069	1176	1283
	Noise Criteria, Position A	—	16	22	27	31	35	38	41	44
	Noise Criteria, Position B	—	22	27	32	36	40	43	46	49
	Throw, Position A	4-6-10	4-7-12	5-8-14	6-9-16	7-10-18	8-12-20	9-13-22	10-15-24	10-16-26
	Throw, Position B	5-7-11	5-8-14	6-9-16	7-10-18	8-11-20	9-13-22	10-15-25	11-17-27	12-18-30
16" Dia.	Total Pressure, Position A	.031	.049	.071	.096	.125	.159	.196	.237	.282
	Total Pressure, Position B	.050	.079	.113	.154	.201	.254	.314	.380	.452
	Airflow, CFM	559	698	838	977	1117	1257	1396	1536	1676
	Noise Criteria, Position A	—	15	21	25	29	33	36	39	42
	Noise Criteria, Position B	—	19	24	29	33	37	40	43	46
	Throw, Position A	4-7-12	5-8-14	6-9-16	7-11-18	8-12-20	9-13-22	10-14-24	11-16-26	12-17-28
	Throw, Position B	5-7-13	6-9-16	7-10-18	8-12-20	9-13-22	10-14-24	11-15-26	12-18-29	13-19-31
18" Dia.	Total Pressure, Position A	.028	.045	.064	.087	.114	.144	.178	.215	.256
	Total Pressure, Position B	.046	.071	.103	.140	.183	.231	.286	.346	.411
	Airflow, CFM	707	884	1060	1237	1414	1590	1767	1944	2121
	Noise Criteria, Position A	—	—	19	24	28	32	35	38	41
	Noise Criteria, Position B	—	17	22	27	31	35	38	41	44
	Throw, Position A	5-7-13	6-9-16	7-11-18	8-12-20	9-14-23	10-15-25	12-17-27	13-18-29	14-20-31
	Throw, Position B	6-8-15	7-10-18	8-12-20	9-13-22	10-15-25	11-17-29	13-19-30	14-20-32	15-21-34
20" Dia.	Total Pressure, Position A	.028	.044	.063	.086	.112	.142	.175	.212	.252
	Total Pressure, Position B	.045	.070	.101	.138	.180	.228	.281	.340	.405
	Airflow, CFM	873	1091	1309	1527	1745	1963	2182	2400	2618
	Noise Criteria, Position A	—	—	20	25	29	33	36	39	42
	Noise Criteria, Position B	—	18	23	28	32	36	39	42	45
	Throw, Position A	5-9-15	7-10-18	8-12-20	9-14-23	10-15-26	12-17-28	13-19-30	14-21-33	15-23-35
	Throw, Position B	6-10-17	8-11-20	9-13-22	10-15-25	11-16-28	13-18-30	14-20-32	15-22-35	16-25-38

For performance notes, see D145.



## PERFORMANCE DATA:

### MODELS RNR AND ARNR • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200
24" Dia.	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.075	.090
	Total Pressure, Position A	.025	.039	.056	.076	.099	.125	.154	.187	.222
	Total Pressure, Position B	.040	.062	.089	.121	.158	.200	.247	.299	.356
	Airflow, CFM	1257	1571	1885	2199	2513	2827	3142	3456	3770
	Noise Criteria, Position A	—	15	21	26	30	34	37	40	43
	Noise Criteria, Position B	—	19	24	29	33	37	40	43	46
	Throw, Position A	6-10-18	8-12-20	9-14-24	10-16-27	11-17-29	13-20-33	15-22-36	17-25-39	18-27-42
	Throw, Position B	7-11-19	9-13-22	10-16-26	11-18-29	12-19-31	14-22-35	16-24-39	18-27-42	20-30-46

#### Performance Notes:

- All pressures are in inches w.g..
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Performance data as shown is for ceiling mounted diffusers. For exposed duct mounting, multiply the throw values by 0.70.
- Noise Criteria (NC) values are based on 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in spaces indicates a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Dia. in Inches	Ak Factor	
	Position A (Cones Down)	Position B (Cones Down)
6	0.114	0.097
8	0.163	0.126
10	0.316	0.245
12	0.478	0.323
14	0.536	0.420
16	0.758	0.594
18	0.998	0.761
20	1.254	0.987
24	2.058	1.625

## ROUND CEILING DIFFUSERS

- ADJUSTABLE
- HORIZONTAL TO VERTICAL DISCHARGE PATTERN
- LOUVERED FACE
- ROUND NECK

### Models:

- RNRA1 Steel  
ARNRA1 Aluminum



Model RNRA1

Model Series RNRA1 and ARNRA1 Round Ceiling Diffusers feature three concentric cones in all sizes to offer a balanced appearance where different sizes are used in the same area. The diffusers deliver the air in a true 360° air diffusion pattern and produce excellent performance in variable air volume systems.

Models RNRA1 and ARNRA1 are designed for both heating and cooling applications. The air discharge pattern is fully adjustable between horizontal and vertical. The discharge pattern is adjusted by sliding the core up or down. In the "down" setting, capacity is maximized and throw is horizontal. In the "up" setting, air projects vertically down from the diffuser.

### STANDARD FEATURES:

- Engineered 360° air diffusion pattern.
- High neck collars for solid connection.
- All sizes feature three cones for a uniform and balanced appearance.
- A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.
- Discharge positions are easily field set by sliding the inner cone assembly up or down. The core is securely retained by a spring loaded friction arrangement.

- Designed for both heating and cooling applications.
- Screwdriver adjustment of the optional balancing damper through the cones.

### CONSTRUCTION MATERIAL:

Corrosion-resistant steel or aluminum.

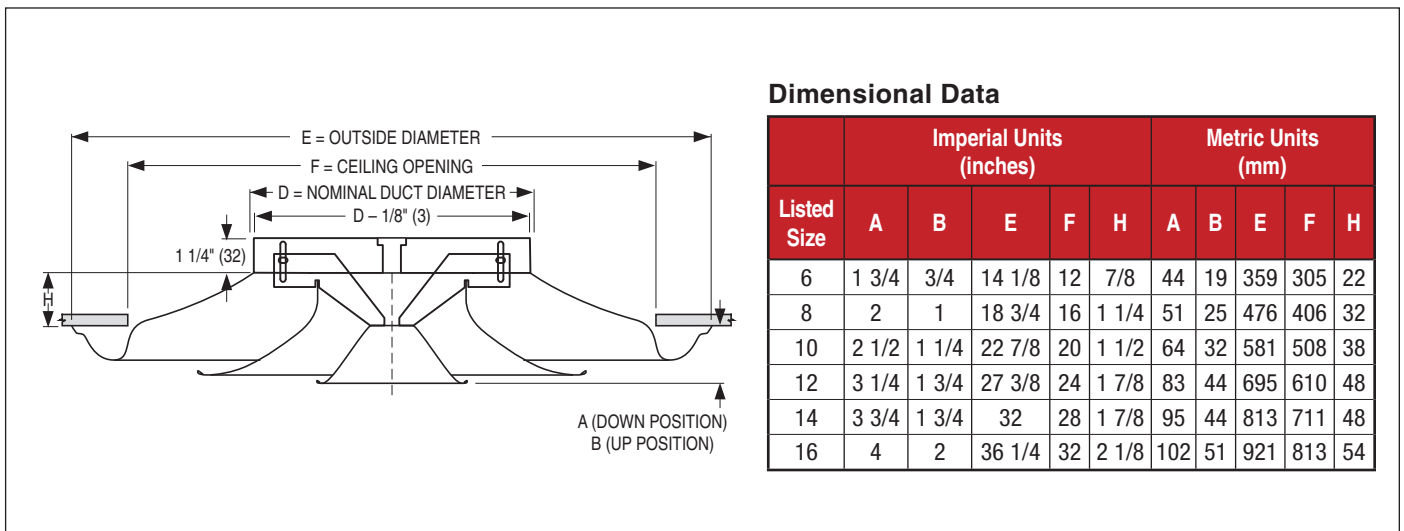
### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper  
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper  
5" – 24" (127 – 610).
- SC Safety Chain
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories; see page D255.



## PERFORMANCE DATA:

### MODELS RNRA1 AND ARNRA1 • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1100	1200	1400
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.075	.090	.122
6" Dia.	Total Pressure, Horizontal	.017	.030	.041	.058	.076	.096	.125	.149	.181	.246
	Total Pressure, Vertical	.025	.044	.064	.089	.123	.158	.200	.245	.294	.400
	Airflow, CFM	79	98	118	137	157	177	196	216	236	275
	Noise Criteria, Horizontal	—	—	—	—	15	22	31	35	39	44
	Noise Criteria, Vertical	—	—	—	15	26	33	38	42	44	49
	Throw, Horizontal	2-4-9	3-5-10	3-6-11	4-6-12	5-7-14	5-8-14	6-9-15	7-10-16	8-11-17	9-13-19
	Throw, Vertical	1-1-1	1-1-2	1-2-3	2-3-4	2-3-5	3-4-6	3-5-7	4-6-9	5-8-11	5-9-12
8" Dia.	Total Pressure, Horizontal	.016	.026	.038	.053	.070	.090	.112	.136	.162	.225
	Total Pressure, Vertical	.034	.057	.081	.116	.150	.194	.242	.291	.347	.472
	Airflow, CFM	140	175	209	244	279	314	349	384	419	489
	Noise Criteria, Horizontal	—	—	15	18	23	30	35	39	41	46
	Noise Criteria, Vertical	—	—	18	24	29	33	36	39	42	47
	Throw, Horizontal	2-5-10	3-6-11	4-7-12	4-8-13	5-9-14	6-9-15	7-10-16	8-11-16	9-12-17	11-14-18
	Throw, Vertical	10-17-24	12-19-27	14-20-29	16-22-32	17-24-34	19-25-36	21-27-38	22-28-40	24-29-42	27-32-45
10" Dia.	Total Pressure, Horizontal	.016	.027	.041	.056	.073	.093	.117	.142	.237	.272
	Total Pressure, Vertical	.029	.049	.075	.126	.145	.168	.210	.276	.330	.449
	Airflow, CFM	218	273	327	382	436	491	545	600	654	764
	Noise Criteria, Horizontal	—	—	15	18	23	29	33	37	41	46
	Noise Criteria, Vertical	—	—	16	23	26	31	35	38	40	45
	Throw, Horizontal	3-5-11	4-16-13	5-7-14	5-9-16	6-10-17	7-11-18	8-12-19	9-13-20	10-14-22	11-16-24
	Throw, Vertical	18-21-30	20-24-34	21-26-37	23-28-40	25-30-43	26-32-45	28-34-48	29-35-50	30-37-52	33-40-56
12" Dia.	Total Pressure, Horizontal	.015	.025	.037	.053	.069	.089	.109	.138	.163	.232
	Total Pressure, Vertical	.029	.048	.071	.101	.127	.162	.206	.254	.306	.417
	Airflow, CFM	314	393	471	550	628	707	785	864	942	1100
	Noise Criteria, Horizontal	—	—	—	15	20	24	28	33	36	42
	Noise Criteria, Vertical	—	—	15	20	25	30	34	38	40	46
	Throw, Horizontal	3-7-13	4-8-15	6-9-16	7-10-17	8-12-19	9-13-20	10-14-21	11-15-22	12-16-23	14-18-25
	Throw, Vertical	18-23-32	21-25-35	23-27-38	24-30-41	26-32-44	27-33-47	29-35-49	30-37-51	32-38-54	34-41-58
14" Dia.	Total Pressure, Horizontal	.019	.031	.044	.061	.077	.104	.129	.156	.190	.259
	Total Pressure, Vertical	.038	.058	.086	.116	.156	.193	.237	.279	.342	.465
	Airflow, CFM	428	535	641	748	855	962	1069	1176	1283	1497
	Noise Criteria, Horizontal	—	—	—	15	21	25	30	33	36	42
	Noise Criteria, Vertical	—	—	—	17	25	30	34	37	40	46
	Throw, Horizontal	4-8-15	5-10-16	7-11-18	8-12-19	9-13-20	10-15-21	11-16-22	13-17-23	14-18-24	16-20-26
	Throw, Vertical	20-25-35	23-28-39	25-30-43	27-33-46	29-35-49	30-37-52	32-39-55	34-41-58	35-43-60	38-46-65
16" Dia.	Total Pressure, Horizontal	.023	.040	.057	.079	.109	.137	.173	.212	.251	.358
	Total Pressure, Vertical	.047	.078	.103	.149	.195	.246	.308	.370	.450	.612
	Airflow, CFM	559	698	838	977	1117	1257	1396	1536	1676	1955
	Noise Criteria, Horizontal	—	—	—	16	23	28	32	35	38	44
	Noise Criteria, Vertical	—	—	19	25	30	34	38	41	44	50
	Throw, Horizontal	7-10-15	8-12-17	9-13-18	10-14-20	11-15-21	12-16-22	13-17-23	14-17-25	15-18-26	17-20-28
	Throw, Vertical	26-32-44	29-35-49	32-38-54	34-41-58	36-44-62	38-47-65	40-49-69	42-52-72	44-54-75	48-58-81

D

CEILING DIFFUSERS

#### Performance Notes:

- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions for a ceiling mounted diffuser (inner cones in fully down position A). For exposed duct mounting, multiply the throw values by 0.70.
- Vertical throws are given at 150, 100 and 50 fpm under isothermal conditions (inner cones in fully up position B). For non-isothermal conditions, use the following correction factors:

ΔT Temperature Differential	Correction Factor
20°F Cooling	x 1.40
Isothermal	x 1.00
10°F Heating	x 0.83
20°F Heating	x 0.58
30°F Heating	x 0.53
40°F Heating	x 0.43

4. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Dia. in Inches	Ak Factor	
	Position A (Cones Down)	Position B (Cones Up)
6	0.14	0.11
8	0.25	0.19
10	0.45	0.29
12	0.61	0.59
14	0.85	0.57
16	0.89	0.68

## ROUND CEILING DIFFUSERS

- ADJUSTABLE HORIZONTAL / VERTICAL AIRFLOW PATTERN
- ROUND NECK
- ALUMINUM

**Model:**

**6300R Continuous Rotary Adjustment**



Model 6300R

Model Series 6300 Round Ceiling Diffusers are available in a comprehensive range of sizes with a capacity ranging from 50 to 5000 cfm (24 – 2360 l/s). They are suitable for both cooling and heating applications. With three concentric cones in all sizes they offer the same balanced appearance when different sizes are used in the same zone. They feature a 360° air diffusion pattern and provide excellent performance in variable air volume systems.

Model 6300R provides 3/4" (19) adjustability through utilization of a threaded mechanism. The "UP" position of the core provides vertical throw, and the "DOWN" position provides horizontal throw. The core is easily adjusted by rotating the center cone. An optional round opposed blade damper is screwdriver-operated through the face of the unit. Model 6300R has a fully adjustable core to guide vertical or horizontal projection of the air.

**CONSTRUCTION MATERIAL:**

Spun aluminum.

**FINISH OPTIONS:**

AW Appliance White finish is standard.  
AL Aluminum is optional. Special finishes are available.

**OPTIONS & ACCESSORIES:**

- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- SC Safety Chain

For additional options and accessories; see page D255.

D

CEILING DIFFUSERS

**6300R**

**Notes:**  
 1/4" (6) oversize duct fits outside collar, if desired.  
 A = Inside diameter of diffuser neck.  
 C = Projection of diffuser outer cone below ceiling.  
 D = Overall diameter of diffuser.

**Dimensional Data**

Listed Size	Imperial Units (inches)			Metric Units (mm)		
	A	C	D	A	C	D
6	6 1/8	3/4	12 1/8	156	19	308
8	8 1/8	1	15 1/2	206	25	394
10	10 1/8	1 1/4	18 7/8	257	32	479
12	12 1/8	1 3/8	22 1/4	308	35	565
14	14 1/8	1 9/16	25 5/8	359	40	651
16	16 1/8	1 3/4	29	410	44	737
18	18 1/8	1 15/16	32 3/8	460	49	822
20	20 1/8	2 1/8	35 3/4	511	54	908
24	24 1/8	2 1/2	42 1/2	613	64	1080

## PERFORMANCE DATA:

### MODEL 6300R • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.024	.037	.056	.071	.092	.112	.138	.197	.272	.345
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Radius of Diffusion, ft.	2-5	3-5	4-6	4-7	5-7	6-8	6-9	6-9	7-10	7-10
	Noise Criteria	—	—	12	17	21	25	28	34	39	41
8" Dia.	Total Pressure	.033	.049	.068	.095	.122	.155	.192	.270	.362	.470
	Airflow, CFM	140	175	210	245	280	315	350	420	490	560
	Radius of Diffusion, ft.	3-7	4-8	5-8	6-9	7-10	8-10	9-11	8-12	9-13	10-14
	Noise Criteria	—	—	14	19	23	27	30	36	41	44
10" Dia.	Total Pressure	.041	.062	.098	.121	.157	.200	.245	.350	.477	.610
	Airflow, CFM	220	270	330	380	435	490	545	655	765	870
	Radius of Diffusion, ft.	4-9	5-10	7-11	8-11	9-12	9-13	10-14	11-15	11-16	12-17
	Noise Criteria	—	10	16	21	25	29	32	38	43	46
12" Dia.	Total Pressure	.043	.066	.093	.127	.165	.206	.249	.355	.482	.620
	Airflow, CFM	315	390	470	550	630	705	785	940	1100	1255
	Radius of Diffusion, ft.	5-10	7-12	8-13	9-14	10-15	11-16	12-16	13-18	14-19	15-21
	Noise Criteria	—	12	18	23	27	31	34	40	45	48
16" Dia.	Total Pressure	.043	.060	.093	.127	.153	.206	.252	.350	.482	.580
	Airflow, CFM	560	700	840	980	1120	1260	1400	1680	1960	2240
	Radius of Diffusion, ft.	6-12	7-13	9-15	10-16	12-17	13-18	13-18	14-20	16-22	18-24
	Noise Criteria	—	16	22	27	31	35	38	44	49	52
18" Dia.	Total Pressure	.044	.068	.097	.130	.167	.214	.253	.370	.492	.630
	Airflow, CFM	710	885	1060	1240	1420	1590	1770	2120	2480	2830
	Radius of Diffusion, ft.	7-16	10-18	12-19	14-21	16-22	17-23	18-24	19-27	21-29	22-31
	Noise Criteria	—	17	23	28	32	36	39	45	50	53
20" Dia.	Total Pressure	.045	.069	.099	.135	.170	.215	.262	.375	.512	.645
	Airflow, CFM	875	1100	1310	1530	1750	1970	2190	2610	3060	3500
	Radius of Diffusion, ft.	8-18	11-19	14-21	15-23	17-24	18-26	19-27	21-30	23-32	24-34
	Noise Criteria	10	18	24	29	33	37	40	46	51	54
24" Dia.	Total Pressure	.043	.066	.095	.131	.170	.215	.267	.360	.407	.660
	Airflow, CFM	1260	1570	1880	2200	2510	2820	3140	3770	4400	5020
	Radius of Diffusion, ft.	10-21	13-23	16-25	18-28	21-29	22-31	25-36	25-36	28-39	29-42
	Noise Criteria	12	19	25	30	34	38	41	47	52	55

#### Performance Notes:

1. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
2. Radius of diffusion values are given at 100 and 50 fpm terminal velocities under isothermal conditions.
3. Performance data as shown is for the diffuser only, with the cones in the "down" position. Performance for the cones in the "up" position can be approximated by multiplying the total pressures by 1.6, adding 5 Noise Criteria to the sound levels, and multiplying the radius of diffusion by .90.

4. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Dia. in Inches	Ak Factor
6	0.120
8	0.200
10	0.310
12	0.440
14	0.570
16	0.785
18	0.990
20	1.220
24	1.770

## ROUND CEILING DIFFUSERS

- ARCHITECTURAL PLAQUE FACE
- ADJUSTABLE HORIZONTAL TO VERTICAL DISCHARGE PATTERN
- ALUMINUM FACE
- ROUND NECK

### Models:

- RUNI** Steel  
**ARUNI** Aluminum



Model RUNI

Model Series RUNI and ARUNI Round Plaque Ceiling Air Diffuser has been designed to provide both the appearance required for architectural excellence as well as high engineering performance. These diffusers are suitable for both architectural ceilings and exposed duct applications.

The diffusers deliver the air in a true 360° air pattern and provide excellent performance in variable air volume systems. The discharge setting is simply adjusted by sliding the inner face plaque assembly up or down. The diffuser provides higher induction and more air movement in the higher position while maximum capacity at minimum NC levels can be obtained in the lower position.

### STANDARD FEATURES:

- Smooth heavy duty face plaque is 1/8" (0.125) thick aluminum for strength and lightness.
- A spring clip arrangement permits quick, easy installation and removal of the inner cone assembly.
- The core is retained by a spring loaded friction arrangement. There are no screws to reposition.
- An optional radial opposed blade damper with an operating arm to adjust the damper

without removing the core is available.

- Available for duct sizes 6" – 16" (152 – 406) diameter.
- High neck collars for solid connection.

### CONSTRUCTION MATERIAL:

Corrosion-resistant steel outer cone and bracketry with an aluminum face or aluminum outer cone with corrosion-resistant steel neck bracketry and aluminum face.

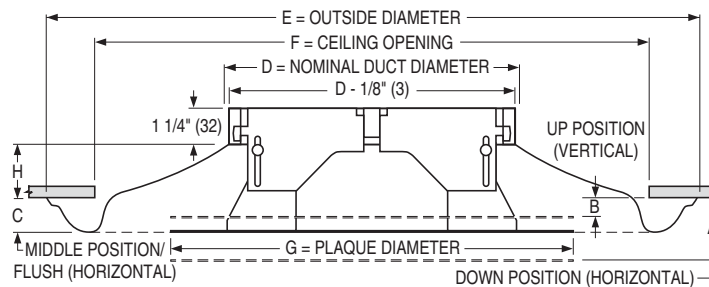
### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- SC Safety Chain
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories; see page D255.



### Dimensional Data

Listed Size	Imperial Units (inches)							Metric Units (mm)						
	A	B	C	E	F	G	H	A	B	C	E	F	G	H
6	1 3/4	1/4	3/4	14 1/8	12	9	7/8	44	6	19	359	305	229	22
8	2	1/2	1	18 3/4	16	12	1 1/4	51	13	25	476	406	305	32
10	2 1/4	11/16	1 3/16	22 3/4	20	15	1 1/2	57	17	30	578	508	381	38
12	2 3/4	15/16	1 11/16	27 3/8	24	18	1 7/8	70	24	43	695	610	457	48
14	3	1	1 3/4	32	28	21	1 7/8	76	25	44	813	711	533	48
16	3 3/8	1	2	36 1/4	32	24	2 1/8	86	25	51	921	813	610	54



## PERFORMANCE DATA:

### MODELS RUNI AND ARUNI

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.090	.122	.160
6" Dia.	Total Pressure, Horizontal	0.017	0.026	0.038	0.051	0.067	0.085	0.105	0.151	0.206	0.269
	Total Pressure, Vertical	0.034	0.053	0.076	0.104	0.135	0.171	0.211	0.304	0.414	0.541
	Airflow, CFM	80	100	120	140	160	180	200	235	275	315
	Noise Criteria, Horizontal	—	—	—	—	—	16	18	26	31	34
	Noise Criteria, Vertical	—	—	—	—	—	19	22	29	34	37
	Throw, Horizontal	2-3-6	2-3-7	3-4-9	3-5-10	4-6-11	4-6-12	5-7-12	5-8-13	6-10-14	7-11-15
	Throw, Vertical	8-12-23	10-15-25	12-18-26	14-21-27	16-23-28	18-24-29	20-25-30	23-26-31	24-27-32	25-28-33
8" Dia.	Total Pressure, Horizontal	0.017	0.026	0.038	0.051	0.067	0.085	0.105	0.151	0.206	0.269
	Total Pressure, Vertical	0.038	0.059	0.085	0.116	0.151	0.191	0.236	0.340	0.463	0.605
	Airflow, CFM	140	175	209	244	279	314	349	419	489	558
	Noise Criteria, Horizontal	—	—	—	—	—	16	20	28	32	35
	Noise Criteria, Vertical	—	—	—	—	15	21	28	31	36	42
	Throw, Horizontal	3-5-11	4-6-13	5-7-14	5-8-16	6-9-17	7-10-18	8-12-19	9-14-22	11-16-24	12-18-26
	Throw, Vertical	15-22-31	18-24-34	20-27-37	22-29-40	24-31-43	26-32-46	28-34-48	31-37-53	34-40-57	38-43-61
10" Dia.	Total Pressure, Horizontal	0.017	0.027	0.039	0.053	0.070	0.088	0.109	0.157	0.214	0.279
	Total Pressure, Vertical	0.033	0.051	0.073	0.100	0.131	0.165	0.204	0.294	0.400	0.522
	Airflow, CFM	218	273	327	382	436	491	545	654	764	873
	Noise Criteria, Horizontal	—	—	—	—	—	16	21	28	32	35
	Noise Criteria, Vertical	—	—	—	—	19	23	28	32	38	43
	Throw, Horizontal	3-5-11	4-6-13	5-7-14	5-8-16	6-9-17	7-10-18	8-12-20	9-14-22	11-16-24	12-19-27
	Throw, Vertical	15-22-31	18-25-35	20-27-38	22-29-41	24-31-44	26-33-47	28-35-49	32-38-54	36-41-58	39-44-62
12" Dia.	Total Pressure, Horizontal	0.019	0.030	0.044	0.059	0.078	0.098	0.121	0.175	0.238	0.311
	Total Pressure, Vertical	0.042	0.065	0.094	0.128	0.167	0.211	0.261	0.375	0.511	0.667
	Airflow, CFM	314	393	471	550	628	707	785	942	1100	1257
	Noise Criteria, Horizontal	—	—	—	—	15	18	21	29	34	39
	Noise Criteria, Vertical	—	—	—	—	18	24	29	29	40	45
	Throw, Horizontal	4-6-14	5-7-16	6-9-17	7-10-19	8-12-20	9-13-21	10-15-22	12-17-24	14-20-26	16-23-28
	Throw, Vertical	23-28-39	25-31-43	28-34-47	30-36-51	32-39-55	34-41-58	36-43-61	39-47-67	42-51-72	45-55-77
14" Dia.	Total Pressure, Horizontal	0.021	0.033	0.047	0.064	0.084	0.106	0.131	0.189	0.257	0.336
	Total Pressure, Vertical	0.042	0.066	0.095	0.129	0.168	0.213	0.263	0.378	0.515	0.673
	Airflow, CFM	428	535	641	748	855	962	1069	1283	1497	1710
	Noise Criteria, Horizontal	—	—	—	—	—	19	22	31	35	41
	Noise Criteria, Vertical	—	—	—	19	21	28	31	39	44	49
	Throw, Horizontal	4-7-16	5-8-19	7-10-20	8-11-22	9-13-24	10-15-26	11-16-27	13-20-30	15-23-33	17-26-35
	Throw, Vertical	24-29-41	26-32-45	29-35-50	31-38-54	33-41-57	35-43-61	37-45-64	41-50-70	44-54-75	47-57-81
16" Dia.	Total Pressure, Horizontal	0.021	0.033	0.048	0.065	0.085	0.107	0.132	0.191	0.259	0.339
	Total Pressure, Vertical	0.045	0.071	0.102	0.139	0.181	0.229	0.283	0.408	0.555	0.725
	Airflow, CFM	559	698	838	977	1117	1257	1396	1676	1955	2234
	Noise Criteria, Horizontal	—	—	—	—	18	22	25	33	37	41
	Noise Criteria, Vertical	—	—	19	21	24	30	33	40	45	50
	Throw, Horizontal	5-7-16	6-9-19	7-11-22	8-12-25	9-14-27	11-16-30	12-18-32	14-21-36	17-25-41	19-28-45
	Throw, Vertical	25-31-43	28-34-48	31-38-53	33-40-57	35-43-61	38-46-64	40-48-68	43-53-74	47-57-80	50-61-86

**D**  
CEILING DIFFUSERS

#### Performance Notes:

- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions for a ceiling mounted diffuser (inner plaque in fully down position A). For exposed duct mounting, multiply the throw values by 0.70.
- Vertical throws are given at 150, 100 and 50 fpm under isothermal conditions (inner plaque in fully up position B). For non-isothermal conditions, use the following

correction factors:

ΔT Temperature Differential	Correction Factor
20°F Cooling	x 1.40
Isothermal	x 1.00
10°F Heating	x 0.83
20°F Heating	x 0.58
30°F Heating	x 0.53
40°F Heating	x 0.43

4. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Dia. in Inches	Ak Factor
	Position A (Cone Down)
6	0.12
8	0.21
10	0.33
12	0.51
14	0.70
16	0.88

## ROUND DOWNBLAST DIFFUSER

- HEAVY DUTY
- ADJUSTABLE VERTICAL TO HORIZONTAL DISCHARGE PATTERN
- "FIBONACCI" SPIRAL
- ROUND NECK

### Models:

RDB Steel



Model RDB

Model Series RDB Round Downblast Diffusers have been designed for industrial and commercial applications. The unique contemporary design features a "Fibonacci spiral" adjustable aperture. The discharge pattern can be adjusted from full horizontal to full vertical. At the full vertical setting, the diffuser forces approximately 75% of the air in a long downward projection. This results in effective spot cooling or heating from high mounting locations.

This style of diffuser is suitable for theaters, auditoriums, factories, warehouses, convention halls, coliseums, shopping malls and other applications where ceilings are high and conditions are variable.

### STANDARD FEATURES:

- Unique "Fibonacci spiral" adjustable aperture damper.
- Horizontal mode provides a uniform 360° discharge pattern.
- Vertical setting provides effective spot cooling or heating in high mounting locations.
- Included is an easily adjustable ring operator that allows for pole adjustment.
- High neck collars for solid connection.

- Optional round opposed blade damper is screwdriver operated and adjusted through the aperture.

### CONSTRUCTION MATERIAL:

Heavy gauge corrosion-resistant steel.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

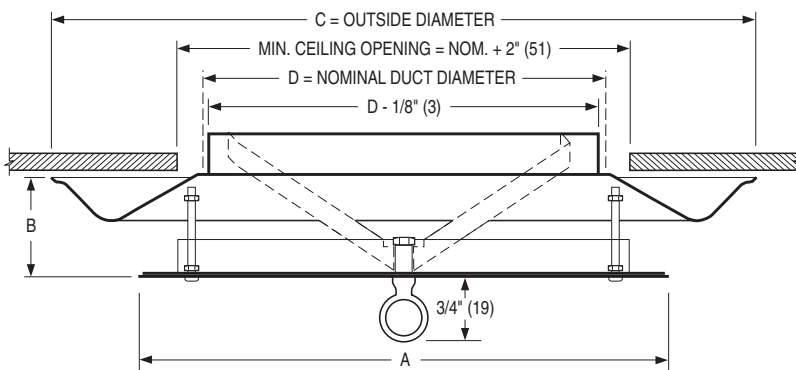
### OPTIONS & ACCESSORIES:

- SC Safety Chain
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

D

CEILING DIFFUSERS



### Dimensional Data

Listed Size	Imperial Units (inches)			Metric Units (mm)		
	A	C	D	A	C	D
8	11 11/16	2 1/4	14 3/8	297	57	365
10	14	2 9/16	17 15/16	356	65	456
12	16 1/4	3	21 5/8	413	76	549
14	18 5/8	3 3/8	25 1/4	473	86	641
16	20 7/8	4	29	530	102	737
18	23 1/4	4 1/2	33 1/2	591	114	851
20	25 1/2	5 7/16	37 1/4	648	138	946
24	30 3/16	6 1/2	43 7/8	767	165	1114

## PERFORMANCE DATA:

### MODEL RDB • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.090	.122	.160
8" Dia.	Total Pressure, Horizontal	.027	.042	.062	.073	.115	.140	.175	.258	.335	.421
	Total Pressure, Vertical	.014	.024	.035	.049	.053	.071	.088	.122	.176	.235
	Airflow, CFM	140	175	209	244	279	314	349	419	489	559
	Noise Criteria, Horizontal	—	—	—	21	23	25	31	33	37	39
	Noise Criteria, Vertical	—	—	—	—	—	—	20	22	28	31
	Throw, Horizontal	0-1-2	1-2-4	1-2-5	1-2-7	1-3-9	2-4-10	2-4-11	3-5-12	4-6-13	6-7-15
	Throw, Vertical	8	10	16	19	24	31	34	37	43	48
10" Dia.	Total Pressure, Horizontal	.036	.056	.082	.111	.145	.185	.230	.335	.462	.570
	Total Pressure, Vertical	.016	.026	.037	.051	.066	.083	.103	.149	.204	.265
	Airflow, CFM	218	273	327	382	436	491	545	654	764	873
	Noise Criteria, Horizontal	—	—	—	—	21	23	27	33	39	41
	Noise Criteria, Vertical	—	—	—	—	—	—	20	25	32	35
	Throw, Horizontal	0-1-3	1-2-5	1-2-7	1-3-8	2-4-10	2-4-11	3-5-12	4-7-13	6-8-15	7-10-16
	Throw, Vertical	12	13	22	26	29	34	37	40	48	50
12" Dia.	Total Pressure, Horizontal	.047	.073	.107	.149	.195	.245	.307	.445	.612	.800
	Total Pressure, Vertical	.018	.029	.042	.058	.076	.095	.118	.170	.232	.305
	Airflow, CFM	314	393	471	550	628	707	785	942	1100	1257
	Noise Criteria, Horizontal	—	—	—	33	27	31	35	39	43	46
	Noise Criteria, Vertical	—	—	—	—	—	—	22	25	28	33
	Throw, Horizontal	3-6-	4-7-13	5-8-15	6-10-17	7-11-18	8-12-19	9-13-20	12-16-22	15-18-23	18-20-25
	Throw, Vertical	15	17	28	36	46	50	55	60	67	75
14" Dia.	Total Pressure, Horizontal	.039	.062	.090	.127	.165	.209	.262	.380	.542	.700
	Total Pressure, Vertical	.016	.027	.038	.054	.070	.088	.111	.162	.224	.295
	Airflow, CFM	428	535	641	748	855	962	1069	1283	1497	1710
	Noise Criteria, Horizontal	—	—	—	—	22	25	29	37	46	52
	Noise Criteria, Vertical	—	—	—	—	—	—	22	29	35	38
	Throw, Horizontal	1-6-12	2-7-14	3-8-16	4-10-17	5-11-18	7-12-19	8-13-20	11-16-22	15-18-23	19-21-25
	Throw, Vertical	21	25	31	39	48	53	57	63	70	89
16" Dia.	Total Pressure, Horizontal	.053	.069	.110	.181	.232	.292	.367	.535	.737	.965
	Total Pressure, Vertical	.020	.032	.045	.061	.083	.104	.132	.189	.261	.342
	Airflow, CFM	559	698	838	977	1117	1257	1396	1676	1955	2234
	Noise Criteria, Horizontal	—	—	—	22	25	31	37	42	46	52
	Noise Criteria, Vertical	—	—	—	—	—	—	22	27	35	41
	Throw, Horizontal	6-10-18	7-11-20	7-13-21	8-16-22	9-17-24	11-19-25	13-20-26	14-21-27	15-22-28	16-23-29
	Throw, Vertical	25	27	34	41	50	55	59	67	85	94
18" Dia.	Total Pressure, Horizontal	.071	.114	.162	.226	.300	.375	.472	.690	.942	1.230
	Total Pressure, Vertical	.023	.037	.053	.073	.096	.120	.150	.217	.298	.390
	Airflow, CFM	707	884	1060	1237	1414	1590	1767	2121	2474	2827
	Noise Criteria, Horizontal	—	—	22	34	37	41	44	52	57	62
	Noise Criteria, Vertical	—	—	—	—	—	24	27	33	37	41
	Throw, Horizontal	8-13-21	10-14-22	11-16-23	12-17-24	14-18-25	15-19-26	16-20-27	18-22-28	21-23-29	23-25-30
	Throw, Vertical	29	34	39	44	55	57	63	74	85	100
20" Dia.	Total Pressure, Horizontal	.074	.116	.162	.221	.289	.365	.442	.630	.862	1.12
	Total Pressure, Vertical	.022	.035	.05	.069	.09	.115	.142	.206	.284	.373
	Airflow, CFM	873	1091	1309	1527	1745	1963	2182	2618	3054	3491
	Noise Criteria, Horizontal	—	25	31	34	38	42	45	53	58	62
	Noise Criteria, Vertical	—	—	—	—	23	27	31	36	42	46
	Throw, Horizontal	10-14-20	12-16-23	14-19-26	16-21-29	18-23-31	20-25-32	22-27-34	25-30-37	29-34-39	32-37-41
	Throw, Vertical	36	42	48	53	58	63	69	81	90	105
24" Dia.	Total Pressure, Horizontal	.047	.073	.104	.141	.182	.229	.281	.400	.540	.700
	Total Pressure, Vertical	.010	.016	.022	.030	.040	.050	.062	.090	.122	.159
	Airflow, CFM	1257	1571	1885	2199	2513	2827	3142	3770	4398	5027
	Noise Criteria, Horizontal	25	30	34	36	42	47	53	62	70	73
	Noise Criteria, Vertical	—	—	—	24	27	33	38	44	47	51
	Throw, Horizontal	12-16-22	14-19-26	17-21-30	18-23-32	20-25-33	23-27-36	25-31-37	29-35-40	33-38-42	34-40-47
	Throw, Vertical	43	47	50	58	64	69	87	95	99	113

D  
CEILING DIFFUSERS

#### Performance Notes:

- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions with the face fully closed.
- Vertical throw (projection) is given at 50 fpm terminal velocity under isothermal conditions with the face fully open. For non-isothermal conditions, use the following correction factors:

ΔT Temperature Differential	Correction Factor
20°F Cooling Isothermal	x 1.40
10°F Heating	x 0.83
20°F Heating	x 0.58
30°F Heating	x 0.53
40°F Heating	x 0.43

- Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise

Criteria of less than 20. Values shown are for the horizontal discharge pattern (center closed) and vertical discharge pattern (center fully open).  
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Nominal Neck Size Dia. in Inches	Ak Factor
6	0.13
8	0.25
10	0.51
12	0.56
14	1.08
18	1.36
20	1.60

## HOW TO ORDER

### ROUND CEILING DIFFUSERS

#### MODEL SERIES RNR, RNRA1, RUNI, RDB, ARNR, ARNRA1, ARUNI AND 6300R

EXAMPLE: RNR - 12 - AW - -

1. **Models**

**Steel**

- RNR Adjustable (Horizontal)
- RNRA1 Adjustable (Horizontal/Vertical)
- RUNI Plaque, Adjustable (Horizontal/Vertical)
- RDB Downblast, Adjustable

**Aluminum**

- ARNR Adjustable (Horizontal)
- ARNRA1 Adjustable (Horizontal/Vertical)
- ARUNI Plaque, Adjustable (Horizontal/Vertical)
- 6300R Rotating Fully Adjustable (Horizontal to Vertical)

2. **Neck Size** (inches)

- 06, 08, 10, 12, 14, 16, 18, 20, 24 (RNRA1, RUNI, ARNRA1 and ARUNI available 06 to 16 only)
- (RDB available 08 to 24 only)

3. **Finish \***

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime Coat Paint
- SP Special Custom Color

**OPTIONS & ACCESSORIES:**

4. **Damper \*\***

- None (default)
- 4250 Radial Sliding, 6" - 14"
- 4275 Radial Opposed Blade, 5" - 24"

5. **Safety Chain**

- None (default)
- SC Safety Chain

6. **Gasket**

- GK Foam Gasket (Not applicable on 6300R)

7. **Earthquake Tabs**

- None (default)
- EQT Earthquake Tabs (Not applicable on 6300R)

**OTHER OPTIONS & ACCESSORIES:**

- None

8. **Air Balancing Devices**

- (order separately)
- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

**Notes:**

1. \*Model 6300R is available as standard only in AW (default) or AL finish. For availability of custom colors, contact factory.
2. \*\*Model 4250 is not compatible with RUNI, ARUNI or 6300R diffusers.
3. Vinyl bulb gasket standard on 6300R.

## HOW TO SPECIFY

**SUGGESTED SPECIFICATION:**  
**RNR and ARNR – Steel or Aluminum**  
 Furnish and install **Nailor Model** (select one) **RNR** (steel) or **ARNR** (aluminum) **Round Adjustable Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have three round spun cones. The inner core assembly shall be removable and slide up or down to attain infinite horizontal discharge pattern adjustment. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper, without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**SUGGESTED SPECIFICATION:**  
**RNRA1 and ARNRA1 – Steel or Aluminum**  
 Furnish and install **Nailor Model** (select one) **RNRA1** (steel) or **ARNRA1** (aluminum) **Round Adjustable Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel or aluminum and have three round spun cones. The inner cones shall be removable. The core shall be adjustable to achieve a horizontal or vertical discharge pattern. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**SUGGESTED SPECIFICATION:**  
**6300R – Rotating Fully Adjustable**  
 Furnish and install **Nailor Model 6300R Aluminum Adjustable Round Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be all aluminum construction and incorporate three round cones that have been spun. The diffuser shall be easily adjusted by rotating the inner core either in an up or down position. The diffuser shall have a removable plug for screwdriver adjustment of the optional damper without removing the inner core. The finish shall be AW Appliance White (optional finishes are available).  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**SUGGESTED SPECIFICATION:**  
**RUNI and ARUNI – Steel or Aluminum**  
 Furnish and install **Nailor Model** (select one) **RUNI** (steel) or **ARUNI** (aluminum) **Round Architectural Plaque Face Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model RUNI shall have a round outer cone that is spun from corrosion-resistant steel. Model ARUNI shall have a round, aluminum outer cone with corrosion-resistant steel neck bracketry. The inner core shall have a round plaque face that is heavy gauge aluminum, and shall be smooth and flat in appearance. A removable inner core assembly shall slide up or down to attain infinite horizontal discharge patterns. The finish shall be AW Appliance White (optional finishes are available).  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**SUGGESTED SPECIFICATION:**  
**RBD – Steel**  
 Furnish and install **Nailor Model RDB Round Downblast Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be constructed of heavy gauge corrosion-resistant spun steel and incorporate a round outer cone. A removable flat inner cone assembly shall have a "Fibonacci spiral" aperture damper that is adjusted by a ring (pole) operator, which extends below the face of the diffuser. The finish shall be AW Appliance White (optional finishes are available).  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



## PERFORATED CEILING DIFFUSERS

- SUPPLY
- FACE MOUNTED PATTERN CONTROLLERS
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN

### Steel Models:

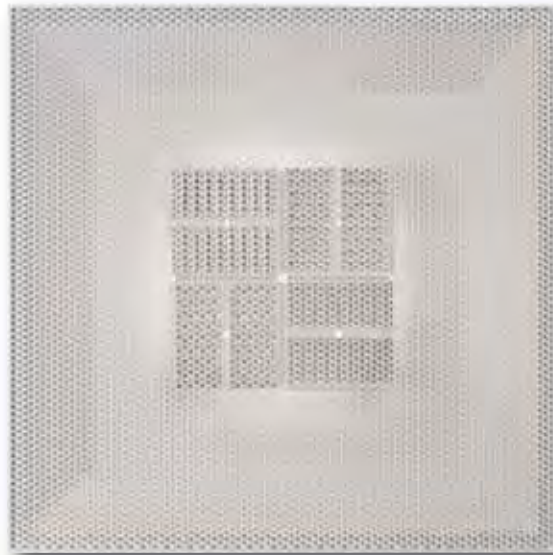
- 4320 Flush Face
- 4325 Drop Face

### Aluminum Face Models:

- 4320A Flush Face
- 4325A Drop Face

### Aluminum Models:

- 4320AA Flush Face
- 4325AA Drop Face



Model 4320

Model Series 4320 and 4325 Perforated Ceiling Diffusers have been designed to provide both the unobtrusive, smooth appearance preferred by many architects and the high engineering performance required for use in heating and cooling applications. They project a tight, uniform horizontal blanket of air over a wide range of air volumes and provide excellent performance in variable air volume systems.

Model Series 4320 features four individual stamped pattern controllers mounted on the rear of the diffuser face. They are easily field adjustable to suit the desired air pattern. Model Series 4325 features a dropped (extended) face panel that is available to complement tegular tile ceiling systems, so the panel remains flush with the ceiling line. In non-tegular ceilings the throw is reduced slightly and the airflow projection protects the ceiling against smudging.

### STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Discharge pattern can adjust to vertical or 1, 2, 3 or 4-way horizontal, before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and rotating the pattern deflectors.
- Inlet collar has 1 1/4" (32) depth for easy duct connection.

- Dropping the perforated face gives access to the optional damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Return models (4360 Series) have the same face and frame construction as the supply models to match the appearance.

### CONSTRUCTION MATERIAL:

Models 4320/4325 have a corrosion-resistant steel perforated face and backpan. Models 4320A/4325A have an

aluminum perforated face and a corrosion-resistant steel backpan. Models 4320AA/4325AA have an aluminum perforated face and backpan.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

#### Round Neck:

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- 4675 Butterfly Damper 6" – 14" (152 – 356).
- MIB Molded Insulation Blanket, R-6.0.

#### Square Neck:

- OBD Opposed Blade Damper (Steel)
- OBDA Opposed Blade Damper (Aluminum) (-AA models only)

### OTHER OPTIONS & ACCESSORIES:

- EX External Foil-Back Insulation (installed) -R-4.2.
- EXB External Foil-Back Insulation (loose) -R-4.2.
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

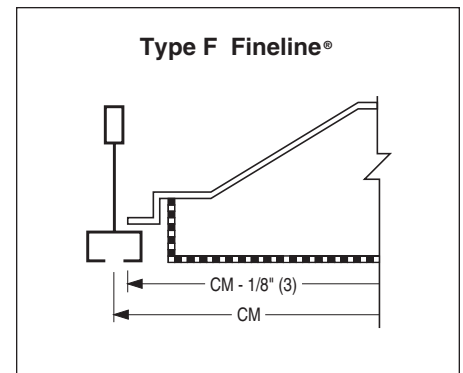
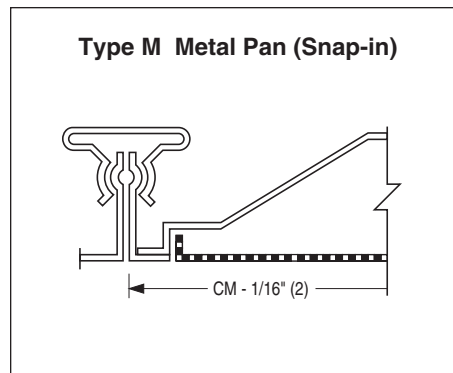
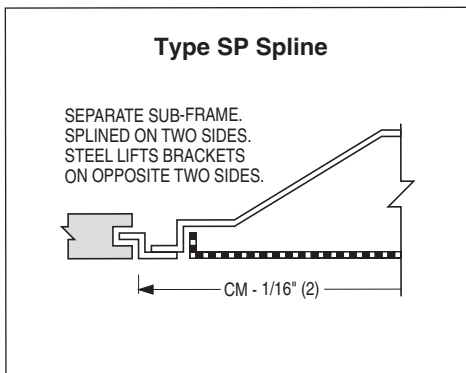
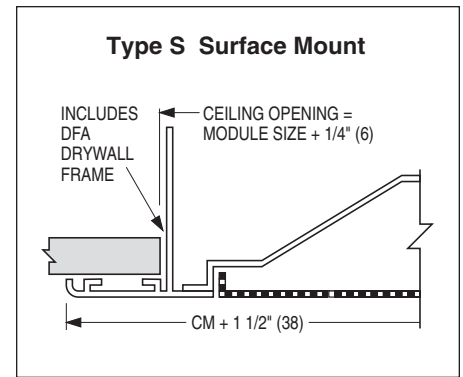
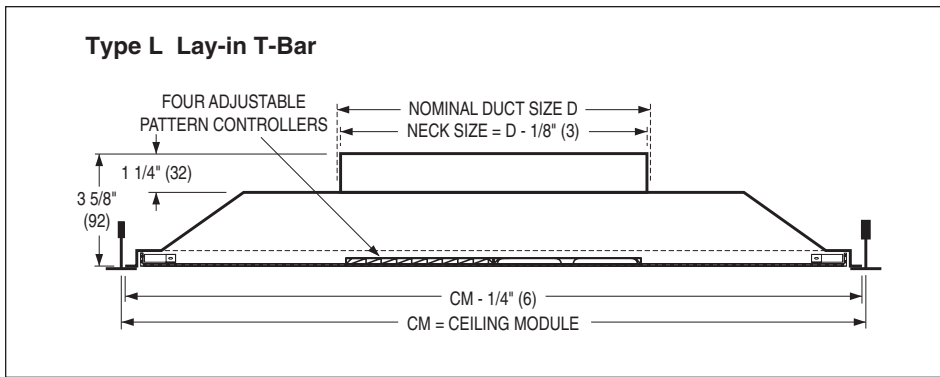
### Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D			
Imperial Modules	Metric Modules	Round Neck		Square Neck	
		Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6, 8	152, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
16 x 16	400 x 400	6, 8, 10, 12	152, 203, 254, 305	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
24 x 12	600 x 300	6, 8	152, 203	6 x 6, 8 x 8, 18 x 6	152 x 152, 203 x 203, 457 x 152
20 x 20	500 x 500	6, 8, 10, 12, 14	152, 203, 254, 305, 356	6 x 6, 8 x 8, 10 x 10	152 x 152, 203 x 203, 254 x 254
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16	152, 203, 254, 305, 356, 381, 406	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356

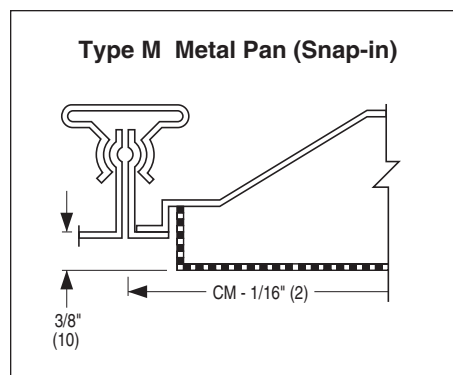
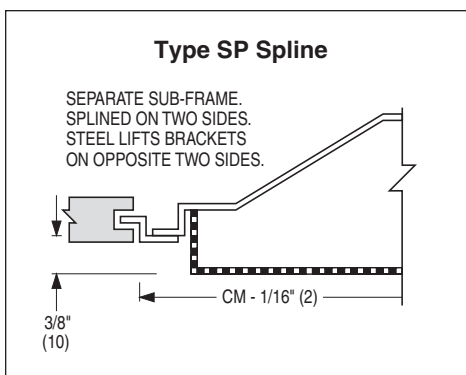
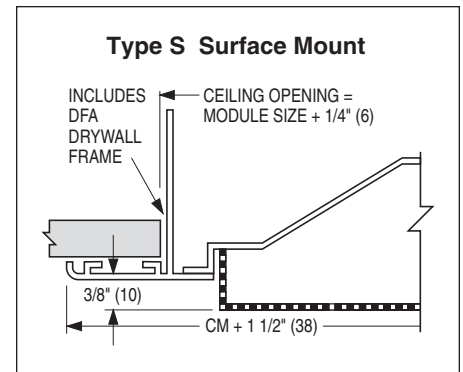
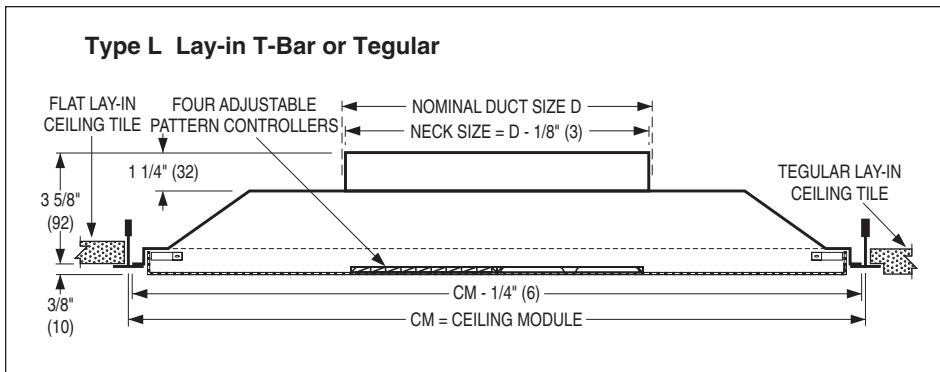


## DIMENSIONAL DATA AND FRAME TYPES:

### Models 4320, 4320A, 4320AA • Supply • Flush Face



### Models 4325, 4325A, 4325AA • Supply • Drop Face



D  
CEILING DIFFUSERS

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## PERFORMANCE DATA:

### Models 4320, 4320A, 4320AA • Flush Face • 12 x 12 (300 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	
6" Dia.	Total Pressure	.012	.020	.032	.046	.063	.082	.128	.185	
	Flow Rate, CFM	58	78	98	117	137	156	196	235	
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
Noise Criteria	—	—	—	19	24	28	35	41		
8" Dia.	Total Pressure	.014	.022	.035	.049	.065	.086	.132	.194	
	Flow Rate, CFM	105	140	175	210	245	280	350	420	
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
Noise Criteria	—	—	16	22	27	31	38	44		
6 x 6	Total Pressure	.013	.022	.036	.052	.074	.092	.143	.206	
	Flow Rate, CFM	75	100	125	150	175	200	250	300	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
Noise Criteria	—	—	16	22	27	31	38	44		
8 x 8	Total Pressure	.015	.026	.041	.059	.080	.104	.162	.234	
	Flow Rate, CFM	135	175	220	265	310	355	440	530	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
Noise Criteria	—	12	19	25	30	34	41	47		

### Models 4320, 4320A, 4320AA • Flush Face • 24 x 12 (600 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	
6" Dia.	Total Pressure	.012	.020	.032	.046	.063	.082	.128	.185	
	Flow Rate, CFM	58	78	98	117	137	156	196	235	
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
Noise Criteria	—	—	—	19	24	28	35	41		
8" Dia.	Total Pressure	.014	.022	.035	.049	.065	.086	.132	.194	
	Flow Rate, CFM	105	140	175	210	245	280	350	420	
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
Noise Criteria	—	—	16	22	27	31	38	44		
6 x 6	Total Pressure	.013	.022	.036	.052	.074	.092	.143	.206	
	Flow Rate, CFM	75	100	125	150	175	200	250	300	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
Noise Criteria	—	—	16	22	27	31	38	44		
8 x 8	Total Pressure	.015	.026	.041	.059	.080	.104	.162	.234	
	Flow Rate, CFM	135	175	220	265	310	355	440	530	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
Noise Criteria	—	12	19	25	30	34	41	47		

For performance notes, see page D160.

## PERFORMANCE DATA:

Models 4320, 4320A, 4320AA • Flush Face • 24 x 24 (600 x 600) and 48 x 24 (1200 x 600)  
Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	
6" Dia.	Total Pressure	.012	.020	.032	.046	.062	.082	.128	.185	
	Flow Rate, CFM	58	78	98	117	137	156	196	235	
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
1-Way		1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19	
Noise Criteria	—	—	10	18	21	25	32	38		
8" Dia.	Total Pressure	.015	.026	.042	.060	.082	.107	.167	.241	
	Flow Rate, CFM	104	139	174	209	244	279	349	418	
	Throw	4-Way	1-1-2	1-1-3	1-1-5	1-2-6	1-2-7	1-3-8	2-5-10	3-6-12
		3-Way	1-1-4	1-2-6	1-3-8	2-4-10	2-5-11	3-6-13	5-8-17	6-10-20
		2-Way	1-1-6	1-3-9	2-4-11	3-6-13	4-8-16	5-9-18	7-11-22	9-13-24
1-Way		1-2-8	1-4-11	2-6-14	4-8-16	5-9-19	7-11-22	9-14-26	11-16-29	
Noise Criteria	—	11	16	22	27	31	38	44		
10" Dia.	Total Pressure	.019	.033	.053	.075	.102	.135	.210	.302	
	Flow Rate, CFM	163	218	272	327	381	436	545	654	
	Throw	4-Way	1-1-3	1-1-5	1-2-7	1-3-8	2-4-10	2-5-11	4-7-14	5-8-17
		3-Way	1-1-7	1-3-9	2-5-11	3-7-14	4-8-16	5-9-18	7-11-23	9-14-27
		2-Way	1-2-9	2-5-12	3-7-15	5-9-19	7-11-22	8-12-26	10-15-32	12-19-34
1-Way		1-3-11	3-7-15	4-9-19	7-11-23	9-13-28	10-15-31	12-19-36	15-23-39	
Noise Criteria	—	16	21	27	32	36	43	49		
12" Dia.	Total Pressure	.022	.040	.063	.091	.124	.162	.253	.364	
	Flow Rate, CFM	235	314	392	471	549	628	785	942	
	Throw	4-Way	1-1-5	1-2-7	1-3-9	2-5-11	3-6-13	4-7-14	6-9-18	7-11-22
		3-Way	1-2-9	2-5-12	3-7-15	5-9-18	6-10-21	8-12-24	10-15-31	12-18-36
		2-Way	1-4-12	3-7-16	5-10-20	7-12-24	9-14-29	10-16-33	13-20-41	16-24-44
1-Way		2-6-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-46	19-30-50	
Noise Criteria	—	19	25	31	36	40	47	53		
14" Dia.	Total Pressure	.026	.047	.073	.105	.143	.187	.292	.420	
	Flow Rate, CFM	318	424	530	636	742	848	1060	1272	
	Throw	4-Way	1-1-6	1-3-9	2-5-11	3-6-13	4-8-16	5-9-18	7-11-23	9-13-28
		3-Way	1-4-11	3-7-14	4-9-18	7-11-22	8-13-27	9-14-30	12-18-38	14-22-44
		2-Way	2-6-15	4-10-20	7-12-26	10-15-31	11-17-36	13-20-41	16-26-50	20-31-54
1-Way		3-8-18	6-12-24	10-15-31	12-18-38	14-21-44	16-24-50	20-30-57	24-38-62	
Noise Criteria	13	23	29	35	40	44	51	57		
15" Dia.	Total Pressure	.029	.052	.081	.117	.159	.208	.324	.467	
	Flow Rate, CFM	370	490	615	740	860	985	1225	1475	
	Throw	4-Way	1-1-6	1-3-9	2-5-11	3-6-13	4-8-16	5-9-18	7-11-23	9-13-28
		3-Way	1-4-11	3-7-14	4-9-18	7-11-22	8-13-27	9-14-30	12-18-38	14-22-44
		2-Way	2-6-15	4-10-20	7-12-26	10-15-31	11-17-36	13-20-41	16-26-50	20-31-54
1-Way		3-8-18	6-12-24	10-15-31	12-18-38	14-21-44	16-24-50	20-30-57	24-38-62	
Noise Criteria	15	25	31	37	42	46	53	59		
16" Dia.	Total Pressure	.032	.058	.090	.129	.175	.229	.359	.517	
	Flow Rate, CFM	418	558	698	837	977	1116	1396	1675	
	Throw	4-Way	1-3-10	2-5-13	3-8-15	5-10-16	7-12-22	9-13-19	12-15-21	13-16-23
		3-Way	3-5-9	5-7-10	6-8-11	7-9-12	8-9-13	8-10-14	9-11-16	10-12-18
		2-Way	2-5-11	4-8-13	6-10-14	8-11-16	9-12-17	10-13-18	12-14-20	13-16-22
1-Way		7-12-21	11-17-24	14-29-28	17-21-31	18-23-33	20-24-36	22-28-40	24-31-43	
Noise Criteria	16	26	32	38	43	47	54	60		

For performance notes, see page D160.

## PERFORMANCE DATA:

Models 4320, 4320A, 4320AA • Flush Face • 24 x 24 (600 x 600) and 48 x 24 (1200 x 600)  
Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	
6 x 6	Total Pressure	.013	.022	.036	.052	.070	.092	.143	.206	
	Flow Rate, CFM	75	100	125	150	175	200	250	300	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
1-Way		1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22	
Noise Criteria	—	—	12	20	23	27	34	40		
8 x 8	Total Pressure	.018	.030	.048	.069	.094	.123	.191	.276	
	Flow Rate, CFM	133	177	222	266	310	355	444	532	
	Throw	4-Way	1-1-2	1-1-4	1-1-6	1-2-7	1-3-8	2-4-9	3-6-12	4-7-14
		3-Way	1-1-5	1-2-8	1-4-10	2-5-12	3-7-14	4-8-16	6-10-20	8-12-24
		2-Way	1-2-8	1-4-10	2-6-13	4-8-16	5-9-19	7-10-21	9-13-27	10-16-30
1-Way		1-3-9	2-5-13	3-8-16	5-9-19	7-11-23	8-13-27	11-16-31	13-19-34	
Noise Criteria	—	14	19	25	30	34	41	47		
10 x 10	Total Pressure	.021	.038	.059	.086	.116	.152	.237	.341	
	Flow Rate, CFM	208	277	347	416	485	555	694	832	
	Throw	4-Way	1-1-4	1-2-6	1-3-8	2-4-10	2-5-11	3-6-13	5-8-16	6-10-20
		3-Way	1-2-8	1-4-11	3-6-13	4-8-16	5-9-19	7-11-22	9-13-28	11-16-33
		2-Way	1-3-11	3-6-14	4-9-18	6-11-22	8-13-27	9-14-30	12-18-37	14-22-40
1-Way		2-5-13	4-9-18	6-11-22	9-13-28	10-16-33	12-18-37	15-22-42	18-28-46	
Noise Criteria	—	17	24	30	35	39	45	52		
12 x 12	Total Pressure	.025	.046	.071	.103	.140	.183	.286	.411	
	Flow Rate, CFM	300	400	500	600	700	800	1000	1200	
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22	8-13-27
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-37	14-21-42
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47	19-30-52
1-Way		3-8-17	6-11-23	9-14-30	11-17-36	13-20-42	15-23-48	19-30-54	23-36-59	
Noise Criteria	12	21	28	34	39	43	49	56		
14 x 14	Total Pressure	.031	.055	.086	.124	.169	.221	.345	.497	
	Flow Rate, CFM	410	545	680	815	955	1090	1360	1635	
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22	8-13-27
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-37	14-21-42
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47	19-30-52
1-Way		3-8-17	6-11-23	9-14-30	11-17-36	13-20-42	15-23-48	19-30-54	23-36-59	
Noise Criteria	15	24	31	37	42	46	52	59		

### Performance Notes:

- All pressures are in inches w.g..
- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Noise Criteria (NC) values are based on 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in spaces indicates a Noise Criteria level of less than 10.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Square in Inches	Nominal Overall Face Size	Ak Factor
6 x 6	12 x 12	.2345
8 x 8	12 x 12	.3461
6 x 6	24 x 24	.6932
8 x 8	24 x 24	.7620
10 x 10	24 x 24	.7995
12 x 12	24 x 24	.8465
14 x 14	24 x 24	.8993

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.2289
8	12 x 12	.3461
6	24 x 24	.6010
8	24 x 24	.6854
10	24 x 24	.7283
12	24 x 24	.7651
14	24 x 24	.8102
15	24 x 24	.8389

## PERFORMANCE DATA:

### Models 4325, 4325A, 4325AA • Drop Face • 12 x 12 (300 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	
6" Dia.	Total Pressure	.009	.016	.025	.036	.049	.063	.099	.143	
	Flow Rate, CFM	58	78	98	117	137	156	196	235	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-3	1-2-4	1-2-4	2-3-6	2-3-6
		3-Way	1-1-2	1-1-3	1-2-4	1-2-5	1-3-6	2-3-7	3-4-9	3-5-9
		2-Way	1-1-3	1-1-4	1-2-5	1-3-6	2-3-7	2-4-8	3-5-11	4-6-12
1-Way		1-1-4	1-2-6	1-3-7	2-4-9	3-5-10	4-6-12	5-7-15	6-9-16	
Noise Criteria	—	—	—	16	21	25	32	38		
8" Dia.	Total Pressure	.010	.017	.026	.037	.051	.067	.104	.150	
	Flow Rate, CFM	105	140	175	210	245	280	350	420	
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
1-Way		1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19	
Noise Criteria	—	—	14	20	25	29	36	42		
6 x 6	Total Pressure	.010	.019	.028	.041	.056	.072	.113	.163	
	Flow Rate, CFM	75	100	125	150	175	200	250	300	
	Throw	4-Way	1-1-2	1-1-3	1-1-3	1-2-4	1-2-5	2-3-6	2-3-7	3-4-7
		3-Way	1-1-3	1-1-4	1-2-5	1-3-6	2-4-8	3-4-9	3-5-10	4-6-11
		2-Way	1-1-4	1-2-5	1-3-7	2-4-8	3-4-9	3-5-11	4-7-13	5-8-14
1-Way		1-1-5	1-3-7	2-4-9	3-5-11	4-6-13	5-7-15	6-9-17	7-11-19	
Noise Criteria	—	—	13	19	24	28	35	41		
8 x 8	Total Pressure	.012	.021	.032	.046	.063	.082	.128	.185	
	Flow Rate, CFM	135	175	220	265	310	355	440	530	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
1-Way		1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22	
Noise Criteria	—	10	17	23	28	32	39	45		

### Models 4325, 4325A, 4325AA • Drop Face • 24 x 12 (600 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	
6" Dia.	Total Pressure	.009	.016	.025	.036	.049	.063	.099	.143	
	Flow Rate, CFM	58	78	98	117	137	156	196	235	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-3	1-2-4	1-2-4	2-3-6	2-3-6
		3-Way	1-1-2	1-1-3	1-2-4	1-2-5	1-3-6	2-3-7	3-4-9	3-5-9
		2-Way	1-1-3	1-1-4	1-2-5	1-3-6	2-3-7	2-4-8	3-5-11	4-6-12
1-Way		1-1-4	1-2-6	1-3-7	2-4-9	3-5-10	4-6-12	5-7-15	6-9-16	
Noise Criteria	—	—	—	16	21	25	32	38		
8" Dia.	Total Pressure	.010	.017	.026	.037	.051	.067	.104	.150	
	Flow Rate, CFM	105	140	175	210	245	280	350	420	
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
1-Way		1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19	
Noise Criteria	—	—	14	20	25	29	36	42		
6 x 6	Total Pressure	.013	.022	.036	.052	.074	.092	.143	.206	
	Flow Rate, CFM	75	100	125	150	175	200	250	300	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
1-Way		1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22	
Noise Criteria	—	—	13	19	24	28	35	41		
8 x 8	Total Pressure	.012	.021	.032	.046	.063	.082	.128	.185	
	Flow Rate, CFM	135	175	220	265	310	355	440	530	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
1-Way		1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22	
Noise Criteria	—	10	17	23	28	32	39	45		

For performance notes, see page D163.

## PERFORMANCE DATA:

### Models 4325, 4325A, 4325AA • Drop Face • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	
6" Dia.	Total Pressure	.009	.016	.025	.036	.049	.063	.099	.143	
	Flow Rate, CFM	<b>58</b>	<b>78</b>	<b>98</b>	<b>117</b>	<b>137</b>	<b>156</b>	<b>196</b>	<b>235</b>	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-3	1-2-4	1-2-4	2-3-6	2-3-6
		3-Way	1-1-2	1-1-3	1-2-4	1-2-5	1-3-6	2-3-7	3-4-9	3-5-9
		2-Way	1-1-3	1-1-4	1-2-5	1-3-6	2-3-7	2-4-8	3-5-11	4-6-12
		1-Way	1-1-4	1-2-6	1-3-7	2-4-9	3-5-10	4-6-12	5-7-15	6-9-16
Noise Criteria	—	—	—	15	18	22	29	35		
8" Dia.	Total Pressure	.013	.021	.034	.049	.066	.087	.136	.195	
	Flow Rate, CFM	<b>104</b>	<b>139</b>	<b>174</b>	<b>209</b>	<b>244</b>	<b>279</b>	<b>349</b>	<b>418</b>	
	Throw	4-Way	1-1-3	1-1-4	1-2-5	1-3-6	2-3-7	2-4-8	3-5-8	4-6-9
		3-Way	1-1-4	1-2-6	2-3-7	2-4-9	3-5-11	4-6-12	5-7-13	6-9-14
		2-Way	1-2-5	1-3-7	2-4-9	3-5-11	4-6-13	5-7-15	6-9-16	7-11-18
		1-Way	1-2-7	2-4-10	3-6-12	4-7-15	6-9-18	6-10-19	8-12-21	10-15-23
Noise Criteria	—	—	13	18	24	28	35	41		
10" Dia.	Total Pressure	.016	.027	.043	.061	.084	.109	.171	.245	
	Flow Rate, CFM	<b>163</b>	<b>218</b>	<b>272</b>	<b>327</b>	<b>381</b>	<b>436</b>	<b>545</b>	<b>654</b>	
	Throw	4-Way	1-1-4	1-3-6	2-3-7	3-4-9	3-5-10	4-6-10	5-7-12	6-9-13
		3-Way	1-2-7	2-4-9	3-6-12	4-7-14	5-8-15	6-9-16	8-12-18	9-14-20
		2-Way	1-3-8	2-5-11	4-7-14	5-8-17	6-10-19	7-11-20	9-14-22	11-17-26
		1-Way	2-4-11	3-7-15	6-9-19	7-11-23	9-13-26	10-15-28	13-19-31	15-23-34
Noise Criteria	—	13	18	24	29	33	40	46		
12" Dia.	Total Pressure	.019	.033	.052	.074	.101	.132	.207	.297	
	Flow Rate, CFM	<b>235</b>	<b>314</b>	<b>392</b>	<b>471</b>	<b>549</b>	<b>628</b>	<b>785</b>	<b>942</b>	
	Throw	4-Way	1-3-6	2-4-9	3-5-11	4-6-12	5-7-13	6-9-14	7-11-15	9-12-17
		3-Way	2-4-10	3-6-13	5-8-16	6-10-18	7-11-19	9-13-20	11-16-23	13-18-26
		2-Way	2-5-12	4-8-16	6-10-20	8-12-22	9-14-24	11-16-22	13-20-30	16-22-33
		1-Way	3-7-16	6-11-22	9-14-28	11-16-30	13-19-33	14-22-35	18-28-39	22-30-43
Noise Criteria	—	17	23	29	34	38	45	51		
14" Dia.	Total Pressure	.021	.038	.059	.086	.117	.153	.239	.344	
	Flow Rate, CFM	<b>318</b>	<b>424</b>	<b>530</b>	<b>636</b>	<b>742</b>	<b>848</b>	<b>1060</b>	<b>1272</b>	
	Throw	4-Way	2-4-8	3-5-11	4-7-13	5-8-14	6-10-16	7-11-17	9-13-19	11-14-21
		3-Way	3-6-13	5-9-18	7-11-20	9-13-22	10-15-24	12-18-26	15-20-29	18-23-32
		2-Way	3-8-16	6-11-22	9-13-26	11-16-28	12-19-31	14-22-33	18-27-36	22-28-40
		1-Way	5-11-22	9-14-30	12-18-35	14-22-38	17-27-41	19-30-44	24-35-49	30-38-51
Noise Criteria	10	20	28	32	37	41	48	54		
15" Dia.	Total Pressure	.022	.040	.062	.091	.127	.171	.265	.366	
	Flow Rate, CFM	<b>370</b>	<b>490</b>	<b>615</b>	<b>740</b>	<b>860</b>	<b>985</b>	<b>1225</b>	<b>1475</b>	
	Throw	4-Way	2-4-7	3-5-10	4-7-12	5-8-14	6-9-15	7-10-17	9-12-19	10-13-21
		3-Way	3-6-13	5-9-19	7-10-19	9-12-22	10-15-23	12-18-26	14-19-29	18-22-32
		2-Way	3-8-15	6-11-21	8-12-26	11-15-28	11-19-30	13-21-32	18-27-35	21-27-40
		1-Way	5-10-21	8-14-29	11-17-34	13-21-36	17-26-40	18-29-42	24-34-47	28-36-50
Noise Criteria	12	22	28	34	39	43	50	56		
16" Dia.	Total Pressure	.025	.045	.070	.100	.137	.179	.280	.403	
	Flow Rate, CFM	<b>418</b>	<b>558</b>	<b>698</b>	<b>837</b>	<b>977</b>	<b>1116</b>	<b>1396</b>	<b>1675</b>	
	Throw	4-Way	3-5-11	5-7-15	6-9-17	7-11-18	8-13-20	10-15-21	12-17-24	15-18-27
		3-Way	2-6-13	4-9-17	7-11-19	9-13-21	10-16-22	12-17-24	15-19-28	17-21-30
		2-Way	2-6-13	4-9-17	7-11-19	9-13-21	10-16-22	12-17-24	15-19-28	17-21-30
		1-Way	7-12-23	12-17-27	15-21-31	18-23-34	20-26-36	22-27-39	24-31-43	26-34-47
Noise Criteria	13	23	29	35	40	44	51	57		

For performance notes, see page D163.



## PERFORMANCE DATA:

### Models 4325, 4325A, 4325AA • Drop Face • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	
6 x 6	Total Pressure	.010	.019	.028	.041	.056	.072	.113	.163	
	Flow Rate, CFM	75	100	125	150	175	200	250	300	
	Throw	4-Way	1-1-2	1-1-3	1-1-3	1-2-4	1-2-5	2-3-6	2-3-7	3-4-7
		3-Way	1-1-3	1-1-4	1-2-5	1-3-6	2-4-8	3-4-9	3-5-10	4-6-11
		2-Way	1-1-4	1-2-5	1-3-7	2-4-8	3-4-9	3-5-11	4-7-13	5-8-14
1-Way		1-1-5	1-3-7	2-4-9	3-5-11	4-6-13	5-7-15	6-9-17	7-11-19	
Noise Criteria	—	—	—	17	20	24	31	37		
8 x 8	Total Pressure	.014	.024	.038	.056	.075	.098	.153	.220	
	Flow Rate, CFM	133	177	222	266	310	355	444	532	
	Throw	4-Way	1-1-3	1-2-5	1-3-6	2-3-7	3-4-8	3-5-9	4-6-10	5-7-11
		3-Way	1-2-5	1-3-7	2-4-9	3-5-11	4-6-13	5-7-14	6-9-15	7-11-17
		2-Way	1-2-7	2-4-9	3-6-12	4-7-14	5-8-16	6-9-17	8-12-19	9-14-21
1-Way		1-3-9	3-6-13	4-8-16	6-9-19	7-11-21	8-13-23	10-16-27	13-19-29	
Noise Criteria	—	11	16	22	27	31	38	44		
10 x 10	Total Pressure	.018	.031	.049	.069	.095	.124	.193	.278	
	Flow Rate, CFM	208	277	347	416	485	555	694	832	
	Throw	4-Way	1-2-5	2-3-7	3-4-9	3-5-11	4-6-12	5-7-12	6-9-14	7-11-15
		3-Way	1-4-8	3-5-11	4-7-14	5-8-16	6-10-18	7-11-19	9-14-21	11-16-23
		2-Way	2-5-11	4-7-14	6-9-18	7-11-20	8-13-22	9-14-24	12-18-28	14-20-30
1-Way		3-6-14	5-9-19	8-12-24	9-14-28	11-17-30	13-19-32	16-24-36	19-28-39	
Noise Criteria	—	14	21	27	32	36	42	49		
12 x 12	Total Pressure	.02	.037	.058	.084	.114	.149	.233	.335	
	Flow Rate, CFM	300	400	500	600	700	800	1000	1200	
	Throw	4-Way	1-4-8	3-5-11	4-7-13	5-8-14	6-9-15	7-11-16	9-13-18	11-14-20
		3-Way	2-6-12	5-8-17	7-10-19	8-12-21	10-15-23	11-17-24	14-19-28	17-21-31
		2-Way	3-7-15	6-10-21	8-13-24	10-15-27	12-18-29	14-21-32	17-24-35	21-27-38
1-Way		4-10-21	8-14-29	11-17-33	14-21-36	16-24-39	18-29-42	23-33-46	28-36-51	
Noise Criteria	—	18	25	31	36	40	46	53		
14 x 14	Total Pressure	.025	.046	.071	.103	.140	.183	.286	.411	
	Flow Rate, CFM	408	544	681	817	953	1089	1361	1633	
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22	8-13-27
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-37	14-21-42
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47	19-30-52
1-Way		3-8-17	6-11-23	9-14-30	11-17-36	13-20-42	15-23-48	19-30-54	23-36-59	
Noise Criteria	12	21	28	34	39	43	49	56		

#### Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re  $10^{-12}$  watts. Dash (—) in space indicates a Noise Criteria of less than 10.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

**HOW TO ORDER**

**PERFORATED SUPPLY CEILING DIFFUSERS, FACE MOUNTED DEFLECTORS**

**MODEL SERIES 4320**

**EXAMPLE: 4320 - RND - 08 - 24 x 24 - L - AW - -**

**1. Models**

- 4320 Steel, Flush Face
- 4325 Steel, Drop Face
- 4320A Aluminum Face, Flush
- 4325A Aluminum Face, Drop
- 4320AA Aluminum Face and Backpan, Flush
- 4325AA Aluminum Face and Backpan, Drop

**2. Neck Type**

- RND Round
- SQR Square/Rectangular

**3. Neck Size (inches)**

- Round:**  
06, 08, 10, 12, 14, 15, 16
- Square or Rectangular:**  
6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 18 x 6

**4. Ceiling Module Size**

- Imperial (inches)**  
12 x 12, 16 x 16, 20 x 20, 24 x 12, 24 x 24 (default), 48 x 24
- Metric (mm)**  
300 x 300, 400 x 400, 500 x 500, 600 x 300, 600 x 600, 1200 x 600

**5. Frame Type**

- L Lay-in T-Bar (default)
- S Surface Mount
- SP Spline
- M Metal Pan (Snap-in)
- F Finline®

**6. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime Coat Paint
- BA AW Face/Black Backpan
- SP Special Custom Color

**OPTIONS & ACCESSORIES:**

**7. Damper**

- None (default)
- Round Neck:**  
4250 Radial Sliding, 6" - 14"  
4275 Radial Opposed Blade, 5" - 24"  
4675 Butterfly, 6" - 14"
- Square Neck:**  
OBD Opposed Blade, Steel  
OBDA Opposed Blade, Aluminum (AA models only)

**8. External Insulation**

- None (default)
- EX Foil-back (installed), R-4.2
- EXB Foil-back (loose), R-4.2
- MIB Molded Insulation Blanket, R-6.0

**9. Earthquake Tabs**

- None (default)
- EQT Earthquake Tabs

**OTHER OPTIONS & ACCESSORIES:**

**10. Air Balancing Devices**

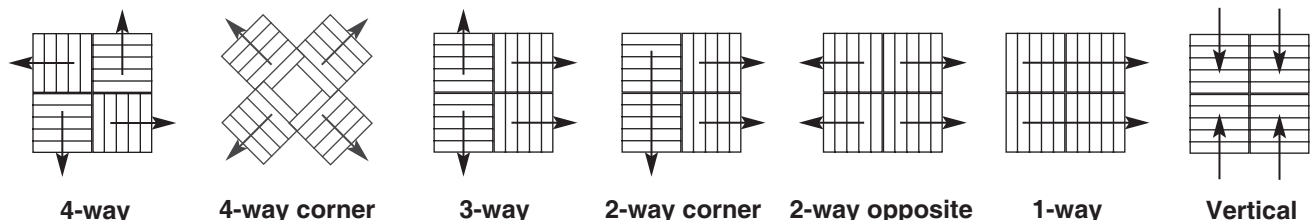
- (order separately)
- Round Neck:**  
EGR Equalizing Grid  
DEGR Damper/Equalizing Grid
- Square/Rectangular Neck:**  
EGL Equalizing Grid (long)  
EGS Equalizing Grid (short)  
DEGL Damper/Equalizing Grid (long)  
DEGS Damper/Equalizing Grid (short)

**Notes:**

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.
2. Dampers are shipped loose for field installation.
3. EX and EXB maximum size 24" x 24" (600 x 600). MIB Molded Insulation Blanket available on 24" x 24" (600 x 600) round neck only.

**Available Air Patterns**

All diffusers are shipped with the standard 4-way pattern, but the air pattern can be simply field adjusted by lowering the hinged face and rotating the spring loaded pattern controllers.



**Note:**

1. Consult individual models as to limitations and availability of ceiling module and neck size combinations.

## HOW TO SPECIFY

**SUGGESTED SPECIFICATION:****Models 4320, 4325 – Steel**

Furnish and install **Nailor Model** (select one) **4320 Flush Face** or **4325 Drop Face, Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck as specified. A corrosion-resistant steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the rear of the perforated face shall be four individually stamped square pattern deflectors that are easily field adjusted to provide throws in a 1, 2, 3, or 4-way pattern. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**Models 4320A, 4325A – Aluminum Face**

Furnish and install **Nailor Model** (select one) **4320A Flush Face** or **4325A Drop Face, Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the rear of the perforated face shall be four individually stamped square pattern deflectors that are easily field adjusted to provide throws in a 1, 2, 3, or 4-way pattern. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**Models 4320AA, 4325AA – Aluminum**

Furnish and install **Nailor Model** (select one) **4320AA Flush Face** or **4325AA Drop Face, Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped aluminum backpan with a round or square neck as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the rear of the perforated face shall be four individually stamped square pattern deflectors that are easily field adjusted to provide throws in a 1, 2, 3, or 4-way pattern. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORATED CURVED BLADE DIFFUSERS

- SUPPLY
- 4-WAY ADJUSTABLE DISCHARGE PATTERN (STANDARD)
- 1, 2 OR 3-WAY DISCHARGE PATTERN (OPTIONAL)

### Steel Models:

- 4320CB Flush Face
- 4325CB Drop Face

### Aluminum Face Models:

- 4320CBA Flush Face
- 4325CBA Drop Face

### Aluminum Models:

- 4320CBAA Flush Face
- 4325CBAA Drop Face



Model 4320CB

Model Series 4320CB Curved Blade Diffusers provide the unobtrusive, smooth appearance preferred by many architects with superior features and performance characteristics. Designed to maximize throw, this model features individually adjustable, friction pivoted curved blade deflectors mounted directly under the neck. They project a tight, uniform horizontal blanket of air over a wide range of air volumes and provide excellent performance in variable air volume systems.

4320CB Diffusers features a 4-way adjustable discharge pattern as standard. The deflector blades can be adjusted to control both the angle of discharge and hence throw from full horizontal to vertical in each direction and also damper the air volume. By closing off the deflectors in one or more directions, directional control can also be achieved. Model Series 4320CB is also available with a factory supplied 1, 2 or 3-way adjustable discharge pattern controller.

Model Series 4325CB features a dropped (extended) face panel that is available to complement regular tile ceiling systems, so that the panel remains flush with the ceiling line.

### STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Discharge pattern can be adjusted from horizontal to vertical before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and moving the curved blade deflectors.
- Inlet collar has 1 1/4" (32) depth for easy duct connection.

- Dropping the perforated face gives access to the optional damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Return models (4360 Series) have the same face and frame construction as the supply models to match their appearance.

### CONSTRUCTION MATERIAL:

Models 4320CB/4325CB have a corrosion-resistant steel perforated face and backpan. Models 4320CBA/4325CBA

have an aluminum perforated face and a corrosion-resistant steel backpan. Models 4320BAA/4325CBAA have an aluminum perforated face and backpan.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

#### Round Neck:

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- 4675 Butterfly Damper 6" – 14" (152 – 356).
- MIB Molded Insulation Blanket, R-6.0.

#### Square Neck:

- OBD Opposed Blade Damper (Steel)
- OBDA Opposed Blade Damper (Aluminum) (-AA models only)

### OTHER OPTIONS & ACCESSORIES:

- EX External Foil-Back Insulation (installed) -R-4.2.
- EXB External Foil-Back Insulation (loose) -R-4.2.
- EQT Earthquake Tabs

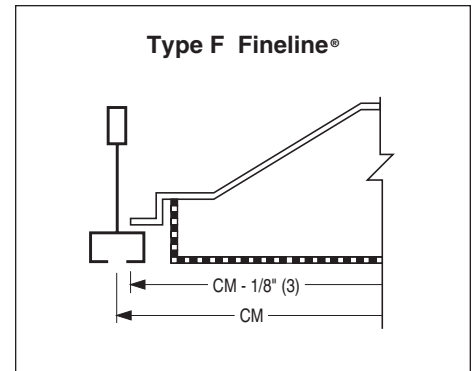
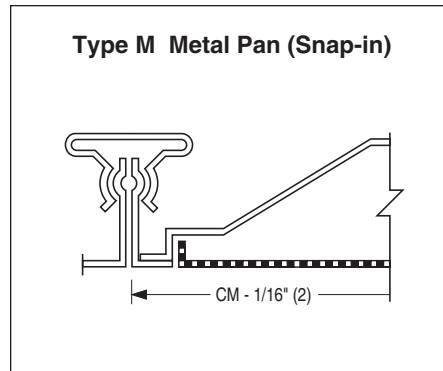
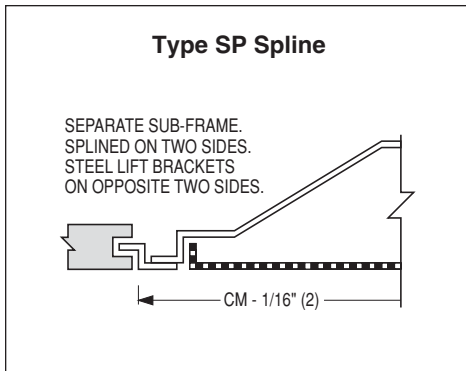
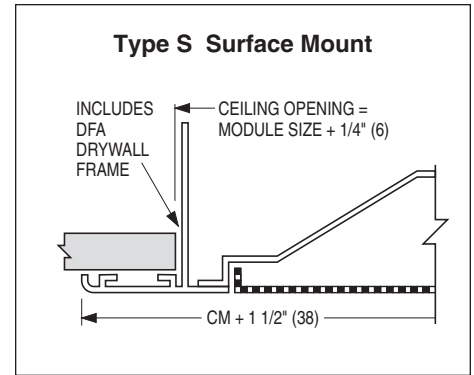
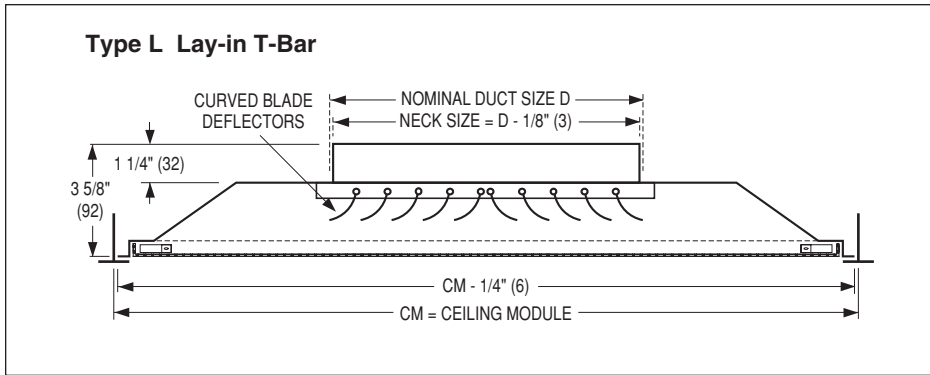
For additional options and accessories; see page D255.

### Available Combinations of Ceiling Module vs. Neck Size

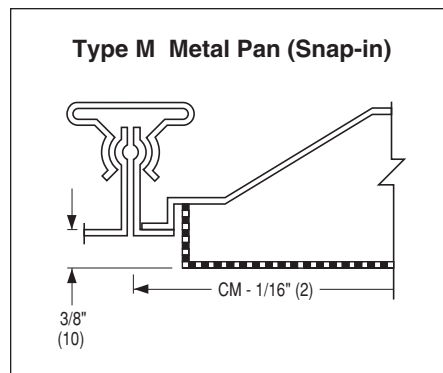
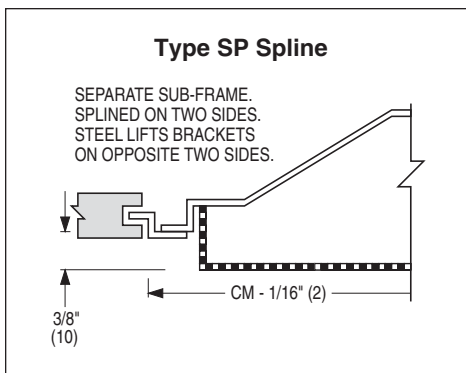
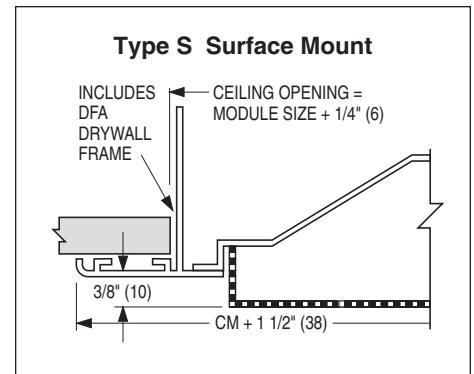
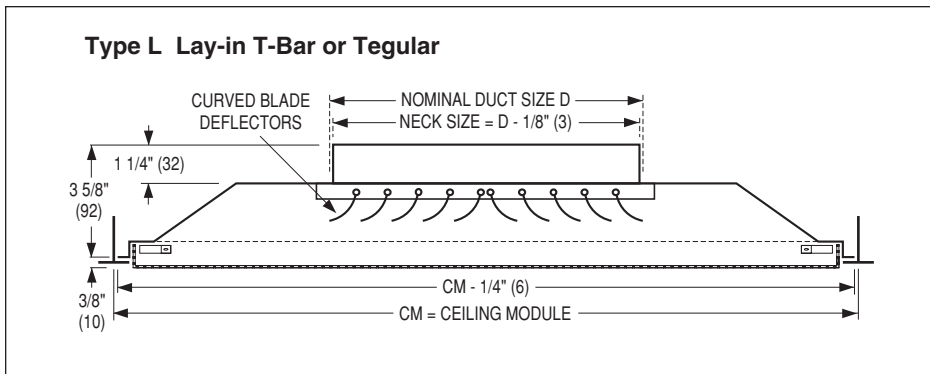
Ceiling Module CM		Nominal Duct Size D			
Imperial Modules	Metric Modules	Round Neck		Square Neck	
		Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6, 8	152, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
16 x 16	400 x 400	6, 8, 10, 12	152, 203, 254, 305	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
24 x 12	600 x 300	6, 8	152, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
20 x 20	500 x 500	6, 8, 10, 12, 14	152, 203, 254, 305, 356	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16, 18	152, 203, 254, 305, 356, 381, 406, 457	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406, 457 x 457

## DIMENSIONAL DATA AND FRAME TYPES:

Models 4320CB, 4320CBA, 4320CBAA • Supply • Flush Face



Models 4325CB, 4325CBA, 4325CBAA • Supply • Drop Face



D  
CEILING DIFFUSERS

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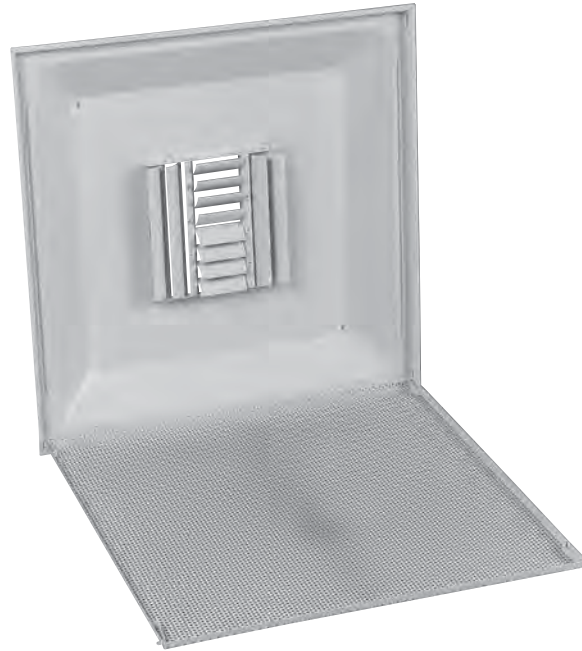
## Model Series 4320CB • Adjusting Pattern Controllers

### Removing Perforated Face

The **4300 Series** is supplied with a removable face plate that is retained in place by four spring-loaded latches, one located in each corner of the diffuser.

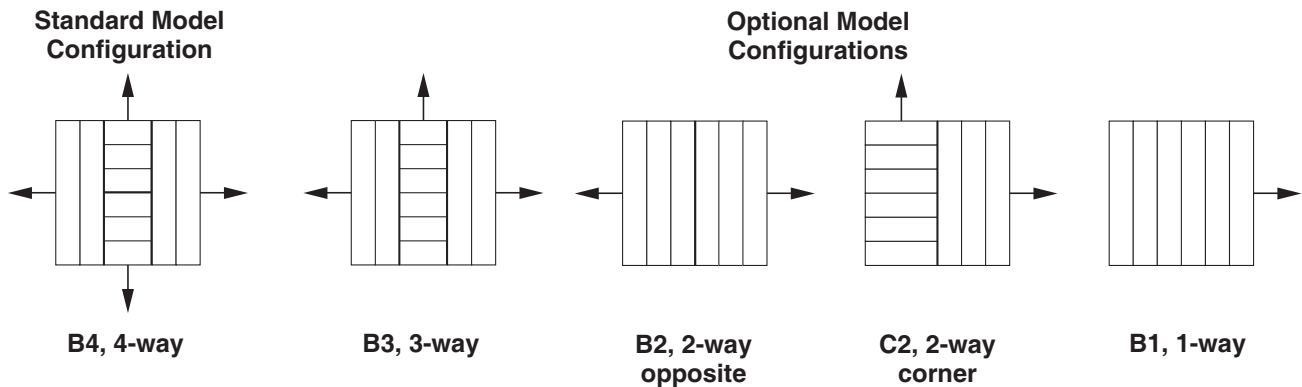
1. Insert a small screwdriver through a perforated hole in the edge of the face plate and push the spring-loaded latch inward from diffuser frame to release face.
2. Repeat procedure on the opposite side.
3. The face plate will now swing down, using the two remaining latches as hinges. The face may be completely removed by depressing in a similar manner, the two remaining latches.
4. To close; lift perforated face, depress spring latches with fingers and snap in place.

The pattern controller in the neck of the diffuser features individually adjustable deflector blades which may be used to vary the discharge pattern from full horizontal to vertical. Each blade is friction pivoted using a tension wire which securely holds its position after adjustment.



Round or Square Neck • 4-way Pattern

### Pattern Controller Options



The **4320CB Series** is supplied with this style of pattern controller unless specified otherwise.



## PERFORMANCE DATA:

### Models 4320CB, 4325CB, 4320CBA, 4325CBA, 4320CBAA, 4325CBAA • 12 x 12 Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1100	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.075	
6" Dia.	Total Pressure	.023	.042	.037	.039	.052	.159	.204	.307	
	Flow Rate, CFM	60	80	95	115	135	155	175	215	
	Throw	4-Way	1-2-4	2-3-6	2-4-7	3-5-7	3-5-8	4-6-9	5-6-9	6-6-11
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15	7-11-16
		2-Way	2-4-8	3-5-11	4-6-13	5-8-15	6-9-16	7-11-18	8-12-20	9-13-22
1-Way		3-4-9	4-6-12	5-8-16	6-9-18	7-11-20	8-12-22	9-14-23	10-16-26	
Noise Criteria	—	—	—	18	23	28	32	40		
8" Dia.	Total Pressure	.025	.045	.069	.102	.137	.180	.227	.340	
	Flow Rate, CFM	105	140	175	210	245	280	315	385	
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12	6-9-15
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14	8-11-16
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21	10-16-24
1-Way		3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25	12-19-29	
Noise Criteria	—	—	15	21	26	31	34	41		
6 x 6	Total Pressure	.025	.045	.066	.096	.132	.175	.224	.338	
	Flow Rate, CFM	75	100	125	150	175	200	225	275	
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11	6-8-12
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15	7-11-17
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22	10-16-25
1-Way		3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26	11-18-29	
Noise Criteria	—	—	—	19	24	29	33	41		
8 x 8	Total Pressure	.027	.049	.076	.112	.151	.197	.249	.374	
	Flow Rate, CFM	135	175	220	265	310	355	400	490	
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14	7-11-16
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16	8-12-18
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24	12-18-27
1-Way		4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28	14-23-32	
Noise Criteria	—	—	16	22	27	32	35	42		

### Models 4320CB, 4325CB, 4320CBA, 4325CBA, 4320CBAA, 4325CBAA • 24 x 12 Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1100	
	VP	.006	.010	.016	.023	.031	.040	.051	.075	
6" Dia.	Total Pressure	.023	.042	.037	.039	.052	.159	.204	.307	
	Flow Rate, CFM	60	80	95	115	135	155	175	215	
	Throw	4-Way	1-2-4	2-3-6	2-4-7	3-5-7	3-5-8	4-6-9	5-6-9	6-6-11
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15	7-11-16
		2-Way	2-4-8	3-5-11	4-6-13	5-8-15	6-9-16	7-11-18	8-12-20	9-13-22
1-Way		3-4-9	4-6-12	5-8-16	6-9-18	7-11-20	8-12-22	9-14-23	10-16-26	
Noise Criteria	—	—	—	18	23	28	32	40		
8" Dia.	Total Pressure	.025	.045	.069	.102	.137	.180	.227	.340	
	Flow Rate, CFM	105	140	175	210	245	280	315	385	
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12	6-9-15
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14	8-11-16
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21	10-16-24
1-Way		3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25	12-19-29	
Noise Criteria	—	—	15	21	26	31	34	41		
6 x 6	Total Pressure	.025	.045	.066	.096	.132	.175	.224	.338	
	Flow Rate, CFM	75	100	125	150	175	200	225	275	
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11	6-8-12
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15	7-11-17
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22	10-16-25
1-Way		3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26	11-18-29	
Noise Criteria	—	—	—	19	24	29	33	41		
8 x 8	Total Pressure	.027	.049	.076	.112	.151	.197	.249	.374	
	Flow Rate, CFM	135	175	220	265	310	355	400	490	
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14	7-11-16
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16	8-12-18
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24	12-18-27
1-Way		4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28	14-23-32	
Noise Criteria	—	—	16	22	27	32	35	42		

For performance notes, see page D171.

## PERFORMANCE DATA:

Models 4320CB, 4325CB, 4320CBA, 4325CBA, 4320CBAA, 4325CBAA • 24 x 24 (600 x 600)  
Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1100	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.075	
6" Dia.	Total Pressure	.014	.025	.036	.052	.071	.094	.120	.181	
	Flow Rate, CFM	60	80	95	115	135	155	175	215	
	Throw	4-Way	1-2-4	2-3-6	2-3-7	3-4-7	3-5-8	4-6-9	4-6-9	5-6-11
		3-Way	1-2-5	2-3-7	2-4-8	3-5-9	4-6-9	4-7-10	5-7-11	6-8-12
		2-Way	2-3-7	3-4-9	4-6-11	4-7-12	5-8-13	6-9-14	7-11-15	8-12-17
1-Way		2-4-8	3-5-11	4-7-13	5-8-15	6-9-16	7-11-17	8-12-18	9-14-21	
Noise Criteria	—	—	—	17	22	26	28	35		
8" Dia.	Total Pressure	.015	.027	.041	.060	.081	.106	.134	.200	
	Flow Rate, CFM	105	140	175	210	245	280	315	385	
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12	6-9-15
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14	8-11-16
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21	10-16-24
1-Way		3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25	12-19-29	
Noise Criteria	—	—	17	21	26	30	32	37		
10" Dia.	Total Pressure	.017	.029	.045	.066	.090	.118	.149	.224	
	Flow Rate, CFM	165	215	270	325	380	435	490	600	
	Throw	4-Way	2-3-7	3-5-10	4-6-12	5-7-13	5-8-14	6-10-15	7-11-16	8-12-19
		3-Way	2-4-8	3-5-11	4-7-13	5-8-15	6-10-16	7-11-17	8-13-18	9-15-21
		2-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-23	10-16-25	12-18-27	14-21-31
1-Way		4-7-14	6-9-18	7-11-23	9-14-26	11-16-28	12-18-29	14-22-31	16-25-35	
Noise Criteria	—	—	19	23	28	31	34	40		
12" Dia.	Total Pressure	.018	.032	.050	.072	.099	.127	.162	.394	
	Flow Rate, CFM	235	315	390	470	550	625	705	865	
	Throw	4-Way	3-4-9	4-6-12	5-7-14	6-9-15	7-10-17	8-12-18	9-13-20	10-15-22
		3-Way	3-5-10	4-7-14	5-8-16	7-10-18	8-12-20	9-14-22	10-15-23	11-17-26
		2-Way	4-7-14	6-9-20	8-12-24	9-14-26	11-17-28	13-20-30	14-23-32	16-26-36
1-Way		5-8-17	7-11-23	9-14-28	11-17-31	13-20-33	15-23-35	17-26-37	19-29-42	
Noise Criteria	—	16	21	25	29	33	36	42		
14" Dia.	Total Pressure	.019	.034	.054	.078	.107	.139	.175	.230	
	Flow Rate, CFM	320	425	535	640	750	855	960	1175	
	Throw	4-Way	3-5-10	4-7-14	5-8-16	7-10-18	8-12-21	9-14-22	10-16-23	14-19-26
		3-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-24	10-16-25	12-18-27	14-21-31
		2-Way	5-8-17	7-11-24	9-14-28	11-17-30	13-21-33	15-24-35	17-26-37	19-29-42
1-Way		6-9-20	8-13-27	11-16-33	13-20-36	15-24-38	17-27-41	20-30-43	23-34-49	
Noise Criteria	—	17	22	26	30	34	38	45		
15" Dia.	Total Pressure	.011	.036	.056	.081	.110	.144	.180	.271	
	Flow Rate, CFM	370	490	615	740	860	985	1100	1350	
	Throw	4-Way	3-6-10	4-2-14	5-8-17	8-10-19	8-13-21	10-14-23	10-16-24	14-19-26
		3-Way	4-6-12	6-8-17	6-11-21	8-13-22	10-14-25	11-16-26	13-18-28	15-21-32
		2-Way	4-8-17	7-12-25	9-15-30	11-18-31	13-22-34	16-25-35	17-27-38	19-31-43
1-Way		6-9-20	8-14-28	12-17-34	14-21-37	16-24-39	18-27-42	17-31-43	19-35-49	
Noise Criteria	—	18	23	27	31	35	39	46		
16" Dia.	Total Pressure	.021	.038	.059	.084	.114	.149	.189	.283	
	Flow Rate, CFM	420	560	700	835	975	1115	1255	1535	
	Throw	4-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-23	10-16-25	12-18-26	16-22-31
		3-Way	4-7-14	6-9-18	7-11-23	9-14-25	10-16-27	12-18-29	14-22-30	16-25-34
		2-Way	6-9-20	8-13-27	10-16-32	13-20-35	15-24-37	17-27-40	20-30-42	23-34-48
1-Way		7-11-23	10-15-31	12-18-37	15-23-41	17-27-44	21-31-47	23-35-50	26-40-57	
Noise Criteria	—	19	24	28	32	36	40	47		
18" Dia.	Total Pressure	.022	.039	.061	.087	.118	.155	.196	.293	
	Flow Rate, CFM	530	705	885	1060	1235	1415	1590	1945	
	Throw	4-Way	4-7-14	5-9-18	7-10-20	9-13-24	10-16-26	10-19-28	13-21-29	17-25-33
		3-Way	4-7-17	6-10-21	8-12-24	10-15-28	11-20-30	13-22-32	17-24-34	19-27-39
		2-Way	7-10-23	10-14-29	11-17-34	15-22-36	18-28-43	20-30-44	24-34-50	27-39-57
1-Way		8-12-26	11-17-33	14-21-40	18-25-45	21-32-50	23-38-53	29-40-56	33-46-64	
Noise Criteria	—	21	26	30	34	38	42	49		

For performance notes, see page D171.

## PERFORMANCE DATA:

Models 4320CB, 4325CB, 4320CBA, 4325CBA, 4320CBAA, 4325CBAA • 24 x 24 (600 x 600)  
Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1100	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.075	
6 x 6	Total Pressure	.015	.027	.039	.057	.078	.103	.132	.199	
	Flow Rate, CFM	75	100	125	150	175	200	225	275	
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11	6-8-12
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15	7-11-16
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22	10-16-25
1-Way		3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26	11-18-29	
Noise Criteria	—	—	—	18	23	27	29	35		
8 x 8	Total Pressure	.016	.029	.045	.066	.089	.116	.147	.220	
	Flow Rate, CFM	135	175	220	265	310	355	400	490	
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14	7-11-16
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16	8-12-18
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24	12-18-27
1-Way		4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28	15-22-32	
Noise Criteria	—	—	18	22	27	31	33	38		
10 x 10	Total Pressure	.018	.031	.049	.072	.099	.129	.163	.246	
	Flow Rate, CFM	210	275	345	415	485	555	625	765	
	Throw	4-Way	2-4-8	3-5-11	4-7-13	5-8-14	6-10-16	7-11-17	8-12-18	9-13-21
		3-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-22	10-16-25
		2-Way	4-6-13	6-9-18	7-11-22	9-13-25	10-16-26	12-18-28	13-21-30	15-24-34
1-Way		5-8-16	7-10-22	8-13-26	10-16-29	12-18-31	14-22-33	16-25-35	18-29-40	
Noise Criteria	—	—	20	24	29	32	35	41		
12 x 12	Total Pressure	.019	.035	.055	.079	.108	.139	.178	.433	
	Flow Rate, CFM	300	400	500	600	700	800	900	1100	
	Throw	4-Way	3-5-10	4-6-13	5-8-16	6-10-17	8-12-20	9-13-21	10-15-22	11-17-25
		3-Way	3-5-11	5-7-15	6-9-18	7-11-21	9-13-23	10-15-24	11-17-26	12-19-29
		2-Way	5-8-16	7-11-23	9-13-27	11-16-29	13-20-32	14-23-34	16-25-36	18-29-41
1-Way		6-9-20	8-12-26	10-16-31	12-20-34	14-23-37	17-26-40	22-31-44	25-35-50	
Noise Criteria	—	17	22	26	30	34	37	43		
14 x 14	Total Pressure	.020	.037	.059	.085	.117	.152	.192	.253	
	Flow Rate, CFM	410	545	680	815	955	1090	1225	1500	
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22	8-12-25
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-37	12-21-42
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47	18-27-54
1-Way		3-8-17	6-11-23	9-14-30	11-17-36	13-20-42	15-23-48	19-30-54	22-35-64	
Noise Criteria	—	18	23	27	31	35	39	46		
15 x 15	Total Pressure	.012	.039	.061	.089	.121	.158	.198	.298	
	Flow Rate, CFM	470	625	780	935	1095	1250	1405	1720	
	Throw	4-Way	4-6-12	5-8-17	7-10-21	8-12-23	10-15-25	11-17-26	12-20-28	13-22-32
		3-Way	4-7-14	6-9-20	8-12-24	9-14-26	11-17-28	13-20-30	14-23-32	16-26-36
		2-Way	6-10-21	9-13-28	11-17-33	13-21-37	16-25-40	18-28-42	21-32-45	24-36-51
1-Way		8-12-25	10-16-33	13-21-39	16-25-43	18-29-46	22-33-49	25-37-53	29-42-60	
Noise Criteria	—	19	24	28	32	36	40	47		
16 x 16	Total Pressure	.023	.041	.064	.092	.125	.163	.207	.311	
	Flow Rate, CFM	530	710	890	1065	1245	1420	1600	1955	
	Throw	4-Way	4-7-14	5-9-18	7-10-20	9-13-24	10-16-26	10-19-28	13-21-29	15-24-33
		3-Way	4-7-17	6-10-21	8-12-24	10-15-28	11-20-30	13-22-32	17-24-34	19-27-39
		2-Way	7-10-23	10-14-29	11-17-34	15-22-36	18-28-43	20-30-44	24-34-50	27-39-57
1-Way		8-12-26	11-17-33	14-21-40	18-25-45	21-32-50	23-38-53	29-40-56	33-46-64	
Noise Criteria	—	20	25	29	33	37	41	49		
18 x 18	Total Pressure	.024	.042	.067	.095	.129	.170	.215	.322	
	Flow Rate, CFM	675	900	1125	1350	1575	1800	2025	2475	
	Throw	4-Way	5-7-15	6-10-21	8-12-25	10-15-27	12-18-30	13-21-32	15-24-33	17-27-38
		3-Way	5-8-17	7-11-24	9-14-29	11-17-32	13-22-34	15-24-36	17-27-39	19-31-44
		2-Way	8-12-26	11-16-34	13-21-40	16-26-44	20-30-47	23-34-50	26-38-54	29-43-62
1-Way		9-14-29	12-20-39	16-25-47	20-29-52	23-34-56	26-39-60	29-44-64	33-50-73	
Noise Criteria	15	22	27	31	35	39	43	51		

### Performance Notes:

- All pressures are in inches w.g..
- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts.

Dash (—) in space indicates a Noise Criteria of less than 15.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

### Balancing:

It is recommended that a commercially

available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## HOW TO ORDER

### PERFORATED CURVED BLADE SUPPLY CEILING DIFFUSERS

#### MODEL SERIES 4320CB

EXAMPLE: 4320CB - RND - 08 - 24 x 24 - L - AW - B4 - -

1. **Models**

- 4320CB Steel, Flush Face
- 4325CB Steel, Drop Face
- 4320CBA Aluminum Face, Flush
- 4325CBA Aluminum Face, Drop
- 4320CBAA Aluminum Face and Backpan, Flush
- 4325CBAA Aluminum Face and Backpan, Drop

2. **Neck Type**

- RND Round
- SQR Square/Rectangular

3. **Neck Size (inches)**

**Round:**

06, 08, 10, 12, 14, 15, 16, 18

**Square or Rectangular:**

6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18

4. **Ceiling Module Size**

**Imperial (inches)**

12 x 12, 16 x 16, 20 x 20, 24 x 12, 24 x 24 (default), 48 x 24

**Metric (mm)**

300 x 300, 400 x 400, 500 x 500, 600 x 300, 600 x 600, 1200 x 600

5. **Frame Type**

- L Lay-in T-Bar (default)
- S Surface Mount
- SP Spline
- M Metal Pan (Snap-in)
- F Fineline®

6. **Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime Coat Paint
- BA AW Face/Black Backpan
- SP Special Custom Color

7. **Blow Pattern**

- B4 4-way (default)
- B1 1-way
- B2 2-way opposite
- B3 3-way
- C2 2-way corner

**OPTIONS & ACCESSORIES:**

8. **Damper**

- None (default)

**Round Neck:**

- 4250 Radial Sliding, 6" - 14"
- 4275 Radial Opposed Blade, 5" - 24"
- 4675 Butterfly, 6" - 14"

**Square Neck:**

- OBD Opposed Blade, Steel
- OBDA Opposed Blade, Aluminum (AA models only)

9. **External Insulation**

- None (default)
- EX Foil-back (installed), R-4.2
- EXB Foil-back (loose), R-4.2
- MIB Molded Insulation Blanket, R-6.0

10. **Earthquake Tabs**

- None (default)
- EQT Earthquake Tabs

**OTHER OPTIONS & ACCESSORIES:**

11. **Air Balancing Devices**

(order separately)

**Round Neck:**

- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

**Square/Rectangular Neck:**

- EGL Equalizing Grid (long)
- EGS Equalizing Grid (short)
- DEGL Damper/Equalizing Grid (long)
- DEGS Damper/Equalizing Grid (short)

**Notes:**

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

2. Dampers are shipped loose for field installation.

3. EX and EXB maximum size 24" x 24" (600 x 600). MIB Molded Insulation Blanket available on 24" x 24" (600 x 600) round neck only.

## HOW TO SPECIFY

### SUGGESTED SPECIFICATION:

#### Models 4320CB, 4325CB – Steel

Furnish and install **Nailor Model** (select one) **4320CB Flush Face** or **4325CB Drop Face, Perforated Supply Curved Blade Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck as specified. A corrosion-resistant steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the neck of the diffuser shall be a factory installed curved blade pack with individually adjustable blades configured for a 4-way (standard) throw. (Optional) Factory installed 3, 2 or 1-way (select one) pattern to be supplied. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Models 4320CBA, 4325CBA – Aluminum Face

Furnish and install **Nailor Model** (select one) **4320CBA Flush Face** or **4325CBA Drop Face, Perforated Supply Curved Blade Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the neck of the diffuser shall be a factory installed curved blade pack with individually adjustable blades configured for a 4-way (standard) throw. (Optional) Factory installed 3, 2 or 1-way (select one) pattern to be supplied. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Models 4320CBAA, 4325CBAA – Aluminum

Furnish and install **Nailor Model** (select one) **4320CBAA Flush Face** or **4325CBAA Drop Face, Perforated Supply Curved Blade Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a stamped aluminum backpan with a round or square neck as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the neck of the diffuser shall be a factory installed curved blade pack with individually adjustable blades configured for a 4-way (standard) throw. (Optional) Factory installed 3, 2 or 1-way (select one) pattern to be supplied. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



## PERFORATED CURVED BLADE DIFFUSERS

- SUPPLY
- SURFACE MOUNT
- FULL FACE SQUARE NECK
- 4-WAY ADJUSTABLE DISCHARGE PATTERN (STANDARD)
- 1, 2 OR 3-WAY DISCHARGE PATTERN (OPTIONAL)

### Steel Face Model:

4340CB

### Aluminum Model:

4340CBA

- Suffix '-O' adds a steel opposed blade damper



Model 4340CB

Model Series 4340CB Curved Blade Diffusers are designed to complement the Nailor 4320CB curved blade ceiling diffusers and feature the same individually adjustable, friction pivoted curved blade pattern controllers. Designed to maximize throw, they project a tight, uniform horizontal blanket of air over a wide range of air volumes and provide excellent performance in VAV systems.

Model 4340CB is a square neck grille frame style design, featuring full face pattern controllers, for surface mount installation in hard ceilings. A 4-way adjustable discharge pattern is standard. The pattern controllers may also be used to damper the air volume and by closing them off in one or more directions, directional control can also be achieved. Also available with a factory supplied optional 1, 2 or 3-way adjustable discharge pattern controller.

### STANDARD FEATURES:

- Available in nominal duct sizes from 6" x 6" (152 x 152) to 24" x 24" (610 x 610) in 2" (51) increments.
- Curved blades on 1" (25) centers are individually adjustable and regulate angle of discharge.
- Frame is mechanically interlocked for strength with hairline mitered corners. Standard diffuser has a 4-way (B4) discharge pattern.
- Removable face has concealed latches for easy access to core.
- Perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area.
- Type N standard fastening is with sheet metal screws (by others), through the neck of the diffuser outer frame. Optional Type A countersunk screw holes on face of outer frame.
- Dropping the perforated face gives access to the optional opposed blade damper.
- Return models (4340R Series) have the same face and frame construction as the supply models to match the appearance.

### CONSTRUCTION MATERIAL:

Extruded aluminum blades and frame. Corrosion-resistant steel perforated face (Model 4340CB) or aluminum perforated face (Model 4340CBA).

### FINISH OPTIONS:

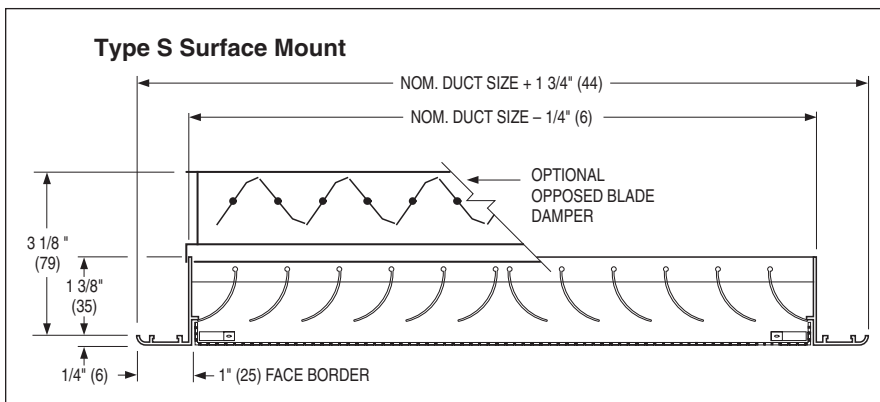
AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

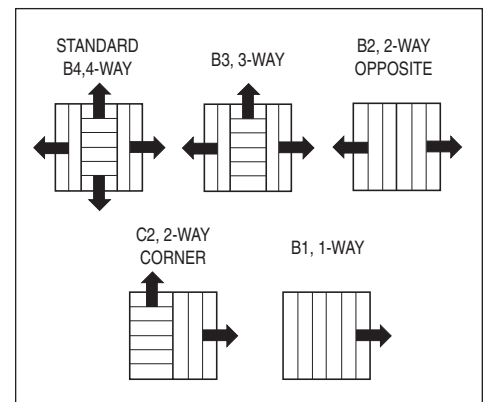
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

### Dimensional Data



### Pattern Controller Options





## PERFORMANCE DATA:

### Models 4340CB, 4340CBA • Surface Mount • Square Neck

Nominal Neck Size	Neck Velocity, FPM	200	300	400	500	600	700	800	900	
	Velocity Pressure	.003	.006	.010	.016	.022	.031	.040	.050	
	Total Pressure	.014	.032	.057	.089	.129	.175	.229	.290	
6 x 6	Flow Rate, CFM	50	75	100	125	150	175	200	225	
	Throw	4-Way	1-1-3	2-3-4	3-4-5	3-5-6	4-5-7	4-6-8	5-7-9	6-8-10
		3-Way	1-2-3	2-3-4	3-5-6	4-5-7	5-7-9	6-8-10	6-9-12	7-10-13
		2-Way	2-3-4	3-4-5	4-5-7	5-7-9	6-9-12	7-10-13	8-12-15	8-12-16
		1-Way	3-4-5	4-5-7	5-7-9	6-8-11	7-11-14	8-12-16	9-14-18	11-16-21
Noise Criteria	—	21	25	28	31	34	36	38		
8 x 8	Flow Rate, CFM	89	133	176	222	267	311	356	400	
	Throw	4-Way	2-3-4	3-4-5	3-5-6	4-5-7	4-6-8	5-7-9	5-7-10	6-9-12
		3-Way	2-3-4	3-4-5	4-5-7	4-6-8	5-7-10	6-9-12	7-10-13	7-11-14
		2-Way	3-4-5	3-5-6	4-6-8	5-7-10	7-10-13	7-11-14	8-12-16	9-14-18
		1-Way	3-5-6	4-6-8	5-7-10	6-9-12	8-12-15	9-13-17	10-15-19	11-16-22
Noise Criteria	—	23	27	30	33	35	37	39		
10 x 10	Flow Rate, CFM	139	208	278	347	417	486	556	625	
	Throw	4-Way	2-3-4	3-5-6	4-6-8	6-8-11	6-9-12	7-11-14	8-12-16	9-14-18
		3-Way	3-5-6	4-6-8	5-7-10	7-10-13	8-12-15	9-14-18	10-15-20	11-16-22
		2-Way	4-6-8	6-8-11	7-10-13	8-12-16	10-15-20	12-17-23	13-19-26	15-20-23
		1-Way	5-7-9	6-9-12	8-12-16	10-15-20	12-18-24	14-21-28	16-24-32	18-27-36
Noise Criteria	—	23	28	31	34	36	38	40		
12 x 12	Flow Rate, CFM	200	300	400	500	600	700	800	900	
	Throw	4-Way	3-5-6	4-6-8	5-7-10	6-9-12	8-12-15	9-13-17	10-15-20	12-17-23
		3-Way	3-5-6	5-7-9	6-9-12	8-12-15	9-14-18	11-16-22	13-19-25	14-20-27
		2-Way	5-7-9	6-9-12	8-12-16	11-16-21	12-18-24	15-22-29	17-25-33	18-27-36
		1-Way	6-9-12	8-12-16	10-15-20	12-18-24	15-22-29	17-25-33	18-27-36	21-31-42
Noise Criteria	—	23	27	31	34	36	39	41		
14 x 14	Flow Rate, CFM	272	408	544	681	817	953	1089	1225	
	Throw	4-Way	4-5-7	4-6-9	6-9-12	7-11-14	9-14-18	10-15-20	12-18-24	14-21-28
		3-Way	4-5-9	5-8-11	6-10-13	8-13-16	10-15-20	11-17-23	13-19-27	16-23-31
		2-Way	5-7-10	6-9-13	8-12-18	11-17-22	12-19-26	16-23-31	18-26-36	19-29-39
		1-Way	6-9-12	8-12-18	10-15-22	13-19-26	15-23-30	17-25-35	19-28-39	21-31-43
Noise Criteria	—	24	28	32	35	37	40	42		
16 x 16	Flow Rate, CFM	355	533	711	889	1067	1244	1422	1600	
	Throw	4-Way	5-7-9	6-8-11	8-10-14	9-13-18	10-15-21	13-18-27	14-20-28	16-22-31
		3-Way	5-7-11	6-9-13	8-13-17	10-15-22	13-19-26	15-22-30	18-25-36	19-29-39
		2-Way	6-10-12	9-14-16	11-17-24	14-21-28	17-25-32	19-26-34	21-34-40	24-34-44
		1-Way	7-10-16	9-15-18	12-18-26	15-22-32	18-27-36	19-28-37	24-35-42	26-36-46
Noise Criteria	—	27	31	35	37	40	42	44		
18 x 18	Flow Rate, CFM	450	675	900	1125	1350	1575	1800	2025	
	Throw	4-Way	5-7-10	6-9-12	8-12-16	10-15-20	12-18-24	14-21-28	16-24-32	18-27-36
		3-Way	5-7-12	7-11-14	9-14-18	11-16-22	13-19-26	16-24-31	18-27-36	21-31-41
		2-Way	8-12-18	10-15-20	13-19-26	16-24-32	20-29-39	23-34-45	26-39-52	29-43-58
		1-Way	9-14-22	11-16-24	15-23-30	18-27-36	22-32-43	25-37-49	28-42-56	30-45-60
Noise Criteria	—	28	32	36	38	41	43	45		

#### Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 20.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## PERFORATED MODULAR CORE DIFFUSERS

- SUPPLY
- SURFACE MOUNT
- FULL FACE SQUARE NECK
- 1, 2, 3 OR 4-WAY DISCHARGE PATTERN

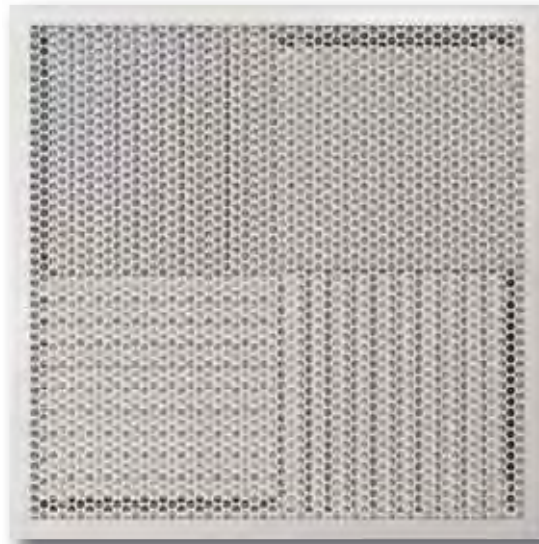
### Steel Face Model:

4340M

### Aluminum Face Model:

4340MA

- Suffix '-O' adds a steel opposed blade damper



Model 4340M

Model Series 4340M Modular Core Diffusers are designed to complement the Nailor 4320M and 4320MR modular ceiling diffusers and feature the same flexible high performance modular core design. The four individual, spring-loaded modular pattern controllers are mounted in the diffuser frame and position the leading edge of the pattern controllers near the perforated face and flush with the ceiling for optimum performance. The engineered design maintains a tight, uniform horizontal throw pattern from maximum to minimum cataloged air volumes, providing excellent performance in VAV systems.

Model 4340M is a square neck grille frame design, featuring full face pattern controllers, for surface mount installation in hard ceilings. Discharge pattern can adjust to 1, 2, 3 or 4-way horizontal, before or after installation. Discharge pattern is adjusted by dropping the perforated face and rotating the pattern deflectors. Diffusers are shipped from the factory with a 4-way discharge pattern.

### STANDARD FEATURES:

- Hinged removable face plate with quick-release spring latches.
- Discharge pattern can be adjusted to a 1, 2, 3 or 4-way horizontal pattern before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and rotating the modular sections.
- Frame is mechanically interlocked for strength with hairline mitered corners.
- Perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area.
- Type N standard fastening is with sheet metal screws (by others), through the neck of the diffuser outer frame. Optional Type A countersunk screw holes on face of outer frame.
- Dropping the perforated face and removing a modular core gives access to the optional opposed blade damper.
- Return models 4340R Series have the same face and frame construction as the supply models to match the appearance.

### CONSTRUCTION MATERIAL:

Extruded aluminum frame. Corrosion-resistant steel modular core. Corrosion-resistant steel perforated face (Model 4340M) or aluminum perforated face (Model 4340MA).

### FINISH OPTIONS:

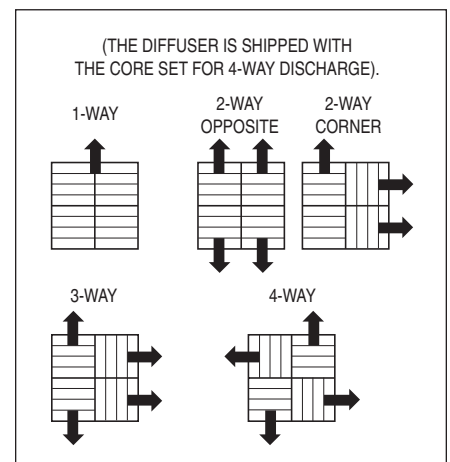
AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

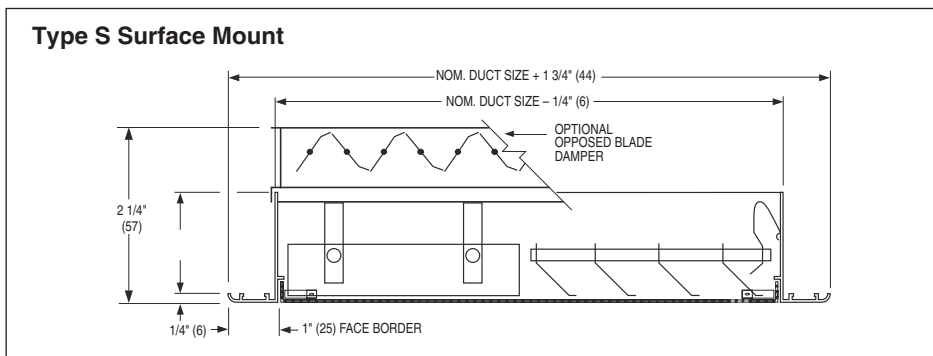
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

### Modular Core Adjustments



### Dimensional Data



### Available Duct Sizes

6 x 6 (152 x 152)	10 x 10 (254 x 254)	14 x 14 (356 x 356)	18 x 18 (457 x 457)	22 x 22 (559 x 559)
8 x 8 (203 x 203)	12 x 12 (305 x 305)	16 x 16 (406 x 406)	20 x 20 (508 x 508)	24 x 24 (610 x 610)

## PERFORMANCE DATA:

### Models 4340M, 4340MA • Surface Mount • Square Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800
	Velocity Pressure		.006	.010	.016	.023	.031	.040
	Total Pressure		.028	.047	.075	.103	.146	.188
6 x 6	Flow Rate, CFM		75	100	125	150	175	200
	Throw	4-Way	2-3-7	3-4-8	4-5-8	4-7-9	5-7-10	6-8-11
		3-Way	3-4-8	4-5-9	4-7-10	5-8-11	6-8-12	7-9-13
		2-Way	4-5-10	5-7-12	6-9-13	7-10-15	8-11-16	9-12-17
		1-Way	4-7-13	6-9-15	7-11-17	9-13-18	10-14-20	12-15-21
Noise Criteria		—	—	19	25	31	35	
8 x 8	Flow Rate, CFM		133	176	222	267	311	356
	Throw	4-Way	2-4-8	3-5-10	4-6-11	5-8-12	6-9-13	7-10-14
		3-Way	2-5-9	4-6-12	5-8-13	6-9-15	7-11-18	8-12-17
		2-Way	3-6-12	5-8-16	7-10-18	8-12-20	10-14-25	11-16-23
		1-Way	4-8-15	7-10-20	8-13-22	10-15-25	12-18-31	14-20-28
Noise Criteria		—	—	22	28	34	38	
10 x 10	Flow Rate, CFM		208	278	347	417	486	556
	Throw	4-Way	2-5-9	4-6-12	5-8-14	6-9-15	7-11-17	8-12-18
		3-Way	3-5-11	5-7-14	6-9-17	7-11-18	8-13-20	10-14-21
		2-Way	3-7-14	6-10-19	8-12-22	10-14-25	11-17-27	13-19-28
		1-Way	4-9-18	8-12-24	10-15-28	12-18-31	14-21-33	16-24-35
Noise Criteria		—	16	24	30	36	41	
12 x 12	Flow Rate, CFM		300	400	500	600	700	800
	Throw	4-Way	2-5-11	4-7-14	6-9-17	7-11-18	8-12-20	9-14-21
		3-Way	3-6-13	5-8-17	7-11-20	8-13-22	10-15-24	11-17-26
		2-Way	4-8-17	7-11-22	9-14-27	11-17-29	13-20-32	15-22-34
		1-Way	5-11-21	9-14-28	12-18-34	14-21-37	16-25-40	19-28-43
Noise Criteria		—	18	26	32	38	43	
14 x 14	Flow Rate, CFM		408	544	681	817	953	1089
	Throw	4-Way	3-6-12	5-8-16	7-10-20	8-12-21	9-14-23	11-16-25
		3-Way	3-7-15	6-10-19	8-12-24	10-15-26	11-17-28	13-19-30
		2-Way	4-10-19	8-13-26	11-16-31	13-19-34	15-23-37	17-26-40
		1-Way	5-12-24	10-16-32	13-20-39	16-24-43	19-28-46	22-32-50
Noise Criteria		—	19	27	34	39	44	
15 x 15	Flow Rate, CFM		469	625	781	938	1094	1250
	Throw	4-Way	3-6-13	5-9-17	7-11-21	9-13-23	10-15-25	11-17-27
		3-Way	3-8-15	6-10-21	9-13-25	10-15-28	12-18-30	14-21-32
		2-Way	5-10-21	8-14-28	11-17-34	14-21-37	16-24-40	18-28-43
		1-Way	6-13-26	10-17-34	14-22-42	17-26-46	20-30-50	23-34-53
Noise Criteria		—	20	28	35	40	45	
16 x 16	Flow Rate, CFM		533	711	889	1067	1244	1422
	Throw	4-Way	3-7-14	5-9-18	8-11-22	9-14-25	11-16-27	12-18-28
		3-Way	4-8-16	6-11-22	9-14-27	11-16-29	13-19-32	15-22-34
		2-Way	5-11-22	8-15-29	12-18-36	15-22-39	17-26-42	20-29-45
		1-Way	6-13-27	11-18-37	15-23-45	18-27-49	21-32-53	24-37-57
Noise Criteria		—	21	29	35	41	46	
18 x 18	Flow Rate, CFM		675	900	1125	1350	1575	1800
	Throw	4-Way	3-7-15	6-10-20	9-13-25	10-15-28	12-18-30	14-20-32
		3-Way	4-9-18	7-12-25	10-15-30	12-18-33	14-21-36	16-25-38
		2-Way	5-12-25	9-16-33	14-20-40	16-25-44	19-29-48	22-33-51
		1-Way	7-15-31	12-20-41	17-26-50	20-31-55	24-36-60	27-41-64
Noise Criteria		—	22	30	37	42	47	

#### Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## PERFORATED RETURN AIR DIFFUSERS

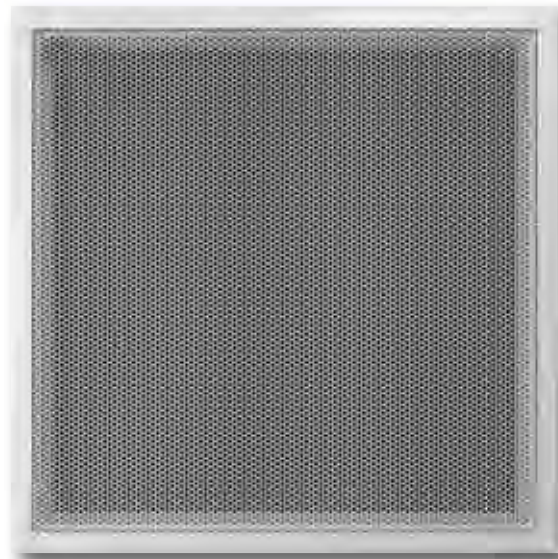
- SURFACE MOUNT
- SQUARE NECK
- MATCH AND COMPLEMENT 4340CB AND 4340M SUPPLY MODELS

### Steel Face Model:

4340R

### Aluminum Model:

4340RA



Model 4340R

Model Series 4340R Perforated Face Return Air Diffusers are designed to match supply air Models 4340CB and 4340M in appearance, except that the air pattern controllers are omitted.

Model 4340R is a square neck grille frame style design, for surface mount installation in hard ceilings. It is suitable for both ducted and ductless return air applications.

### STANDARD FEATURES:

- Square neck.
- Available in nominal duct sizes from 6" x 6" (152 x 152) to 24" x 24" (610 x 610) in 2" (51) increments.
- Frame is mechanically interlocked for strength with hairline mitered corners.
- Hinged, removable face plate with concealed quick release spring latches.
- Perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area.

- Type N standard fastening is with sheet metal screws (by others), through the neck of the diffuser outer frame. Optional Type A countersunk screwholes on face of outer frame.
- Dropping the perforated face gives access to the optional opposed blade damper.

### CONSTRUCTION MATERIAL:

Extruded aluminum frame. Corrosion-resistant steel perforated face (Model 4340R) or aluminum perforated face (Model 4340RA).

### FINISH OPTIONS:

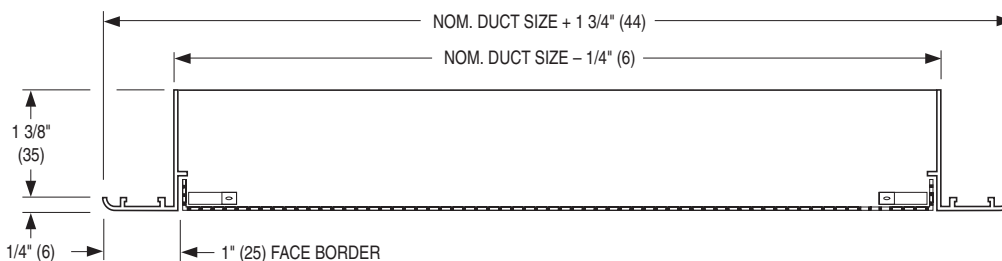
AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

### Type S Surface Mount



## PERFORMANCE DATA:

### Models 4340R, 4340RA • Surface Mount • Square Neck

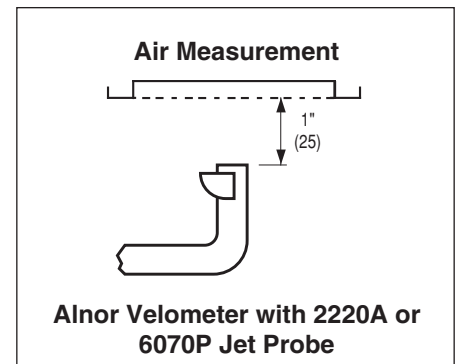
Listed Duct Size	Core Area (sq. ft.)	Ak Factor	Core Velocity	300	400	500	600	700	800	900	1000	1200
			Velocity Pressure	.006	.010	.016	.022	.031	.040	.051	.062	.090
			Neg. Static Pressure	.024	.042	.067	.095	.130	.170	.215	.265	.382
6 x 6	0.20	0.20	CFM	60	80	100	120	140	160	180	200	240
			Noise Criteria	—	—	—	15	21	26	32	37	44
8 x 8	0.38	0.36	CFM	114	152	190	228	266	304	342	380	456
			Noise Criteria	—	—	11	18	25	29	35	40	47
10 x 10	0.61	0.56	CFM	183	244	305	366	427	488	549	610	732
			Noise Criteria	—	—	13	20	27	31	37	42	49
12 x 12	0.90	0.80	CFM	270	360	450	540	630	720	810	900	1080
			Noise Criteria	—	—	15	22	28	33	38	44	51
14 x 14	1.24	1.09	CFM	372	496	620	744	868	992	1116	1240	1488
			Noise Criteria	—	—	16	23	29	34	39	45	52
16 x 16	1.64	1.42	CFM	492	656	820	984	1148	1312	1476	1640	1968
			Noise Criteria	—	—	17	24	30	35	40	46	53
18 x 18	2.10	1.80	CFM	630	840	1050	1260	1470	1680	1890	2100	2520
			Noise Criteria	—	—	17	24	30	36	40	46	53
20 x 20	2.61	2.22	CFM	783	1044	1305	1566	1827	2088	2349	2610	3132
			Noise Criteria	—	11	18	25	30	37	41	47	54
22 x 22	3.17	2.69	CFM	951	1268	1585	1902	2219	2536	2853	3170	3804
			Noise Criteria	—	11	18	26	31	37	42	48	55
24 x 24	3.79	3.20	CFM	1137	1516	1895	2274	2653	3032	3411	3790	4548
			Noise Criteria	—	12	19	27	33	38	43	49	56

#### Performance Notes:

- All pressures are in inches w.g..
- Diffuser tested without damper. Apply the following corrections for addition of opposed blade damper to diffuser:  
**Neg. Static Pressure** Listed Value x 1.10.  
**Noise Criteria** Add 5 dB to listed value.
- Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.
- Core Velocity is in feet per minute.

#### Airflow Measurements

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into diffuser.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (CFM) = Average velocity (V<sub>k</sub>) x Ak.





## HOW TO ORDER

### PERFORATED RETURN CEILING DIFFUSERS, GRILLE TYPE

#### MODEL SERIES 4340CB, 4340M AND 4340R

EXAMPLE: 4340CB - O - 0808 - S - AW - B4 - A - -

1a. **Models**

**Supply:**

4340CB	Steel, Curved Blade Controllers
4340CBA	Aluminum, Curved Blade Controllers
4340M	Steel, Modular Core
4340MA	Aluminum, Modular Core

**Return:**

4340R	Steel
4340RA	Aluminum

1b. **Damper**

(model suffix)

-	None (default)
-O	OBD Opposed Blade, Steel

2. **Neck Size** (inches – all models)

0606	6 x 6
0808	8 x 8
1010	10 x 10
1212	12 x 12
1414	14 x 14
1616	16 x 16
1818	18 x 18
2020	20 x 20
2222	22 x 22
2424	24 x 24

Return only:

3030	30 x 30
4824	48 x 24

3. **Frame Type**

S Surface Mount (default)

4. **Finish**

AW	Appliance White (default)
AL	Aluminum
BK	Black
BW	British White
MI	Mill
PC	Prime Coat Paint
SP	Special Custom Color

5. **Blow Pattern**

(CB only)

B4	4-way (default)
B1	1-way
B2	2-way opposite
B3	3-way
C2	2-way corner

6. **Fastening**

N	None (default)
A	Screw Holes

7. **Gasket**

-	None (default)
GK	Foam Gasket

8. **Earthquake Tabs**

-	None (default)
EQT	Earthquake Tabs

**OTHER OPTIONS & ACCESSORIES:**

9. **Air Balancing Devices**

(order separately)

**Square/Rectangular Neck:**

EGL	Equalizing Grid (long)
DEGL	Damper/Equalizing Grid (long)

**Note:**

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.



**HOW TO SPECIFY**

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **4340CB** (aluminum with corrosion-resistant steel face) or **4340CBA** (aluminum) **Perforated Full Face Curved Blade Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a mechanically interlocked extruded aluminum frame with hairline mitered corners. An extruded aluminum blade pack with individually adjustable curved blades on 1" (25) centers shall be sized according to the square neck size as specified. The diffuser shall have a 4-way (standard), 3-way, 2-way, 1-way (select one) discharge pattern. A perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The diffuser shall be fastened through the neck with sheet metal screws. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel, and operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **4340M** (corrosion-resistant steel with aluminum frame) or **4340MA** (aluminum frame and face) **Full Face Square Neck Perforated Supply Modular Core Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a mechanically interlocked extruded aluminum frame with hairline mitered corners. Mounted in the diffuser shall be four, corrosion-resistant steel, square modular pattern deflectors installed in a 4-way pattern, that are easily field rotated to provide throws in 1, 2, or 3-way patterns. The modular core shall be sized according to the square neck size as specified. The perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and rotating the deflectors (or optional damper). The diffuser shall be fastened through the neck with sheet metal screws (supplied by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel, and operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **4340R** (corrosion-resistant steel face with aluminum frame) or **4340RA** (aluminum) **Full Face Square Neck Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a mechanically interlocked extruded aluminum frame with hairline mitered corners. The perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall also be removable, hinged and include quick-release spring latches allowing easy access for cleaning. The diffuser shall be surface mounted and fastened through the neck with sheet metal screws. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**D**  
**CEILING DIFFUSERS**

## PERFORATED CEILING DIFFUSERS

- SUPPLY
- NECK MOUNTED PATTERN CONTROLLERS
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN

### Steel Face/Steel Backpan Models:

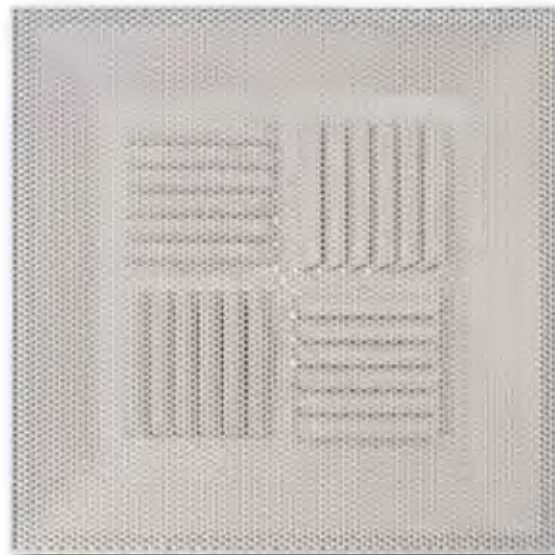
- 4320F Flush Face
- 4325F Drop Face

### Aluminum Face/Steel Backpan Models:

- 4320FA Flush Face
- 4325FA Drop Face

### Aluminum Face/Aluminum Backpan Models:

- 4320FAA Flush Face
- 4325FAA Drop Face



Model 4320F

D

CEILING DIFFUSERS

Model Series 4320F Perforated Diffusers combine smooth, unobtrusive architectural appearance with the superior performance characteristics required by engineers. Designed to maximize throw, these models feature four heavy gauge stamped pattern controllers that are mounted directly under the neck. The formed louver air pattern controller has curved vanes that optimize airflow projection and provide a superior horizontal air pattern with a strong ceiling coanda effect. An excellent choice for variable air volume systems.

A main benefit of the 4320F Series design is that the factory set 4-way discharge pattern controllers can be field adjusted to a 1, 2, or 3-way pattern. You can be assured that once installed, be it long or short term, the air pattern projection and performance will remain constant.

Model 4325F features a drop (extended) face panel that is available to complement tegular tile ceiling systems. This ensures the panel remains flush with the ceiling line.

### STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Factory set 4-way discharge pattern can be field adjusted to a 1, 2, or 3 way deflection.
- Rugged curved vane air pattern controllers ensure performance is always optimized.
- Inlet collar has 1 1/4" (32) depth for easy duct connection.
- Dropping the perforated face gives access to the optional damper.

- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Return models (4360 Series) have the same face and frame construction as the supply models to match their appearance.

### CONSTRUCTION MATERIAL:

Models 4320F/4325F have a corrosion-resistant steel perforated face and backpan. Models 4320FA/4325FA have an aluminum perforated face and corrosion-resistant steel backpan. Models 4320FAA/4325FAA have an aluminum perforated face and backpan.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

#### Round Neck:

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- 4675 Butterfly Damper 6" – 14" (152 – 356).
- MIB Molded Insulation Blanket, R-6.0.

#### Square Neck:

- OBD Opposed Blade Damper (Steel)
- OBDA Opposed Blade Damper (Aluminum) (-AA models only)

### OTHER OPTIONS & ACCESSORIES:

- EX External Foil-Back Insulation (installed) -R-4.2.
- EXB External Foil-Back Insulation (loose) -R-4.2.
- EQT Earthquake Tabs

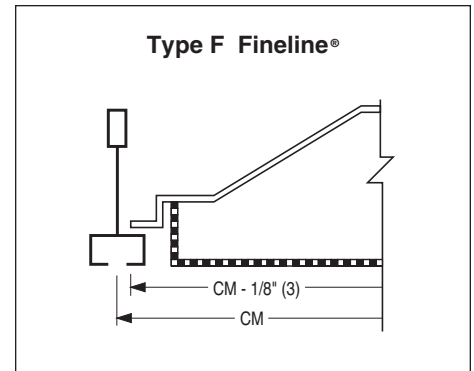
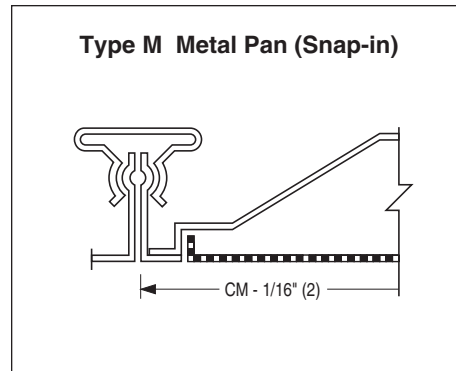
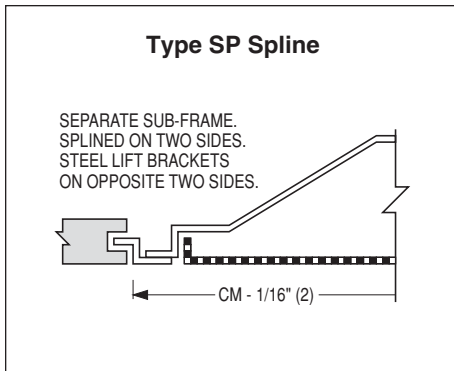
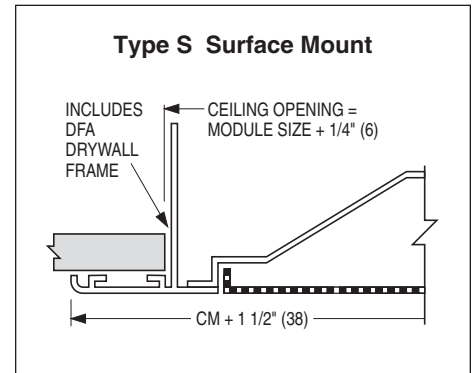
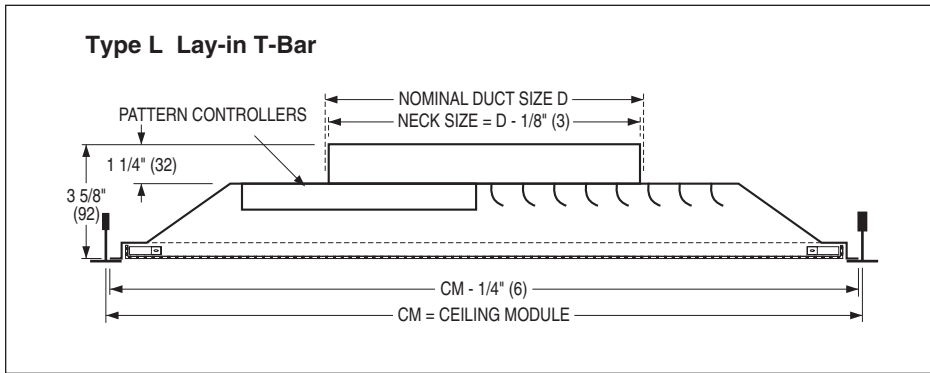
For additional options and accessories; see page D255.

### Available Combinations of Ceiling Module vs. Neck Size

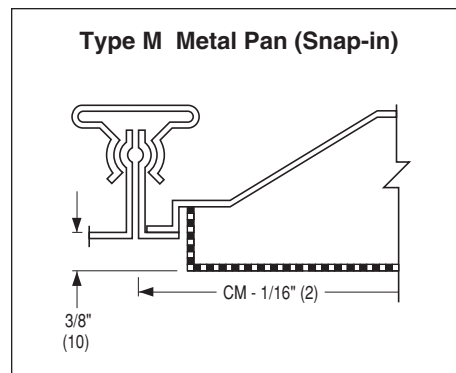
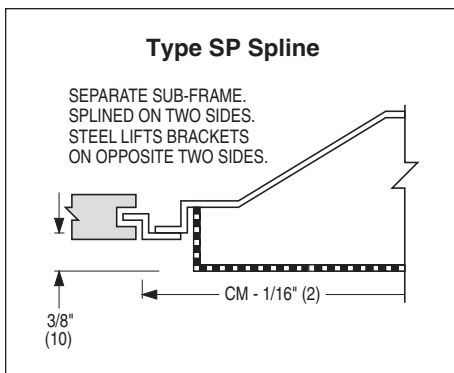
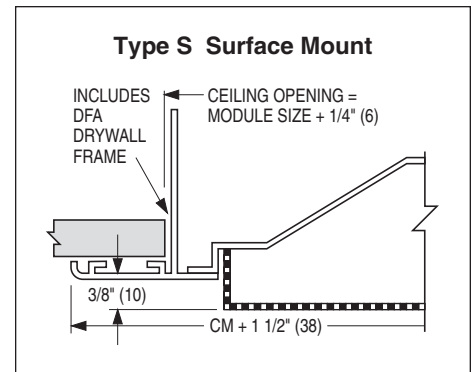
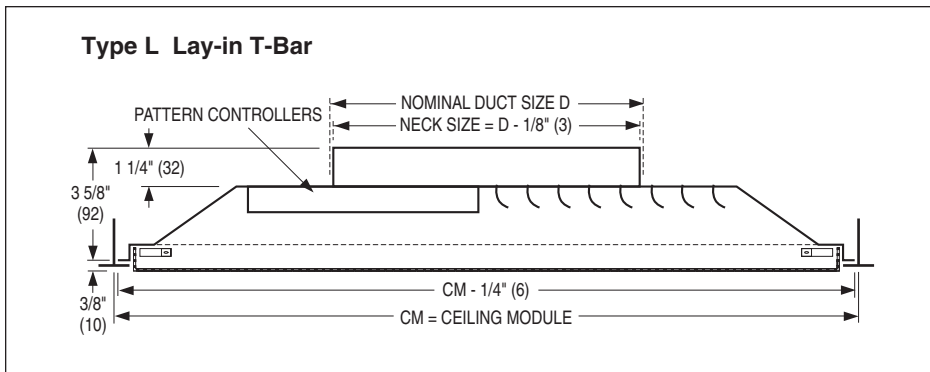
Ceiling Module CM		Nominal Duct Size D			
Imperial Modules	Metric Modules	Round Neck		Square Neck	
		Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16	152, 203, 254, 305, 356, 381, 406	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406

## DIMENSIONAL DATA AND FRAME TYPES:

### Models 4320F, 4320FA, 4320FAA • Supply • Flush Face



### Models 4325F, 4325FA, 4325FAA • Supply • Drop Face



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## PERFORMANCE DATA:

Models 4320F, 4320FA, 4320FAA, 4325F, 4325FA, 4325FAA • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	
	Total Pressure	.026	.047	.073	.105	.143	.186	.236	
6" Dia.	Flow Rate, CFM	60	80	95	115	135	155	175	
	Throw	4-Way	1-2-4	2-3-6	2-3-7	3-4-7	3-5-8	4-6-9	4-6-9
		3-Way	1-2-5	2-3-7	2-4-8	3-5-9	4-6-9	4-7-10	5-7-11
		2-Way	2-3-7	3-4-9	4-6-11	4-7-12	5-8-13	6-9-14	7-11-15
		1-Way	2-4-8	3-5-11	4-7-13	5-8-15	6-9-16	7-11-17	8-12-18
Noise Criteria	—	—	17	23	28	33	36		
8" Dia.	Flow Rate, CFM	105	140	175	210	245	280	315	
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21
		1-Way	3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25
Noise Criteria	—	—	20	26	31	36	39		
10" Dia.	Flow Rate, CFM	165	215	270	325	380	435	490	
	Throw	4-Way	2-3-7	3-5-10	4-6-12	5-7-13	5-8-14	6-10-15	7-11-16
		3-Way	2-4-8	3-5-11	4-7-13	5-8-15	6-10-16	7-11-17	8-13-18
		2-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-23	10-16-25	12-18-27
		1-Way	4-7-14	6-9-18	7-11-23	9-14-26	11-16-28	12-18-29	14-22-31
Noise Criteria	—	15	23	29	34	38	40		
12" Dia.	Flow Rate, CFM	235	315	390	470	550	625	705	
	Throw	4-Way	3-4-9	4-6-12	5-7-14	6-9-15	7-10-17	8-12-18	9-13-20
		3-Way	3-5-10	4-7-14	5-8-16	7-10-18	8-12-20	9-14-22	10-15-23
		2-Way	4-7-14	6-9-20	8-12-24	9-14-26	11-17-28	13-20-30	14-23-32
		1-Way	5-8-17	7-11-23	9-14-28	11-17-31	13-20-33	15-23-35	17-26-37
Noise Criteria	—	16	24	30	35	39	41		
14" Dia.	Flow Rate, CFM	320	425	535	640	750	855	960	
	Throw	4-Way	3-5-10	4-7-14	5-8-16	7-10-18	8-12-21	9-14-22	10-16-23
		3-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-24	10-16-25	12-18-27
		2-Way	5-8-17	7-11-24	9-14-28	11-17-30	13-21-33	15-24-35	17-26-37
		1-Way	6-9-20	8-13-27	11-16-33	13-20-36	15-24-38	17-27-41	20-30-43
Noise Criteria	—	18	26	32	37	41	43		
15" Dia.	Flow Rate, CFM	370	490	615	740	860	985	1100	
	Throw	4-Way	3-6-10	4-2-14	5-8-17	8-10-19	8-13-21	10-14-23	10-16-24
		3-Way	4-6-12	6-8-17	6-11-21	8-13-22	10-14-25	11-16-26	13-18-28
		2-Way	4-8-17	7-12-25	9-15-30	11-18-31	13-22-34	16-25-35	17-27-38
		1-Way	6-9-20	8-14-28	12-17-34	14-21-37	16-24-39	18-27-42	17-31-43
Noise Criteria	—	19	27	33	38	42	44		
16" Dia.	Flow Rate, CFM	420	560	700	835	975	1115	1255	
	Throw	4-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-23	10-16-25	12-18-26
		3-Way	4-7-14	6-9-18	7-11-23	9-14-25	10-16-27	12-18-29	14-22-30
		2-Way	6-9-20	8-13-27	10-16-32	13-20-35	15-24-37	17-27-40	20-30-42
		1-Way	7-11-23	10-15-31	12-18-37	15-23-41	17-27-44	21-31-47	23-35-50
Noise Criteria	—	21	28	34	39	43	45		

For performance notes, see page D185.

## PERFORMANCE DATA:

Models 4320F, 4320FA, 4320FAA, 4325F, 4325FA, 4325FAA • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	
	Total Pressure	.025	.045	.070	.100	.137	.179	.226	
6 x 6	Flow Rate, CFM	75	100	125	150	175	200	225	
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22
		1-Way	3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26
Noise Criteria	—	—	18	24	29	34	37		
8 x 8	Flow Rate, CFM	135	175	220	265	310	355	400	
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24
		1-Way	4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28
Noise Criteria	—	—	21	27	32	37	40		
10 x 10	Flow Rate, CFM	210	275	345	415	485	555	625	
	Throw	4-Way	2-4-8	3-5-11	4-7-13	5-8-14	6-10-16	7-11-17	8-12-18
		3-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-22
		2-Way	4-6-13	6-9-18	7-11-22	9-13-25	10-16-26	12-18-28	13-21-30
		1-Way	5-8-16	7-10-22	8-13-26	10-16-29	12-18-31	14-22-33	16-25-35
Noise Criteria	—	16	24	30	35	39	41		
12 x 12	Flow Rate, CFM	300	400	500	600	700	800	900	
	Throw	4-Way	3-5-10	4-6-13	5-8-16	6-10-17	8-12-20	9-13-21	10-15-22
		3-Way	3-5-11	5-7-15	6-9-18	7-11-21	9-13-23	10-15-24	11-17-26
		2-Way	5-8-16	7-11-23	9-13-27	11-16-29	13-20-32	14-23-34	16-25-36
		1-Way	6-9-20	8-12-26	10-16-31	12-20-34	14-23-37	17-26-40	22-31-44
Noise Criteria	—	17	25	31	36	40	42		
14 x 14	Flow Rate, CFM	410	545	680	815	955	1090	1360	
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-37
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47
		1-Way	3-8-17	6-11-23	9-14-30	11-17-1936	13-20-42	15-23-48	19-30-54
Noise Criteria	—	19	27	33	38	42	44		
15 x 15	Flow Rate, CFM	470	625	780	935	1095	1250	1405	
	Throw	4-Way	4-6-12	5-8-17	7-10-21	8-12-23	10-15-25	11-17-26	12-20-28
		3-Way	4-7-14	6-9-20	8-12-24	9-14-26	11-17-28	13-20-30	14-23-32
		2-Way	6-10-21	9-13-28	11-17-33	13-21-37	16-25-40	18-28-42	21-32-45
		1-Way	8-12-25	10-16-33	13-21-39	16-25-43	18-29-46	22-33-49	25-37-53
Noise Criteria	—	20	28	33	39	43	45		
16 x 16	Flow Rate, CFM	530	710	890	1065	1245	1420	1600	
	Throw	4-Way	4-7-14	5-9-18	7-10-20	9-13-24	10-16-26	10-19-28	13-21-29
		3-Way	4-7-17	6-10-21	8-12-24	10-15-28	11-20-30	13-22-32	17-24-34
		2-Way	7-10-23	10-14-29	11-17-34	15-22-36	18-28-43	20-30-44	24-34-50
		1-Way	8-12-26	11-17-33	14-21-40	18-25-45	21-32-50	23-38-53	29-40-56
Noise Criteria	—	22	29	35	40	44	45		

### Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## HOW TO ORDER

### PERFORATED SUPPLY CEILING DIFFUSERS, NECK MOUNTED DEFLECTORS MODEL SERIES 4320F

EXAMPLE: 4320F - RND - 08 - 24 x 24 - L - AW - -

#### 1. Models

##### Louvered Face

4320F	Steel, Flush Face
4325F	Steel, Drop Face
4320FA	Aluminum Face, Flush
4325FA	Aluminum Face, Drop
4320FAA	Aluminum Face and Backpan, Flush
4325FAA	Aluminum Face and Backpan, Drop

#### 2. Neck Type

RND	Round
SQR	Square/Rectangular

#### 3. Neck Size (inches)

##### Round:

06, 08, 10, 12, 14, 15, 16

##### Square or Rectangular:

6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16

#### 4. Ceiling Module Size

##### Imperial (inches)

24 x 24 (default)

##### Metric (mm)

600 x 600

#### 5. Frame Type

L	Lay-in T-Bar (default)
S	Surface Mount
SP	Spline
M	Metal Pan (Snap-in)
F	Fineline®

#### 6. Finish

AW	Appliance White (default)
AL	Aluminum
BK	Black
BW	British White
MI	Mill
PC	Prime Coat Paint
BA	AW Face/Black Backpan
SP	Special Custom Color

#### 7. Damper

– None (default)

##### Round Neck:

4250 Radial Sliding, 6" - 14"

4275 Radial Opposed Blade, 5" - 24"

4675 Butterfly, 6" - 14"

##### Square Neck:

OBD Opposed Blade, Steel

OBDA Opposed Blade, Aluminum (AA models only)

#### 8. External Insulation

– None (default)

EX Foil-back (installed), R-4.2

EXB Foil-back (loose), R-4.2

MIB Molded Insulation Blanket, R-6.0

#### 9. Earthquake Tabs

– None (default)

EQT Earthquake Tabs

#### OTHER OPTIONS & ACCESSORIES:

#### 10. Air Balancing Devices

(order separately)

##### Round Neck:

EGR Equalizing Grid

DEGR Damper/Equalizing Grid

##### Square/Rectangular Neck:

EGL Equalizing Grid (long)

EGS Equalizing Grid (short)

DEGL Damper/Equalizing Grid (long)

DEGS Damper/Equalizing Grid (short)

#### Notes:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

2. Dampers are shipped loose for field installation.

3. EX and EXB maximum size 24" x 24" (600 x 600). MIB Molded Insulation Blanket available on 24" x 24" (600 x 600) round neck only.



**HOW TO SPECIFY**

**SUGGESTED SPECIFICATION:**  
**Models 4320F, 4325F - Steel**  
 Furnish and install **Nailor Model** (select one) **4320F Flush Face** or **4325F Drop Face, Adjustable Pattern Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a high neck collar that is round or square as specified. A corrosion-resistant steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted at the neck of the diffuser shall be factory set 4-way stamped curved vane deflectors that can be field adjusted to a 1, 2, or 3 way discharge pattern (as specified). The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning, adjusting the discharge pattern and adjusting the optional damper if required.  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

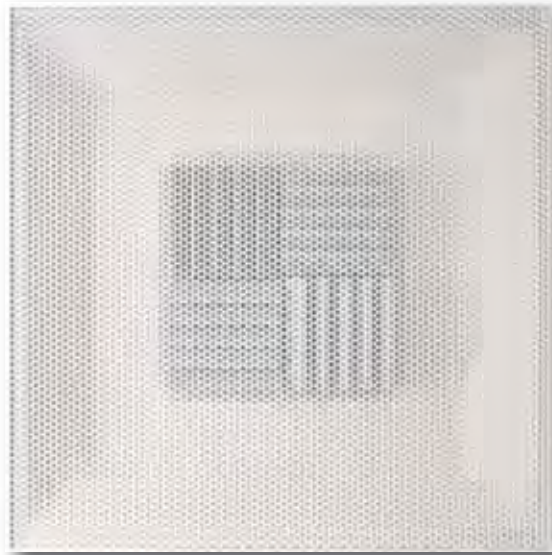
**SUGGESTED SPECIFICATION:**  
**Models 4320FA, 4325FA – Aluminum Face**  
 Furnish and install **Nailor Model** (select one) **4320FA Flush Face** or **4325FA Drop Face, Adjustable Pattern Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a high neck collar that is round or square as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted at the neck of the diffuser shall be factory set 4-way stamped curved vane deflectors that can be field adjusted to a 1, 2, or 3 way discharge pattern (as specified). The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning, adjusting the discharge pattern and adjusting the optional damper if required.  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**SUGGESTED SPECIFICATION:**  
**Models 4320FAA, 4325FAA – Aluminum Face and Backpan**  
 Furnish and install **Nailor Model** (select one) **4320FAA Flush Face** or **4325FAA Drop Face, Adjustable Pattern Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an aluminum backpan with a high neck collar that is round or square as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted at the neck of the diffuser shall be factory set 4-way stamped curved vane deflectors that can be field adjusted to a 1, 2, or 3 way discharge pattern (as specified). The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning, adjusting the discharge pattern and adjusting the optional damper if required.  
 The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**D**  
**CEILING DIFFUSERS**

## PERFORATED MODULAR CORE DIFFUSERS

- SUPPLY
- SQUARE NECK
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN



Model 4320M

### Steel Models:

- 4320M Flush Face
- 4325M Drop Face

### Aluminum Face Models:

- 4320MA Flush Face
- 4325MA Drop Face

Model Series 4320M Perforated Modular Core Diffusers provide the unobtrusive, smooth appearance preferred by many architects and combines this with the flexible features of a high performance modular core design. This model features four individual, spring-loaded modular pattern controllers mounted in the neck. They can be adjusted before or after installation, to provide a 1, 2, 3 or 4-way discharge pattern by simply dropping the perforated face and rotating one or more of the pattern controllers.

The engineered modular core design maintains a tight, uniform horizontal throw pattern from maximum to minimum cataloged air volumes. It therefore provides excellent performance in variable air volume systems. The diffuser is shipped from the factory with the modular core set for a 4-way discharge pattern.

Model 4325M features a dropped (extended) face panel that is designed to complement tegular tile ceiling systems. The face panel is suspended flush with the ceiling line, providing both an aesthetically pleasing appearance and ensuring optimal performance is maintained.

### STANDARD FEATURES:

- Square neck is standard.
- Hinged, removable face plate with quick-release spring latches.
- Discharge pattern can be adjusted to a 1, 2, 3 or 4-way horizontal pattern before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and rotating the modular sections.
- Inlet collar has approximately 1 1/2" (38) depth for easy duct connection.
- Dropping the perforated face and removing a core module gives access to the optional opposed blade damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Return models (4360 Series) have the same face and frame construction as the supply models to match their appearance.

### CONSTRUCTION MATERIAL:

Models 4320M/4325M have a corrosion-resistant steel backpan, modular core and perforated face. Models 4320MA/4325MA have a corrosion-resistant steel backpan and modular core with an aluminum perforated face.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- OBD Opposed Blade Damper (steel)
- EX External Foil-Back Insulation (installed) -R-4.2.
- EXB External Foil-Back Insulation (loose) -R-4.2.
- EQT Earthquake Tabs

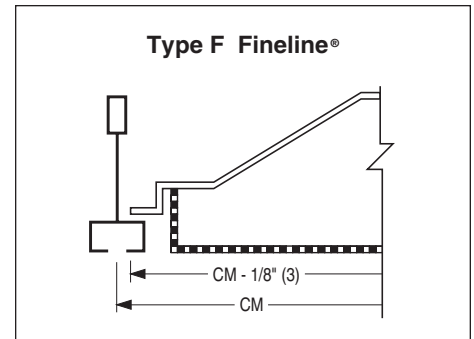
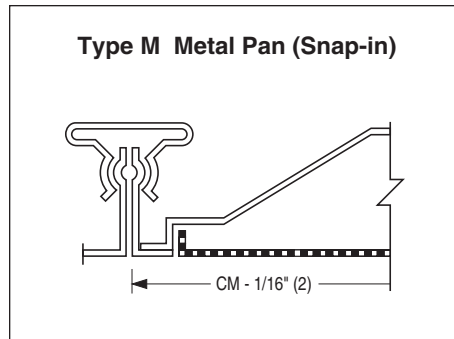
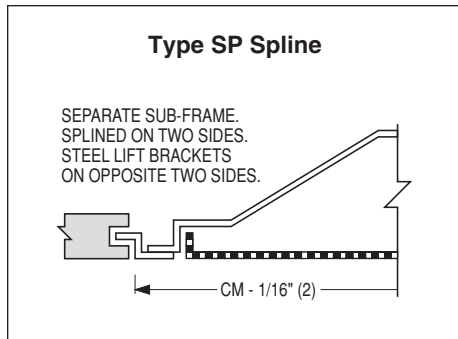
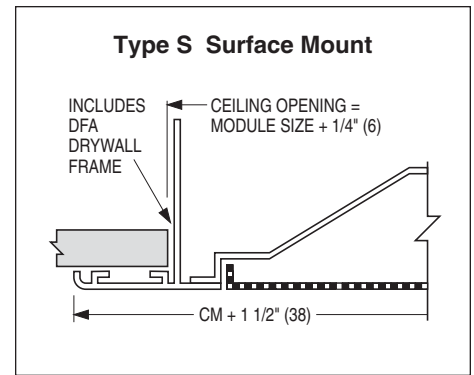
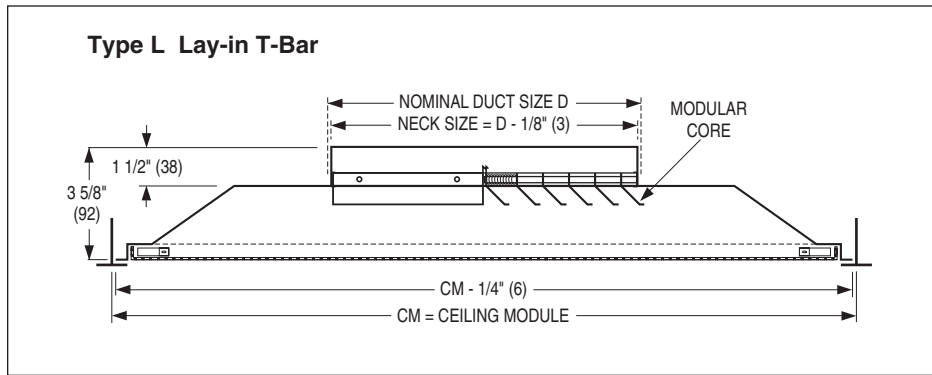
For additional options and accessories; see page D255.

### Available Combinations of Ceiling Module vs. Neck Size

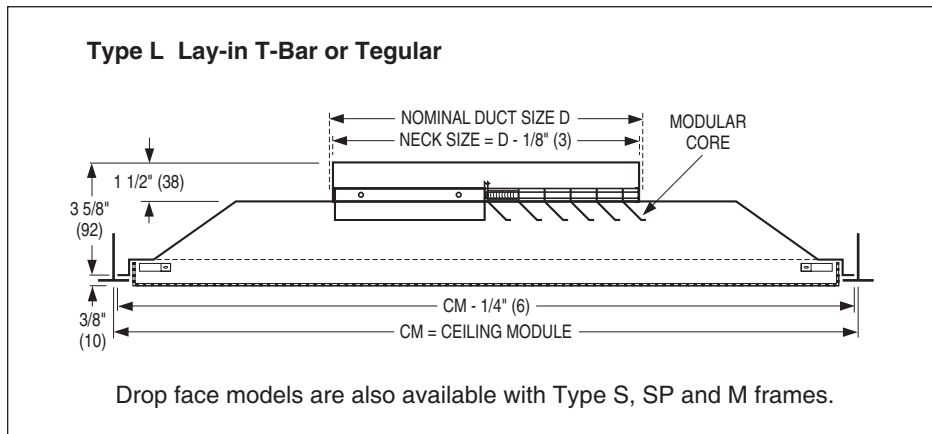
Ceiling Module CM		Nominal Duct Size D	
Imperial Modules	Metric Modules	Square Neck	
		Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6 x 6, 8 x 8	152 x 152, 203 x 203
24 x 24	600 x 600	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18, 20 x 20	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406, 457 x 457, 508 x 508

## DIMENSIONAL DATA AND FRAME TYPES:

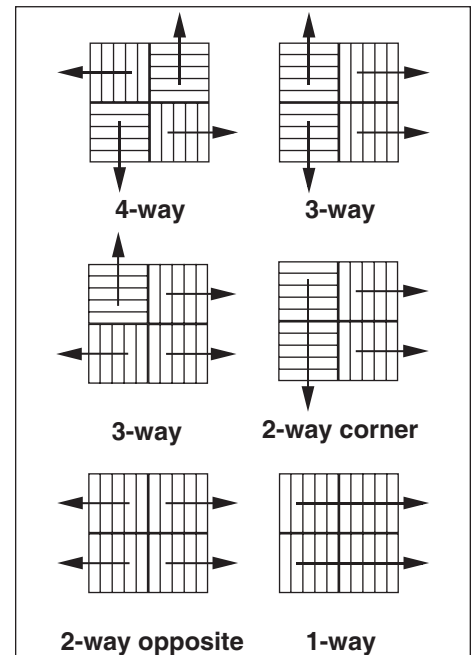
### Models 4320M, 4320MA • Flush Face • Square Neck



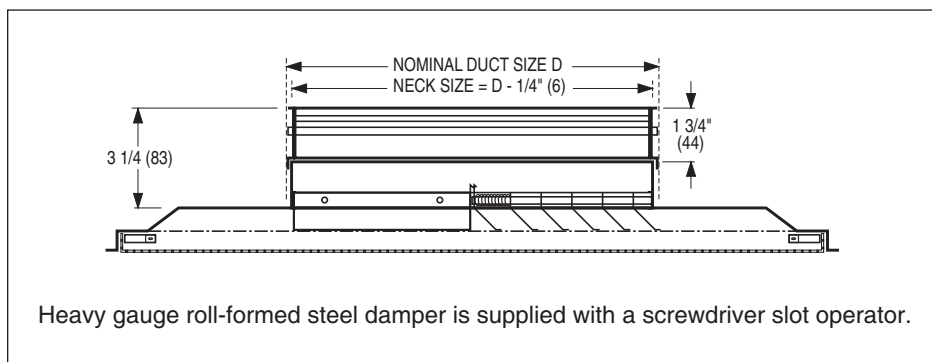
### Models 4325M, 4325MA • Drop Face • Square Neck



### Modular Core Adjustments



### Optional Opposed Blade Damper • Model OBD



All diffusers are shipped with the standard 4-way pattern, but the air pattern can be simply field adjusted by lowering the hinged face and rotating the spring loaded pattern controllers.

Fineline® is a registered trademark of USG Interiors Inc.

D  
CEILING DIFFUSERS

## PERFORMANCE DATA:

### Models 4320M, 4320MA, 4325M, 4325MA • 12 x 12 (300 x 300) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	
6 x 6	Total Pressure	.030	.048	.071	.119	.155	.196	.244	
	Flow Rate, CFM	75	100	125	150	175	200	225	
	Throw	4-Way	1-1-2	1-1-3	1-2-4	1-2-5	2-3-6	2-3-6	2-4-7
		3-Way	1-2-4	2-3-6	2-4-8	3-4-9	3-5-10	4-6-11	4-7-11
		2-Way	2-3-6	2-4-8	3-5-10	4-6-12	4-7-13	5-8-14	6-9-15
1-Way		3-4-9	4-6-12	5-8-16	6-9-19	7-11-20	8-12-22	9-14-22	
Noise Criteria	—	—	19	24	30	34	39		
8 x 8	Total Pressure	.028	.042	.064	.110	.141	.186	.240	
	Flow Rate, CFM	135	175	220	265	310	355	400	
	Throw	4-Way	1-1-3	1-2-5	2-3-6	2-3-7	2-4-8	3-5-8	3-5-9
		3-Way	2-3-6	2-4-8	3-5-10	4-6-13	5-7-14	5-8-15	6-9-15
		2-Way	2-4-8	3-5-11	4-6-13	5-8-16	6-9-18	7-11-19	8-12-20
1-Way		4-6-12	5-8-17	7-10-21	8-12-25	10-15-27	11-17-29	12-19-31	
Noise Criteria	—	16	23	28	34	38	43		

#### Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## PERFORMANCE DATA:

### Models 4320M, 4320MA, 4325M, 4325MA • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900
	VP		.006	.010	.016	.023	.031	.040	.051
6 x 6	Total Pressure		.024	.042	.065	.098	.130	.169	.202
	Flow Rate, CFM		75	100	125	150	175	200	225
	Throw	4-Way	1-1-2	1-1-3	1-2-4	1-2-5	2-3-6	2-3-6	2-4-7
		3-Way	1-2-4	2-3-6	2-4-8	3-4-9	3-5-10	4-6-11	4-7-11
		2-Way	2-3-6	2-4-8	3-5-10	4-6-12	4-7-13	5-8-14	6-9-15
1-Way		3-4-9	4-6-12	5-8-16	6-9-19	7-11-20	8-12-22	9-14-22	
Noise Criteria		—	—	15	19	23	29	31	
8 x 8	Total Pressure		.024	.042	.065	.098	.130	.169	.202
	Flow Rate, CFM		135	175	220	265	310	355	400
	Throw	4-Way	1-1-3	1-2-5	2-3-6	2-3-7	2-4-8	3-5-8	3-5-9
		3-Way	2-3-6	2-4-8	3-5-10	4-6-13	5-7-14	5-8-15	6-9-15
		2-Way	2-4-8	3-5-11	4-6-13	5-8-16	6-9-18	7-11-19	8-12-20
1-Way		4-6-12	5-8-17	7-10-21	8-12-25	10-15-27	11-17-29	12-19-31	
Noise Criteria		—	—	18	23	27	33	35	
10 x 10	Total Pressure		.034	.050	.073	.124	.160	.226	.263
	Flow Rate, CFM		210	275	345	415	485	555	625
	Throw	4-Way	1-2-4	2-3-6	2-3-7	3-4-9	3-5-10	4-6-11	4-7-11
		3-Way	2-4-8	3-5-10	4-6-13	5-8-16	6-9-17	7-10-18	8-12-19
		2-Way	3-5-10	4-6-13	5-8-17	6-10-20	8-12-22	9-13-24	10-15-25
1-Way		5-8-16	7-10-21	8-13-26	10-16-32	12-18-34	14-21-37	16-24-39	
Noise Criteria		—	—	21	26	30	36	38	
12 x 12	Total Pressure		.036	.052	.085	.127	.169	.230	.276
	Flow Rate, CFM		300	400	500	600	700	800	900
	Throw	4-Way	1-2-5	2-3-7	3-4-9	3-5-11	4-6-12	5-7-13	5-8-14
		3-Way	3-4-9	4-6-13	5-8-16	6-9-19	7-11-21	8-13-22	9-14-23
		2-Way	4-6-12	5-8-16	6-10-20	8-12-25	9-14-27	11-16-28	12-18-30
1-Way		6-9-19	8-12-25	10-16-32	12-19-38	15-22-41	17-25-44	19-29-47	
Noise Criteria		—	—	25	30	34	39	42	
15 x 15	Total Pressure		.039	.058	.096	.129	.177	.236	.291
	Flow Rate, CFM		470	625	780	935	1095	1250	1405
	Throw	4-Way	2-3-7	3-4-9	4-6-12	4-7-14	5-8-15	6-9-16	7-10-17
		3-Way	4-6-12	5-8-16	6-10-20	8-12-24	9-14-26	10-16-28	12-18-29
		2-Way	5-7-15	6-10-20	8-13-26	10-15-31	12-18-33	13-20-36	15-23-38
1-Way		8-12-24	10-16-32	13-20-40	16-24-48	18-28-52	21-32-56	24-36-59	
Noise Criteria		—	19	28	33	37	42	45	
18 x 18	Total Pressure		.041	.062	.110	.135	.186	.240	.301
	Flow Rate, CFM		675	900	1125	1350	1575	1800	2025
	Throw	4-Way	2-4-8	3-5-11	4-7-14	5-8-17	6-10-18	7-11-19	8-12-21
		3-Way	4-7-14	6-9-19	8-12-24	9-14-29	11-17-31	13-19-33	14-22-35
		2-Way	6-9-18	8-12-25	10-15-31	12-18-37	14-21-40	16-25-43	18-28-46
1-Way		9-14-29	12-19-38	16-24-48	19-29-58	24-34-62	25-38-67	29-43-71	
Noise Criteria		—	22	31	36	41	46	49	

#### Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## PERFORATED MODULAR CORE DIFFUSERS

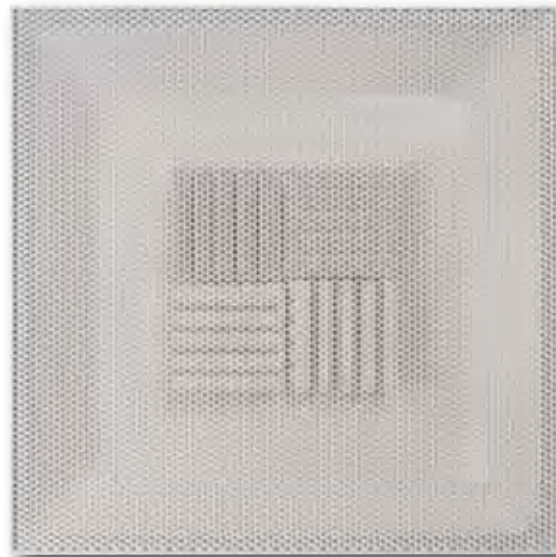
- SUPPLY
- INTEGRAL ROUND NECK
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN

### Steel Models:

- 4320MR Flush Face
- 4325MR Drop Face

### Aluminum Face Models:

- 4320MRA Flush Face
- 4325MRA Drop Face



Model 4320MR

Model Series 4320MR Perforated Modular Core Diffusers provide the unobtrusive, smooth appearance preferred by many architects and combines this with the flexible features of a high performance modular core design. The low profile backpan features an integral round neck which eliminates the need for adapters. Four individual spring-loaded adjustable modular pattern controllers are mounted inside the backpan. This positions the leading edge of the pattern controllers near the perforated face and flush with ceiling for optimum performance. The engineered design maintains a tight, uniform horizontal throw pattern from maximum to minimum cataloged air volumes and therefore provides excellent performance in VAV systems.

Discharge pattern can adjust to 1, 2, 3 or 4-way horizontal, before or after installation.

Discharge pattern is adjusted by dropping the perforated face and rotating the pattern deflectors. Diffusers are shipped from the factory with a 4-way discharge pattern.

Model Series 4325MR features a dropped (extended) face panel that is designed to complement tegular tile ceiling systems. The face panel is suspended flush with the ceiling line, providing both an aesthetically pleasing appearance and ensuring optimal performance is maintained.

### STANDARD FEATURES:

- Designed for suspended ceiling systems.
- Round neck is standard.
- Hinged, removable face plate with quick-release spring latches.
- Discharge pattern can be adjusted to a 1, 2, 3 or 4-way horizontal pattern before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and rotating the modular sections.
- Inlet collar has approximately 1 1/4" (32) depth for easy duct connection.

- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Dropping the perforated face and removing a modular core module gives access to the optional balancing damper.
- Return models (4360 Series) have the same face and frame construction as the supply models to match their appearance.

### CONSTRUCTION MATERIAL:

Models 4320MR/4325MR have a corrosion-resistant steel backpan, modular core and perforated face.

Models 4320MRA/4325MRA have a corrosion-resistant steel backpan and modular core with an aluminum perforated face.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- 4675 Butterfly Damper 6" – 14" (152 – 356).
- EX External Foil-Back Insulation (installed) -R-4.2.
- EXB External Foil-Back Insulation (loose) -R-4.2.
- MIB Molded Insulation Blanket R-6.0.
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

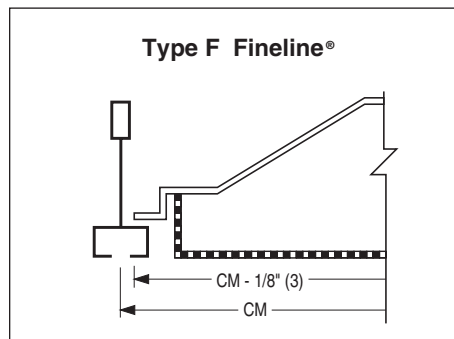
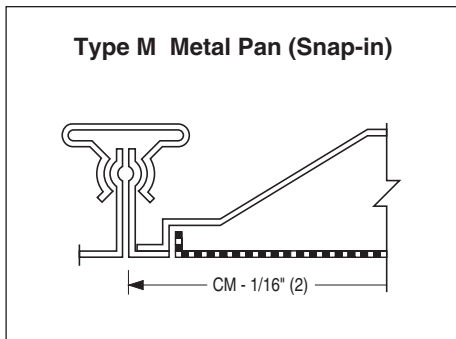
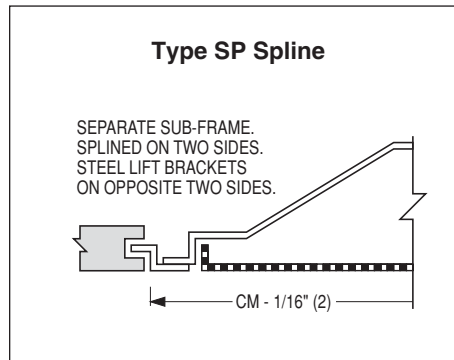
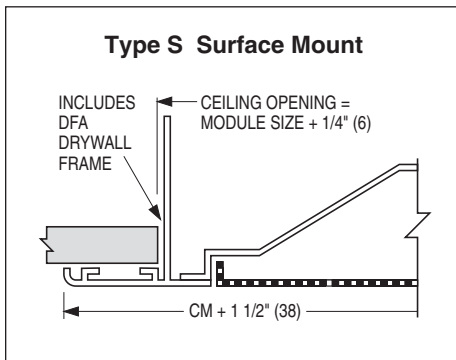
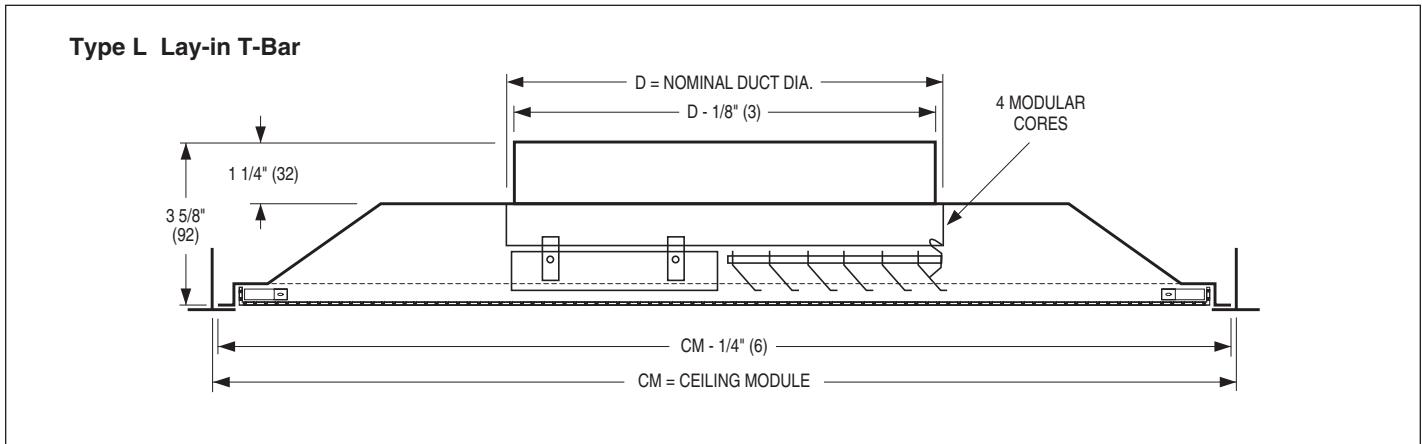
### Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D	
Imperial Modules	Metric Modules	Square Neck	
		Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6, 8	152, 203
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16	152, 203, 254, 305, 356, 381, 406

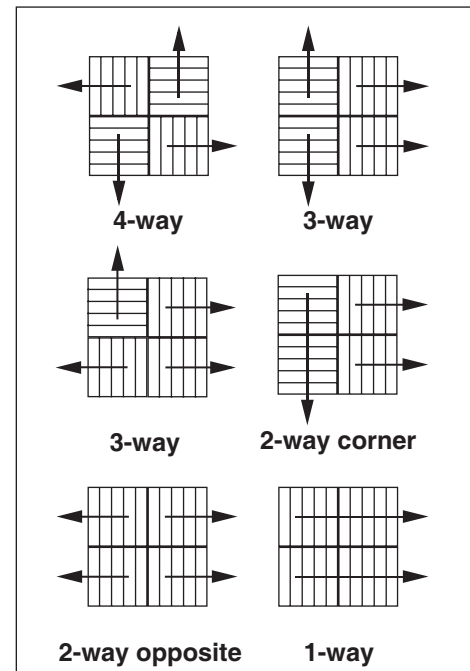


## DIMENSIONAL DATA AND FRAME TYPES:

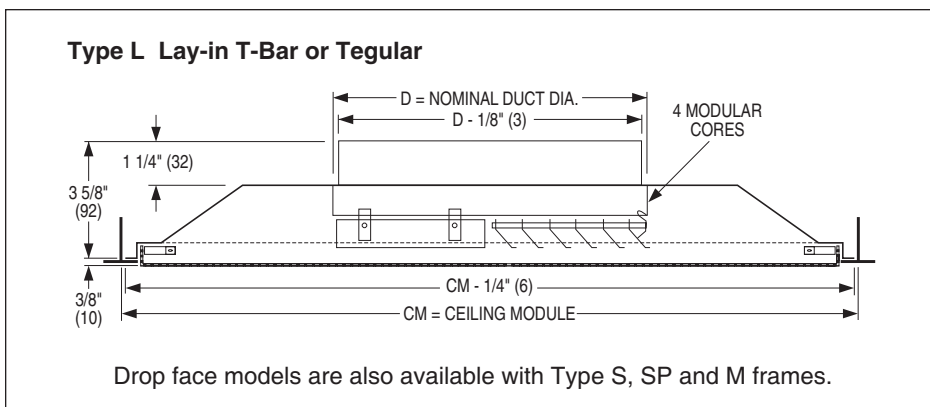
### Models 4320MR, 4320MRA • Flush Face • Round Neck



## Modular Core Adjustments



### Models 4325MR, 4325MRA • Drop Face • Round Neck



All diffusers are shipped with the standard 4-way pattern, but the air pattern can be simply field adjusted by lowering the hinged face and rotating the spring loaded pattern controllers.

Fineline® is a registered trademark of USG Interiors Inc.

## PERFORMANCE DATA:

### Models 4320MR, 4320MRA, 4325MR, 4325MRA • 12 x 12 (300 x 300) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	
6" Dia.	Total Pressure	.016	.031	.041	.065	.092	.124	.163	
	Flow Rate, CFM	60	80	100	115	135	155	195	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-2-5	1-2-5	2-3-7
		3-Way	1-1-3	1-2-5	2-3-6	2-3-7	3-4-8	3-5-9	4-6-12
		2-Way	1-1-3	1-1-4	1-2-5	1-3-6	1-4-8	2-4-9	3-5-11
		1-Way	1-1-4	1-1-7	1-2-8	1-4-9	2-5-10	3-7-13	5-8-15
Noise Criteria	—	—	18	23	29	33	38		
8" Dia.	Total Pressure	.015	.027	.043	.062	.084	.110	.171	
	Flow Rate, CFM	105	140	175	210	245	280	350	
	Throw	4-Way	1-1-2	1-1-4	1-2-5	1-2-6	1-3-7	2-4-8	3-5-10
		3-Way	1-2-5	1-3-7	2-4-8	3-5-9	4-6-11	4-7-13	5-9-16
		2-Way	1-1-4	1-2-6	1-3-9	2-4-9	3-5-11	3-6-13	5-8-16
		1-Way	1-2-7	1-4-9	2-6-12	4-7-14	5-9-17	6-10-19	8-13-21
Noise Criteria	—	15	24	27	33	37	42		

#### Performance Notes:

1. All pressures are in inches w.g..
2. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## PERFORMANCE DATA:

### Models 4320MR, 4320MRA, 4325MR, 4325MRA • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063
6" Dia.	Total Pressure		.016	.031	.041	.065	.092	.124	.163
	Flow Rate, CFM		60	80	100	115	135	155	195
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-2-5	1-2-5	2-3-7
		3-Way	1-1-3	1-2-5	2-3-6	2-3-7	3-4-9	3-5-10	4-6-13
		2-Way	1-1-3	1-1-4	1-2-5	1-3-7	1-4-8	2-4-9	3-5-11
1-Way		1-1-4	1-1-7	1-2-8	1-4-10	2-5-12	3-7-14	5-8-16	
Noise Criteria		—	—	16	21	26	30	37	
8" Dia.	Total Pressure		.015	.027	.043	.062	.084	.110	.171
	Flow Rate, CFM		105	140	175	210	245	280	350
	Throw	4-Way	1-1-2	1-1-4	1-2-5	1-2-6	1-3-7	2-4-8	3-5-10
		3-Way	1-2-5	1-3-7	2-4-8	3-5-10	4-6-12	4-7-14	5-9-17
		2-Way	1-1-4	1-2-6	1-3-8	2-4-9	3-5-11	3-6-13	5-8-16
1-Way		1-2-7	1-4-10	2-6-13	4-7-15	5-9-17	6-10-19	8-13-21	
Noise Criteria		—	13	20	25	30	34	41	
10" Dia.	Total Pressure		.019	.033	.052	.075	.102	.133	.208
	Flow Rate, CFM		165	220	270	325	380	435	545
	Throw	4-Way	1-1-4	1-1-6	1-3-7	1-4-9	2-5-10	3-6-12	5-7-13
		3-Way	1-3-6	2-4-9	3-5-11	4-6-13	5-7-15	6-9-17	7-11-19
		2-Way	1-1-6	1-3-8	2-5-10	3-6-13	4-7-15	5-8-17	7-10-19
1-Way		1-4-10	3-7-14	5-9-18	7-10-20	8-12-21	9-14-23	12-18-26	
Noise Criteria		—	16	23	28	33	37	44	
12" Dia.	Total Pressure		.023	.040	.063	.091	.124	.162	.253
	Flow Rate, CFM		235	315	390	470	550	630	785
	Throw	4-Way	1-1-6	1-2-8	2-4-10	2-6-12	3-7-13	5-8-14	6-10-16
		3-Way	1-3-8	3-5-11	4-6-13	5-8-15	6-9-17	7-11-18	9-13-20
		2-Way	1-2-8	2-5-11	3-6-13	5-8-16	6-9-17	7-11-18	9-13-20
1-Way		3-7-14	5-9-19	8-12-21	9-14-23	11-17-25	13-19-27	16-21-30	
Noise Criteria		—	19	26	31	36	40	47	
14" Dia.	Total Pressure		.027	.049	.076	.110	.149	.195	.304
	Flow Rate, CFM		320	425	535	640	750	855	1070
	Throw	4-Way	1-2-8	1-4-11	2-6-13	4-8-14	5-9-15	7-11-16	9-13-18
		3-Way	2-4-10	3-6-12	5-8-13	6-10-15	7-11-16	8-12-17	11-13-19
		2-Way	1-4-10	3-6-13	5-8-15	6-10-16	7-11-18	9-13-19	11-15-21
1-Way		4-9-19	8-13-22	10-16-24	13-19-27	15-20-29	17-22-31	20-24-35	
Noise Criteria		14	23	30	35	40	44	51	
16" Dia.	Total Pressure		.033	.059	.092	.132	.180	.235	.368
	Flow Rate, CFM		420	560	700	835	975	1115	1295
	Throw	4-Way	1-3-10	2-5-13	3-8-15	5-10-16	7-12-17	9-13-19	12-15-21
		3-Way	3-5-9	5-7-10	6-8-11	7-9-12	8-9-13	8-10-14	9-11-16
		2-Way	2-5-11	4-8-13	6-10-14	8-11-16	9-12-17	10-13-18	12-14-20
1-Way		7-12-21	11-17-24	14-19-27	17-21-30	18-23-32	20-24-35	22-27-39	
Noise Criteria		15	24	31	36	41	45	52	

#### Performance Notes:

- All pressures are in inches w.g..
- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.

- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## HOW TO ORDER

### PERFORATED MODULAR CORE SUPPLY CEILING DIFFUSERS – MODEL SERIES 4320M

EXAMPLE: 4320M - 8 x 8 - 24 x 24 - L - AW - -

1. **Models**

**Square Neck:**

- 4320M Steel, Flush Face
- 4325M Steel, Drop Face
- 4320MA Aluminum Face, Flush
- 4325MA Aluminum Face, Drop

**Round Neck:**

- 4320MR Steel, Flush Face
- 4325MR Steel, Drop Face
- 4320MRA Aluminum Face, Flush
- 4325MRA Aluminum Face, Drop

2. **Neck Size (inches)**

**Round:**

06, 08, 10, 12, 14, 15, 16

**Square:**

6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18, 20 x 20

3. **Ceiling Module Size**

**Imperial (inches)**

12 x 12, 24 x 24 (default)

**Metric (mm)**

300 x 300, 600 x 600

4. **Frame Type**

- L Lay-in T-Bar (default)
- S Surface Mount
- SP Spline
- M Metal Pan (Snap-in)
- F Fineline®

5. **Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime Coat Paint
- BA AW Face/Black Backpan
- SP Special Custom Color

6. **Damper**

- None (default)

**Round Neck:**

4250 Radial Sliding, 6" - 14"

4275 Radial Opposed Blade, 5" - 24"

4675 Butterfly, 6" - 14"

**Square Neck:**

OBD Opposed Blade, Steel

7. **External Insulation**

- None (default)
- EX Foil-back (installed), R-4.2
- EXB Foil-back (loose), R-4.2
- MIB Molded Insulation Blanket, R-6.0

8. **Earthquake Tabs**

- None (default)
- EQT Earthquake Tabs

**OTHER OPTIONS & ACCESSORIES:**

**Air Balancing Devices**

(order separately)

**Round Neck:**

- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

**Square/Rectangular Neck:**

- EGL Equalizing Grid (long)
- EGS Equalizing Grid (short)
- DEGL Damper/Equalizing Grid (long)
- DEGS Damper/Equalizing Grid (short)

**Notes:**

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.
2. Dampers are shipped loose for field installation.
3. EX and EXB maximum size 24" x 24" (600 x 600). MIB Molded Insulation Blanket available on 24" x 24" (600 x 600) round neck only.

**HOW TO SPECIFY**

**SUGGESTED SPECIFICATION:**

**Models 4320M, 4325M – Steel**

Furnish and install **Nailor Model** (select one) **4320M Flush Face** or **4325M Drop Face, Perforated Modular Core Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with an integral square neck collar. A corrosion-resistant steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted in the neck of the diffuser shall be four square modular pattern deflectors factory installed in a 4-way pattern, that are easily field rotated to provide throws in 1, 2, or 3-way patterns. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**Models 4320MA, 4325MA – Aluminum Face**

Furnish and install **Nailor Model** (select one) **4320MA Flush Face** or **4325MA Drop Face, Perforated Modular Core Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with an integral square neck collar. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted in the neck of the diffuser shall be four square modular pattern deflectors factory installed in a 4-way pattern, that are easily field rotated to provide throws in 1, 2, or 3-way patterns. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**SUGGESTED SPECIFICATION:**

**Models 4320MR, 4325MR – Steel**

Furnish and install **Nailor Model** (select one) **4320MR Flush Face** or **4325MR Drop Face, Perforated Modular Core Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped, corrosion-resistant steel, low profile backpan with an integral round neck. A corrosion-resistant steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted below the neck of the diffuser shall be four square modular pattern deflectors, factory installed in a 4-way pattern, that are easily field rotated to provide throws in 1, 2, or 3-way patterns. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and rotating the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**Models 4320MRA, 4325MRA – Aluminum Face**

Furnish and install **Nailor Model** (select one) **4320MRA Flush Face** or **4325MRA Drop Face, Perforated Modular Core Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped, corrosion-resistant steel, low profile backpan with an integral round neck. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted below the neck of the diffuser shall be four square modular pattern deflectors, factory installed in a 4-way pattern, that are easily field rotated to provide throws in 1, 2, or 3-way patterns. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning and rotating the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORATED ADJUSTABLE STAR PATTERN DIFFUSERS

- SUPPLY
- FLUSH FACE OR DROP FACE
- ROUND OR SQUARE NECK

### Steel Models:

4320S Flush Face

4325S Drop Face

### Aluminum Face Models:

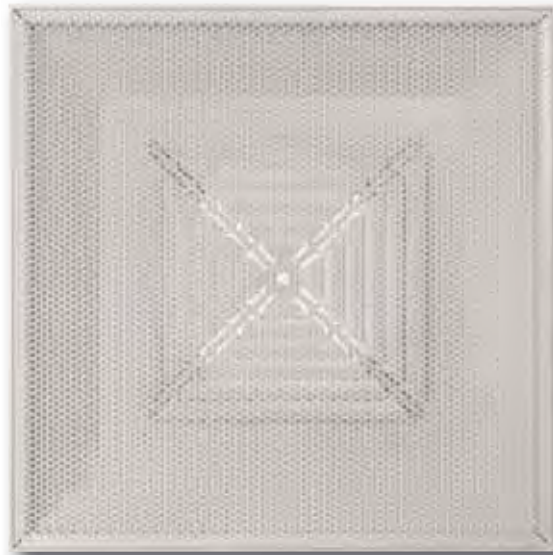
4320SA Flush Face

4325SA Drop Face

### Aluminum Models:

4320SAA Flush Face

4325SAA Drop Face



Model 4320S

Model Series 4320S and 4325S Perforated Adjustable Star Pattern Ceiling Diffusers have been designed to provide both the unobtrusive, smooth appearance preferred by many architects and high engineering performance required for use in heating and cooling applications. The diffusers project a tight, uniform horizontal or vertical blanket of air over a wide range of air volumes and provide excellent performance in variable air volume systems.

Model Series 4320S Diffusers feature a stamped pattern controller mounted directly under the neck that produces a long throw 4-way 'star pattern'. The factory set pattern controller is easily rotated from side throw to corner throw in the field. Individual vanes can be field adjusted to suit the desired air pattern.

Model Series 4325S features a dropped (extended) face panel that is available to complement tegular tile ceiling systems, so that the panel remains flush with the ceiling line. In non-tegular ceilings the throw is reduced slightly and the airflow projection protects the ceiling against smudging.

### STANDARD FEATURES:

- 4-way 'Star Pattern' Controller.
- Round or square necks available.
- Removable face has concealed latches for easy access to the optional damper.
- Discharge pattern can adjust from side throw to corner throw in the field.
- Individual vanes can be adjusted to produce a horizontal or vertical pattern or 3-way horizontal pattern by turning one segment of blades in the opposite direction.
- Inlet collar has 1 1/4" (32) depth for easy duct connection.

- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.

### CONSTRUCTION MATERIAL:

Models 4320S/4325S have a corrosion-resistant steel perforated face and backpan. Models 4320SA/4325SA have an aluminum perforated face and a corrosion-resistant steel backpan. Models 4320SAA/4325SAA have an aluminum perforated face and backpan.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

#### Round Neck:

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- 4675 Butterfly Damper 6" – 14" (152 – 356).
- MIB Molded Insulation Blanket, R-6.0.

#### Square Neck:

- OBD Opposed Blade Damper (Steel)
- OBDA Opposed Blade Damper (Aluminum) (-AA models only)

### OTHER OPTIONS & ACCESSORIES:

- EX External Foil-Back Insulation (installed) -R-4.2.
- EXB External Foil-Back Insulation (loose) -R-4.2.
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

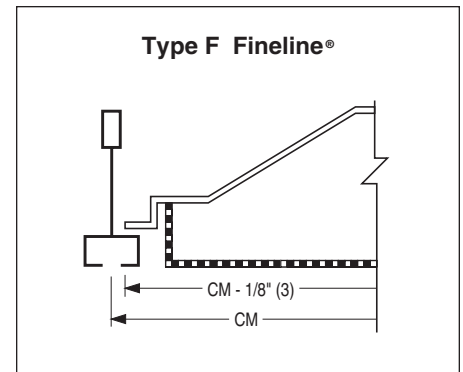
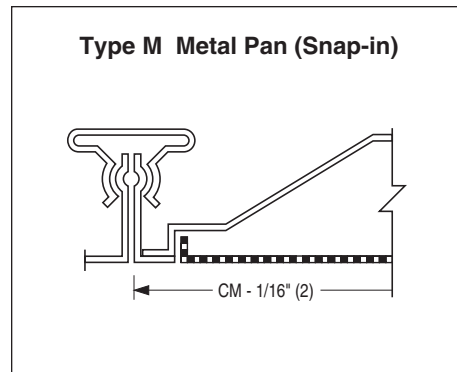
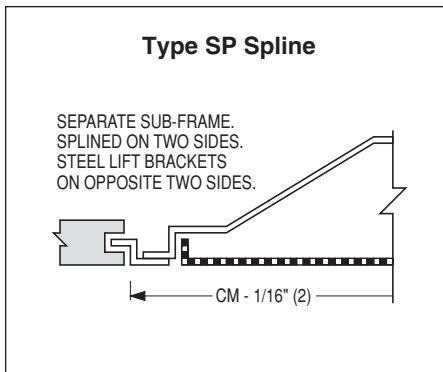
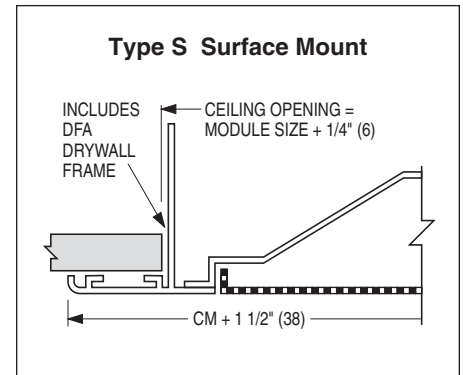
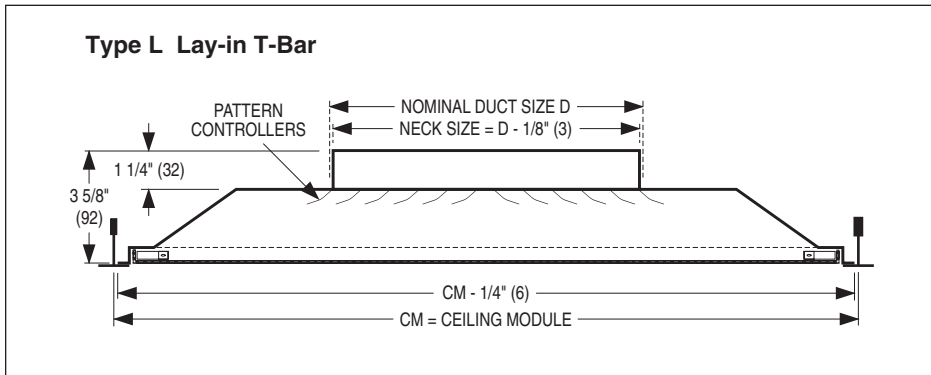
### Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D			
Imperial Modules	Metric Modules	Round Neck		Square Neck	
		Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6	152	6 x 6	152 x 152
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16	152, 203, 254, 305, 356, 381, 406	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305

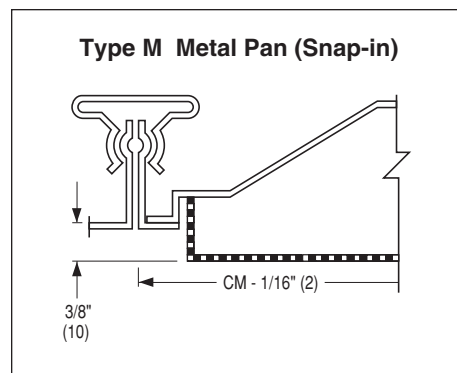
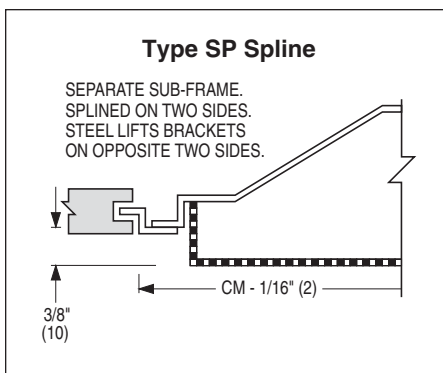
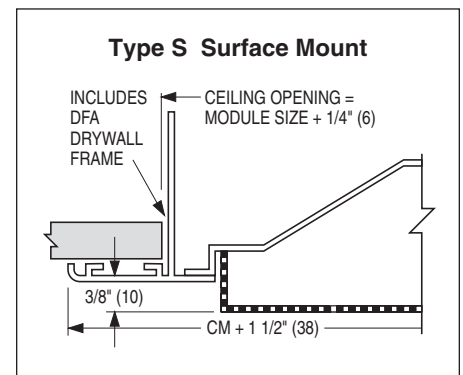
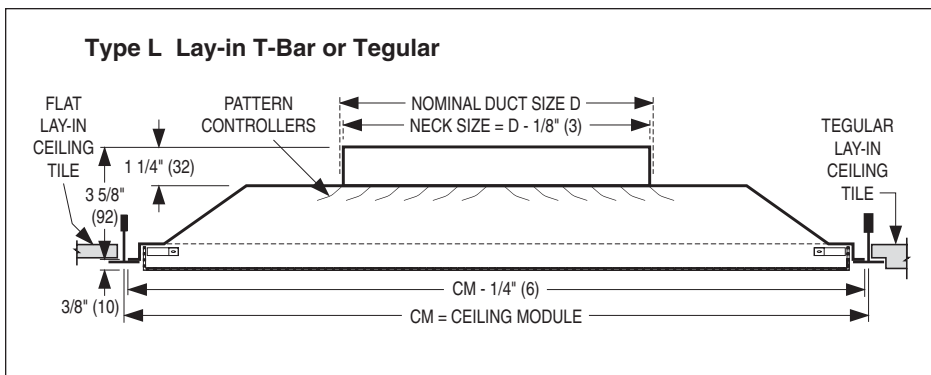


## DIMENSIONAL DATA AND FRAME TYPES:

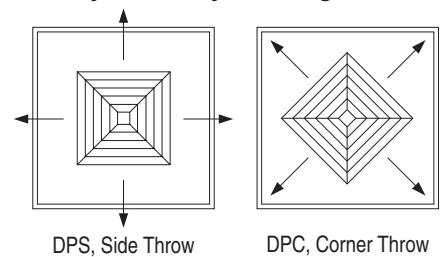
### Models 4320S, 4320SA, 4320SAA • Supply • Flush Face



### Models 4325S, 4325SA, 4325SAA • Supply • Drop Face



**Factory Set 4-Way Discharge Pattern:**



**D**  
CEILING DIFFUSERS

Fineline® is a registered trademark of USG Interiors Inc.

## PERFORMANCE DATA:

### Models 4320S, 4320SA, 4320SAA, 4325S, 4325SA, 4325SAA • 12 x 12 (300 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.022	.031	.040	.050	.062	.090	.122
6" Dia.	Total Pressure	.020	.036	.056	.080	.109	.142	.180	.222	.320	.436
	Airflow, CFM	60	80	100	120	135	155	175	195	235	275
	Throw	1-1-3	1-2-4	1-2-5	2-3-7	2-4-8	3-4-9	3-5-10	3-5-11	4-7-12	5-8-13
	Noise Criteria	—	—	15	21	26	31	34	38	44	49
6 x 6	Total Pressure	.022	.039	.060	.087	.118	.154	.195	.241	.347	.472
	Airflow, CFM	75	100	125	150	175	200	225	250	300	350
	Throw	1-1-3	1-2-5	2-3-6	2-3-7	3-4-9	3-5-10	4-6-11	4-6-12	5-7-14	6-9-15
	Noise Criteria	—	—	17	23	28	32	36	40	46	51

### Models 4320S, 4320SA, 4320SAA, 4325S, 4325SA, 4325SAA • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.022	.031	.040	.050	.062	.090	.122
6 x 6	Total Pressure	.018	.032	.050	.072	.098	.128	.163	.201	.289	.393
	Airflow, CFM	75	100	125	150	175	200	225	250	300	350
	Throw	1-1-3	1-2-5	2-3-6	2-3-7	3-4-9	3-5-10	4-6-11	4-6-12	5-7-14	6-9-15
	Noise Criteria	—	—	17	23	28	32	36	40	46	51
8 x 8	Total Pressure	.020	.036	.056	.081	.110	.144	.182	.224	.323	.440
	Airflow, CFM	135	180	220	265	310	355	400	445	535	620
	Throw	1-2-5	2-3-7	3-4-9	3-5-11	4-6-13	5-7-15	6-8-16	6-8-17	7-11-19	9-13-20
	Noise Criteria	—	—	19	25	30	35	39	42	48	53
10 x 10	Total Pressure	.023	.040	.063	.091	.123	.161	.204	.251	.362	.493
	Airflow, CFM	210	280	345	415	485	555	625	695	835	970
	Throw	2-4-8	3-5-11	4-6-13	5-8-16	6-9-18	7-11-19	8-12-20	9-14-22	11-16-24	13-18-26
	Noise Criteria	—	—	21	27	32	36	40	44	50	55
12 x 12	Total Pressure	.024	.043	.067	.097	.132	.172	.218	.269	.388	.528
	Airflow, CFM	300	400	500	600	700	800	900	1000	1200	1400
	Throw	3-5-11	4-7-14	6-9-18	7-11-21	8-12-23	9-14-24	11-16-26	12-18-27	14-21-30	17-23-32
	Noise Criteria	—	15	22	28	34	38	42	45	51	57

#### Performance Notes:

- All pressures are in inches w.g..
- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.

- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## PERFORMANCE DATA:

Models 4320S, 4320SA, 4320SAA, 4325S, 4325SA, 4325SAA • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.022	.031	.040	.050	.062	.090	.122
6" Dia.	Total Pressure	.017	.031	.048	.069	.094	.123	.155	.192	.276	.376
	Airflow, CFM	60	80	100	120	135	155	175	195	235	275
	Throw	1-1-3	1-2-4	1-2-5	2-3-7	2-4-8	3-4-9	3-5-10	3-5-11	4-7-12	5-8-13
	Noise Criteria	—	—	15	21	26	31	35	38	44	49
8" Dia.	Total Pressure	.018	.032	.051	.073	.099	.129	.164	.202	.291	.396
	Airflow, CFM	105	140	175	210	245	280	315	350	420	490
	Throw	1-2-4	2-3-6	2-4-8	3-5-9	3-5-11	4-6-13	5-7-14	5-8-15	6-9-16	7-11-18
	Noise Criteria	—	—	18	24	29	34	38	41	47	52
10" Dia.	Total Pressure	.021	.038	.059	.085	.115	.151	.191	.235	.339	.461
	Airflow, CFM	165	220	275	325	380	435	490	545	655	765
	Throw	2-3-6	2-4-9	3-5-11	4-6-13	5-7-15	6-8-17	7-9-18	7-11-19	8-13-21	10-15-23
	Noise Criteria	—	—	21	26	31	35	40	43	49	54
12" Dia.	Total Pressure	.023	.042	.065	.094	.128	.167	.211	.260	.375	.510
	Airflow, CFM	235	315	395	470	550	630	705	785	940	1100
	Throw	3-4-9	4-6-12	5-7-14	6-9-18	7-10-20	8-12-21	9-14-22	10-15-23	12-18-26	14-20-28
	Noise Criteria	—	15	23	29	34	38	43	46	52	57
14" Dia.	Total Pressure	.024	.043	.068	.098	.133	.174	.220	.272	.391	.532
	Airflow, CFM	320	430	535	640	750	855	960	1070	1285	1495
	Throw	3-5-11	5-7-15	6-9-19	7-11-22	8-13-23	10-15-25	11-17-26	12-19-28	15-22-31	18-23-33
	Noise Criteria	—	17	25	31	36	40	45	48	54	59
15" Dia.	Total Pressure	.025	.045	.070	.101	.137	.179	.227	.280	.403	.549
	Airflow, CFM	370	490	615	735	860	980	1105	1225	1475	1720
	Throw	4-6-13	6-8-17	7-10-21	8-13-24	9-15-26	12-17-28	13-19-29	15-21-30	17-23-33	20-25-36
	Noise Criteria	—	18	26	32	37	41	46	49	55	61
16" Dia.	Total Pressure	.026	.046	.072	.104	.141	.184	.233	.288	.415	.565
	Airflow, CFM	420	560	700	840	975	1115	1255	1395	1675	1955
	Throw	4-7-14	6-9-19	8-12-23	9-14-25	11-17-28	13-19-29	15-21-31	16-23-33	19-25-36	22-28-39
	Noise Criteria	—	19	27	33	38	42	47	50	56	62

### Performance Notes:

- All pressures are in inches w.g..
- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.

- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## HOW TO ORDER

### PERFORATED STAR PATTERN SUPPLY CEILING DIFFUSERS – MODEL SERIES 4320S

EXAMPLE: 4320S - RND - 08 - 24 x 24 - L - AW - DPS - -

**1. Models**

- 4320S Steel, Flush Face
- 4325S Steel, Drop Face
- 4320SA Aluminum Face, Flush
- 4325SA Aluminum Face, Drop
- 4320SAA Aluminum Face and Backpan, Flush
- 4325SAA Aluminum Face and Backpan, Drop

**2. Neck Type**

- RND Round
- SQR Square

**3. Neck Size (inches)**

- Round:**  
06, 08, 10, 12, 14, 15, 16
- Square/Rectangular:**  
6 x 6, 8 x 8, 10 x 10, 12 x 12

**4. Ceiling Module Size**

- Imperial (inches)**  
12 x 12, 24 x 24 (default)
- Metric (mm)**  
300 x 300, 600 x 600

**5. Frame Type**

- L Lay-in T-Bar (default)
- S Surface Mount
- SP Spline
- M Metal Pan (Snap-in)
- F Fineline®

**6. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime Coat Paint
- BA AW Face/Black Backpan
- SP Special Custom Color

**7. Discharge Pattern**

- DPS Side Throw (default)
- DPC Corner Throw

**8. Damper**

- None (default)

**Round Neck:**

- 4250 Radial Sliding, 6" - 14"
- 4275 Radial Opposed Blade, 5" - 24"
- 4675 Butterfly, 6" - 14"

**Square Neck:**

- OBD Opposed Blade, Steel
- OBDA Opposed Blade, Aluminum (AA models only)

**9. External Insulation**

- None (default)
- EX Foil-back (installed), R-4.2
- EXB Foil-back (loose), R-4.2
- MIB Molded Insulation Blanket, R-6.0

**10. Earthquake Tabs**

- None (default)
- EQT Earthquake Tabs

**OTHER OPTIONS & ACCESSORIES:**

**11. Air Balancing Devices**

(order separately)

**Round Neck:**

- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

**Square/Rectangular Neck:**

- EGL Equalizing Grid (long)
- EGS Equalizing Grid (short)
- DEGL Damper/Equalizing Grid (long)
- DEGS Damper/Equalizing Grid (short)

**Notes:**

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

2. Dampers are shipped loose for field installation.

3. EX and EXB maximum size 24" x 24" (600 x 600). MIB Molded Insulation Blanket available on 24" x 24" (600 x 600) round neck only.

D

CEILING DIFFUSERS

**HOW TO SPECIFY**

**SUGGESTED SPECIFICATION:**

**Models 4320S, 4325S – Steel**

Furnish and install **Nailor Model** (select one) **4320S Flush Face** or **4325S Drop Face, Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck as specified. A corrosion-resistant steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted directly under the neck of the diffuser shall be a 4-way stamped, factory set 'Star Pattern' controller that is easily rotated from side throw to corner throw in the field. The diffuser shall include individual vanes that can be field adjusted to produce a horizontal or vertical pattern or 3-way horizontal pattern by turning one segment of the blades in the opposite direction. The perforated face shall be removable, concealed latches allowing easy access to the interior for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**Models 4320SA, 4325SA – Aluminum Face**

Furnish and install **Nailor Model** (select one) **4320SA Flush Face** or **4325SA Drop Face, Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted directly under the neck of the diffuser shall be a 4-way stamped, factory set 'Star Pattern' controller that is easily rotated from side throw to corner throw in the field. The diffuser shall include individual vanes that can be field adjusted to produce a horizontal or vertical pattern or 3-way horizontal pattern by turning one segment of the blades in the opposite direction. The perforated face shall be removable, concealed latches allowing easy access to the interior for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**Models 4320SAA, 4325SAA – Aluminum**

Furnish and install **Nailor Model** (select one) **4320SAA Flush Face** or **4325SAA Drop Face, Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a stamped aluminum backpan with a round or square neck as specified. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted directly under the neck of the diffuser shall be a 4-way stamped, factory set 'Star Pattern' controller that is easily rotated from side throw to corner throw in the field. The diffuser shall include individual vanes that can be field adjusted to produce a horizontal or vertical pattern or 3-way horizontal pattern by turning one segment of the blades in the opposite direction. The perforated face shall be removable, concealed latches allowing easy access to the interior for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**D**  
**CEILING DIFFUSERS**

## PERFORATED CEILING DIFFUSERS

- SUPPLY
- PREMIUM ARCHITECTURAL QUALITY
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN

### Steel Face Model:

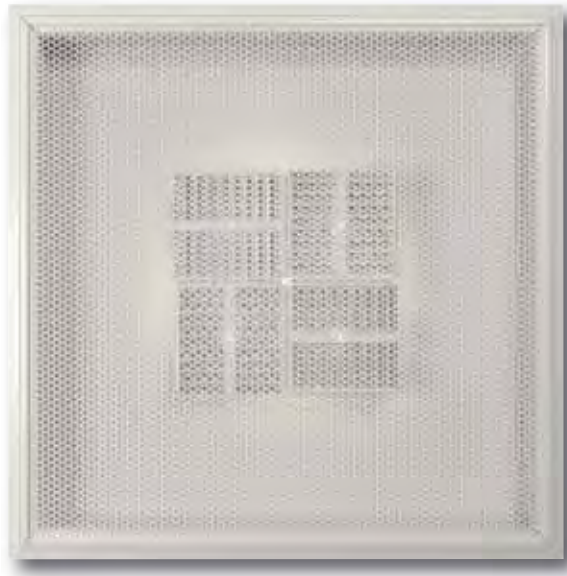
4330 Flush Face

### Aluminum Face Model:

4330A Flush Face

### Aluminum Model:

4330AA Flush Face



Model 4330

Model Series 4330 Perforated Ceiling Diffusers have been designed to provide both the unobtrusive, smooth appearance preferred by many architects and the high engineering performance required for use in heating and cooling applications. They project a tight, uniform horizontal blanket of air over a wide range of air volumes and provide excellent performance in variable air volume systems. The 4330 Series features an extruded aluminum frame with hairline mitered corners that encapsulates the perforated face providing a narrow, visible border within the T-Bar module. Four individual stamped pattern controllers mounted on the rear of the diffuser face are easily field adjustable to suit the desired air pattern.

### STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Discharge pattern can adjust to vertical or 1, 2, 3 or 4-way horizontal, before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and rotating the pattern deflectors.
- Inlet collar has 1 1/4" (32) depth for easy duct connection.
- Dropping the perforated face gives access to the optional damper.
- Perforated face has 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.

- Return models (4330R Series) are available with the same face and frame construction as the supply models to match their appearance.

### CONSTRUCTION MATERIAL:

Model 4330 has a corrosion-resistant steel perforated face and backpan. Model 4330A has an aluminum perforated face and corrosion-resistant steel backpan. Model 4330AA has an aluminum perforated face and backpan. All models have an extruded aluminum border and frame.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

#### Round Neck:

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- 4675 Butterfly Damper 6" – 14" (152 – 356).

#### Square Neck:

- OBD Opposed Blade Damper (Steel)
- OBDA Opposed Blade Damper (Aluminum) (-AA models only)

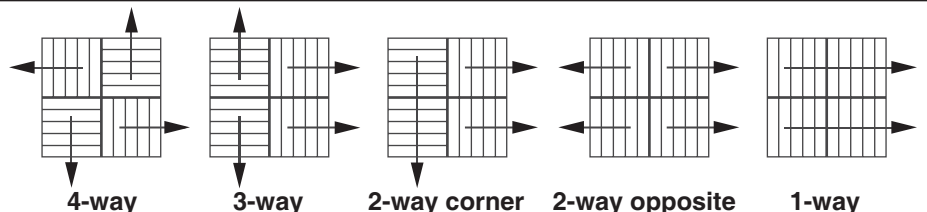
### OTHER OPTIONS & ACCESSORIES:

- EQT Earthquake Tabs

For additional options and accessories; see page D255.

### Available Air Patterns

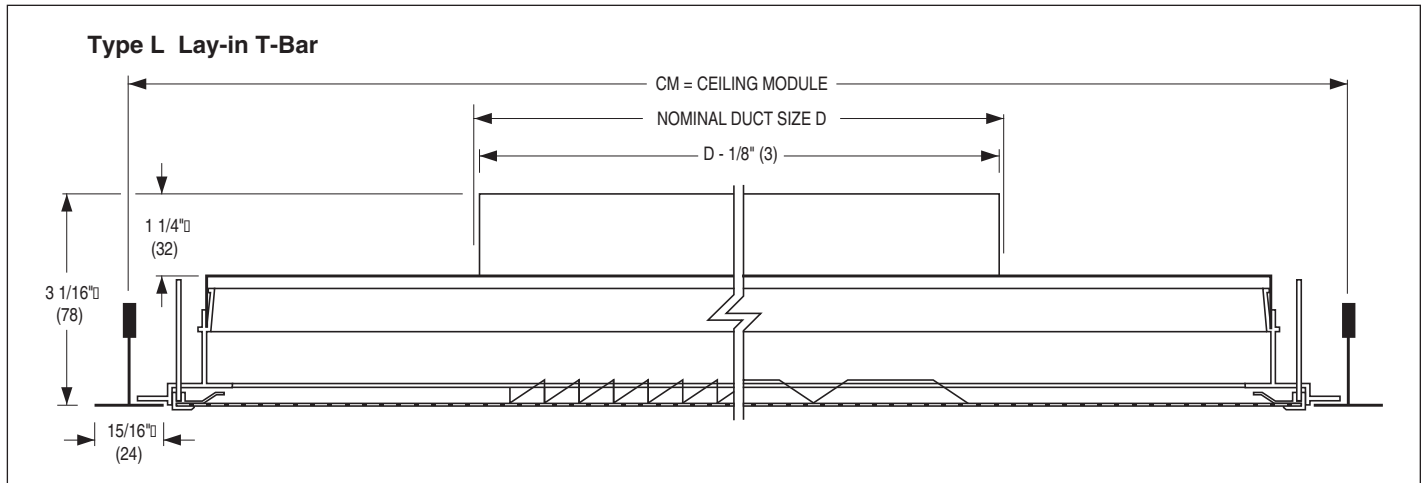
All diffusers are shipped with the standard 4-way pattern, but the air pattern can be simply field adjusted by lowering the hinged face and rotating the spring loaded pattern controllers.





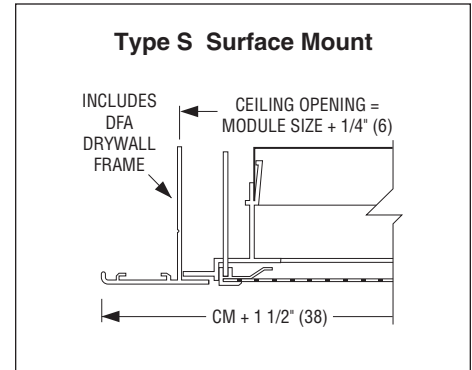
## DIMENSIONAL DATA AND FRAME TYPES:

Models 4330, 4330A, 4330AA • Supply • Flush Face



### Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D			
Imperial Modules	Metric Modules	Round Neck		Square Neck	
		Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	5, 6, 7, 8	127, 152, 178, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
24 x 12	600 x 300	5, 6, 7, 8	127, 152, 178, 203	6 x 6, 8 x 8, 18 x 6	152 x 152, 203 x 203, 457 x 152
16 x 16	400 x 400	5, 6, 7, 8, 10, 12	127, 152, 178, 203, 254, 305	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
20 x 20	500 x 500	5, 6, 7, 8, 10, 12, 14	127, 152, 178, 203, 254, 305, 356	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
24 x 24	600 x 600	5, 6, 7, 8, 10, 12, 14, 15, 16	127, 152, 178, 203, 254, 305, 356, 381, 406	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406
48 x 24	1200 x 600				



D

CEILING DIFFUSERS

## PERFORMANCE DATA:

### Models 4330, 4330A, 4330AA • Flush Face • 12 x 12 (300 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	1400	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	.123	
	Total Pressure	.011	.019	.030	.044	.059	.076	.120	.171	.234	
	Flow Rate, CFM	<b>40</b>	<b>55</b>	<b>70</b>	<b>80</b>	<b>95</b>	<b>110</b>	<b>135</b>	<b>165</b>	<b>190</b>	
5" Dia.	Throw	4-Way	1-2-4	2-2-5	2-3-6	2-4-7	3-5-7	3-6-8	5-6-9	6-7-10	6-7-10
		3-Way	1-2-4	2-3-6	2-3-7	2-4-8	3-5-9	4-6-10	5-7-10	6-8-12	6-9-13
		2-Way	1-2-5	2-3-6	2-4-8	3-5-10	4-6-10	4-7-12	6-8-13	7-10-14	7-10-15
		1-Way	2-3-6	2-4-8	3-5-9	4-6-10	5-7-11	6-8-13	6-9-13	8-10-14	9-10-15
	Noise Criteria	—	—	15	20	24	28	34	39	43	
	Total Pressure	.015	.025	.040	.058	.078	.100	.158	.225	.308	
	Flow Rate, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>195</b>	<b>235</b>	<b>275</b>	
6" Dia.	Throw	4-Way	1-2-4	2-3-5	3-3-7	3-4-8	3-5-8	3-6-9	5-7-10	6-8-10	7-8-11
		3-Way	1-2-4	2-3-6	3-3-8	3-4-9	3-5-10	4-6-10	5-8-11	6-9-13	7-10-14
		2-Way	1-2-5	2-3-7	3-4-9	3-5-10	4-6-11	4-7-12	6-9-14	7-10-15	8-11-17
		1-Way	2-3-6	3-4-9	3-5-11	4-6-11	5-8-12	6-9-13	7-10-15	9-10-16	10-12-17
	Noise Criteria	—	—	17	22	26	30	36	41	45	
	Total Pressure	.016	.028	.040	.066	.092	.118	.187	.262	.36	
	Flow Rate, CFM	<b>80</b>	<b>105</b>	<b>135</b>	<b>160</b>	<b>190</b>	<b>215</b>	<b>270</b>	<b>320</b>	<b>375</b>	
7" Dia.	Throw	4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
		3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
		2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
		1-Way	2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20
	Noise Criteria	—	15	21	26	30	34	40	45	49	
	Total Pressure	.019	.034	.053	.077	.104	.136	.213	.306	.417	
	Flow Rate, CFM	<b>105</b>	<b>140</b>	<b>175</b>	<b>210</b>	<b>245</b>	<b>280</b>	<b>350</b>	<b>420</b>	<b>490</b>	
8" Dia.	Throw	4-Way	1-3-6	2-4-8	4-4-10	4-6-11	4-7-12	5-8-12	6-10-13	8-11-14	9-12-16
		3-Way	1-3-6	2-4-8	4-5-11	4-6-13	5-7-13	5-9-14	7-11-16	9-13-18	10-13-19
		2-Way	1-3-7	2-5-10	4-6-12	4-7-14	5-8-15	6-10-17	8-12-19	10-14-21	12-16-22
		1-Way	3-4-9	4-6-12	5-7-13	6-9-14	7-10-15	8-12-17	10-13-19	13-14-21	13-16-22
	Noise Criteria	—	17	23	28	32	36	42	47	51	
	Total Pressure	.018	.032	.051	.073	.099	.130	.200	.292	.395	
	Flow Rate, CFM	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	
6" x 6"	Throw	4-Way	1-2-5	2-3-6	3-4-8	3-5-9	4-6-9	4-7-10	6-8-11	7-9-12	8-9-13
		3-Way	1-2-5	2-4-7	3-4-9	3-5-10	4-6-11	5-7-12	6-9-13	7-10-15	8-11-16
		2-Way	1-2-6	2-4-8	3-5-10	4-6-12	5-7-13	5-8-14	7-10-16	8-12-17	9-13-19
		1-Way	2-4-7	3-5-10	4-6-11	5-7-12	6-9-13	7-10-14	8-11-16	10-12-17	11-13-19
	Noise Criteria	—	13	19	24	28	32	38	43	47	

For performance notes, see page D211.

D

CEILING DIFFUSERS

## PERFORMANCE DATA:

Models 4330, 4330A, 4330AA • Flush Face • 24 x 12 (600 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200	1400
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090	.123
5" Dia.	Total Pressure		.010	.018	.028	.040	.054	.070	.110	.157	.215
	Flow Rate, CFM		40	55	70	80	95	110	135	165	190
	Throw	4-Way	1-2-4	2-2-5	2-3-6	2-4-7	3-5-7	3-6-8	5-6-9	6-7-10	6-7-10
		3-Way	1-2-4	2-3-6	2-3-7	2-4-8	3-5-9	4-6-10	5-7-10	6-8-12	6-9-13
		2-Way	1-2-5	2-3-6	2-4-8	3-5-10	4-6-10	4-7-12	6-8-13	7-10-14	7-10-15
1-Way		2-3-6	2-4-8	3-5-9	4-6-10	5-7-11	6-8-13	6-9-13	8-10-14	9-10-15	
Noise Criteria		—	—	14	19	23	27	33	38	42	
6" Dia.	Total Pressure		.013	.021	.034	.048	.065	.084	.132	.189	.258
	Flow Rate, CFM		60	80	100	120	140	160	195	235	275
	Throw	4-Way	1-2-4	2-3-5	3-3-7	3-4-8	3-5-8	3-6-9	5-7-10	6-8-10	7-8-11
		3-Way	1-2-4	2-3-6	3-3-8	3-4-9	3-5-10	4-6-10	5-8-11	6-9-13	7-10-14
		2-Way	1-2-5	2-3-7	3-4-9	3-5-10	4-6-11	4-7-12	6-9-14	7-10-15	8-11-17
1-Way		2-3-6	3-4-9	3-5-11	4-6-11	5-8-12	6-9-13	7-10-15	9-10-16	10-12-17	
Noise Criteria		—	—	17	22	26	30	36	41	45	
7" Dia.	Total Pressure		.015	.025	.039	.057	.076	.098	.155	.221	.302
	Flow Rate, CFM		80	105	135	160	190	215	270	320	375
	Throw	4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
		3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
		2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
1-Way		2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20	
Noise Criteria		—	14	20	25	29	33	39	44	48	
8" Dia.	Total Pressure		.014	.026	.04	.058	.079	.103	.16	.231	.314
	Flow Rate, CFM		105	140	175	210	245	280	350	420	490
	Throw	4-Way	1-3-6	2-4-8	4-4-10	4-6-11	4-7-12	5-8-12	6-10-13	8-11-14	9-12-16
		3-Way	1-3-6	2-4-8	4-5-11	4-6-13	5-7-13	5-9-14	7-11-16	9-13-18	10-13-19
		2-Way	1-3-7	2-5-10	4-6-12	4-7-14	5-8-15	6-10-17	8-12-19	10-14-21	12-16-22
1-Way		3-4-9	4-6-12	5-7-13	6-9-14	7-10-15	8-12-17	10-13-19	13-14-21	13-16-22	
Noise Criteria		—	16	22	27	31	35	41	46	50	
6" x 6"	Total Pressure		.017	.030	.048	.069	.094	.122	.189	.274	.374
	Flow Rate, CFM		75	100	125	150	175	200	250	300	350
	Throw	4-Way	1-2-5	2-3-6	3-4-8	3-5-9	4-6-9	4-7-10	6-8-11	7-9-12	8-9-13
		3-Way	1-2-5	2-4-7	3-4-9	3-5-10	4-6-11	5-7-12	6-9-13	7-10-15	8-11-16
		2-Way	1-2-6	2-4-8	3-5-10	4-6-12	5-7-13	5-8-14	7-10-16	8-12-17	9-13-19
1-Way		2-4-7	3-5-10	4-6-11	5-7-12	6-9-13	7-10-14	8-11-16	10-12-17	11-13-19	
Noise Criteria		—	13	19	24	28	32	38	43	47	
18" x 6"	Total Pressure		.041	.068	.109	.157	.211	.273	.430	.613	.84
	Flow Rate, CFM		225	300	375	450	525	600	750	900	1050
	Throw	4-Way	5-7-15	6-10-17	8-12-19	10-15-21	11-16-22	13-17-24	16-19-27	17-21-30	19-23-32
		3-Way	5-7-15	7-10-17	8-13-19	10-15-21	12-16-22	13-17-24	16-19-27	17-21-30	19-23-32
		2-Way	5-8-15	7-11-17	9-13-19	11-15-21	13-16-22	14-17-24	16-19-27	17-21-30	19-23-32
1-Way		8-12-21	10-15-24	13-19-27	15-21-30	18-23-32	20-24-34	22-28-39	24-30-42	27-32-46	
Noise Criteria		17	25	31	36	40	44	50	55	59	

For performance notes, see page D211.

## PERFORMANCE DATA:

### Models 4330, 4330A, 4330AA • Flush Face • 16 x 16 (400 x 400) Module Size

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200	1400
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090	.123
	Total Pressure		.010	.018	.028	.040	.054	.070	.110	.157	.215
	Flow Rate, CFM		<b>40</b>	<b>55</b>	<b>70</b>	<b>80</b>	<b>95</b>	<b>110</b>	<b>135</b>	<b>165</b>	<b>190</b>
5" Dia.	Throw	4-Way	1-2-4	2-2-5	2-3-6	2-4-7	3-5-7	3-6-8	5-6-9	6-7-10	6-7-10
		3-Way	1-2-4	2-3-6	2-3-7	2-4-8	3-5-9	4-6-10	5-7-10	6-8-12	6-9-13
		2-Way	1-2-5	2-3-6	2-4-8	3-5-10	4-6-10	4-7-12	6-8-13	7-10-14	7-10-15
		1-Way	2-3-6	2-4-8	3-5-9	4-6-10	5-7-11	6-8-13	6-9-13	8-10-14	9-10-15
	Noise Criteria		—	—	14	19	23	27	33	38	42
	Total Pressure		.013	.021	.034	.048	.065	.084	.132	.189	.258
	Flow Rate, CFM		<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>200</b>	<b>235</b>	<b>275</b>
6" Dia.	Throw	4-Way	1-2-4	2-3-5	3-3-7	3-4-8	3-5-8	3-6-9	5-7-10	6-8-10	7-8-11
		3-Way	1-2-4	2-3-6	3-3-8	3-4-9	3-5-10	4-6-10	5-8-11	6-9-13	7-10-14
		2-Way	1-2-5	2-3-7	3-4-9	3-5-10	4-6-11	4-7-12	6-9-14	7-10-15	8-11-17
		1-Way	2-3-6	3-4-9	3-5-11	4-6-11	5-8-12	6-9-13	7-10-15	9-10-16	10-12-17
	Noise Criteria		—	—	17	22	26	30	36	41	45
	Total Pressure		.015	.025	.039	.057	.076	.098	.155	.221	.302
	Flow Rate, CFM		<b>80</b>	<b>105</b>	<b>135</b>	<b>160</b>	<b>190</b>	<b>215</b>	<b>270</b>	<b>320</b>	<b>375</b>
7" Dia.	Throw	4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
		3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
		2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
		1-Way	2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20
	Noise Criteria		—	14	20	25	29	33	39	44	48
	Total Pressure		.017	.028	.045	.065	.088	.113	.179	.255	.35
	Flow Rate, CFM		<b>105</b>	<b>140</b>	<b>175</b>	<b>210</b>	<b>245</b>	<b>280</b>	<b>350</b>	<b>420</b>	<b>490</b>
8" Dia.	Throw	4-Way	1-3-6	2-4-8	4-4-10	4-6-11	4-7-12	5-8-12	6-10-13	8-11-14	9-12-16
		3-Way	1-3-6	2-4-8	4-5-11	4-6-13	5-7-13	5-9-14	7-11-16	9-13-18	10-13-19
		2-Way	1-3-7	2-5-10	4-6-12	4-7-14	5-8-15	6-10-17	8-12-19	10-14-21	12-16-22
		1-Way	3-4-9	4-6-12	5-7-13	6-9-14	7-10-15	8-12-17	10-13-19	13-14-21	13-16-22
	Noise Criteria		—	16	22	27	31	35	41	46	50
	Total Pressure		.023	.039	.062	.089	.120	.154	.243	.348	.475
	Flow Rate, CFM		<b>165</b>	<b>220</b>	<b>270</b>	<b>325</b>	<b>380</b>	<b>435</b>	<b>545</b>	<b>655</b>	<b>760</b>
10" Dia.	Throw	4-Way	1-3-8	2-6-10	4-6-12	4-8-13	6-9-14	7-10-14	8-12-17	10-13-18	11-14-20
		3-Way	1-3-8	2-6-10	4-7-13	6-8-15	7-9-17	7-11-18	9-13-20	11-15-22	12-17-23
		2-Way	1-3-9	2-7-12	4-8-14	6-9-18	7-10-19	8-12-21	10-14-23	12-18-25	14-20-28
		1-Way	3-6-11	4-8-14	7-9-17	8-11-18	9-12-19	10-14-21	12-17-23	15-18-25	15-20-28
	Noise Criteria		11	19	25	30	34	38	44	49	53
	Total Pressure		.015	.025	.039	.057	.076	.098	.155	.221	.302
	Flow Rate, CFM		<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>
6" x 6"	Throw	4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
		3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
		2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
		1-Way	2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20
	Noise Criteria		—	14	20	25	29	33	39	44	48
	Total Pressure		.020	.034	.054	.078	.105	.135	.213	.304	.415
	Flow Rate, CFM		<b>135</b>	<b>180</b>	<b>220</b>	<b>265</b>	<b>310</b>	<b>355</b>	<b>445</b>	<b>535</b>	<b>625</b>
8" x 8"	Throw	4-Way	1-3-7	2-5-9	4-5-11	4-7-12	5-8-13	6-9-13	7-11-15	9-12-16	10-13-18
		3-Way	1-3-7	2-5-9	4-6-12	5-7-14	6-8-15	6-10-16	8-12-18	10-14-20	11-15-21
		2-Way	1-3-8	2-6-11	4-7-13	5-8-16	6-9-17	7-11-19	9-13-21	11-16-23	13-18-25
		1-Way	3-5-10	4-7-13	6-8-15	7-10-16	8-11-17	9-13-19	11-15-21	14-16-23	14-18-25
	Noise Criteria		9	17	23	28	32	36	42	47	51

For performance notes, see page D211.

## PERFORMANCE DATA:

### Models 4330, 4330A, 4330AA • Flush Face • 20 x 20 (500 x 500) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	1400	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	.123	
5" Dia.	Total Pressure	.010	.018	.028	.040	.054	.070	.110	.157	.215	
	Flow Rate, CFM	40	55	70	80	95	110	135	165	190	
	Throw	4-Way	1-2-4	2-2-5	2-3-6	2-4-7	3-5-7	3-6-8	5-6-9	6-7-10	6-7-10
		3-Way	1-2-4	2-3-6	2-3-7	2-4-8	3-5-9	4-6-10	5-7-10	6-8-12	6-9-13
		2-Way	1-2-5	2-3-6	2-4-8	3-5-10	4-6-10	4-7-12	6-8-13	7-10-14	7-10-15
1-Way		2-3-6	2-4-8	3-5-9	4-6-10	5-7-11	6-8-13	6-9-13	8-10-14	9-10-15	
Noise Criteria	—	—	14	19	23	27	33	38	42		
6" Dia.	Total Pressure	.013	.021	.034	.048	.065	.084	.132	.189	.258	
	Flow Rate, CFM	60	80	100	120	140	160	200	235	275	
	Throw	4-Way	1-2-4	2-3-5	3-3-7	3-4-8	3-5-8	3-6-9	5-7-10	6-8-10	7-8-11
		3-Way	1-2-4	2-3-6	3-3-8	3-4-9	3-5-10	4-6-10	5-8-11	6-9-13	7-10-14
		2-Way	1-2-5	2-3-7	3-4-9	3-5-10	4-6-11	4-7-12	6-9-14	7-10-15	8-11-17
1-Way		2-3-6	3-4-9	3-5-11	4-6-11	5-8-12	6-9-13	7-10-15	9-10-16	10-12-17	
Noise Criteria	—	—	17	22	26	30	36	41	45		
7" Dia.	Total Pressure	.014	.023	.037	.053	.071	.092	.145	.207	.283	
	Flow Rate, CFM	80	105	135	160	190	215	270	320	375	
	Throw	4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
		3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
		2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
1-Way		2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20	
Noise Criteria	—	13	19	24	28	32	38	43	47		
8" Dia.	Total Pressure	.014	.024	.038	.055	.075	.096	.151	.216	.295	
	Flow Rate, CFM	105	140	175	210	245	280	350	420	490	
	Throw	4-Way	1-3-6	2-4-8	4-4-10	4-6-11	4-7-12	5-8-12	6-10-13	8-11-14	9-12-16
		3-Way	1-3-6	2-4-8	4-5-11	4-6-13	5-7-13	5-9-14	7-11-16	9-13-18	10-13-19
		2-Way	1-3-7	2-5-10	4-6-12	4-7-14	5-8-15	6-10-17	8-12-19	10-14-21	12-16-22
1-Way		3-4-9	4-6-12	5-7-13	6-9-14	7-10-15	8-12-17	10-13-19	13-14-21	13-16-22	
Noise Criteria	—	16	22	27	31	35	41	46	50		
10" Dia.	Total Pressure	.019	.031	.050	.071	.096	.124	.195	.279	.381	
	Flow Rate, CFM	165	220	270	325	380	435	545	655	760	
	Throw	4-Way	1-3-8	2-6-10	4-6-12	4-8-13	6-9-14	7-10-14	8-12-17	10-13-18	11-14-20
		3-Way	1-3-8	2-6-10	4-7-13	6-8-15	7-9-17	7-11-18	9-13-20	11-15-22	12-17-23
		2-Way	1-3-9	2-7-12	4-8-14	6-9-18	7-10-19	8-12-21	10-14-23	12-18-25	14-20-28
1-Way		3-6-11	4-8-14	7-9-17	8-11-18	9-12-19	10-14-21	12-17-23	15-18-25	15-20-28	
Noise Criteria	11	19	25	30	34	38	44	49	53		
12" Dia.	Total Pressure	.023	.038	.060	.087	.117	.150	.237	.338	.462	
	Flow Rate, CFM	235	315	390	470	550	630	785	945	1100	
	Throw	4-Way	2-4-8	3-5-12	5-7-14	5-8-16	6-9-17	7-12-18	9-14-20	12-16-21	14-17-23
		3-Way	2-4-10	3-6-13	5-7-16	6-9-18	7-11-20	8-13-21	11-16-23	13-18-27	15-20-28
		2-Way	2-4-11	3-7-15	5-8-18	7-11-20	8-13-23	9-15-25	12-18-28	15-21-31	17-23-33
1-Way		3-6-14	5-8-18	7-11-20	8-13-21	11-16-23	12-18-25	15-20-28	18-21-31	19-23-33	
Noise Criteria	14	22	28	33	37	41	47	52	56		
14" Dia.	Total Pressure	.029	.049	.079	.113	.152	.196	.309	.440	.603	
	Flow Rate, CFM	320	425	530	635	740	850	1060	1270	1480	
	Throw	4-Way	2-5-10	4-6-13	6-8-16	6-10-18	7-11-19	8-13-20	11-16-23	13-18-24	16-19-26
		3-Way	2-3-11	4-7-14	6-8-18	7-11-20	8-12-23	10-14-24	12-18-26	14-20-30	17-23-31
		2-Way	3-5-12	4-8-17	6-10-20	8-12-23	10-14-26	11-17-29	13-20-31	17-24-35	19-26-37
1-Way		4-7-16	6-10-20	8-12-23	10-14-24	12-18-26	13-20-29	17-23-31	20-24-35	22-26-37	
Noise Criteria	19	27	33	38	42	46	52	57	61		
6" x 6"	Total Pressure	.014	.023	.037	.053	.071	.092	.145	.207	.283	
	Flow Rate, CFM	75	100	125	150	175	200	250	300	350	
	Throw	4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
		3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
		2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
1-Way		2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20	
Noise Criteria	—	13	19	24	28	32	38	43	47		
8" x 8"	Total Pressure	.019	.031	.050	.071	.096	.124	.195	.279	.381	
	Flow Rate, CFM	135	180	220	265	310	355	445	535	625	
	Throw	4-Way	1-3-8	2-6-10	4-6-12	4-8-13	6-9-14	7-10-14	8-12-17	10-13-18	11-14-20
		3-Way	1-3-8	2-6-10	4-7-13	6-8-15	7-9-17	7-11-18	9-13-20	11-15-22	12-17-23
		2-Way	1-3-9	2-7-12	4-8-14	6-9-18	7-10-19	8-12-21	10-14-23	12-18-25	14-20-28
1-Way		3-6-11	4-8-14	7-9-17	8-11-18	9-12-19	10-14-21	12-17-23	15-18-25	15-20-28	
Noise Criteria	11	19	25	30	34	38	44	49	53		
10" x 10"	Total Pressure	.021	.035	.057	.082	.110	.142	.223	.318	.435	
	Flow Rate, CFM	210	280	350	415	485	555	695	835	975	
	Throw	4-Way	2-4-8	3-5-11	5-7-13	5-8-15	6-9-16	7-11-17	9-13-19	11-15-20	13-16-22
		3-Way	2-4-9	3-6-12	5-7-15	6-9-17	7-10-19	8-12-20	10-15-22	12-17-22	14-19-26
		2-Way	2-4-10	3-7-14	5-8-17	7-10-19	8-12-22	9-14-24	11-17-26	14-20-29	16-22-31
1-Way		3-6-13	5-8-17	7-10-19	8-12-20	10-15-22	11-17-24	14-19-26	17-20-29	18-22-31	
Noise Criteria	13	21	27	32	36	40	46	51	55		

D

CEILING DIFFUSERS

## PERFORMANCE DATA:

### Models 4330, 4330A, 4330AA • Flush Face • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200	1400
	VP		.006	.010	.016	.023	.031	.040	.063	.090	.123
	Total Pressure		.013	.021	.034	.048	.065	.084	.132	.189	.258
	Flow Rate, CFM		60	80	100	120	140	160	195	235	275
6" Dia.	Throw	4-Way	1-2-4	2-3-5	3-3-7	3-4-8	3-5-8	3-6-9	5-7-10	6-8-10	7-8-11
		3-Way	1-2-4	2-3-6	3-3-8	3-4-9	3-5-10	4-6-10	5-8-11	6-9-13	7-10-14
		2-Way	1-2-5	2-3-7	3-4-9	3-5-10	4-6-11	4-7-12	6-9-14	7-10-15	8-11-17
		1-Way	2-3-6	3-4-9	3-5-11	4-6-11	5-8-12	6-9-13	7-10-15	9-10-16	10-12-17
	Noise Criteria		—	—	17	22	26	30	36	41	45
	Total Pressure		.014	.024	.038	.055	.075	.096	.151	.216	.295
	Flow Rate, CFM		105	140	175	210	245	280	350	420	490
8" Dia.	Throw	4-Way	1-3-6	2-4-8	4-4-10	4-6-11	4-7-12	5-8-12	6-10-13	8-11-14	9-12-16
		3-Way	1-3-6	2-4-8	4-5-11	4-6-13	5-7-13	5-9-14	7-11-16	9-13-18	10-13-19
		2-Way	1-3-7	2-5-10	4-6-12	4-7-14	5-8-15	6-10-17	8-12-19	10-14-21	12-16-22
		1-Way	3-4-9	4-6-12	5-7-13	6-9-14	7-10-15	8-12-17	10-13-19	13-14-21	13-16-22
	Noise Criteria		—	16	22	27	31	35	41	46	50
	Total Pressure		.016	.027	.043	.062	.084	.109	.171	.244	.333
	Flow Rate, CFM		165	220	270	325	380	435	545	655	760
10" Dia.	Throw	4-Way	1-3-8	2-6-10	4-6-12	4-8-13	6-9-14	7-10-14	8-12-17	10-13-18	11-14-20
		3-Way	1-3-8	2-6-10	4-7-13	6-8-15	7-9-17	7-11-18	9-13-20	11-15-22	12-17-23
		2-Way	1-3-9	2-7-12	4-8-14	6-9-18	7-10-19	8-12-21	10-14-23	12-18-25	14-20-28
		1-Way	3-6-11	4-8-14	7-9-17	8-11-18	9-12-19	10-14-21	12-17-23	15-18-25	15-20-28
	Noise Criteria		11	19	25	30	34	38	44	49	53
	Total Pressure		.020	.033	.053	.076	.103	.132	.208	.298	.407
	Flow Rate, CFM		235	315	390	470	550	630	785	945	1100
12" Dia.	Throw	4-Way	2-4-8	3-5-12	5-7-14	5-8-16	6-9-17	7-12-18	9-14-20	12-16-21	14-17-23
		3-Way	2-4-10	3-6-13	5-7-16	6-9-18	7-11-20	8-13-21	11-16-23	13-18-27	15-20-28
		2-Way	2-4-11	3-7-15	5-8-18	7-11-20	8-13-23	9-15-25	12-18-28	15-21-31	17-23-33
		1-Way	3-6-14	5-8-18	7-11-20	8-13-21	11-16-23	12-18-25	15-20-28	18-21-31	19-23-33
	Noise Criteria		14	22	28	33	37	41	47	52	56
	Total Pressure		.023	.038	.061	.088	.119	.153	.241	.345	.47
	Flow Rate, CFM		320	425	530	635	740	850	1060	1270	1480
14" Dia.	Throw	4-Way	2-5-10	4-6-13	6-8-16	6-10-18	7-11-19	8-13-20	11-16-23	13-18-24	16-19-26
		3-Way	2-5-11	4-7-14	6-8-18	7-11-20	8-12-23	10-14-24	12-18-26	14-20-30	17-23-31
		2-Way	3-5-12	4-8-17	6-10-20	8-12-23	10-14-26	11-17-29	13-20-31	17-24-35	19-26-37
		1-Way	4-8-16	6-10-20	8-12-23	10-14-24	12-18-26	13-20-29	17-23-31	20-24-35	22-26-37
	Noise Criteria		16	24	30	35	39	43	49	54	58
	Total Pressure		.029	.048	.076	.110	.148	.191	.300	.430	.587
	Flow Rate, CFM		420	560	700	840	980	1120	1400	1680	1960
16" Dia.	Throw	4-Way	2-5-12	5-8-15	6-9-19	8-12-20	9-13-21	11-15-24	13-19-26	15-20-28	18-22-31
		3-Way	3-5-12	5-8-17	6-11-20	8-12-25	9-14-26	11-17-28	14-20-32	17-25-34	19-26-38
		2-Way	4-5-14	5-9-19	6-12-24	9-14-28	11-17-31	13-19-33	15-24-37	19-28-40	21-31-44
		1-Way	5-8-18	8-12-24	9-14-26	12-18-28	13-20-31	15-24-33	19-26-37	24-28-40	25-31-44
	Noise Criteria		19	27	33	38	42	46	52	57	61

For performance notes, see page D211.

D

CEILING DIFFUSERS



## PERFORMANCE DATA:

### Models 4330, 4330A, 4330AA • Flush Face • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	1400	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	.123	
	Total Pressure	.014	.023	.037	.053	.071	.092	.145	.207	.283	
	Flow Rate, CFM	75	100	125	150	175	200	250	300	350	
6" x 6"	Throw	4-Way	1-2-5	2-3-6	3-4-9	3-5-10	4-6-10	4-8-11	6-9-12	8-10-13	9-10-14
		3-Way	1-2-5	2-4-7	3-4-10	3-5-11	4-6-12	5-8-13	6-10-14	7-11-16	9-12-17
		2-Way	1-2-6	2-4-9	3-5-11	4-6-12	5-8-14	5-9-15	7-11-17	9-13-18	10-14-20
		1-Way	2-4-8	3-5-11	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	11-13-18	12-14-20
	Noise Criteria	—	13	19	24	28	32	38	43	47	
8" x 8"	Total Pressure	.016	.027	.043	.062	.084	.109	.171	.244	.333	
	Flow Rate, CFM	135	180	220	265	310	355	445	535	625	
	Throw	4-Way	1-3-8	2-6-10	4-6-12	4-8-13	6-9-14	7-10-14	8-12-17	10-13-18	11-14-20
		3-Way	1-3-8	2-6-10	4-7-13	6-8-15	7-9-17	7-11-18	9-13-20	11-15-22	12-17-23
		2-Way	1-3-9	2-7-12	4-8-14	6-9-18	7-10-19	8-12-21	10-14-23	12-18-25	14-20-28
1-Way		3-6-11	4-8-14	7-9-17	8-11-18	9-12-19	10-14-21	12-17-23	15-18-25	15-20-28	
Noise Criteria	11	19	25	30	34	38	44	49	53		
10" x 10"	Total Pressure	.020	.033	.053	.076	.103	.132	.208	.298	.407	
	Flow Rate, CFM	235	315	390	470	550	630	785	945	1100	
	Throw	4-Way	2-4-8	3-5-11	5-7-13	5-8-15	6-9-16	7-11-17	9-13-19	11-15-20	13-16-22
		3-Way	2-4-9	3-6-12	5-7-15	6-9-17	7-10-19	8-12-20	10-15-22	12-17-22	14-19-26
		2-Way	2-4-10	3-7-14	5-8-17	7-10-19	8-12-22	9-14-24	11-17-26	14-20-29	16-22-31
1-Way		3-6-13	5-8-17	7-10-19	8-12-20	10-15-22	11-17-24	14-19-26	17-20-29	18-22-31	
Noise Criteria	14	22	28	33	37	41	47	52	56		
12" x 12"	Total Pressure	.021	.037	.058	.083	.115	.148	.230	.333	.450	
	Flow Rate, CFM	300	400	500	600	700	800	1000	1200	1400	
	Throw	4-Way	2-4-10	4-7-13	5-8-16	7-10-17	8-11-18	9-13-20	11-16-22	13-17-24	15-19-26
		3-Way	2-4-10	4-7-14	5-9-17	7-10-21	8-12-22	9-14-24	12-17-27	14-21-29	16-22-32
		2-Way	2-4-12	4-8-16	5-10-20	8-12-24	9-14-26	11-16-28	13-20-31	16-24-34	18-26-37
1-Way		4-7-15	7-10-20	8-12-22	10-15-24	11-17-26	13-20-28	16-22-31	20-24-34	21-26-37	
Noise Criteria	16	24	30	35	39	43	49	54	58		

#### Performance Notes:

- All pressures are in inches w.g..
- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.  
Listed throws for the 18" x 6" neck/24" x 12" module are for the long side of the diffuser. Throws for the narrow side are approximately x 0.6 listed values.

- Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## PERFORATED CURVED BLADE DIFFUSERS

- SUPPLY
- PREMIUM ARCHITECTURAL QUALITY
- 4-WAY ADJUSTABLE DISCHARGE PATTERN (STANDARD)
- 1, 2 OR 3-WAY DISCHARGE PATTERN (OPTIONAL)
- ROUND OR SQUARE NECK



Model 4330CB

### Steel Face Model:

4330CB Flush Face

### Aluminum Face Model:

4330CBA Flush Face

### Aluminum Model:

4330CBAA Flush Face

Model Series 4330CB Curved Blade Diffusers provide the unobtrusive, smooth appearance preferred by many architects with superior features and performance characteristics. Designed to maximize throw, this model features individually adjustable, friction pivoted curved blade deflectors mounted directly under the neck. They project a tight, uniform horizontal blanket of air over a wide range of air volumes and provide excellent performance in variable air volume systems.

Model 4330CB Diffuser features an extruded aluminum frame with hairline mitered corners that encapsulates the perforated face providing a narrow, visible border within the T-Bar module. The deflector blades can be adjusted to control both the angle of discharge and hence throw from full horizontal to vertical in each direction and also damper the air volume. By closing off the deflectors in one or more directions, directional control can also be achieved. The 4330CB is supplied with a 4-way adjustable discharge pattern as standard but is also available with a factory supplied 1, 2 or 3-way adjustable discharge pattern controller.

### STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Discharge pattern can be adjusted from horizontal to vertical before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and moving the curved blade deflectors.

- Inlet collar has 1 1/4" (32) depth for easy duct connection.
- Perforated face with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area.
- Dropping the perforated face gives access to the optional damper.
- Return models (4330R Series) are available with the same face and frame construction as the supply models to match their appearance.

### CONSTRUCTION MATERIAL:

Model 4330CB has a corrosion-resistant steel perforated face and backpan. Model 4330CBA has an aluminum perforated face and corrosion-resistant steel backpan. Model 4330CBAA has an aluminum perforated face and backpan. All models have an aluminum border and frame.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

#### Round Neck:

- 4250 Radial Sliding Blade Damper  
6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper  
5" – 24" (127 – 610).
- 4675 Butterfly Damper  
6" – 14" (152 – 356).

#### Square Neck:

- OBD Opposed Blade Damper (Steel)
- OBDA Opposed Blade Damper (Aluminum) (-AA models only)

### OTHER OPTIONS & ACCESSORIES:

- EQT Earthquake Tabs

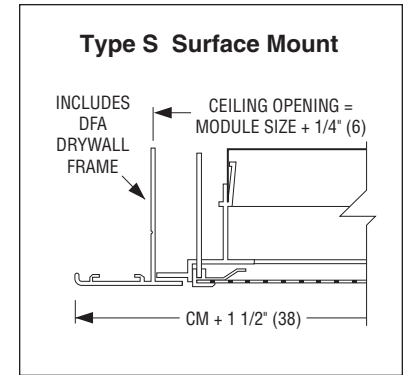
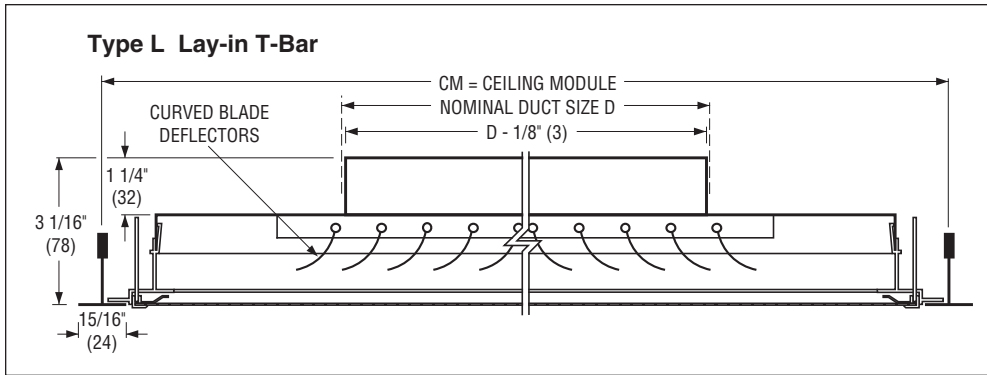
For additional options and accessories; see page D255.

### Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D			
Imperial Modules	Metric Modules	Round Neck		Square Neck	
		Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6, 8	152, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
24 x 12	600 x 300	6, 8	152, 203	6 x 6, 8 x 8, 18 x 6	152 x 152, 203 x 203, 457 x 152
16 x 16	400 x 400	6, 8, 10, 12	152, 203, 254, 305	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
20 x 20	500 x 500	6, 8, 10, 12, 14	152, 203, 254, 305, 356	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14	152 x 152, 203 x 203, 254 x 254, 305 x 305, 381 x 381
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16, 18	152, 203, 254, 305, 356, 381, 406, 457	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406, 457 x 457

## DIMENSIONAL DATA AND FRAME TYPES:

Models 4330CB, 4330CBA, 4330CBAA • Supply • Flush Face



## Model Series 4330CB • Adjusting Pattern Controllers

### Removing Perforated Face

The **4330 Series** is supplied with a removable face plate that is retained in place with quick-release spring latches, located on the edge of the perforated face border.

- Carefully insert a small screwdriver or similar object through a perforated hole in the edge of the face plate and pull the diffuser face down slightly. Grasp the face plate by hand and pull down to the extent of the spring latches on all sides.
- The face plate will now hang by the extended spring latches. Compress the spring latches by hand and remove from the backpan.
- When the latches are removed from three sides, the face will hinge down from the remaining latches for access to the pattern deflectors. The face can be completely removed by depressing the remaining latches.
- To close; lift perforated face, depress the spring latches and snap in place.

The pattern controller in the neck of the diffuser features individually adjustable deflector blades which may be used to vary the discharge pattern from full horizontal to vertical. Each blade is friction pivoted using a tension wire which securely holds its position after adjustment.

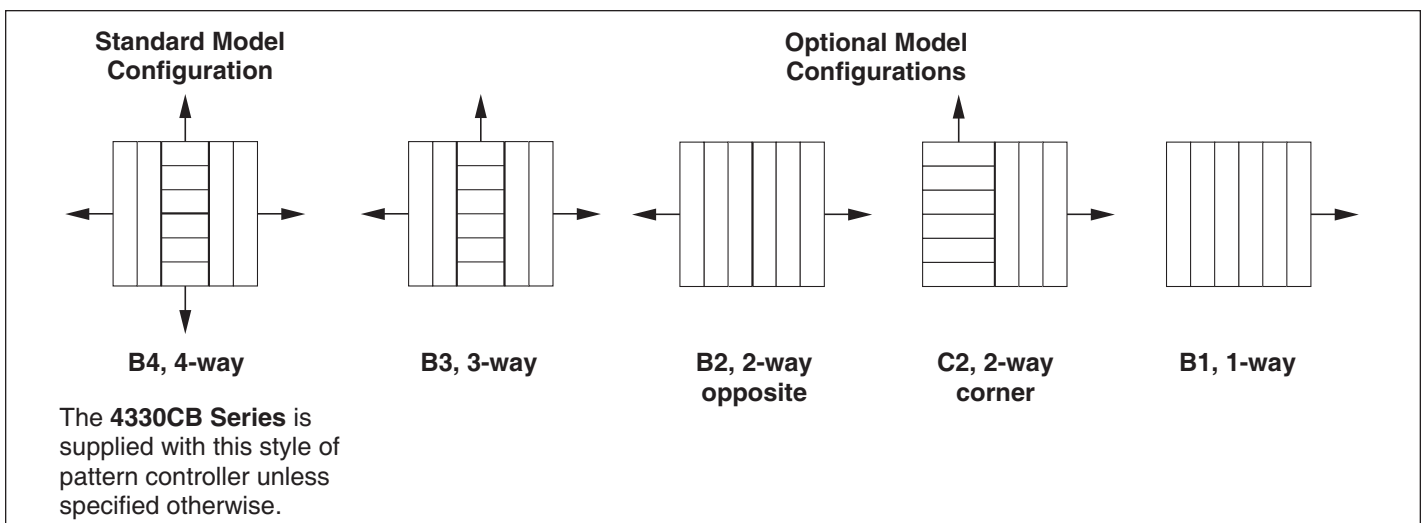


Round or Square Neck • 4-way Pattern

D

CEILING DIFFUSERS

## Pattern Controller Options



## PERFORMANCE DATA:

### Models 4330CB, 4330CBA, 4330CBAA • 12 x 12 (300 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	
	Total Pressure	.030	.052	.082	.118	.162	.211	.267	
6" Dia.	Flow Rate, CFM	60	80	95	115	135	155	175	
	Throw	4-Way	1-2-4	2-3-6	2-4-7	3-5-7	3-5-8	4-6-9	5-6-9
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15
		2-Way	2-4-8	3-5-11	4-6-13	5-8-15	6-9-16	7-11-18	8-12-20
		1-Way	3-4-9	4-6-12	5-8-16	6-9-18	7-11-20	8-12-22	9-14-23
Noise Criteria	16	22	27	32	37	41	44		
8" Dia.	Flow Rate, CFM	105	140	175	210	245	280	315	
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21
		1-Way	3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25
Noise Criteria	17	23	29	35	39	43	46		
6 x 6	Flow Rate, CFM	75	100	125	150	175	200	225	
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22
		1-Way	3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26
Noise Criteria	16	22	27	32	36	40	43		
8 x 8	Flow Rate, CFM	135	175	220	265	310	355	400	
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24
		1-Way	4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28
Noise Criteria	17	23	30	36	40	44	47		

### Models 4330CB, 4330CBA, 4330CBAA • 24 x 12 (600 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	
	Total Pressure	.030	.052	.082	.118	.162	.211	.267	
6" Dia.	Flow Rate, CFM	60	80	95	115	135	155	175	
	Throw	4-Way	1-2-4	2-3-6	2-4-7	3-5-7	3-5-8	4-6-9	5-6-9
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15
		2-Way	2-4-8	3-5-11	4-6-13	5-8-15	6-9-16	7-11-18	8-12-20
		1-Way	3-4-9	4-6-12	5-8-16	6-9-18	7-11-20	8-12-22	9-14-23
Noise Criteria	16	22	27	32	37	41	44		
8" Dia.	Flow Rate, CFM	105	140	175	210	245	280	315	
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21
		1-Way	3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25
Noise Criteria	17	23	29	35	39	43	46		
6 x 6	Flow Rate, CFM	75	100	125	150	175	200	225	
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22
		1-Way	3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26
Noise Criteria	16	22	27	32	36	40	43		
8 x 8	Flow Rate, CFM	135	175	220	265	310	355	400	
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24
		1-Way	4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28
Noise Criteria	17	23	30	36	40	44	47		

For performance notes, see page D216.

## PERFORMANCE DATA:

### Models 4330CB, 4330CBA, 4330CBAA • 24 x 24 (600 x 600) Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	900
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.051
	Total Pressure		.030	.052	.082	.118	.162	.211	.267
6" Dia.	Flow Rate, CFM		60	80	95	115	135	155	175
	Throw	4-Way	1-2-4	2-3-6	2-3-7	3-4-7	3-5-8	4-6-9	4-6-9
		3-Way	1-2-5	2-3-7	2-4-8	3-5-9	4-6-9	4-7-10	5-7-11
		2-Way	2-3-7	3-4-9	4-6-11	4-7-12	5-8-13	6-9-14	7-11-15
		1-Way	2-4-8	3-5-11	4-7-13	5-8-15	6-9-16	7-11-17	8-12-18
Noise Criteria		—	19	25	30	34	38	41	
8" Dia.	Flow Rate, CFM		105	140	175	210	245	280	315
	Throw	4-Way	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	4-8-12	5-9-12
		3-Way	2-3-7	3-4-9	3-5-11	4-7-12	5-8-13	6-9-14	7-10-14
		2-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-21
		1-Way	3-5-11	5-7-15	6-9-18	7-11-21	8-13-22	10-15-24	11-17-25
Noise Criteria		14	22	28	33	37	41	44	
10" Dia.	Flow Rate, CFM		165	215	270	325	380	435	490
	Throw	4-Way	2-3-7	3-5-10	4-6-12	5-7-13	5-8-14	6-10-15	7-11-16
		3-Way	2-4-8	3-5-11	4-7-13	5-8-15	6-10-16	7-11-17	8-13-18
		2-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-23	10-16-25	12-18-27
		1-Way	4-7-14	6-9-18	7-11-23	9-14-26	11-16-28	12-18-29	14-22-31
Noise Criteria		16	24	30	35	39	43	46	
12" Dia.	Flow Rate, CFM		235	315	390	470	550	625	705
	Throw	4-Way	3-4-9	4-6-12	5-7-14	6-9-15	7-10-17	8-12-18	9-13-20
		3-Way	3-5-10	4-7-14	5-8-16	7-10-18	8-12-20	9-14-22	10-15-23
		2-Way	4-7-14	6-9-20	8-12-24	9-14-26	11-17-28	13-20-30	14-23-32
		1-Way	5-8-17	7-11-23	9-14-28	11-17-31	13-20-33	15-23-35	17-26-37
Noise Criteria		18	26	32	37	41	45	48	
14" Dia.	Flow Rate, CFM		320	425	535	640	750	855	960
	Throw	4-Way	3-5-10	4-7-14	5-8-16	7-10-18	8-12-21	9-14-22	10-16-23
		3-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-24	10-16-25	12-18-27
		2-Way	5-8-17	7-11-24	9-14-28	11-17-30	13-21-33	15-24-35	17-26-37
		1-Way	6-9-20	8-13-27	11-16-33	13-20-36	15-24-38	17-27-41	20-30-43
Noise Criteria		21	29	35	39	44	48	51	
15" Dia.	Flow Rate, CFM		370	490	615	740	860	985	1100
	Throw	4-Way	3-6-10	4-2-14	5-8-17	8-10-19	8-13-21	10-14-23	10-16-24
		3-Way	4-6-12	6-8-17	6-11-21	8-13-22	10-14-25	11-16-26	13-18-28
		2-Way	4-8-17	7-12-25	9-15-30	11-18-31	13-22-34	16-25-35	17-27-38
		1-Way	6-9-20	8-14-28	12-17-34	14-21-37	16-24-39	18-27-42	17-31-43
Noise Criteria		22	30	36	40	45	49	52	
16" Dia.	Flow Rate, CFM		420	560	700	835	975	1115	1255
	Throw	4-Way	4-6-12	5-8-16	6-10-20	8-12-22	9-14-23	10-16-25	12-18-26
		3-Way	4-7-14	6-9-18	7-11-23	9-14-25	10-16-27	12-18-29	14-22-30
		2-Way	6-9-20	8-13-27	10-16-32	13-20-35	15-24-37	17-27-40	20-30-42
		1-Way	7-11-23	10-15-31	12-18-37	15-23-41	17-27-44	21-31-47	23-35-50
Noise Criteria		23	31	37	41	46	50	53	
18" Dia.	Flow Rate, CFM		530	705	885	1060	1235	1415	1590
	Throw	4-Way	4-7-14	5-9-18	7-10-20	9-13-24	10-16-26	10-19-28	13-21-29
		3-Way	4-7-17	6-10-21	8-12-24	10-15-28	11-20-30	13-22-32	17-24-34
		2-Way	7-10-23	10-14-29	11-17-34	15-22-36	18-28-43	20-30-44	24-34-50
		1-Way	8-12-26	11-17-33	14-21-40	18-25-45	21-32-50	23-38-53	29-40-56
Noise Criteria		25	33	39	43	48	52	55	

D  
CEILING DIFFUSERS

For performance notes, see page D216.



## PERFORMANCE DATA:

### Models 4330CB, 4330CBA, 4330CBAA • 24 x 24 (600 x 600) Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	
	Total Pressure	.028	.050	.079	.113	.155	.202	.256	
6 x 6	Flow Rate, CFM	75	100	125	150	175	200	225	
	Throw	4-Way	1-2-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-10	5-7-11
		3-Way	2-3-6	2-4-8	3-5-11	4-6-12	5-7-13	5-8-14	6-10-15
		2-Way	3-4-9	4-6-12	5-7-15	6-9-17	7-10-20	8-12-21	9-14-22
		1-Way	3-5-10	4-7-14	6-9-18	7-10-21	8-12-23	9-14-24	10-16-26
Noise Criteria	—	20	26	31	35	39	42		
8 x 8	Flow Rate, CFM	135	175	220	265	310	355	400	
	Throw	4-Way	2-3-6	3-4-9	3-5-10	4-6-11	5-8-12	6-9-13	6-10-14
		3-Way	2-3-7	3-5-10	4-6-12	5-7-13	6-9-14	7-10-15	7-11-16
		2-Way	3-5-11	4-7-14	6-9-17	7-11-20	8-13-21	9-14-23	11-16-24
		1-Way	4-6-12	5-8-17	7-10-21	8-12-23	9-14-25	11-17-27	12-20-28
Noise Criteria	15	23	29	34	38	42	45		
10 x 10	Flow Rate, CFM	210	275	345	415	485	555	625	
	Throw	4-Way	2-4-8	3-5-11	4-7-13	5-8-14	6-10-16	7-11-17	8-12-18
		3-Way	3-4-9	4-6-13	5-8-15	6-9-17	7-11-18	8-13-20	9-14-22
		2-Way	4-6-13	6-9-18	7-11-22	9-13-25	10-16-26	12-18-28	13-21-30
		1-Way	5-8-16	7-10-22	8-13-26	10-16-29	12-18-31	14-22-33	16-25-35
Noise Criteria	17	25	31	36	40	44	47		
12 x 12	Flow Rate, CFM	300	400	500	600	700	800	900	
	Throw	4-Way	3-5-10	4-6-13	5-8-16	6-10-17	8-12-20	9-13-21	10-15-22
		3-Way	3-5-11	5-7-15	6-9-18	7-11-21	9-13-23	10-15-24	11-17-26
		2-Way	5-8-16	7-11-23	9-13-27	11-16-29	13-20-32	14-23-34	16-25-36
		1-Way	6-9-20	8-12-26	10-16-31	12-20-34	14-23-37	17-26-40	22-31-44
Noise Criteria	19	25	33	38	42	46	49		
14 x 14	Flow Rate, CFM	410	545	680	815	955	1090	1360	
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-32
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47
		1-Way	3-8-17	6-11-23	9-14-30	11-17-36	13-20-42	15-23-48	19-30-54
Noise Criteria	22	30	36	40	45	49	52		
15 x 15	Flow Rate, CFM	470	625	780	935	1095	1250	1405	
	Throw	4-Way	4-6-12	5-8-17	7-10-21	8-12-23	10-15-25	11-17-26	12-20-28
		3-Way	4-7-14	6-9-20	8-12-24	9-14-26	11-17-28	13-20-30	14-23-32
		2-Way	6-10-21	9-13-28	11-17-33	13-21-37	16-25-40	18-28-42	21-32-45
		1-Way	8-12-25	10-16-33	13-21-39	16-25-43	18-29-46	22-33-49	25-37-53
Noise Criteria	23	31	37	41	46	50	53		
16 x 16	Flow Rate, CFM	530	710	890	1065	1245	1420	1600	
	Throw	4-Way	4-7-14	5-9-18	7-10-20	9-13-24	10-16-26	10-19-28	13-21-29
		3-Way	4-7-17	6-10-21	8-12-24	10-15-28	11-20-30	13-22-32	17-24-34
		2-Way	7-10-23	10-14-29	11-17-34	15-22-36	18-28-43	20-30-44	24-34-50
		1-Way	8-12-26	11-17-33	14-21-40	18-25-45	21-32-50	23-38-53	29-40-56
Noise Criteria	24	32	38	42	47	51	54		
18 x 18	Flow Rate, CFM	675	900	1125	1350	1575	1800	2025	
	Throw	4-Way	5-7-15	6-10-21	8-12-25	10-15-27	12-18-30	13-21-32	15-24-33
		3-Way	5-8-17	7-11-24	9-14-29	11-17-32	13-22-34	15-24-36	17-27-39
		2-Way	8-12-26	11-16-34	13-21-40	16-26-44	20-30-47	23-34-50	26-38-54
		1-Way	9-14-29	12-20-39	16-25-47	20-29-52	23-34-56	26-39-60	29-44-64
Noise Criteria	26	34	40	44	49	53	56		

#### Performance Notes:

- All pressures are in inches w.g..
- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 20.

- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.



## PERFORATED RETURN AIR DIFFUSERS

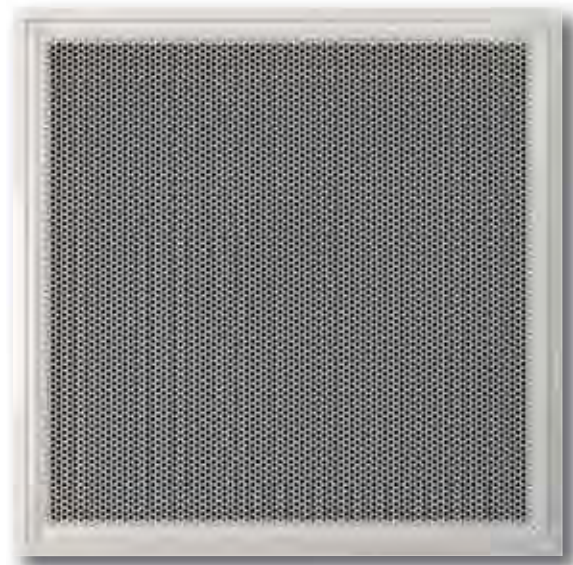
- RETURN
- MATCH AND COMPLEMENT SUPPLY MODELS
- PREMIUM ARCHITECTURAL QUALITY

### Steel Model:

4330R Flush Face

### Aluminum Face Model:

4330RA Flush Face



Model 4330R

Model Series 4330R Series Perforated Face return air models are designed to match supply air models 4330 and 4330CB in appearance and construction detail, except that the air pattern controllers are not required and are omitted.

The 4330R Series is offered in two versions. One for ducted return applications which features the same backpan as the supply air models with a neck for connection to flexible or rigid round duct or square duct. The other version features a dedicated frame assembly which has a neck that is 2" (51) less than the ceiling module size. This unit maximizes free area and may be used for ducted or ductless return air applications.

### STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Inlet collar has minimum 1 1/4" (32) depth for easy duct connection.
- Dropping the perforated face gives access to the optional damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.

### CONSTRUCTION MATERIAL:

Model 4330R has a corrosion-resistant steel perforated face and backpan. Model 4330RA has an aluminum perforated face and corrosion-resistant steel backpan. Both models have an aluminum border and frame.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

#### Round Neck:

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- 4675 Butterfly Damper 6" – 14" (152 – 356).

#### Square or Rectangular Neck:

- OBD Opposed Blade Damper (Steel)

### OTHER OPTIONS & ACCESSORIES:

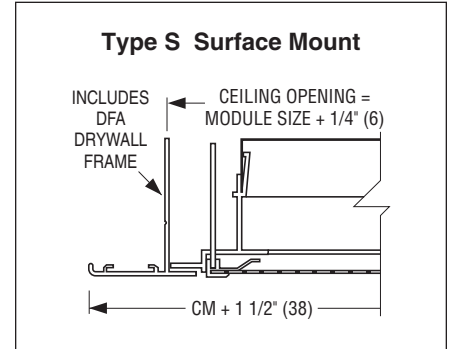
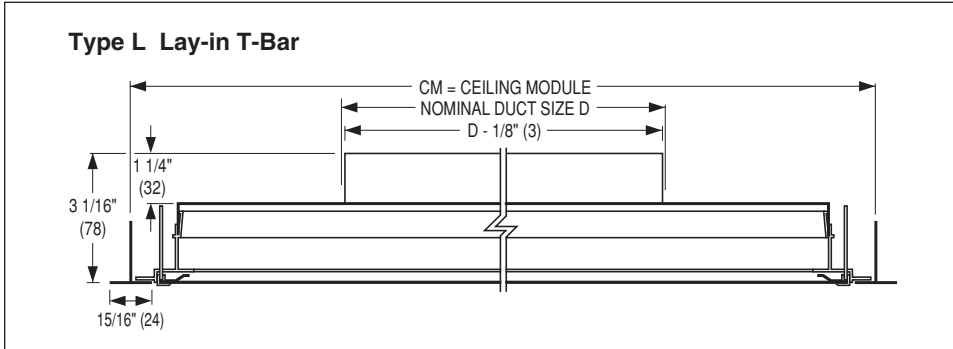
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

## DIMENSIONAL DATA AND FRAME TYPES:

### Models 4330R, 4330RA • Return • Flush Face • Round or Square Neck

All round ducts and square ducts when duct size is less than CM - 2" (51).

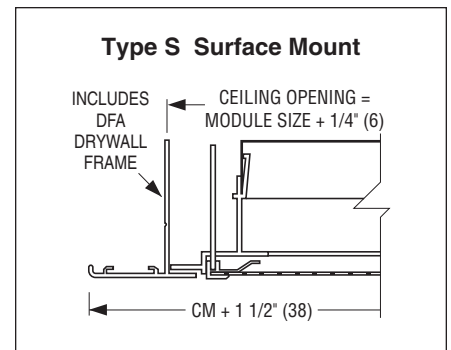
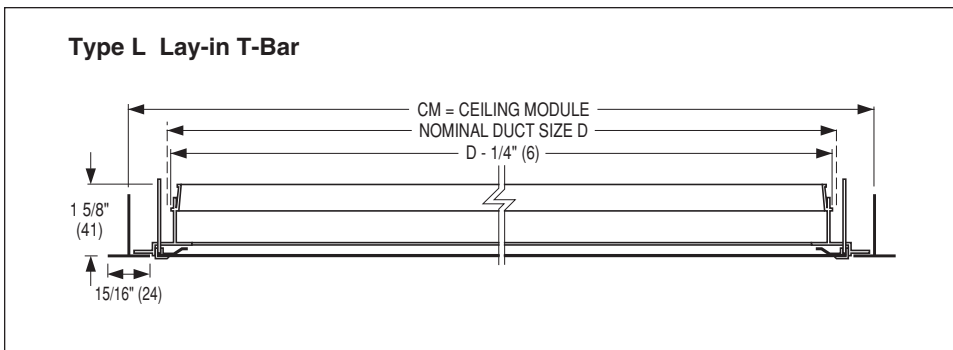


### Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D			
Imperial Modules	Metric Modules	Round Neck		Square or Rectangular Neck	
		Imperial Units (inches)	Metric Units (mm)	Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	5, 6, 7, 8	127, 152, 178, 203	6 x 6, 8 x 8	152 x 152, 203 x 203
16 x 16	400 x 400	5, 6, 7, 8, 10, 12	127, 152, 178, 203, 254, 305	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
24 x 12	600 x 300	5, 6, 7, 8	127, 152, 178, 203	6 x 6, 8 x 8, 18 x 6	152 x 152, 203 x 203, 457 x 152
20 x 20	500 x 500	5, 6, 7, 8, 10, 12, 14	127, 152, 178, 203, 254, 305, 356	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406
24 x 24	600 x 600	5, 6, 7, 8, 10, 12, 14, 15, 16	127, 152, 178, 203, 254, 305, 356, 381, 406	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18, 20 x 20, 22 x 22	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406, 457 x 457, 508 x 508, 559 x 559
48 x 24	1200 x 600				

### Models 4330R, 4330RA • Return • Flush Face • Square Neck • Full Size

When duct size = CM - 2" (51).



### Imperial Module & Metric Module Table

Ceiling Module CM		Nominal Duct Size D	
Imperial Modules	Metric Modules	Square or Rectangular Neck	
		Imperial Modules (inches)	Metric Modules (mm)
12 x 12	300 x 300	10 x 10	250 x 250
16 x 16	400 x 400	14 x 14	350 x 350
24 x 12	600 x 300	22 x 10	550 x 250
20 x 20	500 x 500	18 x 18	450 x 450
24 x 24	600 x 600	22 x 22	550 x 550
48 x 24	1200 x 600	46 x 22	1150 x 550

D

CEILING DIFFUSERS

## PERFORMANCE DATA:

### Models 4330R, 4330RA • Flush Face • Return Model

Ceiling Module	Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	1400
		Negative Static Pressure	.024	.042	.067	.096	.13	.17	.266	.383	.522
		Velocity Pressure	.006	.01	.016	.023	.031	.04	.063	.09	.123
12 x 12	10 x 10	Airflow, CFM	208	277	347	416	485	555	694	832	971
		Noise Criteria	—	15	22	28	33	37	44	51	57
20 x 20	18 x 18	Airflow, CFM	675	900	1125	1350	1575	1800	2250	2700	3150
		Noise Criteria	—	17	24	30	35	39	46	53	58
24 x 12	22 x 10	Airflow, CFM	459	612	765	918	1071	1224	1530	1836	2142
		Noise Criteria	—	17	23	29	34	39	46	53	58
24 x 24	6" Dia.	Airflow, CFM	59	78	98	118	137	157	196	235	275
		Noise Criteria	—	—	—	10	15	19	26	33	38
	6 x 6	Airflow, CFM	75	100	125	150	175	200	250	300	350
		Noise Criteria	—	—	—	12	17	21	28	35	40
	8" Dia.	Airflow, CFM	105	140	175	209	244	279	349	419	489
		Noise Criteria	—	—	—	14	19	23	30	37	42
	8 x 8	Airflow, CFM	133	178	222	267	311	356	444	533	622
		Noise Criteria	—	—	—	15	20	24	31	38	43
	10" Dia.	Airflow, CFM	164	218	273	327	382	436	545	654	764
		Noise Criteria	—	—	10	16	21	25	32	39	44
	10 x 10	Airflow, CFM	208	278	347	417	486	556	694	833	972
		Noise Criteria	—	—	11	17	22	26	33	40	45
	12" Dia.	Airflow, CFM	236	314	393	471	550	628	785	942	1100
		Noise Criteria	—	—	13	19	24	28	35	42	47
	12 x 12	Airflow, CFM	300	400	500	600	700	800	900	1200	1400
		Noise Criteria	—	—	14	20	25	29	36	43	48
	14" Dia.	Airflow, CFM	321	428	535	641	748	855	1069	1283	1497
		Noise Criteria	—	—	15	21	26	30	37	44	49
	14 x 14	Airflow, CFM	408	544	681	817	953	1089	1361	1633	1906
		Noise Criteria	—	10	17	23	28	32	39	46	51
	15 x 15	Airflow, CFM	469	625	781	938	1094	1250	1563	1875	2188
		Noise Criteria	—	12	19	25	30	34	41	48	53
	16" Dia.	Airflow, CFM	419	559	698	838	977	1117	1396	1676	1955
		Noise Criteria	—	10	17	23	28	32	39	46	51
18 x 18	Airflow, CFM	675	900	1125	1350	1575	1800	2250	2700	3150	
	Noise Criteria	—	16	23	29	34	38	45	52	57	
22 x 22	Airflow, CFM	1007	1344	1679	2015	2352	2688	3359	4031	4704	
	Noise Criteria	—	18	25	31	36	40	47	54	59	
48 x 24	46 x 22	Airflow, CFM	2108	2811	3514	4217	4919	5622	7028	8433	9839
		Noise Criteria	11	20	27	34	38	43	50	57	62

#### Performance Notes:

1. All pressures are in inches w.g..
2. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 20.
3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

### PERFORATED PREMIUM CEILING DIFFUSERS – ARCHITECTURAL QUALITY – MODEL SERIES 4330 AND 4330CB

EXAMPLE: 4330 - RND - 08 - 24 x 24 - L - AW - -

1. **Models**

**Supply:**

**Face Mounted Deflectors**

4330	Steel Face
4330A	Aluminum Face
4330AA	Aluminum Face and Backpan

**Curved Blade Pattern Controllers**

4330CB	Steel Face
4330CBA	Aluminum Face
4330CBAA	Aluminum Face and Backpan

**Return:**

4330R	Steel Face
4330RA	Aluminum Face

2. **Neck Type**

RND	Round
SQR	Square/Rectangular

3. **Neck Size (inches)**

**Round:**

05, 06, 07, 08, 10, 12, 14, 15, 16, 18  
(CB and R only)

**Square or Rectangular:**

6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14,  
15 x 15, 16 x 16, 18 x 6  
18 x 18 (CB and R only)  
20 x 20, 22 x 22, 46 x 22 (R only)

4. **Ceiling Module Size**

**Imperial (inches)**

12 x 12, 16 x 16, 20 x 20, 24 x 12,  
24 x 24 (default), 48 x 24

**Metric (mm)**

300 x 300, 400 x 400, 500 x 500,  
600 x 300, 600 x 600, 1200 x 600

5. **Frame Type**

L	Lay-in T-Bar (default)
S	Surface Mount

6. **Finish**

AW	Appliance White (default)
AL	Aluminum
BK	Black
BW	British White
MI	Mill
PC	Prime Coat Paint
BA	AW Face/Black Backpan
SP	Special Custom Color

7. **Blow Pattern**

(CB only)	
B4	4-way (default)
B1	1-way
B2	2-way opposite
B3	3-way
C2	2-way corner

**OPTIONS & ACCESSORIES:**

8. **Damper**

– None (default)

**Round Neck:**

4250	Radial Sliding, 6" - 14"
4275	Radial Opposed Blade, 5" - 24"
4675	Butterfly, 6" - 14"

**Square Neck:**

OBD	Opposed Blade, Steel
OBDA	Opposed Blade, Aluminum (AA models only)

9. **Earthquake Tabs**

– None (default)	
EQT	Earthquake Tabs

**OTHER OPTIONS & ACCESSORIES:**

**Air Balancing Devices**

(order separately)

**Round Neck:**

EGR	Equalizing Grid
DEGR	Damper/Equalizing Grid

**Square/Rectangular Neck:**

EGL	Equalizing Grid (long)
EGS	Equalizing Grid (short)
DEGL	Damper/Equalizing Grid (long)
DEGS	Damper/Equalizing Grid (short)

**Notes:**

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.
2. Dampers are shipped loose for field installation.

**HOW TO SPECIFY**

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **4330** (corrosion-resistant steel face/backpan) or **4330A** (aluminum face/steel backpan) or **4330AA** (aluminum face and backpan) **Premium Architectural Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 4330 shall have a corrosion-resistant steel backpan with a round or square neck as specified, and an extruded aluminum border/frame that encapsulates the perforated face. Model 4330A shall have an aluminum perforated face and corrosion-resistant steel backpan with a round or square neck as specified, and an extruded aluminum border/frame. Model 4330AA shall have an aluminum perforated face and backpan with a round or square neck as specified, and an extruded aluminum border/frame. The perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the rear of the perforated face shall be four individually stamped square pattern deflectors that are easily field rotated to provide throws in 1, 2, 3 or 4-way patterns. The face shall be removable and include spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available). The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **4330CB** (corrosion-resistant steel face/backpan) or **4330CBA** (aluminum face/steel backpan) or **4330CBAA** (aluminum face and backpan) **Premium Architectural Perforated Curved Blade Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 4330CB shall have a corrosion-resistant steel backpan with a round or square neck as specified, and an extruded aluminum border/frame that encapsulates the perforated face. Model 4330CBA shall have an aluminum perforated face and corrosion-resistant steel backpan with a round or square neck as specified, and an extruded aluminum border/frame. Model 4330CBAA shall have an aluminum perforated face and backpan with a round or square neck as specified, and an extruded aluminum border/frame. The perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Mounted on the neck of the diffuser shall be a factory installed curved blade pack with individually adjustable blades configured for a 4-way (standard) throw. (Optional) Factory installed 3, 2, or 1-way (select one) pattern to be supplied. The face shall be removable and include spring latches allowing easy access for cleaning and adjusting the deflectors (or optional damper). The finish shall be AW Appliance White (optional finishes are available). The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **4330R** (corrosion-resistant steel face) or **4330RA** (aluminum face) **Premium Architectural Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a corrosion-resistant steel backpan with a round or square neck as specified, and an extruded aluminum border/frame that encapsulates the perforated face. The perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall be removable and include spring latches allowing easy access for cleaning. The finish shall be AW Appliance White (optional finishes are available). The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**D**  
**CEILING DIFFUSERS**



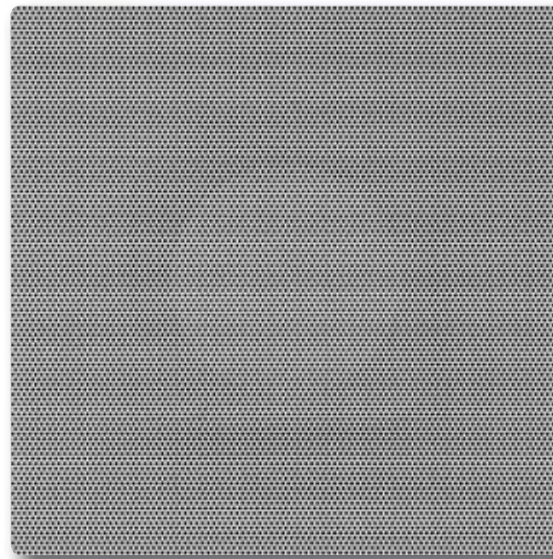
## ALL ALUMINUM PERFORATED CEILING DIFFUSERS

- 100 % ALUMINUM CONSTRUCTION
- SUITABLE FOR MRI ROOMS
- SUPPLY AND RETURN

### Models:

4310A Supply

4310AR Return



Model 4310A

Model 4310A Perforated Supply Diffusers have an all aluminum constructed design that combines a smooth unobtrusive architectural appearance with the superior performance characteristics required by engineers. This diffuser is suitable for MRI rooms.

Model 4310A features a smoothly contoured die-formed backpan and wrap-around fixed perforated face. The round disc pattern deflector provides a true 360° radial horizontal air pattern. A tight air pattern protects the ceiling against smudging, providing excellent performance in VAV systems.

Model 4310AR Perforated Return Diffuser is designed to match the supply model but omits the pattern deflector. It is suitable for ducted return applications.

### STANDARD FEATURES:

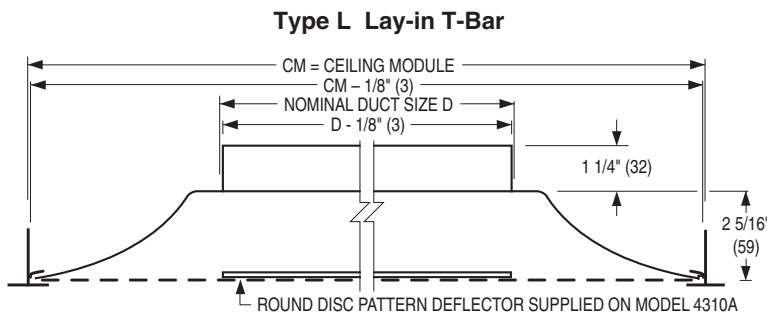
- Specially designed for MRI Rooms.
- 24" x 24" (600 x 600) module design for suspended ceiling systems.
- Integral round neck is standard.
- Inlet collar has approximately 1 1/4" (32) depth for easy duct connection.
- Supply models incorporate an aluminum fixed round disc pattern deflector that provides a tight air pattern.
- Aluminum perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Return models (4310AR Series) have the same face and frame construction as the supply models without the deflector.

### CONSTRUCTION MATERIAL:

100% all aluminum construction.

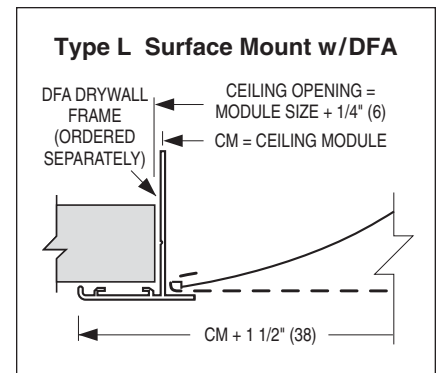
### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.



### Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D	
Imperial Modules	Metric Modules	Round Neck	
		Imperial Modules (inches)	Metric Modules (mm)
24 x 24	600 x 600	6, 8, 10, 12, 14, 15	152, 203, 254, 305, 356, 381





## PERFORMANCE DATA:

### Model 4310A • 24 x 24 (600 x 600) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
6" Dia.	Total Pressure	.005	.008	.013	.016	.025	.032	.041	.050	.072	.098
	Airflow, CFM	<b>60</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>140</b>	<b>160</b>	<b>180</b>	<b>195</b>	<b>235</b>	<b>275</b>
	Throw	1-1-2	1-1-2	1-1-3	1-2-3	1-2-4	1-2-4	2-3-5	2-3-6	2-3-7	3-4-8
	Noise Criteria	—	—	16	18	20	22	24	26	31	37
8" Dia.	Total Pressure	.009	.015	.024	.034	.046	.061	.077	.095	.136	.185
	Airflow, CFM	<b>105</b>	<b>140</b>	<b>175</b>	<b>210</b>	<b>245</b>	<b>280</b>	<b>315</b>	<b>350</b>	<b>420</b>	<b>490</b>
	Throw	1-1-3	1-2-3	1-2-4	2-3-5	2-3-6	2-3-7	3-4-8	3-4-9	3-5-10	4-6-12
	Noise Criteria	—	—	18	21	24	27	31	34	39	46
10" Dia.	Total Pressure	.013	.023	.037	.053	.072	.094	.119	.147	.211	.288
	Airflow, CFM	<b>165</b>	<b>220</b>	<b>270</b>	<b>325</b>	<b>380</b>	<b>435</b>	<b>490</b>	<b>585</b>	<b>655</b>	<b>765</b>
	Throw	1-2-4	2-2-5	2-3-6	2-4-7	3-4-8	3-5-10	4-5-11	4-6-12	5-7-14	6-8-17
	Noise Criteria	—	—	19	22	25	28	33	36	41	48
12" Dia.	Total Pressure	.016	.031	.049	.070	.095	.125	.158	.195	.260	.382
	Airflow, CFM	<b>235</b>	<b>315</b>	<b>390</b>	<b>470</b>	<b>550</b>	<b>630</b>	<b>705</b>	<b>785</b>	<b>940</b>	<b>1100</b>
	Throw	2-2-5	2-3-6	3-4-8	3-5-9	4-5-11	4-6-12	5-7-14	6-8-15	6-9-18	7-11-21
	Noise Criteria	—	16	21	25	29	32	35	38	44	50
14" Dia.	Total Pressure	.021	.038	.059	.085	.115	.151	.191	.235	.339	.461
	Airflow, CFM	<b>320</b>	<b>430</b>	<b>535</b>	<b>640</b>	<b>750</b>	<b>855</b>	<b>960</b>	<b>1070</b>	<b>1285</b>	<b>1495</b>
	Throw	2-3-5	2-4-7	3-5-9	4-5-11	4-6-13	5-7-14	5-8-16	6-9-18	7-11-22	8-13-25
	Noise Criteria	—	16	22	27	32	35	39	43	49	53
15" Dia.	Total Pressure	.022	.040	.062	.090	.122	.160	.202	.250	.359	.489
	Airflow, CFM	<b>370</b>	<b>490</b>	<b>615</b>	<b>735</b>	<b>860</b>	<b>980</b>	<b>1105</b>	<b>1230</b>	<b>1475</b>	<b>1720</b>
	Throw	2-3-5	3-4-7	3-5-10	4-6-11	5-7-13	5-8-15	6-9-17	7-10-19	8-12-23	9-14-27
	Noise Criteria	—	17	23	29	34	37	41	45	51	55

#### Performance Notes:

1. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
2. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.

3. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

## HOW TO SPECIFY OR TO ORDER

### PERFORATED ALL ALUMINUM CEILING DIFFUSERS, MRI – MODEL SERIES 4310A

EXAMPLE: 4310A - 08 - 24 x 24 - L - AW

- |  |   |   |
|--|---|---|
| <p>1. <b>Models</b><br/> <b>Supply:</b><br/>                 4310A<br/> <b>Return:</b><br/>                 4310AR</p> <p>2. <b>Neck Size (inches)</b><br/> <b>Round:</b><br/>                 06, 08, 10, 12, 14, 15</p> <p>3. <b>Ceiling Module Size</b><br/> <b>Imperial (inches)</b><br/>                 24 x 24 (default)<br/> <b>Metric (mm)</b><br/>                 600 x 600</p> <p>4. <b>Frame Type</b><br/>                 L Lay-in T-Bar (default)</p> | <p>5. <b>Finish</b><br/>                 AW Appliance White (default)<br/>                 AL Aluminum<br/>                 BK Black<br/>                 BW British White<br/>                 MI Mill<br/>                 PC Prime Coat Paint<br/>                 BA AW Face/Black Backpan<br/>                 SP Special Custom Color</p> | <p><b>Notes:</b><br/>                 1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.</p> |
|--|---|---|

D  
CEILING DIFFUSERS

**SUGGESTED SPECIFICATION:**

**Model 4310A**

Furnish and install **Nailor Model 4310A All Aluminum Perforated Supply Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a die-formed aluminum backpan with an integral round neck. An aluminum perforated face with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area, shall wrap around the backpan. A round stamped aluminum disc deflector shall be mounted on the perforated face. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**Model 4310AR**

Furnish and install **Nailor Model 4310AR All Aluminum Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a die-formed aluminum backpan with an integral round neck. An aluminum perforated face with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area, shall wrap around the backpan. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

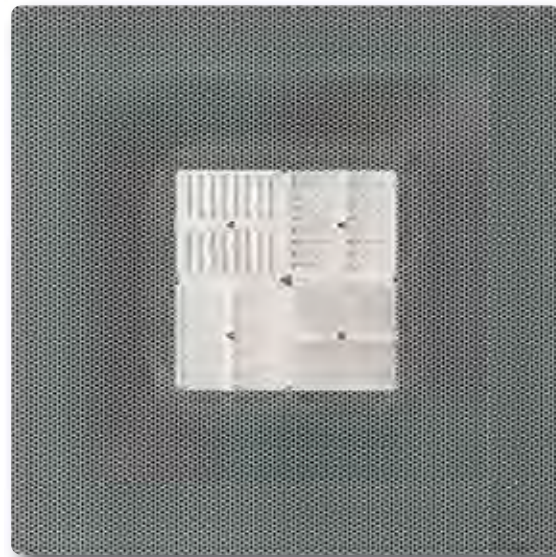
## PERFORATED RETURN AIR DIFFUSERS

- FIBERGLASS PLENUM
- PRE-SCORED PLENUM
- 4-WAY DISCHARGE PATTERN
- SUPPLY AND RETURN

### Models:

4350 Supply

4350R Return



Model 4350

Models 4350 and 4350R Perforated Ceiling Diffusers feature a corrosion-resistant steel diffuser face with a one-piece molded fiberglass backpan with foil-back vapor barrier 6.0 R-value. The vapor barrier created by the fiberglass backpan makes an excellent choice for ducted return air systems and high humidity environments. Available in supply (Model 4350) or return (Model 4350R), the diffusers feature a smoothly contoured backpan, wrap-around fixed perforated face and four stamped pattern controllers mounted on the back of the perforated face, providing excellent performance in VAV systems. The pre-scored plenum identifies round duct sizes to be cut in the field (by others) and will accommodate spin-in or tab-lock inlet collars. The diffusers are available for use with Lay-in T-Bar or hard ceiling applications.

### STANDARD FEATURES:

- Pre-scored plenum for 6", 8", 10", 12", 14" or 15" (152, 203, 254, 305, 356 or 381) round spin-in or tab-lock inlet collars (by others).
- Four stamped pattern controllers mounted on the back of the perforated face, providing 4-way discharge pattern.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.

- Center access hole with plug for screwdriver adjustment.

### CONSTRUCTION MATERIAL:

Corrosion-resistant steel diffuser face with one-piece molded fiberglass backpan with foil-back vapor barrier 6.0 R-value.

### FINISH OPTIONS:

BA - AW Appliance White face and Black interior.

### OPTIONS & ACCESSORIES:

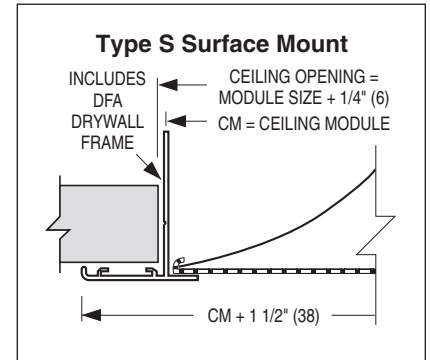
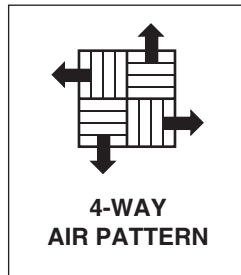
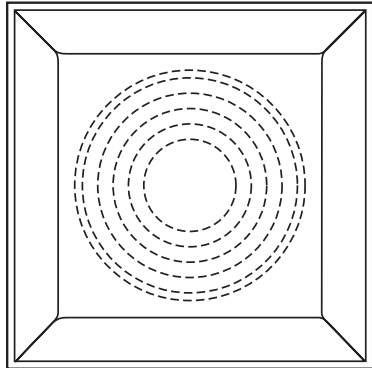
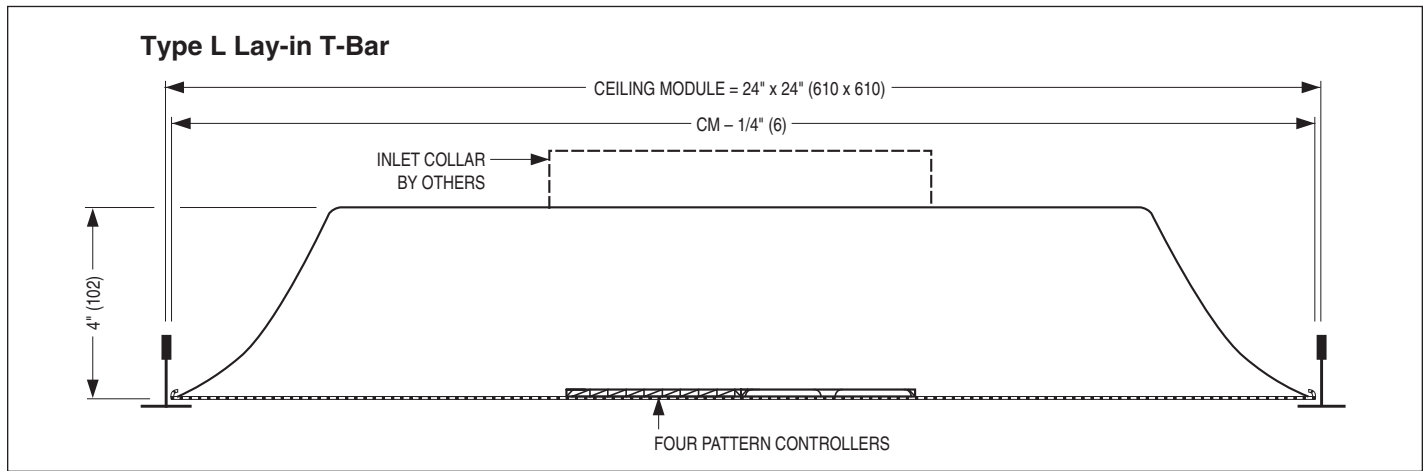
(order separately)

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- 4675 Butterfly Damper 6" – 14" (152 – 356).
- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

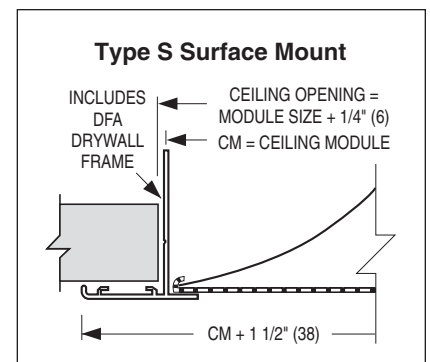
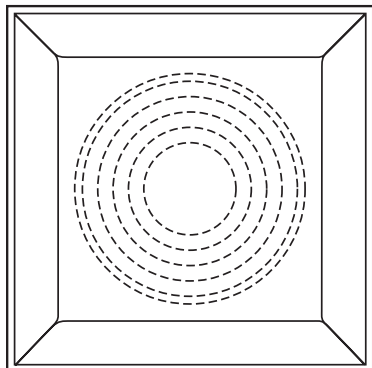
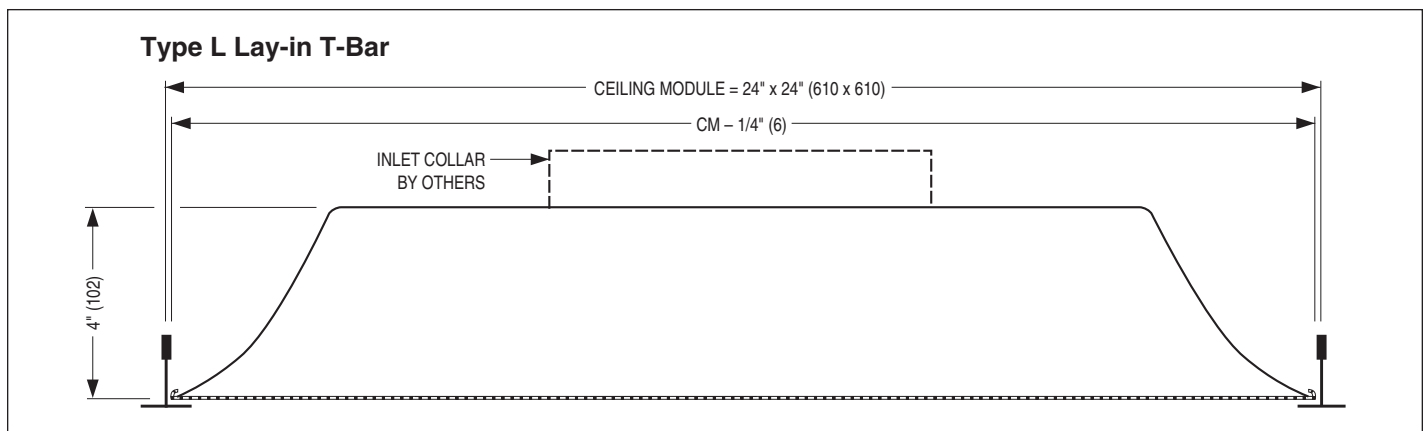
For additional options and accessories; see page D255.

## DIMENSIONAL DATA AND FRAME TYPES:

### Model 4350 • Supply



### Model 4350R • Return



D

CEILING DIFFUSERS

**HOW TO SPECIFY OR TO ORDER**

**PERFORATED CEILING DIFFUSERS, FIBERGLASS PLENUM – MODEL SERIES 4350**

**EXAMPLE: 4350 - 24 x 24 - L - AW**

- |   |   |   |
|---|---|---|
| <p>1. <b>Models</b><br/> <b>Supply:</b><br/>                 4350<br/> <b>Return:</b><br/>                 4350R</p> <p>2. <b>Ceiling Module Size</b><br/> <b>Imperial (inches)</b><br/>                 24 x 24 (default)<br/> <b>Metric (mm)</b><br/>                 600 x 600</p> <p>3. <b>Frame Type</b><br/>                 L Lay-in T-Bar (default)</p> <p>4. <b>Finish</b><br/>                 BA AW Face/Black Backpan (default)</p> | <p><b>OTHER OPTIONS &amp; ACCESSORIES:</b></p> <p><b>Air Balancing Devices</b><br/>                 (order separately)</p> <p><b>Round Neck:</b><br/>                 4250 Radial Sliding Damper, 6" - 14"<br/>                 4275 Radial Opposed Blade Damper, 5" - 24"<br/>                 4675 Butterfly Damper, 6" - 14"<br/>                 EGR Equalizing Grid<br/>                 DEGR Damper/Equalizing Grid</p> | <p><b>Notes:</b></p> <p>1. Pre-scored plenum accommodates a 6" to 15" spin-in or tab-lock inlet collar (by others).</p> |
|---|---|---|

**D**  
**CEILING DIFFUSERS**

**SUGGESTED SPECIFICATION:**

**Models 4350 and 4350R**  
 Furnish and install **Nailor Model** (select one) **4350 (supply)** or **4350R (return) Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The wrap-around fixed perforated face of the diffuser shall be constructed from corrosion-resistant steel with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. Four stamped pattern controllers shall be mounted on the back of the perforated face, to provide a 4-way discharge pattern. A center access hole with plug shall be included to allow for screwdriver adjustment of the optional damper. A one-piece molded fiberglass backpan with foil-back vapor barrier 6.0 R-value shall be included with all units. A pre-scored plenum with cutouts shall be provided with all units, to accommodate spin-in or tab-lock inlet collars (by others). The finish shall be BA - AW Appliance White face and Black interior.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORATED RETURN AIR DIFFUSERS

- MATCH AND COMPLEMENT SUPPLY MODELS
- SUITABLE FOR DUCTED RETURN APPLICATIONS

### Steel Models:

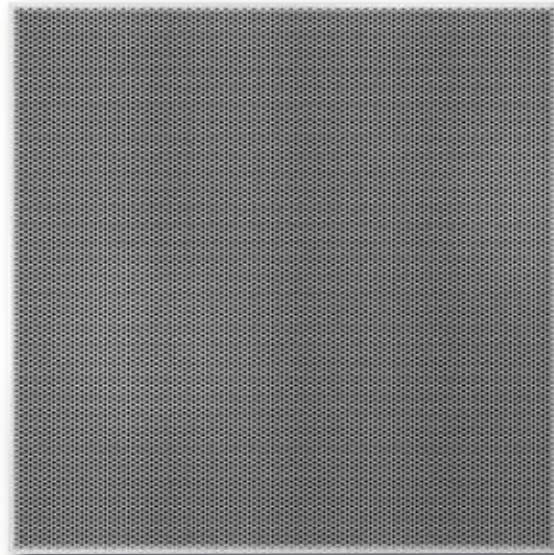
- 4360 Flush Face
- 4365 Drop Face

### Aluminum Face Models:

- 4360A Flush Face
- 4365A Drop Face

### Aluminum Models:

- 4360AA Flush Face
- 4365AA Drop Face



Model 4360

Model Series 4360 Perforated Face return air models are designed to match supply air models 4320, 4320CB, 4320F, 4320MR and 4320M in appearance and construction detail, less the air pattern controllers which are not required.

Model Series 4360 is offered in two versions. One for ducted return applications which features the same backpan as the supply air models with a neck for connection to flexible or rigid round duct or square duct. The other version features a dedicated frame assembly which has a neck that is 2" (51) less than the ceiling module size. This unit maximizes free area and may be used for ducted or ductless return air applications.

Model Series 4365 features a drop (extended) face panel that both matches in appearance the drop face supply models and complements tegular tile ceiling systems, allowing the perforated face panel to remain flush with the ceiling line.

### STANDARD FEATURES:

- Round or square necks available.
- Hinged, removable face plate with quick-release spring latches.
- Inlet collar has minimum 1 1/4" (32) depth for easy duct connection.
- Dropping the perforated face gives access to the optional damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.

### CONSTRUCTION MATERIAL:

Models 4360/4365 have a corrosion-resistant steel perforated face and backpan. Models 4360A/4365A have an aluminum perforated face and a corrosion-resistant steel backpan. Models 4360AA/4365AA have an aluminum perforated face and backpan.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

#### Round Neck:

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- 4675 Butterfly Damper 6" – 14" (152 – 356).
- MIB Molded Insulation Blanket, R-6.0.

#### Square Neck:

- OBD Opposed Blade Damper (Steel)
- OBDA Opposed Blade Damper (Aluminum) (-AA models only)

### OTHER OPTIONS & ACCESSORIES:

- EX External Foil-Back Insulation (installed) -R-4.2.
- EXB External Foil-Back Insulation (loose) -R-4.2.
- EQT Earthquake Tabs

For additional options and accessories; see page D255.

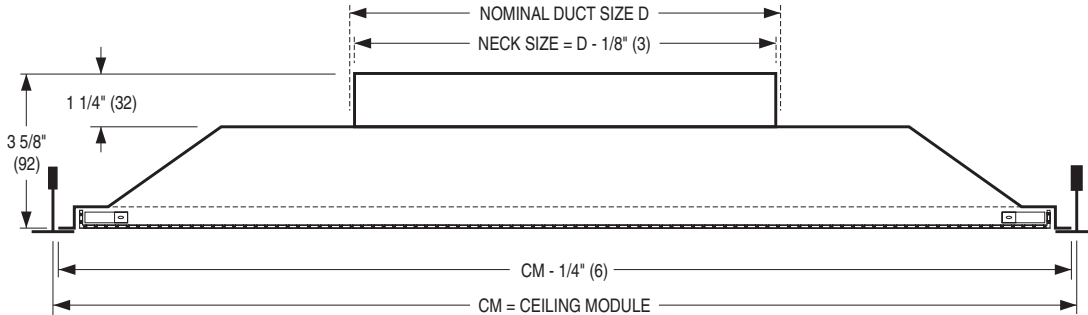


## DIMENSIONAL DATA AND FRAME TYPES:

### Models 4360, 4360A, 4360AA • Return • Flush Face • Round Neck

All round ducts and square ducts when duct size is less than CM – 2" (51).

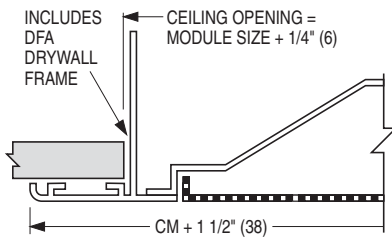
#### Type L Lay-in T-Bar



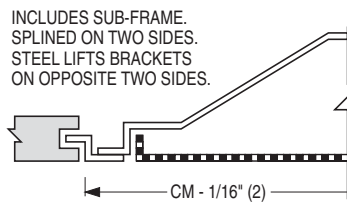
#### Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D	
Imperial Modules	Metric Modules	Round Neck	
		Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6, 8	152, 203
16 x 16	400 x 400	6, 8, 10, 12	152, 203, 254, 305
24 x 12	600 x 300	6, 8	152, 203
20 x 20	500 x 500	6, 8, 10, 12, 14	152, 203, 254, 305, 356
24 x 24	600 x 600	6, 8, 10, 12, 14, 15, 16, 18	152, 203, 254, 305, 356, 381, 406, 457
48 x 24	1200 x 600	6, 8, 10, 12, 14, 15, 16, 18	152, 203, 254, 305, 356, 381, 406, 457

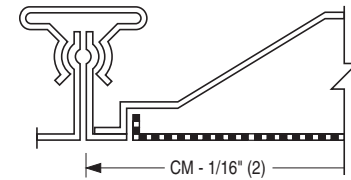
#### Type S Surface Mount



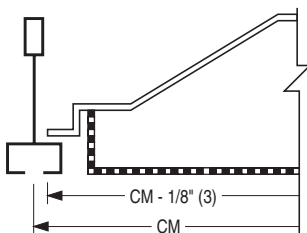
#### Type SP Spline



#### Type M Metal Pan (Snap-in)



#### Type F Fineline® T-Bar

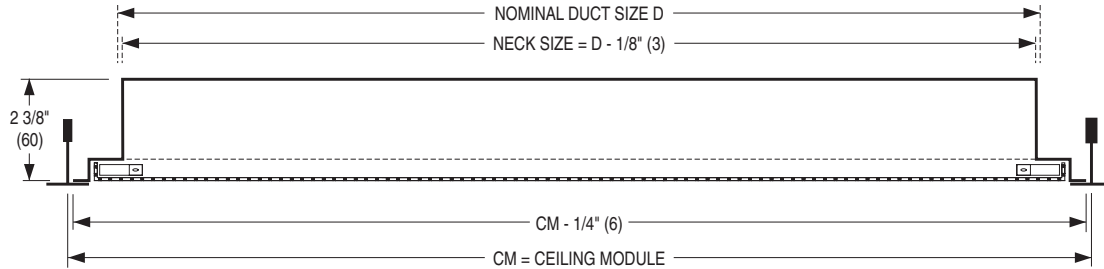


## DIMENSIONAL DATA AND FRAME TYPES:

Models 4360, 4360A, 4360AA • Return • Flush Face • Square or Rectangular Neck

When duct size is = CM - 2" (51).

### Type L Lay-in T-Bar



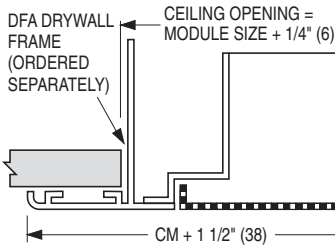
### Available Combinations of Ceiling Module vs. Neck Size

Ceiling Module CM		Nominal Duct Size D	
Imperial Modules	Metric Modules	Square/Rectangular Neck	
		Imperial Units (inches)	Metric Units (mm)
12 x 12	300 x 300	6 x 6, 8 x 8	152 x 152, 203 x 203
16 x 16	400 x 400	6 x 6, 8 x 8, 10 x 10, 12 x 12	152 x 152, 203 x 203, 254 x 254, 305 x 305
24 x 12	600 x 300	6 x 6, 8 x 8, 18 x 6	152 x 152, 203 x 203, 457 x 152
20 x 20	500 x 500	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356
24 x 24	600 x 600	6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 18	152 x 152, 203 x 203, 254 x 254, 305 x 305, 356 x 356, 381 x 381, 406 x 406, 457 x 457
48 x 24	1200 x 600		

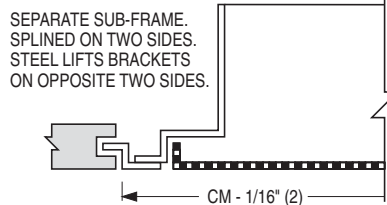
### Imperial & Metric Module Table

Ceiling Module CM		Nominal Duct Size D	
Imperial Modules	Metric Modules	Square Neck	
		Imperial Modules (inches)	Metric Modules (mm)
12 x 12	300 x 300	10 x 10	250 x 250
24 x 12	600 x 300	22 x 10	550 x 250
20 x 20	500 x 500	18 x 18	450 x 450
24 x 24	600 x 600	22 x 22	550 x 550
48 x 24	1200 x 600	46 x 22	1150 x 550

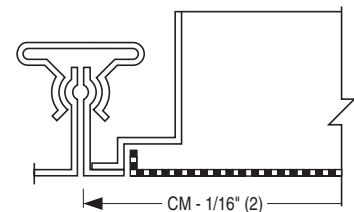
### Type S Surface Mount



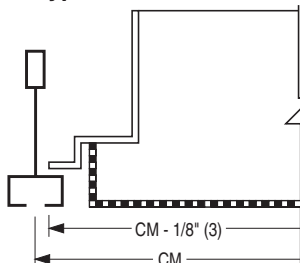
### Type SP Spline



### Type M Metal Pan (Snap-in)



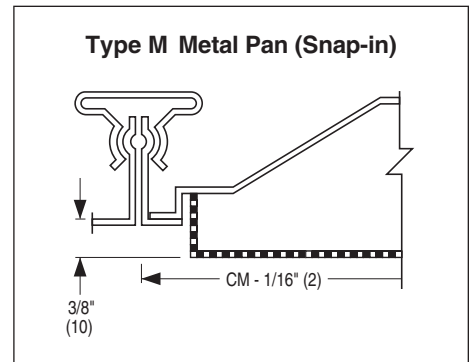
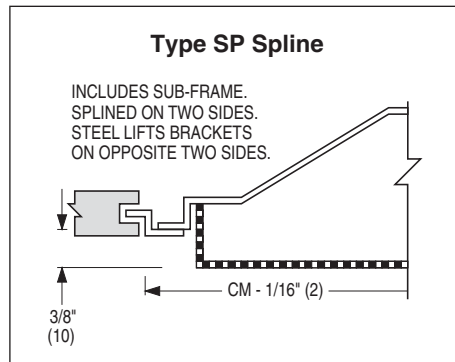
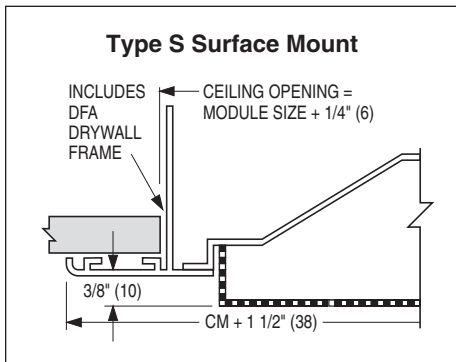
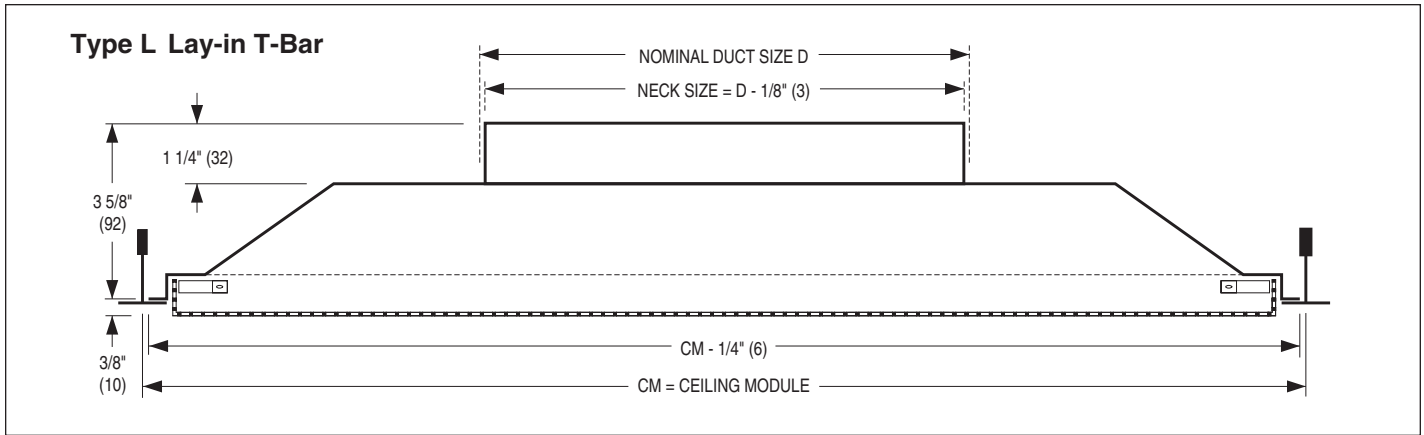
### Type F Finline® T-Bar



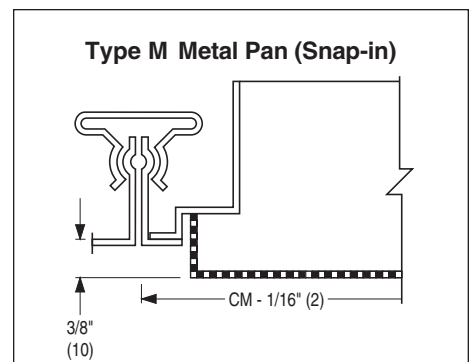
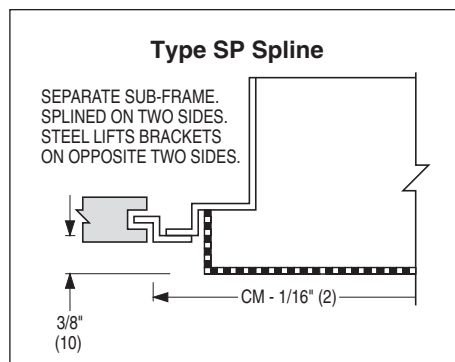
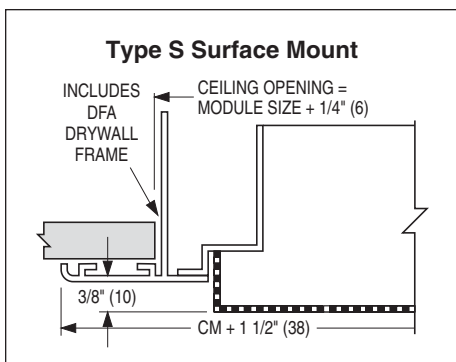
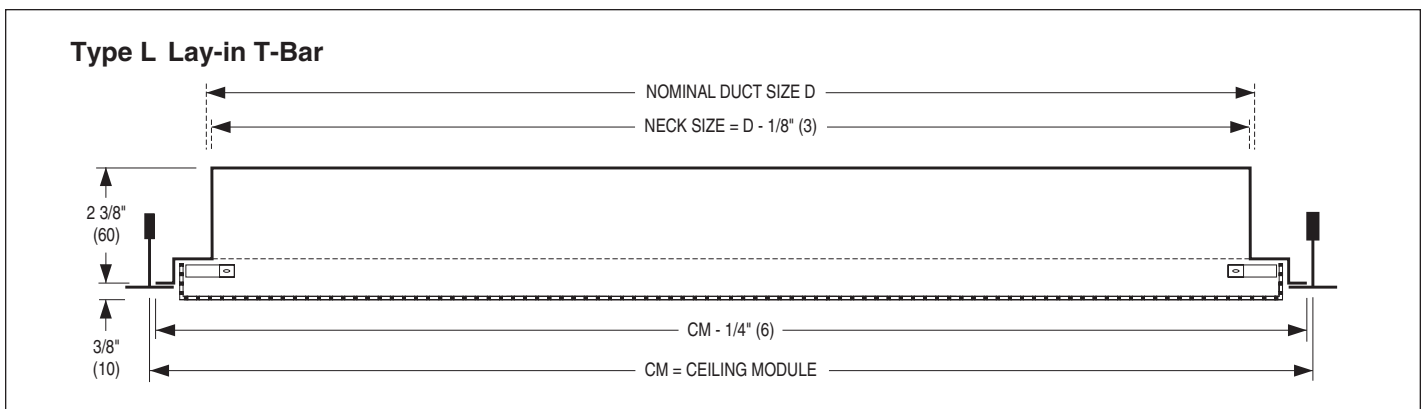
Finline® is a registered trademark of USG Interiors Inc.

## DIMENSIONAL DATA AND FRAME TYPES:

**Models 4365, 4365A, 4365AA • Return • Drop Face • Round, Square or Rectangular Neck**  
 All round ducts and square ducts when duct size is less than CM – 2" (51).



**Models 4365, 4365A, 4365AA • Return • Drop Face**  
 When duct size is = CM – 2" (51).



D  
CEILING DIFFUSERS

## PERFORMANCE DATA:

Models 4360, 4360A, 4360AA • Flush Face • Return Module  
 4365, 4365A, 4365AA • Drop Face • Return Module

Ceiling Module	Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	1400	
		Negative Static Pressure	.024	.042	.067	.096	.130	.170	.266	.383	.522	
		Velocity Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122	
12 x 12	6" Dia.	Airflow, CFM	59	78	98	118	137	157	196	236	275	
		Noise Criteria	—	—	—	10	14	18	27	32	38	
	8 x 8	Airflow, CFM	75	100	125	150	175	200	250	300	350	
		Noise Criteria	—	—	—	12	17	21	30	35	41	
	8" Dia.	Airflow, CFM	105	140	175	209	244	279	349	419	489	
		Noise Criteria	—	—	10	16	21	25	32	39	44	
	8 x 8	Airflow, CFM	133	178	222	267	311	356	444	533	622	
		Noise Criteria	—	—	11	17	22	26	33	40	45	
	10 x 10	Airflow, CFM	208	278	347	416	486	556	694	833	972	
		Noise Criteria	—	—	18	24	29	33	40	47	52	
	20 x 20	18 x 18	Airflow, CFM	675	900	1125	1350	1575	1800	2250	2700	3150
			Noise Criteria	—	17	24	30	35	39	46	53	58
24 x 12	6" Dia.	Airflow, CFM	75	100	125	150	175	200	250	300	350	
		Noise Criteria	—	—	—	13	18	22	29	36	41	
	8" Dia.	Airflow, CFM	105	140	175	209	244	279	349	419	489	
		Noise Criteria	—	—	—	15	20	24	31	38	43	
	8 x 8	Airflow, CFM	133	178	222	267	311	356	444	533	622	
		Noise Criteria	—	—	10	16	21	25	32	39	44	
	18 x 6	Airflow, CFM	225	300	375	450	525	600	750	900	1050	
		Noise Criteria	—	—	14	20	25	28	35	42	47	
	22 x 10	Airflow, CFM	458	611	764	917	1069	1222	1528	1833	2139	
		Noise Criteria	—	15	21	27	34	37	44	51	56	
	24 x 24	6" Dia.	Airflow, CFM	59	79	98	118	137	157	196	236	275
			Noise Criteria	—	—	—	10	15	19	26	33	38
6 x 6		Airflow, CFM	75	100	125	150	175	200	250	300	350	
		Noise Criteria	—	—	—	12	17	21	28	35	41	
8" Dia.		Airflow, CFM	105	140	175	209	244	279	349	419	489	
		Noise Criteria	—	—	—	14	19	23	30	37	42	
8 x 8		Airflow, CFM	133	178	222	267	311	356	444	533	622	
		Noise Criteria	—	—	—	15	20	24	31	38	43	
10" Dia.		Airflow, CFM	164	218	273	327	382	436	545	655	764	
		Noise Criteria	—	—	10	16	21	25	32	39	44	
10 x 10		Airflow, CFM	208	278	347	417	486	556	694	833	972	
		Noise Criteria	—	—	11	17	22	26	33	40	45	
12" Dia.		Airflow, CFM	236	314	393	471	550	628	785	942	1100	
		Noise Criteria	—	—	13	19	24	28	35	42	47	
12 x 12		Airflow, CFM	300	400	500	600	700	800	1000	1200	1400	
		Noise Criteria	—	—	14	20	25	29	36	43	48	
14" Dia.		Airflow, CFM	321	428	535	641	748	855	1069	1283	1497	
		Noise Criteria	—	—	15	21	26	30	37	44	49	
14 x 14		Airflow, CFM	408	544	681	817	953	1089	1361	1633	1906	
		Noise Criteria	—	10	17	23	28	32	39	46	51	
15 x 15		Airflow, CFM	469	625	781	938	1094	1250	1563	1875	2188	
		Noise Criteria	—	12	19	25	30	34	41	48	53	
16" Dia.		Airflow, CFM	419	559	698	838	977	1117	1396	1676	1955	
		Noise Criteria	—	10	17	23	28	32	39	46	51	
18" Dia.	Airflow, CFM	530	707	884	1060	1237	1414	1767	2121	2474		
	Noise Criteria	—	12	19	25	30	32	39	46	51		
18 x 18	Airflow, CFM	675	900	1125	1350	1575	1800	2250	2700	3150		
	Noise Criteria	—	16	23	29	34	38	45	52	57		
22 x 22	Airflow, CFM	1008	1344	1681	2017	2353	2689	3361	4033	4706		
	Noise Criteria	—	18	25	31	36	40	47	51	59		
48 x 24	46 x 22	Airflow, CFM	2108	2811	3514	4217	4919	5622	7028	8433	9839	
		Noise Criteria	11	20	27	34	38	43	50	57	62	

### Performance Notes:

- All pressures are in inches w.g..
- Noise Criteria (NC) values are based

upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 10.

3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

### PERFORATED RETURN CEILING DIFFUSERS – MODEL SERIES 4360

**EXAMPLE: 4360 - RND - 08 - 24 x 24 - L - AW - -**

**1. Models**

- 4360 Steel, Flush Face
- 4365 Steel, Drop Face
- 4360A Aluminum Face, Flush
- 4365A Aluminum Face, Drop
- 4360AA Aluminum Face and Backpan, Flush
- 4365AA Aluminum Face and Backpan, Drop

**2. Neck Type**

- RND Round
- SQR Square/Rectangular

**3. Neck Size (inches)**

**Round:**

06, 08, 10, 12, 14, 15, 16, 18

**Square or Rectangular:**

6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 15 x 15, 16 x 16, 18 x 6, 18 x 18, 22 x 10, 22 x 22, 46 x 22

**4. Ceiling Module Size**

**Imperial (inches)**

12 x 12, 16 x 16, 20 x 20, 24 x 12, 24 x 24 (default), 48 x 24

**Metric (mm)**

300 x 300, 400 x 400, 500 x 500, 600 x 300, 600 x 600, 1200 x 600

**5. Frame Type**

- L Lay-in T-Bar (default)
- S Surface Mount
- SP Spline
- M Metal Pan (Snap-in)
- F Finline®

**6. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime Coat Paint
- BA AW Face/Black Backpan
- SP Special Custom Color

**OPTIONS & ACCESSORIES:**

**7. Damper**

- None (default)

**Round Neck:**

- 4250 Radial Sliding, 6" - 14"
- 4275 Radial Opposed Blade, 5" - 24"
- 4675 Butterfly, 6" - 14"

**Square Neck:**

- OBD Opposed Blade, Steel
- OBDA Opposed Blade, Aluminum (AA models only)

**8. External Insulation**

- None (default)
- EX Foil-back (installed), R-4.2
- EXB Foil-back (loose), R-4.2
- MIB Molded Insulation Blanket, R-6.0

**9. Earthquake Tabs**

- None (default)
- EQT Earthquake Tabs

**OTHER OPTIONS & ACCESSORIES:**

**Air Balancing Devices**

(order separately)

**Round Neck:**

- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

**Square/Rectangular Neck:**

- EGL Equalizing Grid (long)
- EGS Equalizing Grid (short)
- DEGL Damper/Equalizing Grid (long)
- DEGS Damper/Equalizing Grid (short)

**Notes:**

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.
2. Dampers are shipped loose for field installation.
3. EX and EXB is (Ceiling Module - 2"). Maximum size 24" x 24" (600 x 600). MIB available on 24" x 24" (600 x 600) round neck only.

## HOW TO SPECIFY OR TO ORDER

**SUGGESTED SPECIFICATION:****Models 4360, 4365 – Steel**

Furnish and install **Nailor Model** (select one) **4360 Flush Face** or **4365 Drop Face, Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck. A steel perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning (and adjusting the optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**Models 4360A, 4365A – Aluminum Face**

Furnish and install **Nailor Model** (select one) **4360A Flush Face** or **4365A Drop Face, Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a heavy gauge, stamped corrosion-resistant steel backpan with a round or square neck. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning (and adjusting the optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**Models 4360AA, 4365AA – Aluminum**

Furnish and install **Nailor Model** (select one) **4360AA Flush Face** or **4365AA Drop Face, Perforated Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have an aluminum backpan with a round or square neck. An aluminum perforated face shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face shall be removable, hinged and include quick-release spring latches allowing easy access for cleaning (and adjusting the optional damper). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



## PERFORATED RETURN AIR PANELS

- SUITABLE FOR DUCTLESS (PLENUM) RETURN AIR APPLICATIONS

### Steel Models:

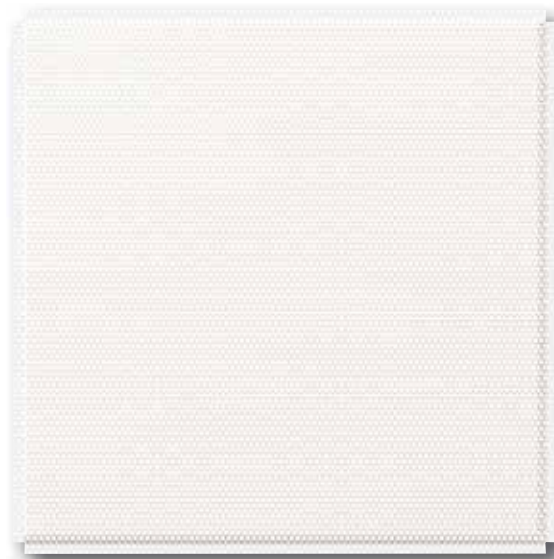
4302 Flush Face

4302-DF Drop Face

4302-F Fineline®

### Aluminum Model:

4302A Flush Face



Model 4302-DF

Model Series 4302 Perforated Return Panels are for use as an economical ductless return or exhaust grille in exposed grid T-Bar ceiling systems. Once installed, the appearance matches that of the 4320/4325 (CB, F and M) Series Supply Diffusers.

### STANDARD FEATURES:

- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.
- Edges of panel are turned up for strength.

### CONSTRUCTION MATERIAL:

Heavy gauge corrosion-resistant steel or aluminum.

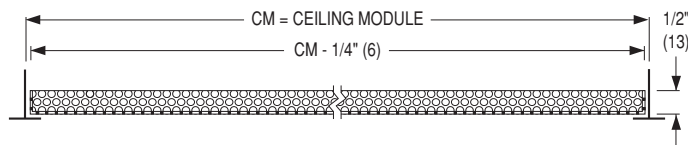
### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

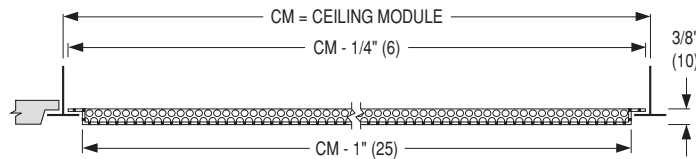
### Available Ceiling Module Sizes

Ceiling Module CM	
Imperial Modules (inches)	Metric Modules (mm)
12 x 12	300 x 300
16 x 16	400 x 400
20 x 20	500 x 500
24 x 12	600 x 300
24 x 24	600 x 600
48 x 24	1200 x 600

### Model 4302 and 4302A Lay-in T-Bar



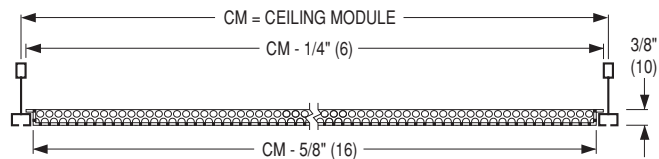
### Model 4302-DF Drop Face Lay-in T-Bar



### Available Ceiling Module Sizes

Ceiling Module CM	
Imperial Modules (inches)	Metric Modules (mm)
20 x 20	500 x 500
24 x 24	600 x 600

### Model 4302-F Fineline® Type Ceilings



## PERFORMANCE DATA:

### Models 4302, 4302-DF, 4302-F, 4302A • Return Panel

Ceiling Module	Neck Velocity, FPM	200	300	400	500	600	700	800	900	1000
	Negative Static Pressure	.013	.029	.051	.080	.115	.157	.205	.259	.320
	Velocity Pressure	.002	.006	.010	.016	.023	.031	.040	.050	.063
12 x 12	Airflow, CFM	200	300	400	500	600	700	800	900	1000
	Noise Criteria	—	—	27	34	40	45	49	52	57
20 x 20	Airflow, CFM	556	833	1111	1389	1667	1944	2222	2500	2778
	Noise Criteria	—	—	24	30	37	42	46	49	54
24 x 12	Airflow, CFM	400	600	800	1000	1200	1400	1600	1800	2000
	Noise Criteria	—	17	27	32	39	44	48	52	56
24 x 24	Airflow, CFM	800	1200	1600	2000	2400	2800	3200	3600	4000
	Noise Criteria	—	16	24	31	37	41	45	48	53
48 x 24	Airflow, CFM	1600	2400	3200	4000	4800	5600	6400	7200	8000
	Noise Criteria	—	18	27	33	39	44	48	51	56

### Performance Notes:

1. All pressures are in inches w.g..
2. Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates a Noise Criteria of less than 15.
3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO SPECIFY OR TO ORDER

### PERFORATED RETURN CEILING DIFFUSERS, PANELS, DUCTLESS – MODEL SERIES 4302

**EXAMPLE: 4302 - 24 x 24 - L - AW**

**1. Models**

- 4302 Steel
- 4302A Aluminum
- 4302-DF Steel, Drop Face
- 4302-F Steel, Fineline® Type

**2. Ceiling Module Size**

**Imperial (inches)**

12 x 12, 16 x 16, 20 x 20, 24 x 12,  
24 x 24 (default), 48 x 24

**Metric (mm)**

300 x 300, 400 x 400, 500 x 500,  
600 x 300, 600 x 600, 1200 x 600

**3. Frame Type**

- L Lay-in T-Bar (default)
- F Fineline®

**4. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- MI Mill
- PC Prime Coat Paint
- SP Special Custom Color

**Notes:**

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

**SUGGESTED SPECIFICATION:**

**Model 4302, 4302A – Flush Face**

Furnish and install **Nailor Model** (select one) **4302** (corrosion-resistant steel) or **4302A** (aluminum) **Perforated Return Air Panels** of the sizes and capacities as shown on the plans and air distribution schedules. The perforated panel shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The edge of the panel shall be turned up a 1/2" (13) for strength. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**Model 4302-DF – Drop Face**

Furnish and install **Nailor Model 4302-DF Perforated Drop Face Return Air Panels** of the sizes and capacities as shown on the plans and air distribution schedules. The corrosion-resistant steel perforated panel shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The face of the panel shall extend below the ceiling line. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

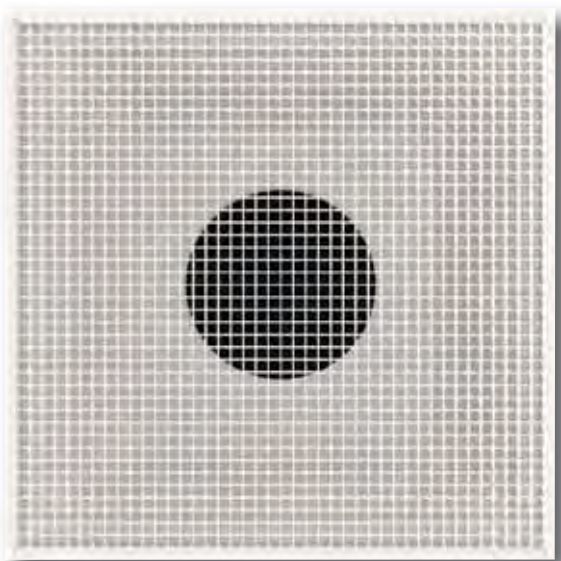
**Model 4302-F – Fineline®**

Furnish and install **Nailor Model 4302-F Perforated Fineline® Return Air Panels** of the sizes and capacities as shown on the plans and air distribution schedules. The corrosion-resistant steel perforated panel shall have 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The panel shall incorporate a corrosion-resistant steel frame to suit Fineline® type ceilings. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## EGGCRATE CEILING RETURN DIFFUSERS

- HIGH CAPACITY
- SUITABLE FOR FLEXIBLE DUCT CONNECTIONS
- 1/2" x 1/2" x 1/2" (13 x 13 x 13) ALUMINUM GRID CORE



Model 4260

### Steel Model:

4260 Steel Frame/Backpan

### Aluminum Model:

4260AA Aluminum Frame

Model Series 4260 Eggcrate Return Ceiling Diffuser has a high free area for high volume capacity with low sound levels and pressure drops. It has an architecturally pleasing design that matches in appearance the grid louvers on parabolic light fixtures.

Model Series 4260 is offered in two versions. One for ducted return applications, for connection to flexible or rigid round duct or square duct. The other version has a dedicated frame assembly which has a neck that is 2" (51) less than the ceiling module size. This unit maximizes free area and may be used for ducted or ductless return air applications.

### STANDARD FEATURES:

- Full face design for ducted return air applications.
- 1/2 x 1/2 x 1/2 (13 x 13 x 13) aluminum eggcrate.
- Removable core.
- Round or square necks available.
- Inlet collar has minimum 1 1/4" (32) depth for easy duct connection.
- Dropping the perforated face gives access to the optional damper.
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers, providing 51% free area.

### CONSTRUCTION MATERIAL:

Model 4260 has a corrosion-resistant steel frame and backpan with an aluminum grid core. Model 4260AA has an aluminum frame, backpan and grid core.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

#### Round Neck:

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- 4675 Butterfly Damper 6" – 14" (152 – 356).

MIB Molded Insulation Blanket, R-6.0.

#### Square Neck:

- OBD Opposed Blade Damper (Steel)
- OBDA Opposed Blade Damper (Aluminum) (-AA models only)

### OTHER OPTIONS & ACCESSORIES:

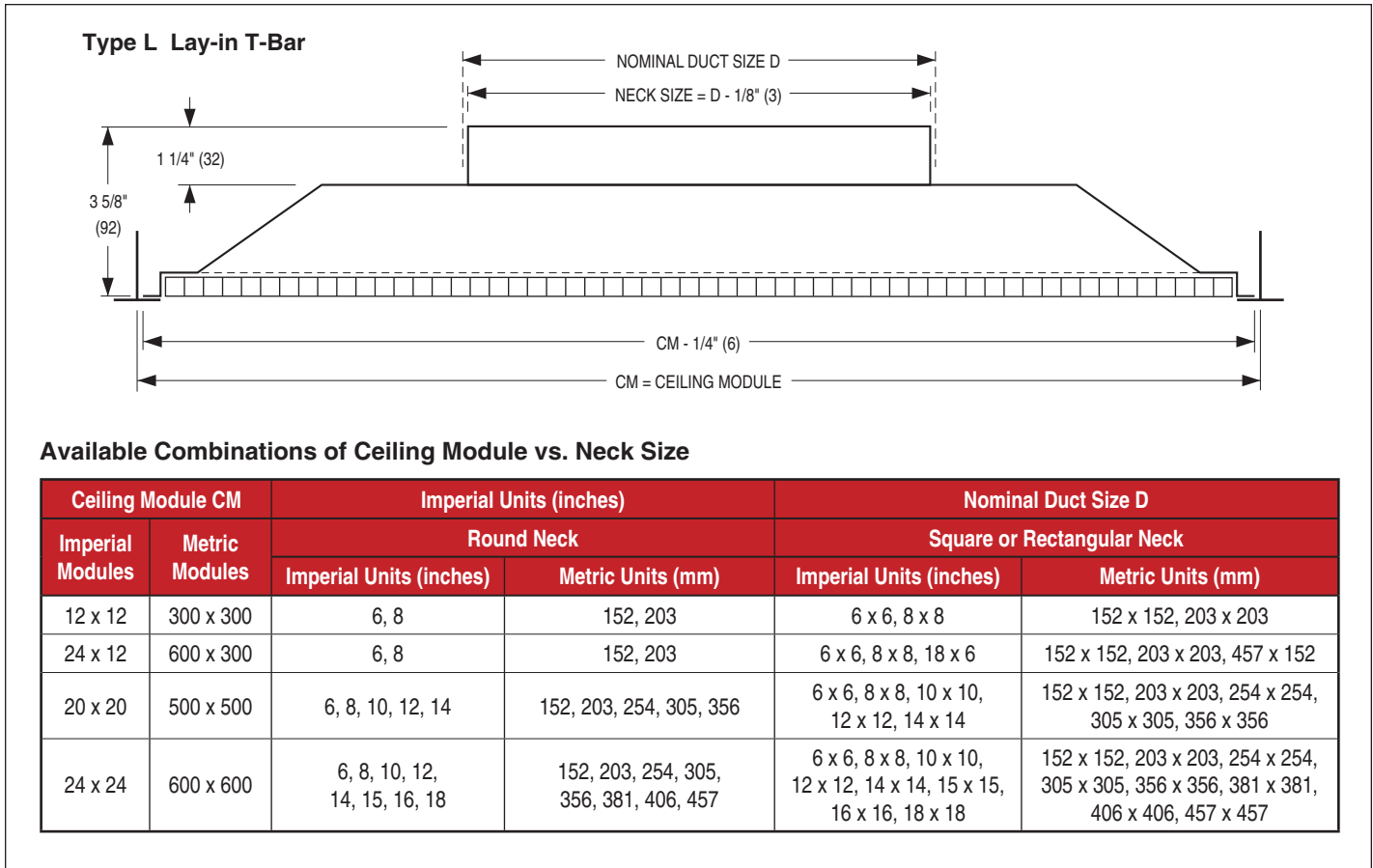
EQT Earthquake Tabs

For additional options and accessories; see page D255.

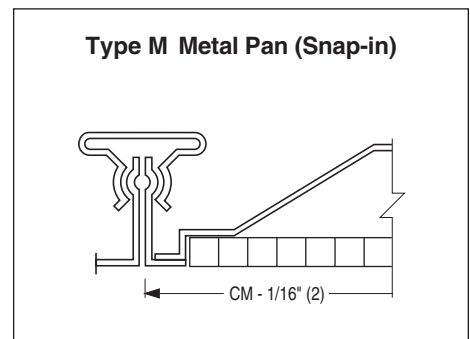
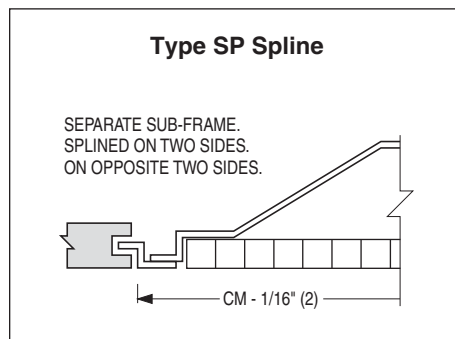
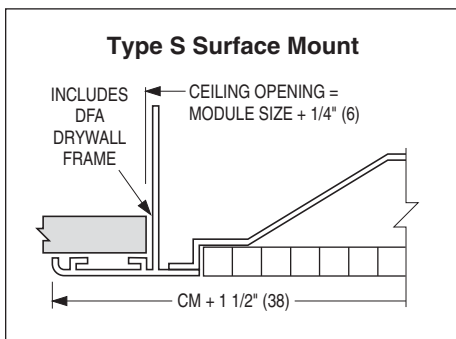
## DIMENSIONAL DATA AND FRAME TYPES:

### Models 4260, 4260AA • Round or Square Neck

All round ducts and square ducts when duct size is less than CM - 2" (51).



D  
CEILING DIFFUSERS

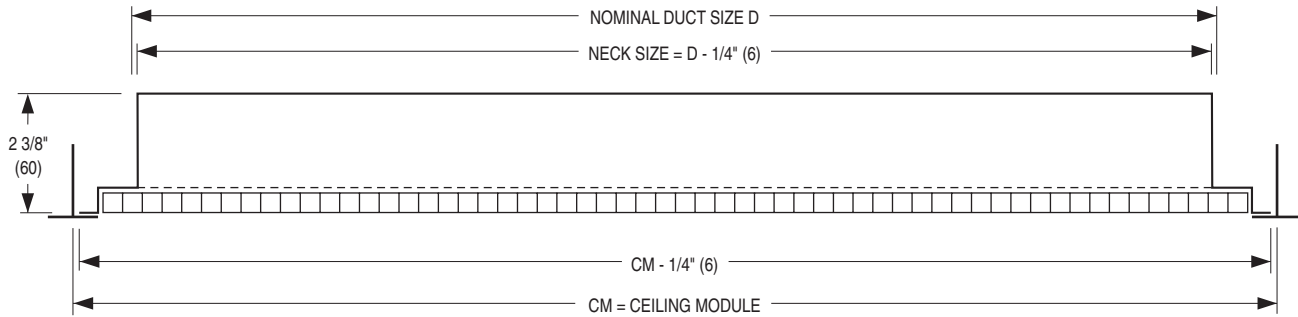


## DIMENSIONAL DATA AND FRAME TYPES:

### Models 4260, 4260AA • Full Face

When duct size = CM - 2" (51).

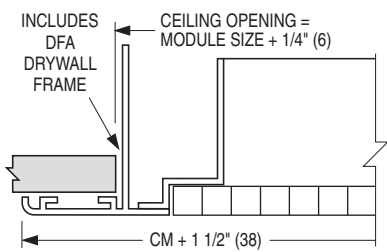
#### Type L Lay-in T-Bar or Tegular



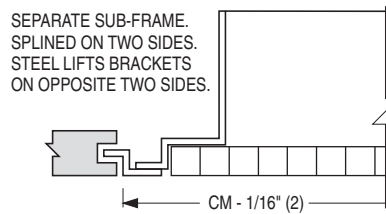
#### Imperial & Metric Module Table

Ceiling Module CM		Nominal Duct Size D	
Imperial Modules	Metric Modules	Square Neck	
		Imperial Modules (inches)	Metric Modules (mm)
12 x 12	300 x 300	10 x 10	250 x 250
24 x 12	600 x 300	22 x 10	550 x 250
20 x 20	500 x 500	18 x 18	450 x 450
24 x 24	600 x 600	22 x 22	550 x 550
48 x 24	1200 x 600	46 x 22	1150 x 550

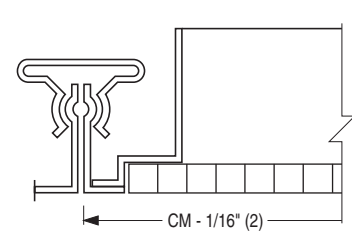
#### Type S Surface Mount



#### Type SP Spline



#### Type M Metal Pan (Snap-in)





## PERFORMANCE DATA:

### Models 4260, 4260AA • Full Face • Round or Square Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122
6" Dia.	Airflow, CFM	59	78	98	118	137	157	176	196	235	274
	Neg. Static Pressure	.011	.019	.029	.042	.056	.073	.092	.113	.162	.218
	Noise Criteria	—	—	—	—	—	—	—	16	20	29
6 x 6	Airflow, CFM	75	100	125	150	175	200	225	250	300	350
	Neg. Static Pressure	.011	.018	.029	.041	.055	.072	.091	.111	.160	.217
	Noise Criteria	—	—	—	—	—	—	16	19	23	32
8" Dia.	Airflow, CFM	105	140	175	209	244	279	314	349	419	489
	Neg. Static Pressure	.011	.019	.030	.042	.057	.074	.092	.113	.163	.218
	Noise Criteria	—	—	—	—	—	15	18	21	25	34
8 x 8	Airflow, CFM	133	178	222	267	311	356	400	444	533	622
	Neg. Static Pressure	.011	.018	.029	.042	.057	.074	.093	.115	.164	.223
	Noise Criteria	—	—	—	—	—	16	19	22	26	35
10" Dia.	Airflow, CFM	164	218	273	327	382	436	491	545	654	763
	Neg. Static Pressure	.011	.020	.031	.044	.058	.076	.095	.118	.165	.226
	Noise Criteria	—	—	—	—	15	19	22	26	32	38
10 x 10	Airflow, CFM	208	278	347	416	486	555	625	694	833	972
	Neg. Static Pressure	.011	.019	.03	.043	.058	.076	.094	.119	.169	.228
	Noise Criteria	—	—	—	—	16	20	23	27	33	39
12" Dia.	Airflow, CFM	236	314	393	471	550	628	707	785	942	1100
	Neg. Static Pressure	.011	.019	.030	.043	.058	.076	.096	.118	.170	.232
	Noise Criteria	—	—	—	—	18	22	25	28	34	41
12 x 12	Airflow, CFM	300	400	500	600	700	800	900	1000	1200	1400
	Neg. Static Pressure	.011	.020	.031	.045	.062	.08	.100	.124	.174	.239
	Noise Criteria	—	—	—	15	19	23	26	29	35	42
14" Dia.	Airflow, CFM	321	428	535	641	748	855	962	1069	1282	1497
	Neg. Static Pressure	.011	.020	.031	.044	.06	.079	.100	.123	.177	.241
	Noise Criteria	—	—	—	16	20	24	27	30	36	43
14 x 14	Airflow, CFM	408	544	681	817	953	1089	1225	1361	1633	1905
	Neg. Static Pressure	.011	.020	.032	.046	.063	.082	.103	.128	.184	.250
	Noise Criteria	—	—	—	17	21	26	29	32	38	45
16" Dia.	Airflow, CFM	419	558	698	838	977	1117	1256	1396	1675	1954
	Neg. Static Pressure	.012	.021	.032	.046	.063	.082	.104	.129	.185	.252
	Noise Criteria	—	—	—	17	21	25	29	32	38	45
16 x 16	Airflow, CFM	533	711	889	1067	1245	1422	1600	1778	2134	2489
	Neg. Static Pressure	.012	.021	.034	.048	.066	.086	.109	.134	.193	.263
	Noise Criteria	—	—	15	20	24	28	31	34	40	47
18" Dia.	Airflow, CFM	530	707	884	1060	1237	1414	1590	1767	2120	2474
	Neg. Static Pressure	.012	.021	.033	.048	.066	.086	.108	.134	.193	.262
	Noise Criteria	—	—	15	20	24	28	31	34	40	47
18 x 18	Airflow, CFM	675	900	1125	1350	1575	1800	2025	2250	2700	3150
	Neg. Static Pressure	.013	.023	.035	.051	.070	.091	.115	.142	.204	.278
	Noise Criteria	—	—	17	22	27	32	35	38	45	51
22 x 22	Airflow, CFM	1008	1344	1681	2017	2353	2689	3025	3361	4033	4706
	Neg. Static Pressure	.014	.025	.040	.057	.078	.102	.129	.159	.229	.312
	Noise Criteria	—	—	19	24	29	34	37	40	47	53

#### Performance Notes:

- All pressures are in inches w.g..
- Neck Velocity is given in feet per minute (fpm). Airflow is given in cubic feet per minute (cfm).
- Noise Criteria (NC) values are based upon 10 dB room absorption, re 10-12 watts. Dash (—) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO SPECIFY OR TO ORDER

### EGGCRATE RETURN CEILING DIFFUSERS – MODEL SERIES 4260 AND 4260AA

EXAMPLE: 4260 - RND - 08 - 24 x 24 - L - AW - -

- |   |   |
|---|---|
| <p>1. <b>Models</b><br/>                 4260 Steel Backpan<br/>                 4260AA Aluminum Backpan</p> <p>2. <b>Neck Type</b><br/>                 RND Round<br/>                 SQR Square/Rectangular</p> <p>3. <b>Neck Size (inches)</b><br/> <b>Round:</b><br/>                 06, 08, 10, 12, 14, 15, 16, 18<br/> <b>Square or Rectangular:</b><br/>                 6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14,<br/>                 15 x 15, 16 x 16, 18 x 6, 18 x 18<br/>                 22 x 10, 22 x 22, 46 x 22</p> <p>4. <b>Ceiling Module Size</b><br/> <b>Imperial (inches)</b><br/>                 12 x 12, 20 x 20, 24 x 12,<br/>                 24 x 24 (default), 48 x 24<br/> <b>Metric (mm)</b><br/>                 300 x 300, 500 x 500, 600 x 300,<br/>                 600 x 600, 1200 x 600</p> <p>5. <b>Frame Type</b><br/>                 L Lay-in T-Bar (default)<br/>                 S Surface Mount<br/>                 SP Spline<br/>                 M Metal Pan (Snap-in)</p> | <p>6. <b>Finish</b><br/>                 AW Appliance White (default)<br/>                 AL Aluminum<br/>                 BK Black<br/>                 BW British White<br/>                 MI Mill<br/>                 PC Prime Coat Paint<br/>                 BA AW Face/Black Backpan<br/>                 SP Special Custom Color</p> |
|---|---|

#### OPTIONS & ACCESSORIES:

7. **Damper**  
 – None (default)
- Round Neck:**  
 4250 Radial Sliding Damper, 6" - 14"  
 4275 Radial Opposed Blade Damper,  
 5" - 24"  
 4675 Butterfly Damper, 6" - 14"
- Square Neck:**  
 OBD Opposed Blade, Steel  
 OBDA Opposed Blade, Aluminum  
 (AA models only)
8. **Earthquake Tabs**  
 – None (default)  
 EQT Earthquake Tabs

#### OTHER OPTIONS & ACCESSORIES:

##### Air Balancing Devices

(order separately)

##### Round Neck:

- EGR Equalizing Grid  
 DEGR Damper/Equalizing Grid

##### Square/Rectangular Neck:

- EGL Equalizing Grid (long)  
 EGS Equalizing Grid (short)  
 DEGL Damper/Equalizing Grid  
 (long)  
 DEGS Damper/Equalizing Grid  
 (short)

#### Notes:

1. Consult individual models as to limitations of module and neck size combinations.
2. Dampers are shipped loose for field installation.

D

CEILING DIFFUSERS

#### SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **4260** (corrosion-resistant steel frame/backpan) or **4260AA** (aluminum frame/backpan) **Eggcrate Return Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a removable aluminum grid core that is 1/2" x 1/2" x 1/2" (13 x 13 x 13) and extends the full face of the diffuser. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## SQUARE MODULAR CORE DIFFUSERS

- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN

### Steel Model:

7500

### Aluminum Model:

7200

- Suffix '-O' adds a steel opposed blade damper



Model 7500

Model Series 7500 and 7200 Diffusers have been specially designed to provide a versatile 'modular core' product which is available in a comprehensive range of sizes and air capacities, providing optimum simplicity and flexibility for field adjustment of the discharge air pattern. They maintain a horizontal ceiling pattern from maximum to minimum flow and make an excellent choice for use in variable air volume systems.

The 7500 and 7200 Series features four individual spring-loaded 'modular' pattern controllers mounted in the neck. They can be adjusted before or after installation, to provide a 1, 2, 3 or 4-way discharge pattern by simply rotating one or more of the pattern controllers which takes only a few seconds.

### STANDARD FEATURES:

- Square neck is standard.
- Each diffuser features four individually adjustable 'spring-loaded' modular cores.
- Simple adjustment for a 1, 2, 3 or 4-way horizontal discharge pattern without the use of tools.
- Inlet collar has minimum 1 1/2" (38) depth for easy duct connection.
- A wide variety of frame styles to suit most ceiling applications.
- Optional extended panels to suit modular T-Bar ceiling systems.

- Optional opposed blade damper with screwdriver slot operator is adjustable from the diffuser face by removing a modular core.

### CONSTRUCTION MATERIAL:

7500 - Corrosion-resistant steel.  
7200 - Aluminum with miscellaneous steel components.

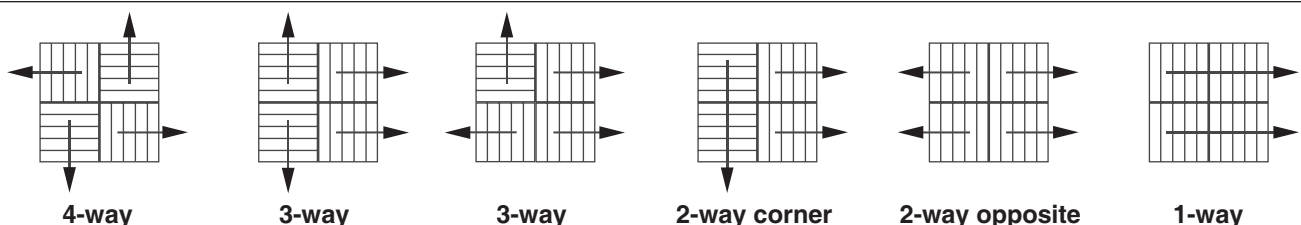
### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- SR Square to Round Transition Collar (4" – 24" specify SR04 – SR24).
  - EQT Earthquake Tabs
- For additional options and accessories; see page D255.

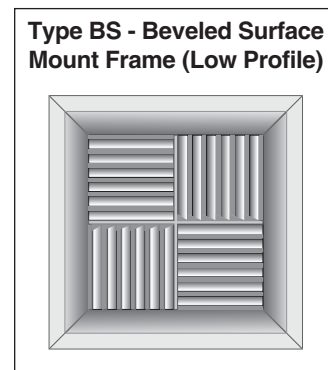
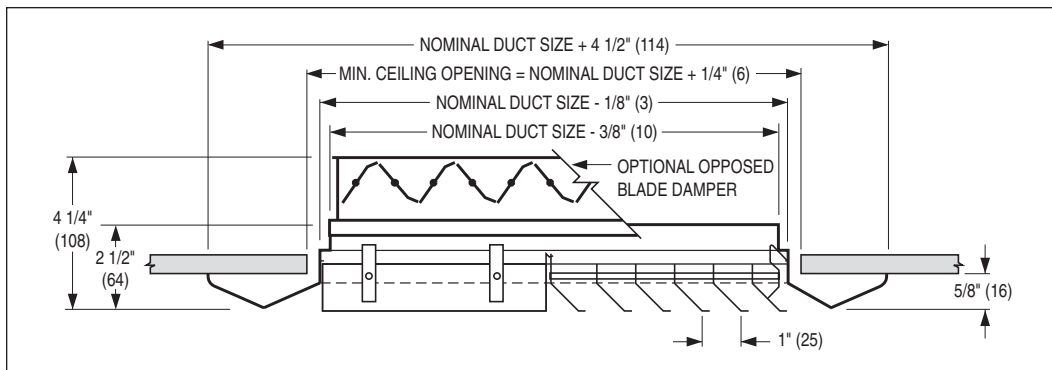
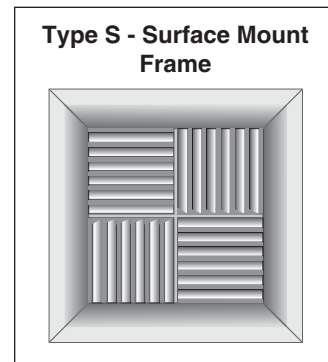
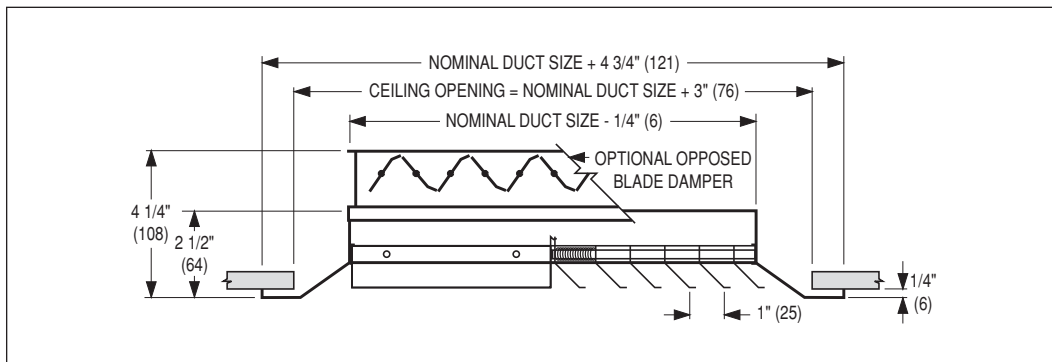
## Modular Core Adjustments



All diffusers are shipped with the standard 4-way pattern, but the air pattern can be simply field adjusted by rotating the spring loaded pattern controllers.

## DIMENSIONAL DATA AND FRAME TYPES:

### Model Series 7500 and 7200



D

CEILING DIFFUSERS

#### Model Series 7500 Available Duct Sizes

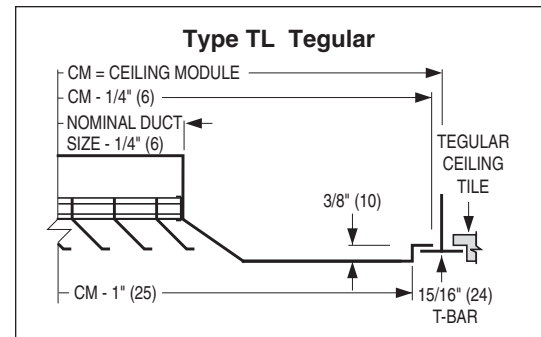
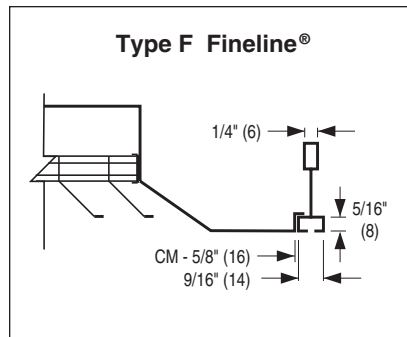
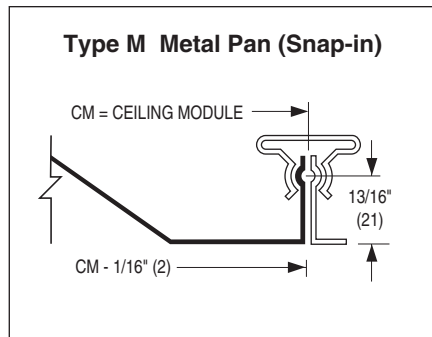
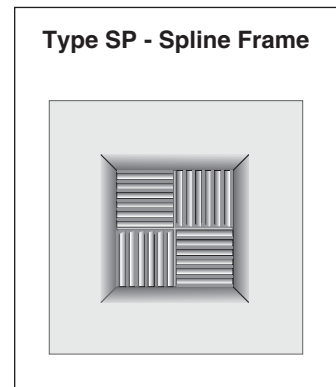
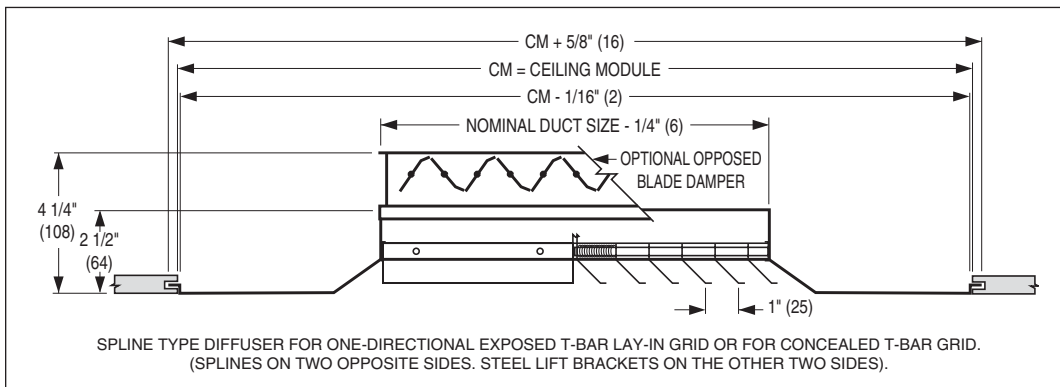
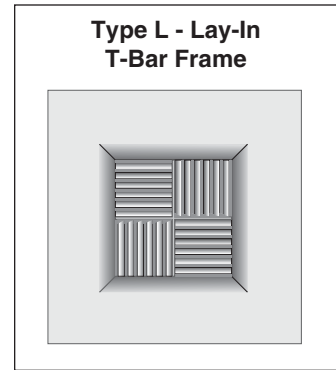
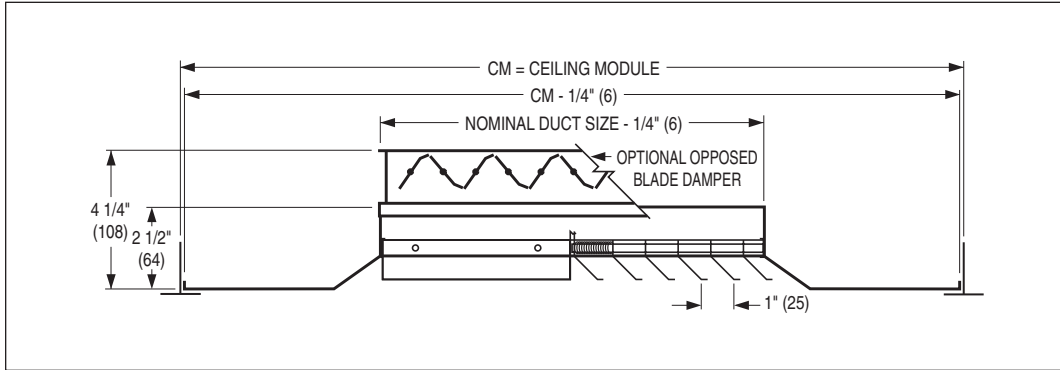
Frame Types S and BS		
6 x 6 (152 x 152)	12 x 12 (305 x 305)	18 x 18 (457 x 457)
8 x 8 (203 x 203)	14 x 14 (356 x 356)	20 x 20 (508 x 508)
9 x 9 (229 x 229)	15 x 15 (381 x 381)	22 x 22 (559 x 559)
10 x 10 (254 x 254)	16 x 16 (406 x 406)	24 x 24 (610 x 610)

#### Model Series 7200 Available Duct Sizes

Frame Types S and BS		
6 x 6 (152 x 152)	14 x 14 (356 x 356)	20 x 20 (508 x 508)
8 x 8 (203 x 203)	16 x 16 (406 x 406)	22 x 22 (559 x 559)
10 x 10 (254 x 254)	18 x 18 (457 x 457)	24 x 24 (610 x 610)
12 x 12 (305 x 305)		

## DIMENSIONAL DATA AND FRAME TYPES:

### Model Series 7500 and 7200



### Extended Panel Diffusers Frame Types L, SP, TL, F and M

If the ceiling module is more than 3" (76) larger than the neck size of the diffuser in either or both dimensions, a module-sized extended panel will be added.

See the table (below) for the maximum duct size for each module size.

Ceiling Module Size CM – Frame Types L, SP, M, TL and F							
Imperial Modules (inches)	Metric Modules (mm)	Model 7500 Available Duct Sizes			Model 7200 Available Duct Sizes		
12 x 12, 24 x 12	300 x 300, 600 x 300	6 x 6 (152 x 152)	8 x 8 (203 x 203)	9 x 9 (229 x 229)	6 x 6 (152 x 152)	8 x 8 (203 x 203)	
20 x 20	500 x 500	6 x 6 (152 x 152) 8 x 8 (203 x 203) 9 x 9 (229 x 229)	10 x 10 (254 x 254) 12 x 12 (305 x 305) 14 x 14 (356 x 356)	15 x 15 (381 x 381)	6 x 6 (152 x 152) 8 x 8 (203 x 203)	10 x 10 (254 x 254) 12 x 12 (305 x 305)	14 x 14 (356 x 356)
24 x 24	600 x 600	6 x 6 (152 x 152) 8 x 8 (203 x 203) 9 x 9 (229 x 229)	10 x 10 (254 x 254) 12 x 12 (305 x 305) 14 x 14 (356 x 356)	15 x 15 (381 x 381) 16 x 16 (406 x 406) 18 x 18 (457 x 457)	6 x 6 (152 x 152) 8 x 8 (203 x 203)	10 x 10 (254 x 254) 12 x 12 (305 x 305) 14 x 14 (356 x 356)	16 x 16 (406 x 406) 18 x 18 (457 x 457)

## PERFORMANCE DATA:

### Models 7500 and 7200 • Square Neck

Nominal Neck Size (inches)	Neck Velocity, FPM	200	300	400	500	600	700	800	900	1000	
	Velocity Pressure	.003	.006	.010	.016	.022	.031	.040	.051	.062	
6 x 6	Total Pressure	.008	.018	.033	.051	.073	.100	.131	.165	.204	
	Airflow, CFM	50	75	100	125	150	175	200	225	250	
	Throw	4-Way (1 core)	1-2-3	2-2-5	2-3-6	2-4-7	3-4-8	3-5-8	4-6-8	5-6-9	5-6-10
		3-Way (2 cores)	2-2-5	3-4-8	4-6-9	4-7-10	5-8-11	6-9-12	7-10-13	8-11-14	9-11-15
		2-Way (3 cores)	2-3-6	3-5-10	4-7-11	5-8-12	6-9-13	7-10-14	8-11-16	9-12-17	11-13-18
		1-Way (4 cores)	2-4-8	4-6-11	5-8-13	7-10-15	8-11-16	9-12-18	10-13-19	11-14-20	12-15-22
Noise Criteria	—	—	—	16	22	26	29	32	35		
8 x 8	Total Pressure	.006	.013	.022	.035	.050	.069	.090	.113	.140	
	Airflow, CFM	88	133	177	222	266	310	355	399	444	
	Throw	4-Way (1 core)	1-2-4	2-3-6	2-4-8	3-5-9	4-6-10	4-7-11	5-8-11	6-8-12	6-9-13
		3-Way (2 cores)	2-3-7	3-5-11	5-7-13	6-9-14	7-11-15	8-12-17	10-13-18	11-14-19	12-14-20
		2-Way (3 cores)	3-4-9	4-7-13	6-9-16	8-11-17	9-13-19	10-14-21	12-16-22	13-17-23	14-17-25
		1-Way (4 cores)	3-5-11	5-8-15	7-11-18	9-13-20	11-15-22	12-16-24	14-18-26	15-19-27	16-20-29
Noise Criteria	—	—	—	17	25	29	32	35	38		
10 x 10	Total Pressure	.007	.015	.027	.042	.060	.082	.108	.136	.168	
	Airflow, CFM	138	208	277	347	416	485	555	624	694	
	Throw	4-Way (1 core)	2-3-7	3-5-9	4-7-10	6-8-11	7-9-12	8-9-14	8-10-14	9-11-14	9-11-17
		3-Way (2 cores)	4-6-12	6-10-14	9-12-16	11-13-18	12-14-20	13-15-22	14-16-23	14-19-25	14-20-26
		2-Way (3 cores)	5-8-14	8-12-17	11-14-20	13-16-22	14-17-24	15-18-27	16-20-28	17-22-30	18-23-32
		1-Way (4 cores)	6-9-16	9-14-20	13-16-23	14-18-26	16-20-28	17-21-31	18-23-33	20-24-35	21-26-37
Noise Criteria	—	—	15	18	24	30	34	37	40		
12 x 12	Total Pressure	.007	.016	.029	.046	.066	.089	.116	.147	.182	
	Airflow, CFM	200	300	400	500	600	700	800	900	1000	
	Throw	4-Way (1 core)	2-4-8	4-6-11	5-8-12	7-10-14	8-11-14	9-11-15	10-12-17	11-13-18	11-14-19
		3-Way (2 cores)	5-8-14	8-12-17	10-14-20	13-15-22	14-17-24	15-18-26	16-20-28	17-21-30	18-22-32
		2-Way (3 cores)	6-10-17	10-14-21	12-17-24	15-19-27	17-21-29	18-22-32	19-24-34	21-26-36	22-27-39
		1-Way (4 cores)	7-11-19	11-16-24	14-19-28	17-22-31	19-24-34	21-26-37	22-28-40	24-30-42	25-31-45
Noise Criteria	—	—	17	21	27	32	36	40	43		
14 x 14	Total Pressure	.009	.020	.035	.055	.080	.108	.141	.179	.221	
	Airflow, CFM	272	408	544	680	816	952	1088	1224	1361	
	Throw	4-Way (1 core)	3-5-10	5-7-12	6-10-14	8-11-15	10-12-19	11-13-18	12-14-19	12-14-21	13-15-22
		3-Way (2 cores)	6-9-16	9-14-20	12-16-23	14-18-26	16-20-29	17-21-31	19-23-33	20-25-35	21-26-37
		2-Way (3 cores)	8-11-20	11-17-24	15-20-28	18-22-32	20-24-35	21-26-38	23-28-40	24-30-42	26-32-44
		1-Way (4 cores)	9-13-23	13-19-28	17-23-33	21-25-37	23-28-40	25-30-44	26-33-47	28-35-49	30-37-51
Noise Criteria	—	—	19	23	29	34	38	42	45		
16 x 16	Total Pressure	.011	.024	.043	.067	.096	.131	.172	.217	.268	
	Airflow, CFM	355	533	711	889	1066	1244	1422	1600	1778	
	Throw	4-Way (1 core)	3-5-11	5-8-14	7-11-15	9-13-17	11-14-19	12-14-21	13-15-23	14-17-24	14-17-25
		3-Way (2 cores)	7-10-18	10-15-23	14-18-27	17-21-30	18-23-33	20-25-36	21-27-38	23-28-41	24-30-43
		2-Way (3 cores)	9-12-22	12-19-29	17-22-33	21-25-36	22-28-40	24-30-43	26-33-46	28-34-49	29-36-51
		1-Way (4 cores)	10-14-26	14-22-32	20-26-38	24-29-42	26-32-46	28-35-49	30-38-53	32-40-56	34-42-59
Noise Criteria	—	—	21	25	31	36	40	44	47		

### Performance Notes:

- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.

- Noise Criteria (NC) values are based on 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in spaces indicates a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Square in Inches	Ak Factor
6 x 6	.1134
8 x 8	.1932
9 x 9	.2551
10 x 10	.3024
12 x 12	.4526
14 x 14	.5883
15 x 15	.6804
16 x 16	.7728



## PERFORMANCE DATA:

### Models 7500 and 7200 • Square Neck

Nominal Neck Size (inches)	Neck Velocity, FPM	200	300	400	500	600	700	800	900	1000	
	Velocity Pressure	.003	.006	.010	.016	.022	.031	.040	.051	.062	
<b>18 x 18</b>	Total Pressure	.013	.029	.051	.080	.115	.157	.205	.259	.320	
	Airflow, CFM	<b>450</b>	<b>675</b>	<b>900</b>	<b>1125</b>	<b>1350</b>	<b>1575</b>	<b>1800</b>	<b>2025</b>	<b>2250</b>	
	Throw	4-Way (1 core)	4-6-13	6-10-15	8-13-18	11-14-20	13-15-22	14-16-24	14-18-26	15-19-27	16-20-29
		3-Way (2 cores)	8-12-21	12-17-26	15-21-30	19-23-34	21-26-37	23-28-40	24-30-43	26-32-46	27-34-48
		2-Way (3 cores)	10-14-26	14-21-32	19-26-36	23-28-41	26-32-44	28-34-48	29-36-52	31-39-55	33-41-58
		1-Way (4 cores)	11-16-30	16-25-37	22-30-42	27-33-48	30-37-51	32-40-56	34-42-60	36-45-63	39-48-67
Noise Criteria	—	15	22	26	32	37	42	45	48		
<b>20 x 20</b>	Total Pressure	.015	.034	.061	.095	.136	.186	.243	.307	.379	
	Airflow, CFM	<b>555</b>	<b>835</b>	<b>1110</b>	<b>1390</b>	<b>1665</b>	<b>1945</b>	<b>2220</b>	<b>2500</b>	<b>2775</b>	
	Throw	4-Way (1 core)	4-7-14	7-11-17	9-14-20	12-15-22	14-17-24	15-18-27	16-20-29	17-21-30	18-22-32
		3-Way (2 cores)	9-13-23	13-19-29	17-23-34	21-26-38	23-29-41	25-31-45	27-34-48	29-36-50	30-38-53
		2-Way (3 cores)	11-16-28	16-24-36	21-28-41	25-32-45	28-35-49	31-38-54	33-41-58	35-43-61	37-45-64
		1-Way (4 cores)	13-18-33	18-28-43	25-33-47	30-37-52	33-41-57	36-44-62	38-47-67	41-49-71	43-52-75
Noise Criteria	—	17	24	28	34	39	44	47	50		
<b>22 x 22</b>	Total Pressure	.018	.040	.071	.111	.159	.217	.284	.359	.443	
	Airflow, CFM	<b>675</b>	<b>1000</b>	<b>1345</b>	<b>1680</b>	<b>2015</b>	<b>2350</b>	<b>2690</b>	<b>3025</b>	<b>3360</b>	
	Throw	4-Way (1 core)	5-8-15	8-12-19	10-15-22	13-17-25	15-19-27	16-20-29	18-22-31	19-23-34	20-25-35
		3-Way (2 cores)	10-14-26	14-21-32	19-26-37	23-29-42	26-32-46	28-35-48	30-37-52	32-39-55	34-41-58
		2-Way (3 cores)	12-17-31	17-26-39	24-31-44	28-35-50	31-39-55	34-42-58	36-44-63	39-47-67	41-50-70
		1-Way (4 cores)	14-20-36	20-31-45	28-36-51	33-41-58	36-45-63	39-48-68	41-51-73	45-54-78	47-58-81
Noise Criteria	—	19	26	30	36	41	46	49	52		
<b>24 x 24</b>	Total Pressure	.021	.046	.082	.129	.185	.252	.329	.416	.514	
	Airflow, CFM	<b>800</b>	<b>1200</b>	<b>1600</b>	<b>2000</b>	<b>2400</b>	<b>2800</b>	<b>3200</b>	<b>3600</b>	<b>4000</b>	
	Throw	4-Way (1 core)	5-8-16	8-13-21	11-16-24	14-19-27	16-21-30	18-22-32	19-24-35	21-26-37	22-27-39
		3-Way (2 cores)	10-15-28	15-23-35	20-28-41	26-32-45	28-35-49	31-38-53	33-41-57	35-43-61	37-45-64
		2-Way (3 cores)	12-19-34	19-29-42	25-34-49	31-39-54	34-42-59	37-45-64	39-49-68	42-52-73	44-54-77
		1-Way (4 cores)	14-22-40	22-34-48	30-40-56	36-45-63	40-48-69	43-52-75	45-56-79	48-60-84	51-63-89
Noise Criteria	—	21	28	32	34	43	48	51	54		

#### Performance Notes:

1. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
2. Throws are given at 150, 100 and 50 fpm terminal velocities, under isothermal conditions.

3. Noise Criteria (NC) values are based on 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in spaces indicates a Noise Criteria level of less than 15.

4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Square in Inches	Ak Factor
<b>18 x 18</b>	0.9541
<b>20 x 20</b>	1.2096
<b>22 x 22</b>	1.4636
<b>24 x 24</b>	1.7304

## HOW TO ORDER

### MODULAR CORE CEILING DIFFUSERS – MODEL SERIES 7500

**EXAMPLE: 7500 - 0 - 9 x 9 - 24 x 24 - L - AW - SR08 - -**

1. **Model**  
7500 Steel
2. **Damper**  
– None (default)  
O Opposed Blade (steel)
3. **Neck Size (inches)**  
**Square or Rectangular:**  
6 x 6, 8 x 8, 9 x 9, 10 x 10, 12 x 12,  
14 x 14, 15 x 15, 16 x 16, 18 x 18,  
20 x 20, 22 x 22, 24 x 24
4. **Ceiling Module Size**  
**Imperial (inches)**  
12 x 12, 20 x 20, 24 x 12, 24 x 24  
**Metric (mm)**  
300 x 300, 500 x 500, 600 x 300,  
600 x 600
5. **Frame Type**  
S Surface Mount  
BS Bevelled Drop Face  
(Surface Mount)  
L Lay-in T-Bar  
SP Spline  
M Metal Pan (Snap-in)  
TL Tegular (Drop Face)  
F Finline®
6. **Finish**  
AW Appliance White (default)  
AL Aluminum  
BK Black  
BW British White  
MI Mill  
PC Prime Coat Paint  
SP Special Custom Color

#### OPTIONS & ACCESSORIES:

- None (default)
- 7. **Transition Collar**  
SR Square to Round Transition  
Collar (04 through 24 specify)
- 8. **Earthquake Tabs**  
EQT Earthquake Tabs

#### OTHER OPTIONS & ACCESSORIES:

##### Air Balancing Devices

(order separately)

##### Round Neck:

4250 Radial Sliding Damper,  
6" - 14"

4275 Radial Opposed Blade  
Damper, 5" - 24"

4675 Butterfly Damper, 6" - 14"

EGR Equalizing Grid

DEGR Damper/Equalizing Grid

##### Square/Rectangular Neck:

DEGL Damper/Equalizing Grid  
(long)

EGL Equalizing Grid

#### Notes:

1. Consult individual models as to limitations of available ceiling module, frame type, neck size and accessories combinations.

#### Available Maximum Sizes for Ceiling Modules

CEILING MODULE		MAXIMUM NECK SIZES BY FRAME TYPES			
Imperial	Metric	L	SP, M	TL	F
12 x 12 24 x 12	300 x 300 600 x 300	9 x 9 (229 x 229)	9 x 9 (229 x 229)	6 x 6 (152 x 152)	6 x 6 (152 x 152)
20 x 20	500 x 500	15 x 15 (381 x 381)	n/a	15 x 15 (381 x 381)	15 x 15 (381 x 381)
24 x 24	600 x 600	18 x 18 (457 x 457)	18 x 18 (457 x 457)	18 x 18 (457 x 457)	18 x 18 (457 x 457)

#### SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model Series 7500 Steel Modular Core Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 7500 shall have a heavy gauge, corrosion-resistant steel frame and core. The modular deflectors shall consist of four square, individually adjustable pattern deflectors, factory installed in a 4-way pattern, that are easily field rotated to provide throws in a 1, 2, or 3-way pattern. The diffuser shall have a square duct connection collar that is an integral part of the frame assembly and not be less than 1 1/2" (38) high. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER OR SPECIFY

### ALUMINUM MODULAR CORE CEILING DIFFUSERS – MODEL SERIES 7200

**EXAMPLE: 7200 - 0 - 9 x 9 - 24 x 24 - L - AW - PLS - SR08 - -**

- |   |  |  |
|---|--|--|
| <p>1. <b>Model</b><br/>7200 Aluminum</p> <p>2. <b>Damper</b><br/>– None (default)<br/>O Opposed Blade (steel)<br/>OA Opposed Blade (aluminum)</p> <p>3. <b>Neck Size (inches)</b><br/><b>Square or Rectangular:</b><br/>6 x 6, 8 x 8, 10 x 10, 12 x 12, 14 x 14, 16 x 16, 18 x 18, 20 x 20, 22 x 22, 24 x 24</p> <p>4. <b>Ceiling Module Size</b><br/>(Type L, SP, M, TL and F only)<br/><b>Imperial (inches)</b><br/>12 x 12, 20 x 20, 24 x 12, 24 x 24<br/><b>Metric (mm)</b><br/>300 x 300, 500 x 500, 600 x 300, 600 x 600</p> <p>5. <b>Frame Type</b><br/>S Surface Mount<br/>BS Bevelled Drop Face (Surface Mount)<br/>L Lay-in T-Bar<br/>SP Spline<br/>M Metal Pan (Snap-in)<br/>TL Tegular (Drop Face)<br/>F Finline®</p> | <p>6. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>MI Mill<br/>PC Prime Coat Paint<br/>SP Special Custom Color</p> <p>7. <b>Extended Panel</b><br/>PLS Steel (default)<br/>PLA Aluminum</p> <p>8. <b>Transition Collar</b><br/>SR Square to Round Transition Collar (04 through 24 specify)</p> <p>9. <b>Earthquake Tabs</b><br/>EQT Earthquake Tabs</p> |  |
|---|--|--|

**OPTIONS & ACCESSORIES:**

- None (default)

**OTHER OPTIONS & ACCESSORIES:**

**Air Balancing Devices**

(order separately)

**Round Neck:**

- 4250 Radial Sliding Damper, 6" - 14"
- 4275 Radial Opposed Blade Damper, 5" - 24"
- 4675 Butterfly Damper, 6" - 14"
- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

**Square/Rectangular Neck:**

- DEGL Damper/Equalizing Grid (long)
- EGL Equalizing Grid

**Notes:**

1. Consult individual models as to limitations of panel and neck size combinations.
2. Extended modular panels where required are steel construction as standard. Aluminum is available as an option. Applicable to Frame Type L, SP, M, TL and F only.

**Available Maximum Sizes for Ceiling Modules**

CEILING MODULE		MAXIMUM NECK SIZES BY FRAME TYPES			
Imperial	Metric	L	SP, M	TL	F
12 x 12 24 x 12	300 x 300 600 x 300	8 x 8 (203 x 203)	8 x 8 (203 x 203)	6 x 6 (152 x 152)	6 x 6 (152 x 152)
20 x 20	500 x 500	14 x 14 (356 x 356)	n/a	14 x 14 (356 x 356)	14 x 14 (356 x 356)
24 x 24	600 x 600	18 x 18 (457 x 457)	18 x 18 (457 x 457)	18 x 18 (457 x 457)	18 x 18 (457 x 457)

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model Series 7200 Aluminum Modular Core Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. Model 7200 shall have an aluminum frame and core. The modular deflectors shall consist of four square, individually adjustable pattern deflectors, factory installed in a 4-way pattern, that are easily field rotated to provide throws in a 1, 2, or 3-way pattern. The diffuser shall have a square duct connection collar that is an integral part of the frame assembly and not be less than 1 1/2" (38) high. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## CURVED BLADE DIFFUSERS

- 1, 2, 3 OR 4-WAY DISCHARGE PATTERNS AVAILABLE

### Steel Models:

61CC 1, 2, 3 or 4-Way

61CCD 1 or 2-Way with Rear Directional Vanes

### Aluminum Models:

51CC 1, 2, 3 or 4-Way

51CCD 1 or 2-Way with Rear Directional Vanes

- Suffix '-O' adds a steel opposed blade damper

- Suffix '-OA' adds an aluminum opposed blade damper (available on aluminum models only)



Model 61CC

Model Series 61CC and 51CC Series Curved Blade Diffusers are similar in design and construction to the Nailor 61C and 51C Series Curved Blade Grilles with the addition of a modular sized panel to integrate with various types of ceiling systems. Available with the choice of a 1, 2, 3 or 4-way discharge pattern.

They also feature individually adjustable friction pivoted curved blades on 1" (25) centers that positively control the airflow. Blades are adjustable from the face, regulating the angle of discharge from a horizontal through to a full down-blow vertical pattern as required. Blades can also regulate air volume as they are closed off.

Available in a comprehensive range of square duct sizes to suit a large range of air volumes, these diffusers, when adjusted correctly, produce a tight horizontal ceiling pattern and work extremely well in variable air volume applications.

Nailor 61CCD and 51CCD Series, available in a 1 or 2-way discharge pattern are similar to the above but incorporate a set of rear vanes on 3/4" (19) centers that are individually adjustable, thus providing complete directional control and airflow equalization.

### STANDARD FEATURES:

- Blades are formed to an engineered curved and streamlined cross-section. Formed with tenons at each end to fit snugly into side margin, friction loaded to firmly hold deflection setting.
- Adjustable angle of discharge from horizontal to vertical.
- Choice of one, two, three or four-way discharge patterns.
- A variety of frame/border styles to suit most ceiling systems.
- Available in square neck sizes 6" x 6" (152 x 152) through 21" x 21" (533 x 533) for standard 24" x 24" (600 x 600) ceiling modules.
- For non-listed rectangular sizes, see the 61C and 51C Series in this catalog and add a module sized extended panel (PL).

### CONSTRUCTION MATERIAL:

- Models 61CC/61CCD have corrosion-resistant steel blades and panel. Models 51CC/51CCD have extruded aluminum blades and a corrosion-resistant steel panel.
- Optional steel or aluminum opposed blade dampers have a screwdriver slot operator accessible through the face of the diffuser.

### FINISH OPTIONS:

AW Appliance White finish is standard. Other finishes are available.

### OPTIONS & ACCESSORIES:

- SR Square to Round Transition Collar (4" – 24" specify SR04 – SR24).
- EQT Earthquake Tabs

### Air Balancing Devices

(order separately)

#### Rectangular Neck:

- EGL Equalizing Grid (long)
- DEGL Damper/Equalizing Grid (long)

#### Round Neck:

- 4250 Radial Sliding Blade Damper 6" – 14" (152 – 356).
- 4275 Radial Opposed Blade Damper 5" – 24" (127 – 610).
- 4675 Butterfly Damper 6" – 14" (152 – 356).

- EGR Equalizing Grid
- DEGR Damper/Equalizing Grid

For additional options and accessories; see page D257.

## DIMENSIONAL DATA AND FRAME TYPES:

### Models 61CC and 51CC

**Type PL Panel Lay-in T-Bar**

CM - 1/4" (6)

CM - 1/4" (6)

CM = CEILING MODULE 24" x 24" (610 x 610)

NOMINAL DUCT SIZE - 1/4" (6)

OPTIONAL REAR DEFLECTION VANES

OPTIONAL OPPOSED BLADE DAMPER

3.9/16" (90)

1-13/16" (46)

**Standard Duct Sizes for 24 x 24 (600 x 600) Ceiling Module**

Imperial Units (inches)				Metric Units (mm)			
6 x 6	10 x 10	15 x 15	21 x 21	152 x 152	254 x 254	381 x 381	553 x 553
8 x 8	12 x 12	16 x 16		203 x 203	305 x 305	406 x 406	
9 x 9	14 x 14	18 x 18		229 x 229	356 x 356	457 x 457	

**Type TL Tegular Lay-in**

CM = CEILING MODULE

CM - 1/4" (6)

3/8" (10)

CM - 1" (25)

15/16" (24) T-BAR

**Type F Finline®**

CM = CEILING MODULE

CM - 5/8" (16)

5/16" (8)

9/16" (14)

**Type M Metal Pan (Snap-in)**

CM = CEILING MODULE

CM - 1/16" (2)

13/16" (21)

**Type SP Spline**

CM = CEILING MODULE

CM - 1/16" (2)

3/8" (10)

For one directional exposed T-Bar or fully concealed grid. 1 spline on two opposite sides. Steel brackets on other.

### Available Discharge Patterns:

**4A 4-way**

**3A 3-way**

**2A 2-way opposite**

**2C 2-way corner**

**1A 1-way**

**61CC and 51CC Diffusers may be ordered in any of the discharge patterns illustrated above.**

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## PERFORMANCE DATA:

### Models 61CC, 61CCD, 51CC, 51CCD

Nom. Neck Size (inches)	Core Area (sq. ft.)	Neck Velocity, FPM	100	200	300	400	500	600	700	800	900	1000	
		Total Pressure	.003	.015	.032	.058	.094	.136	.182	.234	.302	.369	
6 x 6	.20	CFM			60	80	100	120	140	160	180	200	
		Noise Criteria			—	15	21	26	29	32	35	38	
		Throw	4-Way			4-6-9	5-8-13	6-9-15	8-11-17	9-13-20	10-15-23	11-16-26	12-17-28
			3-Way			4-6-10	6-9-14	7-10-16	8-12-19	10-14-22	11-16-25	12-17-28	13-19-31
			2-Way			5-7-11	6-9-15	8-11-17	9-14-21	10-16-24	12-17-28	13-19-31	15-21-39
1-Way				6-9-14	8-11-17	9-14-21	11-16-25	12-18-29	14-20-33	16-23-37	17-25-41		
8 x 8	.38	CFM		75	115	150	190	230	265	305	340	380	
		Noise Criteria			—	17	23	28	31	35	37	40	
		Throw	4-Way		3-4-7	5-7-11	6-9-15	8-11-17	9-13-20	10-16-24	12-17-27	13-18-30	14-20-33
			3-Way		3-5-8	5-7-12	6-9-15	8-12-18	10-14-22	11-16-25	14-18-29	14-20-32	15-22-36
			2-Way		4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-17-28	14-20-32	15-22-36	16-25-40
1-Way			4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	17-24-39	17-26-43	19-30-48		
10 x 10	.61	CFM	60	120	185	245	305	365	430	490	550	610	
		Noise Criteria	—	—	13	20	26	30	34	37	40	43	
		Throw	4-Way	2-3-4	4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-17-27	13-19-21	15-21-35	16-24-39
			3-Way	2-3-5	4-6-9	6-9-14	8-11-17	9-14-21	11-16-26	13-18-30	14-20-33	16-24-38	17-26-42
			2-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-33	16-23-37	17-26-42	19-28-46
1-Way	2-4-6		5-7-12	8-11-17	10-15-27	12-18-29	15-21-24	17-25-40	18-28-45	20-31-49	23-35-55		
12 x 12	.90	CFM	90	180	270	360	450	540	630	720	800	900	
		Noise Criteria	—	—	14	21	27	31	35	38	41	44	
		Throw	4-Way	2-3-5	4-6-9	6-9-14	8-12-18	10-14-22	11-16-26	13-18-30	15-21-34	16-23-38	17-26-42
			3-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-32	16-23-37	17-25-41	19-28-46
			2-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-26	13-19-31	15-22-36	17-25-41	19-28-46	21-31-51
1-Way	3-4-7		6-9-14	8-12-19	11-16-25	13-19-30	16-23-38	18-27-44	20-30-49	22-35-55	25-38-62		
14 x 14	1.24	CFM	125	250	375	500	620	745	870	995	1120	1240	
		Noise Criteria	—	—	15	23	29	33	37	40	43	46	
		Throw	4-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-33	16-23-37	17-26-42	19-28-46
			3-Way	2-4-6	5-7-11	7-10-16	9-14-21	11-16-26	13-19-31	15-22-36	16-25-40	18-28-45	20-31-49
			2-Way	2-4-6	5-7-12	8-11-17	10-15-23	12-18-29	15-21-34	16-25-40	18-28-45	20-31-49	23-35-55
1-Way	3-5-8		6-9-15	9-14-20	12-17-28	15-21-34	17-25-40	19-29-47	22-33-53	25-38-60	28-42-67		
15 x 15	1.44	CFM	145	290	430	575	720	860	1005	1150	1290	1435	
		Noise Criteria	—	—	15	23	29	33	37	40	43	46	
		Throw	4-Way	2-4-6	4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	16-23-38	17-26-38	19-29-47
			3-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-28	13-19-31	15-22-36	17-25-41	19-27-46	21-31-50
			2-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-51	24-36-57
1-Way	3-5-8		6-9-15	10-14-22	12-17-28	15-21-35	17-26-42	20-30-49	22-34-54	25-38-61	28-43-68		
16 x 16	1.64	CFM	165	330	490	655	820	985	1150	1315	1480	1640	
		Noise Criteria	—	—	16	24	29	34	38	41	44	47	
		Throw	4-Way	2-4-6	5-7-11	7-10-16	9-13-20	11-16-25	13-18-30	15-21-35	16-24-39	18-27-44	20-30-49
			3-Way	2-4-6	5-7-12	7-11-16	10-14-22	12-17-27	14-20-32	16-23-38	17-26-43	19-30-48	21-33-52
			2-Way	3-4-7	5-8-13	8-12-18	10-16-24	13-19-31	15-22-36	17-26-42	19-29-46	22-33-53	24-36-58
1-Way	3-5-8		7-10-16	10-14-22	12-18-29	15-22-36	17-26-43	20-31-49	23-35-49	26-40-63	29-45-71		
18 x 18	2.10	CFM	210	420	630	840	1050	1260	1470	1680	1890	2100	
		Noise Criteria	—	—	17	25	30	35	39	42	45	48	
		Throw	4-Way	2-4-6	5-7-12	8-11-17	10-14-22	12-17-27	14-20-33	16-23-43	17-26-43	19-30-48	22-33-53
			3-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-51	24-36-57
			2-Way	3-4-7	6-9-14	9-13-20	12-17-29	14-20-33	17-24-39	18-28-45	21-31-50	24-36-57	27-40-64
1-Way	4-6-9		7-11-16	10-16-24	14-20-32	16-24-39	20-39-47	22-33-53	25-38-60	28-43-68	32-49-78		
21 x 21	2.88	CFM	290	575	865	1155	1440	1730	2020	2305	2595	2885	
		Noise Criteria	—	—	19	27	32	37	41	44	47	50	
		Throw	4-Way	3-4-7	5-8-13	8-12-18	11-16-25	13-18-30	15-22-36	17-26-42	19-30-48	22-34-53	25-38-60
			3-Way	3-4-7	6-9-14	9-13-20	11-16-26	14-20-33	16-24-39	18-28-45	21-31-50	24-37-57	27-40-64
			2-Way	3-5-8	7-10-16	10-15-23	12-18-29	16-23-37	18-27-44	20-31-49	23-35-56	26-41-63	29-45-71
1-Way	4-6-10		8-12-18	12-17-27	15-20-37	18-27-44	21-32-51	25-38-60	28-42-67	32-49-77	36-54-86		

### Performance Notes:

- Pressures are expressed in inches of water gauge.
- Throw values are given for terminal velocities of 150, 100 and 50 fpm, with a cooling temperature differential ( $\Delta T$ ) of 20°F and are based on surface mount units benefiting from the coanda effect. The blade

settings were set for optimum discharge, parallel to the face of the grille, that have the outer blades closest to the frame set with an opening of 1/8" (3) and progressively wider spacing between blades away from the frame. (**Note:** The throw values may be increased or decreased by as much as 20% by changing the blade setting).

- Blades in the full open position
  - reduce the Noise Criteria by 6.
  - multiply the Total Pressure x 0.3.
- The Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



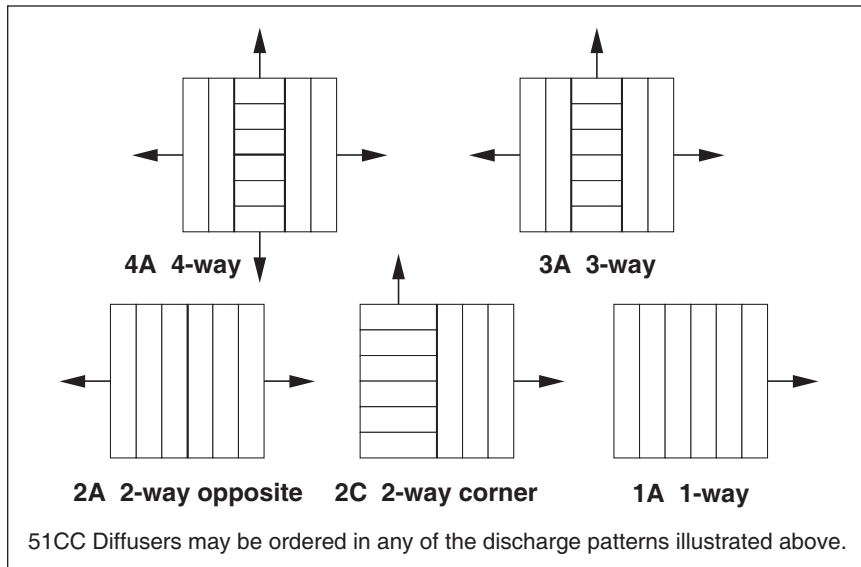
## HOW TO SPECIFY OR TO ORDER

### ALUMINUM CURVED BLADE CEILING DIFFUSERS – MODEL SERIES 51CC

EXAMPLE: 51CC - O - 12 x 12 - 24 x 24 - PL - AW - DMI - 4A - SR08 - -

- |   |  |   |
|---|--|---|
| <p>1. <b>Model</b><br/>51CC Aluminum<br/>51CCD Aluminum with rear vanes</p> <p>2. <b>Damper</b><br/>– None<br/>O Opposed Blade (steel)<br/>OA Opposed Blade (aluminum)</p> <p>3. <b>Neck Size (inches)</b><br/><b>Square:</b><br/>6 x 6, 8 x 8, 9 x 9, 10 x 10, 12 x 12,<br/>14 x 14, 15 x 15, 16 x 16, 18 x 18,<br/>21 x 21</p> <p>4. <b>Ceiling Module Size</b><br/>Standard module<br/><b>Imperial (inches)</b><br/>24 x 24 (default)<br/><b>Metric (mm)</b><br/>600 x 600</p> | <p>5. <b>Frame Type</b><br/>PL Panel Lay-in T-Bar (default)</p> <p>6. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>LBP Light Bronze Paint<br/>MBP Medium Bronze Paint<br/>DBP Dark Bronze Paint<br/>BW British White<br/>MI Mill<br/>PC Prime Coat Paint<br/>SP Special Custom Color</p> <p>7. <b>OBD Finish</b><br/>DMI Mill (default)<br/>DBK Painted Black</p> | <p>8. <b>Blow Pattern</b><br/>4A 4-way (default)<br/>3A 3-way<br/>2C 2-way corner<br/>2A 2-way opposite<br/>1A 1-way</p> <p><b>OPTIONS &amp; ACCESSORIES:</b></p> <p>9. <b>Transition Collar</b><br/>SR Square to Round Transition Collar (04 through 20 specifiy)</p> <p>10. <b>Earthquake Tabs</b><br/>– None (default)<br/>EQT Earthquake Tabs</p> <p><b>OTHER OPTIONS &amp; ACCESSORIES:</b></p> <p><b>Air Balancing Devices</b><br/>(order separately)</p> <p><b>Rectangular Neck:</b><br/>EGL Equalizing Grid (long)<br/>DEGL Damper/Equalizing Grid (long)</p> <p><b>Round Neck:</b><br/>4250 Radial Sliding Blade Damper 6" – 14".<br/>4275 Radial Opposed Blade Damper 5" – 24".<br/>4675 Butterfly Damper 6" – 14".<br/>EGR Equalizing Grid<br/>DEGR Damper/Equalizing Grid</p> |
|---|--|---|

#### Available Discharge Patterns:



#### SUGGESTED SPECIFICATION:

##### Models 51CC, 51CCD – Aluminum

Furnish and install **Nailor Model** (select one) **51CC** or **51CCD** (with deflector vanes) **Aluminum Curved Blade Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a steel panel type frame that has a square neck and contains an extruded aluminum curved blade pack with individually adjustable blades. The blade pack shall be configured in a 4, 3, 2 or 1-way pattern as specified. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional), operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO SPECIFY OR TO ORDER

### STEEL CURVED BLADE CEILING DIFFUSERS – MODEL SERIES 61CC

EXAMPLE: 61CC - O - 12 x 12 - 24 x 24 - PL - AW - DMI - 4A - SR08 - -

- |   |  |  |
|---|--|--|
| <p>1. <b>Model</b><br/>61CC Steel<br/>61CCD Steel with rear vanes</p> <p>2. <b>Damper</b><br/>– None (default)<br/>O Opposed Blade (steel)</p> <p>3. <b>Neck Size (inches)</b><br/><b>Square:</b><br/>6 x 6, 8 x 8, 9 x 9, 10 x 10, 12 x 12,<br/>14 x 14, 15 x 15, 16 x 16, 18 x 18,<br/>21 x 21</p> <p>4. <b>Ceiling Module Size</b><br/>Standard module<br/><b>Imperial (inches)</b><br/>24 x 24 (default)<br/><b>Metric (mm)</b><br/>600 x 600</p> | <p>5. <b>Frame Type</b><br/>PL Panel Lay-in T-Bar (default)</p> <p>6. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>LBP Light Bronze Paint<br/>MBP Medium Bronze Paint<br/>DBP Dark Bronze Paint<br/>BW British White<br/>MI Mill<br/>PC Prime Coat Paint<br/>SP Special Custom Color</p> <p>7. <b>OBD Finish</b><br/>DMI Mill (default)<br/>DBK Painted Black</p> | <p>8. <b>Blow Pattern</b><br/>4A 4-way (default)<br/>3A 3-way<br/>2C 2-way corner<br/>2A 2-way opposite<br/>1A 1-way</p> <p><b>OPTIONS &amp; ACCESSORIES:</b></p> <p>9. <b>Transition Collar</b><br/>SR Square to Round Transition<br/>Collar (04 through 20 specify)</p> <p>10. <b>Earthquake Tabs</b><br/>– None (default)<br/>EQT Earthquake Tabs</p> |
|---|--|--|

#### OTHER OPTIONS & ACCESSORIES:

**Air Balancing Devices**  
(order separately)

#### Rectangular Neck:

EGL Equalizing Grid (long)  
DEGL Damper/Equalizing Grid  
(long)

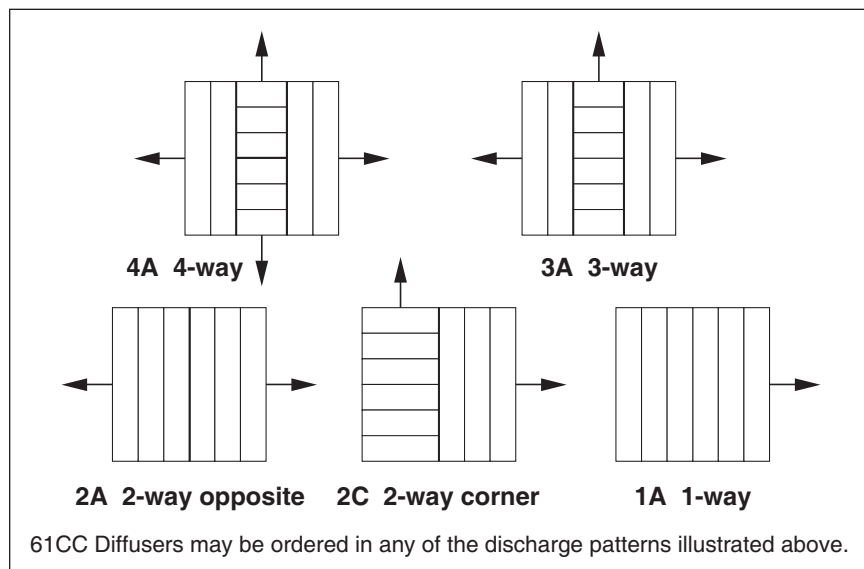
#### Round Neck:

4250 Radial Sliding Blade Damper  
6" – 14".  
4275 Radial Opposed Blade Damper  
5" – 24".  
4675 Butterfly Damper  
6" – 14".  
EGR Equalizing Grid  
DEGR Damper/Equalizing Grid

#### Notes:

1. Consult individual models as to limitations of module, panel, neck size, core styles and accessories combinations.

#### Available Discharge Patterns:



#### SUGGESTED SPECIFICATION:

##### Models 61CC, 61CCD – Steel

Furnish and install **Nailor Model** (select one) **61CC** or **61CCD** (with deflector vanes) **Steel Curved Blade Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall have a corrosion-resistant steel, panel type frame that has a square neck and contains an extruded aluminum curved blade pack with individually adjustable blades. The blade pack shall be configured in a 4, 3, 2 or 1-way pattern as specified. The finish shall be AW Appliance White (optional finishes are available). (Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel, operable from the face of the diffuser, shall be provided with all units.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PRODUCT OVERVIEW OPTIONS AND ACCESSORIES FOR CEILING DIFFUSERS

### MOUNTING FRAMES

- Surface mount adapter frames for plaster and sheet rock ceilings are available in steel and aluminum. They simplify installation, save time and allow ceiling plenum access.

### OPTIONS

- A selection of optional items that are available on ceiling diffusers.

### FINISHES

- Selection of standard and non-standard finishes to choose from.
- Baked enamel paint in custom colors to suit architect.

### AIR BALANCING DEVICES

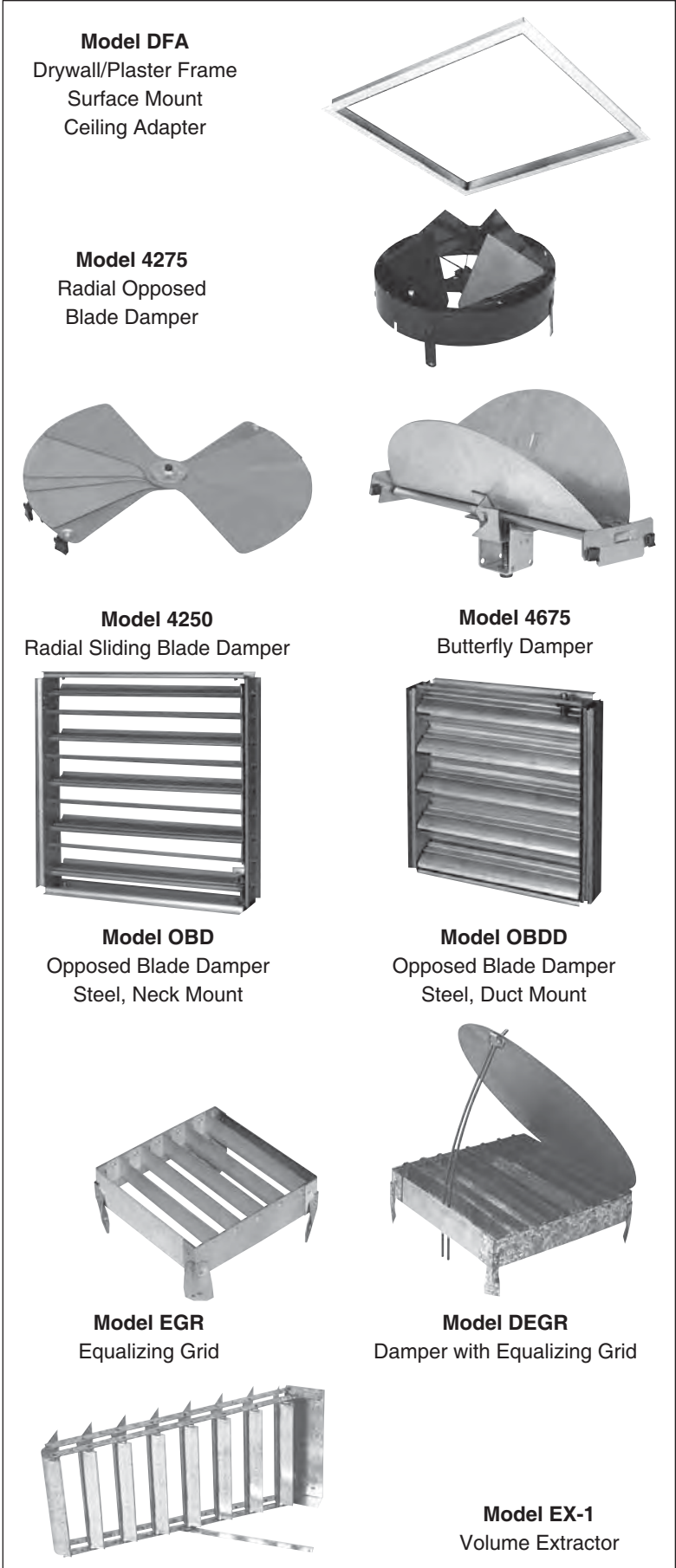
- Dampers for round and square necks.
- Equalizing grids.
- Volume extractors.

Effective air balancing of an HVAC System requires the correct selection, specification and installation of the right product to suit the system design.

Nailor offers a comprehensive range of models and options to cover all applications.

Nailor balancing devices are:

- Easy to select and specify. Many items can be ordered or specified as diffuser accessories.
- Designed to offer a smooth, accurate and predictable response during adjustment for precise air metering.
- Designed to provide quick access and adjustment.
- Engineered with attention to optimizing airflow, in order to minimize noise, turbulence and pressure drop.



## Mounting Frames

### DFS (Steel), DFA (Aluminum) Drywall/Plaster Frame

The DF Series are for mounting in finished drywall or plaster ceilings to accept any standard lay-in type grille, register, diffuser or other ceiling component. Installation of the air outlet is as simple as inserting them in a standard lay-in T-Bar type ceiling system.

The DF Series simplifies and reduces installation time compared with surface mount type diffusers. This is especially true where flexible duct is utilized.

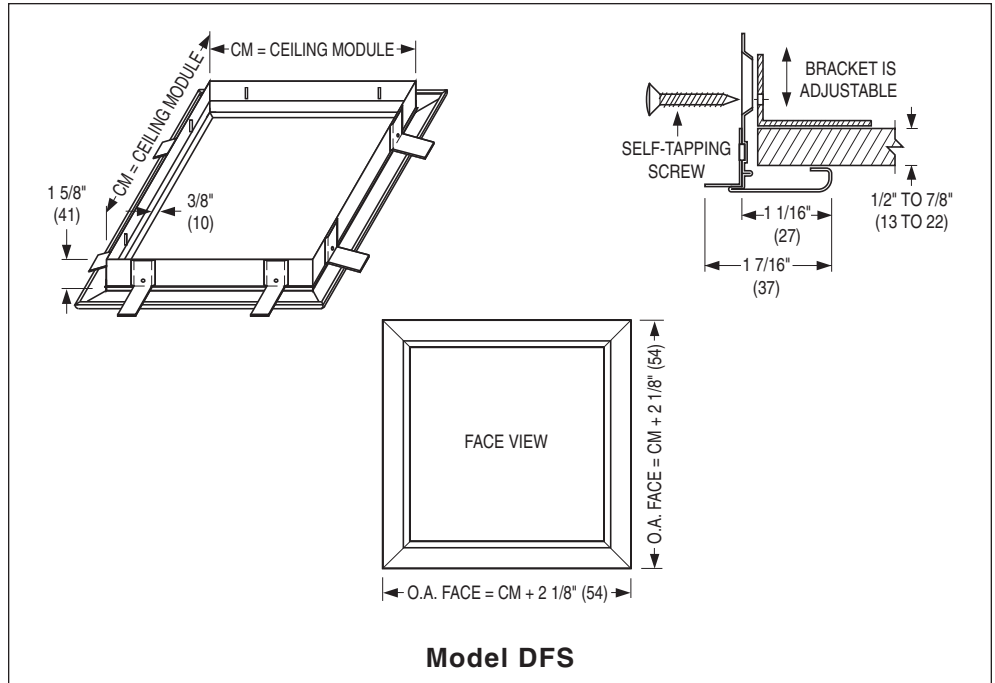
A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access doors. The finished appearance is professional and aesthetically pleasing.

**Standard Finish:** AW Appliance White. Other finishes are available.

**Model DFS** is installed quickly and easily using adjustable fastening angle brackets which adapt to various ceiling thicknesses. Frames are roll-formed corrosion-resistant steel with staked and mitered corners.

IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600

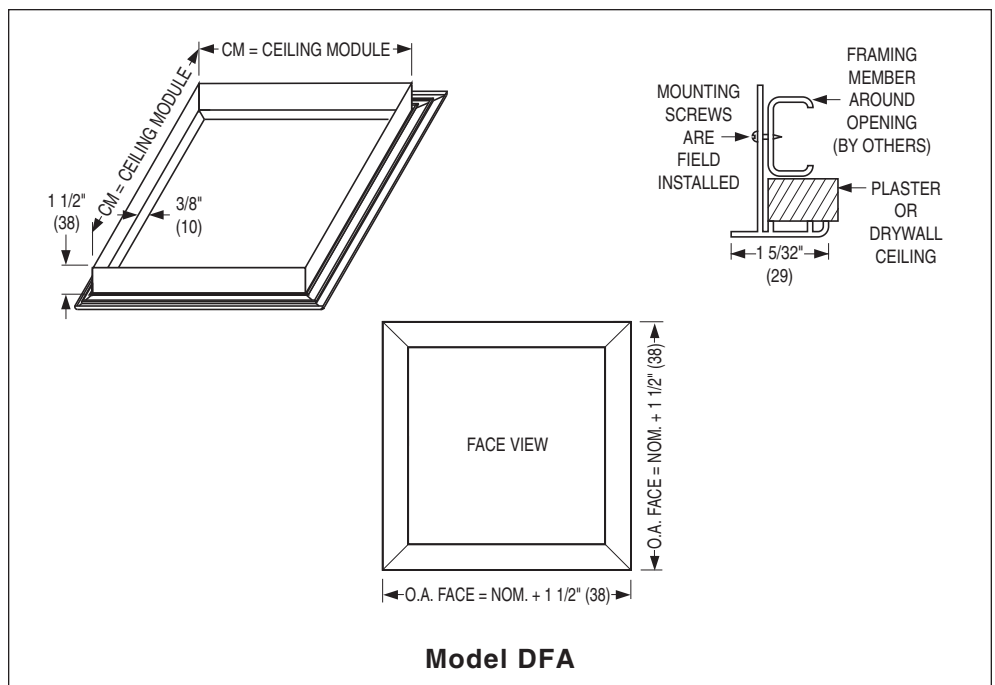
Ceiling opening = CM + 1/4" (6)



**Model DFA** requires framing of the ceiling opening with 'C' channel or wood studs for attachment with mounting screws (by others).

IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600
36 x 24	914 x 610	900 x 600
48 x 12	1219 x 305	1200 x 300
48 x 24	1219 x 1219	1200 x 600
60 x 12	1524 x 305	1500 x 300

Ceiling opening = CM + 1/4" (6)



## Options and Finishes

### OPTIONS:

#### EQT Earthquake Tabs

Earthquake (seismic) retaining safety tabs are available; factory installed on diffusers when required by local building code that units be independently restrained and safety wired to supporting structure.

#### SC Safety Chain

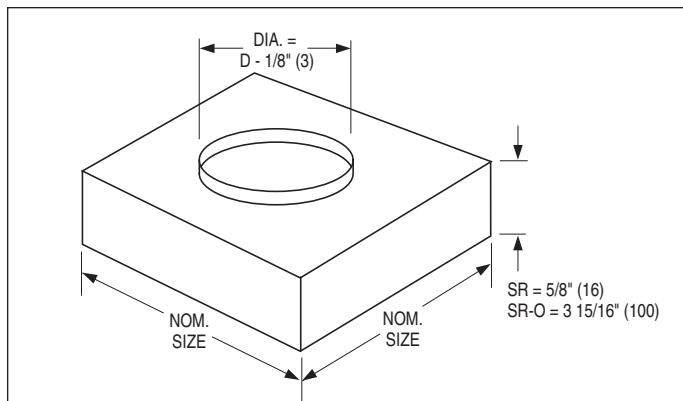
An optional safety chain is available on all of Nailor's round ceiling diffusers.

#### GK Foam Gaskets

Foam gasket is available on a selection of surface mount diffusers.

#### SR Square to Round Transition Collar

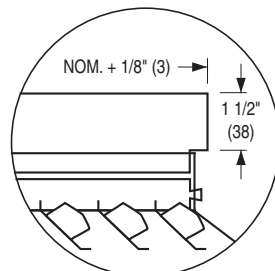
Transition collars are for use on Nailor square neck diffusers where a round duct connection is required. Round necks are sized for flexible or hard duct connection. SR's are shipped loose for field installation and are supplied with barbed S clips.



Square Neck Size (inches)	Round Neck Size D (inches)
6 x 6	4, 5, 6
8 x 8	4, 5, 6, 7, 8
9 x 9	6, 7, 8, 9
10 x 10	6, 7, 8, 9, 10
12 x 12	6, 8, 9, 10, 12
14 x 14	6, 8, 9, 10, 12, 14
15 x 15	6, 8, 10, 12, 14, 15
16 x 16	6, 8, 10, 12, 14, 15, 16
18 x 18	6, 8, 10, 12, 14, 15, 16, 18
20 x 20	6, 8, 10, 12, 14, 15, 16, 18, 20
21 x 21	6, 8, 10, 12, 14, 15, 16, 18, 20
22 x 22	6, 8, 10, 12, 14, 16, 18, 20
24 x 24	6, 8, 10, 12, 14, 15, 16, 18, 20, 24

#### ONA Offset Neck Adaptor

Fits outside duct (if a damper is required; order separately for remote mount. See Model OBDD).



### EXTERNAL FOIL BACK INSULATION

#### EX External Insulation Blanket - Factory Installed

An optional 1 1/2" thick foil back insulation is available installed on a majority of Nailor ceiling diffusers. The insulation has an R value of 4.2.

#### EXB External Insulation Blanket - Ships Loose

This insulation is the same as above but is shipped loose for field installation.

#### MIB Molded Insulation Blanket - Factory Installed

The molded insulation is available as an option on various 24" x 24" square diffusers. The insulation has an R value of 6.0.

### FINISHES:

#### AW Appliance White (standard)

A white finish that is currently the industry standard. Closely matches standard finishes supplied by the majority of T-Bar ceiling system manufacturers. (No additional cost).

#### AL Aluminum

Contains suspended metal particles to give the appearance of a silver grey metallic or anodized finish. (No additional cost).

#### BW British White

Matches most white ceiling tiles. (No additional cost)

#### BK Black

This black has a matte finish. (Additional cost)

#### BA Black Interior/Appliance White Face

Optional on perforated diffusers. AW Appliance White is applied on the perforated face and BK Black is applied on the interior of the backpan for a discreet appearance. (No additional cost)

#### SP Special

The Nailor range of diffusers are available in any color for special architectural consideration. Custom colors are individually mixed to match customer supplied samples. (Additional cost)

### ALSO AVAILABLE:

#### MI Mill Finish

(No additional cost).

#### PPA Paint Prepared Aluminum (Washed only)

Aluminum models only. (No additional cost).

#### PC Prime Coat Paint

(Additional cost).

## Air Balancing Devices

### Radial Opposed Blade Damper

A unique method of controlling volume through a diffuser providing premium design quality and performance. The multi-blade perimeter design offers true radial flow at any setting.

A screwdriver slot, accessible through the diffuser, requires only a half turn to adjust from fully closed to fully open. The damper is designed to fit directly on the neck of the diffuser. Simple, convenient and accurate installation and operation.

Available with an optional operator arm. **Model 4275-OA** allows damper adjustment on the **UNI Diffusers** without removing the inner cone assembly.

**Model 4275**

	Nominal size (inches)							Nominal Size (mm)								
	5	6	8	10	12	14	15	16	127	152	203	254	305	356	381	406
<b>A</b>	4 7/8	5 7/8	7 7/8	9 7/8	11 7/8	13 7/8	14 7/8	15 7/8	124	149	200	251	302	352	378	403
<b>B</b>	1 1/8	1 5/8	2 1/2	2 1/4	2 7/8	3 3/8	3 3/4	4 3/8	29	41	64	57	73	86	95	111
<b>C</b>	1 5/8			2 1/2				41				64				

### Radial Sliding Blade Damper

The **Model 4250** is a neck mounted radial sliding blade damper used in round neck diffuser applications to provide fine volume control. Gang operated radial blades slide at right angles to the duct with minimal protrusion above the diffuser neck; allowing the damper to work effectively in flexible duct applications.

Available in sizes 6", 8", 10", 12" and 14" (152, 203, 254, 305 and 356).

**Model 4250**

### Butterfly Damper

The **Model 4675 Butterfly Damper** is an economical damper for volume balancing in round neck diffusers. Adjustable friction pivots hold the blades at the required setting. Adjusted from the face of the diffuser.

Not recommended for use with flexible duct.

**Model 4675**

	Nominal Size (inches)					Nominal size (mm)				
	6	8	10	12	14	152	203	254	305	356
<b>A</b>	5 7/8	7 7/8	9 7/8	11 7/8	13 7/8	149	200	251	302	352
<b>B</b>	2 1/2	3 1/2	4 1/2	5 1/2	6 1/2	64	89	114	140	165



**Air Balancing Devices**

**OPPOSED BLADE DAMPERS**

**Nailor** Opposed Blade Dampers feature heavy gauge, roll-formed, corrosion-resistant steel or extruded aluminum blades and frame with miscellaneous steel components. Mill finish.

The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

**DIFFUSER MOUNT MODELS:**

**OBD Steel**

**OBD-A Aluminum**

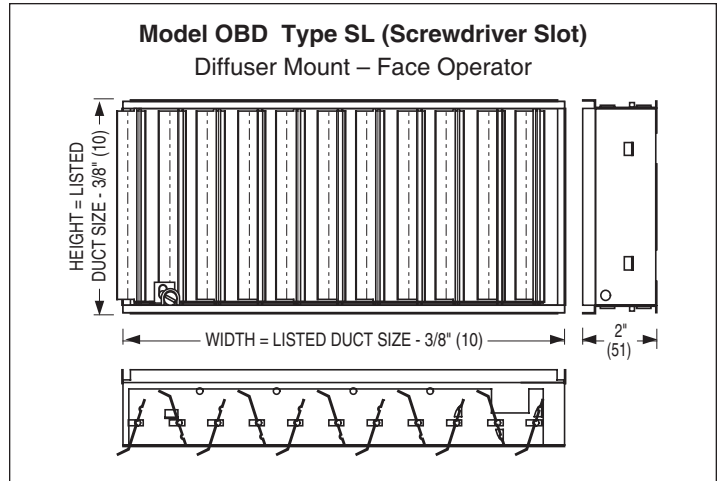
This style of damper mounts directly on the neck and are sized to suit most **Nailor** diffusers. Uses steel barbed S-clips for easy field mounting or removal when ordered separately. Supplied as standard with a screwdriver slot operator (Type SL).

Can be specified as an integral part of the diffuser model by adding a - O (steel) or - OA (aluminum) suffix to the diffuser model.

Available with Type DL Lever Operator for use with 6200, 6400 and 6500 Series Pattern Diffusers and 6600 Series Plaque Diffusers. Permits balancing without removing the diffuser inner core assembly.

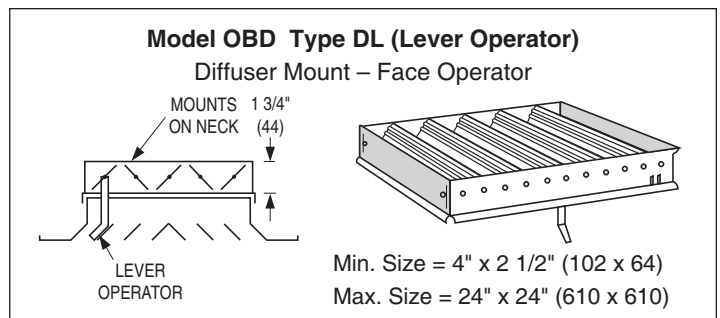
**Type SL Operator**

The SL Operator incorporates a screwdriver slot, which adjusts from the face of the diffuser. This operator is the standard supplied when ordered separately.



**Type DL Operator**

The DL Operator incorporates a lever that adjusts without the use of tools. The lever operator extends through the diffuser face.



## Air Balancing Devices

### DUCT MOUNT MODELS:

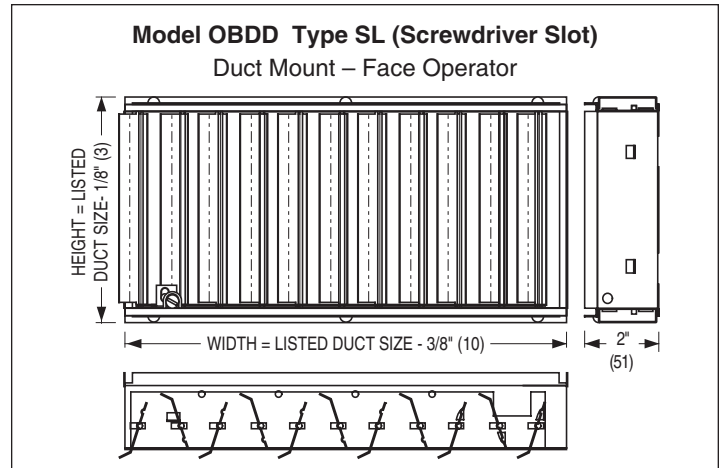
**OBDD Steel**

**OBDD-A Aluminum**

Designed to be field mounted independently in the duct, separate from and behind the diffuser. They are sized to suit and offer a friction fit in nominally sized ducts. They are secured with 1/2" (13) long sheet metal screws (by others) through the double walled sub-frame. Min. Size = 4" x 2 1/2" (102 x 64). Max. Size = 24" x 24" (610 x 610).

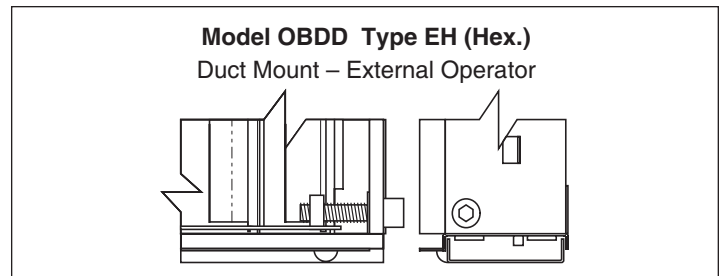
### Type SL Operator

These models are supplied with a screwdriver slot face operator that is accessed from inside the duct by removing the diffuser.



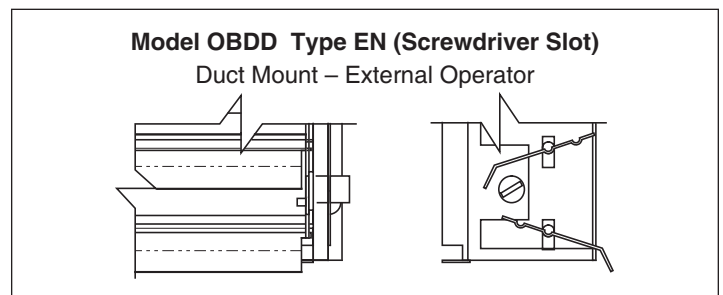
### Type EH Operator

These duct mount models feature an external 3/16" (5) hex operator accessible from outside the duct; from the side of the duct when blades run vertically and from underneath the duct when blades run horizontally.



### Type EN Operator

These duct mount models feature an external glass-filled nylon screwdriver slot operator accessible from outside the duct; from underneath the duct when blades run vertically, and from the side of the duct when blades run horizontally.



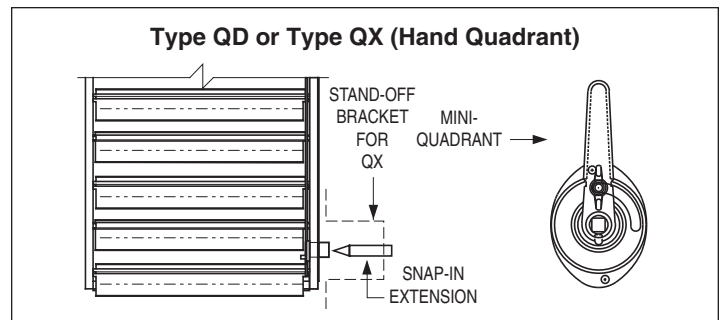
### Type QD Operator \*

A snap-in shaft extension with 'mini' hand locking quadrant is available as an optional accessory.

### Type QX Operator \*

A snap-in shaft extension with 'mini' hand locking quadrant and 2" (51) stand-off bracket for externally insulated ducts. Order damper with blades parallel to horizontal duct dimension to ensure quadrant is located on vertical side of the duct.

\*Not available on Model OBDD-A

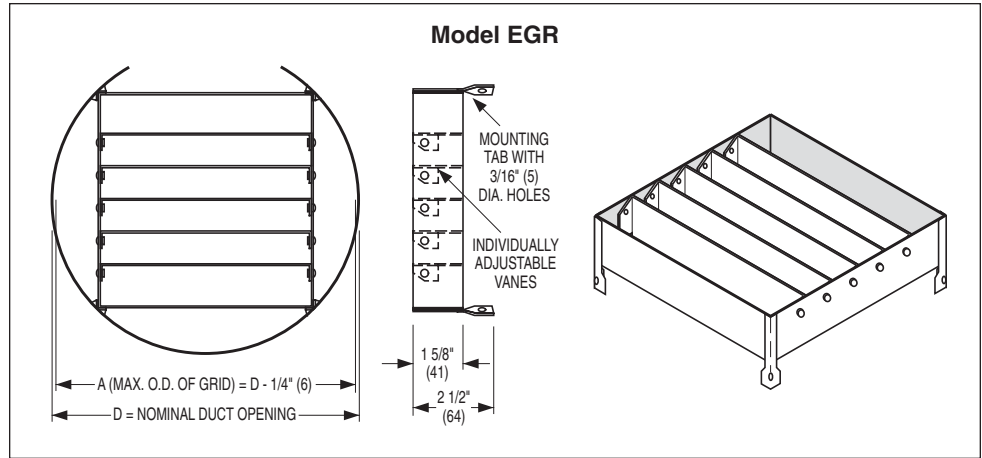


**Air Balancing and Directional Control Devices**

**Equalizing Grid for Round Necks**

The **Model EGR** is a duct mounted grid that equalizes the airflow into the branch duct or diffuser neck and provides directional control. They are shipped loose for field installation. The individually adjusted vanes are friction pivoted to hold the desired setting.

Recommended method of installation is flush with the take-off collar and with the vanes perpendicular to the direction of the approaching airflow.

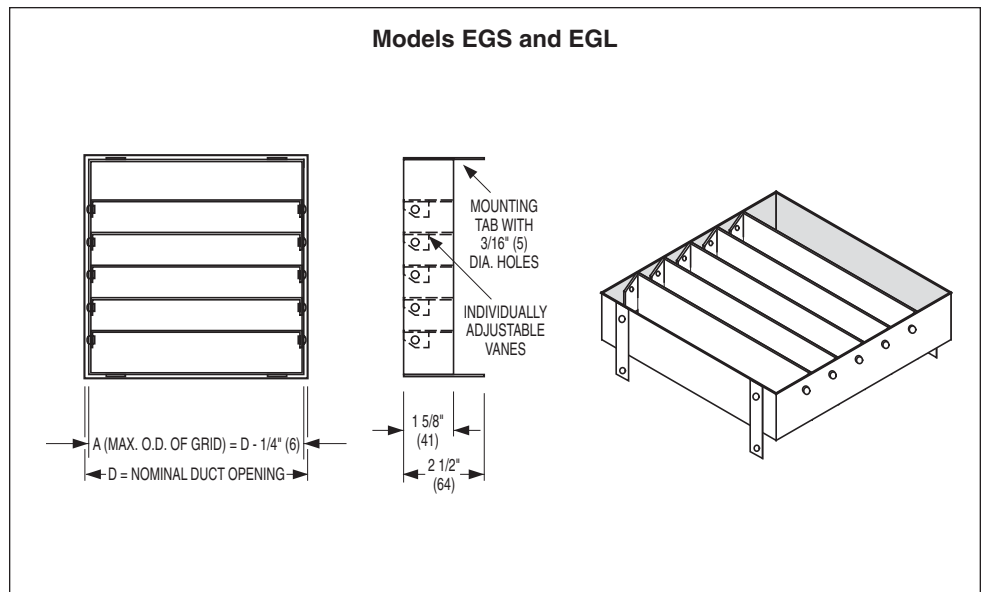


**Equalizing Grid for Square and Rectangular Necks**

The **Models EGS and EGL** are duct mounted grids that equalize the airflow into the branch duct or diffuser neck and provide directional control. They are shipped loose for field installation. The individually adjusted vanes are friction pivoted to hold the desired setting.

Recommended method of installation is flush with the take-off collar and with the vanes perpendicular to the direction of the approaching airflow.

The suffix 'S' or 'L' indicates blades are parallel to the short or long dimension.



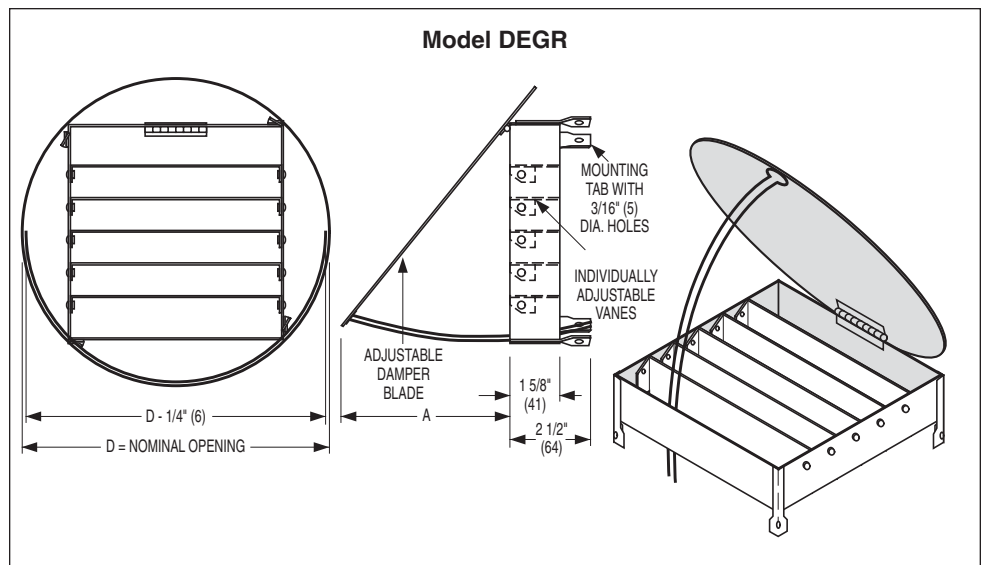
**Damper with Equalizing Grid for Round Necks**

The **Model DEGR** is a duct mounted combination damper with equalizing grid.

It performs as a volume extractor with dampering to near shut-off as well as equalizing the airflow into the branch duct or diffuser neck and providing directional control.

The individual adjustable vanes are friction pivoted to hold the desired setting.

Damper blade may be adjusted to any angle and locked in position with adjusting wires under screw heads.



**Air Balancing and Directional Control Devices**

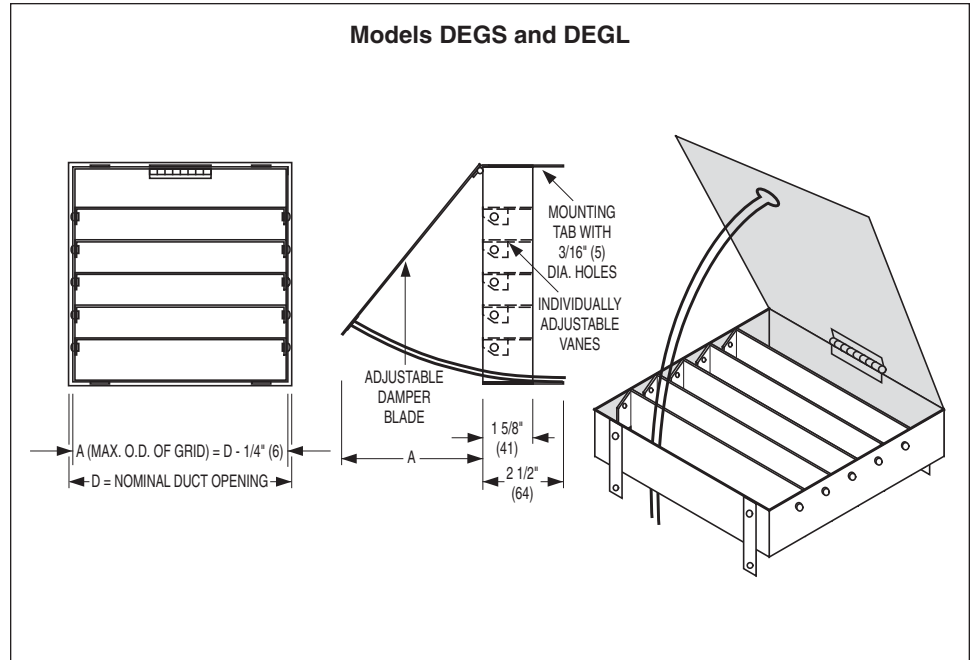
**Damper with Equalizing Grid for Square and Rectangular Necks**

The **Models DEGS** and **DEGL** are duct mounted combination dampers with equalizing grids. They perform as a volume extractor with dampering to near shut-off as well as equalizing the airflow into the branch duct or diffuser neck and providing directional control.

The individual adjustable vanes are friction pivoted to hold the desired setting.

Damper blade may be adjusted to any angle and locked in position with adjusting wires under screw heads.

The suffix 'S' or 'L' indicates blades are parallel to the short or long dimension.



**D**

**CEILING DIFFUSERS**

## Volume Extractors

### MODEL SERIES

**EX** Blades on 2" centers

**EXD** Blades on 1" centers

The **Model Series EX Volume Extractors** uniformly divert air from the main duct into the branch take-off and across the face of a grille or diffuser. Gang-operated parallel blades available on 2" (51) or 1" (25) centers pivot from full open to full closed with blades overlapping for shut-off. The curved blade design improves airflow by reducing turbulence, thereby reducing noise and pressure drop.

Specify or order: Length x Width. (Length is first dimension. Blades are parallel to width, second dimension).

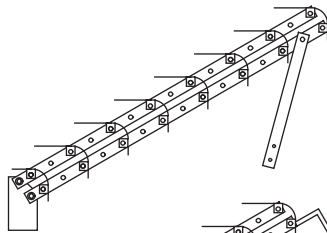
### FEATURES:

- Material: Galvanized steel.
- Minimum size: 6" x 4" (152 x 102).
- Maximum size: 36" x 36" (914 x 914).

### Operator Types

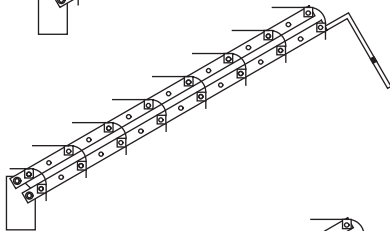
#### EX/EXD-1

Standard unit with adjusting strap.



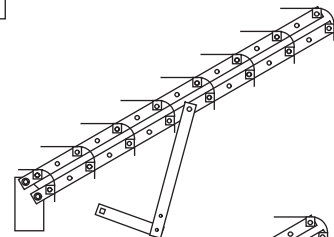
#### EX/EXD-1-R

Rod operator for external operation.



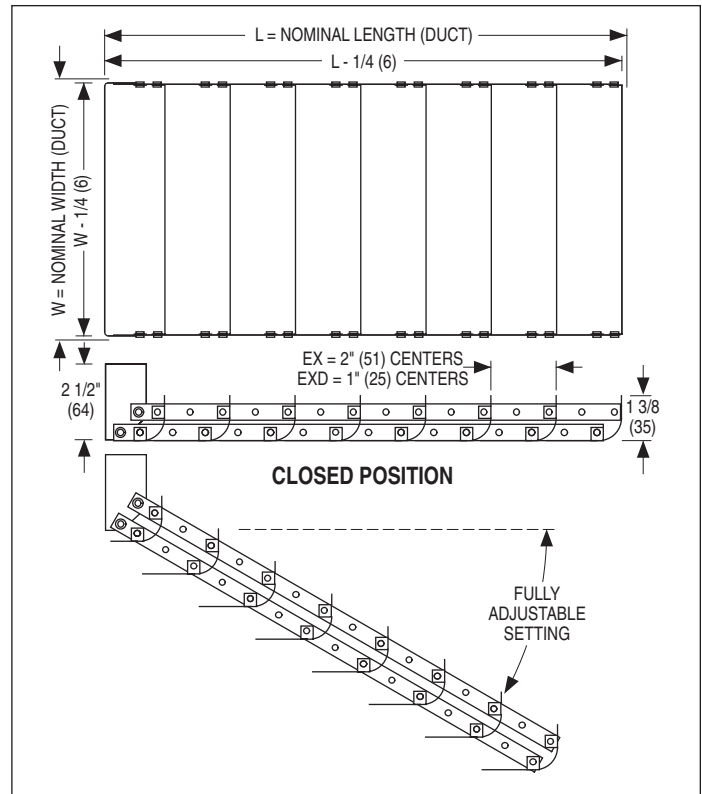
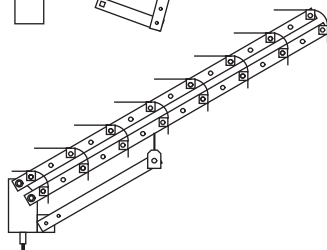
#### EX/EXD-2

Linkage with 7/16" (11) square hole (2 per unit). Remote operator (eg. Young Regulator #1) by others.



#### EX/EXD-3

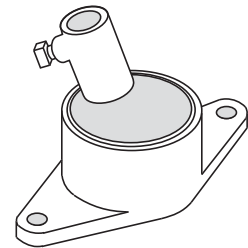
Screw gear operator. Adjusts with 3/16" (5) wrench (by others).



### Optional Accessories

#### RLD

Locking device for Models **EX/EXD-1-R**.



## Quadrant Blanks for Models UNI and AUNI Round Neck Plaque Diffusers



### Model/Accessory: 4695/QB

Model 4695 Quadrant Blanks are specifically designed for use with the UNI Series Square Plaque Ceiling Diffusers. The Quadrant Blanks are constructed of aluminum and the "notched" appearance of the flange features pre-cut grooves that form around the concealed neck bracketry in the diffuser to provide 1, 2, or 3-way discharge as required. The Quadrant Blanks are available for all neck sizes, (to blank-off areas greater than 90° [3-way blow], multiple quantities must be ordered. 2-way blow requires a quantity of two and 1-way blow requires a quantity of three, per diffuser. Quadrant blanks are shipped loose from the factory for trouble-free installation in the field [by others]).

**\*\*Nailor recommends that ALL Quadrant Blanks are affixed prior to installation of the diffuser\*\***

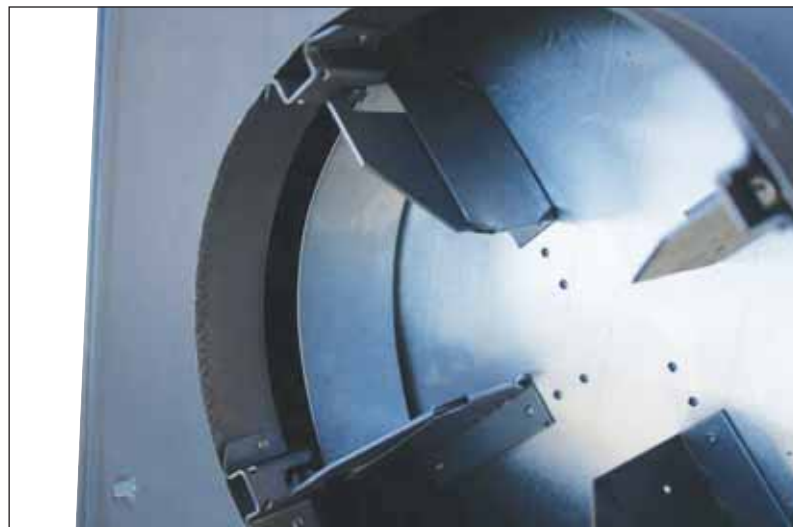
### Pre-Installation (Required Items)

1. Protective eyewear or safety glasses
2. Pair of work gloves
3. Flat Head Screwdriver (UNI & UNI2 models)

### Installation Instructions

1. A Quadrant Blank is a notched aluminum flange that is shipped loose from the factory and installed in the field (by others).
2. Prior to installation, gently bend the center of the Quadrant Blank flange to 90°, additionally bending the end notches to 90° for trouble-free installation.
3. Once the Quadrant Blank flange is formed properly, position the flange behind the neck bracketry, closest to the round inlet (in the desired location for directional blow). Prior to fastening into place, make sure that the flange is even on both sides of the neck bracketry and flush to the bottom of the backpan.
4. Installing one side at a time, form the end of the notch around the neck bracketry (once completed, repeat on the opposite side).

**Note:** To prevent excessive wear to the Quadrant Blanks, do not bend repeatedly!



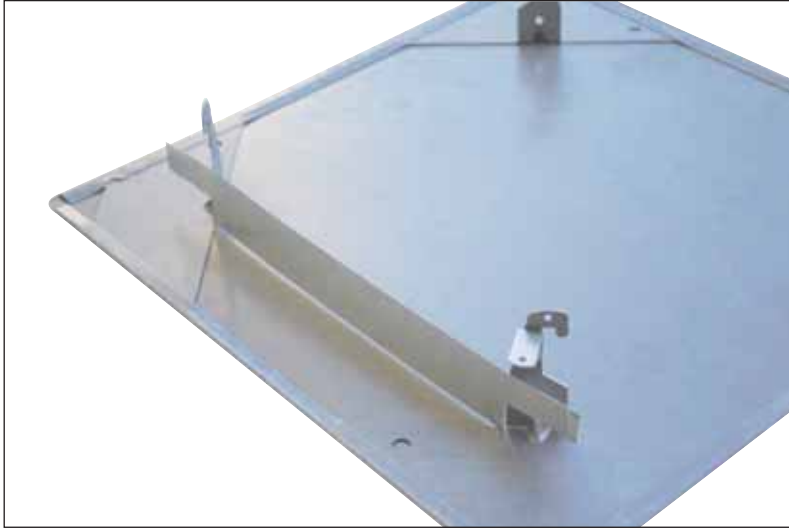
### Quadrant Blanks

4695 QB for Models UNI, AUNI Round Neck Plaque Diffusers

- QB3 3-Way Blow
- QB2 2-Way Blow
- QC2 2-Way Corner Blow
- QB1 1-Way Blow



**Quadrant Blanks for Model UNI2 Square Plaque Diffusers**



**Model/Accessory: 4693/QB**

Model 4693 Quadrant Blanks are designed specifically for use with the UNI2 Series Square Plaque Ceiling Diffusers. The Quadrant Blanks are constructed of an aluminum T-shaped flange that forms around the corner post bracketry, providing 1, 2, or 3-way discharge as required. Quadrant Blanks are available in all neck sizes, (to blank-off areas greater than 90° [3-way blow], multiple quantities must be ordered. 2-way blow requires a quantity of two and 1-way blow requires a quantity of three per diffuser. Quadrant Blanks are shipped loose from the factory for trouble-free installation in the field (by others).

**\*\*Nailor recommends that ALL Quadrant Blanks are affixed prior to installation of the diffuser\*\***

**Required Items**

1. Protective eyewear or safety glasses
2. Pair of work gloves
3. Flat Head Screwdriver (UNI & UNI2 models)

**Installation Instructions**

1. The Quadrant Blank is shipped loose from the factory and shall be installed in the field (by others).
2. Prior to installation, position and center the T-shaped flange on the outside of the corner posts so that the extension ears are on top and the base of the flange is on the bottom, resting flush against the back of the plaque face. Flange ears shall be equal distance apart before folding around the corner post bracketry.
3. Carefully bend one side of the flange ears around the corner post bracketry (repeat on the opposite side of the post).
4. If installed properly, the base of the flange shall rest flush against the plaque face, ensuring that the airflow is restricted in that area. The ears of the flange shall be securely fastened around the corner post bracketry, equal distance apart on both sides, nearly touching the center of the corner post.

**Note:** To prevent excessive wear to the Quadrant Blanks, do not bend repeatedly!

**Quadrant Blanks**

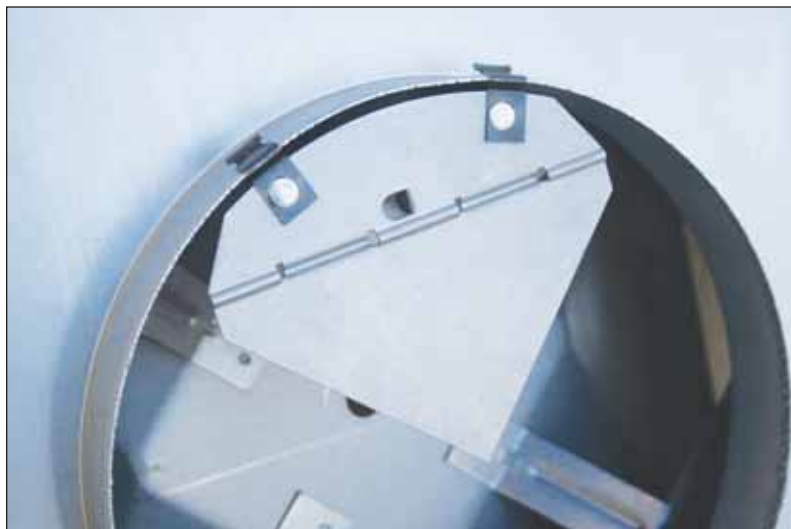
4693 for Model UNI2 Square Plaque Diffusers

- QB3 3-Way Blow
- QB2 2-Way Blow
- QC2 2-Way Corner Blow
- QB1 1-Way Blow

**Quadrant Blanks for Models RNS3 and ARNS3 Round Neck Diffusers**

**D**

**CEILING DIFFUSERS**



**Quadrant Blanks**  
4293 QB for Models RNS3,  
ARNS3 Round Neck Diffusers

- QB3 3-Way Blow
- QB2 2-Way Blow
- QC2 2-Way Corner Blow
- QB1 1-Way Blow

**Model/Accessory: 4293/QB**

Model 4293 Quadrant Blanks are designed specifically for use with the RNS3 Series Square Ceiling Diffusers. The Quadrant Blanks are constructed of steel with S-Clip brackets attached to the pie-shaped piece for insertion onto the diffuser neck collar in order to provide 1, 2, or 3-way discharge as required. Quadrant Blanks are available for all neck sizes, (to blank-off areas greater than 90° [3-way blow], multiple quantities must be ordered. 2-way blow requires a quantity of two and 1-way blow requires a quantity of three, per diffuser. Quadrant Blanks are shipped loose from the factory for trouble-free installation in the field [by others]).

**\*\*Nailor recommends that ALL Quadrant Blanks are affixed prior to installation of the diffuser\*\***

**Required Items**

1. Protective eyewear or safety glasses
2. Pair of work gloves

**Installation Instructions**

1. The steel, pie-shaped Quadrant Blanks with S-Clips are shipped loose from the factory and shall be installed in the field (by others).
2. Prior to installation, properly position the QB in the neck of the diffuser for desired directional blow. The round edge of the QB shall face the outside of the inlet, while the knife edge shall face the center of the inlet.
3. The S-Clips connected to the QB shall be securely pressed onto the neck of the diffuser. Once in place, the Quadrant Blank shall be held horizontally in place at the desired location.
4. For additional Quadrant Blank installation, please repeat steps 1 – 3.

**Quadrant Blanks for Model Series RNS and RNSA Round Neck Diffusers**



**Model/Accessory: 4295/QB**

Model 4295 Quadrant Blanks are designed specifically for use with the RNS Series Stamped Square Ceiling Diffusers. The Quadrant Blanks are constructed of steel, featuring a pie-shaped piece with a hinge pin that is pre-installed through pre-set holes for insertion into the riveted neck bracketry located in the diffuser, providing 1, 2, or 3-way discharge as required. Quadrant Blanks are available in all neck sizes, (to blank-off areas greater than 90° [3-way blow], multiple quantities must be ordered. 2-way blow requires a quantity of two and 1-way blow requires a quantity of three, per diffuser. Quadrant Blanks are shipped loose from the factory for trouble-free installation in the field [by others]).

**\*\*Nailor recommends that ALL Quadrant Blanks are affixed prior to installation of the diffuser\*\***

**Required Items**

1. Protective eyewear or safety glasses
2. Pair of work gloves

**Installation Instructions**

1. The steel, pie-shaped Quadrant Blank is shipped loose with a hinge pin pre-installed through pre-set holes, to provide trouble-free installation, in the field (by others).
2. Prior to installation, properly position the QB around the neck of the diffuser for desired directional blow. The elevated eyehole located above the hinged pin on the quadrant blank, shall be facing in the upright position before the piece is installed in the diffuser. The round edge of the QB shall face the outside of the inlet collar, while the knife edge shall face the center of the inlet.
3. The hinge pins on the QB shall slide securely into the pre-set holes of the riveted neck bracketry located in the diffuser inlet collar. Once in place, the knife edge of the QB shall rest on top of the concealed neck bracketry.
4. For additional Quadrant Blank installation, repeat steps 1 – 3.



**Quadrant Blanks**

4295 QB for Models RNS, ARNS, RNS2, RNSA1, RNSA2, ARNSA Round Neck Diffusers

- QB3 3-Way Blow
- QB2 2-Way Blow
- QC2 2-Way Corner Blow
- QB1 1-Way Blow

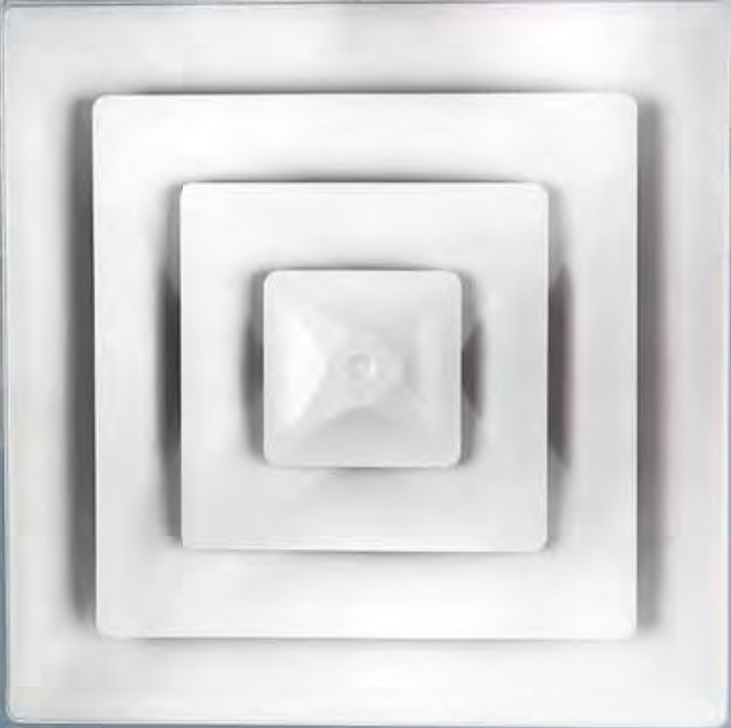
**NOTES:**

**D**

**CEILING DIFFUSERS**



# FIRE RATED PRODUCTS



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## GENERAL PRODUCT OVERVIEW

### Fire Rated Products

Nailor offers a wide variety of fire rated products that are designed to provide the unobtrusive appearance required for architectural excellence and the high engineering performance required for use in heating and cooling applications. Ceiling diffusers, plenum slot diffusers and even ductless return air grilles are some of the many styles that are available.

Nailor's selection of fire rated products are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

### FIRE RATED PATTERN CEILING DIFFUSERS

Nailor pattern ceiling diffusers are a high capacity louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. Available in a variety of core styles and neck sizes: a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit particular requirements.

#### Square Neck –

Fixed Pattern	Model 6500FRD	<b>Page E7</b>
Adjustable Pattern	Model 6550FRD	<b>Page E7</b>
Induction Vanes	Model 6500IVFRD	<b>Page E7</b>

#### Round Neck –

Fixed Pattern	Model 6505FRD	<b>Page E10</b>
Adjustable Pattern	Model 6555FRD	<b>Page E10</b>
Induction Vanes	Model 6505IVFRD	<b>Page E10</b>



Model 6500FRD



Models 4010, 4010-1, 4420

### FIRE RATED STAMPED SQUARE CEILING DIFFUSERS

Nailor 4000 and 4400 series models are a fire rated version of the popular RNS series. They have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance.

#### Fixed Air Pattern – Round Neck

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#### Adjustable Pattern – Round Neck

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#### Fixed Pattern 2-Cone – Round Neck

Full Face	Models 4410, 4420	<b>Page E22</b>
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### FIRE RATED ARCHITECTURAL CEILING DIFFUSERS

These Nailor models are a fire rated version of the popular UNI series. Designed with the architect in mind, the diffusers in this series are fashioned to blend in with most ceiling types to create the ultimate aesthetic look. Nailor has made available the standard UNI with a fixed 360° air diffusion pattern.

#### Flat Panel – Round Neck

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Surface Mount	Models 4410-UNI Type S (ULC only)	<b>Page E28</b>



Model 4410-UNI

## FIRE RATED PERFORATED DIFFUSERS

The fire rated diffusers in this series are the most popular choices of Nailor's 4300 series perforated diffusers. Models included are the adjustable pattern controller design for ultimate performance flexibility. Available in both supply and return air styles with a choice of a flush or drop face.

### Supply Air Adjustable Pattern Deflectors – Round Neck

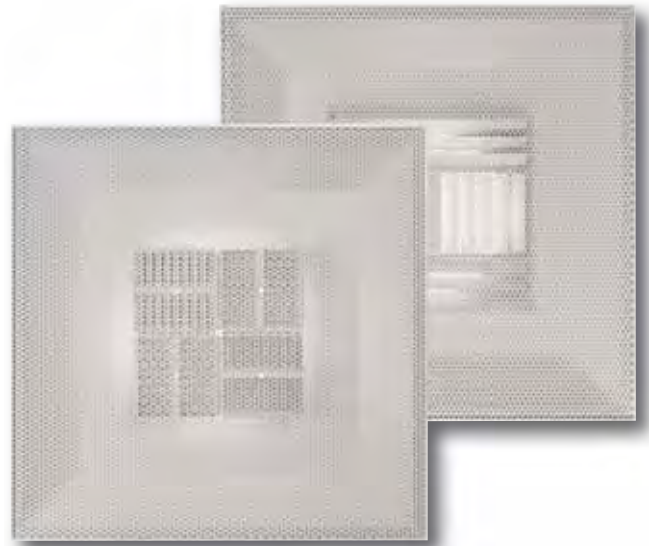
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Drop Face	Models 4075R, 4085R	<b>Page E31</b>
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### Supply Air Curved Blade Pattern Controllers – Round Neck

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Drop Face	Models 4075CB, 4085CB	<b>Page E37</b>



Models 4080, 4080CB



Model 7500FRD

## FIRE RATED MODULAR CORE DIFFUSERS

Nailor 7500 Series Modular Core Diffusers feature four individual spring-loaded 'modular' pattern controllers mounted in the neck. They can be adjusted before or after installation, to provide a 1, 2, 3 or 4-way discharge pattern. The diffuser maintains a horizontal ceiling pattern from maximum to minimum flow.

**Square Neck –**  
Model 7500FRD

**Page E40**

**Round Neck –**  
Model 7505FRD

**Page E40**

## FIRE RATED DUCTLESS RETURN GRILLES

Model Series 4100 Ductless Return Grilles have been designed to complement the Nailor range of fire rated supply diffusers. The grilles have been tested and classified for use without the requirement of duct work or supplementary support, they simply lay in place. The grilles are available in three styles, a perforated face, an eggcrate face or an open face model that can accommodate a grille by others.

### Perforated Face –

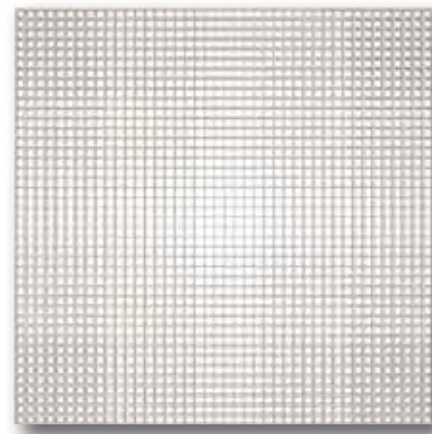
Models 4111, 4112, 4113 **Page E44**

### Eggcrate Face –

Models 4114, 4115, 4116 **Page E44**

### Open Face (grille by others) –

Models 4117, 4118, 4119 **Page E44**



Model 4116

## FIRE RATED DUCTLESS RETURN FILTER GRILLES

Model Series 4100 Ductless Return Air Filter Grilles have been designed to complement the Nailor range of fire rated supply diffusers. These grilles are manufactured to accommodate a throw away filter by others. The grilles have been tested and classified for use without the requirement of duct work or supplementary support, they simply lay in place. The filter grilles are available in two styles, a louvered face or an eggcrate face.

### Louvered Face –

Models 4121, 4122, 4123

Page E47

### Eggcrate Face –

Models 4124, 4125, 4126

Page E47



Model 4123



Model 4129

## FIRE RATED DUCTLESS RETURN CEILING DAMPERS FOR OPTIONAL GRILLE

A unique Nailor product that features a raised ceiling radiation damper mounted on an extended support frame above the ceiling line. It will accommodate any type of return air grille, filter grille or register manufactured from steel or aluminum. This allows the design engineer greater flexibility.

### Optional Grilles –

Models 4127, 4128, 4129

Page E50

## FIRE RATED OPEN FACE PLENUM DIFFUSERS

Nailor 5200 Series Fire Rated Plenums are designed for lay-in T-Bar. They can accommodate steel or aluminum grilles, registers or linear type slot diffusers and bar grilles. A turned in leg design is available to suit lay-in type cores and a hemmed leg design is available to accommodate concealed mounting angles.

### Turned In Leg –

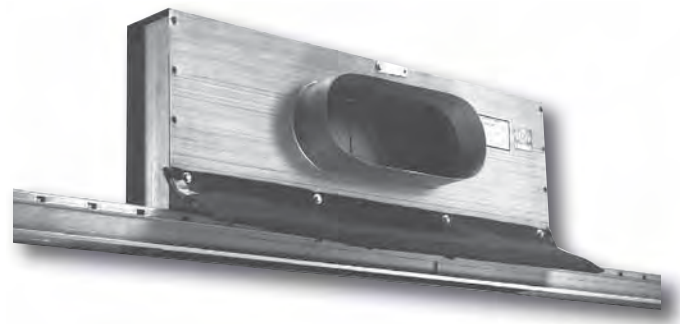
Model 5200 Type L

Page E53

### Hemmed Leg –

Model 5200 Type S

Page E53



Model 5200

## FIRE RATED PLENUM SLOT DIFFUSERS

Nailor 5500 Series Plenum Slot Diffusers are designed for lay-in T-Bar. They are available for supply and return air. The supply air models feature pattern controllers that are available in three performance styles, four slot widths, and up to four parallel slots. The return models are designed to match the look of the supply air models.

### 'Wiper Blade' Pattern Controller –

Models 5550WB, 5575WB, 5510WB, 5515WB

Page E56

### 'Ice Tong' Pattern Controller –

Models 5550T, 5575T, 5510T

Page E59

### 'Flip Flop' Pattern Controller –

Model 5575

Page E62

### Return Air –

Models 5550R, 5575R, 5510R, 5515R

Page E62



Models 5575, 5575R



## FIRE RATED PATTERN CEILING DIFFUSERS

- SQUARE NECK
- 3 HOUR RATING
- LOUVERED FACE
- HIGH CAPACITY
- LAY-IN

### Models:

- 6500FRD** Fixed Pattern
- 6550FRD** Adjustable Pattern
- 6500IVFRD** Induction Vanes



CATEGORY  
CABS & CABS7



Model 6500FRD

Models 6500FRD, 6550FRD and 6500IVFRD are UL Classified fire rated ceiling diffuser component assemblies. The ceiling damper and thermal blanket accessory are listed in Underwriters Laboratories Fire Resistance Directory under categories, "Ceiling Dampers" and "Ceiling Fire Stop Flap Assemblies Certified for Canada." This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

Pattern Ceiling Diffusers provide a high capacity louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. Available in a variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirements.

All models provide a tight horizontal discharge pattern from maximum to minimum airflow, making this product ideally suited to VAV applications.

Model 6550FRD Adjustable Pattern Ceiling Diffuser features four hinged, independently adjustable control vanes, providing continuous adjustment of the air discharge pattern from horizontal to vertical on each side of the diffuser.

Model 6500IVFRD Induction Vane Pattern Ceiling Diffuser features induction vanes mounted behind the louvers that create counter-flowing jets of primary air that promote rapid mixing of the cool primary air with room air.

### STANDARD FEATURES:

- Tested in accordance with UL Standard 555C "Ceiling Dampers" and ULC S112.2 "Fire Stop Flap Assemblies."
- Spring-loaded core. Removable without the use of tools.
- Engineered air diffusion patterns for 1, 2, 3 or 4-way blow in a variety of square neck sizes.
- Clean lines with no unsightly visible screws.
- The fixed ceiling radiation damper is standard. An adjustable model for balancing is optional (see page E8).
- Removing the inner core assembly gives access to AV balancing option.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.

### CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

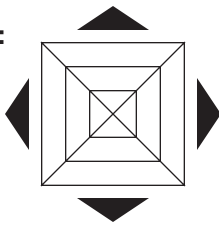
### FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

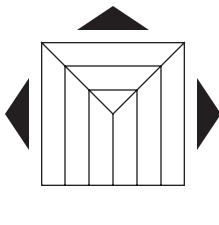
### PERFORMANCE DATA:

- See non-fire rated Model 6500 or Model 6500IV.

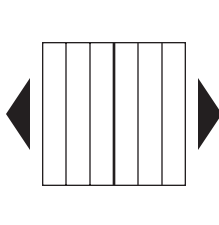
**Core Selection:**



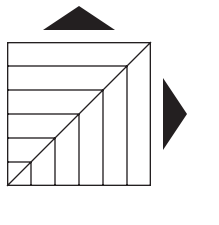
**4A, 4-way**



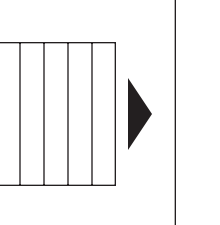
**3A, 3-way**



**2S, 2-way opposite**



**2G, 2-way corner**

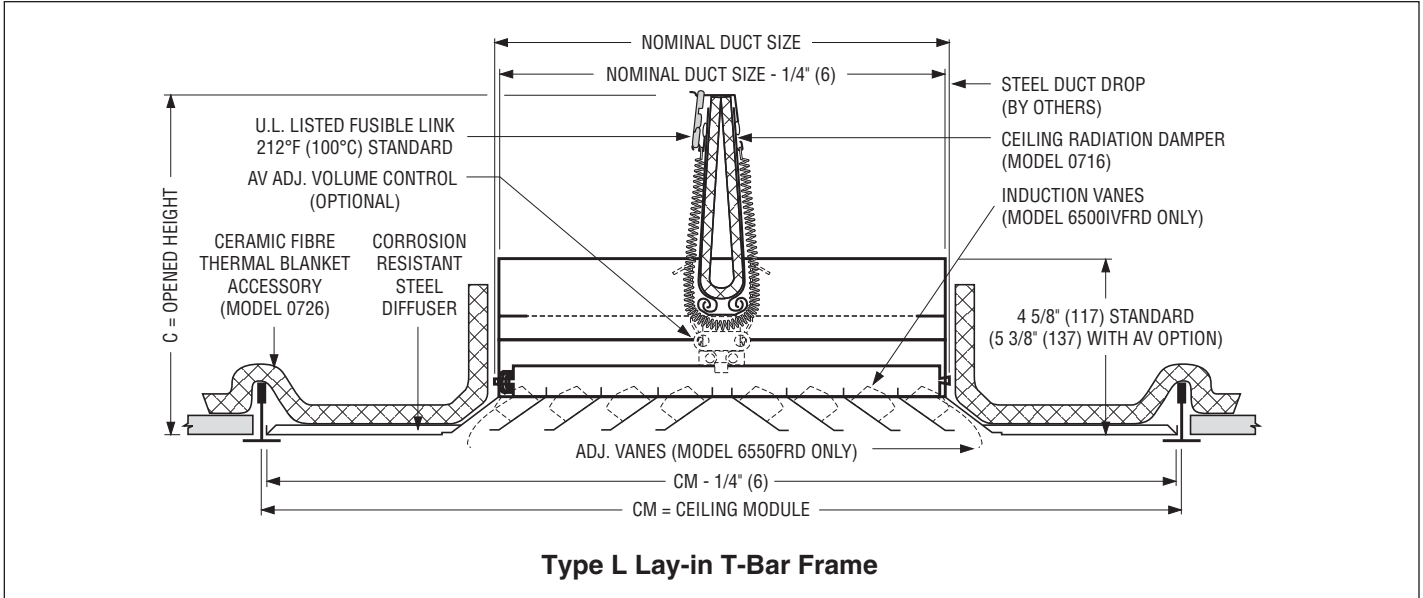


**1S, 1-way**

**Note:**  
Model 6550FRD is available in core style 4A only.

## DIMENSIONAL DATA:

### MODELS 6500FRD, 6550FRD AND 6500IVFRD • SQUARE NECK



### Dimensional Data and Sizing Availability:

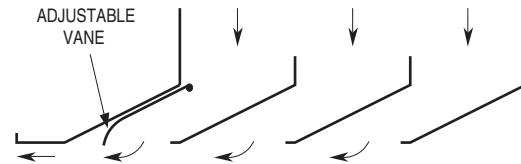
Ceiling Module CM	Nominal Duct Size (square)	Opened Height C	
		Standard	With AV Option
12 x 12	6 x 6 (152 x 152)	5 3/4 (146)	6 1/2 (165)
	9 x 9 (229 x 229)	7 1/4 (184)	8 (203)
24 x 24	6 x 6 (152 x 152)	5 3/4 (146)	6 1/2 (165)
	9 x 9 (229 x 229)	7 1/4 (184)	8 (203)
	12 x 12 (305 x 305)	9 (229)	9 3/4 (248)
	15 x 15 (381 x 381)	10 1/4 (260)	11 (279)
	18 x 18 (457 x 457)	11 3/4 (298)	N/A
	21 x 21 (533 x 533)	13 1/4 (337)	N/A

Dimensions are in inches (mm).

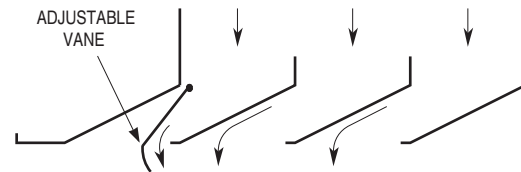
#### Note:

If the square ceiling module is more than 3" (76) larger than the duct size, a module sized extended panel is utilized.

### Model 6550FRD Pattern Adjustment



**Horizontal Pattern**  
Adjustable Vane Open Position

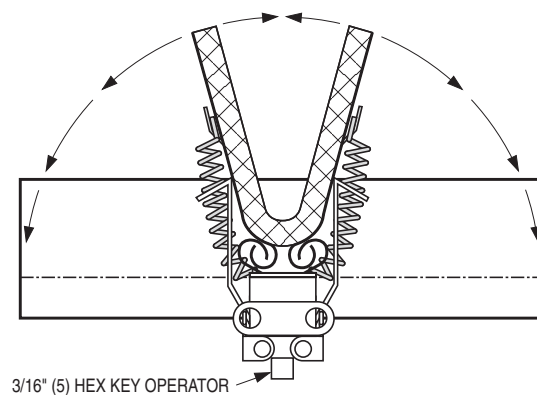


**Vertical Pattern**  
Adjustable Vane Closed Position

### AV Adjustable Volume Control Option.

This UL Listed ceiling radiation damper control (**Model 0716A**) option allows the ceiling radiation damper to be used as a balancing damper for volume control. The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.

**Note:** Maximum square duct size for this option is 15" x 15" (381 x 381).





## HOW TO ORDER OR TO SPECIFY

### FIRE RATED PATTERN CEILING DIFFUSERS • SQUARE NECK – MODELS 6500FRD, 6550FRD AND 6500IVFRD

**EXAMPLE: 6500FRD - 0909 - 24" x 24" - L - AW - 4A - 212 - AV**

**1. Models**

- 6500FRD Fixed Pattern
- 6550FRD Adjustable Pattern
- 6500IVFRD Induction Vanes

**2. Neck Size**

**Imperial**

- 0606 06" x 06" (152 x 152) Square
- 0909 09" x 09" (229 x 229) Square
- 1212 12" x 12" (305 x 305) Square
- 1515 15" x 15" (381 x 381) Square
- 1818 18" x 18" (457 x 457) Square
- 2121 21" x 21" (533 x 533) Square

Only available on 24" x 24" or 600 x 600 ceiling modules

**3. Ceiling Module Size**

**Imperial**

- 12" x 12"
- 24" x 24"

**Metric**

- 300 mm x 300 mm
- 600 mm x 600 mm

**4. Frame Type**

- L Lay-in T-Bar (default)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- PC Prime Coat
- SP Special Custom Color

**6. Core Style**

- 4A 4-Way (default)
- 1S 1-Way
- 2G 2-Way Corner
- 2S 2-Way Opposite Equal
- 3A 3-Way

**7. Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

**8. Volume Control**

- None (default)
- AV Adjustable Volume Control

**Notes:**

1. Consult individual model as to limitations of module, neck size and core style combination.
2. Model 6550FRD is available with core style 4A only.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **6500FRD, 6550FRD or 6500IVFRD Square Neck Steel Fire Rated Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall incorporate fixed discharge louvers for a horizontal throw pattern and shall be supplied in 4, 3, 2 or 1-way pattern as specified. Model 6550FRD shall include adjustable vanes to provide a vertical throw pattern capability. Model 6500IVFRD shall include induction vanes for high induction, reduced throw and rapid air mixing. (Optional: ceiling damper shall be provided with AV adjustable volume control for field balancing). The finish shall be AW Appliance White (optional finishes are available). The entire core assembly shall be removable without the use of tools. Diffusers shall be factory assembled UL/ULC fire rated diffuser component assemblies and classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating. Ceiling damper and thermal blanket accessory shall be listed in UL/ULC Fire Resistance (Certifications) Directory and meet all NFPA 90A requirements.

**FIRE RATED PRODUCTS**

## FIRE RATED PATTERN CEILING DIFFUSERS

- ROUND NECK
- 3 HOUR RATING
- LOUVERED FACE
- HIGH CAPACITY
- LAY-IN



CATEGORY  
CABS & CABS7



Model 6505FRD

### Models:

- 6505FRD** Fixed Pattern
- 6555FRD** Adjustable Pattern
- 6505IVFRD** Induction Vanes

Models 6505FRD, 6555FRD and 6505IVFRD are UL Classified fire rated ceiling diffuser component assemblies. The ceiling damper and thermal blanket accessory are listed in Underwriters Laboratories Fire Resistance Directory under categories, "Ceiling Dampers" and "Ceiling Fire Stop Flap Assemblies Certified for Canada." This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

Pattern Ceiling Diffusers provide a high capacity louvered face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. Available in a variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirements.

All models provide a tight horizontal discharge pattern from maximum to minimum airflow, making this product ideally suited for VAV applications.

Model 6555FRD Adjustable Pattern Ceiling Diffuser features four hinged, independently adjustable control vanes, providing continuous adjustment of the air discharge pattern from horizontal to vertical on each side of the diffuser.

Model 6505IVFRD Induction Vane Pattern Ceiling Diffuser features induction vanes mounted behind the louvers that create counter-flowing jets of primary air that promote rapid mixing of the cool primary air with room air.

### STANDARD FEATURES:

- Tested in accordance with UL Standard 555C "Ceiling Dampers" and ULC S112.2 "Fire Stop Flap Assemblies."
- Spring-loaded core. Removable without the use of tools.
- Engineered air diffusion patterns for 1, 2, 3 or 4-way blow.
- Clean lines with no unsightly visible screws.
- Round neck permits use of flexible duct.
- The fixed ceiling radiation damper is standard. An adjustable model for balancing is optional (see page E11).
- Removing the inner core assembly gives access to AV balancing option.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.

### CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

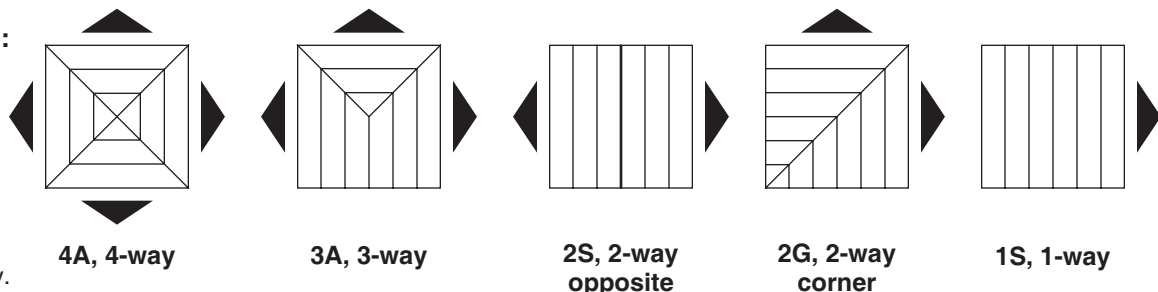
### FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

### PERFORMANCE DATA:

- See non-fire rated Model 6500 or Model 6500IV.

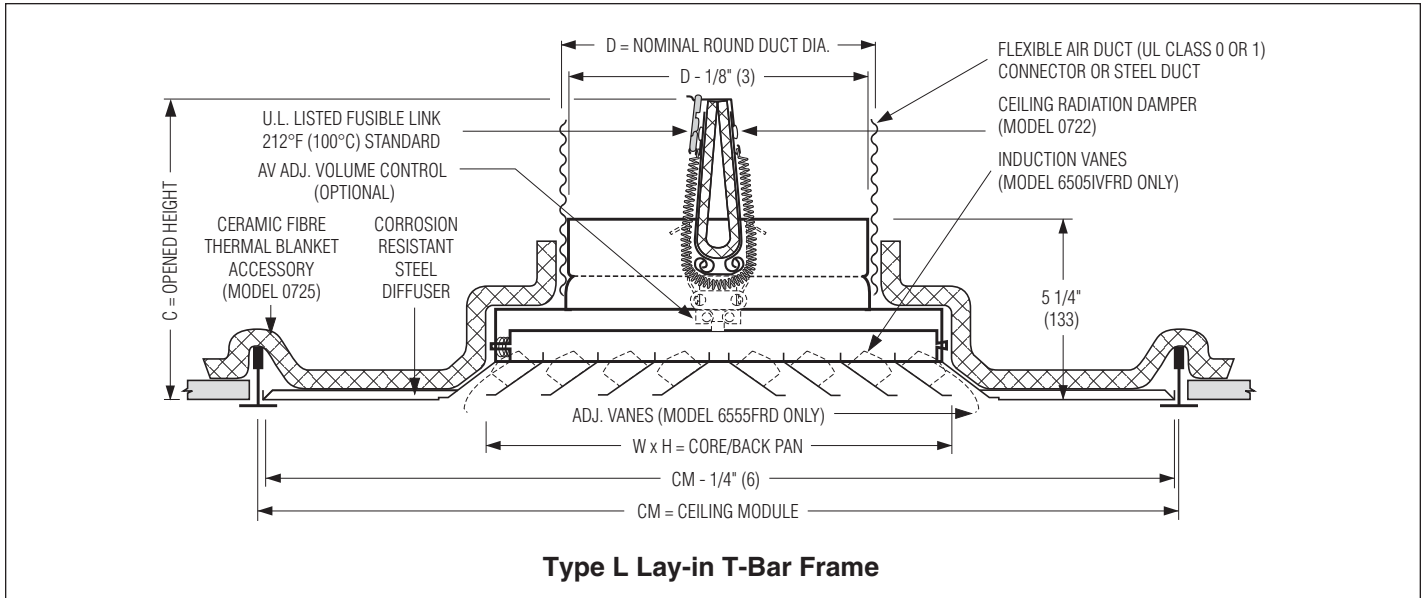
### Core Selection:



**Note:**  
Model 6555FRD is available in core style 4A only.

## DIMENSIONAL DATA:

### MODELS 6505FRD, 6555FRD AND 6505IVFRD • ROUND NECK



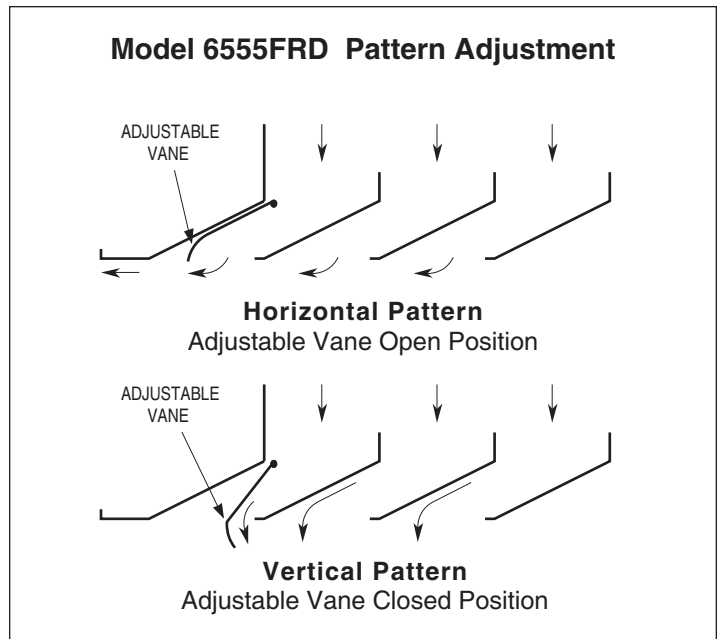
### Dimensional Data and Sizing Availability:

Ceiling Module	Core / Back Pan	Round Neck	Opened Height
CM	W x H	D	C
12 x 12	9 x 9 (229 x 229)	6 (152)	6 1/2 (165)
		8 (203)	7 1/2 (191)
24 x 24	9 x 9 (229 x 229)	6 (152)	6 1/2 (165)
		8 (203)	7 1/2 (191)
	12 x 12 (305 x 305)	10 (254)	8 1/2 (216)
		14 (356)	10 1/2 (267)
15 x 15 (381 x 381)	18 x 18 (457 x 457)	12 (305)	9 1/2 (241)
		14 (356)	10 1/2 (267)

Dimensions are in inches (mm).

**Note:**

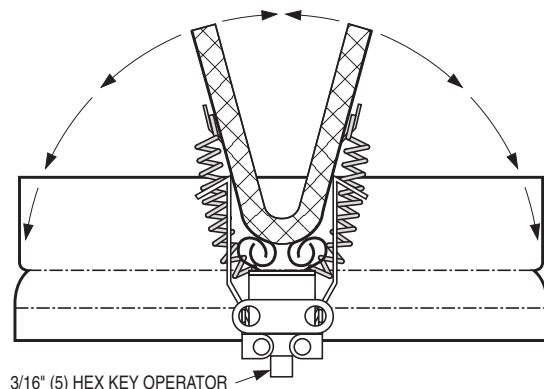
If the square ceiling module is more than 3" (76) larger than the duct size, a module sized extended panel is utilized.



**AV Adjustable Volume Control Option.**

This UL Listed ceiling radiation damper control (Model 0722A) option allows the ceiling radiation damper to be used as a balancing damper for volume control.

The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



## HOW TO ORDER OR TO SPECIFY

### FIRE RATED PATTERN CEILING DIFFUSERS • ROUND NECK – MODELS 6505FRD, 6555FRD AND 6505IVFRD

**EXAMPLE: 6505FRD - 0909 - 08 - 24" x 24" - L - AW - 4A - 212 - AV**

**1. Models**

- 6505FRD Fixed Pattern
- 6555FRD Adjustable Pattern
- 6505IVFRD Induction Vanes

**2. Core/Back Pan Size**

**Imperial**

- 0909 09" x 09" (229 x 229)
- 1212 12" x 12" (305 x 305)
- 1515 15" x 15" (381 x 381)
- 1818 18" x 18" (457 x 457)

**3. Neck Size**

**Imperial**

- 06 6" (152) Round
- 08 8" (203) Round
- 10 10" (254) Round
- 12 12" (305) Round
- 14 14" (356) Round

Only available on  
24" x 24" or  
600 mm x 600 mm  
ceiling modules

**3. Ceiling Module Size**

**Imperial**

- 12" x 12"
- 24" x 24"

**Metric**

- 300 mm x 300 mm
- 600 mm x 600 mm

**4. Frame Type**

- L Lay-in T-Bar (default)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- PC Prime Coat
- SP Special Custom Color

**6. Core Style**

- 4A 4-Way (default)
- 1S 1-Way
- 2G 2-Way Corner
- 2S 2-Way Opposite Equal
- 3A 3-Way

**7. Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

**8. Volume Control**

- None (default)
- AV Adjustable Volume Control

**Notes:**

1. Consult individual model as to limitations of module, neck size and core style combination.
2. Model 6555FRD is available with core style 4A only.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **6505FRD, 6555FRD** or **6505IVFRD Round Neck Steel Fire Rated Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall incorporate fixed discharge louvers for a horizontal throw pattern and shall be supplied in 4, 3, 2 or 1-way pattern as specified. Model 6555FRD shall include adjustable vanes to provide a vertical throw pattern capability. Model 6505IVFRD shall include induction vanes for high induction, reduced throw and rapid air mixing. (Optional: ceiling damper shall be provided with AV adjustable volume control for field balancing). The finish shall be AW Appliance White (optional finishes are available). The entire core assembly shall be removable without the use of tools. Diffusers shall be factory assembled UL/ULC fire rated diffuser component assemblies and classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating. Ceiling damper and thermal blanket accessory shall be listed in UL/ULC Fire Resistance (Certifications) Directory and meet all NFPA 90A requirements.

## FIRE RATED STAMPED SQUARE CEILING DIFFUSERS

- 4 CONE
- FIXED AIR PATTERN
- HIGH PERFORMANCE
- ROUND NECK
- 3 HOUR RATING
- LAY-IN

### Full Face Models:

4010, 4020

### Panel Type Models:

4030, 4040



CATEGORY  
BZZU



CATEGORY  
BZGUC



Model 4020

Model Series 4000 are UL/ULC Classified fire rated Ceiling Diffuser/Air Terminal Unit assemblies listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

These models are a fire rated version of the popular RNS Series. They have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. For these reasons the RNS Series diffuser is the most popular choice for general applications.

The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance. The stepped down core design increases capacity and minimizes streaking and smudging of the ceiling.

The diffusers provide stable diffusion and mixing patterns under constant and changing load conditions, and are particularly suitable for variable air volume systems.

### STANDARD FEATURES:

- Factory assembled, 'packaged' product ensures compliance with fire code, simplifies specification and minimizes field labor.
- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- Approved for use with flexible duct. Eliminates steel branch duct and drop. No costly independent hangers and supports are required.
- Spring-loaded core is securely held in position and is removable without the use of tools.
- Engineered air diffusion pattern.
- Steel stamped cones for uniformity.
- All 12 x 12 (300 x 300) and 24 x 24 (600 x 600) modules feature four cones in all neck sizes, providing a uniform appearance where different sizes are installed in the same area.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E14).
- Quick, easy access to the AV balancing option is achieved from the face of the diffuser by removing the center plug. It is not necessary to remove the inner cone assembly.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.

### CONSTRUCTION MATERIAL:

- Heavy gauge corrosion-resistant steel.

### FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

### PERFORMANCE DATA:

- See non-fire rated Model RNS.

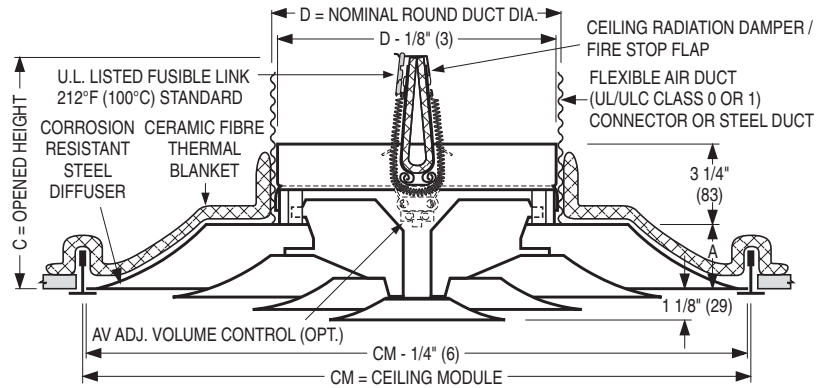
## DIMENSIONAL DATA:

### MODELS 4010 AND 4020 • FULL FACE

**Model 4010** 12 x 12 or 300 x 300

**Model 4020** 24 x 24 or 600 x 600

Listed Neck Size	Imperial Modules (inches)			Metric Modules (mm)		
	D	A	C	D	A	C
6	CM = 12 x 12			CM = 300 x 300		
	6	1	5 1/2	152	25	140
8	CM = 12 x 12			CM = 300 x 300		
	8	1	6 1/2	203	25	165
Listed Neck Size	CM = 24 x 24			CM = 600 x 600		
	D	A	C	D	A	C
6	CM = 24 x 24			CM = 600 x 600		
	6		6 13/16	152		173
8	CM = 24 x 24			CM = 600 x 600		
	8		7 13/16	203		198
10	CM = 24 x 24			CM = 600 x 600		
	10	2 5/16	8 13/16	254	59	224
12	CM = 24 x 24			CM = 600 x 600		
	12		9 13/16	305		249
14	CM = 24 x 24			CM = 600 x 600		
	14		10 13/16	356		275



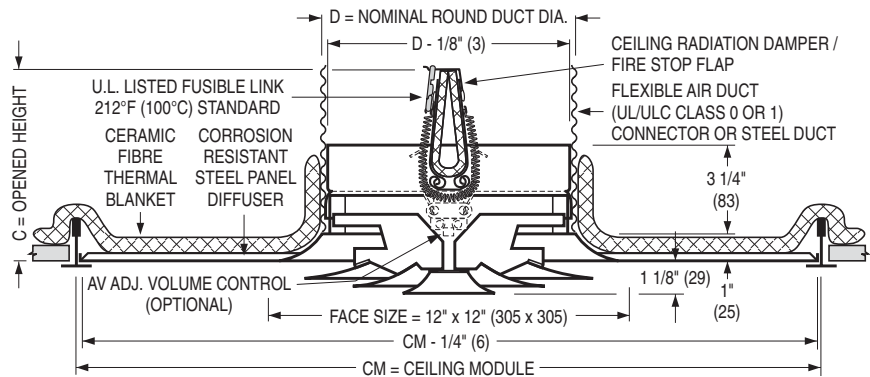
**Type L Lay-in T-Bar Frame**

### MODELS 4030 AND 4040 • PANEL TYPE

**Model 4030** 24 x 12 or 600 x 300

**Model 4040** 24 x 24 or 600 x 600

Listed Neck Size	Imperial Modules (inches)		Metric Modules (mm)	
	D	C	D	C
6	CM = 24 x 12		CM = 600 x 300	
	6	5 1/2	152	140
8	CM = 24 x 12		CM = 600 x 300	
	8	6 1/2	203	165
Listed Neck Size	CM = 24 x 24		CM = 600 x 600	
	D	C	D	C
6	CM = 24 x 24		CM = 600 x 600	
	6	5 1/2	152	140
8	CM = 24 x 24		CM = 600 x 600	
	8	6 1/2	203	165

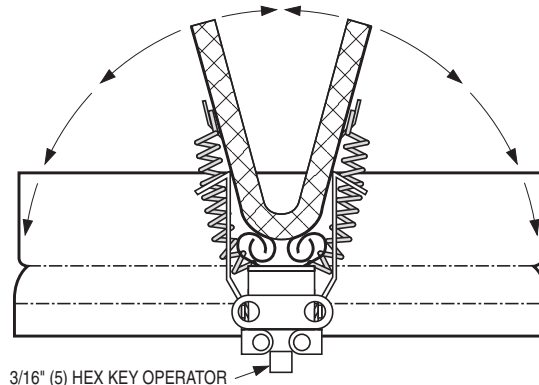


**Type PL Panel Lay-in T-Bar Frame**

#### AV Adjustable Volume Control Option.

This UL Listed ceiling radiation damper control (**Model 0722A**) option allows the ceiling radiation damper to be used as a balancing damper for volume control.

The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.





## HOW TO ORDER OR TO SPECIFY

### FIRE RATED STAMPED SQUARE CEILING DIFFUSERS – FIXED PATTERN MODELS 4010, 4020, 4030, 4040

**EXAMPLE: 4020 - 08 - 24" x 24" - L - AW - 212 - AV**

**1. Models**

- 4010 12" x 12" or 300 mm x 300 mm, Full Face
- 4020 24" x 24" or 600 mm x 600 mm, Full Face
- 4030 24" x 12" or 600 mm x 300 mm, Panel Type
- 4040 24" x 24" or 600 mm x 600 mm, Panel Type

**2. Neck Size**

**Imperial**

- 06 6" (152) Round
- 08 8" (203) Round
- 10 10" (254) Round
- 12 12" (305) Round
- 14 14" (356) Round

Only available on Model 4020

**3. Ceiling Module Size**

**Imperial**

- 12" x 12" (Model 4010)
- 24" x 12" (Model 4030)
- 24" x 24" (Models 4020 and 4040)

**Metric**

- 300 mm x 300 mm (Model 4010)
- 600 mm x 300 mm (Model 4030)
- 600 mm x 600 mm (Models 4020 and 4040)

**4. Frame Type**

- L Lay-in T-Bar (Models 4010 and 4020)
- PL Panel Lay-in T-Bar (Models 4030 and 4040)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- PC Prime Coat
- SP Special Custom Color

**6. Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

**7. Volume Control**

- None (default)
- AV Adjustable Volume Control

**Note:**

- 1. Consult individual model as to limitations of module and neck size combination.

**FIRE RATED PRODUCTS**

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one or more) **4010, 4020 (Full Face)** or **4030, 4040 (Panel Type) Fixed Pattern Steel Fire Rated Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and have four die-formed concentric cones in all sizes. The inner core assembly is removable by using a spring clip arrangement that permits quick, easy installation and removal. Diffusers shall include a factory mounted ceiling damper and thermal blanket. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Certifications Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## FIRE RATED STAMPED SQUARE CEILING DIFFUSERS

- 4 CONE
- FIXED AIR PATTERN
- ROUND NECK
- 3 HOUR RATING
- SURFACE MOUNT



Model 4010

**Model:**

**4010 12 x 12 (300 x 300)  
Type S Surface Mount**

The only fire rated diffuser assembly of its kind for surface mount applications. Popular applications are fire rated ceiling designs which incorporate wooden joists on less than 24" (610) centers and 'Type X' gypsum wallboard ceiling membrane protection. This model is a fire rated version of the popular RNS Louvered Face Series.

Classified by Underwriters' Laboratories of Canada (ULC) for use in ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate air ducts and a hard (gypsum board) ceiling membrane with up to a 3 hour rating. For details of fire rated assemblies, see the current ULC Fire Resistance Directory. The use of this product in fire rated ceilings with ceiling membrane protection and/or UL Classified assemblies in the U.S.A. requires local approval by the authority having jurisdiction.

**STANDARD FEATURES:**

- Tested in accordance with CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- AV Adjustable Volume control. Permits adjustment to damper blades for balancing.
- Non-standard temperature UL Listed fusible link (165°F [74°C]).

**CONSTRUCTION MATERIAL:**

- Corrosion-resistant steel.

**FINISH OPTIONS:**

- AW Appliance White finish is standard.
- Other finishes are available.

**PERFORMANCE DATA:**

- See non-fire rated Model RNS.

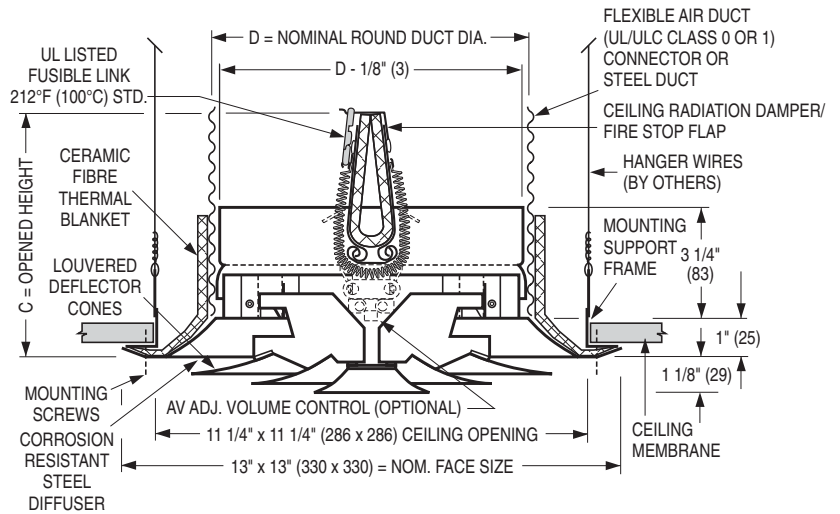
## DIMENSIONAL DATA:

### MODEL 4010 • FULL FACE

### 12 x 12 or 300 x 300 TYPE S SURFACE MOUNT MODULE FOR HARD CEILINGS

#### Model 4010: 12 x 12 or 300 x 300 module

Listed Neck Size	Imperial Modules (inches)		Metric Modules (mm)	
	D	C	D	C
6	6	5 1/2	152	140
8	8	6 1/2	203	165

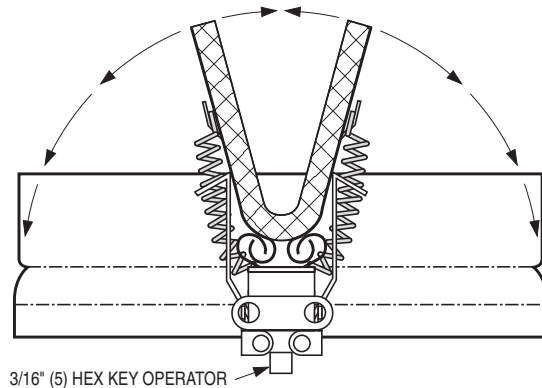


**Type S Surface Mount**

#### AV Fusible Link Adjustable Volume Control Option.

This UL Listed ceiling radiation damper control (**Model 0722A**) option allows the ceiling radiation damper to be used as a balancing damper for volume control.

The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



## HOW TO ORDER OR TO SPECIFY

### FIRE RATED STAMPED SQUARE CEILING DIFFUSER – 4 CONE FIXED PATTERN MODEL 4010

**EXAMPLE: 4010 - 08 - 12" x 12" - S - AW - 212 - AV**

- |  |   |
|--|---|
| <p><b>1. Model</b><br/>4010 12" x 12" or 300 mm x 300 mm, Full Face Module</p> <p><b>2. Neck Size</b><br/><b>Imperial</b><br/>06 6" (152) Round<br/>08 8" (203) Round</p> <p><b>3. Ceiling Module Size</b><br/><b>Imperial</b><br/>12" x 12"<br/><b>Metric</b><br/>300 mm x 300 mm</p> <p><b>4. Frame Type</b><br/>S Surface Mount (default)</p> | <p><b>5. Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>PC Prime Coat<br/>SP Special Custom Color</p> <p><b>6. Fusible Link Temperature</b><br/>212 212°F (100°C) (default)<br/>165 165°F (74°C)</p> <p><b>7. Volume Control</b><br/>— None (default)<br/>AV Adjustable Volume Control</p> |
|--|---|

**Note:**

1. Consult individual model as to limitations of module and neck size combination.

FIRE RATED PRODUCTS

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 4010 Type S** Surface Mount (round neck) **Steel Fire Rated Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be manufactured from corrosion-resistant steel and have four die-formed concentric cones in all sizes. The inner core assembly is removable by using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional adjustable volume controller without removing the inner core. The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be ULC Classified fire rated ceiling diffuser assemblies as listed in the ULC Certifications Directory. Diffusers shall be tested in accordance with CAN/ULC Standard S101 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate air ducts and a hard gypsum board ceiling membrane with up to a 3 hour rating. The use of this product in UL Classified Ceiling Assemblies requires approval from the local authority having jurisdiction.

## FIRE RATED ADJUSTABLE STAMPED SQUARE CEILING DIFFUSERS

- 4 CONE
- HORIZONTAL TO VERTICAL ADJUSTABLE DISCHARGE PATTERN
- HIGH PERFORMANCE
- ROUND NECK
- 3 HOUR RATING
- LAY-IN

### Full Face Models:

4010-1, 4020-1

### Panel Type Models:

4030-1, 4040-1



CATEGORY  
BZZU



CATEGORY  
BZGUC



Model 4020-1

Model Series 4000 are UL/ULC Classified Fire Rated Ceiling Diffuser / Air Terminal Unit assemblies listed in Underwriters Laboratories Fire Resistance Directory and Underwriters Laboratories of Canada List of Equipment and Materials. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

These models are a fire rated version of the popular RNSA Series. They have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. They provide the flexibility of a standard horizontal discharge or near vertical discharge pattern, useful in high ceiling applications where better air penetration or spot heating may be desired.

The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance.

The diffusers provide stable diffusion and mixing patterns under constant and changing load conditions, and are particularly suitable for variable air volume systems.

### STANDARD FEATURES:

- Factory assembled, 'packaged' product ensures compliance with fire code, simplifies specification and minimizes field labor.
- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- Approved for use with flexible duct. Eliminates steel branch duct and drop. No costly independent hangers and supports are required.

**Adjustment:** Quick and simple unique screw-type arrangement from the face of the diffuser. Permits gradual adjustment of the air discharge pattern from horizontal to vertical by rotating the center cone and so moving the inner cone assembly up or down.

- Spring-loaded core is securely held in position and is removable without the use of tools.

- Engineered air diffusion pattern.
- Steel stamped cones for uniformity.
- All 12 x 12 (300 x 300) and 24 x 24 (600 x 600) modules feature four cones in all neck sizes, providing a uniform appearance where different sizes are installed in the same area.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E20).
- Quick, easy access to the AV balancing option is achieved from the face of the diffuser by removing the center plug. It is not necessary to remove the inner cone assembly.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.

### CONSTRUCTION MATERIAL:

- Heavy gauge corrosion-resistant steel.

### FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

### PERFORMANCE DATA:

- See non-fire rated Model RNSA.

## DIMENSIONAL DATA:

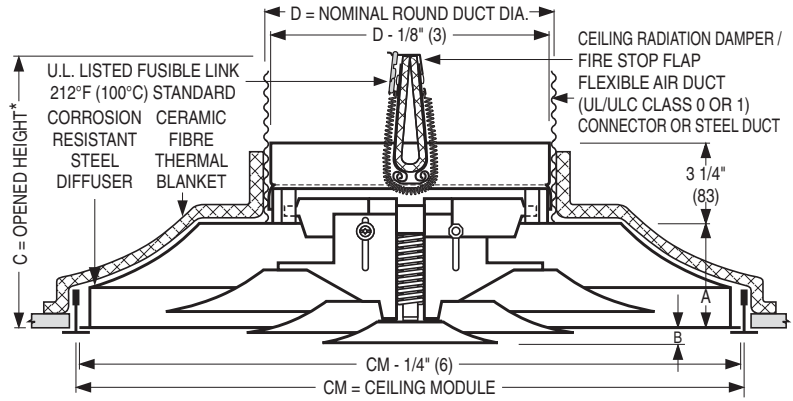
### MODELS 4010-1 AND 4020-1 • FULL FACE

**Model 4010-1** 12 x 12 or 300 x 300

**Model 4020-1** 24 x 24 or 600 x 600

Listed Neck Size	Imperial Modules (inches)				Metric Modules (mm)			
	D	A	B	C*	D	A	B	C*
6	CM = 12 x 12				CM = 300 x 300			
	6	2 1/4	0 to 1/2	6 3/4	152	57	0 to 13	171
8	8			7 3/4	203			197
6	CM = 24 x 24				CM = 600 x 600			
	6			8 1/4	152			210
8	8		0	9 1/4	203	0		235
10	10	3 3/4	to	10 1/4	254	95	to	260
12	12		3/8	11 1/4	305	10		286
14	14			12 1/4	356			311

\* Plus 1 1/2" (38) with AV option.



**Type L Lay-in T-Bar Frame**

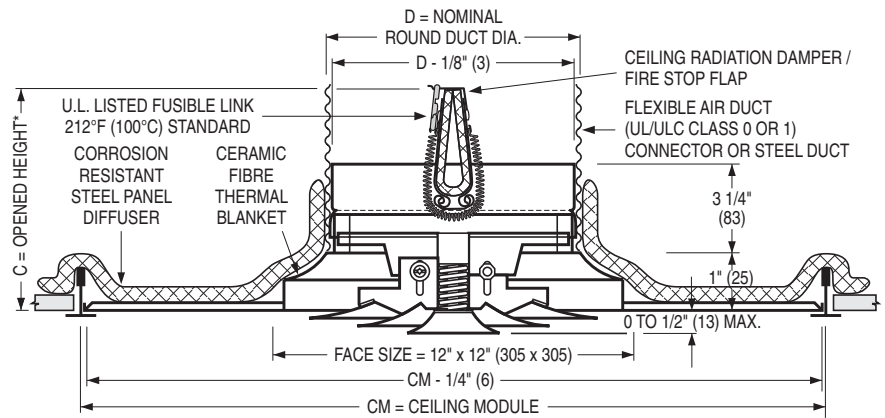
### MODELS 4030-1 AND 4040-1 • PANEL TYPE

**Model 4030-1** 24 x 12 or 600 x 300

**Model 4040-1** 24 x 24 or 600 x 600

Listed Neck Size	Imperial Modules (inches)		Metric Modules (mm)	
	D	C*	D	C*
6	CM = 24 x 12		CM = 600 x 300	
	6	6 3/4	152	171
8	8	7 3/4	203	197
6	CM = 24 x 24		CM = 600 x 600	
	6	6 3/4	152	171
8	8	7 3/4	203	197

\* Plus 1 1/2" (38) with AV option.

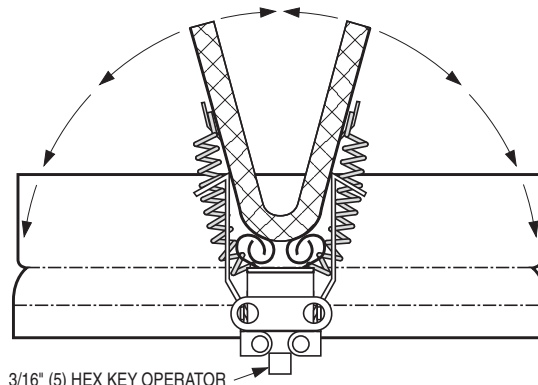


**Type PL Panel Lay-in T-Bar Frame**

### AV Adjustable Volume Control Option.

This UL Listed ceiling radiation damper control (**Model 0722A**) option allows the ceiling radiation damper to be used as a balancing damper for volume control.

The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



3/16" (5) HEX KEY OPERATOR



## HOW TO ORDER OR TO SPECIFY

### FIRE RATED STAMPED SQUARE CEILING DIFFUSERS – 4 CONE ADJUSTABLE PATTERN MODELS 4010-1, 4020-1, 4030-1, 4040-1

**EXAMPLE: 4020-1 - 10 - 24" x 24" - L - AW - 212 - AV**

**1. Models**

- 4010-1 12" x 12" or 300 mm x 300 mm, Full Face
- 4020-1 24" x 24" or 600 mm x 600 mm, Full Face
- 4030-1 24" x 12" or 600 mm x 300 mm, Panel Type
- 4040-1 24" x 24" or 600 mm x 600 mm, Panel Type

**2. Round Neck Size**

**Imperial**

- 06 6" (152) Round
  - 08 8" (203) Round
  - 10 10" (254) Round
  - 12 12" (305) Round
  - 14 14" (356) Round
- ] Only available on  
Model 4020-1

**3. Ceiling Module Size**

**Imperial**

- 12" x 12" (Model 4010-1)
- 24" x 12" (Model 4030-1)
- 24" x 24" (Models 4020-1 and 4040-1)

**Metric**

- 300 mm x 300 mm (Model 4010-1)
- 600 mm x 300 mm (Model 4030-1)
- 600 mm x 600 mm (Models 4020-1 and 4040-1)

**4. Frame Type**

- L Lay-in T-Bar (Models 4010-1 and 4020-1)
- PL Panel Lay-in T-Bar (Models 4030-1 and 4040-1)
- S Surface Mount (Model 4010-1)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- PC Prime Coat
- SP Special Custom Color

**6. Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

**7. Volume Control**

- None (default)
- AV Adjustable Volume Control

**Notes:**

1. Consult individual model as to limitations of module and neck size combination.
2. Model 4010-1 (Frame Type S) is ULC Classified only.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one or more) **4010-1, 4020-1, 4030-1, 4040-1 Adjustable Pattern Steel Fire Rated Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be manufactured from corrosion-resistant steel and have four die-formed concentric cones in all sizes. The inner core assembly is to be removable by using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional adjustable volume controller without removing the inner core. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## FIRE RATED STAMPED SQUARE CEILING DIFFUSERS

- 2 CONE
- FIXED AIR PATTERN
- HIGH PERFORMANCE
- ROUND NECK
- 3 HOUR RATING
- LAY-IN

### Full Face Models:

4410, 4420

### Panel Type Models:

4430, 4440



CATEGORY  
BZZU



CATEGORY  
BZGUC



Model 4420

Model Series 4400 are UL/ULC Classified Fire Rated Ceiling Diffuser/Air Terminal Unit assemblies listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

These models are a fire rated version of the economical RNS2 Series. They have been specially designed to provide an extremely cost effective, value engineered product. They offer both the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance.

The stamped one-piece cones eliminate mitered corners and the die-formed curves provide consistent quality and performance. The stepped down core design increases capacity and the diffusers provide stable diffusion and mixing patterns under constant and changing load conditions. They can accommodate a turn down of 80% without losing the ceiling coanda effect and dumping, making them particularly suitable for variable air volume systems.

### STANDARD FEATURES:

- Factory assembled, 'packaged' product ensures compliance with fire code, simplifies specification and minimizes field labor.
- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- Approved for use with flexible duct. Eliminates steel branch duct and drop. No costly independent hangers and supports are required.
- The inner cone assembly is fixed and non-removable, providing additional security and safety.
- Engineered air diffusion pattern.
- Steel stamped cones for uniformity.
- All 12 x 12 (300 x 300) and 24 x 24 (600 x 600) modules feature two cones in all neck sizes, providing a uniform appearance where different sizes are installed in the same area.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E23).
- Quick, easy access to the AV balancing option is achieved from the face of the diffuser by removing the center plug.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.

### CONSTRUCTION MATERIAL:

- Heavy gauge corrosion-resistant steel.

### FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

### PERFORMANCE DATA:

- See non-fire rated Model RNS2.

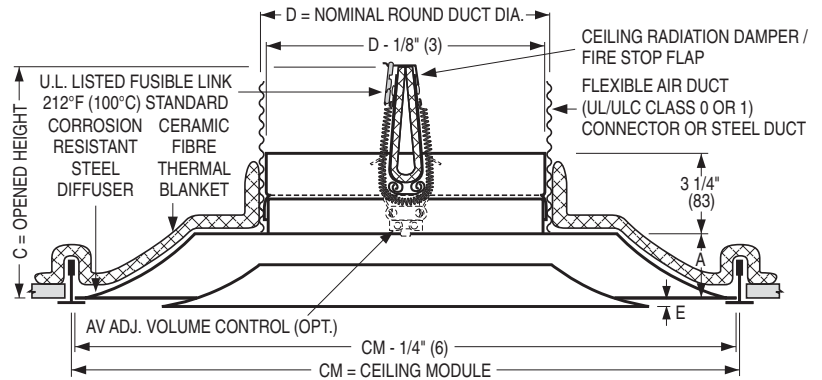
## DIMENSIONAL DATA:

### MODELS 4410 AND 4420 • FULL FACE

**Model 4410** 12 x 12 or 300 x 300

**Model 4420** 24 x 24 or 600 x 600

Listed Neck Size	Imperial Modules (inches)				Metric Modules (mm)			
	CM = 12 x 12				CM = 300 x 300			
	D	A	C	E	D	A	C	E
6	6		5 1/2		152		140	
8	8	1	6 1/2	1 1/4	203	25	165	32
Listed Neck Size	CM = 24 x 24				CM = 600 x 600			
	D	A	C	E	D	A	C	E
6	6		6 13/16		152		173	
8	8		7 13/16		203		198	
10	10	2 5/16	8 13/16	7/8	254	59	224	22
12	12		9 13/16		305		249	
14	14		10 13/16		356		275	



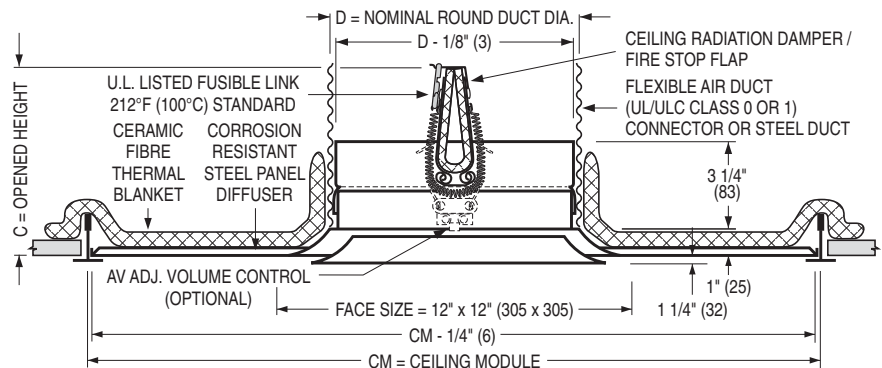
**Type L Lay-in T-Bar Frame**

### MODELS 4430 AND 4440 • PANEL TYPE

**Model 4430** 24 x 12 or 600 x 300

**Model 4440** 24 x 24 or 600 x 600

Listed Neck Size	Imperial Modules (inches)		Metric Modules (mm)	
	CM = 24 x 12		CM = 600 x 300	
	D	C	D	C
6	6	5 1/2	152	140
8	8	6 1/2	203	165
Listed Neck Size	CM = 24 x 24		CM = 600 x 600	
	D	C	D	C
6	6	5 1/2	152	140
8	8	6 1/2	203	165

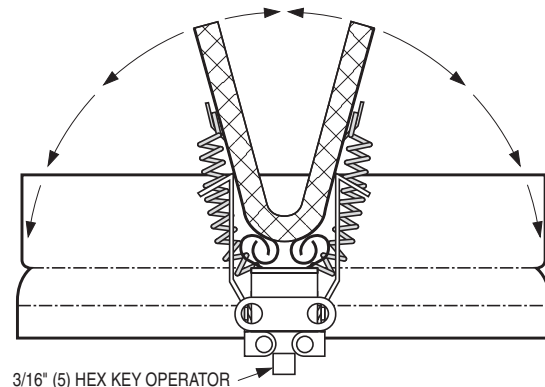


**Type PL Panel Lay-in T-Bar Frame**

#### AV Adjustable Volume Control Option.

This UL Listed ceiling radiation damper control (**Model 0722A**) option allows the ceiling radiation damper to be used as a balancing damper for volume control.

The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



## HOW TO ORDER OR TO SPECIFY

### FIRE RATED STAMPED SQUARE CEILING DIFFUSERS – 2 CONE

#### MODELS 4410, 4420, 4430, 4440

**EXAMPLE: 4420 - 12 - 24" x 24" - L - AW - 212 - AV**

**1. Models**

- 4410 12" x 12" or 300 mm x 300 mm, Full Face
- 4420 24" x 24" or 600 mm x 600 mm, Full Face
- 4430 24" x 12" or 600 mm x 300 mm, Panel Type
- 4440 24" x 24" or 600 mm x 600 mm, Panel Type

**2. Round Neck Size**

**Imperial**

- 06 6"(152) Round
- 08 8"(203) Round
- 10 10"(254) Round
- 12 12"(305) Round
- 14 14"(356) Round

Only available on Model 4420

**3. Ceiling Module Size**

**Imperial**

- 12" x 12" (Model 4410)
- 24" x 12" (Model 4430)
- 24" x 24" (Models 4420 and 4440)

**Metric**

- 300 mm x 300 mm (Model 4410)
- 600 mm x 300 mm (Model 4430)
- 600 mm x 600 mm (Models 4420 and 4440)

**4. Frame Type**

- L Lay-in T-Bar (Models 4410 and 4420)
- PL Panel Lay-in T-Bar (Models 4430 and 4440)
- S Surface Mount (Model 4410)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- PC Prime Coat
- SP Special Custom Color

**6. Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

**7. Volume Control**

- None (default)
- AV Adjustable Volume Control

**Notes:**

1. Consult individual model as to limitations of module and neck size combination.
2. Model 4410 (Frame Type S) is ULC Classified only.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor** (select one or more) **Model 4410, 4420, 4430 or 4440 Steel Fire Rated Stamped Square Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be manufactured from corrosion-resistant steel and consist of two die-formed concentric cones which eliminate mitered corners and provide uniform appearance in all neck sizes. The inner core assembly is removable by using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional adjustable volume controller without removing the inner core. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## FIRE RATED ARCHITECTURAL SQUARE CEILING DIFFUSERS

- SQUARE PLAQUE
- HIGH PERFORMANCE
- ROUND NECK
- 3 HOUR RATING
- LAY-IN

### Full Face Models:

4410-UNI, 4420-UNI

### Panel Type Models:

4430-UNI, 4440-UNI



CATEGORY  
BZZU



CATEGORY  
BZGUC



Model 4420-UNI

Model Series 4400 are UL/ULC Classified Fire Rated Ceiling Diffuser/Air Terminal Unit assemblies listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

These models are a fire rated version of the popular UNI Series. They have been specially designed to provide the unobtrusive appearance required for architectural excellence and the 360° diffusion pattern at minimum NC levels required for high engineering performance. The stamped one-piece outer cone eliminates mitered corners and the die-formed curves provide consistent quality and performance.

The UNI diffuser complements any decor, blending beautifully with virtually any architectural style or requirement. The UNI diffuser provides a stable, tight fit to the ceiling, horizontal air diffusion and mixing pattern under constant and changing load conditions throughout the cataloged range of air volumes, and is particularly suitable for variable air volume applications.

### STANDARD FEATURES:

- Factory assembled, 'packaged' product ensures compliance with fire code, simplifies specification and minimizes field labor.
- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- Approved for use with flexible duct. Eliminates steel branch duct and drop. No costly independent hangers and supports are required.
- Spring-loaded core is securely held in position and is removable without the use of tools.
- Engineered air diffusion pattern.
- Steel stamped cones for uniformity.
- Face panel is virtually flush with the ceiling line and is double skinned for rigidity and strength. Features a hemmed edge for a professional finish.
- With two cones in all sizes, the diffusers provide a uniform appearance where different neck sizes are installed in the same area.
- RC Retaining Channels are available for ceiling tile installation on the face of the inner cone assembly.
- Unique, concealed neck bracketry is virtually invisible from most angles.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional.
- Access to the AV balancing option is achieved by removing the inner cone assembly.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.

### CONSTRUCTION MATERIAL:

- Heavy gauge corrosion-resistant steel.

### FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

### PERFORMANCE DATA:

- See non-fire rated Model UNI.



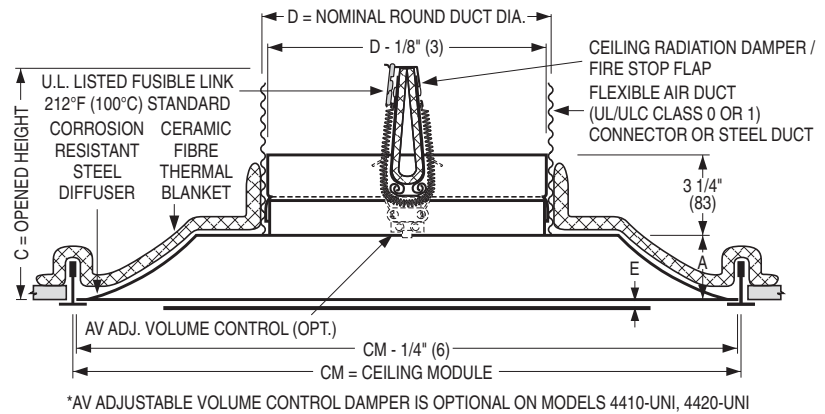
## DIMENSIONAL DATA:

### MODELS 4410-UNI AND 4420-UNI • FULL FACE

**Model 4410-UNI** 12 x 12 or 300 x 300

**Model 4420-UNI** 24 x 24 or 600 x 600

Listed Neck Size	Imperial Modules (inches)				Metric Modules (mm)			
	CM = 12 x 12				CM = 300 x 300			
	D	A	C	E	D	A	C	E
6	6		5 1/2		152		140	
8	8	1	6 1/2	5/8	203	25	165	16
Listed Neck Size	CM = 24 x 24				CM = 600 x 600			
	D	A	C	E	D	A	C	E
6	6		6 13/16		152		173	
8	8		7 13/16		203		198	
10	10	2 5/16	8 13/16	3/8	254	59	224	10
12	12		9 13/16		305		249	
14	14		10 13/16		356		275	



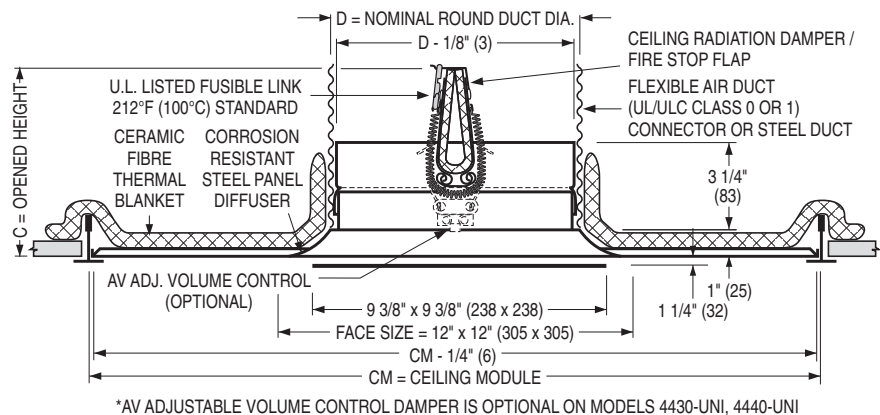
**Type L Lay-in T-Bar Frame**

### MODELS 4430-UNI AND 4440-UNI • PANEL TYPE

**Model 4430-UNI** 24 x 12 or 600 x 300

**Model 4440-UNI** 24 x 24 or 600 x 600

Listed Neck Size	Imperial Modules (inches)		Metric Modules (mm)	
	CM = 24 x 12		CM = 600 x 300	
	D	C	D	C
6	6	5 1/2	152	140
8	8	6 1/2	203	165
Listed Neck Size	CM = 24 x 24		CM = 600 x 600	
	D	C	D	C
6	6	5 1/2	152	140
8	8	6 1/2	203	165



**Type PL Panel Lay-in T-Bar Frame**

### Architectural Option

#### Model 4420-UNI

Model 4420-UNI Diffuser with optional RC Retaining Channel complements any decor blending beautifully with virtually any architectural style or requirement for a unique 'custom' appearance.

The retaining channel is shipped separately for field installation of a ceiling tile that has been cut to size and installs directly on the face of the inner cone assembly.

The result is a high performance, fire rated diffuser that blends harmoniously with the specified architectural ceiling design.





## HOW TO ORDER OR TO SPECIFY

### FIRE RATED ARCHITECTURAL CEILING DIFFUSERS – SQUARE PLAQUE MODELS 4410-UNI, 4420-UNI, 4430-UNI, 4440-UNI

**EXAMPLE: 4420-UNI - 08 - 24" x 24" - L - AW - 212 - AV**

**1. Models**

- 4410-UNI 12" x 12" or 300 mm x 300 mm, Full Face
- 4420-UNI 24" x 24" or 600 mm x 600 mm, Full Face
- 4430-UNI 24" x 12" or 600 mm x 300 mm, Panel Type
- 4440-UNI 24" x 24" or 600 mm x 600 mm, Panel Type

**2. Round Neck Size**

**Imperial**

- 06 6" (152) Round
- 08 8" (203) Round
- 10 10" (254) Round
- 12 12" (305) Round
- 14 14" (356) Round

Only available on  
Model 4420-UNI

**3. Ceiling Module Size**

**Imperial**

- 12" x 12" (Model 4410-UNI)
- 24" x 12" (Model 4430-UNI)
- 24" x 24" (Models 4420-UNI and 4440-UNI)

**Metric**

- 3030 300 mm x 300 mm (Model 4410-UNI)
- 6030 600 mm x 300 mm (Model 4430-UNI)
- 6060 600 mm x 600 mm (Models 4420-UNI and 4440-UNI)

**4. Frame Type**

- L Lay-in T-Bar (Models 4410-UNI and 4420-UNI)
- PL Panel Lay-in T-Bar (Models 4430-UNI and 4440-UNI)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- PC Prime Coat
- SP Special Custom Color

**6. Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

**7. Volume Control**

- None (default)
- AV Adjustable Volume Control

**Note:**

- 1. Consult individual model as to limitations of module and neck size combination.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor** (select one or more) **Model 4410-UNI, 4420-UNI, 4430-UNI or 4440-UNI Steel Fire Rated Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be manufactured from corrosion-resistant steel and consist of stamped one-piece outer-cone which eliminates mitered corners and a double-skinned inner face panel with a hemmed edge for strength and a clean appearance. The inner core assembly is to be removable by using a spring clip arrangement that permits quick, easy installation and removal. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## FIRE RATED ARCHITECTURAL SQUARE CEILING DIFFUSERS

- SQUARE PLAQUE
- ROUND NECK
- 3 HOUR RATING
- SURFACE MOUNT MODULE FOR HARD CEILINGS



Model 4410-UNI

**Model:**

**4410-UNI 12 x 12 or 300 x 300  
Type S Surface Mount**

Classified by Underwriters' Laboratories of Canada (ULC) for use in ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate air ducts and a hard (gypsum board) ceiling membrane with up to a 3 hour rating. For details of fire rated assemblies, see the current ULC Fire Resistance Directory. The use of this product in fire rated ceilings with ceiling membrane protection and/or UL Classified assemblies in the U.S.A. requires local approval by the authority having jurisdiction.

The diffuser delivered air in a true 360° streamline pattern. Excellent for VAV systems. Removable face has spring clips for easy access to the damper.

**STANDARD FEATURES:**

- Tested in accordance with CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- The diffuser consists of a stamped one piece outer cone and a plaque inner face panel with a hemmed edge for strength and a clean appearance.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E29).
- Non-standard temperature UL Listed fusible link (165°F [74°C]).

**CONSTRUCTION MATERIAL:**

- Corrosion-resistant steel diffuser.

**FINISH OPTIONS:**

- AW Appliance White finish is standard.
- Other finishes are available.

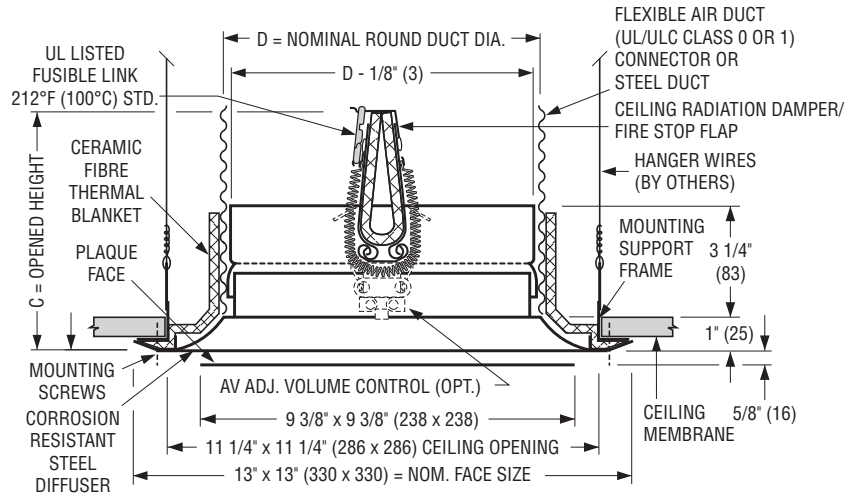
**PERFORMANCE DATA:**

- See non-fire rated Model UNI.

## DIMENSIONAL DATA:

### MODEL 4410-UNI • SQUARE FACE

### 12 x 12 or 300 x 300 TYPE S SURFACE MOUNT MODULE FOR HARD CEILINGS



**Type S Surface Mount**

### Available Sizes and Dimensional Data

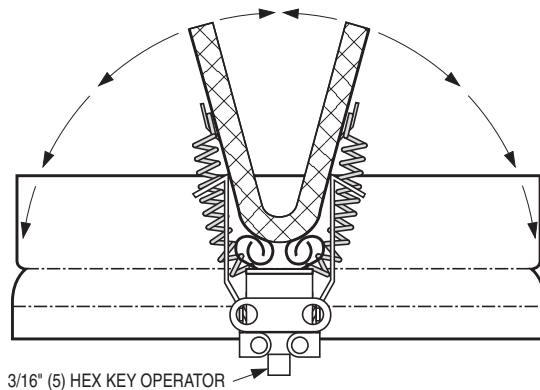
#### Model 4410-UNI - 12 x 12 or 300 x 300 module

Listed Neck Size	Imperial Modules				Metric Modules	
	Imperial Units (in.)		SI Units (mm)		SI Units (mm)	
	CM = 12 x 12		CM = 305 x 305		CM = 300 x 300	
	D	C	D	C	D	C
6	6	5 1/2	152	140	152	140
8	8	6 1/2	203	165	203	165

#### AV Adjustable Volume Control Option.

This UL Listed ceiling radiation damper control (**Model 0722A**) option allows the ceiling radiation damper to be used as a balancing damper for volume control.

The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



## HOW TO ORDER OR TO SPECIFY

### FIRE RATED ARCHITECTURAL CEILING DIFFUSERS – SQUARE PLAQUE – SURFACE MOUNT MODEL 4410-UNI

**EXAMPLE: 4410-UNI - 08 - 12" x 12" - S - AW - 212 - AV**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <b>Models</b><br/>4410-UNI 12" x 12" or 300 mm x 300 mm, Full Face</li> <li>2. <b>Round Neck Size</b><br/><b>Imperial</b><br/>06 6" (152) Round<br/>08 8" (203) Round</li> <li>3. <b>Ceiling Module Size</b><br/><b>Imperial</b><br/>12" x 12"<br/><b>Metric</b><br/>300 mm x 300 mm</li> <li>4. <b>Frame Type</b><br/>S Surface Mount for Hard Ceilings</li> </ol> | <ol style="list-style-type: none"> <li>5. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>PC Prime Coat<br/>SP Special Custom Color</li> <li>6. <b>Fusible Link Temperature</b><br/>212 212°F (100°C) (default)<br/>165 165°F (74°C)</li> <li>7. <b>Volume Control</b><br/>— None (default)<br/>AV Adjustable Volume Control</li> </ol> |
|---|--|

**Notes:**

1. Consult individual model as to limitations of module and neck size combination.
2. Model 4410-UNI (Frame Type S) is ULC Classified only.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 4410-UNI Type S** Surface Mount (round neck) **Steel Fire Rated Architectural Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel and consist of a stamped one-piece outer-cone and a double-skinned inner face panel with a hemmed edge for strength and a clean appearance. The inner core assembly is to be removable by using a spring clip arrangement that permits quick, easy installation and removal. The diffuser shall have a removable plug for screwdriver adjustment of the optional adjustable volume controller without removing the inner core. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be ULC Classified fire rated ceiling diffuser assemblies as listed in the ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with CAN/ULC Standard S101 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate air ducts and a hard gypsum board ceiling membrane with up to a 3 hour rating. The use of this product in UL Classified Ceiling Assemblies requires approval from the local authorities having jurisdiction.

## FIRE RATED PERFORATED CEILING DIFFUSERS

- FACE MOUNTED DEFLECTORS
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN
- ROUND NECK
- 3 HOUR RATING
- LAY-IN

### Supply Models:

- 4070, 4080 Flush Face
- 4075, 4085 Drop Face

### Return Models:

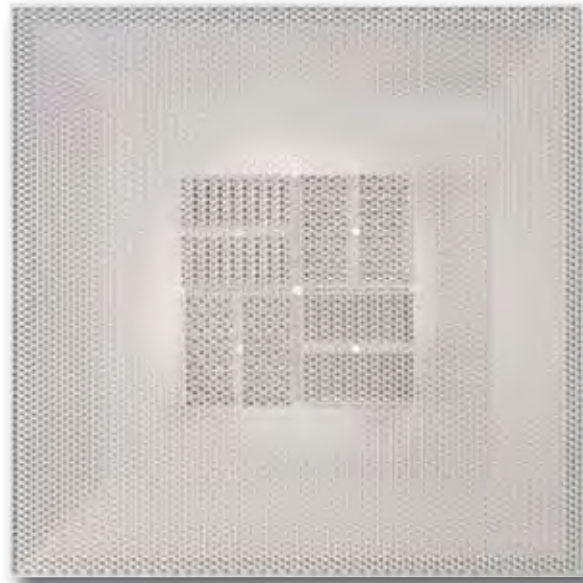
- 4070R, 4080R Flush Face
- 4075R, 4085R Drop Face



CATEGORY  
BZZU



CATEGORY  
BZGUC



Model 4080

Model Series 4070 and 4080 are UL/ULC Classified fire rated Ceiling Diffuser/Air Terminal Unit assemblies listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

Fire Rated Perforated Ceiling Diffusers have been designed to provide the unobtrusive appearance required for architectural excellence and the high engineering performance required for use in heating and cooling applications. They have excellent performance in variable air volume systems and provide a tight horizontal discharge pattern without marking the ceiling.

### STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- Hinged removable face plate with quick-release spring latches.
- Discharge pattern can adjust to vertical or 1, 2, 3 or 4-way horizontal, before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and rotating the pattern controllers.
- Round necks permit use of flexible duct.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E32).

- Dropping the perforated face gives access to this balancing feature.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers (51% free area).
- Return models have the same face and frame construction as the supply models to match appearance. The deflectors are omitted for return applications.
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.
- Ductless returns are also available.

### CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

### FINISH OPTIONS:

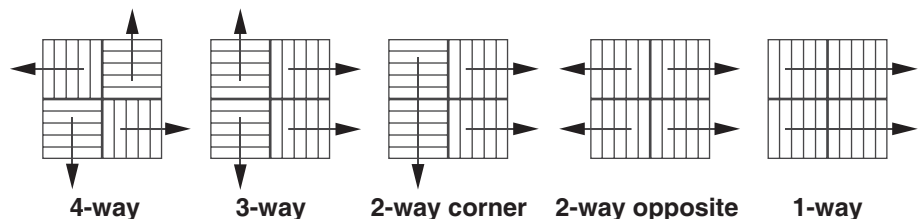
- AW Appliance White finish is standard.
- Other finishes are available.

### PERFORMANCE DATA:

- See non-fire rated Model 4320 (flush face), Model 4325 (drop face), Model 4360 (flush face) and Model 4365 (drop face).

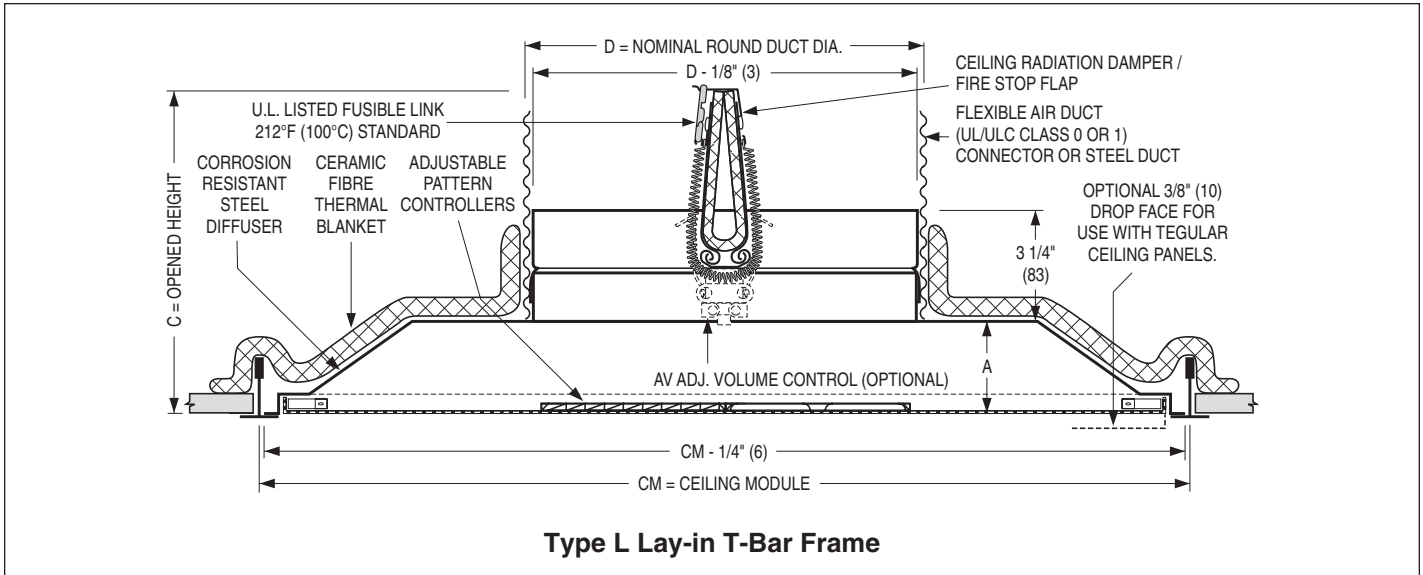
### Available Air Patterns:

All diffusers are shipped with the standard 4-way pattern, but the air pattern can be simply field adjusted by lowering the hinged face and rotating the spring loaded pattern controllers.



## DIMENSIONAL DATA:

MODELS 4070, 4075, 4080, 4085, 4070R, 4075R, 4080R AND 4085R



## Available Sizes and Dimensional Data

Listed Neck Size	Imperial Modules						Metric Modules		
	Imperial Units (in.)			SI Units (mm)			SI Units (mm)		
	CM = 12 x 12			CM = 305 x 305			CM = 300 x 300		
	D	A	C	D	A	C	D	A	C
6	6		6 3/8	152		162	152		162
8	8	1 7/8	7 3/8	203	48	187	203	48	187
	CM = 24 x 24			CM = 610 x 610			CM = 600 x 600		
	D	A	C	D	A	C	D	A	C
6	6		6 7/8	152		175	152		175
8	8		7 7/8	203		200	203		200
10	10	2 3/8	8 7/8	254	60	225	254	60	225
12	12		9 7/8	305		251	305		251
14	14		10 7/8	356		276	356		276

## Model Number Designation

### Supply Models:

**4070, Flush Face**

**4075, Drop Face**

12 x 12 or 300 x 300  
Type L Lay-in Frame

**4080, Flush Face**

**4085, Drop Face**

24 x 24 or 600 x 600  
Type L Lay-in Frame

### Return Models:

**4070R, Flush Face**

**4075R, Drop Face**

12 x 12 or 300 x 300  
Type L Lay-in Frame

**4080R, Flush Face**

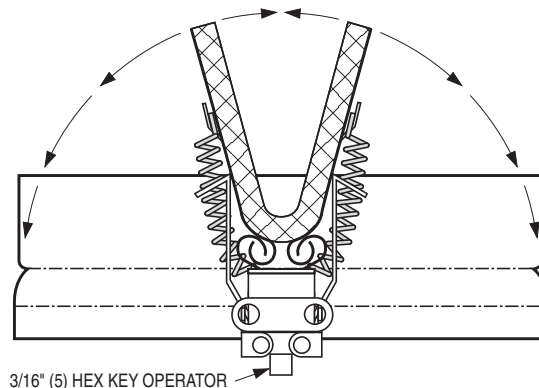
**4085R, Drop Face**

24 x 24 or 600 x 600  
Type L Lay-in Frame

### AV Adjustable Volume Control Option.

This UL Listed ceiling radiation damper control (**Model 0722A**) option allows the ceiling radiation damper to be used as a balancing damper for volume control.

The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.





## HOW TO ORDER OR TO SPECIFY

### FIRE RATED PERFORATED CEILING DIFFUSERS – ROUND NECK MODELS 4070, 4080, 4075, 4085, 4070R, 4080R, 4075R, 4085R

**EXAMPLE: 4070 - 06 - 12" x 12" - L - AW - 212 - AV**

**1. Models**

- 4070 12" x 12" or 300 mm x 300 mm, Flush Face - Supply
- 4080 24" x 24" or 600 mm x 600 mm, Flush Face - Supply
- 4075 12" x 12" or 300 mm x 300 mm, Drop Face - Supply
- 4085 24" x 24" or 600 mm x 600 mm, Drop Face - Supply
- 4070R 12" x 12" or 300 mm x 300 mm, Flush Face - Return
- 4080R 24" x 24" or 600 mm x 600 mm, Flush Face - Return
- 4075R 12" x 12" or 300 mm x 300 mm, Drop Face - Return
- 4085R 24" x 24" or 600 mm x 600 mm, Drop Face - Return

**2. Neck Size**

**Imperial**

- 06 6" (152) Round
- 08 8" (203) Round
- 10 10" (254) Round
- 12 12" (305) Round
- 14 14" (356) Round

Available on  
Models 4080, 4085,  
4080R, 4085R

**3. Ceiling Module Size**

**Imperial**

- 12" x 12"
- 24" x 24"

**Metric**

- 300 mm x 300 mm
- 600 mm x 600 mm

**4. Frame Type**

- L Lay-in T-Bar

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BA Appliance White Face - Black Back Pan
- BK Black
- BW British White
- PC Prime Coat
- SP Special Custom Color

**6. Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

**7. Volume Control**

- None (default)
- AV Adjustable Volume Control

**Note:**

- 1. Consult individual model as to limitations of module and neck size combination.

**SUGGESTED SPECIFICATION:**

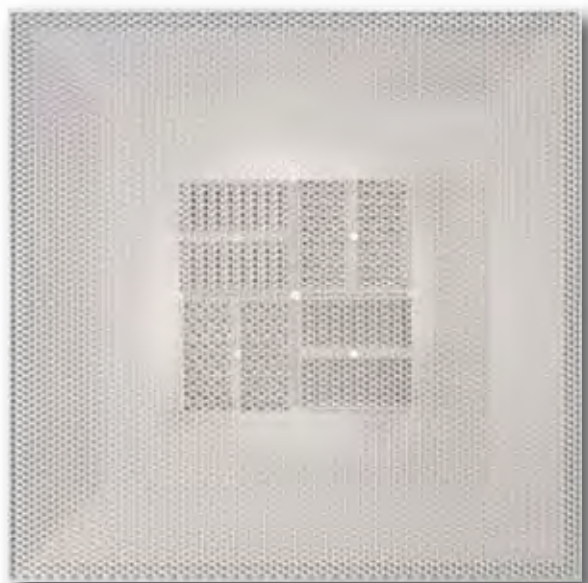
Furnish and install **Nailor Model** (select one or more) Supply – **4070, 4080 (Flush Face)**, or **4075, 4085 (Drop Face)** or Return – **4070R, 4080R (Flush Face)** or **4075R, 4085R (Drop Face)** Round Neck Steel Fire Rated Perforated Ceiling Diffusers of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be manufactured from corrosion-resistant steel and have a hinged removable face plate with quick-release spring latches. The discharge pattern can adjust to vertical or 1, 2, 3, or 4-way horizontal, before or after installation, by dropping the perforated face and rotating the pattern controllers. Return models have the same face and frame construction as the supply models to match appearance. The deflectors are omitted for return applications. Diffusers shall include a factory mounted ceiling damper and thermal blanket. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## FIRE RATED PERFORATED CEILING DIFFUSERS

- FACE MOUNTED DEFLECTORS
- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN
- ROUND NECK
- 3 HOUR RATING
- SURFACE MOUNT



CATEGORY  
BZGUC



Model 4070

### Supply Model:

**4070** 12 x 12 or 300 x 300  
Type S Surface Mount

### Return Model:

**4070R** 12 x 12 or 300 x 300  
Type S Surface Mount

Classified by Underwriters' Laboratories of Canada (ULC) for use in ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate air ducts and a hard (gypsum board) ceiling membrane with up to a 3 hour rating. For details of fire rated assemblies, see the current ULC List of Equipment and Materials Vol. III Fire Resistant Ratings. The use of this product in fire rated ceilings with ceiling membrane protection and/or UL Classified assemblies in the U.S.A. requires local approval by the authority having jurisdiction.

The discharge pattern is 1, 2, 3, or 4-way horizontal and is adjusted by dropping the perforated face and rotating the pattern deflectors. Removable face has spring clips for easy access to the damper.

The return model is furnished without pattern controllers.

### STANDARD FEATURES:

- Tested in accordance with CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E35).
- Non-standard temperature UL Listed fusible link (165°F [74°C]).

### CONSTRUCTION MATERIAL:

- Corrosion-resistant steel diffuser.

### FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

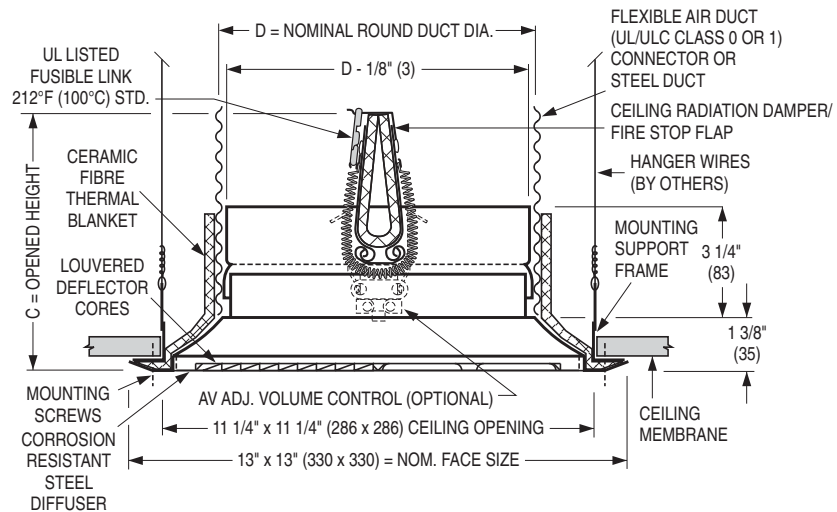
### PERFORMANCE DATA:

- See non-fire rated Model 4320 and Model 4360.

## DIMENSIONAL DATA:

### MODELS 4070 AND 4070R

### 12 x 12 or 300 x 300 TYPE S SURFACE MOUNT MODULE FOR HARD CEILINGS



**Type S Surface Mount**

### Available Sizes and Dimensional Data

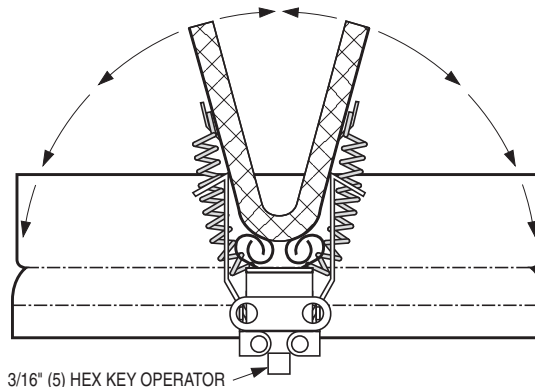
#### Model 4070 - 12 x 12 or 300 x 300 module

Listed Neck Size	Imperial Modules				Metric Modules	
	Imperial Units (in.)		SI Units (mm)		SI Units (mm)	
	CM = 12 x 12		CM = 305 x 305		CM = 300 x 300	
	D	C	D	C	D	C
6	6	5 7/8	152	149	152	149
8	8	6 7/8	203	175	203	175

#### AV Adjustable Volume Control Option.

This UL Listed ceiling radiation damper control (**Model 0722A**) option allows the ceiling radiation damper to be used as a balancing damper for volume control.

The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.



## HOW TO ORDER OR TO SPECIFY

### FIRE RATED PERFORATED CEILING DIFFUSERS – ROUND NECK MODELS 4070, 4070R

EXAMPLE: 4070 - 06 - 12" x 12" - S - AW - 212 - AV

- |  |   |
|--|---|
| <p>1. <b>Models</b><br/>4070 Supply Air<br/>4070R Return Air</p> <p>2. <b>Neck Size</b><br/><b>Imperial</b><br/>06 6" (152) Round<br/>08 8" (203) Round</p> <p>3. <b>Ceiling Module Size</b><br/><b>Imperial</b><br/>12" x 12"<br/><b>Metric</b><br/>300 mm x 300 mm</p> <p>4. <b>Frame Type</b><br/>S Surface Mount</p> | <p>5. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>PC Prime Coat<br/>SP Special Custom Color</p> <p>6. <b>Fusible Link Temperature</b><br/>212 212°F (100°C) (default)<br/>165 165°F (74°C)</p> <p>7. <b>Volume Control</b><br/>— None (default)<br/>AV Adjustable Volume Control</p> |
|--|---|

FIRE RATED PRODUCTS

#### SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one or more) **4070 Type S** Surface Mount (Supply) or **4070R Type S** Surface Mount (Return) **Round Neck Steel Fire Rated Perforated Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser shall be manufactured from corrosion-resistant steel with a discharge pattern of 1, 2, 3, or 4-way horizontal and is adjusted by dropping the perforated face and rotating the pattern controllers. The return model is furnished without pattern controllers. Diffusers shall include a factory mounted ceiling damper and thermal blanket. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be ULC Classified fire rated ceiling diffuser assemblies as listed in the ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with CAN/ULC Standard S101 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate air ducts and a hard gypsum board ceiling membrane with up to a 3 hour rating. The use of this product in UL Classified Ceiling Assemblies requires approval from the local authority having jurisdiction.

## FIRE RATED PERFORATED CURVED BLADE CEILING DIFFUSERS

- CURVED BLADE PATTERN CONTROLLERS
- 4-WAY ADJUSTABLE DISCHARGE PATTERN
- ROUND NECK
- 3 HOUR RATING
- LAY-IN

### Supply Models:

- 4070CB, 4080CB Flush Face**
- 4075CB, 4085CB Drop Face**



CATEGORY  
BZU



CATEGORY  
BZGUC



Model 4080CB

Model Series 4070CB and 4080CB are UL/ULC Classified fire rated Ceiling Diffuser/Air Terminal Unit assemblies listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

Curved Blade Perforated Diffusers provide the unobtrusive, smooth appearance preferred by many architects with superior features and performance characteristics. Designed to maximize throw, this model features individually adjustable, friction pivoted curved blade deflectors mounted directly under the neck. They project a tight, uniform horizontal blanket of air over a wide range of air volumes and provide excellent performance in variable air volume systems.

These models feature a 4-way adjustable discharge pattern as standard. The deflector blades can be adjusted to control both the angle of discharge and hence throw from full horizontal to vertical in each direction and also damper the air volume. By closing off the deflectors in one or more directions, directional control can also be achieved. They are optionally available with a factory supplied 1, 2 or 3-way adjustable discharge pattern controller.

The 4075CB and 4085CB feature a dropped (extended) face panel that is available to complement regular tile ceiling systems, so that the panel remains flush with the ceiling line.

### STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials."
- Hinged removable face plate with quick-release spring latches.
- Discharge pattern can be adjusted from horizontal to vertical, before or after installation.
- Discharge pattern is adjusted by dropping the perforated face and moving the curved blade deflectors.
- Round necks permit use of flexible duct.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E38).
- Dropping the perforated face gives access to this balancing feature.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- Perforated face with 3/16" (5) diameter holes on staggered 1/4" (6) centers (51% free area).
- All models must be installed in accordance with the installation instructions for UL/ULC Classification.
- Ductless returns are also available.

### CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

### FINISH OPTIONS:

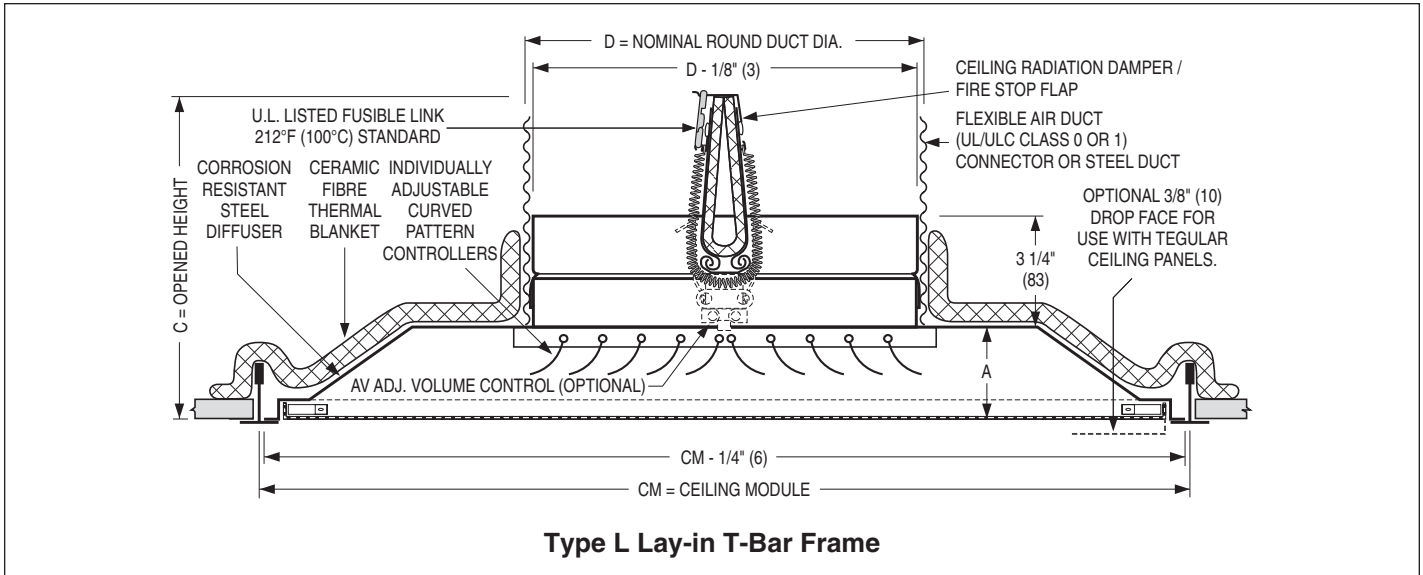
- AW Appliance White finish is standard.
- Other finishes are available.

### PERFORMANCE DATA:

- See non-fire rated Models 4320CB and 4325CB.

## DIMENSIONAL DATA:

### MODELS 4070CB, 4075CB, 4080CB AND 4085CB



## Available Sizes and Dimensional Data

Listed Neck Size	Imperial Modules						Metric Modules		
	Imperial Units (in.)			SI Units (mm)			SI Units (mm)		
	CM = 12 x 12			CM = 305 x 305			CM = 300 x 300		
	D	A	C	D	A	C	D	A	C
6	6	1 7/8	6 3/8	152	48	162	152	48	162
8	8		7 3/8	203		187	203		187
	CM = 24 x 24			CM = 610 x 610			CM = 600 x 600		
	D	A	C	D	A	C	D	A	C
6	6		6 7/8	152		175	152		175
8	8		7 7/8	203		200	203		200
10	10	2 3/8	8 7/8	254	60	225	254	60	225
12	12		9 7/8	305		251	305		251
14	14		10 7/8	356		276	356		276

## Model Number Designation

### Supply Models:

**4070CB, Flush Face**

**4075CB, Drop Face**

12 x 12 or 300 x 300

Adjustable Curved Blades

Type L Lay-in Frame

**4080CB, Flush Face**

**4085CB, Drop Face**

24 x 24 or 600 x 600

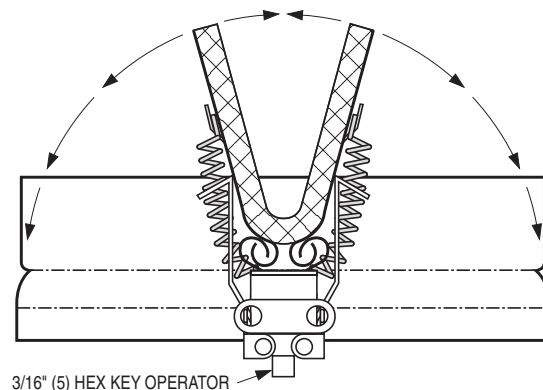
Adjustable Curved Blades

Type L Lay-in Frame

### AV Adjustable Volume Control Option.

This UL Listed ceiling radiation damper control (**Model 0722A**) option allows the ceiling radiation damper to be used as a balancing damper for volume control.

The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper.





## HOW TO ORDER OR TO SPECIFY

### FIRE RATED PERFORATED CEILING DIFFUSERS – ROUND NECK MODELS 4070CB, 4080CB (FLUSH FACE) - 4075CB, 4085CB (DROP FACE)

EXAMPLE: 4070CB - 06 - 12" x 12" - L - AW - 212 - AV - B4

**1. Models**

- 4070CB 12" x 12" or 300 mm x 300 mm, Flush Face
- 4080CB 24" x 24" or 600 mm x 600 mm, Flush Face
- 4075CB 12" x 12" or 300 mm x 300 mm, Drop Face
- 4085CB 24" x 24" or 600 mm x 600 mm, Drop Face

**2. Neck Size**

**Imperial**

- 06 6" (152) Round
- 08 8" (203) Round
- 10 10" (254) Round
- 12 12" (305) Round
- 14 14" (356) Round

\*Available on  
Models 4080CB,  
4085CB

**3. Ceiling Module Size**

**Imperial**

- 12" x 12"
- 24" x 24"

**Metric**

- 300 mm x 300 mm
- 600 mm x 600 mm

**4. Frame Type**

- L Lay-in T-Bar

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BA Appliance White Face - Black Back Pan
- BK Black
- BW British White
- PC Prime Coat
- SP Special Custom Color

**6. Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

**7. Volume Control**

- None (default)
- AV Adjustable Volume Control

**8. Blow Pattern**

- B4 4-Way Blow (default)
- B1 1-Way Blow
- B2 2-Way Opposite Blow
- B3 3-Way Blow
- C2 2-Way Corner Blow

**Note:**

- 1. Consult individual model as to limitations of module and neck size combination.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one or more) **4070CB, 4080CB (Flush Face)** or **4075CB, 4085CB (Drop Face) Round Neck Steel Fire Rated Perforated Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be manufactured from corrosion-resistant steel and have a hinged removable face plate with quick-release spring latches. The discharge pattern is 4-way adjustable (vertical or horizontal) and can be adjusted either before or after installation by dropping the perforated face and moving the curved blade deflectors. Diffusers shall include a factory mounted ceiling damper and thermal blanket. (Optional: ceiling radiation damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## FIRE RATED SQUARE MODULAR CORE CEILING DIFFUSERS

- 1, 2, 3 OR 4-WAY ADJUSTABLE DISCHARGE PATTERN
- ROUND OR SQUARE NECK
- 3 HOUR RATING
- LAY-IN

### Square Neck Models:

7500FRD

### Round Neck Models:

7505FRD



CATEGORY  
CABS & CABS7



Model 7500FRD

Model 7500FRD is a UL Classified Fire Rated Ceiling Diffuser Component Assembly. The ceiling damper and thermal blanket accessory are listed in Underwriters Laboratories Fire Resistance Directory under categories, "Ceiling Dampers" and "Ceiling Fire Stop Flap Assemblies Certified for Canada." This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

This model is classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

Modular Core Diffusers provide a versatile 'modular core' design that is available in a comprehensive range of sizes and air capacities, providing optimum simplicity and flexibility for field adjustment of the discharge air pattern. They maintain a tight horizontal ceiling pattern from maximum to minimum flow and make an excellent choice for use in variable air volume systems.

These diffusers consist of four spring-loaded modular cores that may be simply adjusted by rotating each module after installation to provide a 1, 2, 3 or 4-way blow pattern in a few seconds.

### STANDARD FEATURES:

- Tested in accordance with UL Standard 555C "Ceiling Dampers" and ULC S112.2 "Fire Stop Flap Assemblies."
- Each diffuser has 4 separate individually adjustable spring-loaded modular cores.
- Simple adjustment for a 1, 2, 3 or 4-way horizontal discharge pattern without the use of tools.
- Square neck Model 7500FRD has ample collar depth and allows a solid duct connection.
- The fixed ceiling radiation damper is standard. The AV adjustable option is not available on this model as the core assembly restricts access. Balancing should be performed by installing a remote damper in the duct take-off.
- Round neck Model 7505FRD permits use of flexible duct.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- Must be installed in accordance with the installation instructions for UL/ULC Classification.

### CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

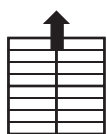
### FINISH OPTIONS:

- AW Appliance White finish is standard.
- Other finishes are available.

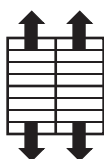
### PERFORMANCE DATA:

- See non-fire rated Model 7500.

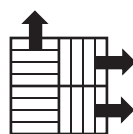
### Modular Core Adjustments



1-way



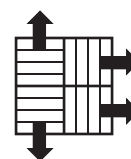
2-way opposite



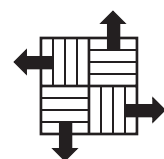
2-way corner



2-way (3 cores)



3-way

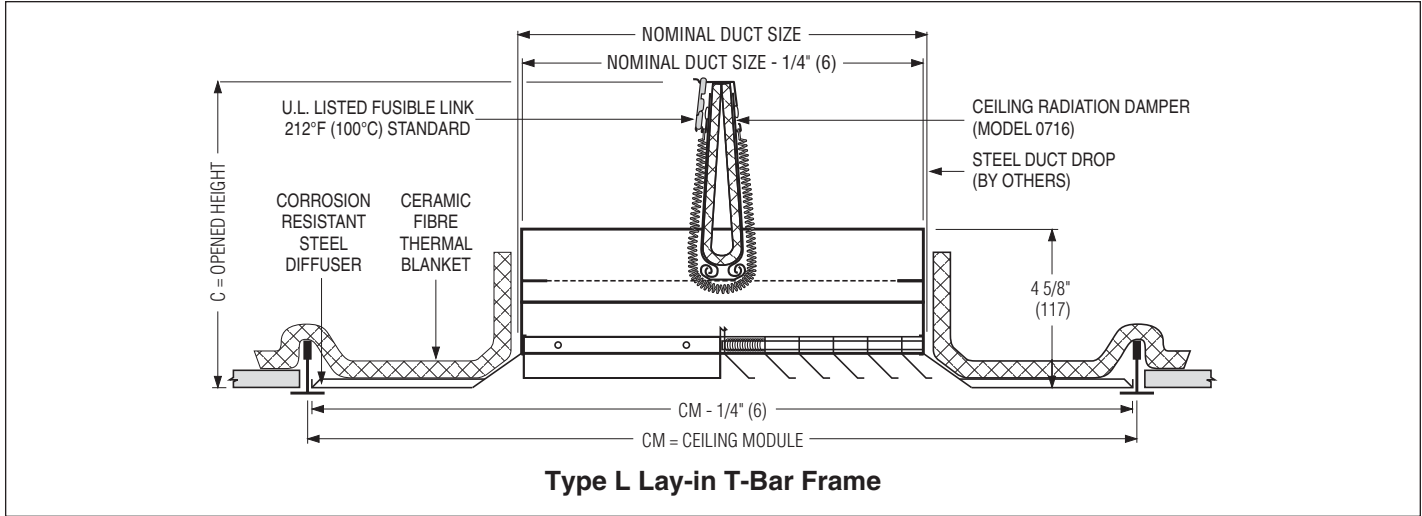


4-way

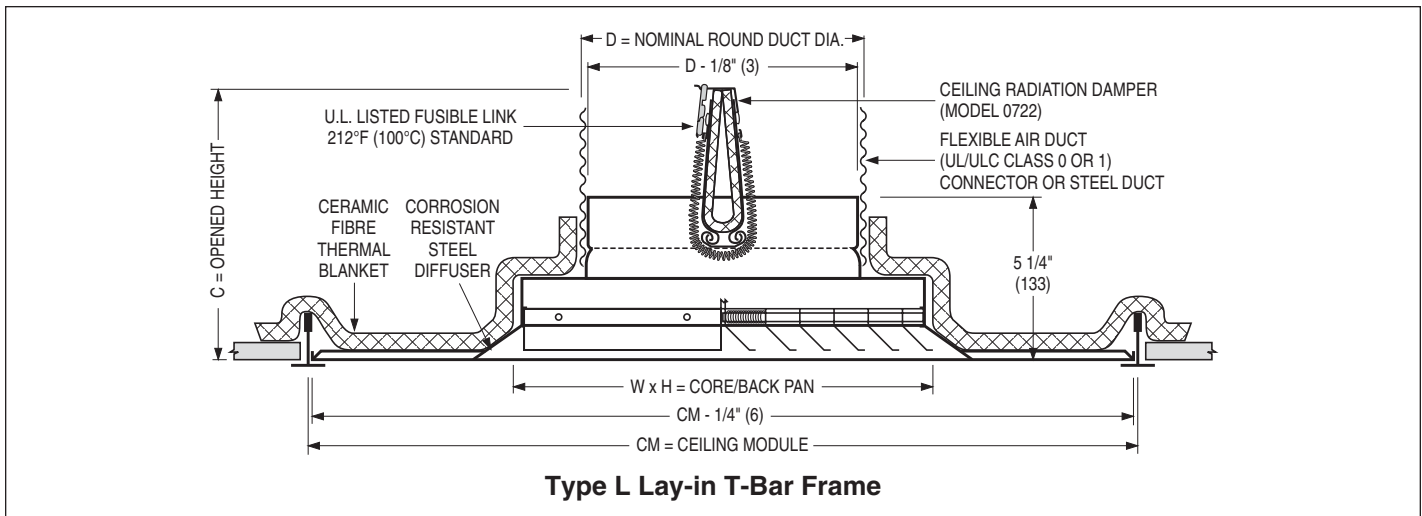
All diffusers are shipped with the core set for 4-way discharge, but the air pattern can be simply field adjusted by lowering the hinged face and rotating the spring-loaded modules.

## DIMENSIONAL DATA:

### MODEL 7500FRD • SQUARE NECK



### MODEL 7505FRD • ROUND NECK



## Available Sizes and Dimensional Data:

### Model 7500FRD

Ceiling Module	Nominal Duct Size	Opening Height C
CM	(square)	Standard
12 x 12	6 x 6	5 3/4
	8 x 8	6 3/4
	9 x 9	7 1/4
24 x 24	6 x 6	5 3/4
	8 x 8	6 3/4
	9 x 9	7 1/4
	10 x 10	7 3/4
	12 x 12	9
	14 x 14	9 3/4
	15 x 15	10 1/4
	16 x 16	10 3/4
18 x 18	11 3/4	
	20 x 20	12 3/4

### Model 7505FRD

Ceiling Module	Core/Back Pan	Round Neck	Opening Height
CM	W x H	D	C
12 x 12	9 x 9	6	6 1/2
		8	7 1/2
24 x 24	9 x 9	6	6 1/2
		8	7 1/2
	10 x 10	6	6 1/2
		8	7 1/2
	12 x 12	8	7 1/2
		10	8 1/2
	15 x 15	10	8 1/2
		12	9 1/2
14		10 1/2	
12		9 1/2	
	18 x 18	14	10 1/2

**Note:** If the square ceiling module is more than 3" (76) larger than the square neck (core/back pan), a module sized extended panel is utilized.

## HOW TO ORDER OR TO SPECIFY

### FIRE RATED MODULAR CORE DIFFUSERS • SQUARE NECK – MODEL 7500FRD

EXAMPLE: 7500FRD - 0606 - 12" x 12" - L - AW - 212

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. <b>Model</b><br/>7500FRD Square Neck</li> <li>2. <b>Neck Size</b><br/><b>Imperial</b><br/>0606 06" x 06" (152 x 152) Square<br/>0808 08" x 08" (203 x 203) Square<br/>0909 09" x 09" (229 x 229) Square<br/>1010 10" x 10" (254 x 254) Square<br/>1212 12" x 12" (305 x 305) Square<br/>1414 14" x 14" (356 x 356) Square<br/>1515 15" x 15" (381 x 381) Square<br/>1616 16" x 16" (406 x 406) Square<br/>1818 18" x 18" (457 x 457) Square<br/>2020 20" x 20" (508 x 508) Square</li> <li>3. <b>Ceiling Module Size</b><br/><b>Imperial</b><br/>12" x 12"<br/>24" x 24"<br/><b>Metric</b><br/>300 mm x 300 mm<br/>600 mm x 600 mm</li> </ol> | <ol style="list-style-type: none"> <li>4. <b>Frame Type</b><br/>L Lay-in T-Bar</li> <li>5. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>PC Prime Coat<br/>SP Special Custom Color</li> <li>6. <b>Fusible Link Temperature</b><br/>212 212°F (100°C) (default)<br/>165 165°F (74°C)</li> </ol> |
|---|---|

Only available on  
24" x 24" or  
600 mm x 600 mm  
ceiling modules

**Note:**

1. Consult individual model as to limitations of module and neck size combination.



**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 7500FRD** (Square Neck) **Steel Fire Rated Modular Core Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall consist of four spring-loaded modular cores that can be adjusted by lowering the hinged face and rotating each module after installation to provide a 1, 2, 3 or 4-way horizontal throw pattern without the use of tools. Diffusers shall include a factory mounted ceiling damper and thermal blanket. The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be factory assembled UL/ULC fire rated diffuser component assemblies and classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating. Ceiling damper and thermal blanket accessory shall be listed in UL/ULC Fire Resistance (Certifications) Directory and meet all NFPA 90A requirements.

## HOW TO ORDER OR TO SPECIFY

### FIRE RATED MODULAR CORE DIFFUSERS • ROUND NECK – MODEL 7505FRD

EXAMPLE: 7505FRD - 1212 - 10 - 24" x 24" - L - AW - 212

- |   |   |  |
|---|---|--|
| <p>1. <b>Model</b><br/>7505FRD Round Neck</p> <p>2. <b>Core/Backpan Size</b><br/><b>Imperial</b><br/>0909 09" x 09" (229 x 229)<br/>1212 12" x 12" (305 x 305)<br/>1515 15" x 15" (381 x 381)<br/>1818 18" x 18" (457 x 457)</p> <p>3. <b>Neck Size</b><br/><b>Imperial</b><br/>06 6" (152) Round<br/>08 8" (203) Round<br/>10 10" (254) Round<br/>12 12" (305) Round<br/>14 14" (356) Round</p> <p>4. <b>Ceiling Module Size</b><br/><b>Imperial</b><br/>12" x 12"<br/>24" x 24"<br/><b>Metric</b><br/>300 mm x 300 mm<br/>600 mm x 600 mm</p> | <p>Only available on<br/>24" x 24" or<br/>600 mm x 600 mm<br/>ceiling modules</p> | <p>5. <b>Frame Type</b><br/>L Lay-in T-Bar</p> <p>6. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>PC Prime Coat<br/>SP Special Custom Color</p> <p>7. <b>Fusible Link Temperature</b><br/>212 212°F (100°C) (default)<br/>165 165°F (74°C)</p> |
|---|---|--|

**Note:**

1. Consult individual model as to limitations of module and neck size combination.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 7505FRD** (Round Neck) **Steel Fire Rated Modular Core Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall consist of four spring-loaded modular cores that can be adjusted by lowering the hinged face and rotating each module after installation to provide a 1, 2, 3 or 4-way horizontal throw pattern without the use of tools. Diffusers shall include a factory mounted ceiling damper and thermal blanket. The finish shall be AW Appliance White (optional finishes are available). Diffusers shall be factory assembled UL/ULC fire rated diffuser component assemblies and classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating. Ceiling damper and thermal blanket accessory shall be listed in UL/ULC Fire Resistance (Certifications) Directory and meet all NFPA 90A requirements.

## FIRE RATED DUCTLESS RETURN GRILLES

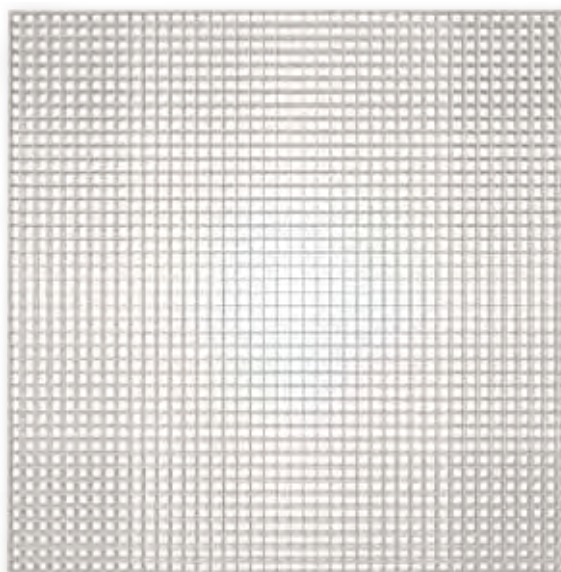
- LOW PROFILE
- VOLUME CONTROL OPTION
- 3 HOUR RATING
- LAY-IN



CATEGORY  
BZZU



CATEGORY  
CABS & CABS7



Model 4116

### Models:

#### Perforated Face:

4111, 4112, 4113

#### Eggcrate Face:

4114, 4115, 4116

#### Open Face (grille by others):

4117, 4118, 4119

Model Series 4100 are UL Classified Fire Rated Ceiling Diffuser assemblies listed in Underwriters Laboratories Fire Resistance Directory under categories "Ceiling Diffusers", "Ceiling Dampers" and "Ceiling Fire Stop Flaps Assemblies Certified for Canada". This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

These models have been designed to complement the Nailor range of fire rated supply diffusers. Successfully tested and classified for use without the requirement of duct work or supplementary support, they simply lay in place. They enable the ceiling plenum to be utilized as a ductless return air system and so provide an extremely economical means of fire protection in return air applications.

#### STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials", UL Standard 555C "Ceiling Dampers" and ULC S112.2 "Fire Stop Flap Assemblies".
- Available in both popular perforated and eggcrate face styles.
- Perforated face models are corrosion-resistant steel with 3/16" (5) diameter holes on staggered 1/4" (6) centers (51% free area).
- Eggcrate models feature an 1/2 x 1/2 x 1/2 (13 x 13 x 13) aluminum grid core.
- 212°F (100°C) fusible link is standard (165°F [74°C] is opt.).
- All models must be installed in accordance with installation instructions for UL/ULC Classification.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E45).

#### CONSTRUCTION MATERIAL:

- Galvanized steel frame. Non-asbestos UL Classified insulation.

#### FINISH OPTIONS:

- AW Appliance White finish is standard to match supply models.
- Other finishes are available.

#### PERFORMANCE DATA:

- See non-fire rated models. Perforated Model 4302. Eggcrate Model 51EC.

#### Available Sizes and Dimensional Data

Model No.	Face Type	Ceiling Module		Opening Height A	
		Imperial (inches)	Metric (mm)	Standard	With AV Option
4111	Perforated	12 x 12	300 x 300	6 1/4 (159)	7 1/4 (184)
4112		24 x 12	600 x 300	6 1/4 (159)	7 1/4 (184)
4113		24 x 24	600 x 600	12 1/4 (311)	13 1/4 (337)
4114	Eggcrate	12 x 12	300 x 300	6 1/4 (159)	7 1/4 (184)
4115		24 x 12	600 x 300	6 1/4 (159)	7 1/4 (184)
4116		24 x 24	600 x 600	12 1/4 (311)	13 1/4 (337)
4117	Open	12 x 12	300 x 300	6 1/4 (159)	7 1/4 (184)
4118		24 x 12	600 x 300	6 1/4 (159)	7 1/4 (184)
4119		24 x 24	600 x 600	12 1/4 (311)	13 1/4 (337)

Dimensions are in inches (mm).



## DIMENSIONAL DATA:

### MODELS 4111 TO 4119 • PERFORATED, EGGCRATE OR OPEN FACE

**Perforated Grille Models:**

4111, 4112, 4113

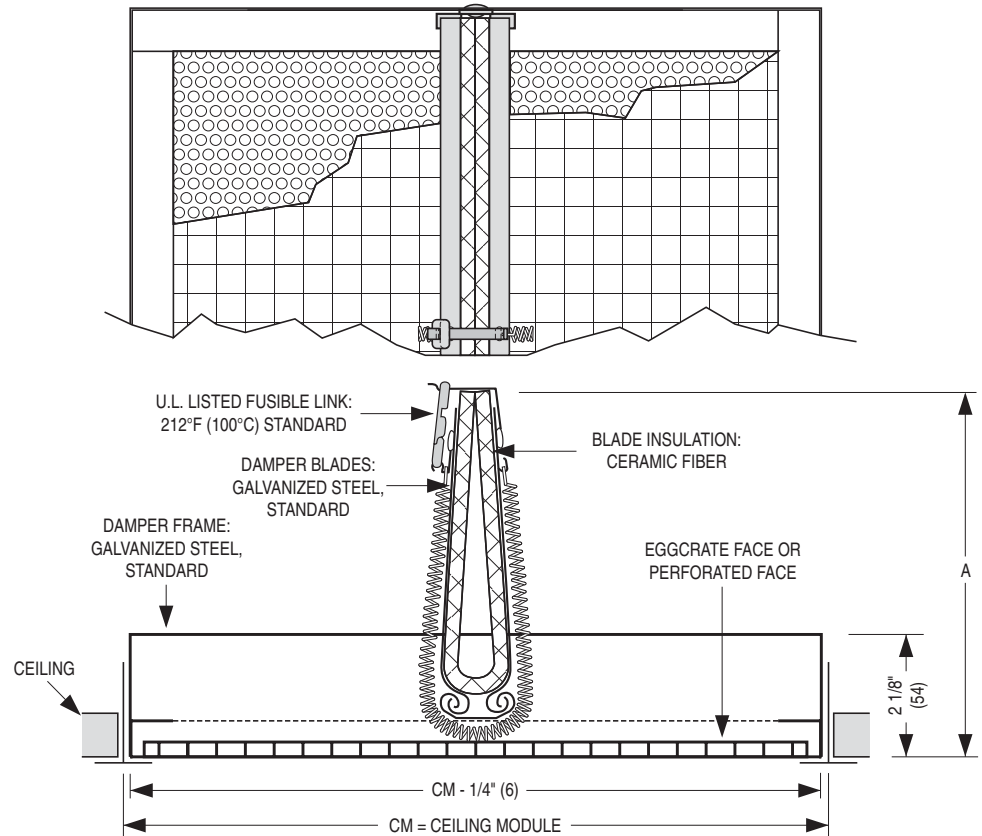
**Eggcrate Grille Models:**

4114, 4115, 4116

**Open Face Models**

**(grille by others):**

4117, 4118, 4119



### MODELS 4111 TO 4119 • PERFORATED, EGGCRATE OR OPEN FACE • WITH AV OPTION

**Perforated Grille Models with Adjustable Volume Control:**

4111 AV, 4112 AV, 4113 AV

**Eggcrate Grille Models with Adjustable Volume Control:**

4114 AV, 4115 AV, 4116 AV

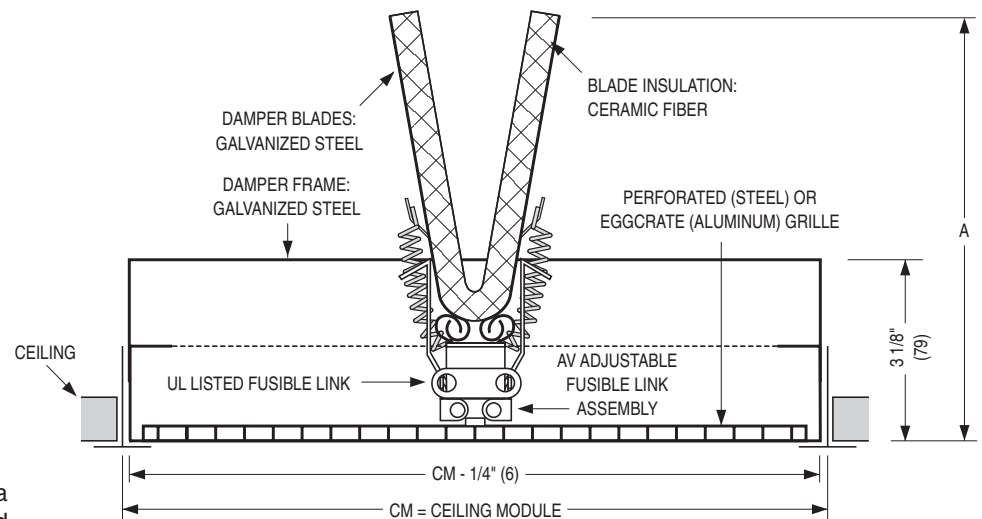
**Open Face Models with Adjustable Volume Control:**

4117 AV, 4118 AV, 4119 AV

**AV Adjustable Volume Control Option.**

This UL Listed option allows the damper to be used as a balancing damper for volume control.

The blades are adjusted with a 3/16" (5) hex key (by others) and perform like a butterfly damper.



FIRE RATED PRODUCTS

## HOW TO ORDER OR TO SPECIFY

### FIRE RATED DUCTLESS RETURN GRILLES

#### MODELS 4111, 4112, 4113, 4114, 4115, 4116, 4117, 4118, 4119

EXAMPLE: 4111 - 12" x 12" - AW - 212 - AV

**1. Models**

- 4111 12" x 12" or 300 mm x 300 mm, Perforated Face
- 4112 24" x 12" or 600 mm x 300 mm, Perforated Face
- 4113 24" x 24" or 600 mm x 600 mm, Perforated Face
- 4114 12" x 12" or 300 mm x 300 mm, Eggcrate Face
- 4115 24" x 12" or 600 mm x 300 mm, Eggcrate Face
- 4116 24" x 24" or 600 mm x 600 mm, Eggcrate Face
- 4117 12" x 12" or 300 mm x 300 mm, Open Face  
(Grille by others)
- 4118 24" x 12" or 600 mm x 300 mm, Open Face  
(Grille by others)
- 4119 24" x 24" or 600 mm x 600 mm, Open Face  
(Grille by others)

**3. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- PC Prime Coat
- SP Special Custom Color

**4. Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

**5. Volume Control**

- None (default)
- AV Adjustable Volume Control

**Note:**

- 1. Consult individual model as to limitations of module sizes.

**2. Ceiling Module Size**

**Imperial**

- 12" x 12"
- 24" x 12"
- 24" x 24"

**Metric**

- 300 mm x 300 mm
- 600 mm x 300 mm
- 600 mm x 600 mm

FIRE RATED PRODUCTS

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one or more) **4111, 4112, 4113 (Perforated Face)** or **4114, 4115, 4116 (Eggcrate Face)** or **4117, 4118, 4119 (Open Face for Grille [by others]) Fire Rated Ductless Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. Grilles shall include a factory mounted ceiling damper. The grilles shall be tested and classified for use without the requirement of duct work or supplementary support and enable the ceiling plenum to be utilized as a ductless return air system. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). Where a grille is part of the assembly the finish shall be AW Appliance White (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Grilles shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## FIRE RATED DUCTLESS RETURN FILTER GRILLES

- RAISED TYPE
- VOLUME CONTROL OPTION
- 3 HOUR RATING
- LAY-IN

### Models:

#### Louvered Face:

4121, 4122, 4123

#### Eggcrate Face:

4124, 4125, 4126



CATEGORY  
BZZU



CATEGORY  
CABS & CABS7



Model 4123

Model Series 4100 are UL Classified Fire Rated Ceiling Diffuser assemblies listed in Underwriters Laboratories Fire Resistance Directory under categories "Ceiling Diffusers", "Ceiling Dampers" and "Ceiling Fire Stop Flaps Assemblies Certified for Canada". This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

These models have been designed to complement the Nailor range of fire rated supply diffusers. Successfully tested and classified for use without the requirement of duct work or supplementary support, they simply lay in place. They enable the ceiling plenum to be utilized as a ductless return air system and so provide an extremely economical means of fire protection in return air applications.

#### STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials", UL Standard 555C "Ceiling Dampers" and ULC S112.2 "Fire Stop Flap Assemblies".
- Available in both popular louvered face and eggcrate face styles.
- Filter grille frames are constructed of corrosion-resistant steel and feature a hinged core secured by 1/4 turn fasteners. 1" (25) filter by others.
- Louvered face models feature fixed 45° deflection blades on 3/4" (19) centers.
- Eggcrate models feature a 1/2 x 1/2 x 1/2 (13 x 13 x 13) aluminum grid core.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with installation instructions for UL/ULC Classification.
- The fixed ceiling radiation damper is standard. An adjustable version for balancing is optional (see page E48).

#### CONSTRUCTION MATERIAL:

- Galvanized steel frame and blades. Non-asbestos UL Classified insulation.

#### FINISH OPTIONS:

- AW Appliance White finish is standard to match supply models.
- Other finishes are available.

#### PERFORMANCE DATA:

- See non-fire rated models. Louvered Face Model 61FB45. Eggcrate Model 61FE.

#### Available Sizes and Dimensional Data

Model No.	Filter Grille	Ceiling Module		Opened Height A	1" (25) Filter Size
		Imperial (inches)	Metric (mm)		
4121	Louvered Face	12 x 12	300 x 300	10 (254)	8 x 8 (203 x 203)
4122		24 x 12	600 x 300	10 (254)	20 x 8 (508 x 203)
4123		24 x 24	600 x 600	16 (406)	20 x 20 (508 x 508)
4124	Eggcrate Face	12 x 12	300 x 300	10 (254)	8 x 8 (203 x 203)
4125		24 x 12	600 x 300	10 (254)	20 x 8 (508 x 203)
4126		24 x 24	600 x 600	16 (406)	20 x 20 (508 x 508)

Dimensions are in inches (mm).

## DIMENSIONAL DATA:

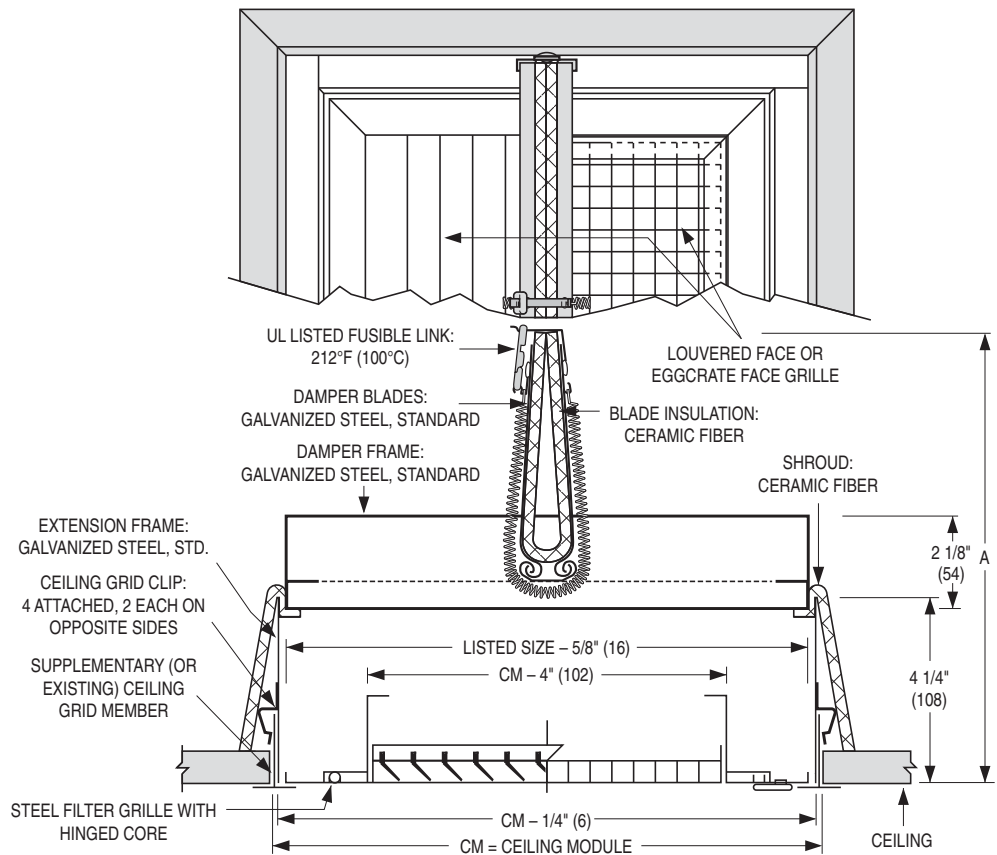
### MODELS 4121 TO 4126 • LOUVERED OR EGGCRATE FACE

#### Louvered Grille Models:

4121, 4122, 4123

#### Eggcrate Grille Models:

4124, 4125, 4126



### MODELS 4121 TO 4126 • LOUVERED OR EGGCRATE FACE • WITH AV OPTION

#### Louvered Grille Models with Adjustable Volume Control:

4121 AV, 4122 AV, 4123 AV

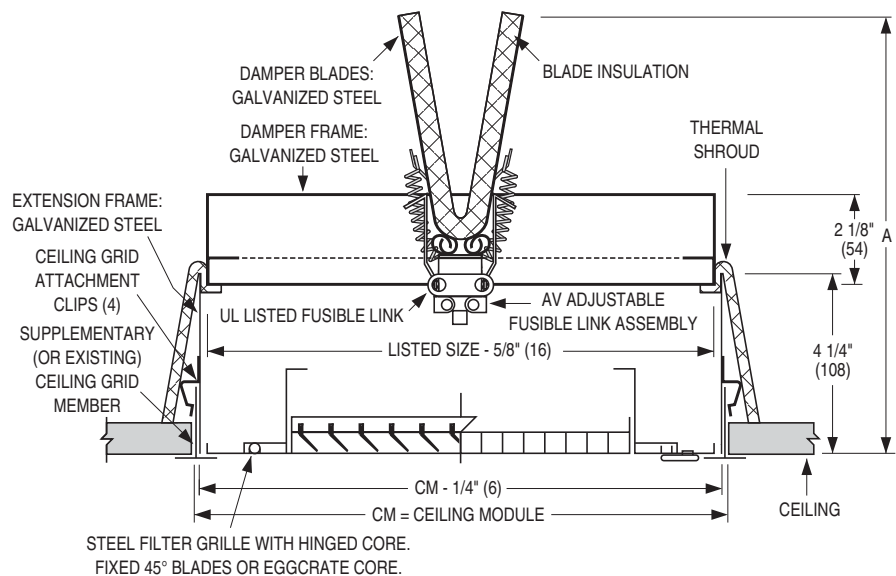
#### Eggcrate Grille Models with Adjustable Volume Control:

4124 AV, 4125 AV, 4126 AV

#### AV Adjustable Volume Control Option.

This UL Listed option allows the damper to be used as a balancing damper for volume control.

The blades are adjusted with a 3/16" (5) hex key (by others) and perform like a butterfly damper.



## HOW TO ORDER OR TO SPECIFY

### FIRE RATED DUCTLESS RETURN FILTER GRILLES

#### MODELS 4121, 4122, 4123, 4124, 4125, 4126

EXAMPLE: 4121 - 12" x 12" - AW - 212 - AV

1. **Models**

- 4121 12" x 12" or 300 mm x 300 mm, Louvered Face
- 4122 24" x 12" or 600 mm x 300 mm, Louvered Face
- 4123 24" x 24" or 600 mm x 600 mm, Louvered Face
- 4124 12" x 12" or 300 mm x 300 mm, Eggcrate Face
- 4125 24" x 12" or 600 mm x 300 mm, Eggcrate Face
- 4126 24" x 24" or 600 mm x 600 mm, Eggcrate Face

2. **Ceiling Module Size**

**Imperial**

- 12" x 12"
- 24" x 12"
- 24" x 24"

**Metric**

- 300 mm x 300 mm
- 600 mm x 300 mm
- 600 mm x 600 mm

3. **Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- PC Prime Coat
- SP Special Custom Color

4. **Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

5. **Volume Control**

- None (default)
- AV Adjustable Volume Control

**Note:**

- 1. Consult individual model as to limitations of module sizes.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one or more) **4121, 4122, 4123 (Louvered Face)** or **4124, 4125, 4126 (Eggcrate Face)** **Fire Rated Ductless Return Filter Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. Grilles shall include a raised type factory mounted ceiling damper and thermal shroud. Filter grilles shall be constructed of corrosion-resistant steel and feature a hinged core secured by 1/4 turn fasteners. The grilles shall be tested and classified for use without the requirement of duct work or supplementary support and enable the ceiling plenum to be utilized as a ductless return air system. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). The finish shall be AW Appliance White to match supply models (optional finishes are available). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## FIRE RATED DUCTLESS RETURN CEILING DAMPERS

- FOR OPTIONAL GRILLE (BY NAILOR OR OTHERS)
- RAISED TYPE
- 3 HOUR RATING
- LAY-IN



CATEGORY  
BZZU



CATEGORY  
CABS & CABS7



Model 4129 [\*Grille Ordered Separately]

Model Series 4100 are UL/ULC Classified Fire Rated Ceiling Diffuser Assemblies listed in Underwriters Laboratories Fire Resistance Directory under categories "Ceiling Diffusers", "Ceiling Dampers" and "Ceiling Fire Stop Flaps Assemblies Certified for Canada". This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

This unique Nailor product features a raised ceiling radiation damper mounted on an extended support frame above the ceiling line. The integrity of the ceiling membrane protection is maintained by the addition of a peripheral, thermally retardant, shroud. The fire rated protected cavity allows the design engineer great flexibility. As the fire protection and integrity are supplied solely by the damper assembly, any type of return air grille, filter grille or register of steel or aluminum construction may be selected and installed in the fire rated ceiling. One such example is when a return air register with opposed blade damper is required.

### STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials", UL Standard 555C "Ceiling Dampers" and ULC S112.2 "Fire Stop Flap Assemblies".
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- Permits selection of any Nailor 6100 Series steel or 5100 Series aluminum return grille, which is manufactured to suit.

- All models must be installed in accordance with installation instructions for UL/ULC Classification.
- AV Adjustable Volume Control. Permits field balancing. The ceiling damper blades are adjusted with a hex key and perform like a butterfly damper. This option would be specified when the selected return grille has no damper and volume control is still desired (see page E51).

### CONSTRUCTION MATERIAL:

- Galvanized steel frame and blades. Non-asbestos UL Classified insulation.

### PERFORMANCE DATA:

- Refer to relevant performance tables in catalog for grille or register selected.

### Available Sizes and Dimensional Data

Model No.	Ceiling Module		Opened Height A	1" (25) Filter Size
	Imperial (inches)	Metric (mm)		
4127	12 x 12	300 x 300	10 (254)	8 x 8 (203 x 203)
4128	24 x 12	600 x 300	10 (254)	20 x 8 (508 x 203)
4129	24 x 24	600 x 600	16 (406)	20 x 20 (508 x 508)

Dimensions are in inches (mm).



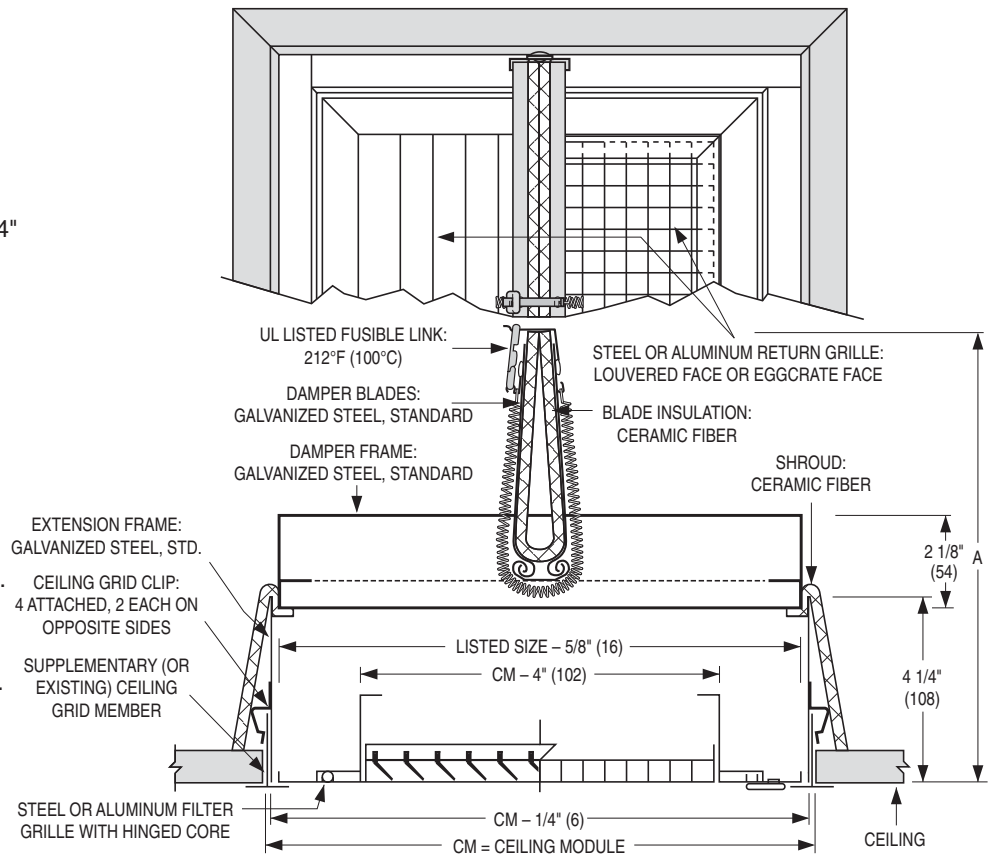
## DIMENSIONAL DATA:

### MODELS 4127, 4128 AND 4129

#### Some Commonly Selected Grille and Register Options:

- **61EC (-O) Type L**  
Steel Return Air Eggcrate Grille (Register).
- **6145H (-O)**  
Steel Return Air Grille (Register). Fixed 45° Deflection blades on 3/4" (19) centers.
- **5145H (-O)**  
Aluminum Return Air Grille (Register). Fixed 45° Deflection blades on 3/4" (19) centers.
- **7145H (-O)**  
Premium Airfoil Blade Aluminum Return Air Grille (Register).
- **61FP**  
Steel Perforated Face Filter Grille.

**Note:** Maximum grille depth capacity for this model is 4" (102).

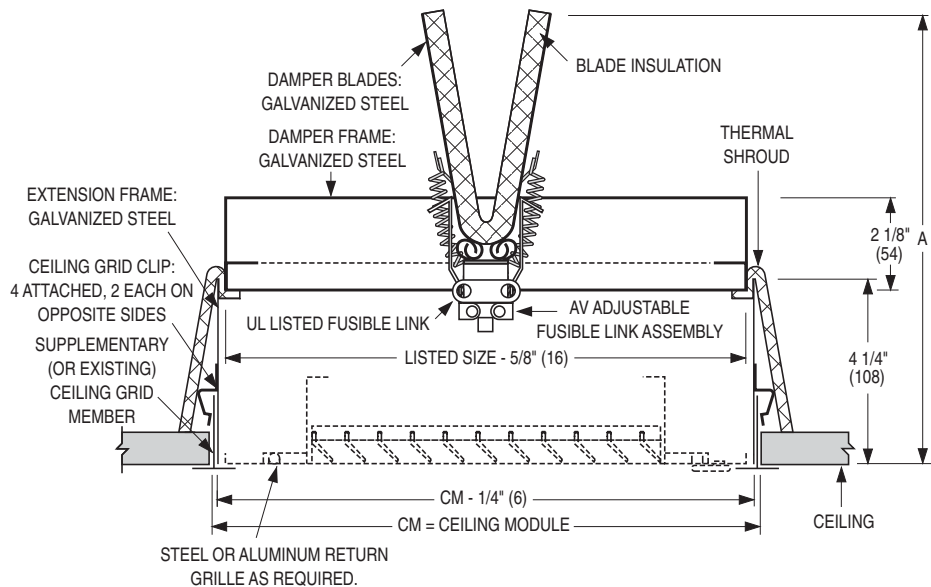


### MODELS 4127, 4128 AND 4129 • WITH AV OPTION

#### Some Commonly Selected Grille Options:

- **6145H**  
Steel Return Air Grille. Fixed 45° Deflection blades on 3/4" (19) centers.
- **5145H**  
Aluminum Return Air Grille. Fixed 45° Deflection blades on 3/4" (19) centers.
- **61FP**  
Steel Perforated Face Filter Grille.

**Note:** Maximum grille depth capacity for this model is 2 1/4" (57).



## HOW TO ORDER OR TO SPECIFY

### FIRE RATED DUCTLESS RETURN CEILING DAMPERS

#### MODELS 4127, 4128, 4129

EXAMPLE: 4127 - 12" x 12" - 212 - AV

**1. Models**

- 4127 12" x 12" or 300 mm x 300 mm
- 4128 24" x 12" or 600 mm x 300 mm
- 4129 24" x 24" or 600 mm x 600 mm

**2. Ceiling Module Size**

**Imperial**

- 1212 12" x 12"
- 2412 24" x 12"
- 2424 24" x 24"

**Metric**

- 3030 300 mm x 300 mm
- 6030 600 mm x 300 mm
- 6060 600 mm x 600 mm

**3. Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

**4. Volume Control**

- None (default)
- AV Adjustable Volume Control

FIRE RATED PRODUCTS

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one or more) **4127, 4128, 4129 Fire Rated Ductless Return Ceiling Dampers (Open Face for compatible aluminum or steel grille by Nailor)** of the sizes and capacities as shown on the plans and air distribution schedules. Dampers shall include a raised type factory mounted ceiling damper and thermal shroud. The dampers shall be successfully tested and classified for use without the requirement of ductwork or supplementary support and enable the ceiling plenum to be utilized as a ductless return air system. (Optional: ceiling damper shall be supplied with AV adjustable volume control option for field balancing). Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## FIRE RATED OPEN FACE PLENUM DIFFUSERS

- FOR USE WITH LINEAR TYPE DIFFUSERS
- 3 HOUR RATING
- FOR LAY-IN CEILINGS



Model 5200

### Model: 5200

- **Plenum Type L**  
**Flat Leg (Lay-in)**
- **Plenum Type S**  
**Hemmed Leg (Surface Mount)**

Model Series 5200 is a UL Classified Fire Rated "Air Terminal Unit" listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

A maximum of 20 lineal ft. (6096) of 2" (51) wide throat opening, 10 lineal ft. (3048) of 4" (102) wide throat opening, or 5 lineal ft. (1524) of 6" (152) and 8" (203) width throat opening is allowed for each 113 sq. inch (72,903 mm<sup>2</sup>) duct outlet area permitted in specific design.

The 5200 Series provides flexibility, in that a variety of steel or aluminum grilles, registers or linear type slot diffusers and bar grilles may be used.

### STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials".
- Available in 20", 24", 30", 36", 48" and 60" (500, 600, 750, 900, 1200 and 1500) nominal lengths to suit both imperial and metric ceiling systems.
- 6", 8", 10" or 12" (152, 203, 254 or 305) inlet sizes are available.
- Plenum casing width (throat) dimension is variable and fabricated to suit required grille or diffuser.

Minimum = 1 11/16" (43).

Maximum = 8" (203).

- Plenum Type L features a flat leg for lay-in type cores.
- Plenum Type S features a hemmed leg for surface mounting a grille or diffuser with Type C concealed mounting straps.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).
- All models must be installed in accordance with installation instructions for UL Classification.

### CONSTRUCTION MATERIAL:

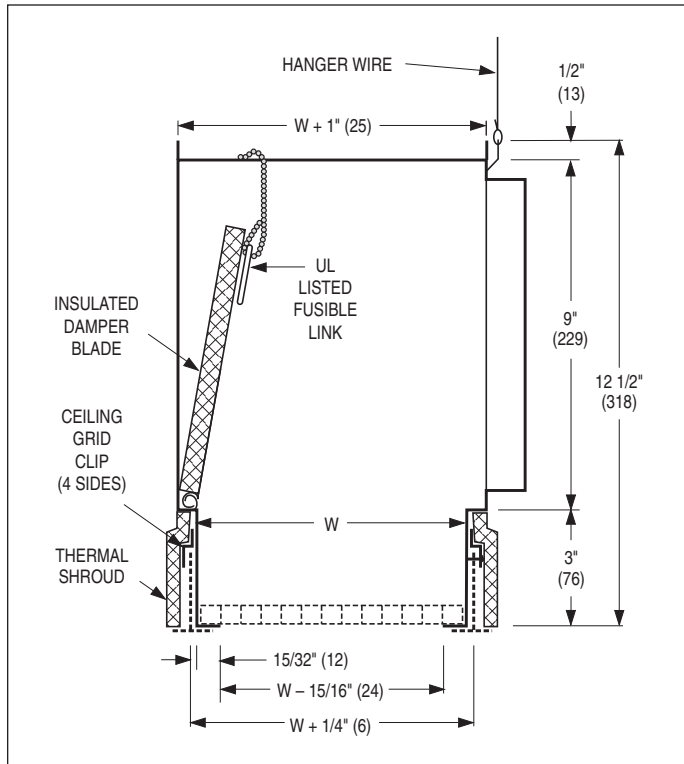
- Corrosion-resistant steel plenum and damper blades. Non-asbestos UL Classified insulation.

### FINISH OPTIONS:

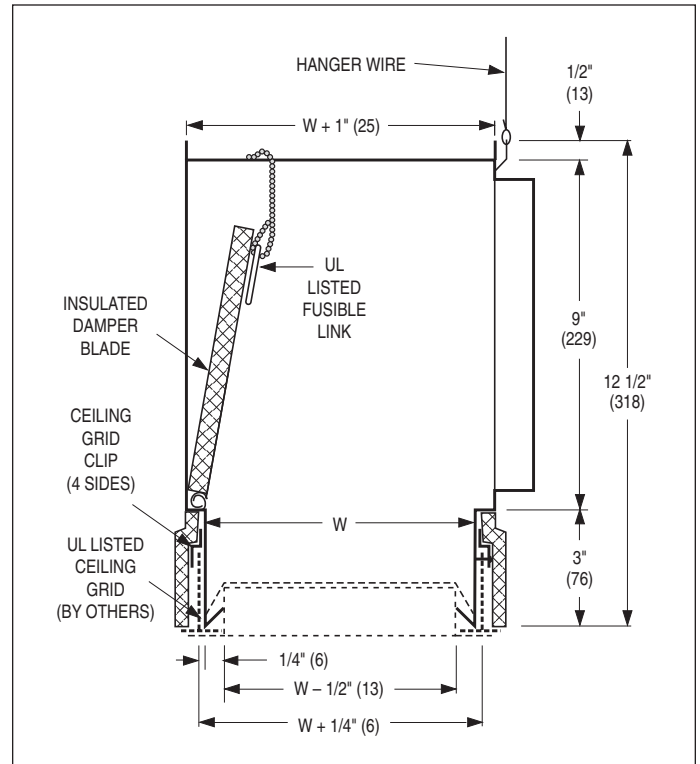
- Exposed surfaces are finished in BK Black.

## DIMENSIONAL DATA:

### MODEL SERIES 5200 – TYPE L FLAT LEG • LAY-IN DIFFUSER CORE



### MODEL SERIES 5200 – TYPE S HEMMED LEG • SURFACE MOUNT DIFFUSER WITH CONCEALED MOUNTING BRACKETS



- 'W' Dimension (throat) is variable and manufactured to suit required grille or diffuser.  
Minimum 'W' = 1 11/16" (43).  
Maximum 'W' = 8" (203).
- Type L design is for flangeless lay-in core styles. e.g. Eggcrate Core Model 51EC Type C Core Only or Linear Slot Diffuser – Model Series 5000, Frame Type M.

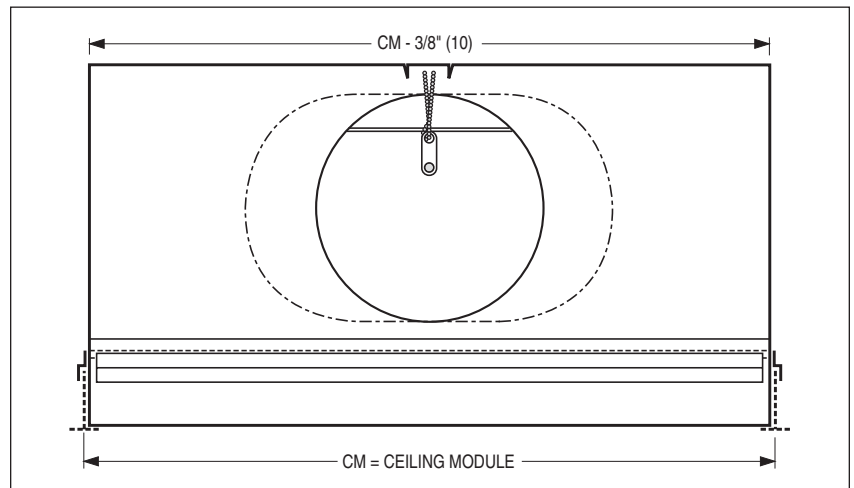
Unit is installed by diagonally inserting it into plenum opening and allowing it to sit back on plenum flanges.

- Type S design is for flanged diffusers with concealed mounting straps which locate in hemmed plenum leg. e.g. Linear Slot Diffuser – Model Series 5000, Frame Types C and D.

- Available inlet sizes:  
Round sizes are: 5", 6", 7" and 8" (127, 152, 178 and 203).  
Flat oval sizes are: 9", 10" and 12" (229, 254 and 305).

### Available Lengths

Nominal Length (CM)
20" (508)
24" (610)
30" (762)
36" (914)
48" (1219)
60" (1524)



## HOW TO ORDER OR TO SPECIFY

### FIRE RATED OPEN FACE PLENUM DIFFUSERS

#### MODEL 5200

**EXAMPLE: 5200 - S - 48" x 2" - 08 - 212 - ID - EX - T1**

- |   |   |
|---|---|
| <p>1. <b>Model</b><br/>5200</p> <p>2. <b>Plenum Type</b><br/>L Flat Leg for Lay-in Diffuser Core<br/>S Hemmed Leg for Surface Mount</p> <p>3. <b>Nominal Length</b><br/><b>Imperial</b><br/>inches (mm)<br/>20", 24", 30", 36", 48", 60"<br/>(508, 610, 762, 914, 1219, 1524)<br/><b>Metric</b><br/>mm<br/>500, 600, 750, 900, 1200, 1500</p> <p>4. <b>Nominal Width</b><br/>Minimum 1 11/16" (43) to<br/>Maximum 8" (203)</p> <p>5. <b>Neck Size</b><br/><b>Imperial</b><br/>05 5" (127) Round<br/>06 6" (152) Round<br/>07 7" (178) Round<br/>08 8" (203) Round<br/>09 9" (229) Flat Oval<br/>10 10" (254) Flat Oval<br/>12 12" (305) Flat Oval</p> | <p>6. <b>Fusible Link Temperature</b><br/>212 212°F (100°C) (default)<br/>165 165°F (74°C)</p> <p>7. <b>Damper</b><br/>ID Inlet Balancing Damper with Hand Locking Quadrant</p> <p>8. <b>External Insulation</b><br/>EX External Foil-Back Insulation, installed – R-4.2</p> <p>9. <b>Supplementary T-Bars</b><br/>T0 One - Opposite Inlet<br/>T1 One Inlet Side<br/>T2 Both Sides</p> <p><b>Note:</b><br/>1. Consult individual model as to limitations of module and neck size combination.</p> |
|---|---|

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 5200 Fire Rated Open Face Plenum Diffusers (Lay-in)** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser plenum and damper blades shall be constructed from corrosion-resistant steel and the installation shall be non-asbestos UL Classified. Model 5200 Plenum Type L features a flat lip for lay-in type cores and Plenum Type S features a hemmed leg for surface mounting a grille or diffuser with Type C concealed mounting straps. Exposed surfaces shall be finished in Black. Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## FIRE RATED PLENUM SLOT SUPPLY DIFFUSERS

- ADJUSTABLE 'WIPER BLADE' PATTERN CONTROLLERS
- 3 HOUR RATING
- LAY-IN



CATEGORY  
BZGU & BZGU7



Model 5575WB

### Models:

- 5550WB 1/2" (13) Slot Width
- 5575WB 3/4" (19) Slot Width
- 5510WB 1" (25) Slot Width
- 5515WB 1 1/2" (38) Slot Width

Model Series 5500WB is a UL Classified fire rated "Air Terminal Unit" listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

The 5500WB Series features a friction pivoted adjustable extruded aluminum pattern controller in each slot. A key feature is the gasketed 'wiper blade' design. The direction of airflow is adjustable through a full 180° from the face of the diffuser. In the horizontal discharge setting, either left or right, the gasket seal at the top of the blade seals tightly against the inside of the diffuser plenum casing or factory supplied center T-Bar, assuring positive directional control. The pattern controller may also be set for vertical discharge.

In the horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow and the 5500WB Series therefore provides excellent performance in variable air volume applications.

### STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials".
- Full 180° pattern controller adjustment means there are no 'lefts or rights'.
- Available in 20", 24", 36", 48" and 60" (500, 600, 900, 1200 and 1500) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of four slot widths.
- Choice of 1, 2, 3 or 4 parallel slots.
- Factory installed center tees on multi-slot models are standard. They

are dropped slightly below the diffuser face to align flush with the ceiling grid.

- Pattern controller is split mid-way on units 36" (900) and longer, permitting a 2-way opposite blow pattern from a single slot.
- Return models available. See page E62.
- Units must be installed in accordance with the installation instructions for UL Classification.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).

### CONSTRUCTION MATERIAL:

- Corrosion-resistant steel plenum, extruded aluminum pattern controllers and factory supplied center tees.

### FINISH OPTIONS:

- BK Black on pattern controllers and exposed surfaces. AW Appliance White finish on factory supplied T-Bars.

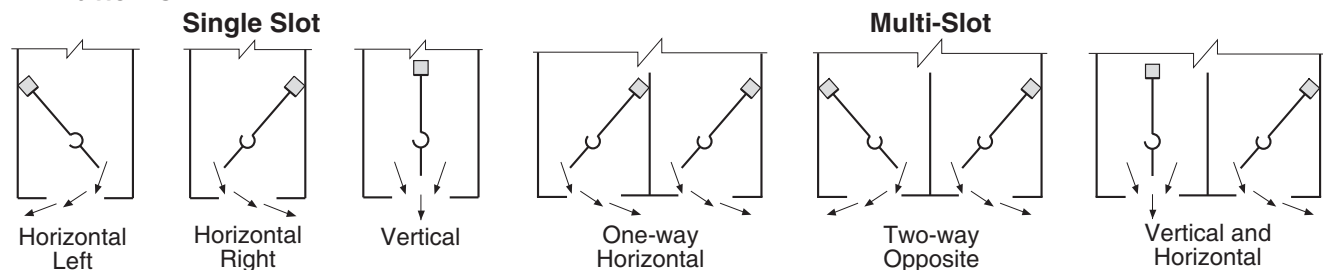
### OPTIONS AND ACCESSORIES:

- Supplementary ceiling grid (T-Bar) member (UL Listed).
- T1 One (inlet side).
- T0 One (opposite inlet side).
- T2 Two (both sides).
- EX External foil back insulation.
- ID Inlet damper.

### PERFORMANCE DATA:

- Non-fire rated Model Series 5700.

### Air Patterns

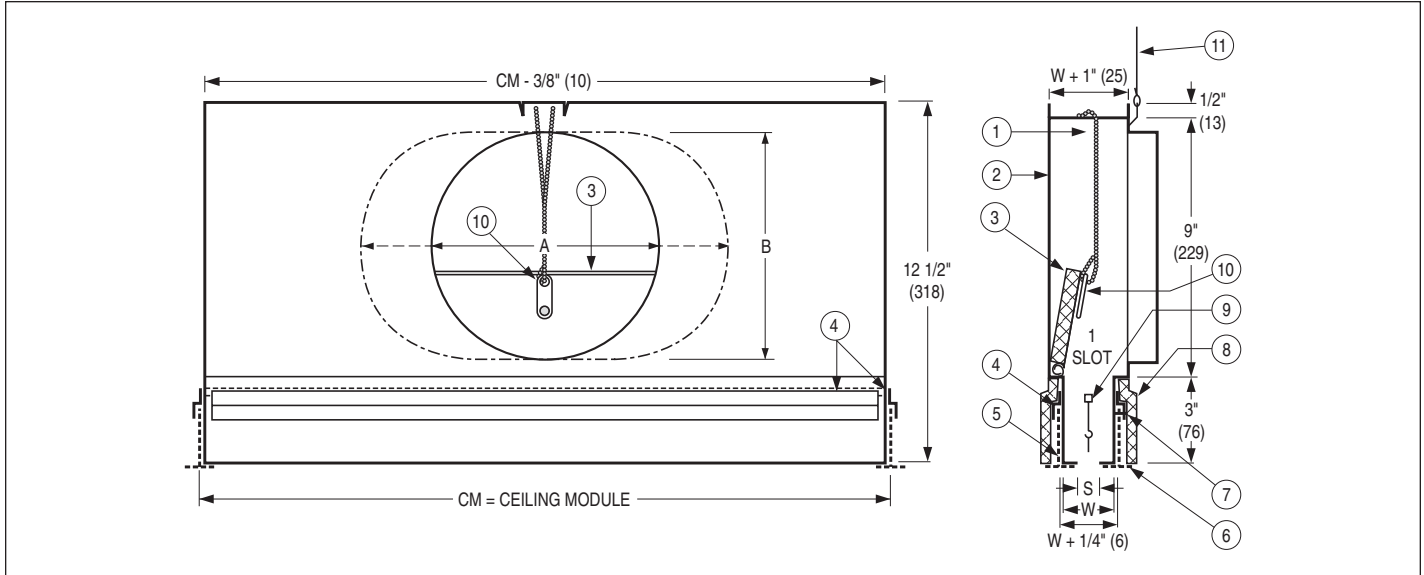




## DIMENSIONAL DATA:

### MODEL SERIES 5500WB

UNDERWRITER'S LABORATORIES, INC.®  
CLASSIFIED AIR TERMINAL UNITS  
LISTED FOR UP TO 3 HOURS  
CATEGORY BZGU & BZGU7

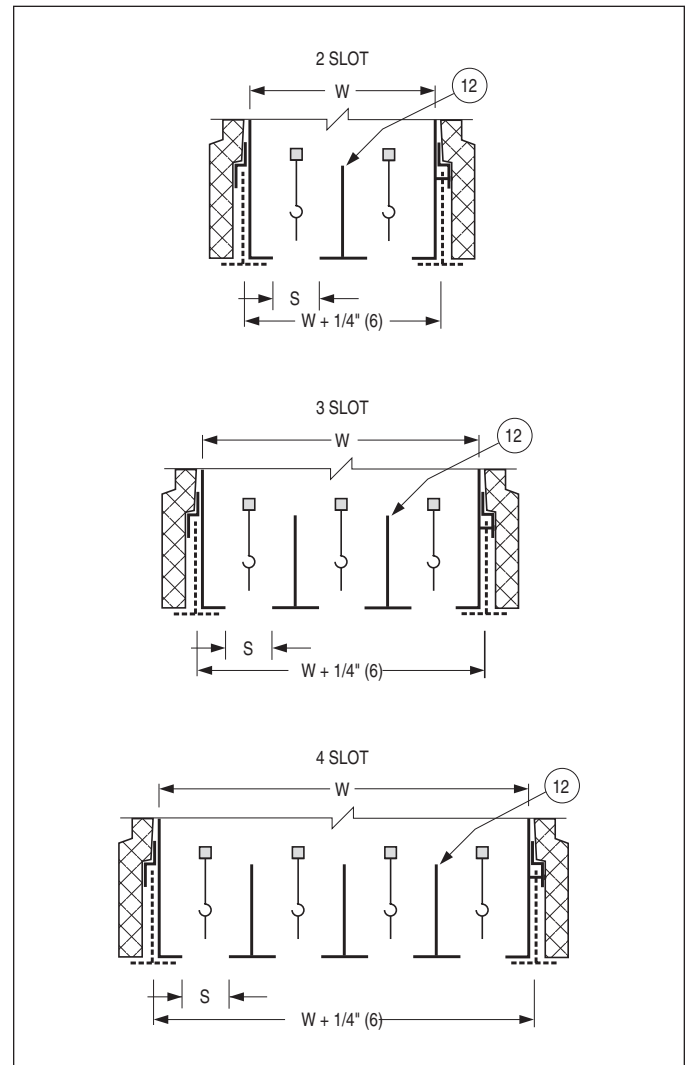


### ITEMS:

1. Fusible link damper support chain.
2. Diffuser casing.
3. Insulated, hinged damper blade.
4. Clip for ceiling grid member – 4 sides.
5. Existing grid member.
6. Supplementary ceiling grid member. UL Listed (optional or by others).
7. #8 screws for grid member attachment.
8. Thermal shroud.
9. Adjustable pattern controller.
10. UL Listed fusible link (replaceable).
11. Hanger wire at casing mid-point.
12. Intermediate grid bars (shown solid) supplied and installed by factory.

		S (Slot Width)			
		1/2" (13)	3/4" (19)	1" (25)	1 1/2" (38)
W (Width)	1 slot	1 1/2" (38)	1 3/4" (44)	2" (51)	2 1/2" (64)
	2 slot	3" (76)	3 1/2" (89)	4" (102)	5" (127)
	3 slot	4 1/2" (114)	5 1/4" (133)	6" (152)	7 1/2" (191)
	4 slot	6" (152)	7" (178)	8" (203)	N/A

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	-	-	7 7/8" (200)	7 7/8" (200)



## HOW TO ORDER OR TO SPECIFY

### FIRE RATED PLENUM SLOT DIFFUSERS – 'WIPER BLADE' PATTERN CONTROLLER MODELS 5550WB, 5575WB, 5510WB, 5515WB

**EXAMPLE: 5515WB - 48 - 2 SLOT - 08 - AW - 212 - ID - EX - T1**

- |   |   |
|---|---|
| <p><b>1. Models</b><br/>5550WB • Supply, 1/2" (13) Slot Width<br/>5575WB • Supply, 3/4" (19) Slot Width<br/>5510WB • Supply, 1" (25) Slot Width<br/>5515WB • Supply, 1 1/2" (38) Slot Width</p> <p><b>2. Nominal Length</b><br/><b>Imperial</b><br/>inches (mm)<br/>20", 24", 30", 36", 48", 60"<br/>(508, 610, 762, 914, 1219, 1524)<br/><b>Metric</b><br/>mm<br/>500, 600, 750, 900, 1200, 1500</p> <p><b>3. No. of Slots</b><br/>1 through 4</p> <p><b>4. Inlet Size</b><br/><b>Imperial</b><br/>05 5" (127) Round<br/>06 6" (152) Round<br/>07 7" (178) Round<br/>08 8" (203) Round<br/>09 9" (229) Flat Oval<br/>10 10" (254) Flat Oval<br/>12 12" (305) Flat Oval</p> | <p><b>5. Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BW British White</p> <p><b>6. Fusible Link Temperature</b><br/>212 212°F (100°C) (default)<br/>165 165°F (74°C)</p> <p><b>7. Damper</b><br/>ID Inlet Balancing Damper with Hand Locking Quadrant</p> <p><b>8. External Insulation</b><br/>EX External Foil-Back Insulation, installed – R-4.2</p> <p><b>9. Supplementary T-Bars</b><br/>T0 One - Opposite Inlet<br/>T1 One Inlet Side<br/>T2 Both Sides</p> <p><b>Note:</b><br/>1. Consult individual model as to limitations of length, width and neck size combinations.</p> |
|---|---|

FIRE RATED PRODUCTS

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one or more) **5500WB, 5575WB, 5510WB** or **5515WB Fire Rated Plenum Slot Diffusers 'Wiper Blade'** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser plenums shall be constructed from corrosion-resistant steel and pattern controllers shall be extruded aluminum. The direction of airflow is adjustable through a full 180° from the face of the diffuser. Factory installed center tees shall be supplied as standard on multi-slot models. (Optional: Supplementary ceiling grid [T-Bar] members shall be supplied as an option for inlet side, opposite inlet side or both sides). The finish shall be Black on pattern controllers and exposed surfaces. AW Appliance White finish shall be applied on factory supplied T-Bars. Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## FIRE RATED PLENUM SLOT DIFFUSERS

- ADJUSTABLE 'ICE TONG' PATTERN CONTROLLERS
- 3 HOUR RATING
- LAY-IN



CATEGORY  
BZGU & BZGU7



Model 5575T

### Models:

- 5550T 1/2" (13) Slot Width
- 5575T 3/4" (19) Slot Width
- 5510T 1" (25) Slot Width

Model Series 5500T is a UL Classified Fire Rated "Air Terminal Unit" listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

The 5500T Series features the same 'ice tong' pattern controller as used in the 5000 Series Linear Slot Diffuser, providing total flexibility in all applications. The direction of airflow is adjustable through a full 180° from the face of the diffuser and pattern controllers may also be adjusted for volume control.

In the horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow and the 5500T Series therefore provides excellent performance in variable air volume applications.

### STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials".
- Full 180° pattern controller adjustment means there are no 'lefts or rights'. Pattern controllers also permit volume control.
- Available in 20", 24", 36", 48" and 60" (500, 600, 900, 1200 and 1500) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of three slot widths.
- Choice of 1, 2, 3 or 4 parallel slots.
- Factory installed center tees on multi-slot models are standard. They are

dropped slightly below the diffuser face to align flush with the ceiling grid.

- Pattern controller is split mid-way on units 48" (1200) and longer, permitting a 2-way opposite blow pattern from a single slot.
- Return models are available. See page E62.
- Units must be installed in accordance with the installation instructions for UL Classification.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).

### CONSTRUCTION MATERIAL:

- Corrosion-resistant steel plenum and pattern controllers. Aluminum center tees.

### FINISH OPTIONS:

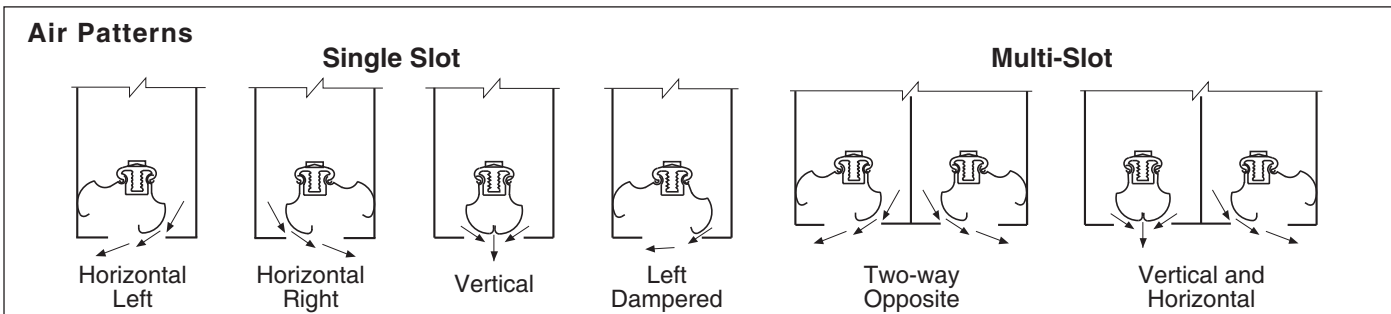
- BK Black on pattern controllers and exposed surfaces. AW Appliance White finish on center tees.

### OPTIONS AND ACCESSORIES:

- Supplementary ceiling grid (T-Bar) member (UL Listed).
- T1 One (inlet side).
- T0 One (opposite inlet side).
- T2 Two (both sides).
- EX External foil back insulation.
- ID Inlet damper.

### PERFORMANCE DATA:

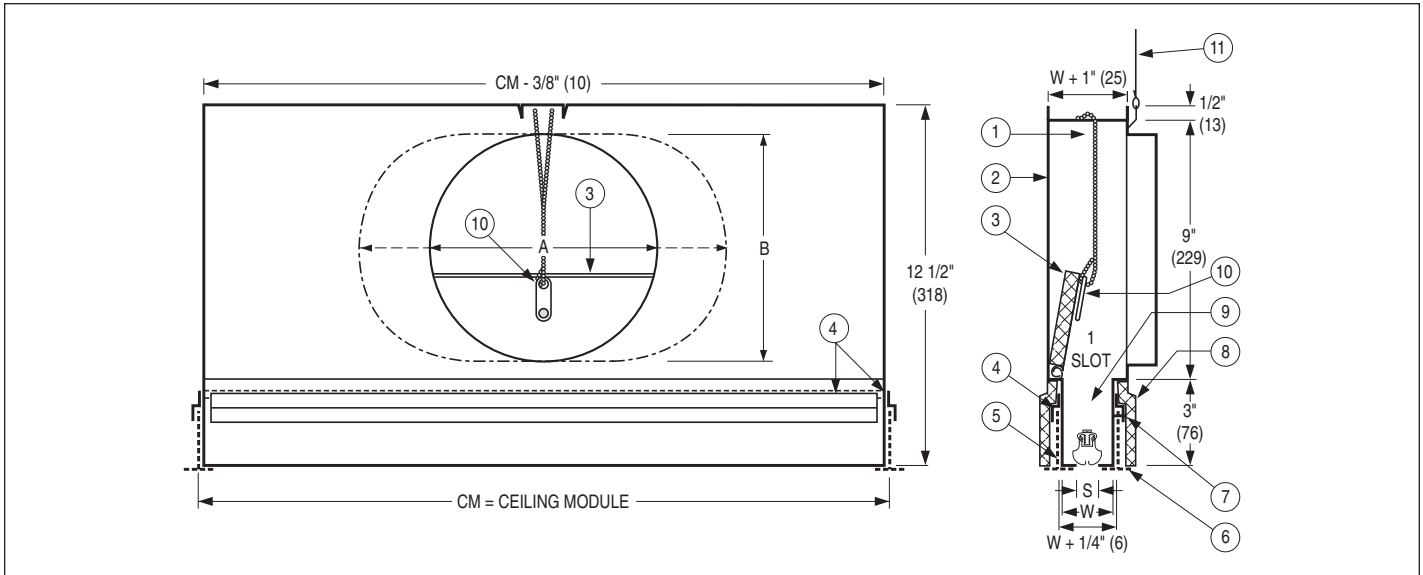
- See non-fire rated Model Series 5800.



## DIMENSIONAL DATA:

### MODEL SERIES 5500T

UNDERWRITER'S LABORATORIES, INC.<sup>®</sup>  
 CLASSIFIED AIR TERMINAL UNITS  
 LISTED FOR UP TO 3 HOURS  
 CATEGORY BZGU & BZGU7

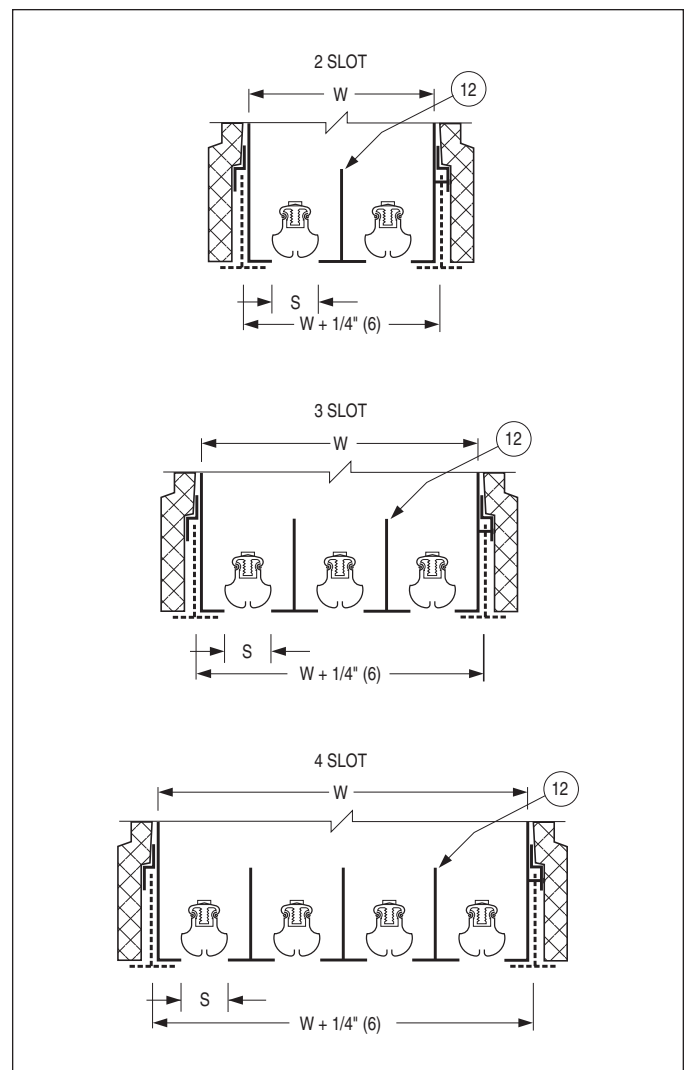


## ITEMS:

1. Fusible link damper support chain.
2. Diffuser casing.
3. Insulated, hinged damper blade.
4. Clip for ceiling grid member – 4 sides.
5. Existing grid member.
6. Supplementary ceiling grid member. UL Listed (optional or by others).
7. #8 screws for grid member attachment.
8. Thermal shroud.
9. Adjustable pattern controller.
10. UL Listed fusible link (replaceable).
11. Hanger wire at casing mid-point.
12. Intermediate grid bars (shown solid) supplied and installed by factory.

		S (Slot Width)		
		1/2" (13)	3/4" (19)	1" (25)
W (Width)	1 slot	1 1/2" (38)	1 3/4" (44)	2" (51)
	2 slot	3" (76)	3 1/2" (89)	4" (102)
	3 slot	4 1/2" (114)	5 1/4" (133)	6" (152)
	4 slot	6" (152)	7" (178)	8" (203)

	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)
B	-	-	7 7/8" (200)	7 7/8" (200)



## HOW TO ORDER OR TO SPECIFY

### FIRE RATED PLENUM SLOT DIFFUSERS – ADJUSTABLE 'ICE TONG' PATTERN CONTROLLER MODELS 5550T, 5575T, 5510T

**EXAMPLE: 5550T - 48" - 2 SLOT - 08 - AW - 212 - ID - EX - T1**

**1. Models**

- 5550T Supply, 1/2" (13) Slot Width
- 5575T Supply, 3/4" (19) Slot Width
- 5510T Supply, 1" (25) Slot Width

**2. Nominal Length**

**Imperial**

inches (mm)

20", 24", 30", 36", 48", 60"

(508, 610, 762, 914, 1219, 1524)

**Metric**

mm

500, 600, 750, 900, 1200, 1500

**3. No. of Slots**

1 through 4

**4. Inlet Size**

**Imperial**

- 05 5" (127) Round
- 06 6" (152) Round
- 07 7" (178) Round
- 08 8" (203) Round
- 09 9" (229) Flat Oval
- 10 10" (254) Flat Oval
- 12 12" (305) Flat Oval

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BW British White

**6. Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

**7. Damper**

- ID Inlet Balancing Damper with Hand Locking Quadrant

**8. External Insulation**

- EX External Foil-Back Insulation, installed – R-4.2

**9. Supplementary T-Bars**

- T0 One - Opposite Inlet
- T1 One Inlet Side
- T2 Both Sides

**Note:**

- 1. Consult individual model as to limitations of length, width and neck size combinations.

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one or more) **5500T, 5575T or 5510T Fire Rated Plenum Slot Diffusers with 'Ice Tong' Pattern Controllers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffuser plenum and pattern controllers shall be constructed from corrosion-resistant steel. The direction of airflow is adjustable through a full 180° from the face of the diffuser and pattern controllers may be adjusted for volume control. Factory installed center tees shall be supplied as standard on multi-slot models. The diffuser plenum shall include an integral hinged ceiling damper that is suspended out of the airstream. (Optional: Supplementary ceiling grid [T-Bar] members shall be supplied as an option for inlet side, opposite inlet side or both sides). The finish shall be Black on pattern controllers and exposed surfaces. AW Appliance White finish shall be applied on factory supplied T-Bars. Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## FIRE RATED PLENUM SLOT DIFFUSERS

- SUPPLY MODEL INCLUDES CURVED BLADE 'FLIP FLOP' PATTERN CONTROLLER
- 3 HOUR RATING
- LAY-IN



Models 5575 and 5575R

### Supply Models:

5575 3/4" (19) Slot Width

### Return Models:

5550R 1/2" (13) Slot Width

5575R 3/4" (19) Slot Width

5510R 1" (25) Slot Width

5515R 1 1/2" (38) Slot Width

Model Series 5500 is a UL Classified Fire Rated "Air Terminal Unit" listed in Underwriters Laboratories Fire Resistance Directory. This design meets UL time-vs-temperature test criteria and NFPA 90A requirements.

All diffusers are classified for use in UL/ULC restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling (lay-in T-Bar) with up to a 3 hour rating. For details of fire rated assemblies, see the current UL or ULC Fire Resistance Directory.

Model 5575 features a roll-formed curved blade pattern controller in each slot. Aerodynamically designed to produce a fixed horizontal discharge pattern, the controller is pivoted at either end and may be simply rotated with fingers from the diffuser face for either a left or right discharge direction. In the horizontal discharge setting, the coanda effect is maximized and a tight blanket of air is projected across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow and the 5500 Series therefore provides excellent performance in variable air volume applications.

### STANDARD FEATURES:

- Tested in accordance with ANSI/UL Standard 263, "Fire Tests of Building Construction and Materials" and CAN/ULC Standard S101 "Fire Endurance Tests of Building Construction and Materials".
- Simple 'Flip Flop' pattern controller adjustment, from face of diffuser for left or right blow pattern.
- Available in 20", 24", 36", 48" and 60" (500, 600, 900, 1200 and 1500) nominal lengths to suit both imperial and metric ceiling systems.
- Choice of 1, 2, 3 or 4 parallel slots.
- Return models are same design, but omit pattern controllers. See page E46.

- Factory installed center tees on multi-slot models are standard.
- Blades are shipped locked. They may be set for left or right airflow pattern after installation.
- Units must be installed in accordance with the installation instructions for UL Classification.
- 212°F (100°C) fusible link is standard (165°F [74°C] is optional).

### CONSTRUCTION MATERIAL:

- Corrosion-resistant steel.

### FINISH OPTIONS:

- BK Black on pattern controllers and exposed surfaces. AW Appliance White finish on center tees.

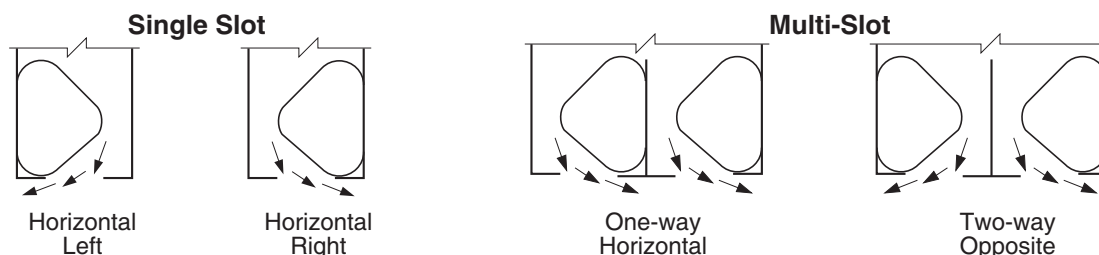
### OPTIONS AND ACCESSORIES:

- Supplementary ceiling grid (T-Bar) member (UL Listed).
- T1 One (inlet side).
- T0 One (opposite inlet side).
- T2 Two (both sides).
- EX External foil back insulation.
- ID Inlet damper.

### PERFORMANCE DATA:

- See non-fire rated Model 5675.

### Model 5575 Supply Air Patterns:

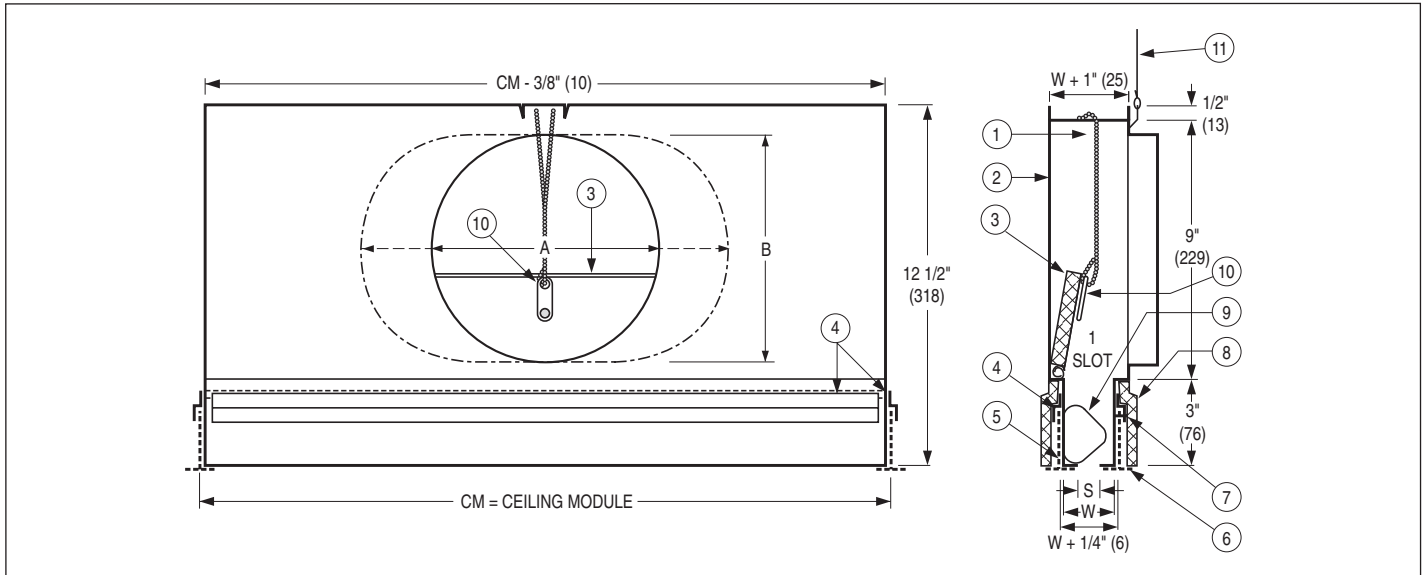




## DIMENSIONAL DATA:

### MODEL 5575

UNDERWRITER'S LABORATORIES, INC.<sup>®</sup>  
 CLASSIFIED AIR TERMINAL UNITS  
 LISTED FOR UP TO 3 HOURS  
 CATEGORY BZGU & BZGU7

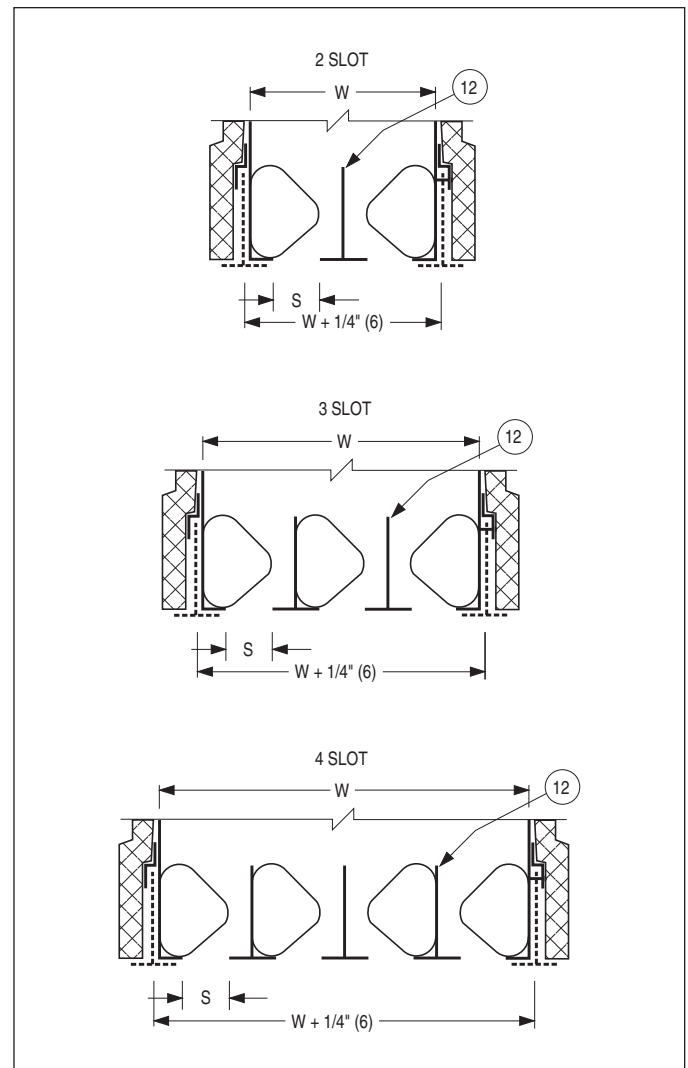


### ITEMS:

1. Fusible link damper support chain.
2. Diffuser casing.
3. Insulated, hinged damper blade.
4. Clip for ceiling grid member – 4 sides.
5. Existing grid member.
6. Supplementary ceiling grid member. UL Listed (optional or by others).
7. #8 screws for grid member attachment.
8. Thermal shroud.
9. Adjustable pattern controller. The position can be as shown or rotated 180° to opposite position.
10. UL Listed fusible link (replaceable).
11. Hanger wire at casing mid-point.
12. Intermediate grid bars (shown solid) supplied and installed by factory.

		$S = 3/4" (19)$
<b>W</b> <b>(Width)</b>	1 slot	$1 11/16" (43)$
	2 slot	$3 3/8" (86)$
	3 slot	$5 1/16" (129)$
	4 slot	$6 3/4" (171)$

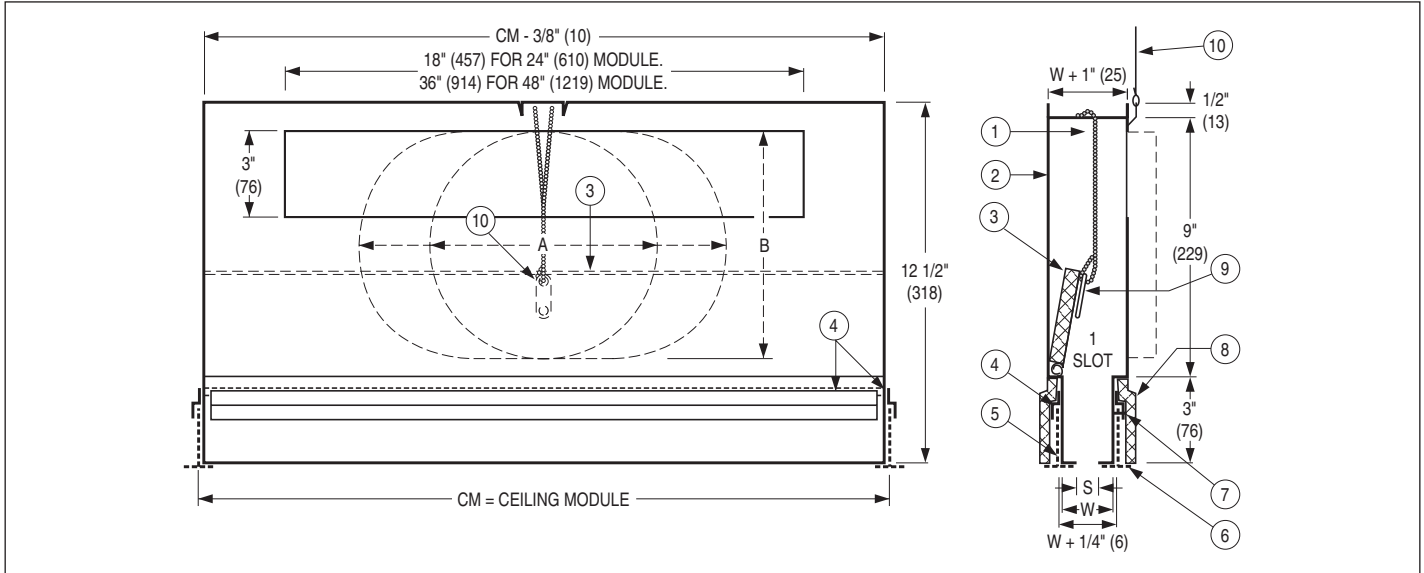
	Nominal Inlet Size			
	6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
<b>A</b>	$5 7/8" (149)$	$7 7/8" (200)$	$11" (279)$	$14 1/8" (359)$
<b>B</b>	–	–	$7 7/8" (200)$	$7 7/8" (200)$



## DIMENSIONAL DATA:

MODELS 5550R, 5575R, 5510R, 5515R • FIRE RATED PLENUM SLOT RETURN • DUCTLESS OPENING OR INLET OPTION

UNDERWRITER'S LABORATORIES, INC.®  
CLASSIFIED AIR TERMINAL UNITS  
LISTED FOR UP TO 3 HOURS  
CATEGORY BZGU & BZGU7

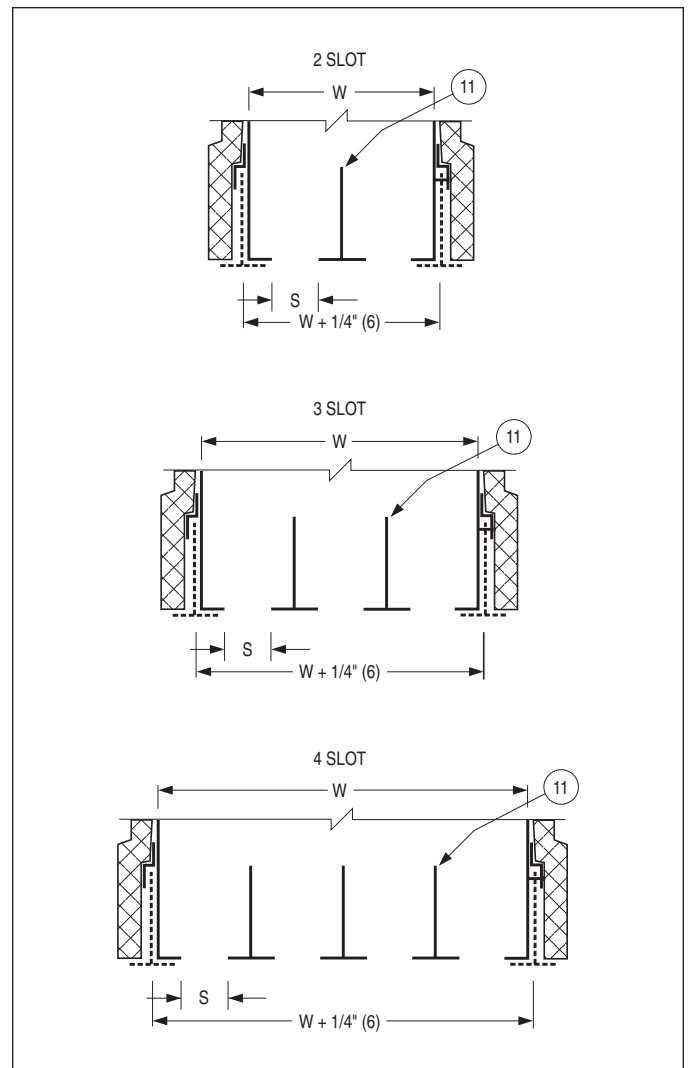


## ITEMS:

1. Fusible link damper support chain.
2. Diffuser casing.
3. Insulated, hinged damper blade.
4. Clip for ceiling grid member – 4 sides.
5. Existing grid member.
6. Supplementary ceiling grid member. UL Listed (optional or by others).
7. #8 screws for grid member attachment.
8. Thermal shroud.
9. UL Listed fusible link (replaceable).
10. Hanger wire at casing mid-point.
11. Intermediate grid bars (shown solid) supplied and installed by factory.

		S (Slot Width)			
		1/2" (13)	3/4" (19)	1" (25)	1 1/2" (38)
W (Width)	1 slot	1 1/2" (38)	1 3/4" (44)	2" (51)	2 1/2" (64)
	2 slot	3" (76)	3 1/2" (89)	4" (102)	5" (127)
	3 slot	4 1/2" (114)	5 1/4" (133)	6" (152)	7 1/2" (191)
	4 slot	6" (152)	7" (178)	8" (203)	N/A

		Nominal Inlet Size			
		6" (152) Round	8" (203) Round	10" (254) Oval	12" (305) Oval
A	5 7/8" (149)	7 7/8" (200)	11" (279)	14 1/8" (359)	
B	–	–	7 7/8" (200)	7 7/8" (200)	



## HOW TO ORDER OR TO SPECIFY

### FIRE RATED PLENUM SLOT DIFFUSERS – 'FLIP FLOP' CONTROLLER MODEL 5575

**EXAMPLE: 5575 - 48" - 2 SLOT - 08 - AW - 212 - ID - EX - T1**

- |   |   |
|---|---|
| <p>1. <b>Models</b><br/>5575 Supply, 3/4" (19) Slot Width</p> <p>2. <b>Nominal Length</b><br/><b>Imperial</b><br/>inches (mm)<br/>20", 24", 30", 36", 48", 60"<br/>(508, 610, 762, 914, 1219, 1524)<br/><b>Metric</b><br/>mm<br/>500, 600, 750, 900, 1200, 1500</p> <p>3. <b>No. of Slots</b><br/>1 through 4</p> <p>4. <b>Inlet Size</b><br/><b>Imperial</b><br/>05 5" (127) Round<br/>06 6" (152) Round<br/>07 7" (178) Round<br/>08 8" (203) Round<br/>09 9" (229) Flat Oval<br/>10 10" (254) Flat Oval<br/>12 12" (305) Flat Oval</p> | <p>5. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BW British White</p> <p>6. <b>Fusible Link Temperature</b><br/>212 212°F (100°C) (default)<br/>165 165°F (74°C)</p> <p>7. <b>Damper</b><br/>ID Inlet Balancing Damper with Hand Locking Quadrant</p> <p>8. <b>External Insulation</b><br/>EX External Foil-Back Insulation, installed – R-4.2</p> <p>9. <b>Supplementary T-Bars</b><br/>T0 One - Opposite Inlet<br/>T1 One Inlet Side<br/>T2 Both Sides</p> <p><b>Note:</b><br/>1. Consult individual model as to limitations of length, width and neck size combinations.</p> |
|---|---|

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 5575 Fire Rated Plenum Slot Supply Diffusers with 'Flip Flop' Pattern Controllers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be constructed from corrosion-resistant steel and the 'Flip-Flop' pattern controllers adjust from the face of the diffuser in a left or right discharge direction. Factory installed center tees shall be supplied as standard on multi-slot models. (Optional: Supplementary ceiling grid [T-Bar] members shall be supplied as an option for inlet side, opposite inlet side or both sides). The finish shall be Black on pattern controllers and exposed surfaces. AW Appliance White finish shall be applied on factory supplied T-Bars. Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

## HOW TO ORDER OR TO SPECIFY

### FIRE RATED PLENUM SLOT RETURN DIFFUSERS

#### MODELS 5550R, 5575R, 5510R, 5515R

**EXAMPLE: 5510R - 48" - 2 SLOT - 08 - AW - 212 - EX - T1**

**1. Models**

- 5550R Return, 1/2" (13) Slot Width
- 5575R Return, 3/4" (19) Slot Width
- 5510R Return, 1" (25) Slot Width
- 5515R Return, 1 1/2" (38) Slot Width

**2. Nominal Length**

**Imperial**

inches (mm)

20", 24", 30", 36", 48", 60"

(508, 610, 762, 914, 1219, 1524)

**Metric**

mm

500, 600, 750, 900, 1200, 1500

**3. No. of Slots**

1 through 4

**4. Inlet Size**

**Imperial**

- 05 5" (127) Round
- 06 6" (152) Round
- 07 7" (178) Round
- 08 8" (203) Round
- 09 9" (229) Flat Oval
- 10 10" (254) Flat Oval
- 12 12" (305) Flat Oval

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BW British White

**6. Fusible Link Temperature**

- 212 212°F (100°C) (default)
- 165 165°F (74°C)

**7. External Insulation**

- EX External Foil-Back Insulation, installed – R-4.2

**8. Supplementary T-Bars**

- T0 One - Opposite Inlet
- T1 One Inlet Side
- T2 Both Sides

**Note:**

1. Consult individual model as to limitations of length, width and neck size combinations.

FIRE RATED PRODUCTS

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one or more) **5500R, 5575R, 5510R** or **5515R Fire Rated Plenum Slot Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be constructed from corrosion-resistant steel and supplied with a rectangular opening as standard for ductless return applications (round/oval connections are an available option). Factory installed center tees shall be supplied as standard on multi-slot models. (Optional: Supplementary ceiling grid [T-Bar] members shall be supplied as an option for inlet side, opposite inlet side or both sides). Blades shall be shipped locked and may be set for left or right airflow pattern after installation. The finish shall be Black on exposed surfaces. AW Appliance White finish shall be applied on factory supplied T-Bars. Diffusers shall be UL/ULC Classified fire rated ceiling diffuser assemblies as listed in the UL/ULC Fire Resistance (Certifications) Directory. Diffusers shall be tested in accordance with UL Standard 263 (field assembled diffusers with ceiling dampers tested to UL Standard 555C are not acceptable) and meet all of the requirements of NFPA 90A. Diffusers shall be classified for use in restrained or unrestrained floor/ceiling and or roof/ceiling assemblies which incorporate an exposed grid suspended ceiling with up to a 3 hour rating.

# GRILLES AND REGISTERS



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## GENERAL PRODUCT OVERVIEW

### GRILLES AND REGISTERS

Quality Assured Products, unobtrusive clean lines for appearance, careful engineering and professional work-manship with the backing of an industry leader – these add up to true value; prime reasons for specifying Nailor Grilles and Registers.

Architectural excellence and engineering selections demand high quality products and shipping schedules demand service; all part of the package.

- Comprehensive range of models and styles to choose from.
- Versatile selection and sizing ensures the correct product for any specific application.
- Material choice of premium quality extruded aluminum, cost-effective steel or stainless steel. Unique in our manufacturing process is the exclusive use of corrosion-resistant coated steel as used in the auto industry. The material has superb forming qualities and outlasts painted cold-rolled steel and galvanized steel by up to three times.
- Various border/frame types, combinations and mounting options.
- Balancing accessories.
- Superior finishes.
- Performance data in accordance with current international test standards and the back-up of one of the finest 'in-house' testing laboratories in North America.

GRILLES AND REGISTERS

### LOUVERED FACE GRILLES AND REGISTERS

This series of grilles and registers are available in cost effective, corrosion-resistant steel, premium quality extruded aluminum or stainless steel construction. The blades are formed to a streamlined engineered contoured cross-section. Rigid, reinforced frames feature hairline-mitered corners. Optional opposed blade dampers have a screwdriver slot or lever operator for adjustment through the face of the register. As standard, the grilles and registers have countersunk screw holes in the frame, which make for an architecturally pleasing appearance.

#### LOUVERED FACE — SUPPLY AIR

##### DOUBLE DEFLECTION

A dual set of individually adjustable blades are friction pivoted and can be easily adjusted to provide maximum control of the air pattern for spread and deflection in two planes. Blades are spaced on 3/4" (19) centers.

**Aluminum – Models 51DV, 51DH**

Page F14

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

**Steel – Models 61DV, 61DH**

Page F16

Suffix '-O' adds a steel OBD

**Stainless Steel – Models 67DV, 67DH**

Page F18

Suffix '-O' adds a stainless steel OBD



Models 51DV, 67DV

##### SINGLE DEFLECTION

A single set of individually adjustable blades are friction pivoted and can be easily adjusted to provide the desired spread or deflection in a single plane. Blades are spaced on 3/4" (19) centers.

**Aluminum – Models 51SV, 51SH**

Page F15

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

**Steel – Models 61SV, 61SH**

Page F17

Suffix '-O' adds a steel OBD

**Stainless Steel – Models 67SV, 67SH**

Page F19

Suffix '-O' adds a stainless steel OBD



Models 51SH, 67SV

## LOUVERED FACE — RETURN AIR

### 45° DEFLECTION, 3/4" (19) BLADE SPACING

The blades are fixed at a 45° angle. This grille is vision proof when installed in a low or high sidewall location with grille blade deflection facing away from the line of sight. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

**Aluminum – Models 5145V, 5145H** **Page F28**

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

**Aluminum – Fineline® – Model 5145F** **Page F31**

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

**Steel – Models 6145V, 6145H** **Page F34**

Suffix '-O' adds a steel OBD

**Steel – Fineline® – Model 6145F** **Page F36**

Suffix '-O' adds a steel OBD

**Stainless Steel – Models 6745V, 6745H** **Page F39**

Suffix '-O' adds a stainless steel OBD



Models 6145H, 6745H

### 45° DEFLECTION, 1/2" (13) BLADE SPACING

The blades are fixed at a 45° angle. This grille is vision proof when installed in a low or high sidewall location with the grille blade deflection facing away from the line of sight, and when viewed from straight ahead. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

**Aluminum – Models 5155V, 5155H** **Page F32**

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

**Steel – Models 6155V, 6155H** **Page F37**

Suffix '-O' adds a steel OBD

**Stainless Steel – Models 6755V, 6755H** **Page F40**

Suffix '-O' adds a stainless steel OBD



Models 5155H, 6755H

### 0° DEFLECTION, 3/4" (19) BLADE SPACING

The blades are fixed at 0°. Their appearance complements the supply grilles and registers of the same series. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

**Aluminum – Models 51FV, 51FH** **Page F29**

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

**Steel – Models 61FV, 61FH** **Page F35**

Suffix '-O' adds a steel OBD

**Stainless Steel – Models 67FV, 67FH** **Page F39**

Suffix '-O' adds a stainless steel OBD



Models 51FH, 67FH

## CURVED SPIRAL DUCT GRILLES

Nailor's unique curved spiral duct grille design offers an architecturally superior appearance and saves installation time and money by directly mounting to the duct. This eliminates the need to fabricate stand-off saddles required for installing standard grilles. These grilles are available for both supply and return air applications.

- Double Deflection – Aluminum Models 51DVC, 51DHC** Page F50
- Double Deflection – Steel Models 61DVC, 61DHC** Page F54
- Single Deflection – Aluminum Models 51SVC, 51SHC** Page F51
- Single Deflection – Steel Models 61SVC, 61SHC** Page F55
- Linear Slot Face – Steel Models 61L50C, 61L75C, 61L10C** Page F67
- Perforated – Aluminum Model 51PRC** Page F52
- Perforated – Steel Model 61PRC** Page F56
- 45° Fixed Blade – Aluminum Models 5145HC, 5155HC** Page F53
- 45° Fixed Blade – Steel Models 6145HC, 6155HC** Page F57

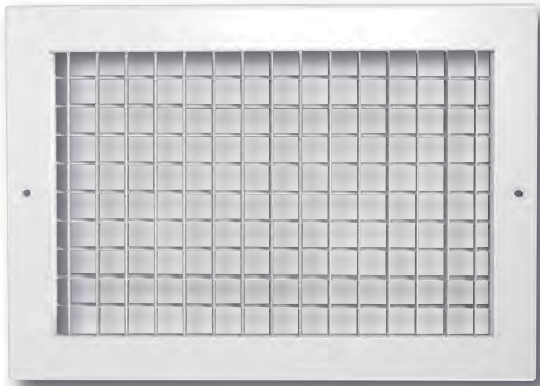


Models 61DVC, 6155HC, 61SVC

## AIRFOIL BLADE GRILLES AND REGISTERS

Sleek design, premium performance and a true extruded aluminum airfoil blade is what makes this series superior to the industry standard. The models in this series are designed for engineers and architects who require exceptional quality and performance. As standard, the grilles and registers have countersunk screw holes in the extruded aluminum frame, which make for a neat clean appearance. Optional opposed blade dampers have a screwdriver slot operator for adjustment through the face of the register.

### AIRFOIL BLADE — SUPPLY AIR



Model 71DV

#### DOUBLE DEFLECTION

A dual set of individually adjustable blades are friction pivoted and can be easily adjusted to provide maximum control of the air pattern for spread and deflection in two planes. The airfoil blades are spaced on 3/4" (19) centers.

- Aluminum – Models 71DV, 71DH**
- Suffix '-O' adds a steel OBD
- Suffix '-OA' adds an aluminum OBD

Page F71

#### SINGLE DEFLECTION

A single set of individually adjustable blades are friction pivoted and can be easily adjusted to provide the desired spread or deflection in a single plane. The airfoil blades are spaced on 3/4" (19) centers.

- Aluminum – Models 71SV, 71SH** Page F72
- Suffix '-O' adds a steel OBD
- Suffix '-OA' adds an aluminum OBD



Model 71SV

## AIRFOIL BLADE — RETURN AIR

### 45° DEFLECTION, 3/4 (19) BLADE SPACING

The airfoil blades are fixed at a 45° angle. This grille is vision proof when installed in a low or high sidewall location with grille blade deflection facing away from the line of sight. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

**Aluminum – Models 7145H, 7145V**

**Page F79**

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

### 0° DEFLECTION, 3/4 (19) BLADE SPACING

The airfoil blades are fixed at a 45° angle. This grille is vision proof when installed in a low or high sidewall location with grille blade deflection facing away from the line of sight. In addition, a diverse selection of mounting frames are available to suit many suspended ceiling designs.

**Aluminum – Models 71FH, 71FV**

**Page F79**

Suffix '-O' adds a steel OBD

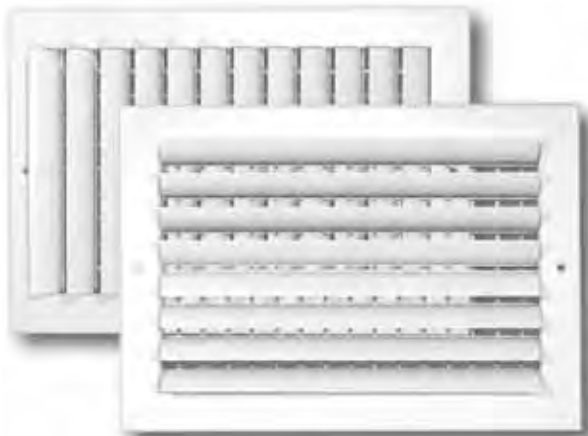
Suffix '-OA' adds an aluminum OBD



Models 71FH, 7145H

## CURVED BLADE DIRECTIONAL GRILLES AND REGISTERS

Nailor's curved blade directional grilles and registers are designed to meet the demand for top quality and competitive prices. Constructed with extruded aluminum blades, this model series is unobtrusive in appearance for architectural excellence. The grilles and registers may be used in sidewall and ceiling applications. Optional opposed blade dampers have a screwdriver slot operator for adjustment through the face of the register. The 1 1/4" (32) frames have countersunk screw holes for an inconspicuous appearance.



Models 51CD, 61CD

### CURVED BLADE WITH DEFLECTION VANES

The models in this series have individually adjustable curved blades that provide a true directional pattern. They also incorporate a set of rear adjustable vanes for complete directional control and flow equalization. They are available with one or two way directional throw.

**Aluminum – Model 51CD**

**Page F86**

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

**Steel – Model 61CD**

**Page F88**

Suffix '-O' adds a steel OBD

### CURVED BLADE WITHOUT DEFLECTION VANES

The models in this series have curved blades that provide a true directional pattern. There are twelve available patterns to choose from.

**Aluminum – Model 51C**

One and Two-Way

**Page F86**

Three and Four-Way

**Page F87**

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

**Steel – Model 61C**

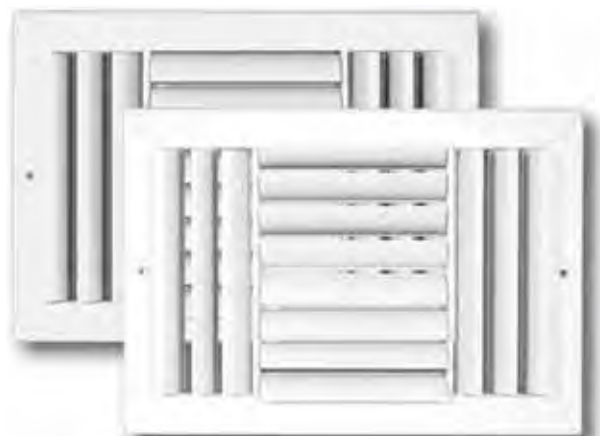
**Page F88**

One and Two-Way

Three and Four-Way

**Page F89**

Suffix '-O' adds a steel OBD



Models 51C, 61C



## EGGCRATE RETURN AND EXHAUST GRILLES

The eggcrate grilles and registers are constructed of thin, interlocked aluminum or stainless steel strips assembled in a square grid fashion that is available in a variety of grid sizes. The standard grid size is 1/2" x 1/2" x 1/2" (13 x 13 x 13) with 1/2" x 1/2" x 1" (13 x 13 x 25) or 1" x 1" x 1" (25 x 25 x 25) as an option. Frame and border types are available in a variety of materials and mounting options.

### Aluminum – Model 51EC

Page F96

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

### Aluminum – Model 51EC-MRI

Page F99

### Aluminum – Model 51EC45

Page F100

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

### Steel – Model 61EC

Page F101

Suffix '-O' adds a steel OBD

### Steel – Fineline® – Model 61ECF

Page F104

### Stainless Steel – Model 67EC

Page F105

Suffix '-O' adds a stainless steel OBD.



Models 51EC45, 67EC

## PERFORATED RETURN GRILLES

The perforated face used on these grilles and registers have 3/16" (5) diameter holes on 1/4" (6) staggered centers (51% free area) and is available in a choice of aluminum, steel or stainless steel construction. Their general appearance matches and complements the popular perforated supply diffusers (refer to the **4300 Series** in the diffuser section of the catalog).

### Aluminum – Model 51PR

Page F114

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

### Steel – Model 61PR

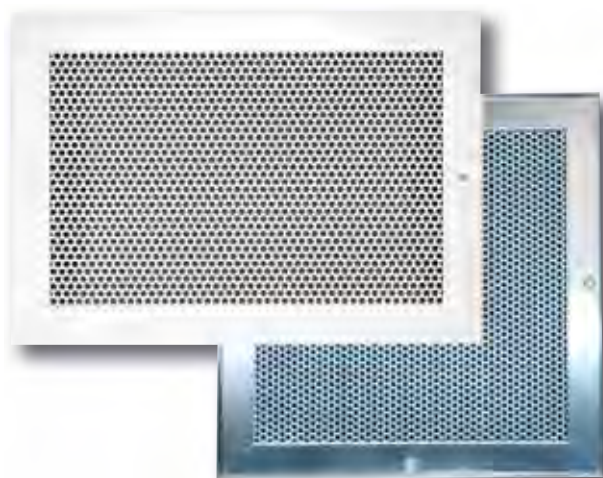
Page F114

Suffix '-O' adds a steel OBD

### Stainless Steel – Model 67PR

Page F116

Suffix '-O' adds a steel OBD



Models 51PR, 67PR

## FILTER RETURN AND EXHAUST GRILLES

Nailor offers a large selection of filter grilles that are designed to match and complement their respective base models in appearance. The standard filter frame accepts a standard 1" (25) thick, throw away type filter (by others) with an option for a 2" (51) filter frame.

### • Louvered Face

Page F122

Aluminum – Models 51FB45, 51FB55, 51FBS

Steel – Models 61FB45, 61FB55, 61FBS

Stainless Steel – 67FB45, 67FB55

### • Eggcrate

Page F122

Aluminum – Model 51FE

Aluminum – Model 51FE45

Steel – Model 61FE

### • Perforated

Page F122

Aluminum – Model 51FP

Steel – Model 61FP



Models 51FBS, 51FB55, 67FB45



## DOOR/TRANSFER GRILLES

Nailor provides an assortment of door grilles that are designed to be completely sight proof and unobtrusive in appearance. They are constructed using extruded aluminum or steel materials. A fire-rated version is also available.

**Aluminum – Models 51DGD, 51DGS**

**Page F129**

**Steel – Models 61DGD, 61DGS, 61DGC**

**Page F130**

**Steel Fire Rated – Models 61DGD-FR**

**Page F131**



Models 51DGD, 61DGD-FR



Model 51RCD

## REVERSIBLE CORE

The versatile core in this series allows a combination of four different deflections and is removable without the need of special tools. Optional deflector vanes and an opposed blade damper are available for additional air control.

**Aluminum – Models 51RC, 51RCD**

**Page F134**

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

## HEAVY DUTY EXTRUDED ALUMINUM BAR GRILLES AND REGISTERS

The grilles in this series are constructed to offer strength and durability for applications requiring strong impact resistance. The extruded aluminum frames are staked and welded, and the extruded aluminum blades are offered with a 0°, 15°, or 30° fixed deflection. Available for both supply and return air applications.

### SUPPLY AIR

#### FIXED FRONT BARS WITH REAR DEFLECTION VANES

This supply air grille has adjustable rear vanes for directional control. The fixed extruded aluminum front blades are supported by a deep profile cross bar for strength.

**Models 51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD, 51DFV-HD**

**Page F139**

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD



Model 51D15H-HD

## RETURN AIR

### FIXED BARS

This return air grille has extruded aluminum fixed blades that are reinforced for strength.

**Models 5130H-HD, 5130V-HD, 51FH-HD, 51FV-HD** Page F144

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD



Model 5130H-HD

## HEAVY DUTY STEEL GRILLES AND REGISTERS, GYMNASIUM STRENGTH

Nailor's Heavy Duty Steel Grilles and Registers are manufactured with 16 gauge steel frames and 14 gauge steel blades which gives them strength to stand up to abuse and high impacts that occur in schools, gymnasiums and other comparable applications.

## SUPPLY AIR



Model 61SH-HD

### ADJUSTABLE BLADES

The supply air grilles are offered with both single and double deflection blades. The adjustability of the blade is 0° — 40° deflection and they are spaced on 1/2" (13) centers. The double deflection rear blades are spaced on 3/4" (19) centers.

**Double Deflection – Models 61DV-HD, 61DH-HD** Page F150

Suffix '-O' adds a steel OBD

**Single Deflection – Models 61SV-HD, 61SH-HD** Page F150

Suffix '-O' adds a steel OBD

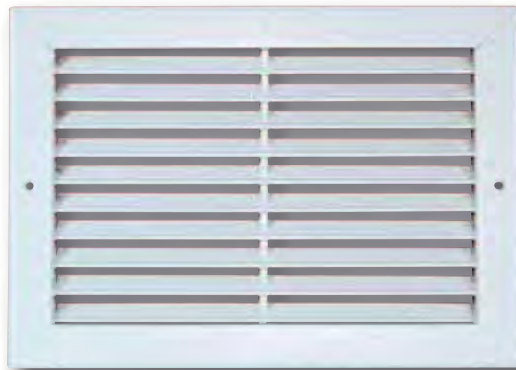
## RETURN AIR

### FIXED BLADES

Heavy gauge frame and blades and all welded construction make this series of grilles and registers extremely durable. These models are perfect for locations that require strong impact resistance. The blades are spaced on 1/2" (13) centers.

**Models 6145H-HD, 6145V-HD, 61FH-HD, 61FV-HD** Page F158

Suffix '-O' adds a steel OBD



Model 6145H-HD

## HEAVY DUTY STAINLESS STEEL

This grille is used mainly for return air applications that require strength and durability in corrosive or high humidity environments. The frame is welded and the blades are spaced on 1/2" (13) centers and reinforced with a mullion on 8" (203) centers.

**Stainless Steel – Models 6755H-HD, 6755V-HD**  
 Suffix '-O' adds a stainless steel OBD

**Page F159**



**Model 6755H-HD**



**Models 45DL1, 45DL2**

## DRUM LOUVERS

These extruded aluminum drum louvers are appropriate when high volumes of air are used and in spot heating and cooling applications. A split-vane style and a pole operating bracket are available.

**Models 45DLC1, 45DLC2**

**Page F168**

Suffix '-DEX' adds a damper/extractor (air scoop)

**Models 45DL1, 45DL2**

**Page F170**

Suffix '-O' adds a steel OBD

## INDUSTRIAL SUPPLY

The industrial supply grilles and registers have contoured airfoil blades that are extruded aluminum and are available with either 1 1/2" (38) or 3" (76) blade spacing. The heavy gauge, 1 1/4" (32) frame includes reinforced and staked mitered corners.

### • Double Deflection

**1 1/2" (38) Blade Spacing – Models 81DV, 81DH**

**Page F177**

**3" (76) Blade Spacing – Models 813DV, 813DH**

**Page F177**

Suffix '-O' adds a steel OBD

### • Single Deflection

**1 1/2" (38) Blade Spacing – Models 81SV, 81SH**

**Page F177**

**3" (76) Blade Spacing – Models 813SV, 813SH**

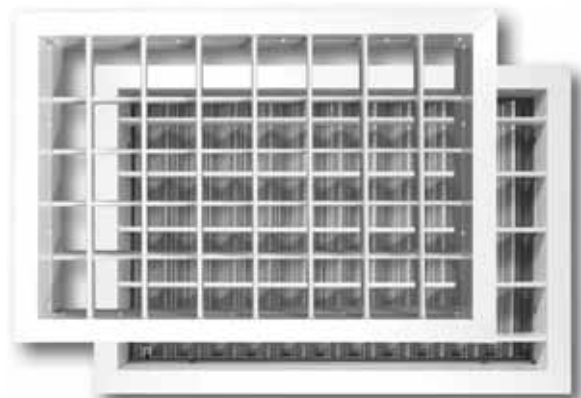
**Page F177**

Suffix '-O' adds a steel OBD

### • Gang Operated – Models 81GDV, 81GDH

**Page F177**

Suffix '-O' adds a steel OBD



**Models 813SH-O, 813DV**



**Model 81MG3**

## MODULAR CORE - INDUSTRIAL SUPPLY

Nailor has incorporated the features of the 8100 Series (double deflection) industrial supply grilles with an aluminum modular frame, which allows for extra directional flow flexibility. Up to four modules are available in specific sizes from 8" x 8" to 15" x 15" (203 x 203 to 381 x 381).

**Models 81MG1, 81MG2, 81MG3, 81MG4**

**Page F184**

Suffix '-O' adds a steel OBD

## LATTICE FACE

Lattice face grilles are available in heavy gauge aluminum, steel and stainless steel construction with a selection of hole patterns to choose from. Countersunk screw holes and mounting screws are optional.

**Aluminum – Model 51LG**

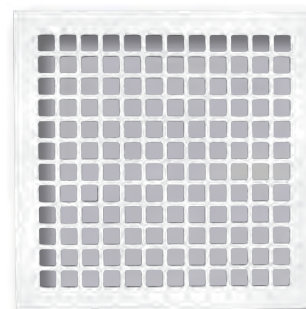
**Page F189**

**Steel – Model 61LG**

**Page F189**

**Stainless Steel – Model 67LG**

**Page F189**



**Model 61LG75**

## OPTIONS AND ACCESSORIES

Nailor offers an extensive selection of accessories and options for grilles and registers. Air balancing devices, air extractors and a variety of mounting frames are several of the accessories available. Grille options consist of special finishes, gaskets, alternative frames and a variety of other items.

### Options

Fastening and Border Frames

Page F192

Mounting Frames

Page F193

Panel Mounting Frames

Page F194

Options

Page F195

Custom Sizing

Page F195

Finishes

Page F195

Sound Reduction for Return Air Grilles

Page F196

### Accessories

Air Balancing Devices

Page F197

Volume Extractors

Page F200



Framing and Air Balancing Devices

## EXCLUSIVE WARRANTY FOR NAILOR STEEL GRILLES, REGISTERS AND DIFFUSERS

LIMITED WARRANTY – SERIES 61C, 6100, 61EC, 61F, RNS, RNS2,  
UNI, 4300, 6500, 7500 AND 61CC

Nailor Industries Inc. ('Nailor') warrants to the original and each subsequent owner of a new Nailor Series Grille, Register or Ceiling Air Diffuser in the model series titled above, constructed of corrosion-resistant steel with a factory applied paint finish that should rust become visible on the exposed portion of any individual product covered by this agreement Nailor will replace the rusted unit. Any diffuser affected by chemicals or misuse, including, without limitation, the failure to perform reasonable and necessary maintenance, will not be covered by this warranty. This warranty is for sixty (60) months from the date of the shipment by Nailor.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

The rusted unit will be shipped by the owner at its cost to Nailor for replacement. The cost of the replacement, including the cost of shipment to the owner, but excluding any costs for either the removal or preparation for shipment of the rusted unit and the re-installation of the replacement unit, will be borne by Nailor. A reasonable time should be allowed after shipment to Nailor for the replacement of the rusted unit.

***This is the only warranty given with the purchase. Any warranties implied by law are limited to sixty (60) months from the date of shipment by Nailor. Nailor neither assumes nor authorizes any person to assume for it any other liability in connection with any diffuser covered by this agreement.***

***No payment or other compensation will be made for indirect or consequential damage such as, damage or injury to person or property or loss of revenue or profit which might be paid, incurred or sustained by reason of the use or inability to use a Nailor product listed above, even if such loss or damage could have been foreseen by Nailor.***

Some states do not allow the exclusion of limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above may not apply to you.



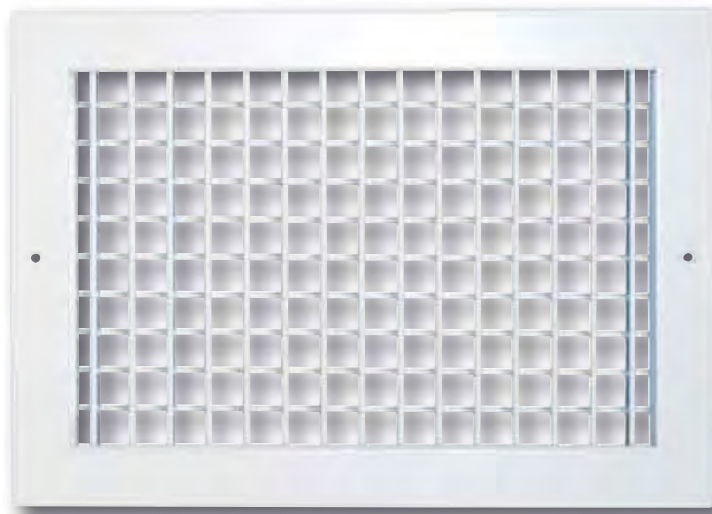
## ALUMINUM DOUBLE DEFLECTION GRILLES AND REGISTERS

### SUPPLY

#### Models:

#### 51DV and 51DH

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51DV

Models 51DV and 51DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

#### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.
- NF Narrow frame with 1" (25) face border and a 3/4" (19) overlap margin. O.A. flange to flange dim. = listed size + 1 1/4" (32). Concealed mounting is optional.
- Rigid, heavy gauge extruded frames with reinforced mitered corners.
- Streamlined shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.

- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

#### CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

#### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

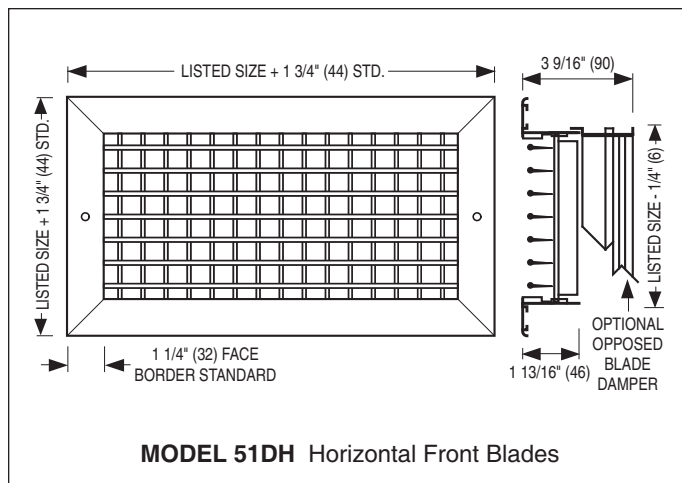
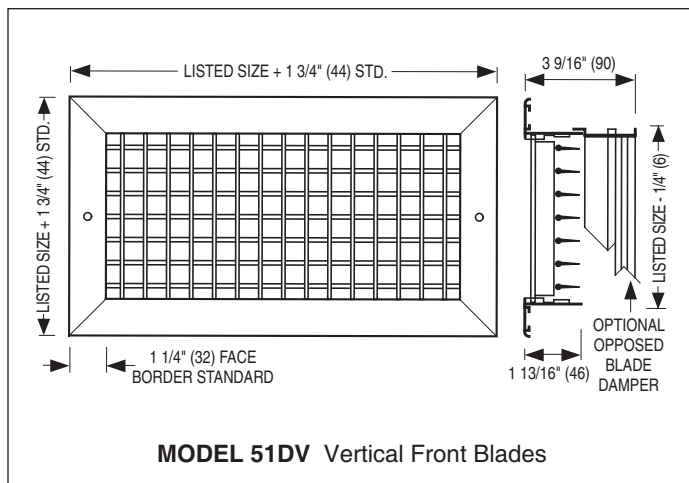
#### FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type D Concealed Screw Holes
- Type N None

#### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.





## ALUMINUM SINGLE DEFLECTION GRILLES AND REGISTERS

### • SUPPLY

#### Models:

#### 51SV and 51SH

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51SV

Models 51SV and 51SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

#### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow frame with 1" (25) face border and a 3/4" (19) overlap margin. O.A. flange to flange dim. = listed size + 1 1/4" (32). Concealed mounting is optional.

- Rigid, heavy gauge extruded frames with reinforced mitered corners.

Streamlined shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.

- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

#### CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

#### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

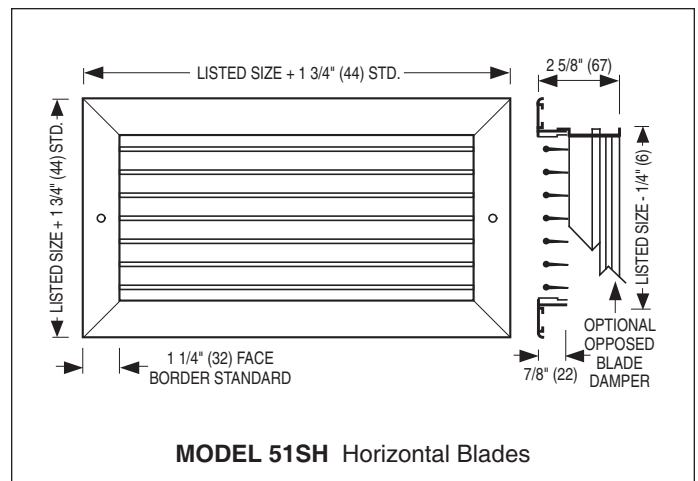
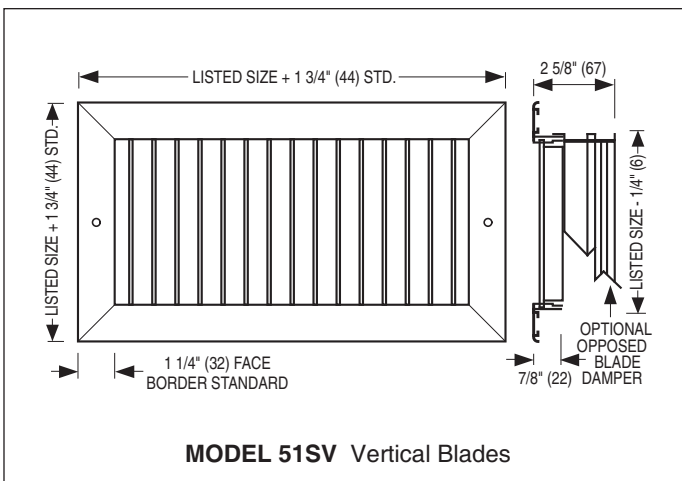
#### FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type D Concealed Screw Holes
- Type N None

#### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



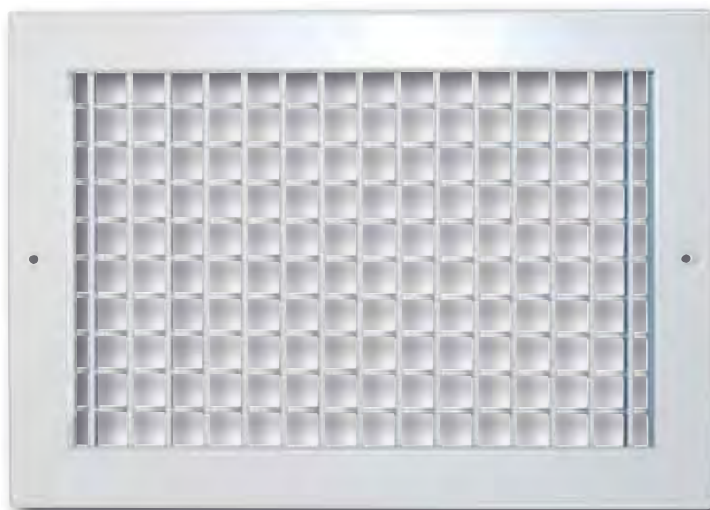
## STEEL DOUBLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY

### Models:

61DV and 61DH

- Suffix '-O' adds a steel opposed blade damper



Model 61DV

Models 61DV and 61DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.

- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.

### CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant steel construction.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.

### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

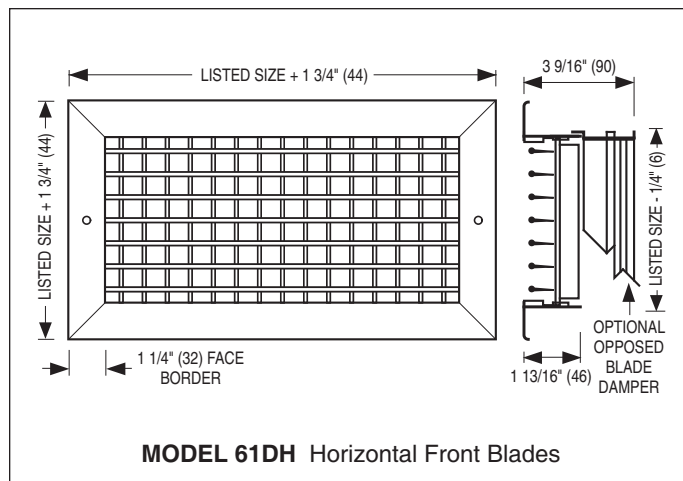
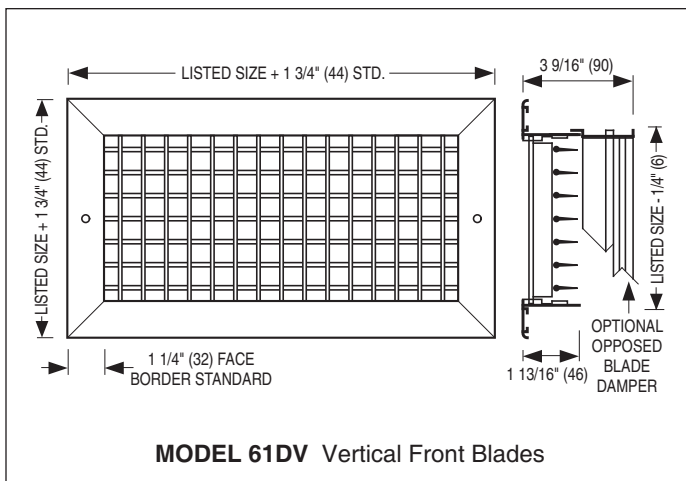
### FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type D Concealed Screw Holes
- Type N None

### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



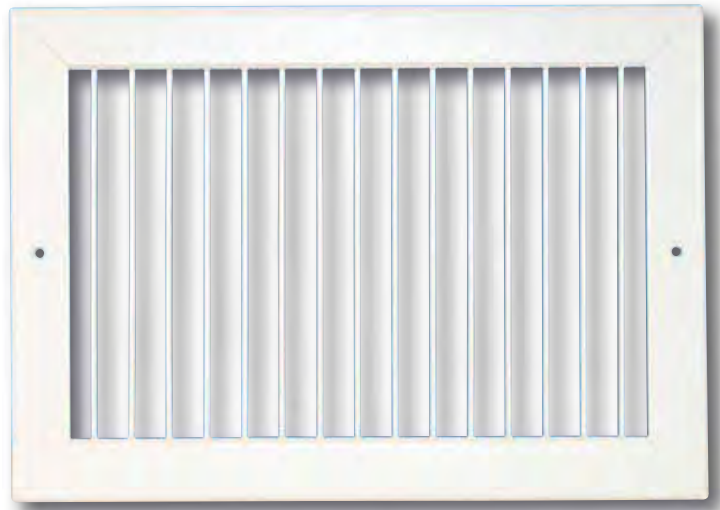
## STEEL SINGLE DEFLECTION GRILLES AND REGISTERS

### • SUPPLY

#### Models:

61SV and 61SH

- Suffix '-O' adds a steel opposed blade damper



Model 61SV

Models 61SV and 61SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

#### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.

- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.

#### CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant steel construction.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.

#### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

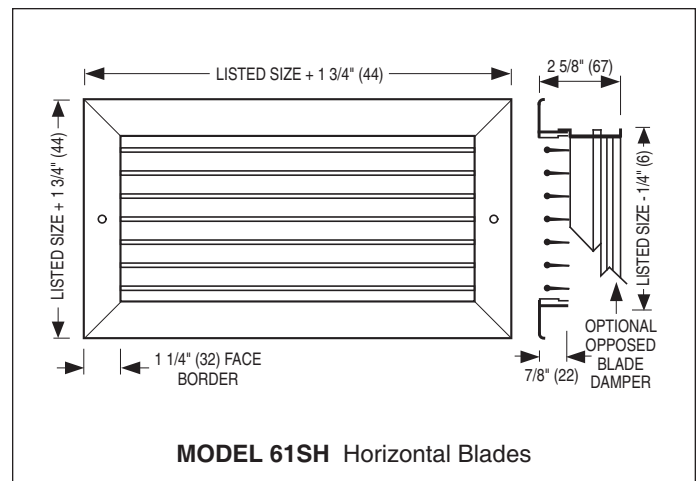
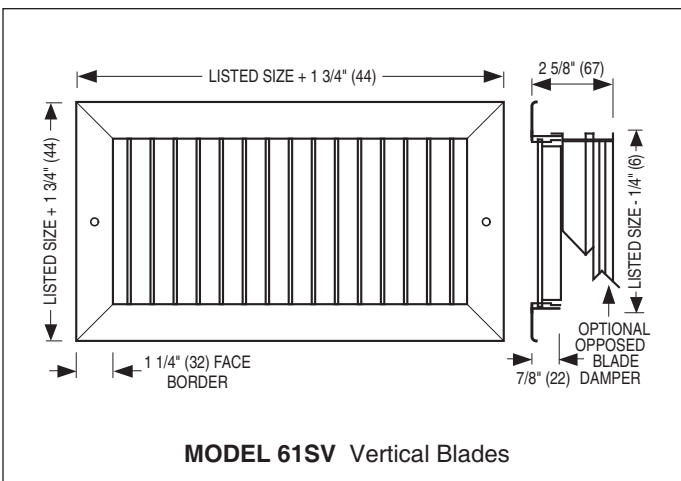
#### FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type D Concealed Screw Holes
- Type N None

#### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



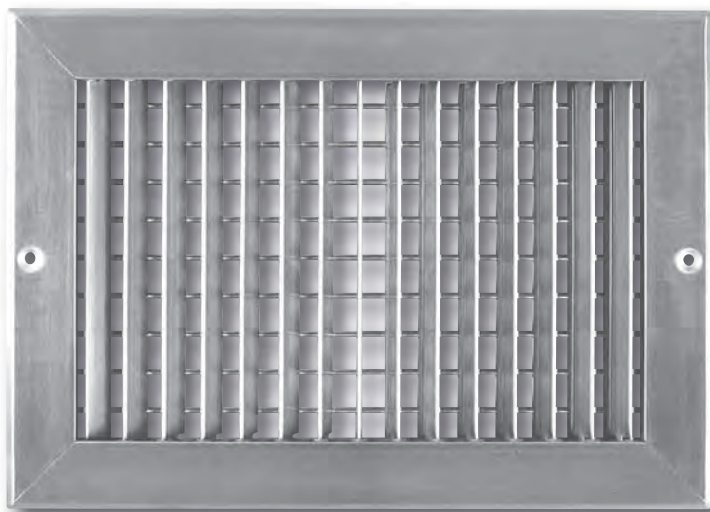
## STAINLESS STEEL DOUBLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY

### Models:

67DV and 67DH

- Suffix '-O' adds a stainless steel opposed blade damper



Model 67DV

Models 67DV and 67DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

The combination of streamlined shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

### STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219).

### CONSTRUCTION MATERIAL:

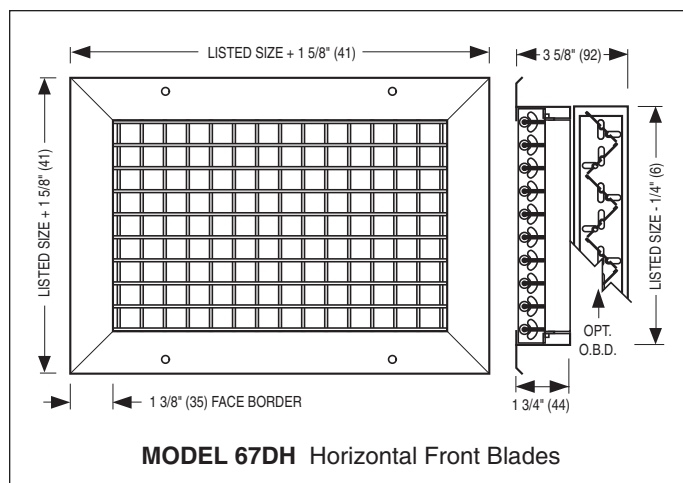
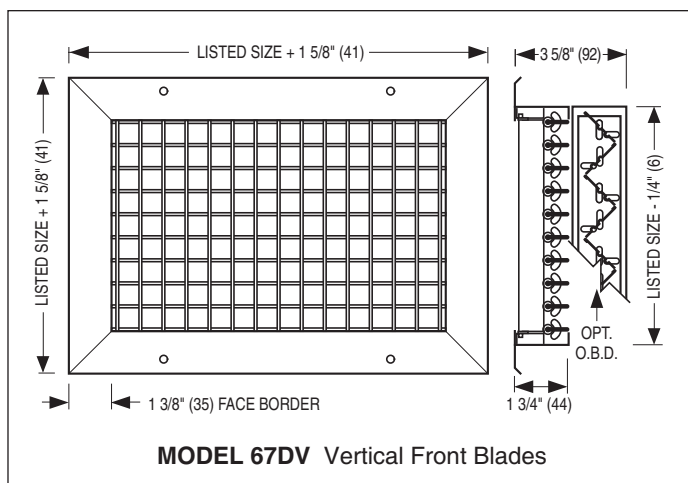
- Type 304 Stainless Steel construction.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.

### FINISH OPTIONS:

- #4 Brushed Satin Polished finish is standard. AW Appliance White finish is optional.

### OPTIONS AND ACCESSORIES:

- Type 316 Stainless Steel Construction
  - PFS Stainless Steel Plaster Frame
- For additional options and accessories, see page F191.



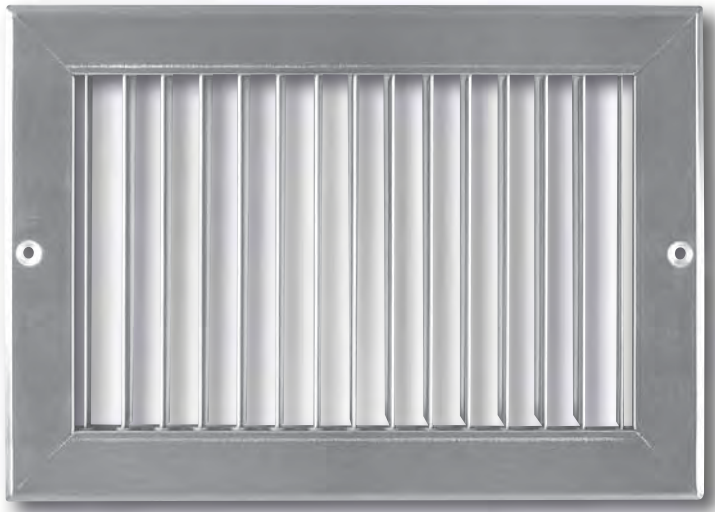
**STAINLESS STEEL  
SINGLE DEFLECTION  
GRILLES AND REGISTERS**

- SUPPLY

**Models:**

**67SV and 67SH**

- Suffix '-O' adds a stainless steel opposed blade damper



Model 67SV

Models 67SV and 67SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

The combination of streamlined shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

**STANDARD FEATURES:**

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.

- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).

**CONSTRUCTION MATERIAL:**

- Type 304 Stainless Steel construction.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.

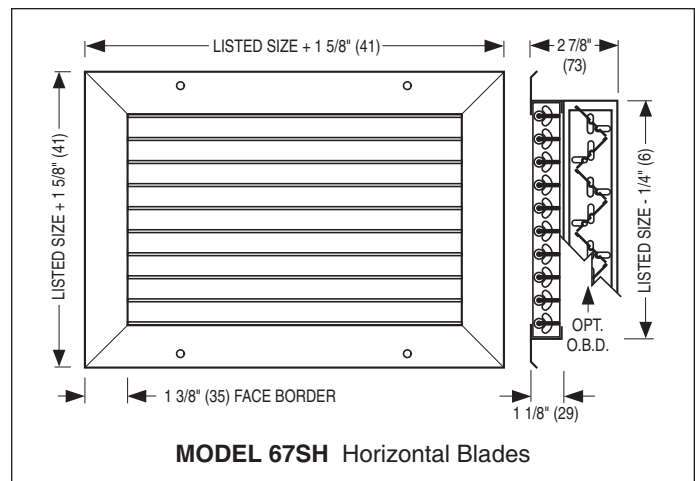
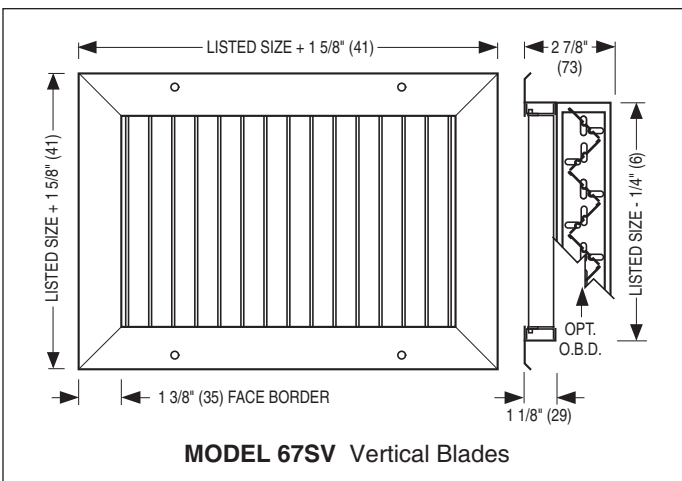
**FINISH OPTIONS:**

- #4 Brushed Satin Polished finish is standard. AW Appliance White finish is optional.

**OPTIONS AND ACCESSORIES:**

- Type 316 Stainless Steel Construction
- PFS Stainless Steel Plaster Frame

For additional options and accessories, see page F191.





## PERFORMANCE NOTES FOR SUPPLY GRILLES AND REGISTERS:

### MODEL SERIES: 5100, 6100 AND 6700

#### Throw, Spread and Drop

The isovel diagrams shown below, illustrate in plan view, the relationship of horizontal spread to throw for three standard vertical blade deflections and represent a typical high side wall supply outlet. The isovels (throw values) are for the cataloged terminal velocities of 150, 100 and 50 fpm.

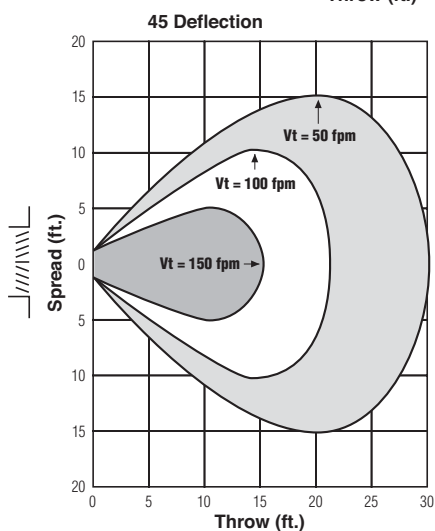
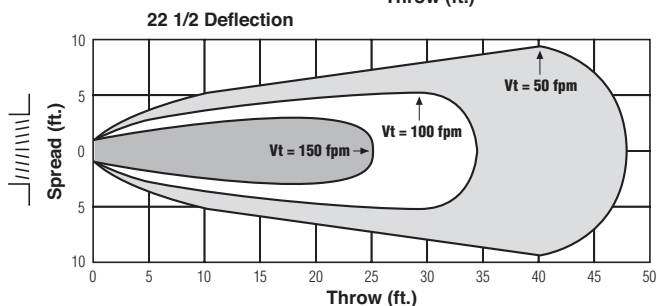
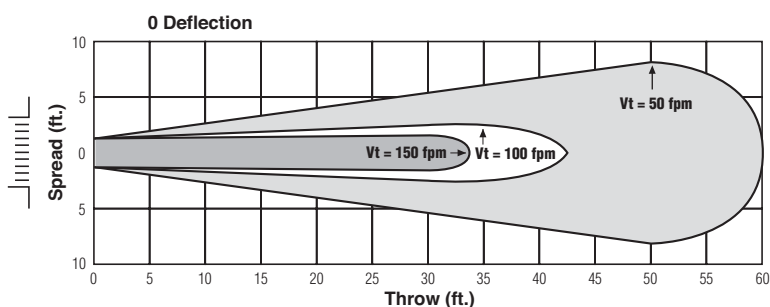
Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by multiplying the cataloged throw by x 0.7.

In order to offset potential draft problems caused by premature drop, it is recommended to set the blades with an upward deflection setting of 15 – 20° in free space conditions. The angle of spread and temperature differential between the supply air and room air ( $\Delta T$ ) also effects the drop of the airstream.

Under constant conditions of temperature, volume and core velocity, the wider the spread, the smaller the drop. Typical cold supply air (20°F  $\Delta T$ ) reduces horizontal throw by approximately 30%. Warm air will increase throw by approximately 30% and reduce drop.

For a full explanation of the effects of spread, throw, temperature and drop, refer to the engineering guide at the back of the catalog.

#### SPREAD CHARACTERISTICS WITH THREE DEFLECTION SETTINGS



#### NC Corrections for Blade Deflection (add)

Model Type	Damper	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	0	+ 2	+ 7
	Without	- 4	- 2	+ 3
Single Deflection	With	- 4	- 1	+ 4
	Without	- 8	- 6	+ 1

Note: Damper corrections are for wide open damper.

#### TP Correction Factors for Grilles Without Damper (multiply)

Blade Deflection	0°	22 1/2°	45°
Double Deflection Factor	x .80	x .83	x .89
Single Deflection Factor	x .73	x .76	x .85

#### NC Corrections for Throttling Damper (add)

Additional Pressure Drop (in. w.g.)	.05"	.15"	.25"
Approx. Damper Opening	75%	67%	50%
NC add	+ 6	+ 11	+ 18





## PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES MODELS: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH, 67DV, 67DH, 67SV, 67SH

**GRILLES AND REGISTERS**
**F**

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity	300	400	500	600	700	800	1000	1200	1400	
				Velocity Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122	
				0°	.015	.026	.041	.059	.081	.106	.165	.238	.324	
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		Total Pressure	22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
				45°	.026	.046	.072	.103	.142	.186	.289	.417	.567	
				CFM	372	496	620	744	868	992	1240	1488	1736	
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		Noise Criteria		—	—	17	22	27	31	37	43	48
				Throw	0°	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	35-42-60	39-47-66	41-51-71
				22 1/2°	9-14-26	13-20-31	16-23-34	19-26-38	22-29-41	25-31-43	28-34-48	31-38-53	33-41-57	
24 x 10	20 x 12 30 x 8	1.52		45°	6-9-17	8-13-20	10-15-21	12-17-24	14-18-26	16-20-27	18-21-30	20-24-33	21-26-36	
				CFM	411	548	685	822	959	1096	1370	1644	1918	
				Noise Criteria	—	—	18	23	28	32	38	44	49	
16 x 16	18 x 14 22 x 12 30 x 8	1.64		0°	11-18-33	16-25-39	20-30-43	24-33-47	28-36-51	32-39-54	35-43-61	39-47-67	41-51-72	
				22 1/2°	9-14-26	13-20-31	16-24-34	19-26-38	22-29-41	26-31-43	28-34-49	31-38-54	33-41-58	
				45°	6-9-17	8-13-20	10-15-22	12-17-24	14-18-26	16-20-27	18-22-31	20-24-34	21-26-36	
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		CFM	456	608	760	912	1064	1216	1520	1824	2128	
				Noise Criteria	—	—	18	23	28	32	38	44	49	
				Throw	0°	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	37-45-65	41-50-70	43-53-76
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		22 1/2°	10-15-28	13-20-33	17-26-36	20-28-40	23-30-42	27-33-46	30-36-51	33-40-56	34-42-61	
				45°	6-10-18	8-13-21	11-16-23	13-18-25	15-19-27	17-21-29	19-23-32	21-25-35	22-27-38	
				CFM	492	656	820	984	1148	1312	1640	1968	2296	
24 x 16	32 x 12	2.50		0°	12-20-37	17-26-42	22-32-47	26-37-51	31-40-56	35-42-59	39-47-67	42-51-73	46-56-79	
				22 1/2°	10-16-30	14-21-34	18-26-38	21-30-41	25-32-45	28-34-47	31-38-54	34-41-58	37-45-63	
				45°	6-10-19	9-13-21	11-16-24	13-19-26	16-20-28	18-21-30	20-24-34	21-26-37	23-28-40	
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM	555	740	925	1110	1295	1480	1850	2220	2590	
				Noise Criteria	—	—	19	24	29	33	39	45	50	
				Throw	0°	12-20-38	18-27-44	22-33-48	27-38-54	32-40-58	36-44-62	40-48-69	44-54-76	48-58-82
20 x 20	22 x 18	2.61		22 1/2°	10-16-30	14-22-35	18-26-38	22-30-43	26-32-46	29-35-50	32-38-55	35-43-61	38-46-66	
				45°	6-10-19	9-14-22	11-16-24	14-19-27	16-20-29	18-21-30	20-24-35	22-27-38	24-29-41	
				CFM	630	840	1050	1260	1470	1680	2100	2520	2940	
24 x 16	32 x 12	2.50		0°	13-21-40	19-29-47	24-36-52	29-40-57	33-43-62	38-47-66	42-52-74	47-57-81	50-62-87	
				22 1/2°	10-17-32	15-23-38	19-29-42	23-32-46	26-34-50	30-38-53	34-42-59	38-46-65	40-50-70	
				45°	7-11-20	10-15-24	12-18-26	15-20-29	17-22-31	19-24-33	21-26-37	24-29-41	25-31-44	
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM	696	928	1160	1392	1624	1856	2320	2784	3248	
				Noise Criteria	—	—	20	25	30	34	40	46	51	
				Throw	0°	14-23-43	21-31-50	26-39-56	31-43-61	36-47-67	41-50-71	46-56-79	50-61-86	54-67-94
24 x 16	32 x 12	2.50		22 1/2°	11-18-34	17-25-40	21-31-45	25-34-49	29-38-54	33-40-57	37-45-63	40-49-69	43-54-75	
				45°	7-12-22	11-16-25	13-20-28	16-22-31	18-24-34	21-25-36	23-28-40	25-31-43	27-34-47	
				CFM	750	1000	1250	1500	1750	2000	2500	3000	3500	
20 x 20	22 x 18	2.61		0°	14-24-45	22-32-52	27-40-58	32-45-64	37-49-68	43-52-74	48-58-82	52-64-90	56-68-97	
				22 1/2°	11-19-36	18-26-42	22-32-46	26-36-51	30-39-54	34-42-59	38-46-66	42-51-72	45-54-78	
				45°	7-12-23	11-16-26	14-20-29	16-23-32	19-25-34	22-26-37	24-29-41	26-32-45	28-34-49	
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM	783	1044	1305	1566	1827	2088	2610	3132	3654	
				Noise Criteria	—	—	20	25	30	34	40	46	51	
				Throw	0°	15-24-46	22-32-53	27-41-59	32-46-65	38-50-70	44-53-75	49-59-84	53-65-92	58-70-99
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		22 1/2°	12-19-37	18-26-42	22-33-47	26-37-52	30-40-56	35-42-60	39-47-67	42-52-74	46-57-81	
				45°	8-12-23	11-16-27	14-21-30	16-23-33	19-25-35	22-27-38	25-30-42	27-33-46	29-35-50	
				CFM	837	1116	1395	1674	1953	2232	2790	3348	3906	
42 x 12	36 x 14	3.27		0°	15-25-48	23-34-55	28-42-61	34-48-68	40-51-73	45-55-77	50-61-86	55-68-95	59-73-103	
				22 1/2°	12-20-38	18-27-44	22-34-49	27-38-54	32-41-58	36-44-62	40-49-69	44-54-76	47-58-82	
				45°	8-13-24	12-17-28	14-21-31	17-24-34	20-26-37	23-28-39	25-31-43	28-34-48	30-37-52	
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM	951	1268	1585	1902	2219	2536	3170	3804	4438	
				Noise Criteria	—	—	21	26	31	35	41	47	52	
				Throw	0°	17-27-50	24-36-58	29-45-65	36-50-71	42-54-77	47-58-82	53-65-92	58-71-101	62-77-109
42 x 12	36 x 14	3.27		22 1/2°	14-22-40	19-29-46	23-36-52	29-40-57	34-43-62	38-46-66	42-52-74	46-57-81	50-62-87	
				45°	9-14-25	12-18-29	15-23-33	18-25-36	21-27-39	24-29-41	27-33-46	29-36-51	31-39-55	
				CFM	981	1308	1635	1962	2289	2616	3270	3924	4578	
30 x 18	24 x 22 34 x 16 40 x 14	3.54		0°	17-27-51	24-36-59	30-45-66	36-51-72	42-55-77	48-59-83	53-66-93	59-72-101	63-77-109	
				22 1/2°	14-22-41	19-29-47	24-36-53	29-41-58	34-44-62	38-47-66	42-53-74	47-58-81	50-62-87	
				45°	9-14-26	12-18-30	15-23-33	18-26-38	21-28-39	24-30-42	27-33-47	30-36-51	32-39-55	
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM	1062	1416	1770	2124	2478	2832	3540	4248	4956	
				Noise Criteria	—	—	21	26	31	35	41	47	52	
				Throw	0°	18-28-53	25-37-61	31-47-69	37-53-75	44-57-81	50-61-86	56-69-97	61-75-106	66-81-115
30 x 18	24 x 22 34 x 16 40 x 14	3.54		22 1/2°	14-22-42	20-30-49	25-38-55	30-42-60	35-46-65	40-49-69	45-55-78	49-60-85	53-65-92	
				45°	9-14-27	13-19-31	16-24-35	19-27-38	22-29-41	25-31-43	28-35-49	31-38-53	33-41-58	
				CFM	1062	1416	1770	2124	2478	2832	3540	4248	4956	

For performance data notes, see F24.

## PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES MODELS: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH, 67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79		CFM		1137	1516	1895	2274	2653	3032	3790	4548	5306
				Noise Criteria		—	—	21	26	31	35	41	47	52
				Throw	0°	18-29-55	29-36-62	33-48-70	39-55-77	45-59-83	51-62-89	57-70-99	62-77-108	68-83-117
					22 1/2°	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	46-56-79	50-62-86	54-66-94
36 x 18	32 x 20 40 x 16 46 x 14	4.29		CFM		1287	1716	2145	2574	3003	3432	4290	5148	6006
				Noise Criteria		—	15	22	27	32	36	42	48	53
				Throw	0°	19-31-58	28-42-68	35-52-75	2-58-83	48-63-89	55-68-95	61-75-106	68-83-117	73-89-125
					22 1/2°	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	49-60-85	54-66-94	58-71-100
26 x 26	28 x 24 48 x 14	4.47		CFM		1341	1788	2235	2682	3129	3576	4470	5364	6258
				Noise Criteria		—	15	22	27	32	36	42	48	53
				Throw	0°	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	63-77-109	69-85-120	75-91-129
					22 1/2°	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	50-62-87	55-68-96	60-73-103
30 x 24	32 x 22 36 x 20 40 x 18	4.77		CFM		1431	1908	2385	2862	3339	3816	4770	5724	6678
				Noise Criteria		—	15	22	27	32	36	42	48	53
				Throw	0°	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	65-79-112	71-87-123	77-94-133
					22 1/2°	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	52-63-90	57-70-98	62-75-106
42 x 18	28 x 26	4.99		CFM		1497	1997	2495	2994	3493	3992	4990	5988	6986
				Noise Criteria		—	16	23	28	33	37	43	49	54
				Throw	0°	20-33-62	30-44-72	37-55-80	44-62-88	52-67-95	59-72-102	66-80-114	72-88-125	77-95-135
					22 1/2°	16-26-50	24-35-58	30-44-64	35-50-70	42-54-76	47-58-82	53-64-91	58-70-100	62-76-108
28 x 28	30 x 26 36 x 22 40 x 20	5.20		CFM		1560	2080	2600	3120	3640	4160	5200	6240	7280
				Noise Criteria		—	16	23	28	33	37	43	49	54
				Throw	0°	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	67-82-116	74-90-128	79-97-137
					22 1/2°	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	54-66-93	59-72-102	63-78-110
42 x 20	30 x 28	5.57		CFM		1671	2228	2785	3342	3899	4456	5570	6684	7798
				Noise Criteria		—	16	23	28	33	37	43	49	54
				Throw	0°	22-35-66	31-47-76	39-58-84	47-66-93	55-71-101	62-76-107	70-84-120	76-93-131	82-100-142
					22 1/2°	18-28-53	25-38-61	31-46-67	38-53-74	44-57-80	50-61-86	56-67-96	61-74-105	66-80-114
36 x 24	40 x 22 44 x 20	5.74		CFM		1722	2296	2870	3444	4018	4592	5740	6888	8036
				Noise Criteria		—	16	23	28	33	37	43	49	54
				Throw	0°	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	72-88-124	78-96-137	85-104-148
					22 1/2°	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	58-70-99	62-77-110	68-83-118
30 x 30	34 x 26 38 x 24 48 x 20	5.99		CFM		1797	2396	2995	3594	4193	4792	5990	7188	8386
				Noise Criteria		—	16	23	28	33	37	43	49	54
				Throw	0°	23-36-69	33-49-80	41-61-89	49-69-98	57-75-106	65-80-113	73-89-126	80-98-138	86-106-150
					22 1/2°	18-29-55	26-39-64	33-49-71	39-55-78	46-60-85	52-64-90	58-71-101	64-78-110	69-85-120
42 x 24	36 x 28 42 x 24 46 x 22	6.72		CFM		2016	2688	3360	4032	4704	5376	6720	8064	9408
				Noise Criteria		—	17	24	29	34	38	44	50	55
				Throw	0°	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	77-93-132	84-102-144	90-111-157
					22 1/2°	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	62-74-106	67-82-115	72-89-126
32 x 32	40 x 26	6.84		CFM		2052	2736	3420	4104	4788	5472	6840	8208	9576
				Noise Criteria		—	17	24	29	34	38	44	50	55
				Throw	0°	24-39-73	34-52-84	43-65-94	52-73-103	61-79-112	69-84-119	77-94-133	84-103-146	91-112-158
					22 1/2°	19-31-58	27-42-67	34-52-75	42-58-82	49-63-90	55-67-95	62-75-106	67-82-117	73-90-126
36 x 30	38 x 28	7.22		CFM		2166	2888	3610	4332	5054	5776	7220	8664	10108
				Noise Criteria		—	17	24	29	34	38	44	50	55
				Throw	0°	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	80-98-139	87-108-151	94-116-164
					22 1/2°	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	64-78-111	70-86-121	75-93-131
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69		CFM		2307	3076	3845	4614	5383	6152	7690	9228	10766
				Noise Criteria		—	18	25	30	35	39	45	51	56
				Throw	0°	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	82-100-142	90-109-155	97-118-167
					22 1/2°	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	66-80-114	72-87-124	78-94-134
Throw	45°	13-22-39	19-28-45	23-45-50	28-39-55	32-42-59	37-45-64	41-50-71	45-55-78	49-59-84				

For performance data notes, see F24.

## PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES MODELS: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH, 67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity	300	400	500	600	700	800	1000	1200	1400	
				Velocity Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122	
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
					22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373
					45°	.026	.046	.072	.103	.142	.186	.289	.417	.567
36 x 34	38 x 32 40 x 30 48 x 26	8.20		CFM	2460	3280	4100	4920	5740	6560	8200	9840	11480	
				Noise Criteria	-	18	25	30	35	45	51	56		
				Throw	0°	26-42-79	37-57-91	47-70-102	57-79-111	65-85-121	75-91-129	84-102-144	91-111-158	98-121-171
				22 1/2°	21-34-63	30-46-73	38-56-82	46-63-89	52-68-97	60-73-103	67-82-115	73-89-126	78-97-137	
				45°	13-21-40	19-29-	24-35-51	29-40-56	33-43-61	38-46-65	42-51-72	46-56-79	49-61-86	
36 x 36	38 x 34 42 x 30 46 x 28	8.69		CFM	2607	3476	4345	5214	6083	6952	8690	10428	12166	
				Noise Criteria	-	18	25	30	35	45	51	56		
				Throw	0°	28-45-84	36-60-96	49-74-108	60-84-117	69-90-127	78-96-136	88-108-152	96-117-166	104-127-180
				22 1/2°	22-36-67	31-48-77	39-59-86	48-67-94	55-72-102	62-77-109	70-86-122	77-94-133	83-102-144	
				45°	14-23-42	20-30-48	25-37-54	30-42-59	35-45-64	39-48-68	44-54-76	48-59-83	52-64-90	
38 x 38	42 x 34	9.70		CFM	2910	3880	4850	5820	6790	7760	9700	11640	13580	
				Noise Criteria	-	19	26	31	36	40	46	52	57	
				Throw	0°	28-47-88	42-62-101	53-78-114	62-88-125	73-95-134	83-101-143	93-114-161	101-125-176	109-134-190
				22 1/2°	22-38-70	34-50-81	42-62-91	50-70-100	58-76-107	66-81-114	74-91-129	81-100-141	87-107-152	
				45°	14-24-44	21-31-51	27-39-57	31-44-63	37-48-67	42-51-72	47-57-81	51-63-88	55-67-95	
42 x 36	44 x 34 48 x 30	10.16		CFM	3048	4064	5080	6096	7112	8128	10160	12192	14224	
				Noise Criteria	-	19	26	31	36	40	46	52	57	
				Throw	0°	29-48-90	43-64-104	53-80-117	64-90-127	75-97-138	85-104-147	95-117-165	104-127-180	112-138-195
				22 1/2°	23-38-72	34-51-83	42-64-94	51-72-102	60-78-110	68-83-118	76-94-132	83-102-144	90-110-156	
				45°	15-24-45	22-32-52	27-40-59	32-45-64	38-49-69	43-52-74	48-59-83	52-64-90	56-69-98	
40 x 40	42 x 38 46 x 34 48 x 32	10.77		CFM	3231	4308	5385	6462	7539	8616	10770	12924	15078	
				Noise Criteria	-	19	26	31	36	40	46	52	57	
				Throw	0°	31-50-94	44-67-108	56-84-121	67-94-132	77-102-143	88-108-153	99-121-171	108-132-187	117-143-203
				22 1/2°	25-40-75	35-54-86	45-67-97	54-75-106	62-82-114	70-86-122	79-97-137	86-106-150	94-114-162	
				45°	16-25-47	22-34-54	28-42-61	34-47-66	39-51-72	44-54-77	48-59-83	54-66-94	59-72-102	
42 x 42	44 x 40 46 x 38 48 x 36	11.89		CFM	3567	4756	5945	7134	8323	9512	11890	14268	16646	
				Noise Criteria	-	20	27	32	37	41	47	53	58	
				Throw	0°	32-52-97	46-69-112	58-86-125	69-97-138	81-105-149	92-112-159	102-125-178	112-138-195	122-145-210
				22 1/2°	26-42-78	37-55-90	46-69-100	55-78-110	65-84-119	74-90-127	82-100-142	90-110-156	98-119-168	
				45°	16-26-49	23-35-56	29-43-63	35-49-69	41-53-75	46-56-80	51-63-89	56-69-98	61-75-105	
44 x 44	46 x 42	13.07		CFM	3921	5228	6535	7842	9149	10456	13070	15684	18298	
				Noise Criteria	-	20	27	32	37	41	47	53	58	
				Throw	0°	34-55-104	49-74-120	61-92-133	74-104-146	86-112-158	97-120-168	109-133-189	120-146-207	129-158-223
				22 1/2°	27-44-83	39-59-96	49-74-106	59-83-117	69-90-126	78-96-134	87-106-151	96-117-166	103-126-178	
				45°	17-28-52	25-37-60	31-46-67	37-52-73	43-56-79	49-60-84	55-67-95	60-73-104	65-79-112	
46 x 46		14.30		CFM	4290	5720	7150	8580	10010	11440	14300	17160	20020	
				Noise Criteria	-	20	27	32	37	41	47	53	58	
				Throw	0°	35-57-107	51-76-124	63-95-138	76-107-151	89-116-163	101-124-174	113-138-195	124-151-214	134-163-231
				22 1/2°	28-46-86	41-61-99	50-76-110	61-86-121	71-93-130	81-99-139	90-110-156	99-121-171	107-130-185	
				45°	18-29-54	26-38-62	32-48-69	38-54-76	45-58-82	51-62-87	57-69-98	62-76-107	62-82-116	
48 x 48		15.59		CFM	4677	6236	7795	9354	10913	12472	15590	18708	21826	
				Noise Criteria	-	21	28	33	38	42	48	54	59	
				Throw	0°	37-60-113	53-80-131	67-100-146	80-113-159	94-122-173	106-131-185	119-146-206	131-159-226	140-173-244
				22 1/2°	30-48-90	42-64-105	54-80-117	64-90-127	75-98-138	85-105-148	95-117-165	105-127-181	112-138-195	
				45°	19-30-57	27-40-66	34-50-73	40-57-80	47-61-87	53-66-93	60-73-103	62-80-113	70-87-122	

### Performance Notes:

- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is based on double deflection grille with opposed blade damper (register).
- 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.
- Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.
- Additional performance notes and correction factors for various models and settings may be found on page F20.
- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts @ 0° deflection. Dash (-) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 5100

### ALUMINUM SUPPLY GRILLES AND REGISTERS

EXAMPLE: 51DV - O - 24 x 12 - S - AW - DMI - A - —

- |   |  |  |
|---|--|--|
| <p>1. <b>Models</b></p> <p><b>Double Deflection:</b></p> <p>51DV Vertical Front Blades</p> <p>51DH Horizontal Front Blades</p> <p><b>Single Deflection:</b></p> <p>51SV Vertical Blades</p> <p>51SH Horizontal Blades</p> | <p>5. <b>Finish</b></p> <p>AW Appliance White (default)</p> <p>AL Aluminum</p> <p>BK Black</p> <p>BW British White</p> <p>LBP Light Bronze Paint</p> <p>MBP Medium Bronze Paint</p> <p>DBP Dark Bronze Paint</p> <p>MI Mill</p> <p>PC Prime Coat</p> <p>SA Satin Anodized (clear)</p> <p>SP Special Custom Color</p> | <p>8. <b>Insect Screen</b></p> <p>IS Insect Screen</p>         |
| <p>2. <b>Damper (OBD)</b><br/>(model suffix)</p> <p>O Steel</p> <p>OA Aluminum</p> <p>— None</p>  | <p>6. <b>Opposed Blade Damper Finish</b></p> <p>DMI Mill (default)</p> <p>DBK Painted Black</p>  | <p>9. <b>Plaster Sub-Frame</b></p> <p>PF Plaster Sub-Frame</p> |
| <p>3. <b>Nominal Width x Height</b><br/>inches (mm)</p>   | <p>7. <b>Fastening</b></p> <p>A Screw Holes (default)</p> <p>C Concealed Mounting Straps</p> <p>D Concealed Screw Holes in Neck</p> <p>N None</p>  | <p>10. <b>Gaskets</b></p> <p>GK Foam Gasket</p>                |
| <p>4. <b>Frame/Border Type</b></p> <p>S Surface Mount</p> <p style="padding-left: 20px;">Border 1 1/4" (32) (default)</p> <p>NF Narrow Frame</p> <p style="padding-left: 20px;">Border 1" (25)</p>                        | <p>11. <b>Earthquake Tabs</b></p> <p>EQT Earthquake Tabs</p>   |  |

**Notes:**

- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically select "standard". For example, an aluminum double deflection register, front blades vertical and steel damper, is **Model 51DV-O**. Unit will be supplied with screw holes and AW Appliance White finish.
- Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.
- The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

**OPTIONS & ACCESSORIES:**

- None (default)

### MODEL SERIES: 5100

### ALUMINUM SUPPLY GRILLES AND REGISTERS

**SUGGESTED SPECIFICATION:**

**51DV, 51DH Double Deflection**

Furnish and install **Nailor Model** (select one) **51DV** or **51DH Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of extruded aluminum adjustable blades that are streamlined shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**51SV, 51SH Single Deflection**

Furnish and install **Nailor Model** (select one) **51SV** or **51SH Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are streamlined shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 6100

### STEEL SUPPLY GRILLES AND REGISTERS

EXAMPLE: 61DV - O - 24 x 12 - S - AW - DMI - A - —

- |  |   |
|--|---|
| <p>1. <b>Models</b></p> <p><b>Double Deflection:</b></p> <p>61DV Vertical Front Blades</p> <p>61DH Horizontal Front Blades</p> <p><b>Single Deflection:</b></p> <p>61SV Vertical Blades</p> <p>61SH Horizontal Blades</p> <p>2. <b>Damper (OBD)</b><br/>(model suffix)</p> <p>O Steel</p> <p>— None</p> <p>3. <b>Nominal Width x Height</b><br/>inches (mm)</p> <p>4. <b>Frame/Border Type</b></p> <p>S Surface Mount</p> <p>Border 1 1/4" (32) (default)</p> <p>5. <b>Finish</b></p> <p>AW Appliance White (default)</p> <p>AL Aluminum</p> <p>BK Black</p> <p>BW British White</p> | <p>LBP Light Bronze Paint</p> <p>MBP Medium Bronze Paint</p> <p>DBP Dark Bronze Paint</p> <p>MI Mill</p> <p>PC Prime Coat</p> <p>SP Special Custom Color</p> <p>6. <b>Opposed Blade Damper Finish</b></p> <p>DMI Mill (default)</p> <p>DBK Painted Black</p> <p>7. <b>Fastening</b></p> <p>A Screw Holes (default)</p> <p>C Concealed Mounting Straps</p> <p>D Concealed Screw Holes in Neck</p> <p>N None</p> <p><b>OPTIONS &amp; ACCESSORIES:</b></p> <p>— None (default)</p> <p>8. <b>Insect Screen</b></p> <p>IS Insect Screen</p> <p>9. <b>Plaster Sub-Frame</b></p> <p>PF Plaster Sub-Frame</p> <p>10. <b>Gaskets</b></p> <p>GK Foam Gasket</p> |
|--|---|

11. **Earthquake Tabs**
- EQT Earthquake Tabs

**Notes:**

- For a standard grille with no special requirements, specification is only required as far as the damper selection.
- The "default" will automatically select "standard". For example, a steel double deflection register, front blades vertical and steel damper, is **Model 61DV-O**. Unit will be supplied with screw holes and AW Appliance White finish.
- Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.
- The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

### MODEL SERIES: 6100

### STEEL SUPPLY GRILLES AND REGISTERS

**SUGGESTED SPECIFICATION:**

**61DV, 61DH Double Deflection**

Furnish and install **Nailor Model** (select one) **61DV** or **61DH Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of streamlined shaped, roll-formed, corrosion-resistant steel blades that are adjustable, and spaced on 3/4" (19) centers. The frame is to be constructed from roll-formed, corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**61SV, 61SH Single Deflection**

Furnish and install **Nailor Model** (select one) **61SV** or **61SH Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of streamlined shaped, roll-formed, corrosion-resistant steel blades that are adjustable, and spaced on 3/4" (19) centers. The frame is to be constructed from roll-formed, corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



## HOW TO ORDER OR TO SPECIFY

**MODEL SERIES: 6700**  
**STAINLESS STEEL SUPPLY GRILLES AND REGISTERS**

**EXAMPLE: 67DV - O - 24 x 12 - S - #4 - A - 304 - PFS**

- |   |   |  |
|---|---|--|
| <p><b>1. Models</b></p> <p><b>Double Deflection:</b><br/>         67DV Vertical Front Blades<br/>         67DH Horizontal Front Blades</p> <p><b>Single Deflection:</b><br/>         67SV Vertical Blades<br/>         67SH Horizontal Blades</p> <p><b>2. Damper (OBD)</b><br/>         (model suffix)<br/>         — None<br/>         O Stainless Steel</p> <p><b>3. Nominal Width x Height</b><br/>         inches (mm)</p> <p><b>4. Frame/Border Type</b><br/>         S Surface Mount<br/>         Border 1 3/8" (35) (default)</p> | <p><b>5. Finish</b><br/>         #4 Brushed Satin Polished (default)<br/>         AW Appliance White</p> <p><b>6. Fastening</b><br/>         A Screw Holes (default)<br/>         N None</p> <p><b>OPTIONS &amp; ACCESSORIES:</b></p> <p><b>7. Construction</b><br/>         304 Type 304 Stainless Steel (default)<br/>         316 Type 316 Stainless Steel</p> <p><b>8. Stainless Steel Plaster Sub-Frame</b><br/>         PFS Stainless Steel Plaster Sub-frame</p> |  |
|---|---|--|

**Notes:**

1. For a standard grille with no special requirements, specification is only required as far as the damper selection.  
 The "default" will automatically select "standard". For example, a 304 stainless steel double deflection register, front blades vertical and stainless steel damper, is **Model 67DV-O**. Unit will be supplied with screw holes and #4 Brushed Satin Polished finish.
2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.
3. The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

**MODEL SERIES: 6700**  
**STAINLESS STEEL SUPPLY GRILLES AND REGISTERS**

**SUGGESTED SPECIFICATION:**

**67DV, 67DH Double Deflection**  
 Furnish and install **Nailor Model** (select one) **67DV** or **67DH Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional), and have a dual set of streamlined shaped roll-formed adjustable blades that are spaced on 3/4" (19) centers. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #4 Brushed Satin Polished finish.  
 (Optional) A stainless steel opposed blade damper adjustable from the face of the grille, shall be provided with all units.  
 The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**67SV, 67SH Single Deflection**  
 Furnish and install **Nailor Model** (select one) **67SV** or **67SH Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional), and have a single set of streamlined shaped roll-formed adjustable blades that are spaced on 3/4" (19) centers. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #4 Brushed Satin Polished finish.  
 (Optional) A stainless steel opposed blade damper adjustable from the face of the grille, shall be provided with all units.  
 The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## ALUMINUM RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- 3/4" (19) SPACING

### Models:

5145H, 5145V, 51FH and 51FV

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 5145H

Models 5145H and 51FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

Models 5145V and 51FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance complements the supply grilles and registers in the 5100 Series.

The streamlined blades and open spacing maintain an effective free area average capacity of over 50% for 45° and 75% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up. Deflected blade grilles installed in a low or high side wall location are vision-proof with the grille deflection facing away from the line of sight.

The design features a concealed rear reinforcing blade support mullion on 45° models. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance.

**Frame/Border Type S Surface Mount** – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

**Frame/Border Type L Lay-in T-Bar** – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

**Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame** – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F192 in the Options and Accessories section for further information.

### STANDARD FEATURES:

- Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.

- Rigid, heavy gauge extruded frames with reinforced mitered corners.
- Streamlined shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

### CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

### FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type N None

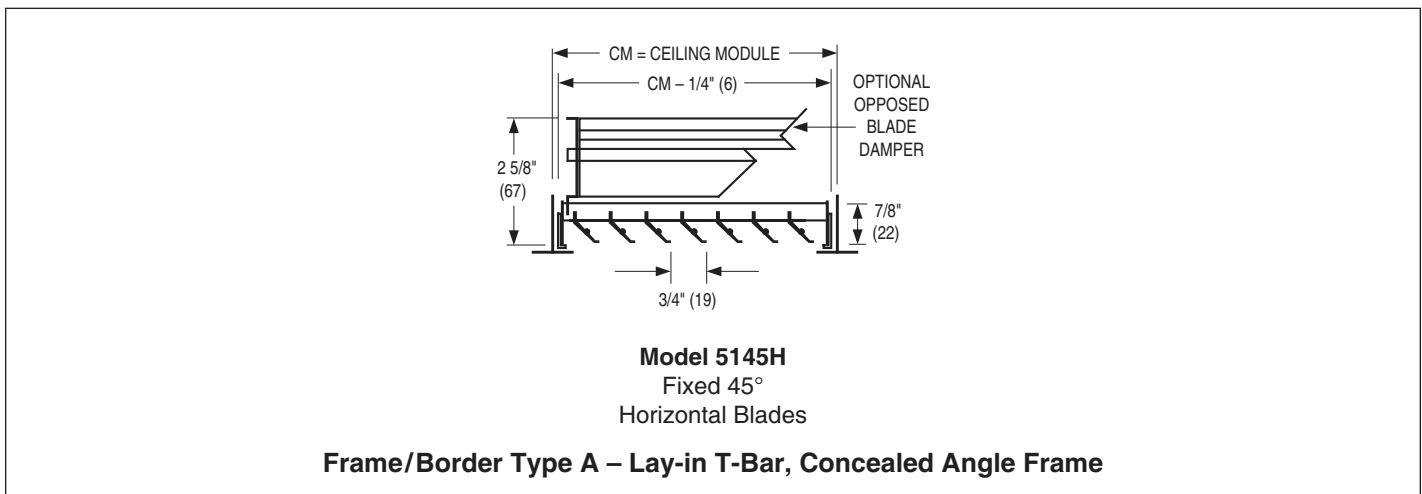
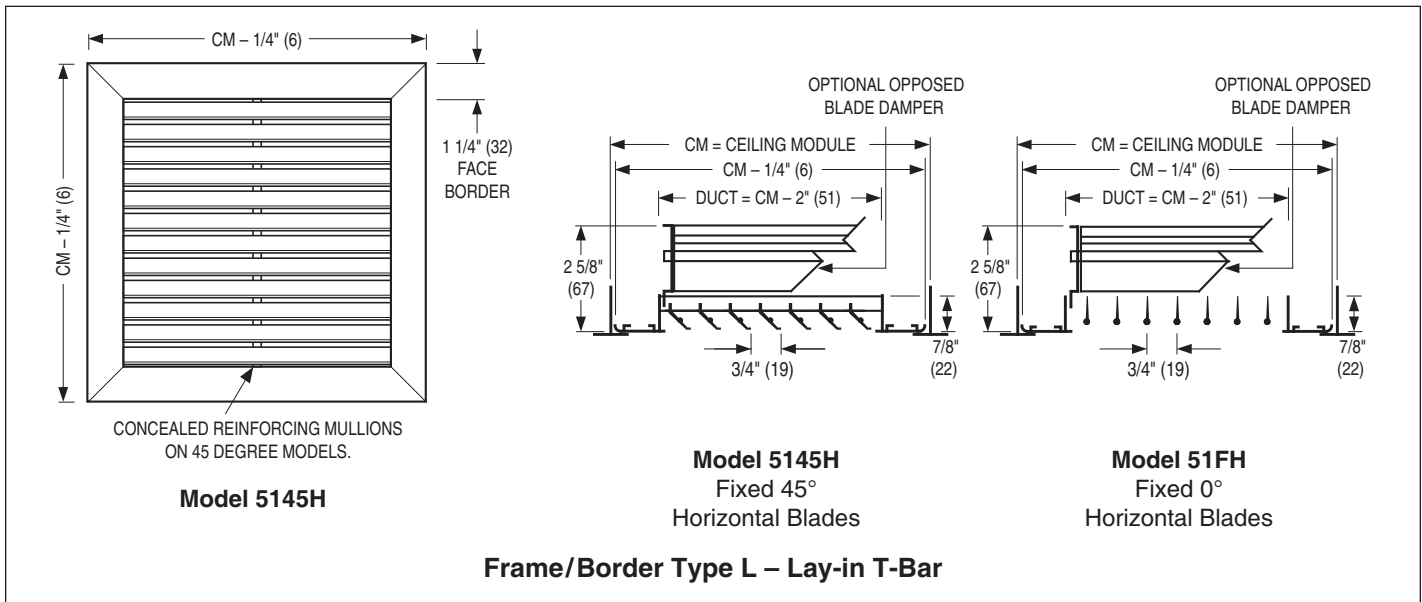
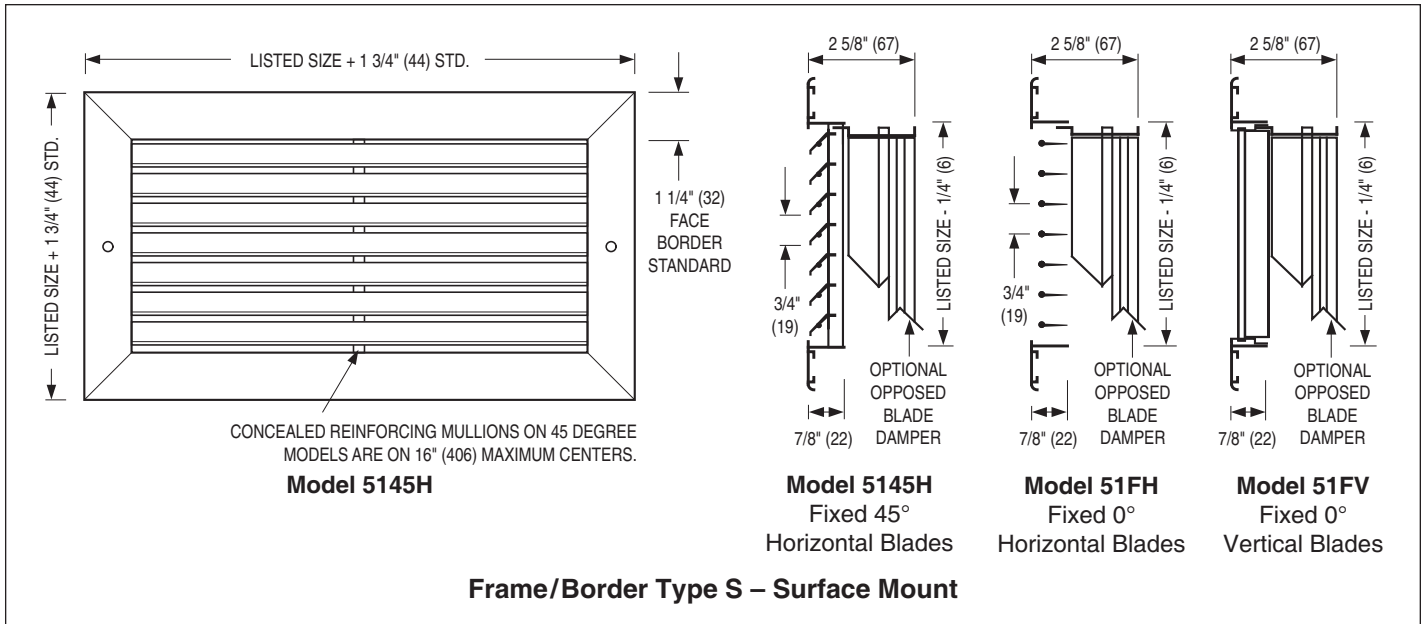
### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

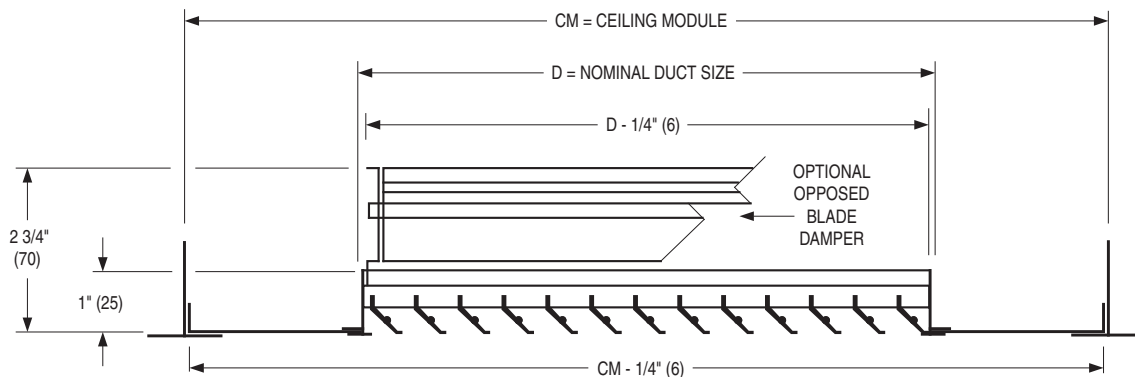
## DIMENSIONAL DATA:

### 5100 SERIES RETURN 3/4" (19) BLADE SPACING

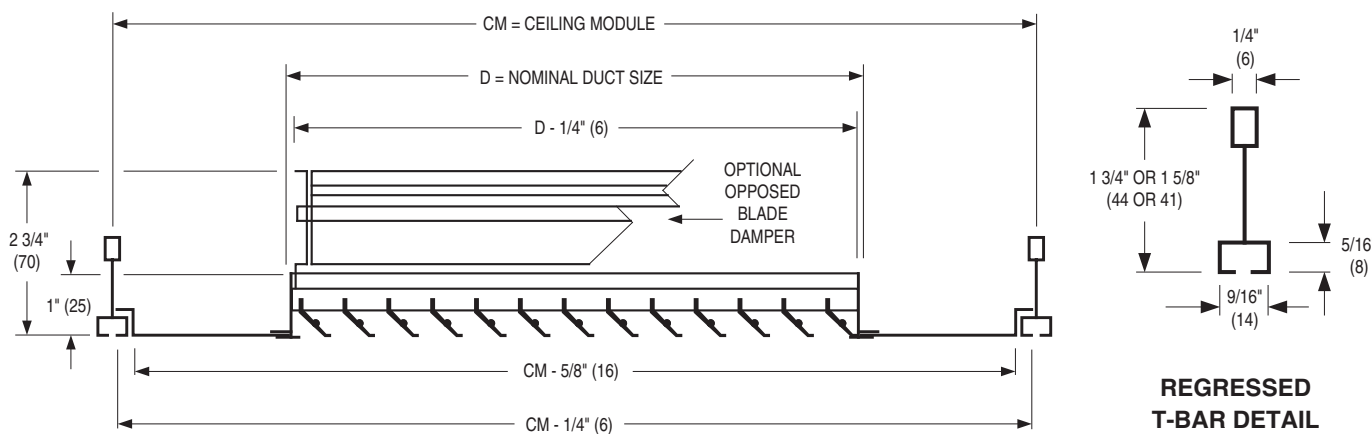


## DIMENSIONAL DATA:

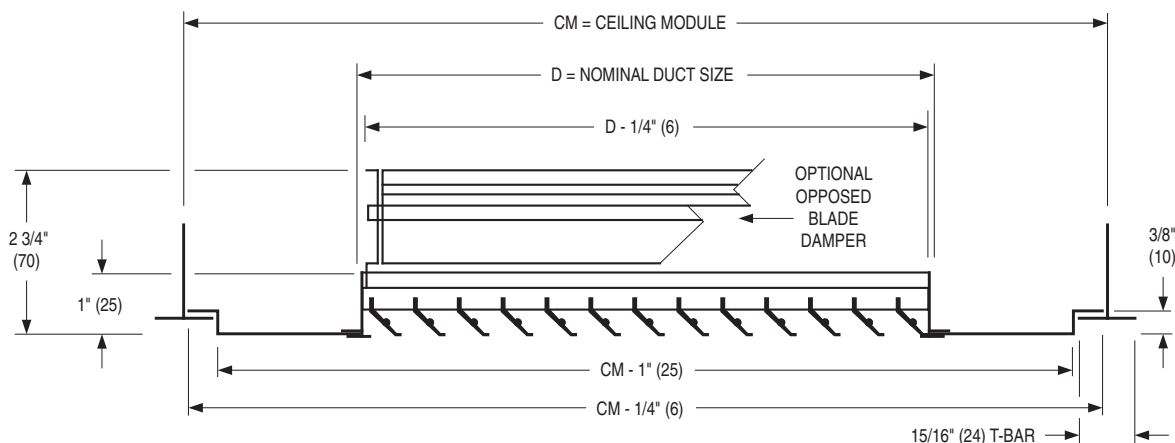
### 5100 SERIES RETURN 3/4" (19) BLADE SPACING



**Frame/Border Type PLS or PLA – Panel Mounted – Lay-in T-Bar Type**



**Frame/Border Type FPS or FPA – Panel Mounted Lay-in – Narrow Regressed T-Bar Type**



**Frame/Border Type TPS or TPA – Tegular Panel Mounted – Lay-in T-Bar Type**

### Ceiling Module Size (Use only for Panel Mounting, Frame/Border Types PL, SP, MP, FP, TP)

Imperial Modules	Imperial Units (in.)	24 x 12	20 x 20	24 x 12	24 x 24	36 x 12	36 x 24	48 x 12	48 x 24
Metric Modules	S.I. Units (mm)	600 x 300	500 x 500	600 x 300	600 x 600	900 x 300	900 x 600	1200 x 300	1200 x 600

## ALUMINUM RETURN GRILLES AND REGISTERS

- FIXED 45° BLADE DEFLECTION
- 3/4" (19) SPACING
- FINELINE®
- FULL FACE

### Model:

#### 5145F

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 5145F

Model 5145F Return Grilles and Registers have been specially designed for return air applications to integrate and complement "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The formed, corrosion-resistant steel frame with mitered corners includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized. The grilles have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° face deflection. Their appearance complements the supply grilles and registers in the 5100 series.

The streamlined blades and open spacing maintain an effective free area average capacity of over 50%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation. The smooth blades do not accumulate lint and plug up. The design features a concealed rear reinforcing blade support mullion. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance.

### STANDARD FEATURES:

- Available in ceiling module sizes 24" x 12" and 24" x 24" (610 x 305 and 610 x 610).
- Rigid, streamlined shaped solid blades on 3/4" (19) centers, fixed at 45° and reinforced with concealed mullion.
- Support rail on four sides, allowing full area of the ceiling module to be utilized.

### CONSTRUCTION MATERIAL:

- Corrosion-resistant, formed steel frame with mitered corners construction.
- Extruded aluminum blades.
- Optional aluminum or roll-formed steel opposed blade damper with screwdriver slot operator accessible through the face of the register.

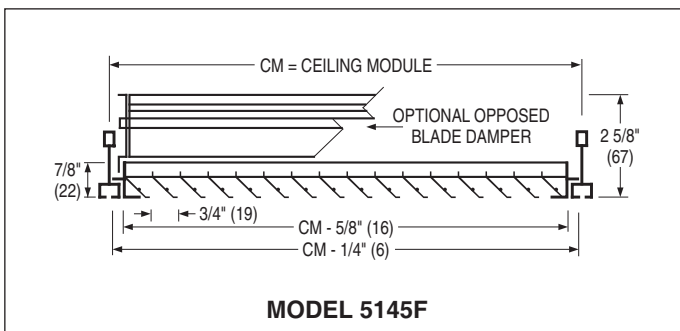
### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

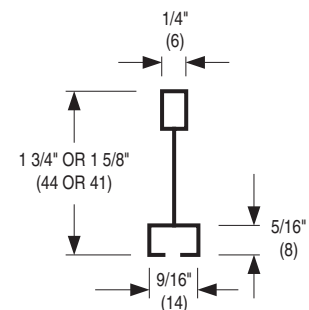
### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



MODEL 5145F



REGRESSED T-BAR DETAIL

Imperial Modules		Metric Modules
Imperial Units (in.)	Metric Units (mm)	S.I. Units (mm)
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600

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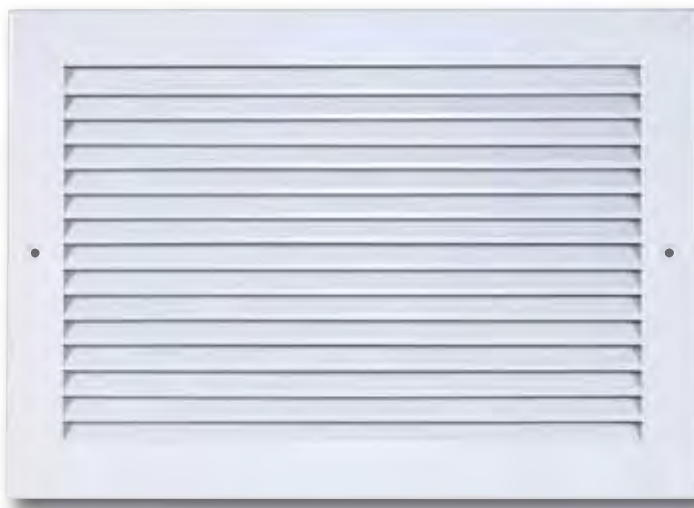
## ALUMINUM RETURN GRILLES AND REGISTERS

- LOUVERED FACE
- FIXED 45° BLADE DEFLECTION
- 1/2" (13) SPACING

### Models:

5155H and 5155V

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 5155H

Models 5155H and 5155V Return Grilles and Registers have fixed horizontal and vertical blades respectively, spaced on 1/2" (13) centers with a 45° fixed deflection.

The streamlined blades and open spacing maintain a minimum effective free area of 40%, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up.

The 1/2" (13) blade centers on these models provide a return grille for return air or exhaust applications which has a "no see-through" design, not only when the grille is viewed with the blade deflection facing away from the line of sight, but also when viewed from straight ahead.

The design features a concealed rear reinforcing blade support mullion. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance.

**Frame/Border Type S Surface Mount** – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

**Frame/Border Type L Lay-in T-Bar** – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

**Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame** – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

### STANDARD FEATURES:

• Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and mounting screws.

Narrow Frame with 1" (25) face border optional.

• Rigid, heavy gauge extruded frames with reinforced mitered corners.

• Streamlined shaped solid blades on 1/2" (13) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

• Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219).

### CONSTRUCTION MATERIAL:

• High quality, extruded aluminum construction.

• Steel or aluminum integral dampers are opposed blade design with screwdriver operator.

### FINISH OPTIONS:

• AW Appliance White finish is standard. Other finishes are available.

### OPTIONS AND ACCESSORIES:

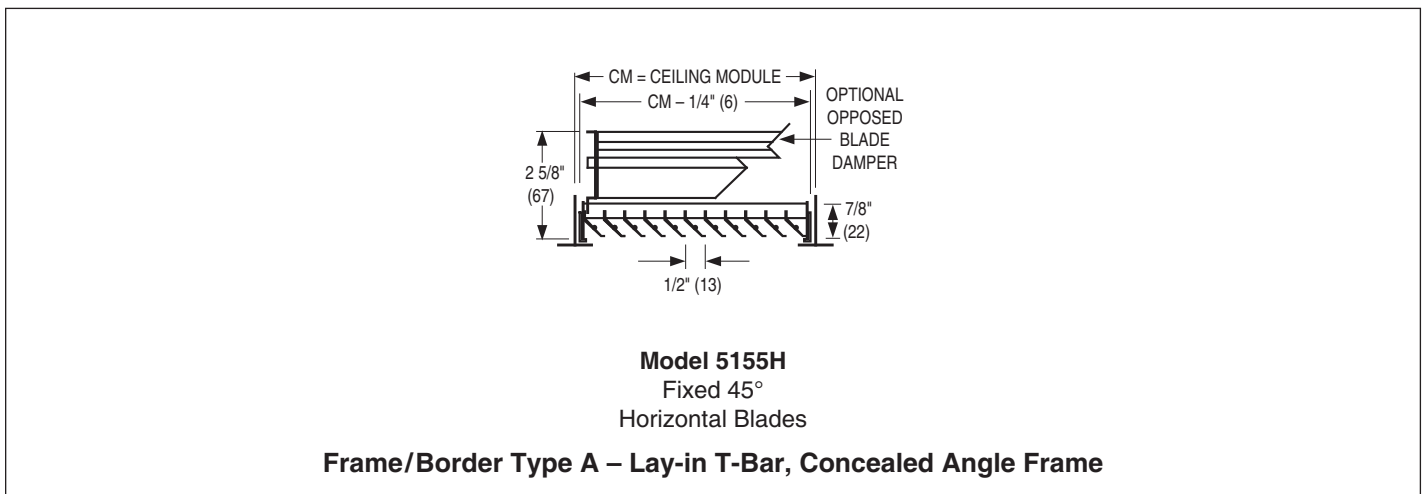
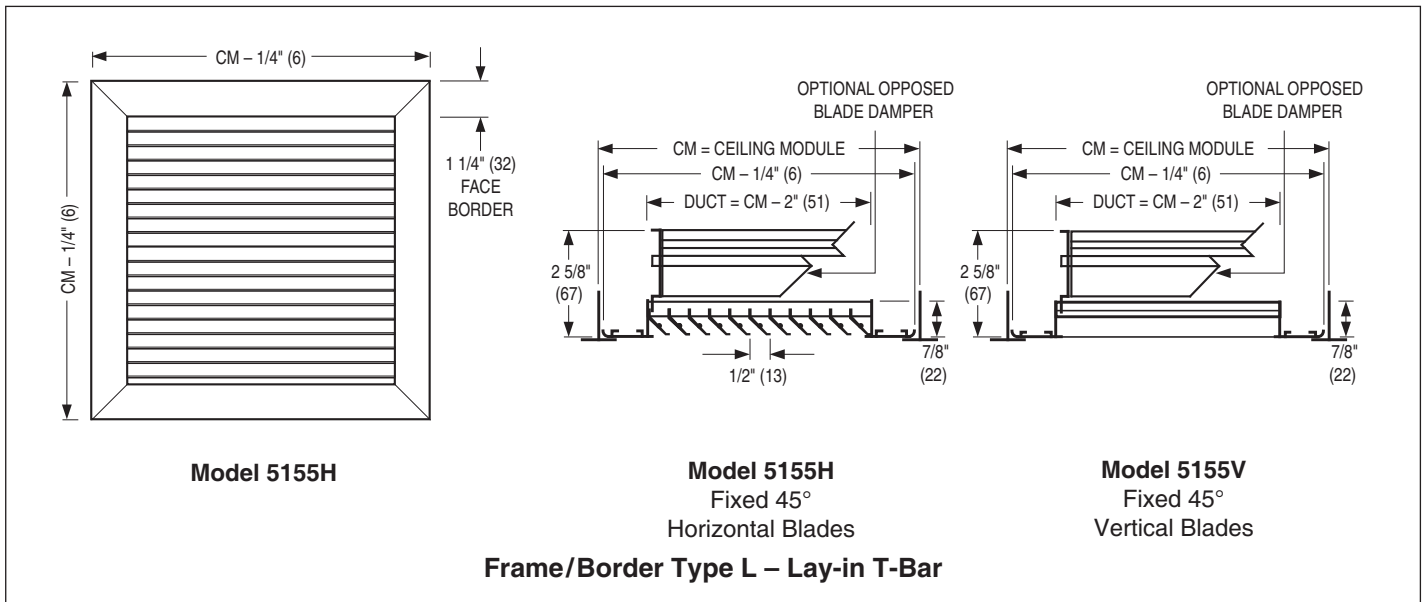
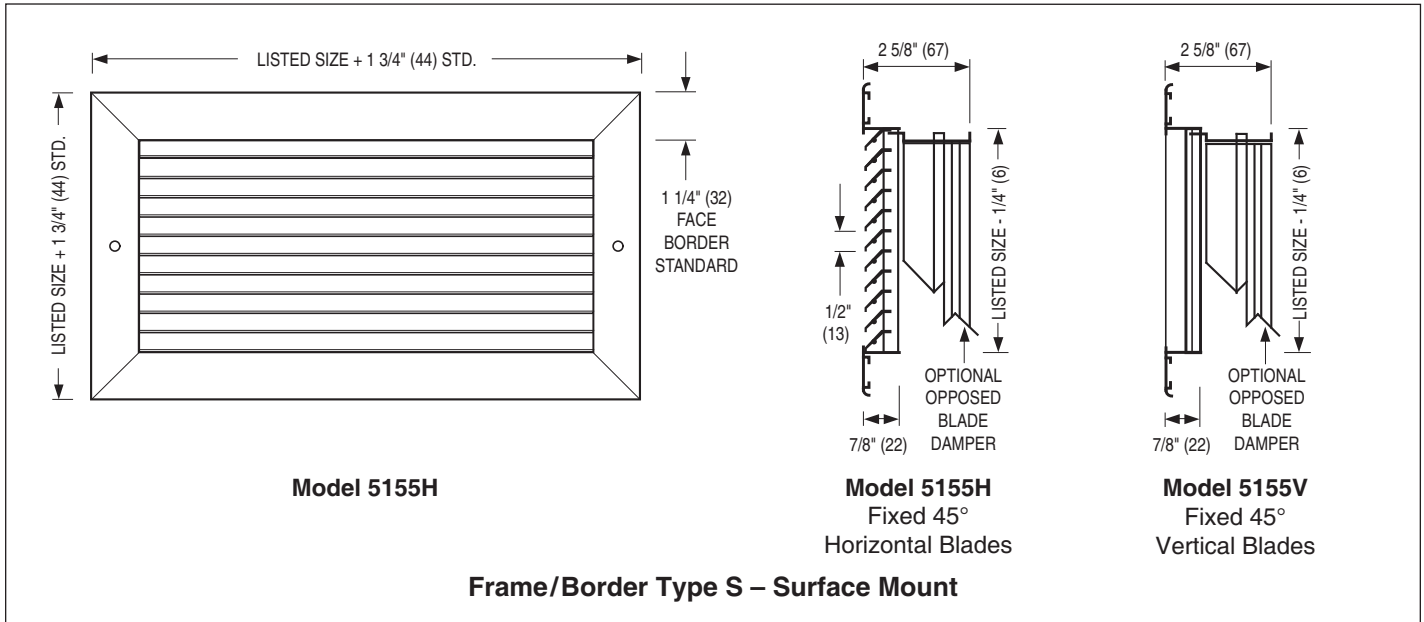
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



## DIMENSIONAL DATA:

### 5100 SERIES RETURN 1/2" (13) BLADE SPACING



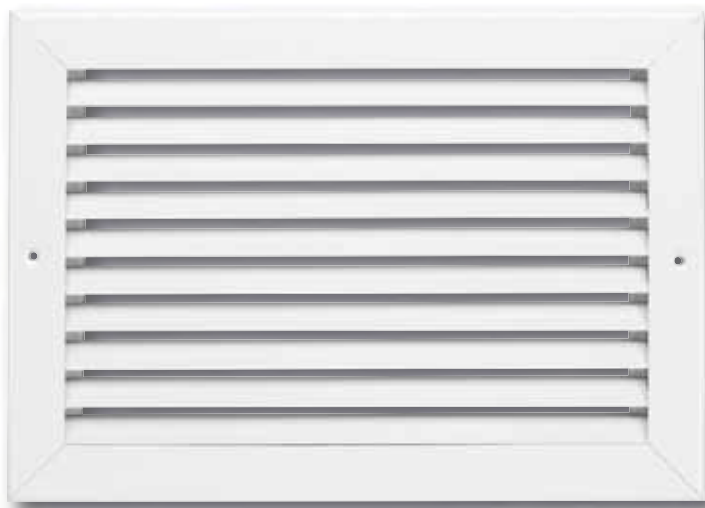
## STEEL RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- 3/4" (19) SPACING

### Models:

6145H, 6145V, 61FH and 61FV

- Suffix '-O' adds a steel opposed blade damper



Model 6145H

Models 6145H and 61FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dimension) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

Models 6145V and 61FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance complements the supply grilles and registers in the 6100 Series.

The streamlined blades and open spacing maintain a minimum effective free area of 50% for 45° and 75% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up. Deflected blade grilles installed in a low or high side wall location are vision-proof with the grille blade deflection facing away from the line of sight. Concealed blade support mullions on 45° models provide a continuous louvered blade appearance on all single section sizes, thereby offering superior architectural appearance.

**Frame/Border Type S Surface Mount** – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

**Frame/Border Type L Lay-in T-Bar** – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

**Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame** – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

### STANDARD FEATURES:

- Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.

### CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant, steel construction.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.

### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

### FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type N None

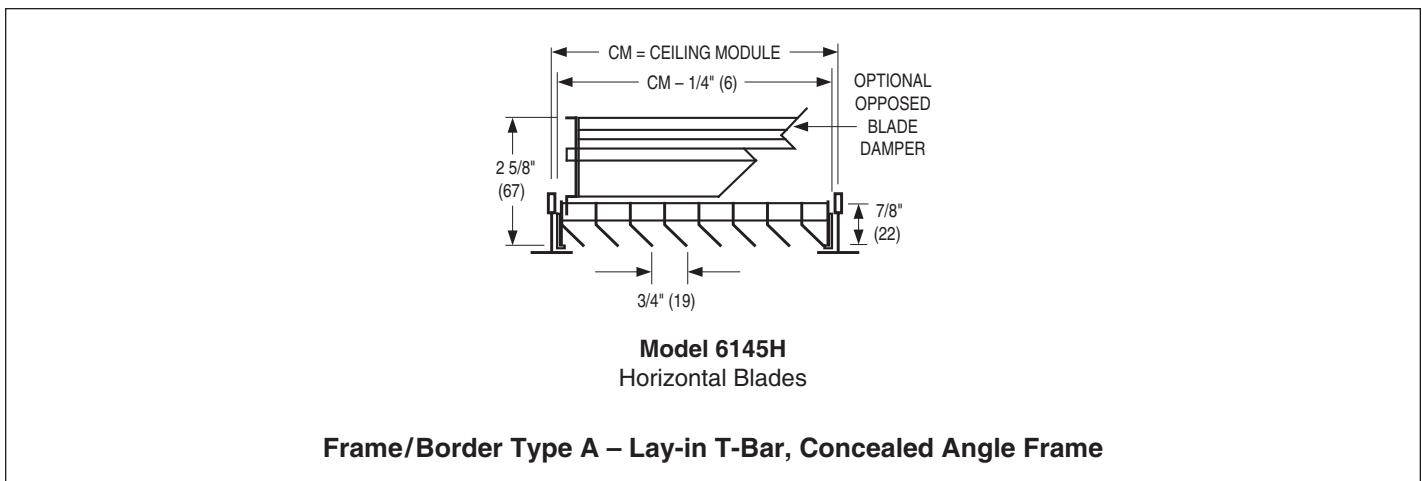
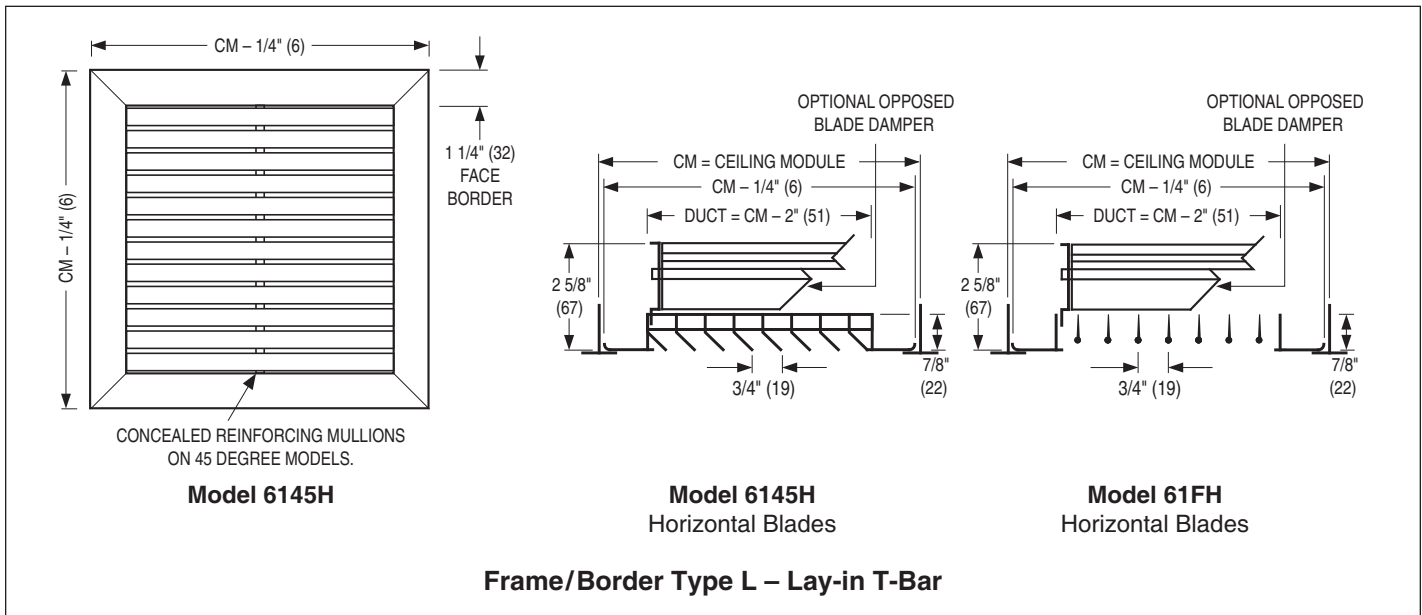
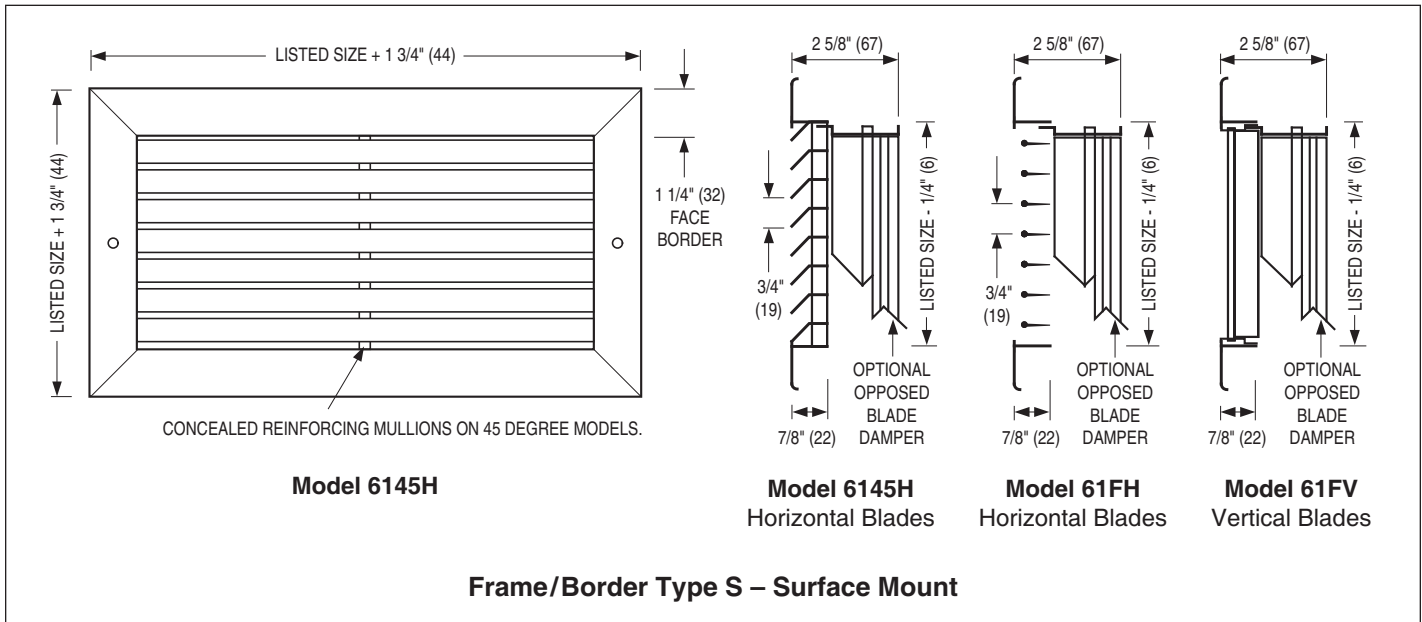
### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

## DIMENSIONAL DATA:

### 6100 SERIES RETURN 3/4" (19) BLADE SPACING



## STEEL RETURN GRILLES AND REGISTERS

- FIXED 45° BLADE DEFLECTION
- 3/4" (19) SPACING
- FINELINE®
- FULL FACE

### Model:

6145F

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 6145F

Model 6145F Return Grilles and Registers have been specially designed for return air applications to integrate and complement "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The formed, corrosion-resistant steel frame with mitered corners includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized. The grilles have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° face deflection. Their appearance complements the supply grilles and registers in the 6100 series.

The streamlined blades and open spacing maintain an effective free area average capacity of over 50%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation. The smooth blades do not accumulate lint and plug up. The design features a concealed rear reinforcing blade support mullion. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance.

### STANDARD FEATURES:

- Available in ceiling module sizes 24" x 12" and 24" x 24" (610 x 305 and 610 x 610).
- Roll-formed blades on 3/4" (19) centers, fixed at 45° and reinforced with concealed mullions on 16" (406) maximum centers.
- Support rail on four sides, allowing full area of the ceiling module to be utilized.

### CONSTRUCTION MATERIAL:

- Corrosion-resistant, formed steel frame with mitered corners construction.
- Optional roll-formed steel opposed blade damper has a screwdriver slot or lever operator accessible through the face of the register.

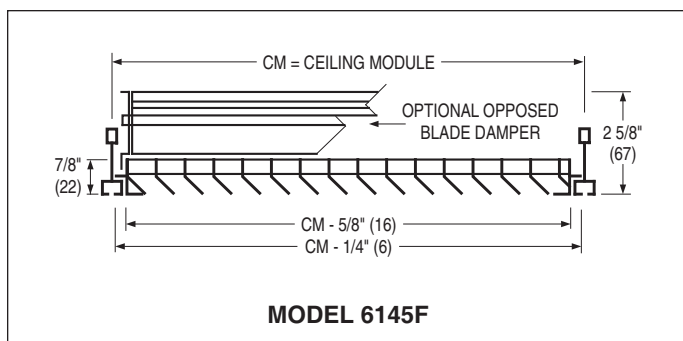
### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

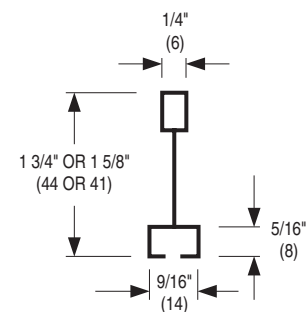
### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



MODEL 6145F



REGRESSED T-BAR DETAIL

Imperial Modules		Metric Modules
Imperial Units (in.)	Metric Units (mm)	S.I. Units (mm)
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600

Fineline® is a registered trademark of USG Interiors Inc.

## STEEL RETURN GRILLES AND REGISTERS

- LOUVERED FACE
- FIXED 45° BLADE DEFLECTION
- 1/2" (13) SPACING

### Models:

6155H and 6155V

- Suffix '-O' adds a steel opposed blade damper



Model 6155H

Models 6155H and 6155V Return Grilles and Registers have fixed horizontal and vertical blades respectively, spaced on 1/2" (13) centers with a 45° fixed deflection.

The streamlined roll-formed blade design features a concealed rear reinforcing mullion for support. The grille therefore has a continuous louvered blade appearance with no visible face mullions on all single section sizes, thereby offering superior architectural appearance. The open design maintains a minimum effective free area of 40%.

The 1/2" (13) blade centers on these models provide a return grille for return air or exhaust applications which has a "no see-through" design, not only when the grille is viewed with the blade deflection facing away from the line of sight, but also when viewed from straight ahead.

**Frame/Border Type S Surface Mount** – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

**Frame/Border Type L Lay-in T-Bar** – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

**Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame** – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

**Frame/Border Type F Narrow Regressed T-Bar** – This style has been specially designed for return air applications to integrate with and complement "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The corrosion-resistant steel frame includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

### STANDARD FEATURES:

- Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 1/2" (13) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.

### CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant, steel construction.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.

### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

### FINISH OPTIONS:

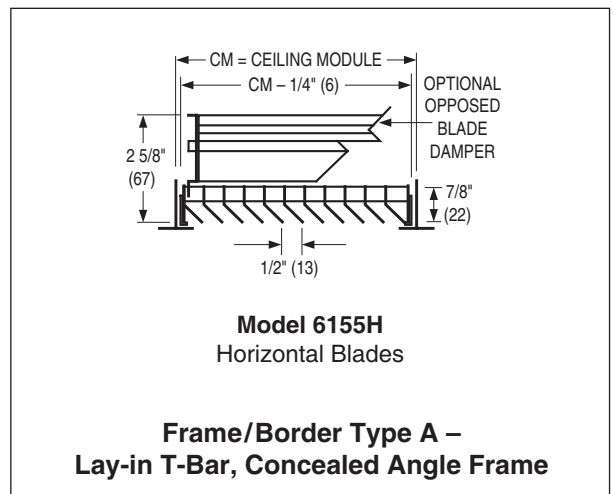
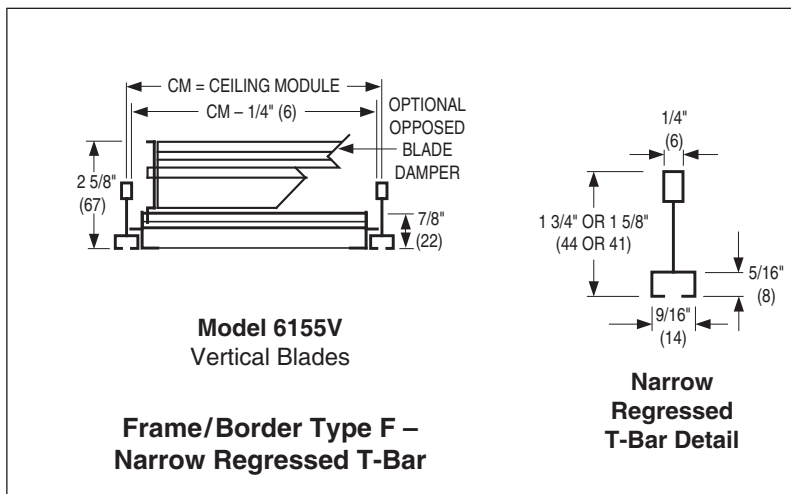
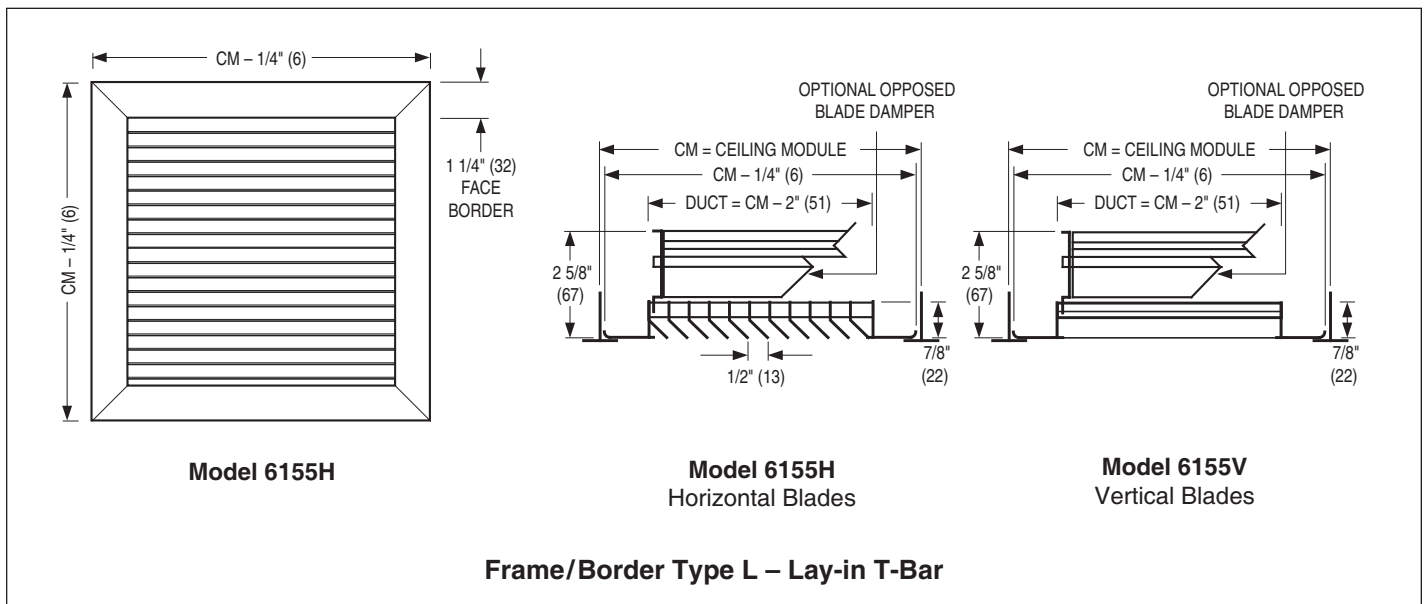
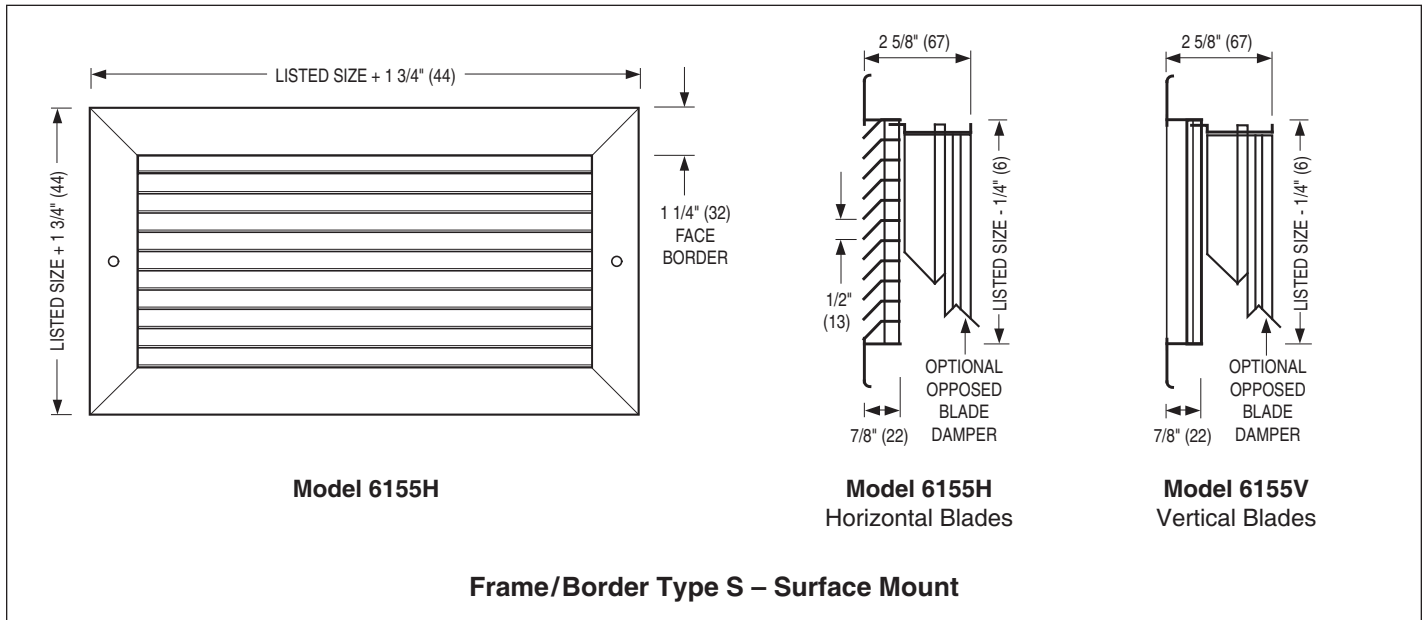
- AW Appliance White finish is standard. Other finishes are available.

## DIMENSIONAL DATA:

### 6100 SERIES RETURN 1/2" (13) BLADE SPACING

GRILLES AND REGISTERS

F





## STAINLESS STEEL RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- 3/4" (19) SPACING

### Models:

6745H, 6745V, 67FH and 67FV

- Suffix '-O' adds a stainless steel opposed blade damper



Model 6745H

Models 6745H and 67FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

Models 6745V and 67FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance complements the supply grilles and registers in the 6700 Series.

The streamlined blades and open spacing maintain a minimum effective free area of 50% for 45° and 70% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up. Deflected bar grilles installed in a low or high side wall location are vision-proof with the grille blade deflection facing away from the line of sight.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

### STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).

### CONSTRUCTION MATERIAL:

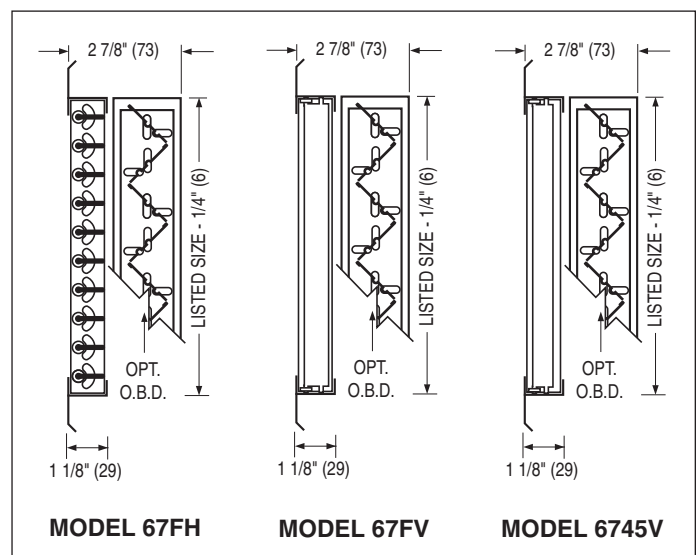
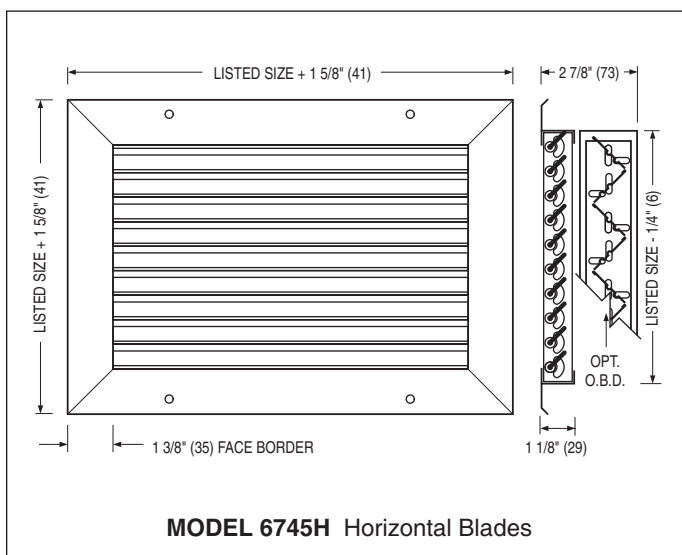
- Type 304 stainless steel construction.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with screwdriver operator.

### FINISH OPTIONS:

- #4 Brushed Satin Polished finish is standard. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- 316 Type 316 Stainless Steel construction is optional.
- PFS Stainless Steel Plaster Frame



## STAINLESS STEEL RETURN GRILLES AND REGISTERS

- LOUVERED FACE
- FIXED 45° BLADE DEFLECTION
- 1/2" (13) SPACING

### Models:

6755H and 6755V

- Suffix '-O' adds a stainless steel opposed blade damper



Model 6755H

Models 6755H and 6755V Return Grilles and Registers have fixed horizontal and vertical blades respectively, spaced on 1/2" (13) centers with a 45° fixed deflection.

The streamlined blades and open spacing maintain a minimum effective free area of 40%, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up.

The 1/2" (13) blade centers on these models provide a return grille for return air or exhaust applications which has a 'no see-through' design, not only when the grille is viewed with the blade deflection facing away from the line of sight, but also when viewed from straight ahead.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

### STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined shaped roll-formed blades on 1/2" (13) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).

- #4 Brushed Satin Polished finish is standard. AW Appliance White finish is optional. Other finishes are available.

### CONSTRUCTION MATERIAL:

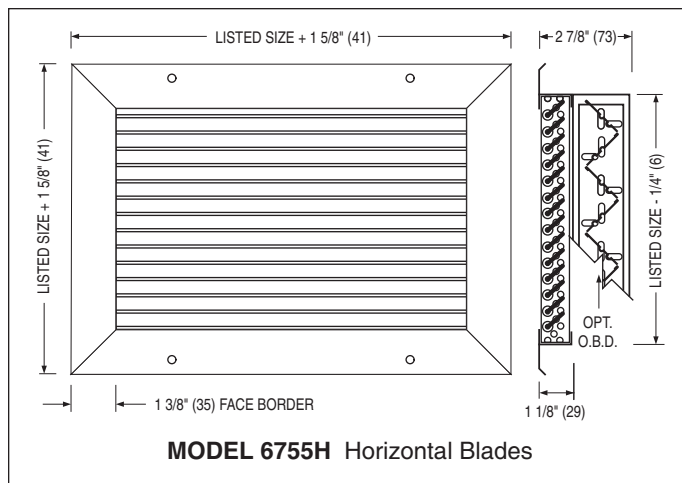
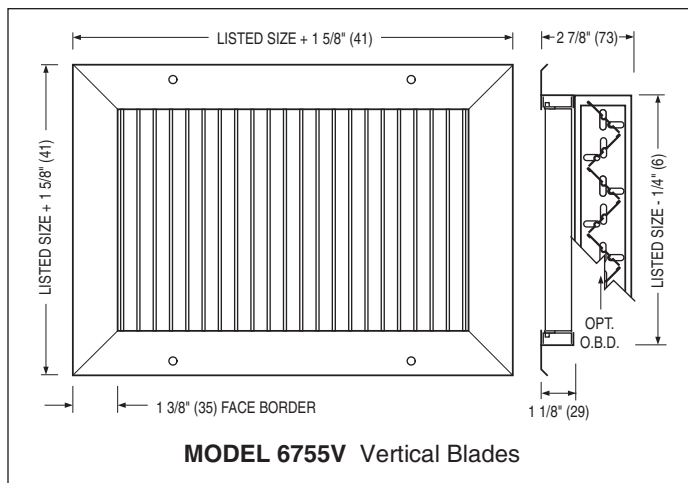
- Type 304 stainless steel construction.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with screwdriver operator.

### FINISH OPTIONS:

- #4 Brushed Satin Polished finish is standard. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- 316 Type 316 Stainless Steel construction is optional.
  - PFS Stainless Steel Plaster Frame
- For additional options and accessories, see page F191.



## PERFORMANCE DATA:

### FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

#### MODELS: 5145H, 6145H, 6745H, 5145V, 6145V, 6745V, 51FB45, 61FB45, 67FB45

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .003	.002 .014	.006 .031	.010 .055	.016 .086	.022 .124	.031 .168	.040 .220	.050 .278	.062 .344
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 -	100 -	120 19	140 24	160 28	180 32	200 36
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 -	140 15	168 20	196 25	224 29	252 33	280 37
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 -	175 16	210 21	245 26	280 30	315 34	350 38
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 -	190 17	228 22	266 27	304 31	342 35	380 39
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 -	210 18	252 23	294 27	336 32	378 36	420 40
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 -	290 19	348 24	406 28	464 33	522 37	580 41
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 -	305 19	366 24	427 29	488 34	549 37	610 41
18 x 6	14 x 8    30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 15	325 20	390 25	455 30	520 34	585 38	650 41
12 x 10	16 x 8    20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 15	370 20	444 25	518 30	592 35	666 39	740 42
12 x 12	14 x 10    24 x 6 18 x 8    38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 16	450 21	540 26	630 31	720 36	810 39	900 42
14 x 14	16 x 12    24 x 8 20 x 10    34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 -	496 16	620 21	744 26	868 31	992 36	1116 40	1240 43
18 x 12	16 x 14    28 x 8 22 x 10    38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 -	548 17	685 22	822 27	959 32	1096 37	1233 40	1370 43
24 x 10	20 x 12    30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 -	608 17	760 22	912 27	1064 32	1216 38	1368 41	1520 44
16 x 16	18 x 14    30 x 8 22 x 12	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 -	656 18	820 23	984 28	1148 33	1312 38	1476 41	1640 44
24 x 12	18 x 16    30 x 10 20 x 14    36 x 8	1.85	1.78	CFM Noise Criteria	185 -	370 -	555 -	740 18	925 23	1110 28	1295 33	1480 38	1665 41	1850 45
18 x 18	20 x 16    28 x 12 24 x 14    32 x 10	2.10	2.01	CFM Noise Criteria	210 -	420 -	630 -	840 18	1050 23	1260 29	1470 34	1680 39	1890 42	2100 45
30 x 12	20 x 18    26 x 14 22 x 16    36 x 10	2.32	2.23	CFM Noise Criteria	232 -	464 -	696 -	928 19	1160 24	1392 29	1624 34	1856 39	2088 42	2320 46
20 x 20	24 x 18    30 x 14 26 x 16    36 x 12	2.61	2.48	CFM Noise Criteria	261 -	522 -	783 -	1044 19	1305 24	1566 30	1827 35	2088 40	2349 43	2610 46
22 x 22	24 x 20    30 x 16 26 x 18    36 x 14	3.17	3.00	CFM Noise Criteria	317 -	634 -	951 -	1268 20	1585 25	1902 31	2219 35	2536 40	2853 43	3170 47
30 x 18	24 x 22    40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 -	708 -	1062 -	1416 20	1770 25	2124 31	2478 36	2832 41	3186 44	3540 48
24 x 24	26 x 22    32 x 18 28 x 20    36 x 16	3.79	3.56	CFM Noise Criteria	379 -	758 -	1137 -	1516 20	1895 25	2274 31	2653 36	3032 41	3411 44	3790 48
36 x 18	32 x 20    46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 -	854 -	1281 -	1708 21	2135 26	2562 32	2989 37	3416 42	3843 45	4270 49
26 x 26	28 x 24    48 x 14	4.47	4.19	CFM Noise Criteria	447 -	894 -	1341 -	1788 21	2235 26	2682 32	3129 37	3576 42	4023 45	4470 49
30 x 24	28 x 26    36 x 20 32 x 22    40 x 18	4.77	4.46	CFM Noise Criteria	477 -	954 -	1431 15	1908 22	2385 27	2862 33	3339 38	3816 42	4293 46	4770 50
28 x 28	30 x 26    40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 -	1040 -	1560 15	2080 22	2600 27	3120 33	3640 38	4160 43	4680 46	5200 50
36 x 24	30 x 28    44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 -	1148 -	1722 15	2296 22	2870 28	3444 34	4018 38	4592 43	5166 47	5740 51
30 x 30	34 x 26    48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 -	1198 -	1797 15	2396 22	2995 28	3594 34	4193 39	4792 43	5391 47	5990 51

For performance data notes, see F42.

## PERFORMANCE DATA:

### FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

### MODELS: 5145H, 6145H, 6745H, 5145V, 6145V, 6745V, 51FB45, 61FB45, 67FB45

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .003	.002 .014	.006 .031	.010 .055	.016 .086	.022 .124	.031 .168	.040 .220	.050 .278	.062 .344
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				Noise Criteria	-	-	16	23	29	35	39	44	48	52
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria	-	-	17	23	29	35	40	44	48	52
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				Noise Criteria	-	-	17	24	29	36	41	45	49	53
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				Noise Criteria	-	-	18	24	30	36	41	45	49	53
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				Noise Criteria	-	-	18	24	30	36	42	45	50	54
42 x 42	46 x 42	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	-	-	19	25	31	37	42	46	50	54
44 x 44		13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				Noise Criteria	-	-	19	25	31	37	42	46	50	54
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				Noise Criteria	-	-	20	26	32	38	43	47	51	55
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				Noise Criteria	-	-	20	26	32	38	43	47	51	55

#### Performance Notes:

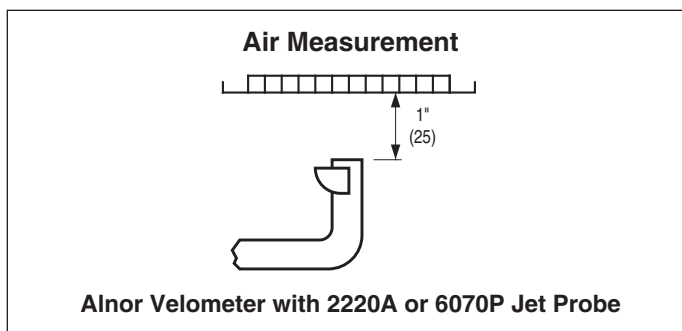
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

**Negative Static Pressure** Listed Value x 0.91.

**Noise Criteria** Listed value - 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (-) in space indicates a Noise Criteria of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 2006.



#### Airflow Measurements:

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (CFM) = Average velocity (V<sub>k</sub>) x Ak.

## PERFORMANCE DATA:

### FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

#### MODELS: 51FH, 61FH, 67FH, 51FV, 61FV, 67FV, 51FBS, 61FBS

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .002	.002 .009	.006 .020	.010 .035	.016 .055	.022 .079	.031 .107	.040 .140	.050 .177	.062 .219
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 -	100 -	120 16	140 18	160 21	180 25	200 30
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 -	140 -	168 17	196 19	224 22	252 26	280 31
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 -	175 -	210 18	245 20	280 23	315 27	350 32
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 -	190 -	228 19	266 21	304 24	342 28	380 32
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 -	210 15	252 19	294 22	336 25	378 29	420 33
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 -	290 15	348 19	406 22	464 26	522 30	580 34
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 -	305 15	366 19	427 22	488 27	549 30	610 35
18 x 6	14 x 8    30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 -	325 16	390 20	455 23	520 27	585 31	650 35
12 x 10	16 x 8    20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 -	370 16	444 21	518 24	592 28	666 32	740 35
12 x 12	14 x 10    24 x 6 18 x 8    38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 -	450 17	540 21	630 24	720 29	810 32	900 35
14 x 14	16 x 12    24 x 8 20 x 10    34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 -	496 -	620 17	744 22	868 25	992 29	1116 33	1240 36
18 x 12	16 x 14    28 x 8 22 x 10    38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 -	548 -	685 18	822 23	959 26	1096 31	1233 34	1370 37
24 x 10	20 x 12    30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 -	608 -	760 18	912 23	1064 27	1216 32	1368 35	1520 38
16 x 16	18 x 14    30 x 8 22 x 12	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 -	656 -	820 19	984 23	1148 27	1312 32	1476 35	1640 38
24 x 12	18 x 16    30 x 10 20 x 14    36 x 8	1.85	1.78	CFM Noise Criteria	185 -	370 -	555 -	740 -	925 19	1110 24	1295 27	1480 32	1665 35	1850 39
18 x 18	20 x 16    28 x 12 24 x 14    32 x 10	2.10	2.01	CFM Noise Criteria	210 -	420 -	630 -	840 -	1050 19	1260 24	1470 28	1680 33	1890 36	2100 39
30 x 12	20 x 18    26 x 14 22 x 16    36 x 10	2.32	2.23	CFM Noise Criteria	232 -	464 -	696 -	928 -	1160 19	1392 24	1624 28	1856 33	2088 36	2320 40
20 x 20	24 x 18    30 x 14 26 x 16    36 x 12	2.61	2.48	CFM Noise Criteria	261 -	522 -	783 -	1044 -	1305 19	1566 24	1827 28	2088 33	2349 36	2610 40
22 x 22	24 x 20    30 x 16 26 x 18    36 x 14	3.17	3.00	CFM Noise Criteria	317 -	634 -	951 -	1268 15	1585 20	1902 25	2219 29	2536 33	2853 36	3170 40
30 x 18	24 x 22    40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 -	708 -	1062 -	1416 15	1770 20	2124 25	2478 29	2832 34	3186 37	3540 41
24 x 24	26 x 22    32 x 18 28 x 20    36 x 16	3.79	3.56	CFM Noise Criteria	379 -	758 -	1137 -	1516 15	1895 20	2274 25	2653 30	3032 34	3411 37	3790 41
36 x 18	32 x 20    46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 -	854 -	1281 -	1708 17	2135 22	2562 26	2989 30	3416 35	3843 38	4270 42
26 x 26	28 x 24    48 x 14	4.47	4.19	CFM Noise Criteria	447 -	894 -	1341 -	1788 17	2235 22	2682 26	3129 30	3576 35	4023 38	4470 42
30 x 24	28 x 26    36 x 20 32 x 22    40 x 18	4.77	4.46	CFM Noise Criteria	477 -	954 -	1431 -	1908 18	2385 23	2862 27	3339 31	3816 35	4293 39	4770 43
28 x 28	30 x 26    40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 -	1040 -	1560 -	2080 18	2600 23	3120 27	3640 31	4160 36	4680 39	5200 43
36 x 24	30 x 28    44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 -	1148 -	1722 -	2296 18	2870 23	3444 27	4018 31	4592 36	5166 40	5740 44
30 x 30	34 x 26    48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 -	1198 -	1797 -	2396 18	2995 23	3594 28	4193 32	4792 36	5391 40	5990 44

GRILLES AND REGISTERS

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For performance data notes, see F44.



## PERFORMANCE DATA:

### FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

#### MODELS: 51FH, 61FH, 67FH, 51FV, 61FV, 67FV, 51FBS, 61FBS

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .003	.002 .014	.006 .031	.010 .055	.016 .086	.022 .124	.031 .168	.040 .220	.050 .278	.062 .344
32 x 32	36 x 30 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				Noise Criteria	-	-	-	18	24	28	32	37	41	45
48 x 24	34 x 34 36 x 32	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria	-	-	-	18	24	29	33	37	41	45
36 x 36	38 x 34 42 x 30	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				Noise Criteria	-	-	-	19	24	29	34	38	42	46
38 x 38	42 x 34 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				Noise Criteria	-	-	-	19	25	30	34	38	42	46
40 x 40	42 x 36 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				Noise Criteria	-	-	-	20	26	30	35	38	43	47
42 x 42	46 x 42	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	-	-	-	20	26	31	35	39	43	47
44 x 44		13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
	Noise Criteria			-	-	15	20	26	31	35	39	43	47	
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
	Noise Criteria			-	-	15	21	27	32	36	40	44	48	
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
	Noise Criteria			-	-	16	21	27	32	36	40	44	48	

#### Performance Notes:

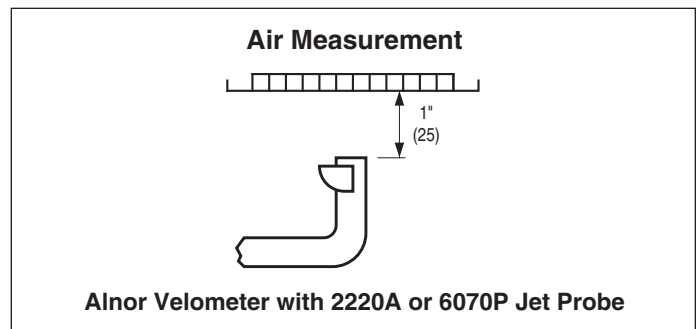
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

**Negative Static Pressure** Listed Value x 0.91.

**Noise Criteria** Listed value - 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (-) in space indicates a Noise Criteria of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 2006.



#### Airflow Measurements:

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (CFM) = Average velocity (V<sub>k</sub>) x Ak.



## PERFORMANCE DATA:

### FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

#### MODELS: 5155H, 6155H, 6755H, 5155V, 6155V, 6755V, 51FB55, 61FB55, 67FB55

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .005	.002 .018	.006 .041	.010 .073	.016 .114	.022 .164	.031 .223	.040 .292	.050 .369	.062 .456
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 -	100 16	120 21	140 26	160 30	180 34	200 38
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 -	140 17	168 22	196 27	224 31	252 35	280 39
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 -	175 18	210 23	245 28	280 32	315 36	350 40
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 -	190 19	228 24	266 29	304 33	342 37	380 41
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 15	210 20	252 25	294 29	336 34	378 38	420 42
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 16	290 21	348 26	406 30	464 35	522 39	580 43
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 16	305 21	366 26	427 31	488 36	549 39	610 43
18 x 6	14 x 8    30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 17	325 22	390 27	455 32	520 36	585 40	650 43
12 x 10	16 x 8    20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 17	370 22	444 27	518 32	592 37	666 41	740 44
12 x 12	14 x 10    24 x 6 18 x 8    38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 18	450 23	540 28	630 33	720 38	810 41	900 44
14 x 14	16 x 12    24 x 8 20 x 10    34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 -	496 18	620 23	744 28	868 33	992 38	1116 42	1240 45
18 x 12	16 x 14    28 x 8 22 x 10    38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 15	548 20	685 25	822 30	959 35	1096 40	1233 43	1370 46
24 x 10	20 x 12    30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 15	608 20	760 25	912 30	1064 35	1216 41	1368 44	1520 47
16 x 16	18 x 14    30 x 8 22 x 12	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 16	656 21	820 26	984 31	1148 36	1312 41	1476 44	1640 47
24 x 12	18 x 16    30 x 10 20 x 14    36 x 8	1.85	1.78	CFM Noise Criteria	185 -	370 -	555 16	740 21	925 26	1110 31	1295 36	1480 41	1665 44	1850 48
18 x 18	20 x 16    28 x 12 24 x 14    32 x 10	2.10	2.01	CFM Noise Criteria	210 -	420 -	630 16	840 21	1050 26	1260 32	1470 37	1680 42	1890 45	2100 48
30 x 12	20 x 18    26 x 14 22 x 16    36 x 10	2.32	2.23	CFM Noise Criteria	232 -	464 -	696 16	928 22	1160 27	1392 32	1624 37	1856 42	2088 45	2320 49
20 x 20	24 x 18    30 x 14 26 x 16    36 x 12	2.61	2.48	CFM Noise Criteria	261 -	522 -	783 16	1044 22	1305 27	1566 33	1827 38	2088 43	2349 46	2610 49
22 x 22	24 x 20    30 x 16 26 x 18    36 x 14	3.17	3.00	CFM Noise Criteria	317 -	634 -	951 17	1268 23	1585 28	1902 34	2219 38	2536 43	2853 46	3170 50
30 x 18	24 x 22    40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 -	708 -	1062 17	1416 23	1770 28	2124 34	2478 39	2832 44	3186 47	3540 51
24 x 24	26 x 22    32 x 18 28 x 20    36 x 16	3.79	3.56	CFM Noise Criteria	379 -	758 -	1137 17	1516 23	1895 28	2274 34	2653 39	3032 44	3411 47	3790 51
36 x 18	32 x 20    46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 -	854 -	1281 18	1708 25	2135 29	2562 36	2989 41	3416 46	3843 49	4270 53
26 x 26	28 x 24    48 x 14	4.47	4.19	CFM Noise Criteria	447 -	894 -	1341 18	1788 25	2235 30	2682 36	3129 41	3576 46	4023 49	4470 53
30 x 24	28 x 26    36 x 20 32 x 22    40 x 18	4.77	4.46	CFM Noise Criteria	477 -	954 -	1431 19	1908 26	2385 31	2862 37	3339 42	3816 46	4293 50	4770 54
28 x 28	30 x 26    40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 -	1040 -	1560 19	2080 26	2600 31	3120 37	3640 42	4160 47	4680 50	5200 54
36 x 24	30 x 28    44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 -	1148 -	1722 19	2296 26	2870 32	3444 38	4018 42	4592 47	5166 51	5740 55
30 x 30	34 x 26    48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 -	1198 -	1797 19	2396 26	2995 32	3594 38	4193 43	4792 47	5391 51	5990 55

GRILLES AND REGISTERS

F

For performance data notes, see F46.

## PERFORMANCE DATA:

### FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

### MODELS: 5155H, 6155H, 6755H, 5155V, 6155V, 6755V, 51FB55, 61FB55, 67FB55

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .005	.002 .018	.006 .041	.010 .073	.016 .114	.022 .164	.031 .223	.040 .292	.050 .369	.062 .456
32 x 32	36 x 30 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				Noise Criteria	-	15	20	27	33	39	43	48	52	56
48 x 24	34 x 34 36 x 32	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria	-	16	21	27	33	39	44	48	52	56
36 x 36	38 x 34 42 x 30	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				Noise Criteria	-	17	21	28	33	40	45	49	53	57
38 x 38	42 x 34 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				Noise Criteria	-	18	22	28	34	40	45	49	53	57
40 x 40	42 x 36 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				Noise Criteria	-	18	23	29	35	41	47	50	55	59
42 x 42	44 x 40 46 x 38	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	-	19	24	30	36	42	47	51	55	59
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				Noise Criteria	-	19	24	30	36	42	47	51	55	59
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				Noise Criteria	15	20	25	31	37	43	48	52	56	60
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				Noise Criteria	15	20	25	31	37	43	48	52	56	60

#### Performance Notes:

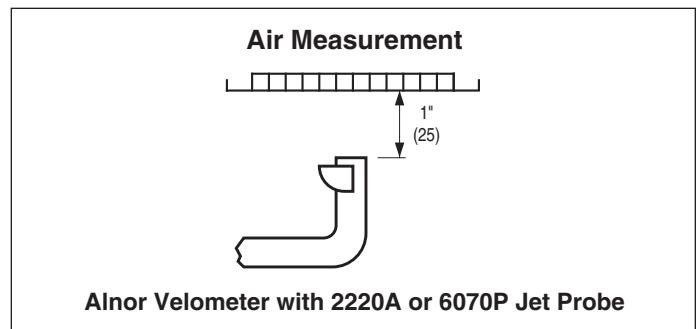
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

**Negative Static Pressure** Listed Value x 0.91.

**Noise Criteria** Listed value - 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (-) in space indicates a Noise Criteria of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 2006.



#### Airflow Measurements:

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (CFM) = Average velocity (V<sub>k</sub>) x Ak.

## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 5100

### ALUMINUM RETURN GRILLES AND REGISTERS – FIXED BLADES

EXAMPLE: 5145H - O - 24 x 12 - S - — - AW - DBK - A - —

1. **Models**
  - Horizontal/Long Dimension Blades:**
    - 51FH Fixed, 0° Deflection, 3/4" (19) Spacing
    - 5145H Fixed, 45° Deflection, 3/4" (19) Spacing
    - 5155H Fixed, 45° Deflection, 1/2" (13) Spacing
  - Vertical/Short Dimension Blades:**
    - 51FV Fixed, 0° Deflection, 3/4" (19) Spacing
    - 5145V Fixed, 45° Deflection, 3/4" (19) Spacing
    - 5155V Fixed, 45° Deflection, 1/2" (13) Spacing
2. **Damper (OBD)** (model suffix)
  - O Steel
  - OA Aluminum
  - None
3. **Nominal Width x Height** inches (mm)
  - For Types S, NF, PL, SP, MP, FP and TP; W x H = Duct Size.
  - Types L & A; W x H = Ceiling Module Size.
4. **Frame/Border Type**
  - Surface Mount:**
    - S Surface Mount
    - Border 1 1/4" (32) (default)
    - NF Narrow Frame/Border 1" (25)
  - Ceiling Grid:**
    - L Lay-in T-Bar \*
    - A Angle Frame
  - Panel Mount: \*\***
    - PLS Steel Lay-in T-Bar Panel
    - PLA Aluminum Lay-in T-Bar Panel
    - FPS Steel Finline® Panel
    - FPA Aluminum Finline® Panel
    - SPS Steel Spline Panel
    - SPA Aluminum Spline Panel
5. **Ceiling Module Size** (Use only for Panel Mounting, Frame/Border Types PL, SP, MP, FP, TP)
  - None (default)
  - Imperial Metric:**
    - 12" x 12" (300 x 300)
    - 20" x 20" (500 x 500)
    - 24" x 12" (600 x 300)
    - 24" x 24" (600 x 600)
    - 36" x 12" (900 x 300)
    - 36" x 24" (900 x 600)
    - 48" x 12" (1200 x 300)
    - 48" x 24" (1200 x 600)
6. **Finish**
  - AW Appliance White (default)
  - AL Aluminum
  - BK Black
  - BW British White
  - LBP Light Bronze Paint
  - MBP Medium Bronze Paint
  - DBP Dark Bronze Paint
  - MI Mill
  - PC Prime Coat
  - SA Satin Anodized (clear)
  - SP Special Custom Color
7. **Opposed Blade Damper Finish**
  - DMI Mill (default)
  - DBK Painted Black
8. **Fastening** (Only for Frame/Border Types S, NF)
  - A Standard Screw Holes (default)
  - C Concealed Mounting Straps \*\*\*
  - D Concealed Screw Holes in Neck \*\*\*\*
  - N None

#### OPTIONS & ACCESSORIES:

- None (standard) (default)
- 9. **Insect Screen**
  - IS Insect Screen
- 10. **Plaster Sub-Frame**
  - PF Plaster Sub-Frame
- 11. **Gaskets**
  - GK Foam Gasket
- 12. **Earthquake Tabs**
  - EQT Earthquake Tabs

#### Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection.

The "default" will automatically select "standard". For example, an aluminum 45° deflection register, 3/4" (19) blade spacing, horizontal orientation and steel damper, is **Model 5145H-O**. Unit will be supplied with screw holes and AW Appliance White finish.

2. The horizontal dimension must always be specified first; for example 24" x 12" (610 x 305) or 12" x 24" (305 x 610).

3.\* For Type L Lay-in, Grille Neck Size is Ceiling Module Size – 2" (51).

\*\* For Panel Mounting, Maximum Grille Neck Size is Ceiling Module Size – 3" (76).

Refer to Options and Accessories page no. F194 for dimensional data.

\*\*\* Not available with 1/2" (13) blade spacing models.

\*\*\*\* Only available on Fixed 0° models.

### MODEL SERIES: 5100

### ALUMINUM RETURN GRILLES AND REGISTERS – FIXED BLADES

#### SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **5145H, 5145V, 5155H, 5155V, 51FH** or **51FV Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have extruded aluminum fixed blades and extruded aluminum frames that have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 6100

### STEEL RETURN GRILLES AND REGISTERS – FIXED BLADES

EXAMPLE: 6145H - O - 24 x 12 - S - — - AW - DBK - A - —

#### 1. Models

##### Horizontal/Long Dimension Blades:

61FH Fixed, 0° Deflection,  
3/4" (19) Spacing

6145H Fixed, 45° Deflection,  
3/4" (19) Spacing

6155H Fixed, 45° Deflection,  
1/2" (13) Spacing

##### Vertical/Short Dimension Blades:

61FV Fixed, 0° Deflection,  
3/4" (19) Spacing

6145V Fixed, 45° Deflection,  
3/4" (19) Spacing

6155V Fixed, 45° Deflection,  
1/2" (13) Spacing

#### 2. Damper (OBD)

(model suffix)

O Steel

— None

#### 3. Nominal Width x Height

inches (mm)

For Types S, PL, SP, MP, FP and TP;

W x H = Duct Size.

Types L & A; W x H = Ceiling Module Size.

#### 4. Frame/Border Type

##### Surface Mount:

S Surface Mount

Border 1 1/4" (32) (default)

##### Ceiling Grid:

L Lay-in T-Bar \*

A Angle Frame

##### Panel Mount: \*\*

PLS Steel Lay-in T-Bar Panel

SPS Steel Spline Panel

MPS Steel Metal Pan Panel

FPS Steel Finline® Panel

TPS Steel Tegular Panel

#### 5. Ceiling Module Size

(Use only for Panel Mounting, Frame/

Border Types PL, SP, MP, FP, TP)

— None (default)

##### Imperial Metric:

12" x 12" (300 x 300)

20" x 20" (500 x 500)

24" x 12" (600 x 300)

24" x 24" (600 x 600)

36" x 12" (900 x 300)

36" x 24" (900 x 600)

48" x 12" (1200 x 300)

48" x 24" (1200 x 600)

#### 6. Finish

AW Appliance White (default)

AL Aluminum

BK Black

BW British White

LBP Light Bronze Paint

MBP Medium Bronze Paint

DBP Dark Bronze Paint

MI Mill

PC Prime Coat

SP Special Custom Color

#### 7. Opposed Blade Damper Finish

DMI Mill (default)

DBK Painted Black

#### 8. Fastening

(Only for Frame/Border Type S)

A Screw Holes (default)

C Concealed Mounting Straps \*\*\*

D Concealed Screw Holes in Neck \*\*\*\*

N None

#### OPTIONS & ACCESSORIES:

— None (default)

#### 9. Insect Screen

IS Insect Screen

#### 10. Plaster Sub-Frame

PF Plaster Sub-Frame

#### 11. Gaskets

GK Foam Gasket

#### 12. Earthquake Tabs

EQT Earthquake Tabs

#### Notes:

1. For a standard grille with no special requirements, specification is only required as far as the damper selection.

The "default" will automatically select "standard". For example, a steel 45° deflection register, 3/4" (19) blade spacing, horizontal orientation and steel damper, is **Model 6145H-O**. Unit will be supplied with screw holes and AW Appliance White finish.

2. The horizontal dimension must always be specified first; for example 24" x 12" (610 x 305) or 12" x 24" (305 x 610).

3. \* For Type L Lay-in, Grille Neck Size is Ceiling Module Size – 2" (51).

\*\* For Panel Mounting, Maximum Grille Neck Size is Ceiling Module Size – 3" (76).

Refer to Options and Accessories page no. F194 for dimensional data.

\*\*\* Not available with 1/2" (13) blade spacing models.

\*\*\*\* Only available on Fixed 0° models.

### MODEL SERIES: 6100

### STEEL RETURN GRILLES AND REGISTERS – FIXED BLADES

#### SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **6145H, 6145V, 6155H, 6155V, 61FH** or **61FV Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have roll-formed corrosion-resistant steel fixed blades and the frame is to be constructed from roll-formed corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 6700

### STAINLESS STEEL RETURN GRILLES AND REGISTERS – FIXED BLADES

EXAMPLE: 6745H - O - 24 x 12 - S - #4 - A - 304 - PFS

**1. Models**

**Horizontal/Long Dimension Blades:**

- 67FH Fixed, 0° Deflection,  
3/4" (19) Spacing
- 6745H Fixed, 45° Deflection,  
3/4" (19) Spacing
- 6755H Fixed, 45° Deflection,  
1/2" (13) Spacing

**Vertical/Short Dimension Blades:**

- 67FV Fixed, 0° Deflection,  
3/4" (19) Spacing
- 6745V Fixed, 45° Deflection,  
3/4" (19) Spacing
- 6755V Fixed, 45° Deflection,  
1/2" (13) Spacing

**2. Damper (OBD)**

(model suffix)

- None
- O Stainless Steel

**3. Nominal Width x Height**

inches (mm)

**4. Frame/Border Type**

- S Surface Mount  
Border 1 3/8" (35) (default)

**5. Finish**

- #4 Brushed Satin Polished (default)
- AW Appliance White

**6. Fastening**

- A Screw Holes (default)
- N None

**OPTIONS & ACCESSORIES:**

**7. Construction**

- 304 Type 304 Stainless Steel (default)
- 316 Type 316 Stainless Steel

**8. Plaster Sub-Frame**

- PFS Stainless Steel Plaster Sub-frame

**Notes:**

1. For a standard grille with no special requirements, specification is only required as far as the damper selection.

The "default" will automatically select "standard". For example, a Type 304 stainless steel 45° deflection register, 3/4" (19) blade spacing, horizontal orientation and stainless steel damper, is **Model 6745H-O**. Unit will be supplied with screw holes and #4 Brushed Satin Polished finish.

2. The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

### MODEL SERIES: 6700

### STAINLESS STEEL RETURN GRILLES AND REGISTERS – FIXED BLADES

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **6745H, 6745V, 6755H, 6755V, 67FH** or **67FV Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional), and have a single set of streamlined shaped roll-formed fixed blades. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #4 Brushed Satin Polished finish (optional finish is AW Appliance White).

(Optional) A stainless steel opposed blade damper, adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



## CURVED SPIRAL DUCT GRILLES

- TRUE FULL RADIUS DESIGN
- DOUBLE DEFLECTION
- SUPPLY
- ALUMINUM

### Models:

51DVC and 51DHC



Model 51DVC-DEX

Models 51DVC and 51DHC Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern, therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards.

The innovative design incorporates a unique frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

### STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

### CONSTRUCTION MATERIAL:

- Unique architectural single piece aluminum frame design, with a 1 3/8" (35) face border rolled to match required duct radius.
- A dual set of individually adjustable, friction pivoted, extruded aluminum "teardrop" blades on 3/4" (19) centers.

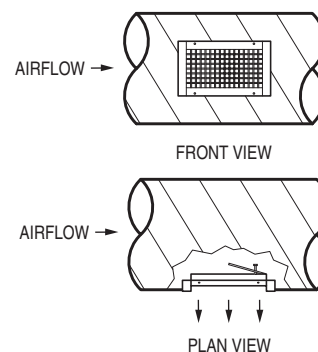
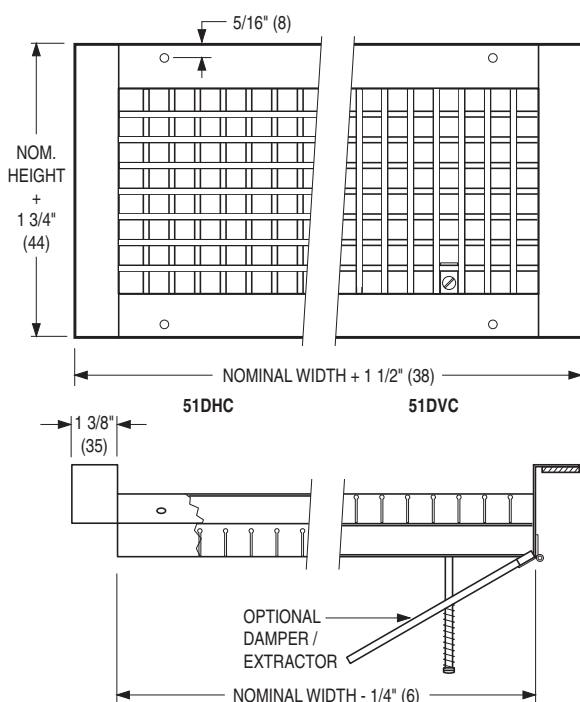
### FINISH OPTIONS:

- Standard finish is AW Appliance White finish. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.



### Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

\* Opening = Nom. + 1/4" (6) with DEX Damper/Extractor option.

**Important:** Grilles custom fabricated to fit a single specified duct dia. only.



## CURVED SPIRAL DUCT GRILLES

- SINGLE DEFLECTION
- SUPPLY
- ALUMINUM

### Models:

51SVC and 51SHC



Model 51SVC

Models 51SVC and 51SHC Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring adjustment in a single horizontal or vertical plane. The vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards. The innovative design incorporates a unique frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

### STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

### CONSTRUCTION MATERIAL:

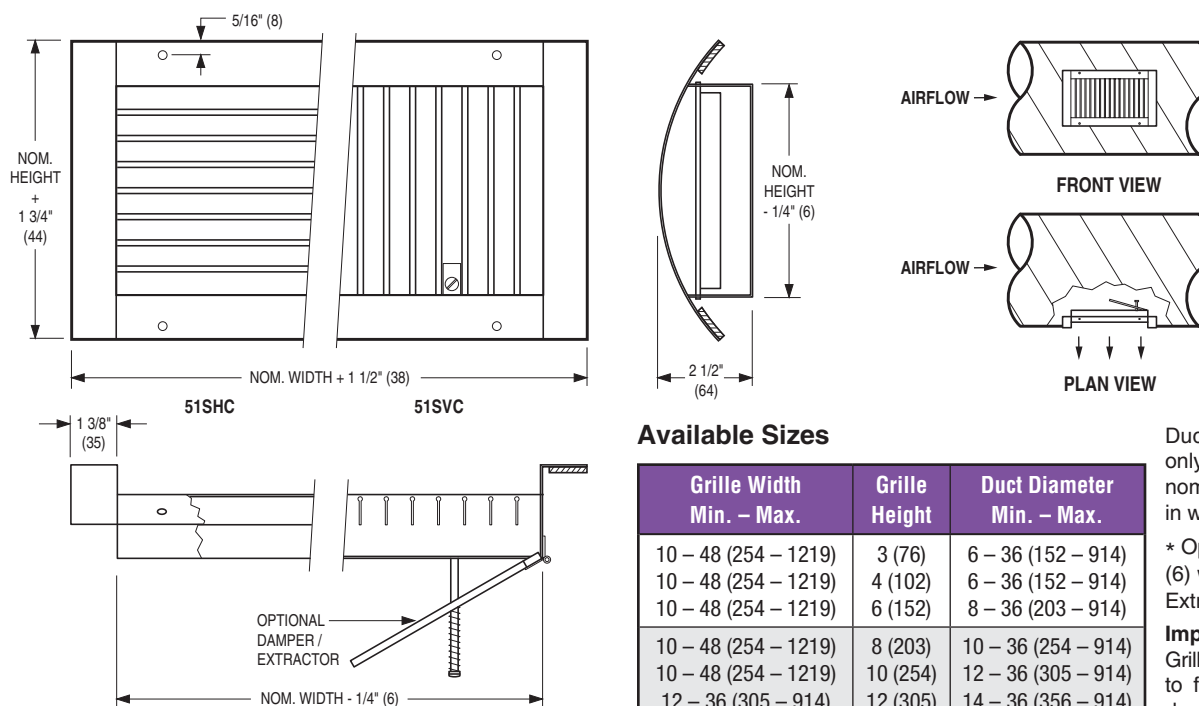
- Unique architectural single piece aluminum frame design, with a 1 3/8" (35) face border rolled to match required duct radius.
- A single set of individually adjustable, friction pivoted, extruded aluminum "teardrop" blades on 3/4" (19) centers.

### FINISH OPTIONS:

- Standard finish is AW Appliance White finish. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- Optional DEX Damper/Extractor (Air Scoop) is available.
- For additional options and accessories, see page F191.



### Available Sizes

Grille Width Min. - Max.	Grille Height	Duct Diameter Min. - Max.
10 - 48 (254 - 1219)	3 (76)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	4 (102)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	6 (152)	8 - 36 (203 - 914)
10 - 48 (254 - 1219)	8 (203)	10 - 36 (254 - 914)
10 - 48 (254 - 1219)	10 (254)	12 - 36 (305 - 914)
12 - 36 (305 - 914)	12 (305)	14 - 36 (356 - 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

\* Opening = Nom. + 1/4" (6) with DEX Damper/Extractor option.

### Important:

Grilles custom fabricated to fit a single specified duct dia. only.

## CURVED SPIRAL DUCT GRILLES

- PERFORATED FACE
- SUPPLY OR RETURN
- ALUMINUM

**Model:**  
**51PRC**



Model 51PRC

Model 51PRC Curved Spiral Duct Grilles are for use in exposed spiral duct supply or return applications. The innovative design incorporates a unique aluminum frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. The perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Many architects prefer the smooth, unobtrusive appearance this grille has to offer.

### STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

- The perforated face has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area.

### CONSTRUCTION MATERIAL:

- Unique architectural single piece aluminum frame design, with a 1 3/8" (35) face border rolled to match required duct radius.

### FINISH OPTIONS:

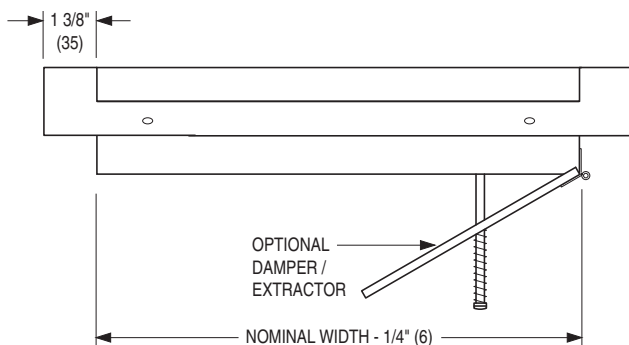
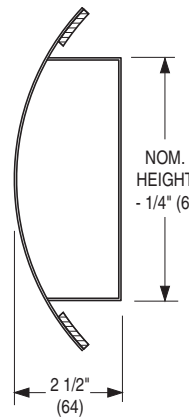
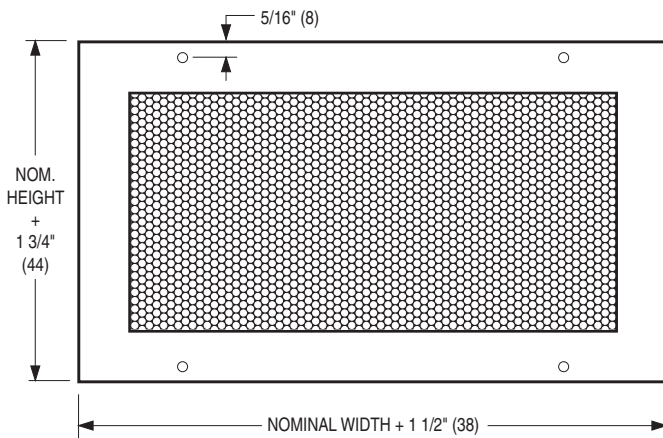
- Standard finish is AW Appliance White finish. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.

For performance data, see pages F117 and F118.



### Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

\* Opening = Nom. + 1/4" (6) with DEX Damper/Extractor option.

**Important:** Grilles custom fabricated to fit a single specified duct dia. only.

## CURVED SPIRAL DUCT RETURN GRILLES

- FIXED 45° BLADES WITH 3/4" (19) OR 1/2" (13) SPACING
- TRUE FULL RADIUS DESIGN
- ALUMINUM

### Model:

5145HC and 5155HC



Model 5145HC

Models 5145HC and 5155C Curved Spiral Duct Grilles are for use in exposed spiral duct, return applications. The streamlined blades and open spacing minimizes intake velocity, reduces inlet pressure and provides quiet operation. The innovative design incorporates a unique architectural aluminum frame, rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. A single set of extruded aluminum roll-formed blades on 3/4" (19) or 1/2" (13) centers are fixed at 45° and incorporate a concealed rear reinforcing mullion (maximum 16" [406] centers) and a single blade pack that provides a continuous louvered appearance.

### STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

### CONSTRUCTION MATERIAL:

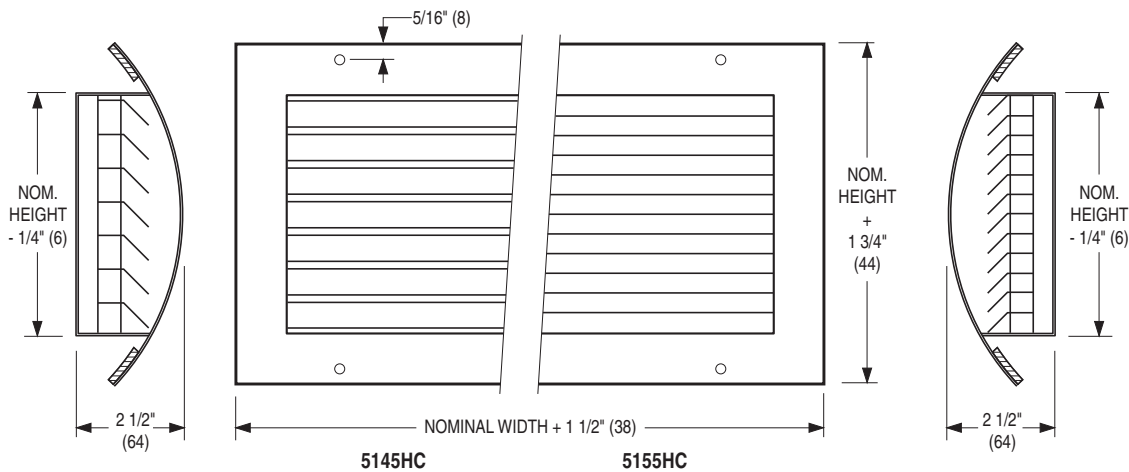
- Unique architectural aluminum frame design, with a 1 3/8" (35) face border rolled to match required duct radius.
- A single set of extruded aluminum roll-formed blades on 3/4" (19) or 1/2" (13) centers fixed at 45°.

### FINISH OPTIONS:

- Standard finish is AW Appliance White finish. Other finishes are available.

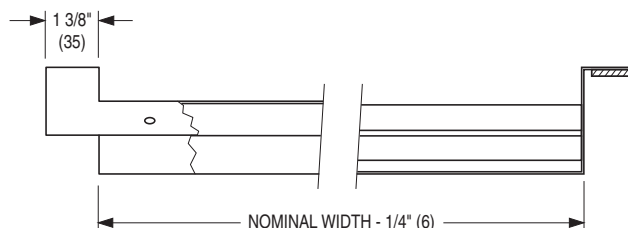
### OPTIONS AND ACCESSORIES:

For additional options and accessories, see page F191.  
For performance data, see pages F117 and F118.



### Available Sizes

Grille Width Min. - Max.	Grille Height	Duct Diameter Min. - Max.
10 - 48 (254 - 1219)	3 (76)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	4 (102)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	6 (152)	8 - 36 (203 - 914)
10 - 48 (254 - 1219)	8 (203)	10 - 36 (254 - 914)
10 - 48 (254 - 1219)	10 (254)	12 - 36 (305 - 914)
12 - 36 (305 - 914)	12 (305)	14 - 36 (356 - 914)



Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

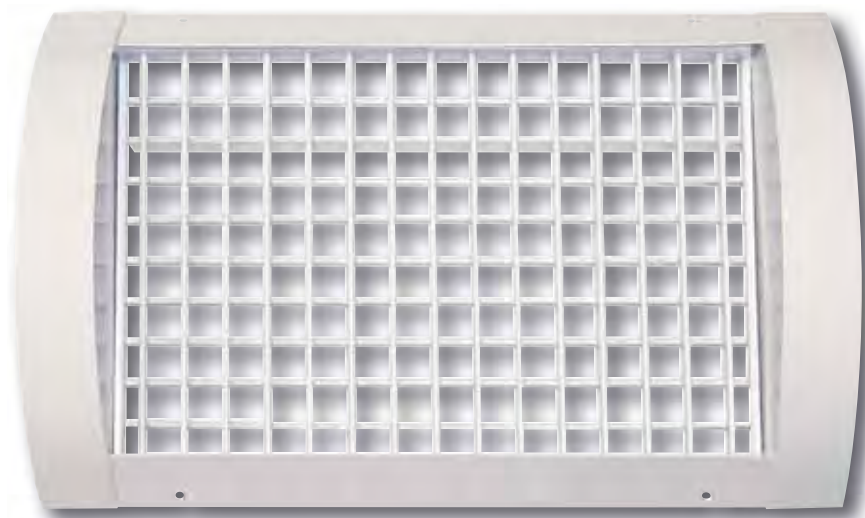
**Important:** Grilles custom fabricated to fit a single specified duct dia. only.

## CURVED SPIRAL DUCT GRILLES

- TRUE FULL RADIUS DESIGN
- DOUBLE DEFLECTION
- SUPPLY
- STEEL

### Models:

61DVC and 61DHC



Model 61DVC

Models 61DVC and 61DHC Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern, therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards.

The innovative design incorporates a unique frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

### STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

### CONSTRUCTION MATERIAL:

- Unique corrosion-resistant steel frame design, with a 1 3/8" (35) face border rolled to match required duct radius.
- A dual set of individually adjustable, friction pivoted, "teardrop" blades on 3/4" (19) centers.

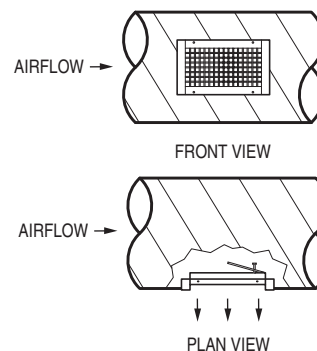
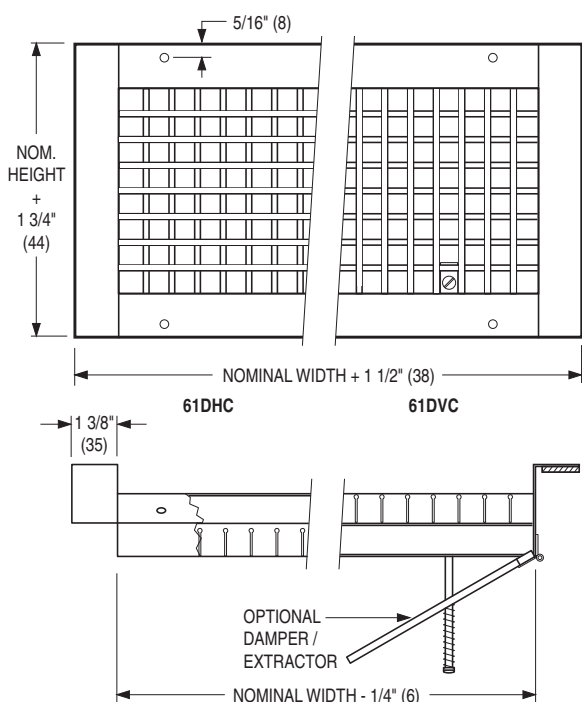
### FINISH OPTIONS:

- Standard finish is AW Appliance White finish. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.



### Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

\* Opening = Nom. + 1/4" (6) with DEX Damper/Extractor option.

### Important:

Grilles custom fabricated to fit a single specified duct dia. only.

## CURVED SPIRAL DUCT GRILLES

- SINGLE DEFLECTION
- SUPPLY
- STEEL

### Models:

61SVC and 61SHC



Model 61SVC

Models 61SVC and 61SHC Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring adjustment in a single horizontal or vertical plane. The vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards.

The innovative design incorporates a unique frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

### STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

### CONSTRUCTION MATERIAL:

- Unique corrosion-resistant steel frame design, with a 1 3/8" (35) face border rolled to match required duct radius.
- A single set of individually adjustable, friction pivoted, "teardrop" blades on 3/4" (19) centers.

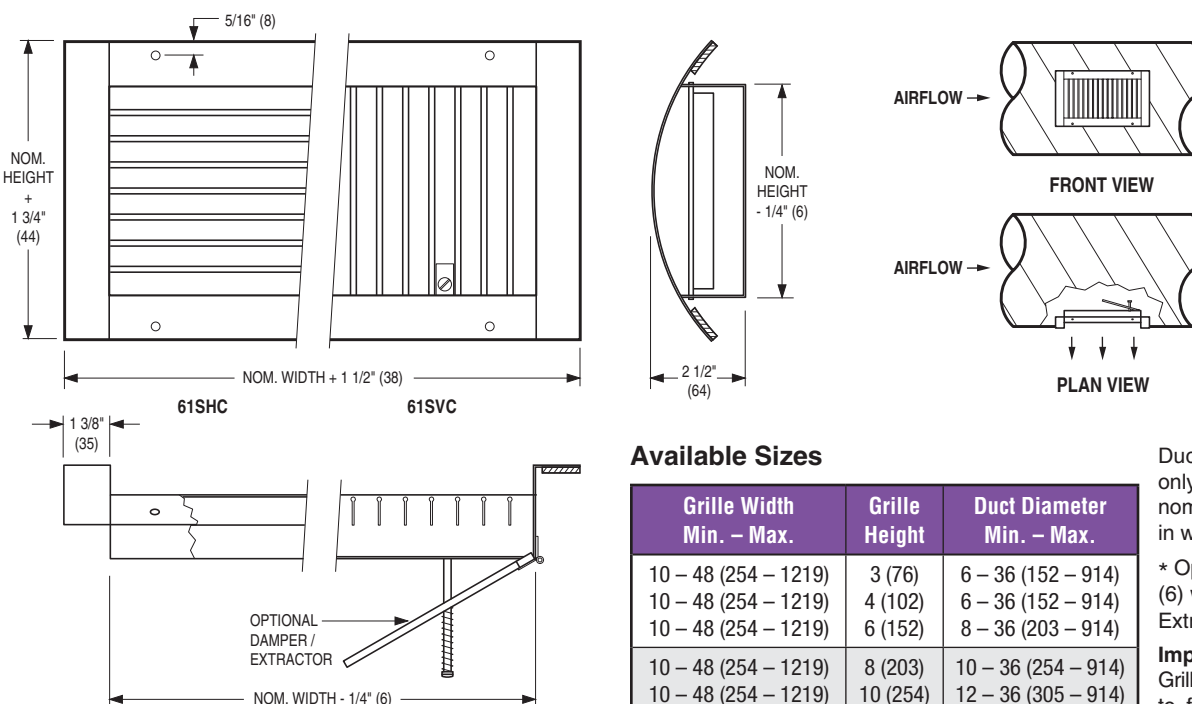
### FINISH OPTIONS:

- Standard finish is AW Appliance White finish. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.



### Available Sizes

Grille Width Min. - Max.	Grille Height	Duct Diameter Min. - Max.
10 - 48 (254 - 1219)	3 (76)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	4 (102)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	6 (152)	8 - 36 (203 - 914)
10 - 48 (254 - 1219)	8 (203)	10 - 36 (254 - 914)
10 - 48 (254 - 1219)	10 (254)	12 - 36 (305 - 914)
12 - 36 (305 - 914)	12 (305)	14 - 36 (356 - 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

\* Opening = Nom. + 1/4" (6) with DEX Damper/Extractor option.

**Important:**  
Grilles custom fabricated to fit a single specified duct dia. only.



## CURVED SPIRAL DUCT GRILLES

- PERFORATED FACE
- SUPPLY OR RETURN
- STEEL

**Model:**  
**61PRC**



Model 61PRC

Model 61PRC Curved Spiral Duct Grilles are for use in exposed spiral duct supply or return applications. The innovative design incorporates a unique corrosion-resistant steel frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. The perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Many architects prefer the smooth, unobtrusive appearance this grille has to offer.

### STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

- The perforated face has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area.

### CONSTRUCTION MATERIAL:

- Unique corrosion-resistant steel frame design, with a 1 3/8" (35) face border rolled to match required duct radius.

### FINISH OPTIONS:

- Standard finish is AW Appliance White finish. Other finishes are available.

### OPTIONS AND ACCESSORIES:

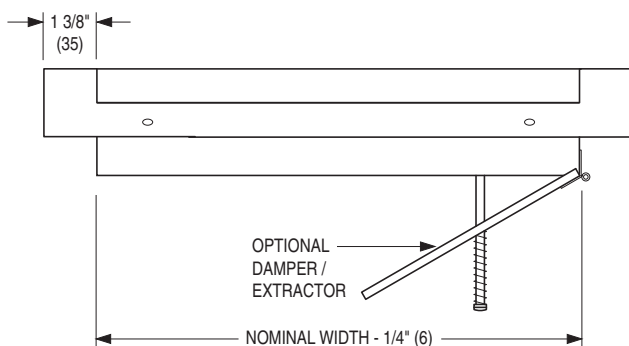
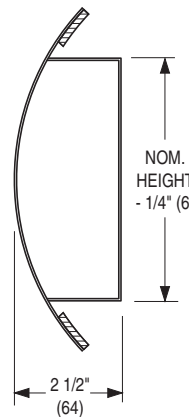
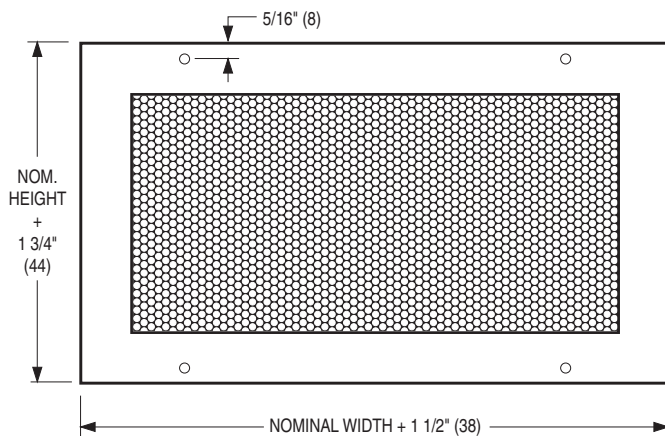
- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.

For performance data, see pages F117 and F118.

GRILLES AND REGISTERS

F



### Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

\* Opening = Nom. + 1/4" (6) with DEX Damper/Extractor option.

### Important:

Grilles custom fabricated to fit a single specified duct dia. only.



## CURVED SPIRAL DUCT RETURN GRILLES

- FIXED 45° BLADES WITH 3/4" (19) OR 1/2" (13) SPACING
- STEEL

### Models:

6145HC and 6155HC



Model 6145HC

Models 6145HC and 6155C Curved Spiral Duct Grilles are for use in exposed spiral duct, return applications. The streamlined blades and open spacing minimizes intake velocity, reduces inlet pressure and provides quiet operation. The innovative design incorporates a unique architectural steel frame, rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. A single set of steel roll-formed blades on 3/4" (19) or 1/2" (13) centers are fixed at 45° and incorporate a concealed rear reinforcing mullion (maximum 16" [406] centers) and a single blade pack that provides a continuous louvered appearance.

### STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- An extensive range of sizes available.
- A single set of roll-formed blades on 3/4" (19) or 1/2" (13) centers fixed at 45°.

### CONSTRUCTION MATERIAL:

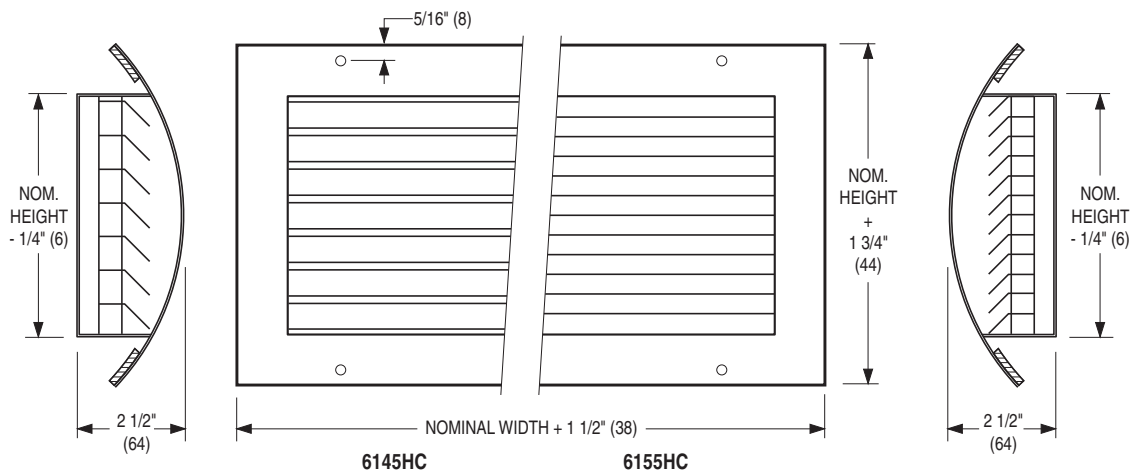
- Unique corrosion-resistant steel frame, with a 1 3/8" (35) face border rolled to match required duct radius.

### FINISH OPTIONS:

- Standard finish is AW Appliance White finish. Other finishes are available.

### OPTIONS AND ACCESSORIES:

For additional options and accessories, see page F191.



### Available Sizes

Grille Width Min. - Max.	Grille Height	Duct Diameter Min. - Max.
10 - 48 (254 - 1219)	3 (76)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	4 (102)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	6 (152)	8 - 36 (203 - 914)
10 - 48 (254 - 1219)	8 (203)	10 - 36 (254 - 914)
10 - 48 (254 - 1219)	10 (254)	12 - 36 (305 - 914)
12 - 36 (305 - 914)	12 (305)	14 - 36 (356 - 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

### Important:

Grilles custom fabricated to fit a single specified duct dia. only.

## PERFORMANCE DATA:

### CURVED SPIRAL DUCT SUPPLY GRILLES • 6100C/5100C SERIES

MODELS: 61DVC, 61DHC, 61SVC, 61SHC, 51DVC, 51DHC, 51SVC, 51SHC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
10 x 3	0.15			CFM		45	60	75	90	105	120	150	180	210
				Noise Criteria		—	—	—	—	18	22	28	34	39
				Throw	0°	3-4-8	4-5-9	5-6-11	6-8-13	7-10-14	8-11-15	9-12-16	11-13-18	11-14-19
22 1/2°	2-3-6	3-4-7	4-5-9		5-6-10	6-8-11	6-9-12	7-10-13	8-10-14	9-11-15				
12 x 3	0.19			CFM		57	76	95	114	133	152	190	228	266
				Noise Criteria		—	—	—	—	19	23	29	35	40
				Throw	0°	4-5-9	5-6-11	6-8-13	7-10-14	8-11-15	8-11-16	11-13-18	11-14-19	12-15-21
22 1/2°	3-4-7	4-5-9	4-7-10		6-8-11	6-8-12	7-9-13	8-10-14	9-11-15	10-12-17				
10 x 4	14 x 3	0.22		CFM		66	88	110	132	154	176	220	164	308
				Noise Criteria		—	—	—	—	19	23	29	35	41
				Throw	0°	4-5-10	5-7-12	6-9-13	7-10-15	8-11-16	9-12-17	11-14-19	12-15-20	13-16-22
22 1/2°	3-4-8	4-6-10	5-7-10		6-8-12	6-9-13	7-10-14	8-10-15	9-11-15	10-12-16				
12 x 4	16 x 3	0.27		CFM		81	108	135	162	189	216	270	324	378
				Noise Criteria		—	—	—	15	20	24	30	36	41
				Throw	0°	4-6-11	6-8-13	7-10-14	8-11-16	9-13-18	11-13-19	12-15-21	13-16-22	13-17-25
22 1/2°	3-4-8	4-7-10	6-8-11		6-9-13	7-10-14	8-11-15	10-12-17	10-13-18	11-13-20				
18 x 3	0.29			CFM		87	116	145	174	203	232	290	348	406
				Noise Criteria		—	—	—	16	21	25	31	37	42
				Throw	0°	4-6-12	6-9-14	7-11-15	8-12-17	10-13-19	12-14-20	13-16-22	14-17-24	14-18-26
22 1/2°	3-5-10	5-7-11	6-9-12		6-10-14	8-10-15	10-11-16	10-13-18	11-14-19	11-14-21				
20 x 3	10 x 6 14 x 4	0.32		CFM		96	128	160	192	224	256	320	384	448
				Noise Criteria		—	—	—	16	21	25	31	37	42
				Throw	0°	4-6-13	6-9-15	7-11-17	8-13-18	11-14-20	12-15-21	14-16-23	15-18-25	15-19-27
22 1/2°	4-5-10	5-7-12	6-9-13		7-11-15	8-11-15	10-12-17	11-13-18	12-14-20	13-15-22				
16 x 4	22 x 3	0.36		CFM		108	144	180	216	252	288	360	432	504
				Noise Criteria		—	—	—	17	22	26	32	38	43
				Throw	0°	4-6-13	6-10-15	8-11-18	9-13-19	11-15-20	13-15-22	13-17-24	15-18-26	16-20-28
22 1/2°	4-5-11	5-8-13	6-9-14		7-11-15	9-12-16	10-13-18	11-13-19	12-15-21	13-15-22				
12 x 6	18 x 4 24 x 3	0.42		CFM		126	168	210	252	294	336	420	504	588
				Noise Criteria		—	—	—	17	22	26	32	38	43
				Throw	0°	4-6-13	6-10-15	8-11-18	9-13-19	11-15-21	13-15-22	13-17-24	15-20-27	16-20-29
22 1/2°	4-5-11	5-8-13	6-9-14		7-11-15	9-12-17	10-13-18	11-13-19	12-15-21	13-16-23				
20 x 4	28 x 3	0.45		CFM		135	180	225	270	315	360	450	540	630
				Noise Criteria		—	—	—	18	23	26	32	39	43
				Throw	0°	4-7-14	6-10-15	8-12-17	10-13-18	11-14-19	11-15-22	13-17-24	15-18-25	6-20-28
22 1/2°	3-6-11	5-8-12	6-10-14		8-10-14	9-11-15	9-12-18	10-14-19	12-14-20	13-16-22				
14 x 6	10 x 8 22 x 4	0.50		CFM		150	200	250	300	350	400	500	600	700
				Noise Criteria		—	—	—	18	23	27	33	39	44
				Throw	0°	4-8-14	7-11-16	8-13-18	11-14-20	11-15-22	13-16-23	15-18-25	16-20-28	18-22-30
22 1/2°	4-6-11	6-8-13	7-10-14		8-11-15	9-13-18	11-13-18	12-14-20	13-15-22	14-18-24				
12 x 8	16 x 6 24 x 4 32 x 3	0.58		CFM		174	232	290	348	406	464	580	696	812
				Noise Criteria		—	—	—	19	24	28	34	40	45
				Throw	0°	5-8-15	7-11-17	8-13-19	11-15-21	12-16-22	14-17-24	15-19-27	17-21-29	18-22-32
22 1/2°	4-6-12	6-8-13	7-11-15		8-12-17	10-13-18	11-13-19	13-15-21	13-17-24	15-18-25				
10 x 10	26 x 4 34 x 3	0.61		CFM		183	244	305	366	427	488	610	732	854
				Noise Criteria		—	—	—	19	24	28	34	40	45
				Throw	0°	5-8-15	7-11-17	9-13-20	11-15-21	12-16-22	14-17-25	16-20-27	17-21-30	19-22-32
22 1/2°	4-6-12	6-9-13	7-11-15		9-12-17	10-13-18	11-13-20	13-15-22	13-17-24	15-18-26				

For performance data notes, see F60.

## PERFORMANCE DATA:

### CURVED SPIRAL DUCT SUPPLY GRILLES • 6100C/5100C SERIES

MODELS: 61DVC, 61DHC, 61SVC, 61SHC, 51DVC, 51DHC, 51SVC, 51SHC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400	
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122	
				Total Pressure		0°	.013	.023	.036	.052	.071	.093	.145	.209	.285
				Throw		22 1/2°	.015	.026	.041	.060	.082	.107	.167	.241	.328
						45°	.023	.040	.063	.091	.125	.164	.254	.367	.499
18 x 6	14 x 8 28 x 4 30 x 4 36 x 3	0.65		CFM		195	260	325	390	455	520	650	780	910	
				Noise Criteria		–	–	15	20	25	29	35	41	46	
				Throw		0°	5-8-15	8-11-18	9-14-20	11-15-22	13-17-24	15-18-25	17-20-28	18-22-32	20-24-34
						22 1/2°	4-7-13	6-9-14	7-11-16	9-13-18	10-13-19	12-14-20	13-16-22	14-18-25	15-19-27
						45°	3-4-8	4-6-9	5-7-11	6-8-12	8-9-13	8-11-14	9-11-16	10-12-17	
12 x 10	20 x 6 30 x 4	0.74		CFM		222	296	370	444	518	592	740	888	1036	
				Noise Criteria		–	–	15	20	25	29	35	41	46	
				Throw		0°	6-9-17	8-12-19	10-15-22	12-17-23	14-18-25	15-19-27	18-22-30	19-23-34	21-25-36
						22 1/2°	4-7-13	6-10-15	8-12-18	10-13-18	11-15-20	13-15-22	14-18-24	15-18-27	17-20-29
						45°	3-5-8	4-6-10	5-8-11	6-8-12	7-9-13	8-10-14	9-11-15	10-12-17	11-13-18
22 x 6	16 x 8 34 x 4	0.80		CFM		240	320	400	480	560	640	800	960	1120	
				Noise Criteria		–	–	16	21	26	30	36	42	47	
				Throw		0°	6-9-12	8-13-20	11-15-22	13-18-25	14-19-27	16-20-29	18-22-32	20-25-35	22-27-37
						22 1/2°	4-7-14	6-10-15	8-13-18	10-14-20	11-15-21	13-15-23	15-18-25	18-20-28	20-21-29
						45°	3-5-9	4-6-10	6-8-11	6-9-13	7-10-13	8-10-15	9-11-16	10-13-18	11-13-19
12 x 12	14 x 10 18 x 8 24 x 6 36 x 4	0.90		CFM		270	360	450	540	630	720	900	1080	1260	
				Noise Criteria		–	–	16	21	26	30	36	42	47	
				Throw		0°	6-10-18	8-13-20	11-16-23	13-18-25	15-19-27	17-20-29	19-23-33	20-25-36	22-27-39
						22 1/2°	5-8-15	7-10-16	8-13-18	10-15-20	12-15-22	13-16-24	15-18-27	16-20-29	18-21-29
						45°	4-5-9	4-6-11	6-8-12	6-9-13	8-10-14	8-11-15	10-12-17	11-13-18	11-14-20
18 x 10	30 x 6	1.13		CFM		339	452	565	678	791	904	1130	1356	1582	
				Noise Criteria		–	–	17	22	27	31	37	43	48	
				Throw		0°	6-11-20	10-14-23	12-18-25	14-20-28	17-21-30	19-23-32	21-25-36	23-28-40	25-30-43
						22 1/2°	5-8-16	8-11-18	10-14-20	11-16-22	13-17-24	15-18-26	17-20-29	18-22-32	20-24-34
						45°	4-6-11	5-7-12	6-9-13	7-11-14	8-11-15	10-12-16	11-13-18	12-14-20	13-15-22
24 x 8	16 x 12 20 x 10 24 x 8 34 x 6	1.20		CFM		360	480	600	720	840	960	1200	1440	1680	
				Noise Criteria		–	–	17	22	27	31	37	43	48	
				Throw		0°	8-13-23	11-18-27	14-20-29	17-23-33	19-25-36	22-27-38	25-29-42	27-33-46	29-36-50
						22 1/2°	6-10-18	9-14-22	11-16-24	13-18-27	15-20-29	18-22-30	20-24-34	22-27-37	23-29-40
						45°	4-6-12	6-9-14	7-11-15	8-12-17	10-13-18	11-14-19	13-15-21	14-17-23	15-18-25
18 x 12	22 x 10 28 x 8 36 x 6	1.37		CFM		411	548	685	822	959	1096	1370	1644	1918	
				Noise Criteria		–	–	18	23	28	32	38	44	49	
				Throw		0°	8-13-23	11-18-27	14-21-30	17-23-33	20-25-36	22-27-38	25-30-43	27-33-47	29-36-50
						22 1/2°	6-10-18	9-14-22	11-17-24	13-18-27	15-20-29	18-22-30	20-24-34	22-27-38	23-29-41
						45°	4-6-12	6-9-14	7-11-15	8-12-17	10-13-18	11-14-19	13-15-22	14-17-24	15-18-25
24 x 10	20 x 12 30 x 8	1.52		CFM		456	608	760	912	1064	1216	1520	1824	2128	
				Noise Criteria		–	–	18	23	28	32	38	44	49	
				Throw		0°	8-13-25	11-18-29	15-22-32	18-25-35	20-27-37	24-29-40	26-32-45	29-35-49	30-37-53
						22 1/2°	7-11-20	9-14-23	12-18-25	14-20-28	16-21-29	19-23-32	21-25-36	23-28-39	24-29-43
						45°	4-7-13	6-9-15	8-11-16	9-13-18	11-13-19	12-15-20	13-16-22	15-18-25	15-19-27
32 x 8	22 x 12 26 x 10	1.61		CFM		483	644	805	966	1127	1288	1610	1932	2254	
				Noise Criteria		–	–	18	23	28	32	38	44	49	
				Throw		0°	8-14-26	12-18-29	15-22-33	18-26-36	22-28-39	25-29-41	27-33-47	29-36-51	32-39-55
						22 1/2°	7-11-21	10-15-24	13-18-27	15-21-29	18-22-32	20-24-33	22-27-38	24-29-41	26-32-44
						45°	4-7-13	6-9-15	8-11-17	9-13-18	11-14-20	13-15-21	14-17-24	15-18-26	16-20-28
24 x 12	30 x 10 36 x 8	1.85		CFM		555	740	925	1110	1295	1480	1850	2220	2590	
				Noise Criteria		–	–	19	24	29	33	39	45	50	
				Throw		0°	8-14-27	13-19-31	15-23-34	19-27-38	22-28-41	25-31-43	28-34-48	31-38-53	34-41-57
						22 1/2°	7-11-21	10-15-25	13-18-27	15-21-30	18-22-32	20-25-35	22-27-39	25-30-43	27-32-46
						45°	4-7-13	6-10-15	8-12-17	10-13-19	11-14-20	13-15-22	14-17-25	15-19-27	17-20-29
32 x 10	28 x 12	2.04		CFM		612	816	1020	1224	1428	1632	2040	2448	2856	
				Noise Criteria		–	–	19	24	29	33	39	45	50	
				Throw		0°	9-15-28	13-20-33	17-25-36	20-28-40	23-30-43	27-33-46	29-36-52	33-40-57	35-43-61
						22 1/2°	7-12-22	11-16-27	13-20-29	16-22-32	18-24-35	21-27-37	24-29-41	27-32-46	28-35-49
						45°	5-8-14	7-11-17	8-13-18	11-14-20	12-15-22	13-17-23	15-18-26	17-20-29	18-22-31
30 x 12	36 x 10	2.32		CFM		696	928	1160	1392	1624	1856	2320	2784	3248	
				Noise Criteria		–	–	20	25	30	34	40	46	51	
				Throw		0°	10-16-30	15-22-35	18-27-39	22-30-43	25-33-47	29-35-50	32-37-55	35-43-60	38-47-66
						22 1/2°	8-13-24	13-18-28	15-22-32	18-24-34	20-27-38	23-28-40	22-32-44	28-34-48	30-38-53
						45°	5-8-15	8-11-18	9-14-20	11-15-22	13-17-24	15-18-25	16-20-28	18-22-30	19-24-33

GRILLES AND REGISTERS

F

For performance data notes, see F60.

## PERFORMANCE DATA:

### CURVED SPIRAL DUCT SUPPLY GRILLES • 6100C/5100C SERIES

#### MODELS: 61DVC, 61DHC, 61SVC, 61SHC, 51DVC, 51DHC, 51SVC, 51SHC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
32 x 12	38 x 10	2.48	1.70 1.48 1.29	CFM	0°	.013	.023	.036	.052	.071	.093	.145	.209	.285
					22 1/2°	.015	.026	.041	.060	.082	.107	.167	.241	.328
					45°	.023	.040	.063	.091	.125	.164	.254	.367	.499
					Throw	10-17-32	15-22-36	19-28-41	22-32-45	26-34-48	30-36-52	34-41-57	36-45-63	39-48-68
40 x 10		2.56	1.77 1.54 1.34	CFM	0°	11-17-32	15-22-37	19-29-41	22-32-46	27-35-49	31-37-53	34-41-59	37-46-64	41-49-69
					22 1/2°	8-13-26	13-18-29	15-23-33	18-26-36	21-28-39	25-29-42	27-33-47	29-36-52	32-39-55
					45°	6-8-16	8-11-19	10-15-21	11-16-23	13-18-25	15-19-27	18-21-29	19-23-32	20-25-35
					Throw	10-17-32	15-22-37	19-29-41	22-32-46	27-35-49	31-37-53	34-41-59	37-46-64	41-49-69
36 x 12	44 x 10	2.79	1.90 1.65 1.44	CFM	0°	11-18-34	16-24-39	20-29-43	24-34-48	28-36-51	32-39-54	34-43-60	39-48-67	41-51-72
					22 1/2°	8-14-27	13-19-31	15-24-34	19-27-38	22-29-41	25-31-43	28-34-48	31-38-53	33-41-57
					45°	6-9-17	8-12-20	10-15-22	12-17-24	14-18-26	16-20-27	18-22-30	20-30-34	21-26-36
					Throw	11-18-34	16-24-39	20-29-43	24-34-48	28-36-51	32-39-54	34-43-60	39-48-67	41-51-72
48 x 10		3.08	2.16 1.87 1.63	CFM	0°	12-19-35	17-25-41	20-32-46	25-35-50	29-38-54	33-41-57	37-46-64	41-50-71	43-54-76
					22 1/2°	10-15-28	13-20-32	16-25-36	20-28-40	24-30-43	27-32-46	29-36-52	32-40-57	35-43-61
					45°	6-10-18	8-13-20	11-16-23	13-18-25	15-19-27	17-20-29	19-23-32	20-25-36	22-27-39
					Throw	12-19-35	17-25-41	20-32-46	25-35-50	29-38-54	33-41-57	37-46-64	41-50-71	43-54-76

#### Performance Notes:

- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is based on double deflection grille without damper/extractor.
- 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.
- Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions, direct duct mounted grille, exposed duct with no ceiling effect.
- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts @ 0° deflection. Dash (-) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### NC Corrections for Blade Deflection and Damper/Extractor set at 45 degrees (add).

Model Type	Damper/Extractor	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	+ 5	+ 7	+ 12
	Without	0	+ 2	+ 7
Single Deflection	With	+ 1	+ 3	+ 10
	Without	- 4	- 2	+ 5

#### TP Correction Factors for Grilles With Damper/Extractor set at 45 degrees.

Blade Deflection	0°	22 1/2°	45°
Double Deflection Factor	x 2.00	x 2.08	x 2.23
Single Deflection Factor	x 1.83	x 1.91	x 2.13

## PERFORMANCE DATA:

### CURVED SPIRAL DUCT RETURN GRILLES • 6100C/5100C SERIES

#### MODELS: 6145HC, 6155HC, 5145HC, 5155HC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .013	300 .006 .028	400 .010 .050	500 .016 .078	600 .022 .113	700 .031 .153	800 .040 .200	900 .050 .253	1000 .062 .313
10 x 3		0.15	0.18	CFM Noise Criteria	15 -	30 -	45 -	60 -	75 -	90 15	105 20	120 24	135 28	150 32
12 x 3		0.19	0.22	CFM Noise Criteria	19 -	38 -	57 -	76 -	95 -	114 15	133 20	152 24	171 28	190 32
10 x 4	14 x 3	0.22	0.25	CFM Noise Criteria	22 -	44 -	66 -	88 -	110 -	132 16	154 21	176 25	198 29	220 33
12 x 4	16 x 3	0.27	0.29	CFM Noise Criteria	27 -	54 -	81 -	108 -	135 -	162 16	189 21	216 25	243 29	270 33
18 x 3		0.29	0.31	CFM Noise Criteria	29 -	58 -	87 -	116 -	145 -	174 17	203 22	232 26	261 30	290 34
20 x 3	10 x 6 14 x 4	0.32	0.34	CFM Noise Criteria	32 -	64 -	96 -	128 -	160 -	192 17	224 22	256 26	288 30	320 34
16 x 4	22 x 3	0.36	0.38	CFM Noise Criteria	36 -	72 -	108 -	144 -	180 -	216 18	252 23	288 27	324 31	360 35
12 x 6	18 x 4 24 x 3	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 -	210 -	252 19	294 23	336 28	378 32	420 36
20 x 4	28 x 3	0.45	0.47	CFM Noise Criteria	45 -	90 -	135 -	180 -	225 -	270 19	315 23	360 28	405 32	450 36
14 x 6	10 x 8 22 x 4	0.50	0.51	CFM Noise Criteria	50 -	100 -	150 -	200 -	250 15	300 20	350 24	400 29	450 33	500 37
12 x 8	16 x 6 24 x 4 32 x 3	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 -	290 15	348 20	406 24	464 29	522 33	580 37
10 x 10	26 x 4 34 x 3	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 -	305 15	366 20	427 25	488 30	549 33	610 37
18 x 6	14 x 8 28 x 4 30 x 4 36 x 3	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 -	325 16	390 21	455 26	520 30	585 34	650 37
12 x 10	20 x 6 30 x 4	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 -	370 16	444 21	518 26	592 31	666 35	740 38
22 x 6	16 x 8 34 x 4	0.80	0.80	CFM Noise Criteria	80 -	160 -	240 -	320 -	400 16	480 21	560 26	640 31	720 35	800 38
12 x 12	14 x 10 18 x 8 24 x 6 36 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 -	450 17	540 22	630 27	720 32	810 35	900 38
18 x 10	30 x 6	1.13	1.12	CFM Noise Criteria	113 -	226 -	339 -	452 -	565 17	678 22	791 27	904 32	1017 36	1130 39
24 x 8	16 x 12 20 x 10 24 x 8 34 x 6	1.20	1.19	CFM Noise Criteria	120 -	240 -	360 -	480 -	600 17	720 22	840 27	960 32	1080 36	1200 39

GRILLES AND REGISTERS

F

For performance table notes, see page F62.

## PERFORMANCE DATA:

### CURVED SPIRAL DUCT RETURN GRILLES • 6100C/5100C SERIES

#### MODELS: 6145HC, 6155HC, 5145HC, 5155HC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .003	.002 .013	.006 .028	.010 .050	.016 .078	.022 .113	.031 .153	.040 .200	.050 .253	.062 .313
18 x 12	22 x 10 28 x 8 36 x 6	1.37	1.34	CFM	137	274	411	548	685	822	959	1096	1233	1370
				Noise Criteria	-	-	-	-	18	23	28	33	36	39
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM	152	304	456	608	760	912	1064	1216	1368	1520
				Noise Criteria	-	-	-	-	18	23	28	34	37	40
32 x 8	22 x 12 26 x 10	1.61	1.59	CFM	161	322	483	644	805	966	1127	1288	1449	1610
				Noise Criteria	-	-	-	-	19	24	29	34	37	40
24 x 12	30 x 10 36 x 8	1.85	1.78	CFM	185	370	555	740	925	1110	1295	1480	1665	1850
				Noise Criteria	-	-	-	-	19	24	29	34	37	41
32 x 10	28 x 12	2.04	1.96	CFM	204	408	612	816	1020	1224	1428	1632	1836	2040
				Noise Criteria	-	-	-	-	19	25	30	35	38	41
30 x 12	36 x 10	2.32	2.23	CFM	232	464	696	928	1160	1392	1624	1856	2088	2320
				Noise Criteria	-	-	-	15	20	25	30	35	38	42
32 x 12	38 x 10 48 x 8	2.48	2.38	CFM	248	496	744	992	1240	1488	1736	1984	2232	2480
				Noise Criteria	-	-	-	15	20	26	31	36	39	42
40 x 10		2.56	2.44	CFM	256	512	768	1024	1280	1536	1792	2048	2304	2560
				Noise Criteria	-	-	-	15	20	26	31	36	39	42
36 x 12	44 x 10	2.79	2.66	CFM	279	558	837	1116	1395	1674	1953	2232	2511	2790
				Noise Criteria	-	-	-	16	21	27	31	36	39	43
48 x 10		3.08	2.92	CFM	308	616	924	1232	1540	1848	2156	2464	2772	3080
				Noise Criteria	-	-	-	16	21	27	31	36	39	43

#### Performance Notes:

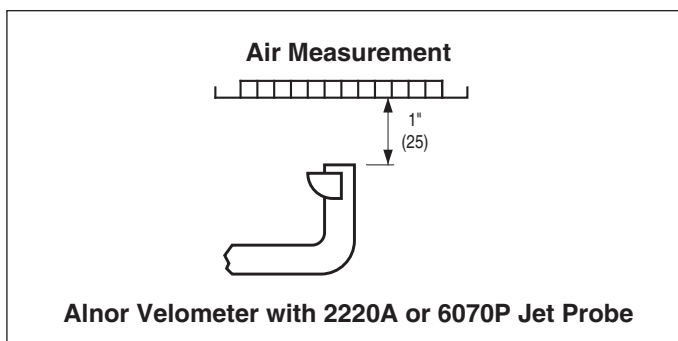
- All pressure are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is based on Model 6145HC. For Model 6155HC apply the following correction factors:

**Negative Static Pressure** Listed Value x 1.3.

**Noise Criteria** Listed value + 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (-) in space indicates a Noise Criteria of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



#### Airflow Measurements:

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (CFM) = Average velocity (V<sub>k</sub>) x Ak.



## HOW TO ORDER

### MODEL SERIES: 5100C

### ALUMINUM CURVED SPIRAL DUCT GRILLES

EXAMPLE: 51DVC - 12 x 6 - 12 - S - AW - A - DEX

**1. Models**

**Supply Double Deflection:**

- 51DVC Vertical Front Blades,  
3/4" (19) Spacing
- 51DHC Horizontal Front Blades,  
3/4" (19) Spacing

**Supply Single Deflection:**

- 51SVC Vertical Blades,  
3/4" (19) Spacing
- 51SHC Horizontal Blades,  
3/4" (19) Spacing

**Return:**

- 51PRC Perforated Face
- 5145HC 45° Deflection,  
3/4" (19) Spacing
- 5155HC 45° Deflection,  
1/2" (13) Spacing

**2. Nominal Width x Height**

inches (mm)

**3. Duct Diameter**

inches

06 through 36 (in 2" increments)

**4. Frame/Border Type**

- S Surface Mount (default)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint
- MI Mill
- PC Prime Coat
- SP Special Custom Color

**6. Fastening**

- A Screw Holes (default)
- N None

**7. Damper/Extractor**

- None (standard) (default)
- DEX Damper/Extractor

**Notes:**

1. Nailor recommends the selection of vertical front blades on supply models for the majority of applications.
2. Refer to "Available Sizes" table for grille height/duct diameter limitations.
3. Not available in fractional or metric sizes.
4. For a standard grille with no special requirements, the "default" will automatically be selected. For example, an aluminum double deflection grille with vertical front blades is Model 51DVC. Unit will be supplied with screw holes and AW Appliance White finish.

**Available Sizes**

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

## HOW TO SPECIFY

### MODEL SERIES: 5100C

### ALUMINUM CURVED SPIRAL DUCT GRILLES

#### SUGGESTED SPECIFICATION:

##### 51DVC, 51DHC Double Deflection

Furnish and install **Nailor Model** (select one) **51DVC** or **51DHC Double Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of extruded aluminum "teardrop" blades spaced on 3/4" (19) centers. The frame shall be made from a single piece aluminum design that is rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 51SVC, 51SHC Single Deflection

Furnish and install **Nailor Model** (select one) **51SVC** or **51SHC Single Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum "teardrop" blades spaced on 3/4" (19) centers. The frame shall be made from a single piece aluminum design that is rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 51PRC Perforated Face

Furnish and install **Nailor Model 51PRC Perforated Face Curved Spiral Duct Supply or Return Grilles** of the type and size as shown on the plans and air distribution schedules. The perforated face shall have 3/16" (5) dia. holes on staggered 1/4" (6) centers providing 51% free area. The frame shall be made from a single piece aluminum design that is rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 5145HC, 5155HC 45° Deflection

Furnish and install **Nailor Model** (select one) **5145HC** or **5155HC Fixed Blade 45° Deflection Curved Spiral Duct Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of roll formed blades on 3/4" (19) or 1/2" (13) centers. The frame shall be made from aluminum and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

### MODEL SERIES: 6100C

### STEEL CURVED SPIRAL DUCT GRILLES

EXAMPLE: 61DVC - 12 x 6 - 12 - S - AW - A - DEX

**1. Models**

**Supply Double Deflection:**

- 61DVC Vertical Front Blades,  
3/4" (19) Spacing
- 61DHC Horizontal Front Blades,  
3/4" (19) Spacing

**Supply Single Deflection:**

- 61SVC Vertical Blades,  
3/4" (19) Spacing
- 61SHC Horizontal Blades,  
3/4" (19) Spacing

**Return:**

- 61PRC Perforated Face
- 6145HC 45° Deflection,  
3/4" (19) Spacing
- 6155HC 45° Deflection,  
1/2" (13) Spacing

**2. Nominal Width x Height**

inches (mm)

**3. Duct Diameter**

inches

06 through 36 (in 2" increments)

**4. Frame/Border Type**

S Surface Mount (default)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint
- MI Mill
- PC Prime Coat
- SP Special Custom Color

**6. Fastening**

- A Screw Holes (default)
- N None

**7. Damper/Extractor**

- None (standard) (default)
- DEX Damper/Extractor

**Notes:**

1. Nailor recommends the selection of vertical front blades on supply models for the majority of applications.
2. Refer to "Available Sizes" table for grille height/duct diameter limitations.
3. Not available in fractional or metric sizes.
4. For a standard grille with no special requirements, the "default" will automatically be selected. For example, a double deflection grille with vertical front blades is Model 61DVC. Unit will be supplied with screw holes and AW Appliance White finish.

### Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

## HOW TO SPECIFY

### MODEL SERIES: 6100C

### STEEL CURVED SPIRAL DUCT GRILLES

#### SUGGESTED SPECIFICATION:

##### **61DVC, 61DHC Double Deflection**

Furnish and install **Nailor Model** (select one) **61DVC** or **61DHC Double Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of "teardrop" blades spaced on 3/4" (19) centers. The frame shall be corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### **61SVC, 61SHC Single Deflection**

Furnish and install **Nailor Model** (select one) **61SVC** or **61SHC Single Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of "teardrop" blades spaced on 3/4" (19) centers. The frame shall be corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### **61PRC Perforated Face**

Furnish and install **Nailor Model 61PRC Perforated Face Curved Spiral Duct Supply or Return Grilles** of the type and size as shown on the plans and air distribution schedules. The perforated face shall have 3/16" (5) dia. holes on staggered 1/4" (6) centers providing 51% free area. The frame shall be made from corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### **6145HC, 6155HC 45° Deflection**

Furnish and install **Nailor Model** (select one) **6145HC** or **6155HC Fixed Blade 45° Deflection Curved Spiral Duct Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of roll formed blades on 3/4" (19) or 1/2" (13) centers. The frame shall be made from corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## STEEL CURVED SPIRAL DUCT GRILLES

- LINEAR SLOT FACE
- TRUE FULL RADIUS DESIGN
- SUPPLY



Model 61L10C

### Models:

- 61L50C** 1/2" (13) Slot
- 61L75C** 3/4" (19) Slot
- 61L10C** 1" (25) Slot

Models 61L50C, 61L75C and 61L10C Curved Spiral Duct Supply Grilles are for use in exposed spiral duct applications requiring maximum flexibility. This linear grille provides stable diffusion under large amounts of air with both constant and changing load conditions. The volume and direction of the discharge air can be adjusted by moving the pattern controllers.

The innovative design incorporates a unique rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles.

### STANDARD FEATURES:

- Custom fabricated to fit only a single duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.

### CONSTRUCTION MATERIAL:

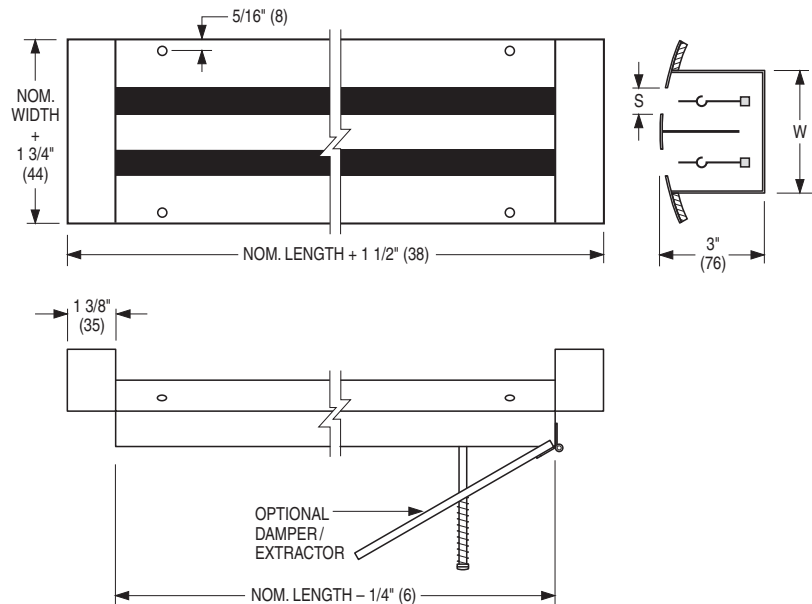
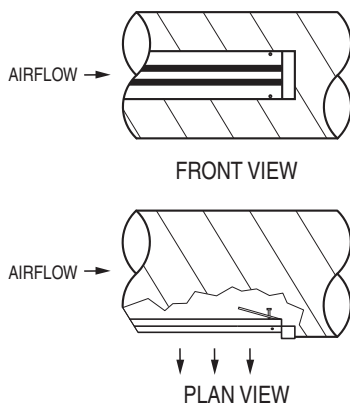
- Unique, corrosion-resistant steel frame design with a 1 3/8" (35) face border rolled to match required duct radius.
- Extruded aluminum adjustable "wiper blade" pattern controllers with gasket edge seal.

### FINISH OPTIONS:

- Standard finish is AW Appliance White finish with BK black pattern controllers. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- DEX Damper/Extractor is available.



**Standard No. of Slots:** 1, 2, 3 or 4

### Available Lengths:

12" through 72" (nominal 1" [25] increments only)

### Available Sizes

No. of Slots	61L50C		61L75C		61L10C	
	S = 1/2" (13)		S = 3/4" (19)		S = 1" (25)	
	W	Duct Dia. Min. - Max.	W	Duct Dia. Min. - Max.	W	Duct Dia. Min. - Max.
1	1 3/4 (44)	6 - 36 (152 - 914)	2 (51)	6 - 36 (152 - 914)	2 1/4 (57)	6 - 36 (152 - 914)
2	3 (76)	6 - 36 (152 - 914)	3 1/2 (89)	6 - 36 (152 - 914)	4 (102)	6 - 36 (152 - 914)
3	4 1/4 (108)	8 - 36 (203 - 914)	5 (127)	8 - 36 (203 - 914)	5 3/4 (146)	8 - 36 (203 - 914)
4	5 1/2 (140)	8 - 36 (203 - 914)	6 1/2 (165)	10 - 36 (254 - 914)	7 1/2 (191)	10 - 36 (254 - 914)

**W** = Nominal Width (duct opening)

\* Opening = Nominal + 1/4" (6) with DEX Damper/Extractor option.

**S** = Slot Width

Duct diameters in even sizes only.

### Important:

Grilles are custom fabricated to fit only a single specified duct diameter.

## PERFORMANCE DATA:

### CURVED SPIRAL DUCT LINEAR SLOT • "WIPER BLADE" PATTERN CONTROLLERS

#### MODEL: 61L50C • 1/2" (13) SLOT WIDTH

Slot	Airflow, CFM per Ft.	5	10	15	20	25	30	35	40
1 Slot	Static Pressure	.003	.014	.027	.051	.083	.116	.158	.215
	Noise Criteria	-	-	-	-	16	21	25	28
	Throw	1-1-2	2-3-6	3-5-9	4-6-11	4-6-12	4-7-13	5-7-14	5-8-15
2 Slot	Airflow, CFM per Ft.	10	20	30	40	50	60	70	80
	Static Pressure	.003	.014	.027	.051	.083	.116	.158	.215
	Noise Criteria	-	-	-	-	18	24	28	31
3 Slot	Airflow, CFM per Ft.	15	30	45	60	75	90	105	120
	Static Pressure	.003	.14	.027	.051	.083	.116	.158	.215
	Noise Criteria	-	-	-	16	21	26	30	33
4 Slot	Airflow, CFM per Ft.	20	40	60	80	100	120	140	160
	Static Pressure	.003	.014	.027	.051	.083	.116	.158	.215
	Noise Criteria	-	-	-	17	22	27	31	34
Throw		2-3-6	4-6-11	5-8-16	7-10-20	7-11-22	8-12-24	9-13-26	10-15-29

#### MODEL: 61L75C • 3/4" (19) SLOT WIDTH

Slot	Airflow, CFM per Ft.	5	10	20	25	30	35	40	50
1 Slot	Static Pressure	.003	.012	.026	.042	.065	.092	.125	.174
	Noise Criteria	-	-	-	-	16	20	23	28
	Throw	1-1-2	2-3-6	3-5-10	4-6-12	4-7-13	5-7-14	5-8-15	5-8-16
2 Slot	Airflow, CFM per Ft.	10	20	40	50	60	70	80	100
	Static Pressure	.003	.012	.026	.042	.065	.092	.125	.174
	Noise Criteria	-	-	-	-	19	23	26	31
3 Slot	Airflow, CFM per Ft.	15	30	60	75	90	105	120	150
	Static Pressure	.003	.12	.026	.042	.065	.092	.125	.174
	Noise Criteria	-	-	-	16	21	25	28	33
4 Slot	Airflow, CFM per Ft.	20	40	80	100	120	140	160	200
	Static Pressure	.003	.012	.026	.042	.065	.092	.125	.174
	Noise Criteria	-	-	-	17	22	26	29	34
Throw		2-3-5	4-6-11	6-9-18	7-11-21	9-13-25	9-14-27	10-15-30	11-16-31

#### NC Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6
Supply	- 3	- 1	0	+ 1	+ 2
Return	0	+ 2	+ 3	+ 3	+ 4

#### Throw Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6
Multiplier	0.70	0.85	1.0	1.125	1.25

#### Performance Notes:

- All pressures are in inches w.g..
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions. Exposed duct (no ceiling effect).
- Horizontal throws are based on the same direction of all slots. Pattern controllers set in upright (non-directing) position.
- Throw values are based on a 4 ft. section. For other lengths, use the correction factors table above.
- Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a NC level of less than 15.
- Noise Criteria are based on a 4 ft. section, horizontal throw. For other lengths, use the correction factors table above.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



## PERFORMANCE DATA:

### CURVED SPIRAL DUCT LINEAR SLOT • "WIPER BLADE" PATTERN CONTROLLERS

#### MODEL: 61L10C • 1" (25) SLOT WIDTH

	Airflow, CFM per Ft.	10	15	25	30	40	50	55	65
1 Slot	Static Pressure	.002	.009	.024	.038	.057	.082	.113	.148
	Noise Criteria	-	-	-	-	19	24	27	31
	Throw	1-1-2	3-4-8	4-6-12	4-7-13	5-8-15	5-8-16	6-9-17	6-9-18
2 Slot	Airflow, CFM per Ft.	20	30	50	60	80	100	110	130
	Static Pressure	.002	.009	.024	.038	.057	.082	.113	.148
	Noise Criteria	-	-	-	15	22	27	30	34
3 Slot	Airflow, CFM per Ft.	30	45	75	90	120	150	165	195
	Static Pressure	.002	.009	.024	.038	.057	.082	.113	.148
	Noise Criteria	-	-	-	17	24	29	32	36
4 Slot	Airflow, CFM per Ft.	40	60	100	120	160	200	220	260
	Static Pressure	.002	.009	.024	.038	.057	.082	.113	.148
	Noise Criteria	-	-	-	19	25	30	33	37
	Throw	2-4-7	4-7-13	7-11-21	9-13-26	10-15-29	10-15-30	12-17-34	12-18-36

#### NC Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6
Supply	- 3	- 1	0	+ 1	+ 2
Return	0	+ 2	+ 3	+ 3	+ 4

#### Throw Correction Factors for Various Lengths

Length (ft.)	2	3	4	5	6
Multiplier	0.70	0.85	1.0	1.125	1.25

#### Performance Notes:

1. All pressures are in inches w.g..
2. Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions. Exposed duct (no ceiling effect).
3. Horizontal throws are based on the same direction of all slots. Pattern controllers set in upright (non-directing) position.

4. Throw values are based on a 4 ft. section. For other lengths, use the correction factors table above.
5. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a NC level of less than 15.

6. Noise Criteria are based on a 4 ft. section, horizontal throw. For other lengths, use the correction factors table above.
7. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 61LC

### STEEL CURVED SPIRAL DUCT LINEAR SLOT GRILLES

EXAMPLE: 61L75C - 24 x 2 - 12 - S - AW - A - DEX

**1. Models**

**Supply:**

- 61L50C 1/2" (13) Linear Slot
- 61L75C 3/4" (19) Linear Slot
- 61L10C 1" (25) Linear Slot

**2. Nominal Length**

- 12 through 72"
- (nominal 1" [25] increments only)

**3. No. of Slots**

- 1 through 4

**4. Duct Diameter**

- inches
- 06 through 36 (in 2" [51] increments)

**5. Frame/Border Type**

- S Surface Mount (default)

**6. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint
- MI Mill
- PC Prime Coat
- SP Special Custom Color

**7. Fastening**

- A Screw Holes (default)
- N None

**8. Damper/Extractor**

- Standard (default) None
- DEX Damper/Extractor

**Notes:**

1. Refer to table for duct diameter limitations.
2. Not available in fractional or metric sizes.
3. For a standard grille without any special requirements, the "default" will automatically be selected. For example, a linear with a 3/4" (19) slot is Model 61L75C. Unit will be supplied with screw holes and AW Appliance White finish.

### MODEL SERIES: 61LC

### STEEL CURVED SPIRAL DUCT SUPPLY LINEAR SLOT

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **61L10C (1", [25] slot)**, **61L75C (3/4", [19] slot)** or **61L50C (1/2", [13] slot)** of the sizes and capacities as shown on the plans and air distribution schedules. The linear shall be supplied in 1 – 4 slots wide as specified. The frame shall be corrosion-resistant steel and rolled to match the specified radius. The pattern deflectors shall have an aerodynamic 'ice tong' shape that can be adjusted to regulate the volume and direction of the airflow. The pattern deflector finish shall be black. The frame is to be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

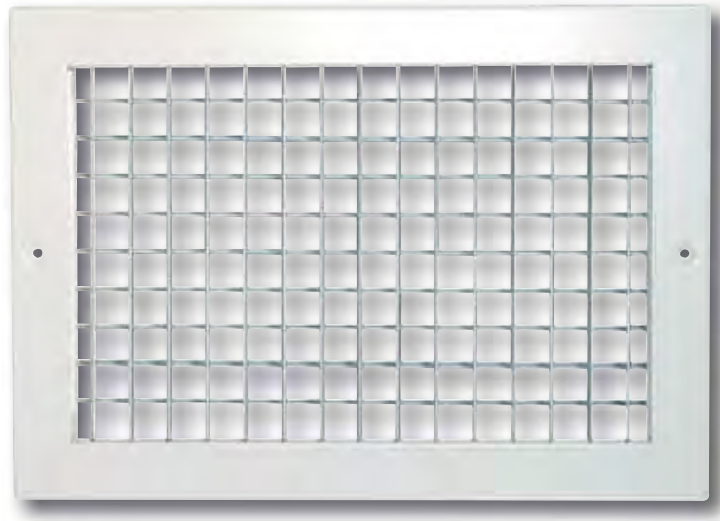
## AIRFOIL SERIES DOUBLE DEFLECTION GRILLES AND REGISTERS

- EXTRUDED ALUMINUM
- PREMIUM QUALITY
- PREMIUM PERFORMANCE
- SUPPLY

### Models:

#### 71DV and 71DH

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 71DV

Models 71DV and 71DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined airfoil shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of approximately 77%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

### CONSTRUCTION MATERIAL:

- Aluminum construction – rigid, heavy gauge extruded frames with reinforced mitered corners.
- Aluminum blades – streamlined airfoil shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

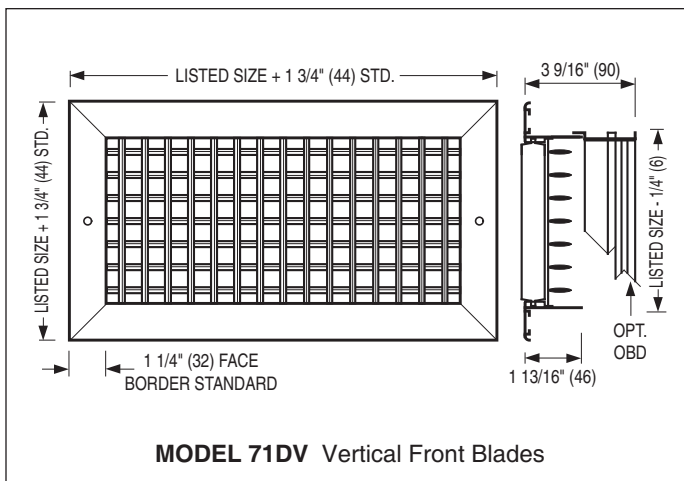
### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

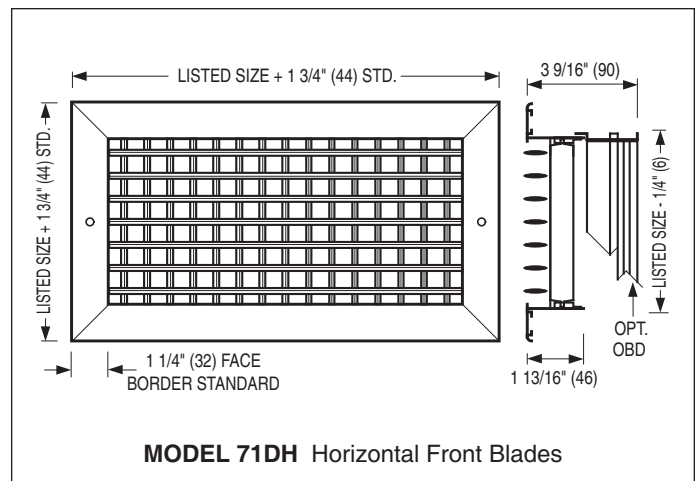
### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



MODEL 71DV Vertical Front Blades



MODEL 71DH Horizontal Front Blades

## AIRFOIL SERIES SINGLE DEFLECTION GRILLES AND REGISTERS

- EXTRUDED ALUMINUM
- PREMIUM QUALITY
- PREMIUM PERFORMANCE
- SUPPLY

### Models:

#### 71SV and 71SH

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 71SV

Models 71SV and 71SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined airfoil shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of approximately 77%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

### CONSTRUCTION MATERIAL:

- Aluminum construction – rigid, heavy gauge extruded frames with reinforced mitered corners.
- Aluminum blades – streamlined airfoil shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

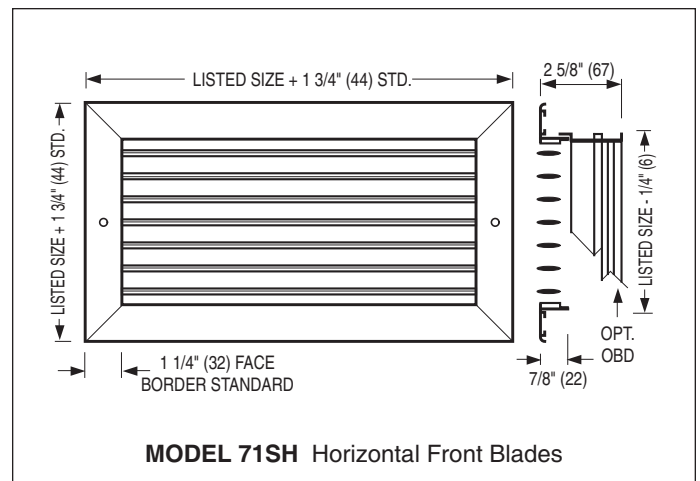
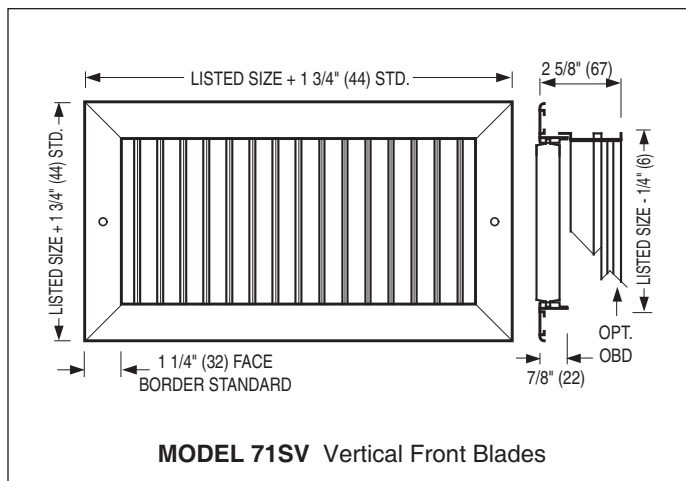
### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



## PERFORMANCE NOTES FOR SUPPLY GRILLES AND REGISTERS: AIRFOIL BLADE 7100 SERIES

### Throw, Spread and Drop

The isovel diagrams shown below, illustrate in plan view, the relationship of horizontal spread to throw for three standard vertical blade deflections and represent a typical high side wall supply outlet. The isovels (throw values) are for the cataloged terminal velocities of 150, 100 and 50 fpm.

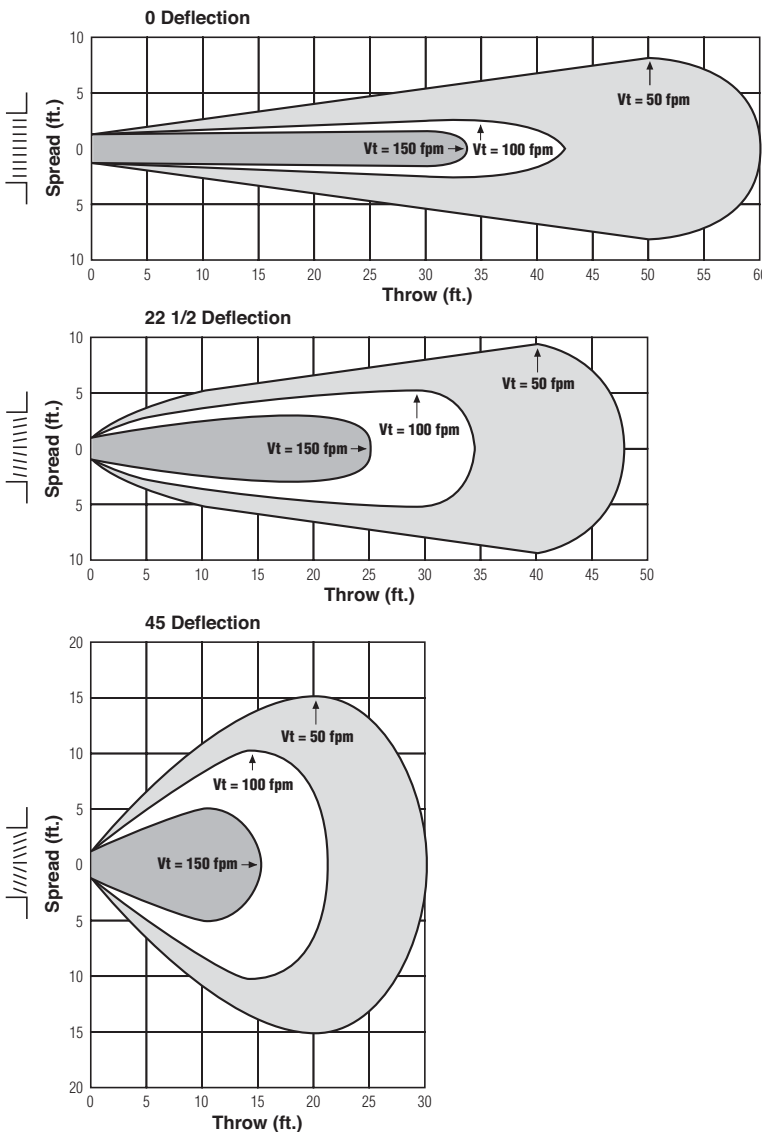
Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by multiplying the cataloged throw by x 0.7.

In order to offset potential draft problems caused by premature drop, it is recommended to set the blades with an upward deflection setting of 15 – 20° in free space conditions. The angle of spread and temperature differential between the supply air and room air ( $\Delta T$ ) also effects the drop of the airstream.

Under constant conditions of temperature, volume and core velocity, the wider the spread, the smaller the drop. Typical cold supply air (20°F  $\Delta T$ ) reduces horizontal throw by approximately 30%. Warm air will increase throw by approximately 30% and reduce drop.

For a full explanation of the effects of spread, throw, temperature and drop, refer to the engineering guide at the back of the catalog.

### SPREAD CHARACTERISTICS WITH THREE DEFLECTION SETTINGS



### NC Corrections for Blade Deflection (add)

Model Type	Damper	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	0	+ 2	+ 7
	Without	- 4	- 2	+ 3
Single Deflection	With	- 4	- 1	+ 4
	Without	- 8	- 6	+ 1

Note: Damper corrections are for wide open damper.

### TP Correction Factors for Grilles Without Damper (multiply)

Blade Deflection	0°	22 1/2°	45°
Double Deflection Factor	x .73	x .76	x .84
Single Deflection Factor	x .66	x .70	x .80

### NC Corrections for Throttling Damper (add)

Additional Pressure Drop (in. w.g.)	.05"	.15"	.25"
Approx. Damper Opening	75%	67%	50%
NC add	+ 6	+ 11	+ 18





## PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES MODELS: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity Pressure		.006	.010	.016	.022	.031	.040	.062	.090	.122
				Total Pressure	0°	.011	.019	.030	.044	.060	.078	.122	.175	.238
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM	0°	372	496	620	744	868	992	1240	1488	1736
				Noise Criteria	22 1/2°	—	—	—	19	24	28	34	40	45
				Throw	45°	11-18-33 9-14-26 6-9-17	16-25-39 13-20-31 8-13-20	20-29-42 16-23-34 10-15-21	24-33-47 19-26-38 12-17-24	27-36-51 22-29-41 14-18-26	31-39-54 25-31-43 16-20-27	35-42-60 28-34-48 18-21-30	39-47-66 31-38-53 20-24-33	41-51-71 33-41-57 21-26-36
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM	0°	411	548	685	822	959	1096	1370	1644	1918
				Noise Criteria	22 1/2°	—	—	15	20	25	29	35	41	46
				Throw	45°	11-18-33 9-14-26 6-9-17	16-25-39 13-20-31 8-13-20	20-30-43 16-24-34 10-15-22	24-33-47 19-26-38 12-17-24	28-36-51 22-29-41 14-18-26	32-39-54 26-31-43 16-20-27	35-43-61 28-34-49 18-22-31	39-47-67 31-38-54 20-24-34	41-51-72 33-41-58 21-26-36
24 x 10	20 x 12 30 x 8	1.52		CFM	0°	456	608	760	912	1064	1216	1520	1824	2128
				Noise Criteria	22 1/2°	—	—	15	20	25	29	35	41	46
				Throw	45°	12-19-35 10-15-28 6-10-18	16-25-41 13-20-33 8-13-21	21-32-45 17-26-36 11-16-23	25-35-50 20-28-40 13-18-25	29-38-53 23-30-42 15-19-27	34-41-57 27-33-46 17-21-29	37-45-65 30-36-51 19-23-32	41-50-70 33-40-56 21-25-35	43-53-76 34-42-61 22-27-38
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM	0°	492	656	820	984	1148	1312	1640	1968	2296
				Noise Criteria	22 1/2°	—	—	15	20	25	29	35	41	46
				Throw	45°	12-20-37 10-16-30 6-10-19	17-26-42 14-21-34 9-13-21	22-32-47 18-26-38 11-16-24	26-37-51 21-30-41 13-19-26	31-40-56 25-32-45 16-20-28	35-42-59 28-34-47 18-21-30	39-47-67 31-38-54 20-24-34	42-51-73 34-41-58 21-26-37	46-56-79 37-45-63 23-28-40
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		CFM	0°	555	740	925	1110	1295	1480	1850	2220	2590
				Noise Criteria	22 1/2°	—	—	16	21	26	30	36	42	47
				Throw	45°	12-20-38 10-16-30 6-10-19	18-27-44 14-22-35 9-14-22	22-33-48 18-26-38 11-17-24	27-38-54 22-30-43 14-19-27	32-40-58 26-32-46 16-20-29	36-44-62 29-35-50 18-22-31	40-48-69 32-38-55 20-24-35	44-54-76 35-43-61 22-27-38	48-58-82 38-46-66 24-29-41
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM	0°	630	840	1050	1260	1470	1680	2100	2520	2940
				Noise Criteria	22 1/2°	—	—	16	21	26	30	36	42	47
				Throw	45°	13-21-40 10-17-32 7-11-20	19-29-47 15-23-38 10-15-24	24-36-52 19-29-42 12-18-26	29-40-57 23-32-46 15-20-29	33-43-62 26-34-50 17-22-31	38-47-66 30-38-53 19-24-33	42-52-74 34-42-59 21-26-37	47-57-81 38-46-65 24-29-41	50-62-87 40-50-70 25-31-44
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM	0°	696	928	1160	1392	1624	1856	2320	2784	3248
				Noise Criteria	22 1/2°	—	—	17	22	27	31	37	43	48
				Throw	45°	14-23-43 11-18-34 7-12-22	21-31-50 17-25-40 11-16-25	26-39-56 21-31-45 13-20-28	31-43-61 25-34-49 16-22-31	36-47-67 29-38-54 18-24-34	41-50-71 33-40-57 21-25-36	46-56-79 32-45-63 23-28-40	50-61-86 40-49-69 25-31-43	54-67-94 43-54-75 27-34-47
24 x 16	32 x 12	2.50		CFM	0°	750	1000	1250	1500	1750	2000	2500	3000	3500
				Noise Criteria	22 1/2°	—	—	17	22	27	31	37	43	48
				Throw	45°	14-24-45 11-19-36 7-12-23	22-32-52 18-26-42 11-16-26	27-40-58 22-32-46 14-20-29	32-45-64 26-36-51 16-23-32	37-49-68 30-39-54 19-25-34	43-52-74 34-42-59 22-26-37	48-58-82 38-46-66 24-29-41	52-64-90 42-51-72 26-32-45	56-68-97 45-54-78 28-34-49
20 x 20	22 x 18	2.61		CFM	0°	783	1044	1305	1566	1827	2088	2610	3132	3654
				Noise Criteria	22 1/2°	—	—	17	22	27	31	37	43	48
				Throw	45°	15-24-46 12-19-37 8-12-23	22-32-53 18-26-42 11-16-27	27-41-59 22-33-47 14-21-30	32-46-65 26-37-52 16-23-33	38-50-70 30-40-56 19-25-35	44-53-75 35-42-60 22-27-38	49-59-84 39-47-67 25-30-42	53-65-92 42-52-74 27-33-46	58-70-99 46-56-79 29-35-50
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM	0°	837	1116	1395	1674	1953	2232	2790	3348	3906
				Noise Criteria	22 1/2°	—	—	17	22	27	31	37	43	48
				Throw	45°	15-25-48 12-20-38 8-13-24	23-34-55 18-27-44 12-17-28	28-42-61 22-34-49 14-21-31	34-48-68 27-38-54 17-24-34	4-51-73 32-41-58 20-26-37	45-55-77 36-44-62 23-28-39	50-61-86 40-49-69 25-31-43	55-68-95 44-54-76 28-34-48	59-73-103 47-58-82 30-37-52
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM	0°	951	1268	1585	1902	2219	2536	3170	3804	4438
				Noise Criteria	22 1/2°	—	—	18	23	28	32	38	44	49
				Throw	45°	17-27-50 14-22-40 9-14-25	24-36-58 19-29-46 12-18-29	29-45-65 23-36-52 15-23-33	36-50-71 29-40-57 18-25-36	42-54-77 34-43-62 21-27-39	47-58-82 38-46-66 24-29-41	53-65-92 42-52-74 27-33-46	58-71-101 46-57-81 29-36-51	62-77-109 50-62-87 31-39-55
42 x 12	36 x 14	3.27		CFM	0°	981	1308	1635	1962	2289	2616	3270	3924	4578
				Noise Criteria	22 1/2°	—	—	18	23	28	32	38	44	49
				Throw	45°	17-27-51 14-22-41 9-14-26	24-36-59 19-29-47 12-18-30	30-45-66 24-36-53 15-23-33	36-51-72 29-41-58 18-26-36	42-55-77 34-44-62 21-28-39	48-59-83 38-47-66 24-30-42	53-66-93 42-53-74 27-33-47	59-72-101 47-58-81 3-36-51	63-77-109 50-62-87 32-39-55
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM	0°	1062	1416	1770	2124	2478	2832	3540	4248	4956
				Noise Criteria	22 1/2°	—	—	18	23	28	32	38	44	49
				Throw	45°	18-28-53 14-22-42 9-14-27	25-37-61 20-30-49 13-19-31	31-47-69 25-38-55 16-24-35	37-53-75 30-42-60 19-27-38	44-57-81 35-46-65 22-29-41	50-61-86 40-49-69 25-31-43	56-69-97 45-55-78 28-35-49	61-75-106 49-60-85 31-38-53	66-81-115 53-65-92 33-41-58

GRILLES AND REGISTERS

For performance data notes, see F77.

## PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES MODELS: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
				Total Pressure	0°	.011	.019	.030	.044	.060	.078	.122	.175	.238
					22 1/2°	.012	.022	.034	.049	.067	.087	.136	.196	.267
					45°	.019	.033	.052	.074	.101	.132	.207	.298	.406
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79		CFM		1137	1516	1895	2274	2653	3032	3790	4548	5306
				Noise Criteria		—	—	18	23	28	32	38	44	49
				Throw	0°	18-29-55	29-36-62	33-48-70	39-55-77	45-59-83	51-62-89	57-70-99	62-77-108	68-83-117
					22 1/2°	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	46-56-79	50-62-86	54-66-94
				45°	9-15-28	13-20-31	17-24-35	20-28-39	23-30-42	26-31-45	29-35-50	31-39-54	34-42-59	
36 x 18	32 x 20 40 x 16 46 x 14	4.29		CFM		1287	1716	2145	2574	3003	3432	4290	5148	6006
				Noise Criteria		—	—	19	24	29	33	39	45	50
				Throw	0°	19-31-58	28-42-68	35-52-75	2-58-83	48-63-89	55-68-95	61-75-106	68-83-117	73-89-125
					22 1/2°	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	49-60-85	54-66-94	58-71-100
				45°	10-16-29	14-21-34	18-26-38	21-29-42	24-32-45	28-34-48	31-38-53	34-42-59	37-45-63	
26 x 26	28 x 24 48 x 14	4.47		CFM		1341	1788	2235	2682	3129	3576	4470	5364	6258
				Noise Criteria		—	—	19	24	29	33	39	45	50
				Throw	0°	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	63-77-109	69-85-120	75-91-129
					22 1/2°	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	50-62-87	55-68-96	60-73-103
				45°	10-16-30	14-22-35	18-27-32	22-30-43	25-33-46	28-35-49	32-39-55	35-43-60	38-46-65	
30 x 24	32 x 22 36 x 20 40 x 18	4.77		CFM		1431	1908	2385	2862	3339	3816	4770	5724	6678
				Noise Criteria		—	—	19	24	29	33	39	45	50
				Throw	0°	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	65-79-112	71-87-123	77-94-133
					22 1/2°	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	52-63-90	57-70-98	62-75-106
				45°	10-17-31	15-22-36	18-27-40	22-31-44	26-34-47	29-36-51	33-40-56	36-44-62	39-47-67	
42 x 18	28 x 26	4.99		CFM		1497	1996	2495	2994	3493	3992	4990	5988	6986
				Noise Criteria		—	—	20	25	30	34	40	46	51
				Throw	0°	20-33-62	30-44-72	37-55-80	44-62-88	52-67-95	59-72-102	66-80-114	72-88-125	77-95-135
					22 1/2°	16-26-50	24-35-58	30-44-64	35-50-70	42-54-76	47-58-82	53-64-91	58-70-100	62-76-108
				45°	10-17-31	15-22-36	19-28-40	22-31-44	26-34-48	30-36-51	33-40-57	36-44-63	39-48-68	
28 x 28	30 x 26 36 x 22 40 x 20	5.20		CFM		1560	2080	2600	3120	3640	4160	5200	6240	7280
				Noise Criteria		—	—	20	25	30	34	40	46	51
				Throw	0°	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	67-82-116	74-90-128	79-97-137
					22 1/2°	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	54-66-93	59-72-102	63-78-110
				45°	11-17-32	15-23-37	19-28-41	23-32-45	27-35-49	30-37-52	34-41-58	37-45-64	40-49-69	
42 x 20	30 x 28	5.57		CFM		1671	2228	2785	3342	3899	4456	5570	6684	7798
				Noise Criteria		—	—	20	25	30	34	40	46	51
				Throw	0°	22-35-66	31-47-76	39-58-84	47-66-93	55-71-100	62-76-107	70-84-120	76-93-131	82-100-142
					22 1/2°	18-28-53	25-38-61	31-46-67	38-53-74	44-57-80	50-61-86	56-67-96	61-74-105	66-80-114
				45°	11-18-33	16-24-38	20-29-42	24-33-47	28-36-50	31-38-54	35-42-60	38-47-66	41-50-71	
36 x 24	40 x 22 44 x 20	5.74		CFM		1722	2296	2870	3444	4018	4592	5740	6888	8036
				Noise Criteria		—	—	20	25	30	34	40	46	51
				Throw	0°	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	72-88-124	78-96-137	85-104-148
					22 1/2°	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	58-70-99	62-77-110	68-83-118
				45°	12-18-34	16-25-39	21-30-44	25-34-48	29-37-52	32-39-56	36-44-62	39-48-69	43-52-74	
30 x 30	34 x 26 38 x 24 48 x 20	5.99		CFM		1797	2396	2995	3594	4193	4792	5990	7188	8386
				Noise Criteria		—	—	20	25	30	34	40	46	51
				Throw	0°	23-36-69	33-49-80	41-61-89	49-69-98	57-75-106	65-80-113	73-89-126	80-98-138	86-106-150
					22 1/2°	18-29-55	26-39-64	33-49-71	39-55-78	46-60-85	52-64-90	58-71-101	64-78-110	69-85-120
				45°	12-18-35	17-25-40	21-31-45	25-35-49	29-38-53	33-40-57	37-45-63	40-49-69	43-53-75	
42 x 24	36 x 28 42 x 24 46 x 22	6.72		CFM		2016	2688	3360	4032	4704	5376	6720	8064	9408
				Noise Criteria		—	—	21	26	31	35	41	47	52
				Throw	0°	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	77-93-132	84-102-144	90-111-157
					22 1/2°	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	62-74-106	67-82-115	72-89-126
				45°	12-20-36	17-26-42	22-32-47	26-36-51	30-39-56	34-42-59	39-47-66	42-51-72	45-56-79	
32 x 32	40 x 26	6.84		CFM		2052	2736	3420	4104	4788	5472	6840	8208	9576
				Noise Criteria		—	—	21	26	31	35	41	47	52
				Throw	0°	24-39-73	34-52-84	43-65-94	52-73-103	61-79-112	69-84-119	77-94-133	84-103-146	91-112-158
					22 1/2°	19-31-58	27-42-67	34-52-75	42-58-82	49-63-90	55-67-95	62-75-106	67-82-117	72-89-126
				45°	12-20-37	17-26-42	22-33-47	26-37-52	31-40-56	35-42-60	39-47-67	42-52-73	46-56-79	
36 x 30	38 x 28	7.22		CFM		2166	2888	3610	4332	5054	5776	7220	8664	10108
				Noise Criteria		—	—	21	26	31	35	41	47	52
				Throw	0°	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	80-98-139	87-108-151	94-116-164
					22 1/2°	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	64-78-111	70-86-121	75-93-131
				45°	13-20-38	18-27-44	23-34-49	27-38-54	32-41-58	36-44-62	40-49-70	44-54-76	47-58-82	
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69		CFM		2307	3076	3845	4614	5383	6152	7690	9228	10766
				Noise Criteria		—	—	22	27	32	36	42	48	53
				Throw	0°	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	82-100-142	90-109-155	97-118-167
					22 1/2°	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	66-80-114	72-87-124	78-94-134
				45°	13-22-39	19-28-45	23-45-50	28-39-55	32-42-59	37-45-64	41-50-71	45-55-78	49-59-84	

For performance data notes, see F77.

## PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES MODELS: 71DV, 71DH, 71SV, 71SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
36 x 34	38 x 32 40 x 30 48 x 26	8.20		CFM		2460	3280	4100	4920	5740	6560	8200	9840	11480
				Noise Criteria		–	15	22	27	32	36	42	48	53
				Throw	0°	26-42-79	37-57-91	47-70-102	57-79-111	65-85-121	75-91-129	84-102-144	91-111-158	98-121-171
22 1/2°	21-34-63	30-46-73	38-56-82		46-63-89	52-68-97	60-73-103	67-82-115	73-89-126	78-97-137				
45°	13-21-40	19-29-	24-35-51		29-40-56	33-43-61	38-46-65	42-51-72	46-56-79	49-61-86				
36 x 36	38 x 34 42 x 30 46 x 28	8.69		CFM		2607	3476	4345	5214	6083	6952	8690	10428	12166
				Noise Criteria		–	15	22	27	32	36	42	48	53
				Throw	0°	28-45-84	36-60-96	49-74-108	60-84-117	69-90-127	78-96-136	88-108-152	96-117-166	104-127-180
22 1/2°	22-36-67	31-48-77	39-59-86		48-67-94	55-72-102	62-77-109	70-86-122	77-94-133	83-102-144				
45°	14-23-42	20-30-48	25-37-54		30-42-59	35-45-64	39-48-68	44-54-76	48-59-83	52-64-90				
38 x 38	42 x 34	9.70		CFM		2910	3880	4850	5820	6790	7760	9700	11640	13580
				Noise Criteria		–	16	23	28	33	37	43	49	54
				Throw	0°	28-47-88	42-62-101	53-78-114	62-88-125	73-95-134	83-101-143	93-114-161	101-125-176	109-134-190
22 1/2°	22-38-70	34-50-81	42-62-91		50-70-100	58-76-107	66-81-114	74-91-129	81-100-141	87-107-152				
45°	14-24-44	21-31-51	27-39-57		31-44-63	37-48-67	42-51-72	47-57-81	51-63-88	55-67-95				
42 x 36	44 x 34 48 x 30	10.16		CFM		3048	4064	5080	6096	7112	8128	10160	12192	14224
				Noise Criteria		–	16	23	28	33	37	43	49	54
				Throw	0°	29-48-90	43-64-104	53-80-117	64-90-127	75-97-138	85-104-147	95-117-165	104-127-180	112-138-195
22 1/2°	23-38-72	34-51-83	42-64-94		51-72-102	60-78-110	68-83-118	76-94-132	83-102-144	90-110-156				
45°	15-24-45	22-32-52	27-40-59		32-45-64	38-49-69	43-52-74	48-59-83	52-64-90	56-69-98				
40 x 40	42 x 38 46 x 34 48 x 32	10.77		CFM		3231	4308	5385	6462	7539	8616	10770	12924	15078
				Noise Criteria		–	16	23	28	33	37	43	49	54
				Throw	0°	31-50-94	44-67-108	56-84-121	67-94-132	77-102-143	88-108-153	99-121-171	108-132-187	117-143-203
22 1/2°	25-40-75	35-54-86	45-67-97		54-75-106	62-82-114	70-86-122	79-97-137	86-106-150	94-114-162				
45°	16-25-47	22-34-54	28-42-61		34-47-66	39-51-72	44-54-77	48-59-86	54-66-94	59-72-102				
42 x 42	44 x 40 46 x 38 48 x 36	11.89		CFM		3567	4756	5945	7134	8323	9512	11890	14268	16646
				Noise Criteria		–	17	24	29	34	38	44	50	55
				Throw	0°	32-52-97	46-69-112	58-86-125	69-97-138	81-105-149	92-112-159	102-125-178	112-138-195	122-145-210
22 1/2°	26-42-78	37-55-90	46-69-100		55-78-110	65-84-119	74-90-127	82-100-142	90-110-156	98-119-168				
45°	16-26-49	23-35-56	29-43-63		35-49-69	41-53-75	46-56-80	51-63-89	56-69-98	61-75-105				
44 x 44	46 x 42	13.07		CFM		3921	5228	6535	7842	9149	10456	13070	15684	18298
				Noise Criteria		–	17	24	29	34	38	44	50	55
				Throw	0°	34-55-104	49-74-120	61-92-133	74-104-146	86-112-158	97-120-168	109-133-189	120-146-207	129-158-223
22 1/2°	27-44-83	39-59-96	49-74-106		59-83-117	69-90-126	78-96-134	87-106-151	96-117-166	103-126-178				
45°	17-28-52	25-37-60	31-46-67		37-52-73	43-56-79	49-60-84	55-67-95	60-73-104	65-79-112				
46 x 46		14.30		CFM		4290	5720	7150	8580	10010	11440	14300	17160	20020
				Noise Criteria		–	17	24	29	34	38	44	50	55
				Throw	0°	35-57-107	51-76-124	63-95-138	76-107-151	89-116-163	101-124-174	113-138-195	124-151-214	134-163-231
22 1/2°	28-46-86	41-61-99	50-76-110		61-86-121	71-93-130	81-99-139	90-110-156	99-121-171	107-130-185				
45°	18-29-54	26-38-62	32-48-69		38-54-76	45-58-82	51-62-87	57-69-98	62-76-107	62-82-116				
48 x 48		15.59		CFM		4677	6236	7795	9354	10913	12472	15590	18708	21826
				Noise Criteria		–	18	25	30	35	39	45	51	56
				Throw	0°	37-60-113	53-80-131	67-100-146	80-113-159	94-122-173	106-131-185	119-146-206	131-159-226	140-173-244
22 1/2°	30-48-90	42-64-105	54-80-117		64-90-127	75-98-138	85-105-148	95-117-165	105-127-181	112-138-195				
45°	19-30-57	27-40-66	34-50-73		40-57-80	47-61-87	53-66-93	60-73-103	62-80-113	70-87-122				

### Performance Notes:

- All pressures are in inches w.g..
- Core velocity is in feet per minute.
- Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.
- Performance data is based on double deflection grille with opposed blade damper (register).
- 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.
- Additional performance notes and correction factors for various models and settings may be found on page F73.
- Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a NC level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 7100

### ALUMINUM AIRFOIL BLADE SUPPLY GRILLES AND REGISTERS

EXAMPLE: 71DV - O - 24 x 12 - S - AW - DMI - A - —

- |   |   |   |
|---|---|---|
| <p>1. <b>Models</b><br/> <b>Double Deflection:</b><br/>                 71DV Vertical Front Airfoil Blades<br/>                 71DH Horizontal Front Airfoil Blades<br/> <b>Single Deflection:</b><br/>                 71SV Vertical Airfoil Blades<br/>                 71SH Horizontal Airfoil Blades</p> <p>2. <b>Damper (OBD)</b><br/>                 (model suffix)<br/>                 O Steel<br/>                 OA Aluminum<br/>                 — None</p> <p>3. <b>Nominal Width x Height</b><br/>                 inches (mm)</p> <p>4. <b>Frame/Border Type</b><br/> <b>Surface Mount:</b><br/>                 S Surface Mount<br/>                 Border 1 1/4" (32) (default)<br/>                 NF Narrow Frame<br/>                 Border 1" (25)</p> <p>5. <b>Finish</b><br/>                 AW Appliance White (default)<br/>                 AL Aluminum</p> | <p>BK Black<br/>                 BW British White<br/>                 LBP Light Bronze Paint<br/>                 MBP Medium Bronze Paint<br/>                 DBP Dark Bronze Paint<br/>                 MI Mill<br/>                 PC Prime Coat<br/>                 PPA Paint Prepared<br/>                 SA Satin Anodized (clear)<br/>                 SP Special Custom Color</p> <p>6. <b>Opposed Blade Damper Finish</b><br/>                 DMI Mill (default)<br/>                 DBK Painted Black</p> <p>7. <b>Fastening</b><br/>                 A Screw Holes (default)<br/>                 C Concealed Mounting Straps<br/>                 D Concealed Screw Holes in Neck<br/>                 N None</p> <p><b>OPTIONS &amp; ACCESSORIES:</b><br/>                 — None (default)</p> <p>8. <b>Insect Screen</b><br/>                 IS Insect Screen</p> | <p>9. <b>Plaster Sub-Frame</b><br/>                 PF Plaster Sub-Frame</p> <p>10. <b>Gaskets</b><br/>                 GK Foam Gasket</p> <p>11. <b>Earthquake Tabs</b><br/>                 EQT Earthquake Tabs</p> <p><b>Notes:</b><br/>                 1. For a standard grille with no special requirements, specification is only required as far as the damper selection.<br/>                 The "default" will automatically select "standard". For example, an aluminum double deflection register, front airfoil blades vertical and steel damper, is <b>Model 71DV-O</b>. Unit will be supplied with screw holes and AW Appliance White finish.<br/>                 2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.<br/>                 3. The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).</p> |
|---|---|---|

### MODEL SERIES: 7100

### ALUMINUM AIRFOIL BLADE SUPPLY GRILLES AND REGISTERS

#### SUGGESTED SPECIFICATION:

#### 71DV, 71DH Double Deflection

Furnish and install **Nailor Model** (select one) **71DV** or **71DH Airfoil Blade Double Deflection Supply Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have a double set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### 71SV, 71SH Single Deflection

Furnish and install **Nailor Model** (select one) **71SV** or **71SH Airfoil Blade Single Deflection Supply Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## AIRFOIL BLADE RETURN GRILLES AND REGISTERS

- FIXED 45° OR 0° BLADE DEFLECTION
- EXTRUDED ALUMINUM
- PREMIUM QUALITY
- PREMIUM PERFORMANCE

### Models:

7145H, 7145V, 71FH and 71FV

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 7145H

Models 7145H and 71FH Return Grilles and Registers have fixed horizontal blades (parallel to width/first specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection.

Models 7145V and 71FV Return Grilles and Registers have fixed vertical blades (parallel to height/second specified dim.) spaced on 3/4" (19) centers with 45° or 0° straight face deflection. Their appearance complements the supply grilles and registers in the 7100 Series.

The streamlined airfoil shaped blades and open spacing maintain a minimum effective free area capacity of 55% for 45° and 75% for 0°, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth shapes do not accumulate lint and plug up. Deflected blade grilles installed in a low or high side wall location are vision-proof with the grille blade deflection facing away from the line of sight.

**Frame/Border Type S Surface Mount** – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

**Frame/Border Type L Lay-in T-Bar** – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

**Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame** – This style has a narrow corrosion-resistant steel frame that surrounds the core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. This frame also permits the attachment of an optional opposed blade damper.

**Frame/Border Type F Narrow Regressed T-Bar** – This style has been specially designed for return air applications to integrate with and complement "Fineline®" type suspended ceiling systems. It is suited for non-ducted plenum return air applications. The corrosion-resistant steel frame includes a support rail on four sides, which allows for the full area of the ceiling module to be utilized.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

### STANDARD FEATURES:

• Frame/border Type S has 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.

• Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

### CONSTRUCTION MATERIAL:

• Aluminum construction – rigid, heavy gauge extruded frames with reinforced mitered corners.

• Aluminum blades – streamlined airfoil shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

• Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

### FINISH OPTIONS:

• AW Appliance White finish is standard. Other finishes are available.

### OPTIONS AND ACCESSORIES:

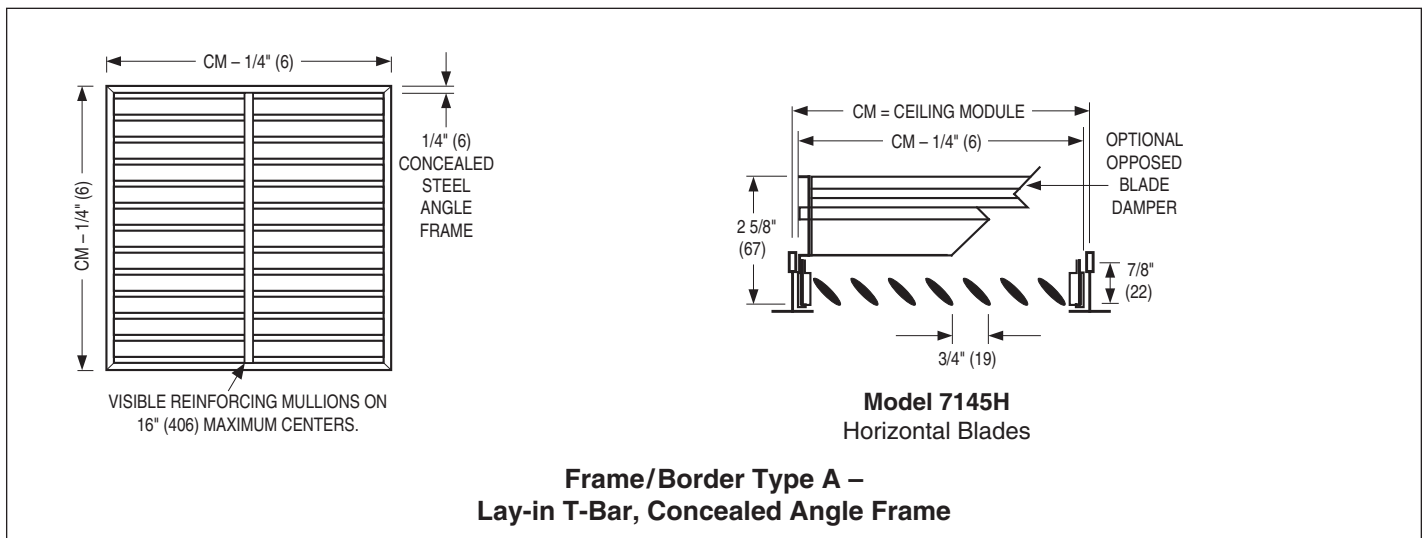
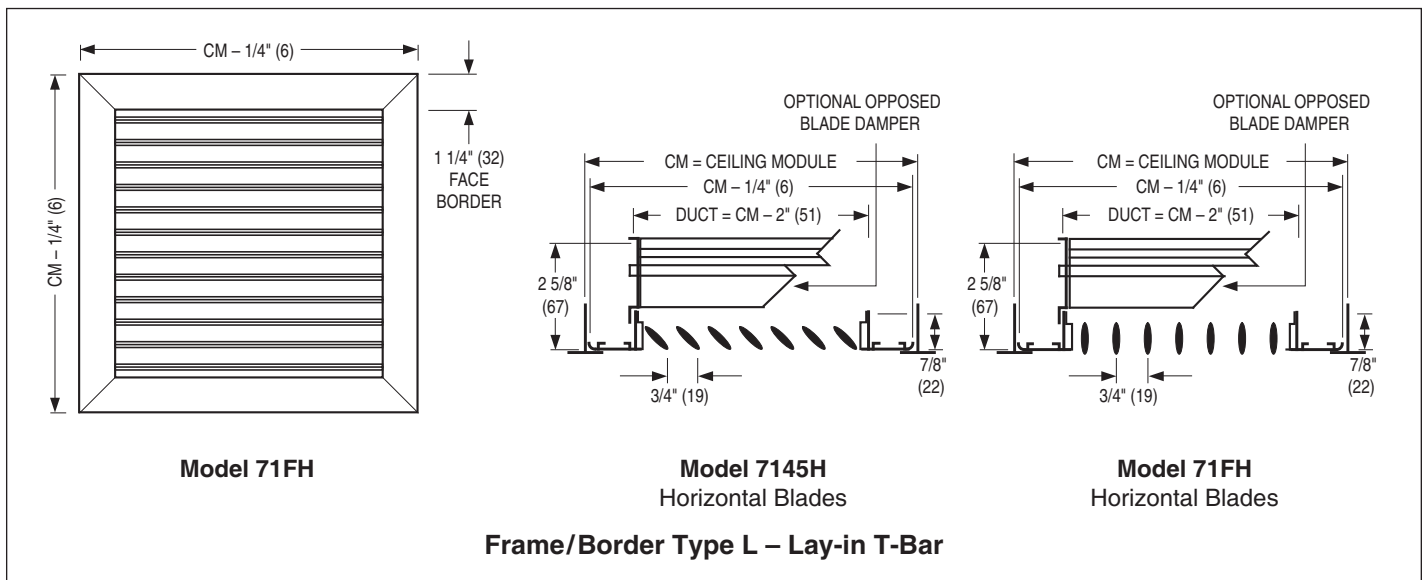
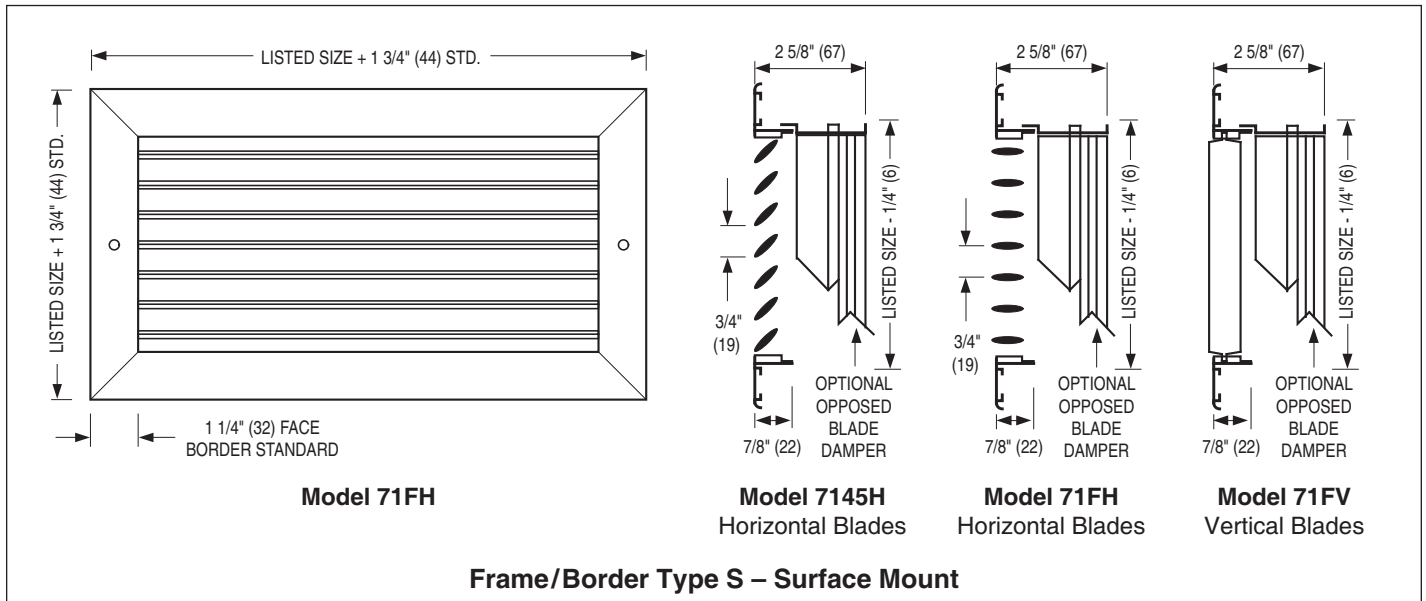
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



## DIMENSIONAL DATA:

### 7100 SERIES RETURN 3/4" (19) BLADE SPACING





## PERFORMANCE DATA:

### FIXED BLADE RETURN GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

#### MODELS: 7145H, 7145V

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .003	.002 .011	.006 .025	.010 .045	.016 .070	.022 .101	.031 .138	.040 .180	.050 .228	.062 .281
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 -	100 -	120 17	140 22	160 26	180 30	200 34
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 -	140 -	168 18	196 23	224 27	252 31	280 35
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 -	175 -	210 19	245 24	280 28	315 32	350 36
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 -	190 15	228 20	266 25	304 29	342 33	380 37
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 -	210 16	252 21	294 25	336 29	378 33	420 37
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 -	290 17	348 22	406 26	464 31	522 35	580 39
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 -	305 17	366 22	427 27	488 32	549 35	610 39
18 x 6	14 x 8 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 -	325 18	390 23	455 28	520 32	585 36	650 39
12 x 10	16 x 8 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 -	370 18	444 23	518 28	592 33	666 37	740 40
12 x 12	14 x 10 18 x 8	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 -	450 19	540 24	630 29	720 34	810 37	900 40
14 x 14	16 x 12 20 x 10	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 -	496 -	620 19	744 24	868 29	992 34	1116 38	1240 41
18 x 12	16 x 14 20 x 10	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 -	548 15	685 20	822 25	959 30	1096 35	1233 38	1370 41
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 -	608 15	760 20	912 25	1064 30	1216 36	1368 39	1520 42
16 x 16	18 x 14 22 x 12	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 -	656 16	820 21	984 26	1148 31	1312 36	1476 39	1640 42
24 x 12	18 x 16 20 x 14	1.85	1.78	CFM Noise Criteria	185 -	370 -	555 -	740 16	925 21	1110 26	1295 31	1480 36	1665 39	1850 43
18 x 18	20 x 16 24 x 14	2.10	2.01	CFM Noise Criteria	210 -	420 -	630 -	840 16	1050 21	1260 27	1470 32	1680 37	1890 40	2100 43
30 x 12	20 x 18 22 x 16	2.32	2.23	CFM Noise Criteria	232 -	464 -	696 -	928 17	1160 22	1392 27	1624 32	1856 37	2088 40	2320 44
20 x 20	24 x 18 26 x 16	2.61	2.48	CFM Noise Criteria	261 -	522 -	783 -	1044 17	1305 22	1566 28	1827 33	2088 38	2349 41	2610 44
22 x 22	24 x 20 26 x 18	3.17	3.00	CFM Noise Criteria	317 -	634 -	951 -	1268 18	1585 23	1902 29	2219 33	2536 38	2853 41	3170 45
30 x 18	24 x 22 34 x 16	3.54	3.34	CFM Noise Criteria	354 -	708 -	1062 -	1416 18	1770 23	2124 29	2478 34	2832 39	3186 42	3540 46
24 x 24	26 x 22 28 x 20	3.79	3.56	CFM Noise Criteria	379 -	758 -	1137 -	1516 18	1895 23	2274 29	2653 34	3032 39	3411 42	3790 46
36 x 18	32 x 20 40 x 16	4.27	4.01	CFM Noise Criteria	427 -	854 -	1281 -	1708 19	2135 24	2562 30	2989 35	3416 40	3843 43	4270 47
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM Noise Criteria	447 -	894 -	1341 -	1788 19	2235 24	2682 30	3129 35	3576 40	4023 43	4470 47
30 x 24	28 x 26 32 x 22	4.77	4.46	CFM Noise Criteria	477 -	954 -	1431 -	1908 20	2385 25	2862 31	3339 36	3816 40	4293 44	4770 48
28 x 28	30 x 26 36 x 22	5.20	4.85	CFM Noise Criteria	520 -	1040 -	1560 -	2080 20	2600 25	3120 31	3640 36	4160 41	4680 44	5200 48
36 x 24	30 x 28 40 x 22	5.74	5.35	CFM Noise Criteria	574 -	1148 -	1722 -	2296 20	2870 26	3444 32	4018 36	4592 41	5166 45	5740 49
30 x 30	34 x 26 38 x 24	5.99	5.57	CFM Noise Criteria	599 -	1198 -	1797 -	2396 20	2995 26	3594 32	4193 37	4792 41	5391 45	5990 49

GRILLES AND REGISTERS



For performance data notes, see F82.

## PERFORMANCE DATA:

### FIXED BLADE RETURN GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

#### MODELS: 7145H, 7145V

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .011	300 .006 .025	400 .010 .045	500 .016 .070	600 .022 .101	700 .031 .138	800 .040 .180	900 .050 .228	1000 .062 .281
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM Noise Criteria	684 —	1368 —	2052 —	2736 21	3420 27	4104 33	4788 37	5472 42	6156 46	6840 50
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM Noise Criteria	769 —	1538 —	2307 15	3076 21	3845 27	4614 33	5383 38	6152 42	6921 46	7690 50
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM Noise Criteria	869 —	1738 —	2607 15	3476 22	4345 27	5214 34	6083 39	6952 43	7821 47	8690 51
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM Noise Criteria	970 —	1940 —	2910 16	3880 22	4850 28	5820 34	6790 39	7760 43	8730 47	9700 51
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM Noise Criteria	1077 —	2154 —	3231 16	4308 22	5385 28	6462 34	7539 40	8616 43	9693 48	10770 52
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM Noise Criteria	1189 —	2378 —	3567 17	4756 23	5945 29	7134 35	8323 40	9512 44	10701 48	11890 52
44 x 44	46 x 42	13.07	11.98	CFM Noise Criteria	1307 —	2614 —	3921 17	5228 23	6535 29	7842 35	9149 40	10456 44	11763 48	13070 52
46 x 46		14.30	13.10	CFM Noise Criteria	1430 —	2860 —	4290 18	5720 24	7150 30	8580 36	10010 41	11440 45	12870 49	14300 53
48 x 48		15.59	14.26	CFM Noise Criteria	1559 —	3118 —	4677 18	6236 24	7795 30	9354 36	10913 41	12472 45	14031 49	15590 53

#### Performance Notes:

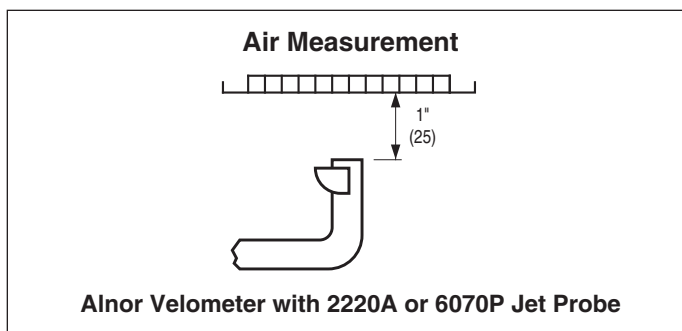
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

**Neg. Static Pressure** Listed Value x 0.91.

**Noise Criteria** Listed value – 4.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (—) in space denotes a Noise Criteria level of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



#### Airflow Measurements:

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (CFM) = Average velocity (V<sub>k</sub>) x Ak.

## PERFORMANCE DATA:

### FIXED BLADE RETURN GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

#### MODELS: 71FH, 71FV

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .002	.002 .007	.006 .017	.010 .030	.016 .047	.022 .067	.031 .092	.040 .120	.050 .152	.062 .187
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 -	100 -	120 17	140 22	160 26	180 30	200 34
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 -	140 -	168 18	196 23	224 27	252 31	280 35
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 -	175 -	210 19	245 24	280 28	315 32	350 36
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 -	190 15	228 20	266 25	304 29	342 33	380 37
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 -	210 -	252 17	294 20	336 23	378 27	420 31
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 -	290 -	348 17	406 20	464 24	522 28	580 32
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 -	305 -	366 17	427 20	488 25	549 28	610 33
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 -	325 -	390 18	455 21	520 25	585 29	650 33
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 -	370 -	444 19	518 22	592 26	666 30	740 33
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 -	450 15	540 19	630 22	720 27	810 30	900 33
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 -	496 -	620 15	744 20	868 23	992 27	1116 31	1240 34
18 x 12	16 x 14 28 x 8 20 x 10 38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 -	548 -	685 16	822 21	959 24	1096 29	1233 32	1370 35
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 -	608 -	760 16	912 21	1064 25	1216 30	1368 33	1520 36
16 x 16	18 x 14 30 x 10 22 x 12 36 x 8	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 -	656 -	820 17	984 21	1148 25	1312 30	1476 33	1640 36
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM Noise Criteria	185 -	370 -	555 -	740 -	925 17	1110 22	1295 25	1480 30	1665 33	1850 37
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM Noise Criteria	210 -	420 -	630 -	840 -	1050 17	1260 22	1470 26	1680 31	1890 34	2100 37
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM Noise Criteria	232 -	464 -	696 -	928 -	1160 17	1392 22	1624 26	1856 31	2088 34	2320 38
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM Noise Criteria	261 -	522 -	783 -	1044 -	1305 17	1566 22	1827 26	2088 31	2349 34	2610 38
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM Noise Criteria	317 -	634 -	951 -	1268 -	1585 18	1902 23	2219 27	2536 31	2853 34	3170 38
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 -	708 -	1062 -	1416 -	1770 18	2124 23	2478 27	2832 32	3186 35	3540 39
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM Noise Criteria	379 -	758 -	1137 -	1516 -	1895 -	2274 -	2653 -	3032 -	3411 -	3790 -
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 -	854 -	1281 -	1708 15	2135 20	2562 24	2989 28	3416 33	3843 36	4270 40
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM Noise Criteria	447 -	864 -	1341 -	1788 15	2235 20	2682 24	3129 28	3576 33	4023 36	4470 40
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM Noise Criteria	477 -	954 -	1431 -	1908 16	2385 21	2862 25	3339 29	3816 33	4293 37	4770 41
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 -	1040 -	1560 -	2080 16	2600 21	3120 25	3640 29	4160 34	4680 37	5200 41
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 -	1148 -	1722 -	2296 16	2870 21	3444 25	4018 29	4592 34	5166 38	5740 42
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 -	1198 -	1797 -	2396 16	2995 21	3594 26	4193 30	4792 34	5391 38	5990 42

For performance data notes, see F84.

## PERFORMANCE DATA:

### FIXED BLADE RETURN GRILLES AND REGISTERS • AIRFOIL BLADE 7100 SERIES

#### MODELS: 71FH, 71FV

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .002	.002 .007	.006 .017	.010 .030	.016 .047	.022 .067	.031 .092	.040 .120	.050 .152	.062 .187
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				Noise Criteria	-	-	-	16	22	26	30	35	39	43
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria	-	-	-	16	22	27	31	35	39	43
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				Noise Criteria	-	-	-	17	22	27	32	36	40	44
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				Noise Criteria	-	-	-	17	23	28	32	36	40	44
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				Noise Criteria	-	-	-	18	24	28	33	36	41	45
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	-	-	-	18	24	29	33	37	41	45
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				Noise Criteria	-	-	-	18	24	29	33	37	41	45
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				Noise Criteria	-	-	-	19	25	30	34	38	42	46
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				Noise Criteria	-	-	-	19	25	30	34	38	42	46

#### Performance Notes:

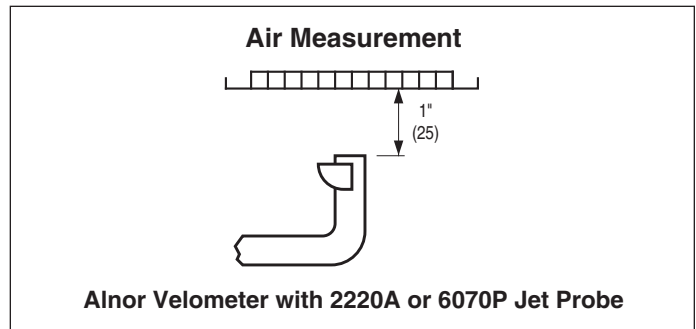
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

**Neg. Static Pressure** Listed Value x 0.91.

**Noise Criteria** Listed value - 4.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a Noise Criteria level of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 2006.



#### Airflow Measurements:

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (CFM) = Average velocity (V<sub>k</sub>) x Ak.

## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 7100

### ALUMINUM AIRFOIL BLADE RETURN GRILLES AND REGISTERS

EXAMPLE: 7145H - O - 24 x 12 - S - — - AW - DMI - A - —

- |  |  |  |
|--|--|--|
| <p><b>1. Models</b></p> <p><b>Horizontal/Long Dimension Blades:</b></p> <p>71FH Fixed, 0° Deflection,<br/>3/4" (19) Spacing</p> <p>7145H Fixed, 45° Deflection,<br/>3/4" (19) Spacing</p> <p><b>Vertical/Short Dimension Blades:</b></p> <p>71FV Fixed, 0° Deflection,<br/>3/4" (19) Spacing</p> <p>7145V Fixed, 45° Deflection,<br/>3/4" (19) Spacing</p> | <p>FPA Aluminum Finline® Panel</p> <p>SPS Steel Spline Panel</p> <p>SPA Aluminum Spline Panel</p> <p>MPS Steel Metal Pan Panel</p> <p>MPA Aluminum Metal Pan Panel</p> <p>TPS Steel Tegular Panel</p> <p>TPA Aluminum Tegular Pan Panel</p> <p><b>5. Ceiling Module Size</b></p> <p><b>Panel Size</b><br/>(Use only for panel mounting, frame/<br/>border Types PL, SP, MP, FP and TP)</p> <p>— None (default)</p> <p><b>Imperial (inches)</b><br/>12 x 12, 20 x 20, 24 x 12, 24 x 24,<br/>36 x 12, 36 x 24, 48 x 12, 48 x 24</p> <p><b>Metric (mm)</b><br/>300 x 300, 500 x 500, 600 x 300,<br/>600 x 600, 900 x 300, 900 x 600,<br/>1200 x 300, 1200 x 600</p> <p><b>6. Finish</b></p> <p>AW Appliance White (default)</p> <p>AL Aluminum</p> <p>BK Black</p> <p>BW British White</p> <p>LBP Light Bronze Paint</p> <p>MBP Medium Bronze Paint</p> <p>DBP Dark Bronze Paint</p> <p>MI Mill</p> <p>PC Prime Coat</p> <p>PPA Paint Prepared Aluminum</p> <p>SA Satin Anodized (clear)</p> <p>SP Special Custom Color</p> | <p><b>8. Fastening</b><br/>(only for frame/border Types S, NF)</p> <p>A Screw Holes (default)</p> <p>C Concealed Mounting Straps</p> <p>D Concealed Screw Holes in Neck***</p> <p>N None</p> <p><b>OPTIONS &amp; ACCESSORIES:</b></p> <p>— None (default)</p> <p><b>9. Insect Screen</b></p> <p>IS Insect Screen</p> <p><b>10. Plaster Sub-Frame</b></p> <p>PF Plaster Sub-Frame</p> <p><b>11. Gaskets</b></p> <p>GK Foam Gasket</p> <p><b>12. Earthquake Tabs</b></p> <p>EQT Earthquake Tabs</p> <p><b>Notes:</b></p> <p>1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically select "standard". For example, an aluminum register, fixed 45° airfoil blades vertical and steel damper, is <b>Model 7145V-O</b>. Unit will be supplied with screw holes and AW Appliance White finish.</p> <p>2. The horizontal dimension must always be specified first; for example 24" x 12" (610 x 305) or 12" x 24" (305 x 610).</p> <p>3. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.</p> <p>4. * For Type L Lay-in, grille neck size is ceiling module size – 2 (51).</p> <p>    ** For Panel mounting, maximum grille neck size is ceiling module size – 3 (76).</p> <p>    *** Only available on Fixed 0° deflection.</p> |
|--|--|--|

### MODEL SERIES: 7100

### ALUMINUM AIRFOIL BLADE RETURN GRILLES AND REGISTERS

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **7145H, 7145V, 71FH or 71FV Airfoil Blade Airfoil Blade Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have extruded aluminum fixed blades that are airfoil shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



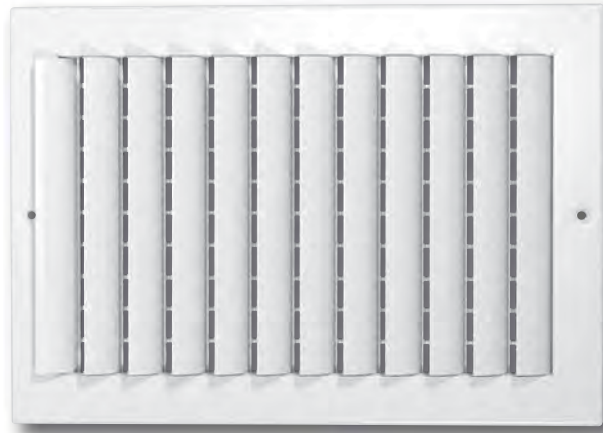
## ALUMINUM CURVED BLADE GRILLES AND REGISTERS

### • SUPPLY

#### Models:

#### 51C and 51CD with One and Two-way Discharge Pattern

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51CD (Pattern 1B)

Models 51C and 51CD are supply grilles and registers which incorporate individually adjustable curved blades. The blades can be positioned to provide one-way, two-way and two-way corner blow discharge air patterns. They are commonly used in ceiling and/or side wall locations and are recommended for use in both heating and cooling applications.

Both one-way and two-way pattern grilles can be adjusted to full or partial down-blow position. The curved streamlined blades are adjusted to a uniform partially closed position to deflect the air path horizontally while retaining an effective area capacity of 35% of the neck area. In the full down-blow position, grille effective area is increased to 75%.

#### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.

- Adjustable pattern – grille blades easily adjustable to provide horizontal one-way or two-way air path from a ceiling location. Adjustable to a full down-blow position as required. Curved blades can be fixed to provide a non-adjustable horizontal air path if specified.

- Available from 6" x 4" to 36" x 36" (152 x 102 to 914 x 914).

#### CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Heavy gauge extruded aluminum margins, mechanically interlocked with reinforced mitered corners.
- Extruded blades – curved streamlined aluminum blades on 1" (25) centers. Blades formed with tenons to fit snugly into the side margin, friction loaded to firmly hold deflection setting.

- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.

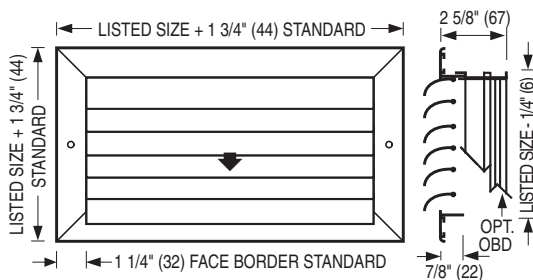
#### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

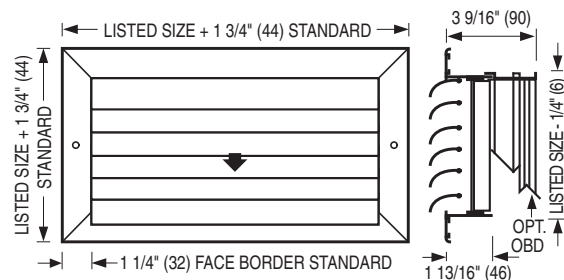
#### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

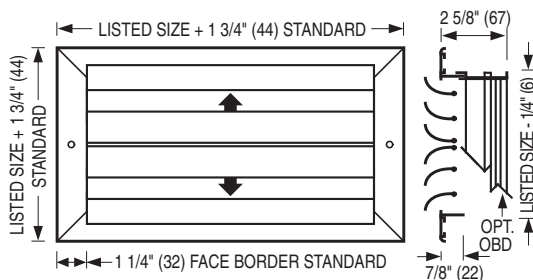
For additional options and accessories, see page F191.



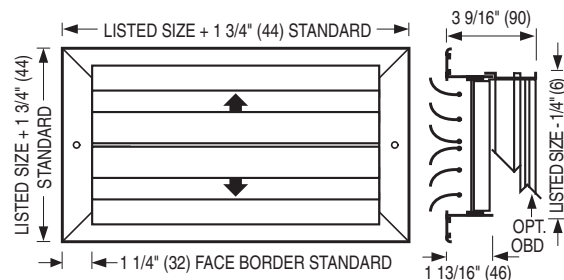
Model 51C One-way Blow (1A)



Model 51CD One-way Blow (1A) with Rear Directional Vanes



Model 51C Two-way Blow (2A)



Model 51CD Two-way Blow (2A) with Rear Directional Vanes



## ALUMINUM CURVED BLADE GRILLES AND REGISTERS

### • SUPPLY

#### Models:

#### 51C with Three and Four-way Discharge Pattern

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51C (Pattern 3A)

Model 51C Pattern 3A, 3B or 3C Supply Ceiling Grilles and Registers have individually adjustable curved blades arranged to provide a three-way ceiling air pattern. Model 51C Pattern 4A, 4B or 4C Supply Ceiling Grilles and Registers have individually adjustable curved blades arranged to provide a four-way ceiling air pattern. They are recommended for applications in ceiling locations for heating and cooling systems.

Both three-way and four-way pattern grilles can be adjusted to full or partial down-blow position. The curved streamlined blades are adjusted to a uniform partially closed position to deflect the air path horizontally while retaining an effective area capacity of 35% of the neck area. In the full down-blow position, grille effective area is increased to 75%.

#### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.
- NF Narrow Frame with 1" (25) face border optional. Concealed mounting is optional.
- Adjustable pattern – grille blades easily adjustable to provide horizontal three-way or four-way air path from a ceiling location. Adjustable to a full down-blow position as required. Curved blades can be fixed to provide a non-adjustable horizontal air path if specified.

- Available from 6" x 4" to 36" x 36" (152 x 102 to 914 x 914).

#### CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Heavy gauge extruded aluminum margins, mechanically interlocked with reinforced mitered corners.
- Extruded blades – curved streamlined aluminum blades on 1" (25) centers. Blades formed with tenons to fit snugly into the side margin, friction loaded to firmly hold deflection setting.

- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.

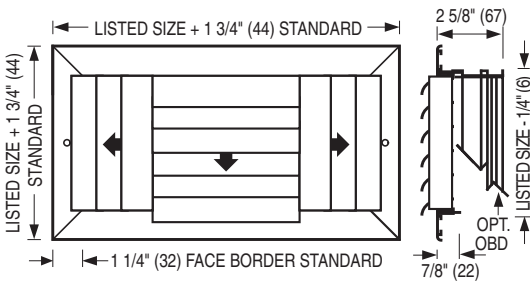
#### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

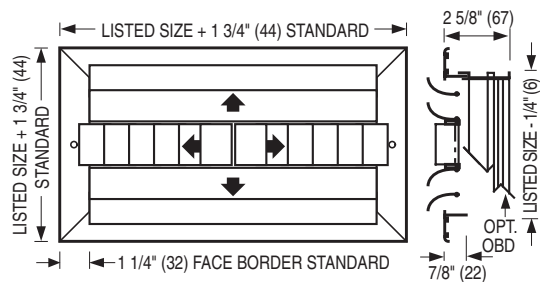
#### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

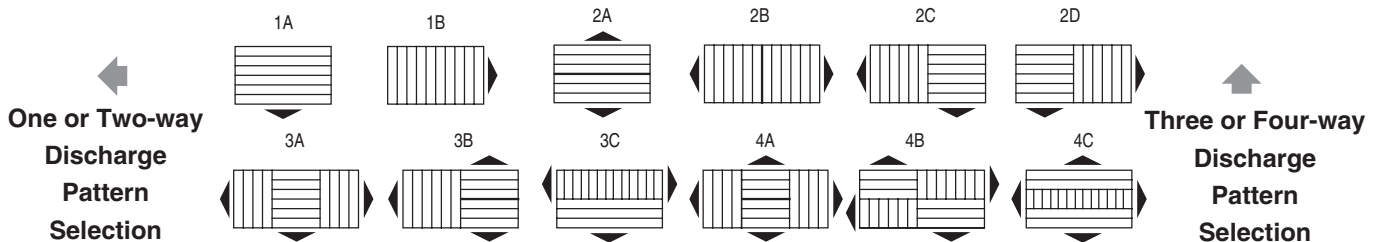
For additional options and accessories, see page F191.



Model 51C Three-way Blow (3A)



Model 51C Four-way Blow (4A)



## STEEL CURVED BLADE GRILLES AND REGISTERS

### • SUPPLY

#### Models:

61C and 61CD with One and Two-way Discharge Pattern

- Suffix '-O' adds a steel opposed blade damper



Model 61CD (Pattern 2A)

Models 61C and 61CD are supply grilles and registers which incorporate individually adjustable curved blades. The blades can be positioned to provide one-way, two-way and two-way corner blow discharge air patterns. They are commonly used in ceiling and/or side wall locations and are recommended for use in both heating and cooling applications.

Both one-way and two-way pattern grilles can be adjusted to full or partial down-blow position. The curved streamlined blades are adjusted to a uniform partially closed position to deflect the air path horizontally while retaining an effective area capacity of 35% of the neck area. In the full down-blow position, grille effective area is increased to 75%.

#### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Adjustable pattern – grille blades easily adjustable to provide horizontal one-way or two-way air path from a ceiling location. Adjustable to a full down-blow position as required. Curved blades can be fixed to provide a non-adjustable horizontal air path if specified.
- Available from 6" x 4" to 36" x 36" (152 x 102 to 914 x 914).

#### CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant steel construction.
- Heavy gauge, roll-formed steel margins, mechanically interlocked with reinforced mitered corners.
- Extruded blades – curved streamlined aluminum blades on 1" (25) centers. Blades formed with tenons to fit snugly into the side margin, friction loaded to firmly hold deflection setting.
- Integral dampers - roll-formed steel blades. Opposed blade design with a screwdriver slot operator.

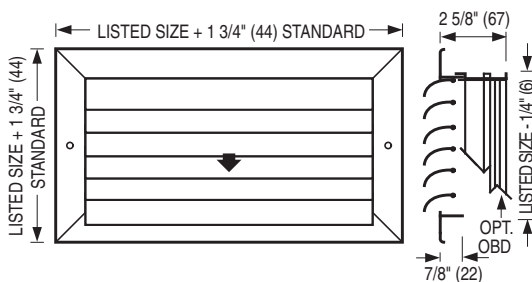
#### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

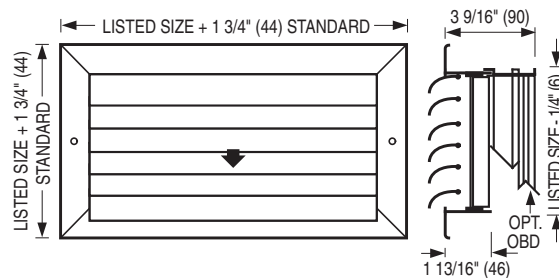
#### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

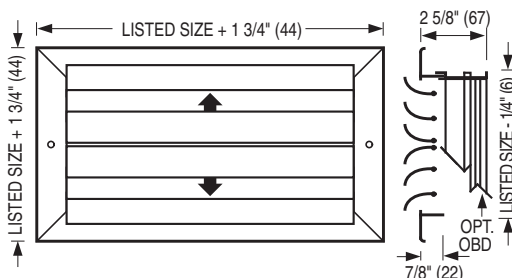
For additional options and accessories, see page F191.



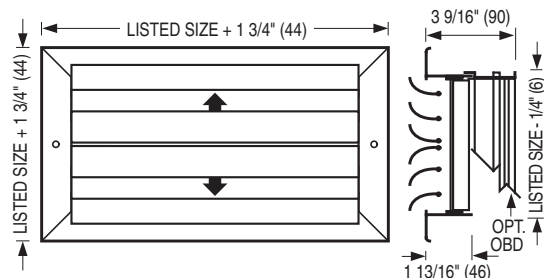
Model 61C One-way Blow (1A)



Model 61CD One-way Blow (1A) with Rear Directional Vanes



Model 61C Two-way Blow (2A)



Model 61CD Two-way Blow (2A) with Rear Directional Vanes

## STEEL CURVED BLADE GRILLES AND REGISTERS

### • SUPPLY

#### Models:

#### 61C with Three and Four-way Discharge Pattern

- Suffix '-O' adds a steel opposed blade damper



Model 61C (Pattern 4A)

Model 61C Patterns 3A, 3B or 3C Supply Ceiling Grilles and Registers have individually adjustable curved blades arranged to provide a three-way ceiling air pattern. Model 61C Patterns 4A, 4B or 4C Supply Ceiling Grilles and Registers have individually adjustable curved blades arranged to provide a four-way ceiling air pattern. They are recommended for applications in ceiling locations for heating and cooling systems.

Both three-way and four-way pattern grilles can be adjusted to full or partial down-blow position. The curved streamlined blades are adjusted to a uniform partially closed position to deflect the air path horizontally while retaining an effective area capacity of 35% of the neck area. In the full down-blow position, grille effective area is increased to 75%.

#### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Adjustable pattern – grille blades easily adjustable to provide horizontal three-way or four-way air path from a ceiling location. Adjustable to a full down-blow position as required. Curved blades can be fixed to provide a non-adjustable horizontal air path if specified.
- Available from 6" x 4" to 36" x 36" (152 x 102 to 914 x 914).

#### CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant steel construction.
- Heavy gauge roll-formed steel margins, mechanically interlocked with reinforced mitered corners.
- Extruded blades – curved streamlined aluminum blades on 1" (25) centers. Blades formed with tenons to fit snugly into the side margin, friction loaded to firmly hold deflection setting.
- Integral dampers - roll-formed steel blades. Opposed blade design with a screwdriver slot operator.

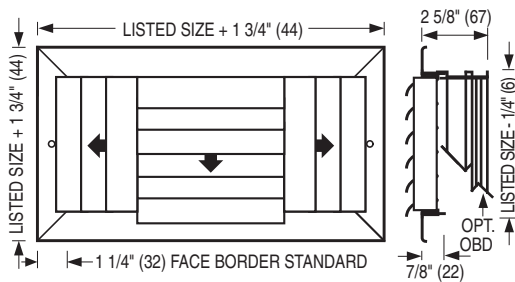
#### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

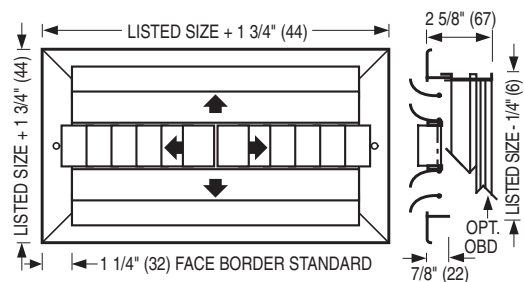
#### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

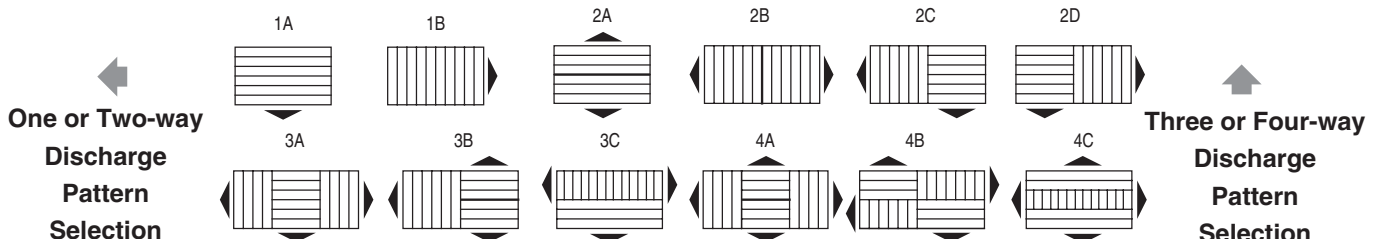
For additional options and accessories, see page F191.



Model 61C Three-way Blow (3A)



Model 61C Four-way Blow (4A)



## PERFORMANCE DATA:

### CURVED BLADE • SUPPLY GRILLES AND REGISTERS • 51C AND 61C SERIES

#### MODELS: 51C, 51CD, 61C, 61CD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM										
		100	200	300	400	500	600	700	800	900	1000	
.12	6 x 4	Total Pressure	.003	.015	.032	.058	.094	.136	.182	.234	.302	.369
		CFM	10	25	35	50	60	70	85	95	110	120
		Noise Criteria	-	-	-	-	20	23	27	30	33	36
		Throw	4-Way 3-Way 2-Way 1-Way				5-7-11 5-7-12 5-8-13 7-10-16	5-8-13 9-6-14 7-10-16 8-12-18	7-10-16 7-11-16 8-12-18 10-14-22	8-12-18 8-12-19 9-14-21 11-16-26	9-13-20 10-14-22 10-16-24 12-18-29	10-15-23 10-16-24 12-17-27 14-20-33
.16	8 x 4	Total Pressure	-	-	-	15	20	25	29	31	34	37
		CFM	15	30	50	65	80	95	110	130	145	160
		Noise Criteria	-	-	-	15	20	25	29	31	34	37
		Throw	4-Way 3-Way 2-Way 1-Way		4-6-9 4-6-10 5-7-11 5-8-13	5-7-12 5-8-13 6-9-14 7-11-16	6-9-14 6-9-15 7-11-16 9-13-20	7-11-16 8-12-18 9-13-20 10-16-24	8-12-19 9-14-21 10-15-23 12-17-28	9-14-21 10-15-23 11-16-26 13-19-31	10-16-24 11-16-26 12-18-29 15-21-35	12-17-27 12-18-29 14-20-32 16-24-39
.20	10 x 4 6 x 6	Total Pressure	-	-	-	15	21	26	29	32	35	38
		CFM	20	40	60	80	100	120	140	160	180	200
		Noise Criteria	-	-	-	15	21	26	29	32	35	38
		Throw	4-Way 3-Way 2-Way 1-Way		4-6-9 4-6-10 5-7-11 6-9-14	5-8-13 6-9-14 5-9-15 8-11-17	6-9-15 7-10-16 8-11-17 9-14-21	8-11-17 8-12-19 9-14-21 11-16-25	9-13-20 10-14-22 9-14-21 12-18-29	10-15-23 11-16-25 10-16-24 14-20-33	11-16-26 12-17-28 13-19-31 16-23-37	12-17-28 13-19-31 15-21-39 17-25-41
.26	12 x 4 8 x 6	Total Pressure	-	-	-	16	22	27	30	33	36	39
		CFM	25	50	80	105	130	155	180	210	235	260
		Noise Criteria	-	-	-	16	22	27	30	33	36	39
		Throw	4-Way 3-Way 2-Way 1-Way	3-4-7 3-4-7 3-5-8 4-6-10	4-6-10 5-7-11 5-7-12 6-9-15	6-9-14 6-9-15 7-10-16 8-12-18	7-10-16 8-11-17 8-12-19 10-15-23	8-12-19 9-13-20 10-15-23 12-17-27	10-14-22 10-15-23 11-16-26 13-19-31	11-16-25 11-16-26 13-18-30 15-22-36	12-17-29 13-18-30 14-20-33 16-25-40	13-19-31 14-20-33 16-23-37 17-27-44
.30	14 x 4	Total Pressure	-	-	-	17	22	27	31	34	37	40
		CFM	30	60	90	120	150	180	210	240	270	300
		Noise Criteria	-	-	-	17	22	27	31	34	37	40
		Throw	4-Way 3-Way 2-Way 1-Way	3-4-7 3-5-8 3-5-8 4-6-10	4-6-10 5-7-11 5-8-13 6-9-15	6-9-14 6-9-15 7-11-16 8-12-19	7-11-16 8-12-18 8-12-19 10-16-24	7-11-16 8-12-18 9-13-20 10-16-24	9-13-20 10-15-23 9-13-20 12-17-28	10-15-23 10-16-24 12-17-27 14-20-33	12-18-29 13-19-31 16-23-37 17-26-42	14-20-32 15-21-34 16-23-38 19-28-46
.35	16 x 4 10 x 6 8 x 8	Total Pressure	-	-	-	18	23	28	31	35	37	40
		CFM	35	70	105	140	175	210	245	280	315	350
		Noise Criteria	-	-	-	18	23	28	31	35	37	40
		Throw	4-Way 3-Way 2-Way 1-Way	3-4-7 3-5-8 4-6-9 4-6-10	5-7-11 5-7-12 5-8-13 7-10-16	6-9-15 6-9-15 7-11-16 9-13-20	8-11-17 8-12-18 8-12-19 10-16-24	9-13-20 10-14-22 10-16-24 12-18-29	10-16-24 11-16-25 10-16-24 15-21-34	12-17-27 14-18-29 14-20-32 17-24-39	13-18-30 14-20-32 15-22-36 17-26-43	14-20-33 15-22-36 16-23-40 19-30-48
.40	18 x 4 12 x 6	Total Pressure	-	-	-	19	24	29	32	35	38	41
		CFM	40	80	120	160	200	240	280	320	360	400
		Noise Criteria	-	-	-	19	24	29	32	35	38	41
		Throw	4-Way 3-Way 2-Way 1-Way	3-5-8 3-5-8 4-6-9 5-7-11	5-7-11 5-8-13 6-9-14 7-10-16	6-9-15 7-10-16 8-11-17 9-14-21	8-12-18 8-12-19 9-14-21 11-16-25	9-14-21 10-15-23 11-16-25 13-18-30	11-16-25 11-16-26 12-18-29 15-21-35	12-17-28 13-18-30 14-20-33 16-25-40	13-19-31 15-21-34 16-23-37 18-28-45	15-21-34 16-23-37 17-25-41 20-31-49
.45	20 x 4 14 x 6 10 x 8	Total Pressure	-	-	-	19	25	29	32	36	39	42
		CFM	45	90	135	180	225	270	315	360	405	450
		Noise Criteria	-	-	-	19	25	29	32	36	39	42
		Throw	4-Way 3-Way 2-Way 1-Way	3-5-8 3-5-8 4-6-9 5-7-11	5-7-12 5-8-13 6-9-14 7-11-16	6-9-15 7-11-16 8-12-18 9-14-21	8-12-18 9-13-20 10-14-22 11-16-26	10-14-22 10-15-23 10-14-22 13-19-31	11-16-25 12-17-27 11-16-26 15-22-36	12-18-29 13-19-31 13-18-30 17-25-41	14-20-32 15-21-35 16-23-38 19-28-46	15-22-36 16-23-38 17-26-43 21-32-51
.55	24 x 4 16 x 6 12 x 8	Total Pressure	-	-	-	20	25	29	33	37	39	42
		CFM	55	110	165	220	275	330	385	440	495	550
		Noise Criteria	-	-	-	20	25	29	33	37	39	42
		Throw	4-Way 3-Way 2-Way 1-Way	2-3-4 2-3-5 2-3-5 2-4-6	3-5-8 4-6-9 4-6-10 5-7-12	5-7-12 5-8-13 6-9-15 8-11-17	7-10-16 8-11-17 8-12-19 10-14-22	8-12-19 9-14-21 10-15-23 12-17-28	10-15-23 11-16-25 12-17-28 14-20-33	12-17-27 12-18-29 14-26-32 16-23-38	13-18-30 14-20-32 15-22-36 17-26-43	15-22-34 16-23-37 16-25-40 20-30-49

For performance data notes, see F93.

## PERFORMANCE DATA:

### CURVED BLADE • SUPPLY GRILLES AND REGISTERS • 51C AND 61C SERIES

#### MODELS: 51C, 51CD, 61C, 61CD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM	100	200	300	400	500	600	700	800	900	1000	
		Total Pressure	.003	.015	.032	.058	.094	.136	.182	.234	.302	.369	
.62	18 x 6 10 x 10	CFM	60	125	185	250	310	370	435	495	560	620	
		Noise Criteria	-	-	-	20	26	30	34	37	40	43	
		Throw	4-Way	2-3-4	4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-17-27	13-19-21	15-21-35	16-24-39
			3-Way	2-3-5	4-6-9	6-9-14	8-11-17	9-14-21	11-16-26	13-18-30	14-20-33	16-24-38	17-26-42
			2-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-33	16-23-37	17-26-42	19-28-46
1-Way	2-4-6		5-7-12	8-11-17	10-15-27	12-18-29	15-21-24	17-25-40	18-28-45	20-31-49	23-35-55		
.70	30 x 4 20 x 6 14 x 8 12 x 10	CFM	70	140	210	280	350	420	490	560	630	700	
		Noise Criteria	-	-	-	20	26	30	34	38	40	43	
		Throw	4-Way	2-3-5	4-6-9	5-8-13	7-11-16	9-13-20	10-16-24	12-19-28	14-20-32	15-22-36	16-25-40
			3-Way	2-3-5	4-6-9	6-9-14	8-12-18	10-14-22	11-16-26	13-19-31	15-21-35	16-24-39	17-26-43
			2-Way	2-4-6	5-7-11	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	17-24-39	17-26-43	19-30-48
1-Way	3-4-7		5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-52	24-36-57		
.81	36 x 4 24 x 6 16 x 8 14 x 10	CFM	80	160	245	325	405	485	565	650	730	810	
		Noise Criteria	-	-	15	21	27	31	35	38	41	44	
		Throw	4-Way	2-3-5	4-6-9	6-9-14	8-11-17	9-14-21	11-16-25	12-18-29	14-20-33	16-23-37	17-26-42
			3-Way	2-3-5	4-6-10	6-9-15	8-12-19	11-16-25	12-17-27	14-20-32	15-22-36	16-25-40	18-28-45
			2-Way	2-4-6	5-7-11	7-10-16	9-14-21	11-16-25	13-18-30	15-21-35	17-24-39	18-28-45	20-31-49
1-Way	3-4-7		5-8-13	8-12-18	11-16-25	13-19-31	16-23-37	17-26-43	19-30-48	22-33-53	25-38-60		
.87	18 x 8 12 x 12	CFM	85	175	260	350	435	520	610	695	785	870	
		Noise Criteria	-	-	-	21	27	31	35	38	41	44	
		Throw	4-Way	2-3-5	4-6-9	6-9-14	8-12-18	10-14-22	11-16-26	13-18-30	15-21-34	16-23-38	17-26-42
			3-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-32	16-23-37	17-25-41	19-28-46
			2-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-26	13-19-31	15-22-36	17-25-41	19-28-46	21-31-51
1-Way	3-4-7		6-9-14	8-12-19	11-16-25	13-19-30	16-23-38	18-27-44	20-30-49	22-35-55	25-38-62		
1.02	30 x 6 20 x 8 16 x 10 14 x 12	CFM	100	205	305	410	510	610	715	815	920	1020	
		Noise Criteria	-	-	15	22	28	32	36	39	42	45	
		Throw	4-Way	2-3-5	4-6-10	6-9-15	8-12-18	10-15-23	12-17-27	13-19-31	15-21-35	16-25-40	18-27-44
			3-Way	2-4-6	4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	16-23-38	17-26-43	19-29-47
			2-Way	2-4-6	5-7-12	7-11-16	10-14-22	12-17-27	14-20-32	16-23-38	17-26-42	19-30-48	22-33-53
1-Way	3-4-7		6-9-14	9-13-20	11-16-26	14-20-33	16-24-39	18-28-45	21-31-50	24-46-57	26-40-63		
1.15	24 x 8 18 x 10 16 x 12	CFM	115	230	345	460	575	690	805	920	1040	1150	
		Noise Criteria	-	-	16	23	29	32	36	40	43	46	
		Throw	4-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-32	16-23-37	17-25-41	18-28-45
			3-Way	2-4-6	5-7-11	7-10-16	9-13-20	11-16-25	13-18-30	15-21-35	16-25-40	18-27-44	20-30-49
			2-Way	2-4-6	5-7-12	8-11-17	10-14-22	12-17-28	14-20-33	16-24-39	18-27-44	20-30-49	22-34-54
1-Way	3-5-8		6-9-15	9-14-21	12-17-27	15-21-34	17-25-40	19-28-46	21-33-53	24-36-58	27-41-66		
1.25	36 x 6 20 x 10 14 x 14	CFM	125	250	375	500	625	750	875	1000	1120	1250	
		Noise Criteria	-	-	16	23	29	33	37	40	43	46	
		Throw	4-Way	2-3-5	4-6-10	6-9-15	8-12-19	10-16-24	12-17-28	14-20-33	16-23-37	17-26-42	19-28-46
			3-Way	2-4-6	5-7-11	7-10-16	9-14-21	11-16-26	13-19-31	15-22-36	16-25-40	18-28-45	20-31-49
			2-Way	2-4-6	5-7-12	8-11-17	10-15-23	12-18-29	15-21-34	16-25-40	18-28-45	20-31-49	23-35-55
1-Way	3-5-8		6-9-15	9-14-21	12-17-28	15-21-34	17-25-40	19-29-47	22-33-53	25-38-60	28-42-67		
1.35	16 x 14 18 x 12	CFM	135	270	405	540	675	810	945	1080	1220	1350	
		Noise Criteria	-	-	16	23	29	33	37	40	43	46	
		Throw	4-Way	2-4-6	4-6-10	7-10-16	9-13-20	10-16-24	12-18-29	15-21-34	16-23-38	17-26-38	19-29-47
			3-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-28	13-19-31	15-22-36	17-25-41	19-27-46	21-31-50
			2-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-32-51	24-36-57
1-Way	3-5-8		6-9-15	10-14-22	12-17-28	15-21-35	17-26-42	20-30-49	22-34-54	25-38-61	28-43-68		
1.53	30 x 8 24 x 10 18 x 14 16 x 16	CFM	155	305	460	610	765	920	1070	1220	1380	1530	
		Noise Criteria	-	-	17	24	29	34	38	41	44	47	
		Throw	4-Way	2-4-6	5-7-11	7-10-16	9-13-20	11-16-25	13-18-30	15-21-35	16-24-39	18-27-44	20-30-49
			3-Way	2-4-6	5-7-12	7-11-16	10-14-22	12-17-27	14-20-32	16-23-38	17-26-43	19-30-48	21-33-52
			2-Way	3-4-7	5-8-13	8-12-18	10-16-24	13-19-31	15-22-36	17-26-42	19-29-46	22-33-53	24-36-58
1-Way	3-5-8		7-10-16	10-14-22	12-18-29	15-22-36	17-26-43	2-31-49	23-35-49	26-40-63	29-45-71		

For performance data notes, see F93.



## PERFORMANCE DATA:

### CURVED BLADE • SUPPLY GRILLES AND REGISTERS • 51C AND 61C SERIES

#### MODELS: 51C, 51CD, 61C, 61CD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM		100	200	300	400	500	600	700	800	900	1000
		Total Pressure		.003	.015	.032	.058	.094	.136	.182	.234	.302	.369
1.82	36 x 8 30 x 10 24 x 12 20 x 14 18 x 16	CFM		182	365	545	730	910	1090	1279	1460	1640	1820
		Noise Criteria		–	–	18	25	30	34	38	42	45	48
		Throw	4-Way	2-4-6	5-7-11	7-11-16	9-14-21	11-16-26	13-19-31	15-22-36	17-25-41	19-28-46	21-32-51
			3-Way	2-4-6	5-7-12	8-11-17	10-15-23	12-17-28	15-21-34	16-24-39	18-27-44	20-31-49	23-35-55
			2-Way	3-4-7	6-9-14	8-12-19	11-16-26	14-20-32	16-23-38	18-27-44	20-30-49	23-35-55	25-38-61
1-Way	3-5-8		7-10-16	10-15-23	13-19-31	16-23-38	18-28-45	21-33-52	24-36-58	28-41-66	31-47-74		
2.10	24 x 14 20 x 16 18 x 18	CFM		210	420	630	840	1050	1260	1470	1680	1890	2100
		Noise Criteria		–	–	19	25	30	35	39	42	45	48
		Throw	4-Way	2-4-6	5-7-12	8-11-17	10-14-22	12-17-27	14-20-33	16-23-43	17-26-43	19-30-48	22-33-53
			3-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-17-28	15-21-35	17-25-41	19-28-46	21-32-51	24-36-57
			2-Way	3-4-7	6-9-14	9-13-20	12-17-29	14-20-33	17-24-39	18-28-45	21-31-50	24-36-57	27-40-64
1-Way	4-6-9		7-11-16	10-16-24	14-20-32	16-24-39	20-39-47	22-33-53	25-38-60	28-43-68	32-49-78		
2.35	36 x 10 30 x 12 24 x 16 20 x 18	CFM		235	470	705	940	1180	1410	1640	1880	2120	2350
		Noise Criteria		–	–	19	26	31	35	39	43	46	49
		Throw	4-Way	2-4-6	5-7-12	8-11-17	10-15-23	12-17-28	15-21-34	16-24-39	18-27-44	20-30-49	23-35-55
			3-Way	3-4-7	5-8-13	8-12-19	10-16-24	13-18-30	15-22-36	17-26-42	19-30-48	22-33-53	24-36-58
			2-Way	3-5-8	6-9-15	9-14-21	12-17-27	15-21-34	17-25-41	19-29-47	21-33-52	24-37-59	33-49-80
1-Way	4-6-9		7-11-16	11-16-25	14-20-33	17-25-41	19-30-48	23-35-55	26-39-62	29-44-70	33-49-80		
2.68	36 x 12 30 x 14 24 x 18 20 x 20	CFM		270	535	805	1070	1340	1610	1880	2140	2410	2680
		Noise Criteria		–	–	19	26	31	36	40	43	46	48
		Throw	4-Way	3-4-7	5-8-13	8-12-18	10-16-24	12-18-29	15-21-35	17-25-41	19-28-46	21-31-50	24-36-57
			3-Way	3-4-7	6-9-14	8-12-19	11-16-25	14-20-32	16-23-38	18-27-44	20-30-49	23-35-55	25-38-61
			2-Way	3-5-8	6-9-15	9-14-21	12-17-28	15-21-35	19-29-47	19-30-48	22-34-54	25-38-60	27-43-68
1-Way	4-6-9		8-11-17	11-16-26	15-21-34	17-26-42	20-31-49	24-36-57	27-40-64	30-46-73	34-51-82		
3.15	36 x 14 30 x 16 24 x 20	CFM		315	630	945	1260	1580	1890	2200	2520	2840	3150
		Noise Criteria		–	–	20	27	32	37	41	44	47	49
		Throw	4-Way	3-4-7	5-8-13	8-12-18	11-16-25	13-18-30	15-22-36	17-26-42	19-30-48	22-34-53	25-38-60
			3-Way	3-4-7	6-9-14	9-13-20	11-16-26	14-20-33	16-24-39	18-28-45	21-31-50	24-37-57	27-40-64
			2-Way	3-5-8	7-10-16	10-13-23	12-18-29	16-23-37	18-27-44	20-31-49	23-35-56	26-41-63	29-45-71
1-Way	4-6-10		8-12-18	12-17-27	15-20-37	18-27-44	21-32-51	25-38-60	28-42-67	32-49-77	36-54-86		
3.65	36 x 16 30 x 18 24 x 24	CFM		365	730	1100	1460	1820	2190	2560	2920	3280	3650
		Noise Criteria		–	–	20	28	33	37	41	45	48	50
		Throw	4-Way	3-4-7	6-9-14	8-12-19	11-16-26	14-20-32	16-23-38	18-27-44	20-30-49	23-35-55	26-39-62
			3-Way	3-5-8	6-9-15	9-14-21	12-17-27	15-21-34	17-25-41	19-29-47	22-33-53	24-37-59	27-41-66
			2-Way	3-5-8	7-10-16	10-15-23	13-19-31	16-23-38	18-28-45	21-33-52	24-36-58	27-41-66	31-47-74
1-Way	4-6-10		8-12-19	12-17-28	15-22-36	18-28-45	22-33-53	26-39-62	29-44-70	33-50-80	37-55-89		
4.05	36 x 18 30 x 20	CFM		405	810	1220	1620	2020	2430	2830	3240	3640	4050
		Noise Criteria		–	–	21	28	33	38	42	45	48	50
		Throw	4-Way	3-4-7	6-9-14	9-13-20	11-16-26	14-20-33	16-24-39	18-28-45	21-31-50	24-36-57	27-40-64
			3-Way	3-5-8	6-9-15	9-14-21	12-17-28	15-21-35	17-26-42	19-30-48	22-34-54	25-38-61	28-43-68
			2-Way	4-6-9	7-11-16	10-15-24	13-19-31	16-24-39	19-28-46	22-33-53	25-38-60	28-43-68	32-48-77
1-Way	4-6-10		8-12-19	12-18-29	16-23-38	19-28-46	23-35-55	27-40-64	30-45-72	34-50-81	38-57-91		
4.72	36 x 20 30 x 24	CFM		470	945	1420	1890	2360	2830	3300	3780	4250	4720
		Noise Criteria		–	–	21	30	34	38	42	46	48	51
		Throw	4-Way	3-5-8	6-9-15	9-14-21	12-17-27	15-21-34	17-26-41	19-29-47	31-33-52	24-37-59	27-41-66
			3-Way	3-5-8	7-10-16	10-14-23	12-18-29	16-23-37	18-27-44	21-31-50	23-35-56	27-40-64	30-45-72
			2-Way	4-6-9	7-11-16	11-16-25	14-20-33	17-25-41	19-30-48	23-35-55	26-39-62	29-45-71	33-49-80
1-Way	5-7-11		9-13-20	13-18-30	16-24-39	19-30-48	24-36-57	27-41-66	31-48-76	36-53-85	40-59-95		
5.82	36 x 24 30 x 30	CFM		580	1160	1750	2330	2910	3490	4070	4660	5240	5820
		Noise Criteria		–	–	22	29	35	39	43	47	49	52
		Throw	4-Way	3-5-8	6-9-15	10-14-22	12-18-29	15-22-36	17-26-43	20-31-49	23-35-56	26-39-62	29-44-70
			3-Way	4-6-9	7-10-16	10-16-24	13-19-31	16-24-39	19-28-46	22-33-53	24-37-59	28-43-68	31-48-76
			2-Way	4-6-9	8-11-17	11-16-26	15-21-34	17-26-43	21-31-50	24-36-58	27-41-66	31-47-75	35-52-84
1-Way	5-7-11		9-14-21	13-19-31	11-25-41	21-31-50	25-38-60	28-44-70	33-49-80	38-56-90	43-64-102		

For performance data notes, see F93.



## PERFORMANCE DATA:

### CURVED BLADE • SUPPLY GRILLES AND REGISTERS • 51C AND 61C SERIES

#### MODELS: 51C, 51CD, 61C, 61CD

Core Area, Square Feet	Nominal Duct Size, Inches	Core Velocity, FPM	100	200	300	400	500	600	700	800	900	1000	
		Total Pressure	.003	.015	.032	.058	.094	.136	.182	.234	.302	.369	
7.17	36 x 30	CFM	715	1430	2150	2870	3580	4300	5020	5740	6450	7170	
		Noise Criteria	–	–	23	29	35	40	44	48	50	53	
		Throw	4-Way	3-5-8	7-10-16	10-15-23	13-19-31	16-22-38	18-28-45	21-33-52	24-36-58	27-41-66	31-47-74
			3-Way	4-6-9	7-11-16	11-16-25	14-20-33	17-25-41	20-30-49	23-35-55	26-40-63	29-45-71	33-49-80
			2-Way	4-6-10	8-12-19	12-17-28	15-22-36	18-28-45	22-33-53	26-39-62	29-44-70	33-49-80	37-55-89
1-Way	5-7-12		10-14-22	14-20-33	17-26-43	22-33-53	27-40-64	31-47-75	35-52-84	40-59-95	45-67-107		
8.63	36 x 36	CFM	865	1730	2590	3450	4320	5180	6040	6900	7700	8630	
		Noise Criteria	–	–	24	30	36	41	45	48	50	53	
		Throw	4-Way	4-6-9	7-11-16	10-16-24	14-20-32	16-25-40	19-30-48	22-34-54	26-39-62	29-43-69	32-49-78
			3-Way	4-6-10	8-11-17	11-16-26	15-21-34	17-28-43	21-31-50	24-36-58	27-41-66	31-47-75	35-52-85
			2-Way	4-6-10	8-12-19	12-18-29	16-23-38	19-30-47	23-35-56	27-41-65	31-47-66	35-52-83	39-59-93
1-Way	5-8-13		10-15-23	15-21-35	18-28-45	23-35-57	28-35-57	32-49-78	37-55-88	42-62-100	47-70-113		

#### Performance Notes:

- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Throw values are given for terminal velocities of 150, 100 and 50 fpm, with a cooling temperature differential ( $\Delta T$ ) of 20°F and are based on surface mount units benefitting from the ceiling coanda effect. The blade settings were set for optimum discharge, parallel to the face of the grille, which has the outer blades closest to the frame, set with an opening of 1/8" (3) and progressively wider spacings between blades away from the frame. (**Note:** The throw values may be increased or decreased by as much as 20% by changing the blade setting).
- Blades in the full open position
  - reduce the Noise Criteria by 6.
  - multiply the Total Pressure x 0.3.
- Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 51C

### ALUMINUM CURVED BLADE GRILLES AND REGISTERS

EXAMPLE: 51C - O - 24 x 12 - S - AW - DMI - A - 4C - AB - PF

**1. Models**

- 51C Aluminum
- 51CD Aluminum w/rear vanes

**2. Damper (OBD)**

- (model suffix)
- O Steel
- OA Aluminum
- None

**3. Nominal Width x Height**

inches (mm)

**4. Frame/Border Type**

- Surface Mount:**
- S Standard
- Border 1 1/4" (32) (default)
- NF Narrow Frame
- Border 1" (25)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint
- MI Mill
- PC Prime Coat
- SA Satin Anodized (clear)
- SP Special Custom Color

**6. OBD Finish**

- DMI Mill (default)
- DBK Painted Black

**7. Fastening**

- A Screw Holes (default)
- C Concealed Mounting Straps
- D Concealed Screw Holes in Neck
- N None

**8. Blow Pattern**

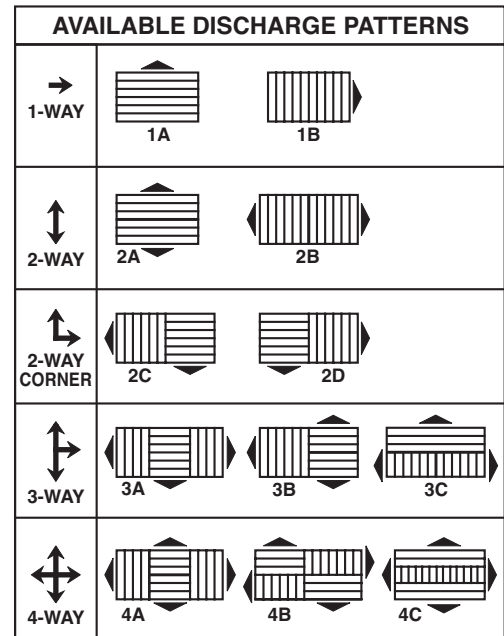
- 1A 1-Way Long
- 1B 1-Way Short
- 2A 2-Way Long
- 2B 2-Way Short
- 2C 2-Way Corner
- 2D 2-Way Corner
- 3A 3-Way Short
- 3B 3-Way Long
- 3C 3-Way Long
- 4A 4-Way Long
- 4B 4-Way Equal
- 4C 4-Way Short

**9. Front Blades**

- AB Adjustable (default)
- FB Fixed

**OPTIONS & ACCESSORIES:**

- None (default)
- 10. Insect Screen**
- IS Insect Screen
- 11. Plaster Sub-Frame**
- PF Plaster Sub-Frame
- 12. Gaskets**
- GK Foam Gasket
- 13. Earthquake Tabs**
- EQT Earthquake Tabs



### MODEL SERIES: 51C

### ALUMINUM CURVED BLADE GRILLES AND REGISTERS

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **51C** or **51CD (with rear vanes) Aluminum Curved Blade Supply Grilles** of the types and sizes as shown on the plans and air distribution schedules. The blades shall be aluminum, extruded into a streamlined curved shape and assembled in a one, two, three or four-way pattern (specify pattern). The frame shall be heavy gauge extruded aluminum and mechanically interlocked for reinforcement, with hairline mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 61C

### STEEL CURVED BLADE GRILLES AND REGISTERS

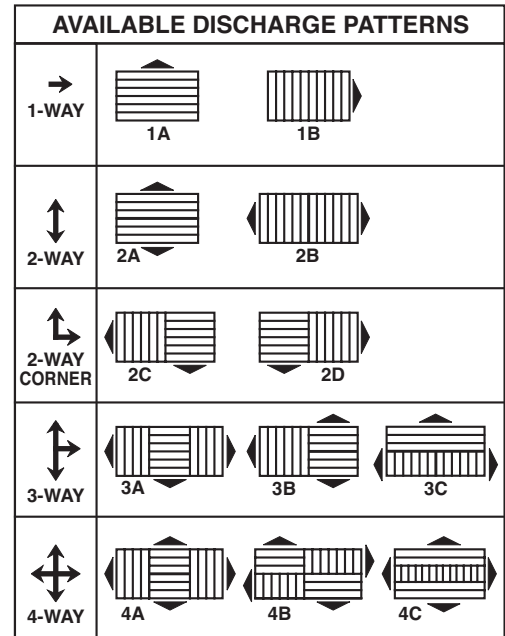
EXAMPLE: 61C - O - 24 x 12 - S - AW - DMI - A - 4C - AB - PF

1. **Models**  
61C Steel  
61CD Steel w/rear vanes
2. **Damper (OBD)**  
(model suffix)  
O Steel  
— None
3. **Nominal Width x Height**  
inches (mm)
4. **Frame/Border Type**  
S Standard  
Border 1 1/4" (32)  
(default)
5. **Finish**  
AW Appliance White (default)  
AL Aluminum  
BK Black  
BW British White  
LBP Light Bronze Paint  
MBP Medium Bronze Paint  
DBP Dark Bronze Paint  
MI Mill  
PC Prime Coat  
SP Special Custom Color
6. **OBD Finish**  
DMI Mill (default)  
DBK Painted Black

7. **Fastening**  
A Screw Holes (default)  
C Concealed Mounting Straps  
D Concealed Screw Holes in Neck  
N None
8. **Blow Pattern**  
1A 1-Way Long  
1B 1-Way Short  
2A 2-Way Long  
2B 2-Way Short  
2C 2-Way Corner  
2D 2-Way Corner  
3A 3-Way Short  
3B 3-Way Long  
3C 3-Way Long  
4A 4-Way Long  
4B 4-Way Equal  
4C 4-Way Short
9. **Front Blades**  
AB Adjustable (default)  
FB Fixed

#### OPTIONS & ACCESSORIES:

- None (default)
- 10. **Insect Screen**  
IS Insect Screen
- 11. **Plaster Sub-Frame**  
PF Plaster Sub-Frame
- 12. **Gaskets**  
GK Foam Gasket
- 13. **Earthquake Tabs**  
EQT Earthquake Tabs



### MODEL SERIES: 61C

### STEEL CURVED BLADE GRILLES AND REGISTERS

#### SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **61C** or **61CD (with rear vanes) Steel Curved Blade Supply Grilles** of the types and sizes as shown on the plans and air distribution schedules. The blades shall be aluminum, extruded into a streamlined curved shape and assembled in a one, two, three or four-way pattern (specify pattern). The frames shall be heavy gauge roll-formed steel and mechanically interlocked for reinforcement, with hairline mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

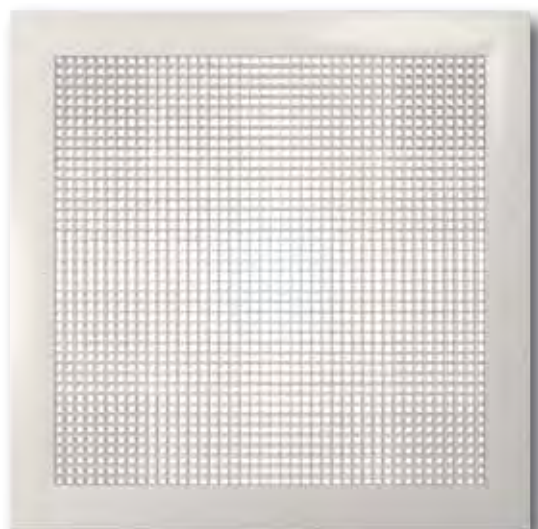
## ALUMINUM EGGCRATE GRILLES AND REGISTERS

### • EXHAUST AND RETURN

#### Model:

#### 51EC

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51EC Frame/Border Type L

Model 51EC Eggcrate Return and Exhaust Grilles and Registers have grid cores capable of transferring or returning high air volumes at minimum pressure requirements. They match in appearance the grid louvers on parabolic light fixtures and are available to suit both lay-in T-Bar openings in suspended grid ceilings and overlap openings in hard ceilings and walls.

**Frame/Border Type S Surface Mount** – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws. Available with optional opposed blade damper.

**Frame/Border Type L Lay-in T-Bar** – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish. Available with optional opposed blade damper.

**Frame/Border Type A Lay-in T-Bar, Concealed Angle Frame** – This style has a narrow corrosion-resistant steel frame that surrounds the eggcrate core and is invisible when installed in standard lay-in T-Bar ceilings. It is suited for non-ducted plenum return air applications. The angle frame provides a finished edge to the eggcrate core which may be desirable if it is to be handled on a frequent basis. It also permits the attachment of an optional opposed blade damper.

**Frame/Border Type C Lay-in T-Bar, Core Only** – The most cost effective return air grille for T-Bar ceilings. The ceiling grid conceals the raw edges of the eggcrate when installed. Suitable for use only in non-ducted plenum return air applications. This model is not available with a damper.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

#### STANDARD FEATURES:

- Frame/Border Type S has a 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.
- NF Narrow Frame with 1" (25) face border or concealed mounting is optional.
- Available from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219).

#### CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Heavy gauge extruded aluminum frames, mechanically interlocked with reinforced mitered corners.
- Grid cores are aluminum. Standard core size is 1/2" x 1/2" x 1/2" (13 x 13 x 13) with mechanically locked-in margins, or available as core only. Optional core sizes are 1/2" x 1/2" x 1" (13 x 13 x 25) and 1" x 1" x 1" (25 x 25 x 25).
- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.

#### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

#### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

## DIMENSIONAL DATA:

### 51EC SERIES EGGCRATE RETURN AND EXHAUST

Top view dimensions: NOMINAL + 1 3/4" (44) STD. (width and height), 1 1/4" (32) FACE BORDER STANDARD (inner width and height).

Side view dimensions: LISTED SIZE = DUCT SIZE D (total width), LISTED SIZE (D) - 1/4" (6) (inner width), E (height of frame), F (height of damper).

OPTIONAL OPPOSED BLADE DAMPER

Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	Optional NF Frame and/or Optional Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

**Frame/Border Type S – Surface Mount**

Top view dimensions: CM - 1/4" (6) (width and height), 1 1/4" (32) FACE BORDER (inner width and height).

Side view dimensions: CM = CEILING MODULE (total width), CM - 1/4" (6) (inner width), DUCT = CM - 2" (51) (duct width), E (height of frame), F (height of damper).

OPTIONAL OPPOSED BLADE DAMPER

Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	With 1/2" x 1/2" x 1" or 1" x 1" x 1" Optional Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

**Frame/Border Type L – Lay-in T-Bar**

Side view dimensions: CM = CEILING MODULE (total width), CM - 1/4" (6) (inner width), E (height of frame), F (height of damper).

OPTIONAL OPPOSED BLADE DAMPER

Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	With 1/2" x 1/2" x 1" or 1" x 1" x 1" Optional Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

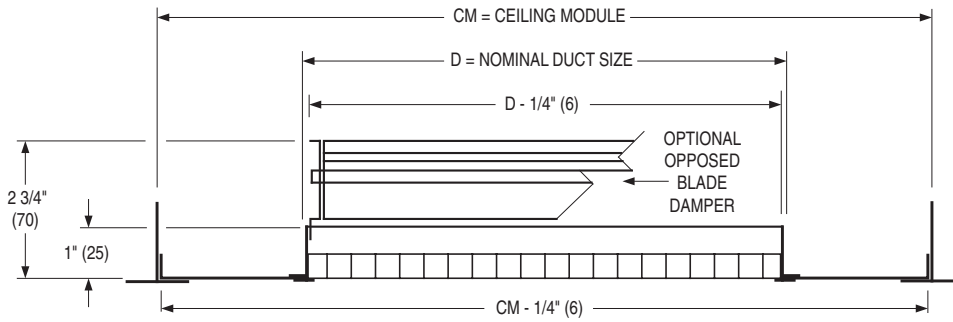
**Frame/Border Type A – Concealed Angle Frame**

Side view dimensions: CM = CEILING MODULE (total width), CM - 1/4" (6) (inner width).

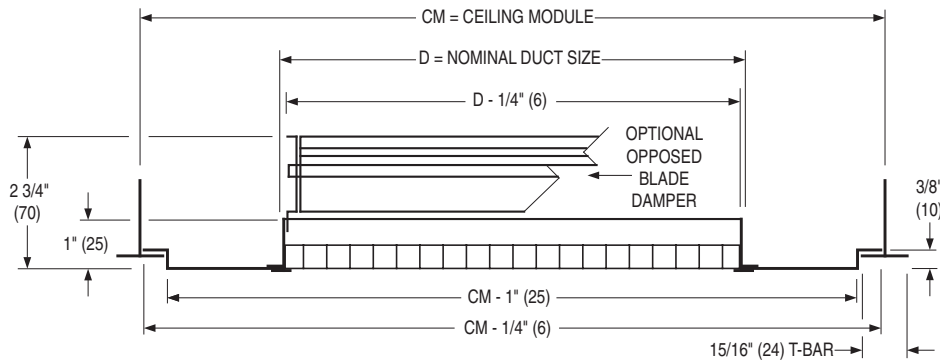
**Frame/Border Type C – Core Only**

## DIMENSIONAL DATA:

### 51EC SERIES EGGCRATE RETURN AND EXHAUST



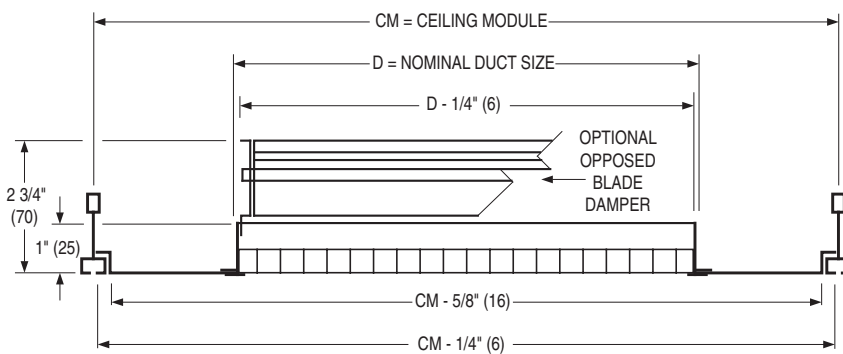
**Frame/Border Type PLS or PLA – Panel Mounted – Lay-in T-Bar Type**



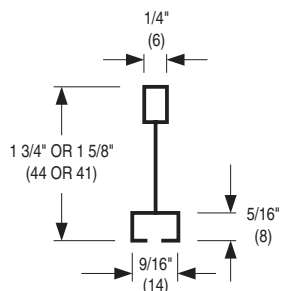
**Frame/Border Type TPS or TPA – Tegular Panel Mounted – Lay-in T-Bar Type**

Available Ceiling Module Sizes		
Imperial Modules		Metric Modules
Imperial Units (in.)	Metric Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
24 x 12	610 x 305	600 x 300
36 x 12	914 x 305	900 x 300
48 x 12	1219 x 305	1200 x 300
20 x 20	508 x 508	500 x 500
24 x 24	610 x 610	600 x 600
36 x 24	914 x 610	900 x 600
48 x 24	1219 x 610	1200 x 600

Max. Duct/Neck Size D =  
Ceiling Module – 3" (76)



**Frame/Border Type FPS or FPA – Panel Mounted Lay-in – Narrow Regressed T-Bar Type**



**REGRESSED T-BAR DETAIL**

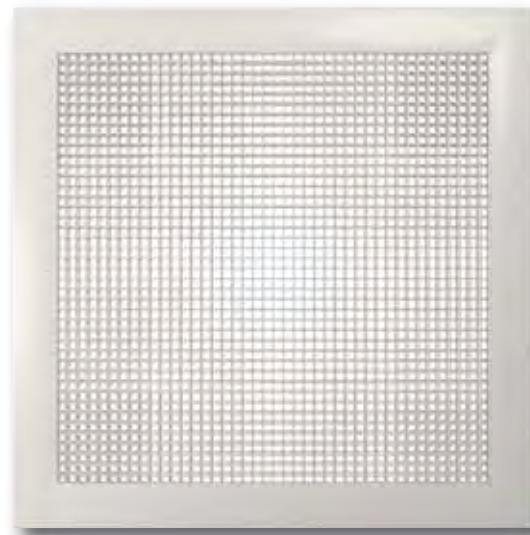
Available Ceiling Module Sizes			Available Duct/Neck Sizes
Imperial Modules		Metric Modules	
Imperial Units (in.)	Metric Units (mm)	S.I. Units (mm)	
20 x 20	508 x 508	500 x 500	6" x 6" (152 x 152) up to 16" x 16" (406 x 406) in 2" (51) increments
24 x 24	610 x 610	600 x 600	6" x 6" (152 x 152) up to 20" x 20" (508 x 508) in 2" (51) increments



## ALUMINUM EGGCRATE GRILLES

- RETURN
- 100% ALUMINUM
- SUITABLE FOR MRI
- LAY-IN T-BAR

**Model:**  
**51EC-MRI**



Model 51EC-MRI

Model 51EC-MRI Eggcrate Return and Exhaust Grilles have an aluminum core capable of transferring or returning high air volumes with minimum pressure drop and sound generation. They match in appearance the grid louvers on parabolic light fixtures and are available to suit Lay-in T-Bar openings in suspended grid ceilings. The grilles are constructed with 100% aluminum and are suitable for use in MRI applications.

### STANDARD FEATURES:

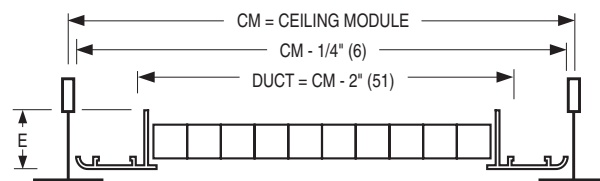
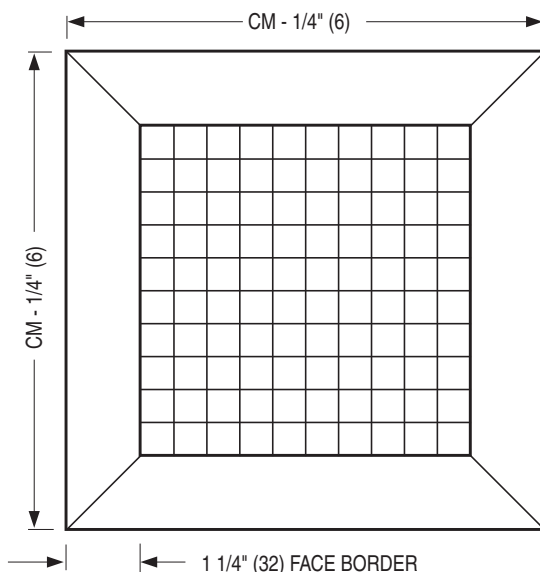
- Frame/Border Type L has a 1 1/4" (32) wide face border with a 1" (25) overlap margin standard.
- Available from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219).

### CONSTRUCTION MATERIAL:

- All aluminum construction with heavy gauge welded frame and mitered corners for strength.
- Aluminum grid core (code CA) size of 1/2" x 1/2" x 1/2" (13 x 13 x 13) is standard on all models. A high capacity return or exhaust outlet with maximum free area for minimum pressure drop and sound generation. Optional core sizes are 1/2" x 1/2" x 1" (13 x 13 x 25) and 1" x 1" x 1" (25 x 25 x 25).

### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.



Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	With 1/2" x 1/2" x 1" or 1" x 1" x 1" Optional Core
E	7/8" (22)	1 1/4" (32)

**MODEL 51EC-MRI GRILLE** Type L Aluminum Frame/Border

## ALUMINUM EGGCRATE GRILLES AND REGISTERS

- EXHAUST AND RETURN
- 45° DEFLECTION
- SIGHTPROOF

### Model:

51EC45

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51EC45

Model 51EC45 Eggcrate Return and Exhaust Grilles and Registers have an aluminum grid core angled at 45° to prevent see through from three directions. The grid cores are capable of transferring or returning high volumes of air with minimum pressure requirements. Their appearance matches grid louvers on parabolic light fixtures and are available to suit both lay-in T-Bar openings in suspended grid ceilings and overlap openings in hard ceilings and walls.

**Frame/Border Type S Surface Mount** – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

**Frame/Border Type L Lay-in T-Bar** – This style is similar to Type S, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the frame style of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish. Available with optional opposed blade damper.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

### STANDARD FEATURES:

- Frame/Border Type S has a 1 1/4" (32) wide face border with a 1" (25) overlap margin, furnished with countersunk screw holes and mounting screws.
- Available from 4" x 4" to 48" x 24" (102 x 102 to 1219 x 610) in one piece construction.

### CONSTRUCTION MATERIAL:

- Aluminum construction – heavy gauge extruded aluminum frame mechanically interlocked with hairline mitered corners.
- Aluminum grid core (code CA). Grid core size of 1/2" x 1/2" x 1/2" (13 x 13 x 13) is angled at 45° to prevent "see through" from three directions is standard.
- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.

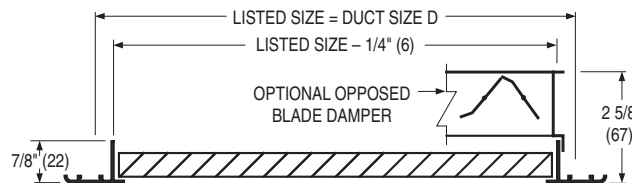
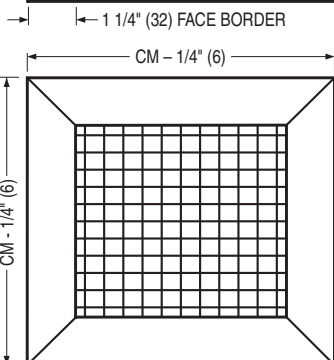
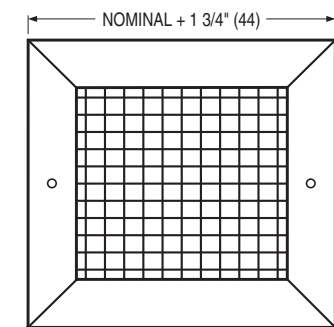
### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

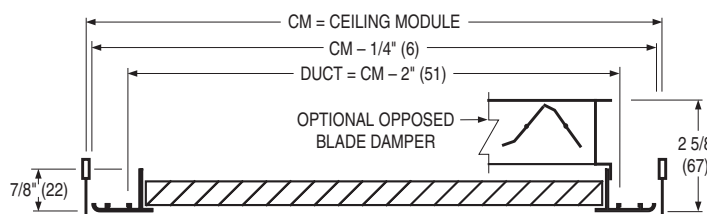
### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



Type S Surface Mount Frame



Type L Lay-in T-Bar • Full Face

### Type L Available Sizes

CM Ceiling Module Dimension	
inches	S. I. mm
12 x 12	300 x 300
24 x 12	600 x 300
36 x 12	900 x 300
20 x 20	500 x 500
24 x 24	600 x 600
36 x 24	900 x 600
48 x 24	1200 x 600

Duct size = CM - 2" (51)

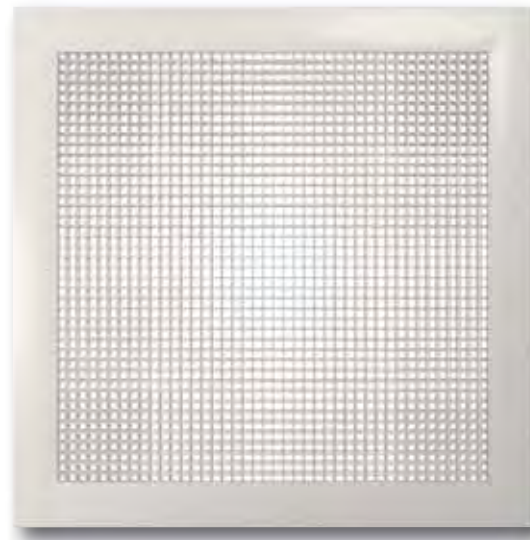
## STEEL FRAME EGGCRATE GRILLES AND REGISTERS

- EXHAUST AND RETURN

### Models:

#### 61EC

- Suffix '-O' adds a steel opposed blade damper



Model 61EC Frame/Border Type L

Model 61EC Eggcrate Return and Exhaust Grilles and Registers have grid cores capable of transferring or returning high air volumes at minimum pressure requirements. They match in appearance the grid louvers on parabolic light fixtures and are available to suit both lay-in T-Bar openings in suspended grid ceilings and overlap openings in hard ceilings and walls.

**Frame/Border Type S Surface Mount** – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws. Available with optional opposed blade damper.

**Frame/Border Type L Lay-in T-Bar** – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish. Available with optional opposed blade damper.

Panel mounting is also available in an assortment of styles to suit most other ceiling types.

### STANDARD FEATURES:

- Frame/Border Type S has a 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Available from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in most models.

### CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant steel is used for the frame.
- Heavy gauge, roll-formed frames, mechanically interlocked with reinforced mitered corners.
- Grid cores are aluminum. Standard core size is 1/2" x 1/2" x 1/2" (13 x 13 x 13) with mechanically locked-in margins. Optional core sizes are 1/2" x 1/2" x 1" (13 x 13 x 25) and 1" x 1" x 1" (25 x 25 x 25).
- Integral dampers – roll-formed steel blades. Opposed blade design with a screwdriver slot operator.

### FINISH OPTIONS:

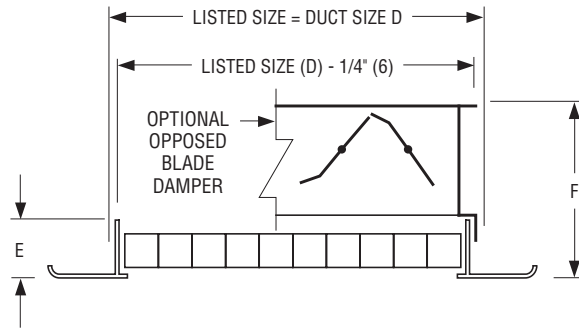
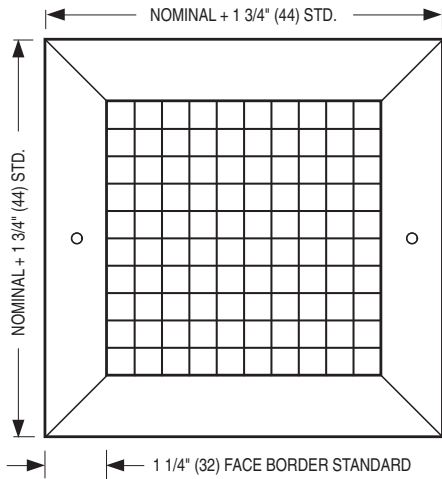
- AW Appliance White finish is standard. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

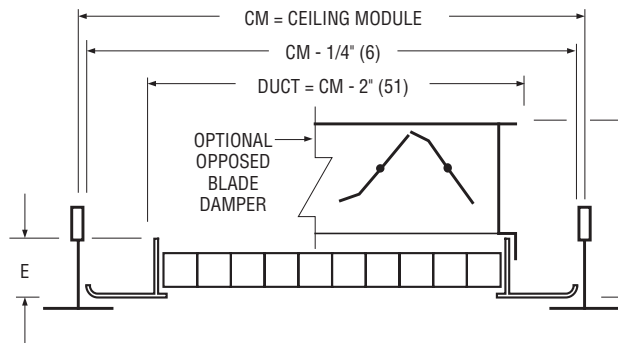
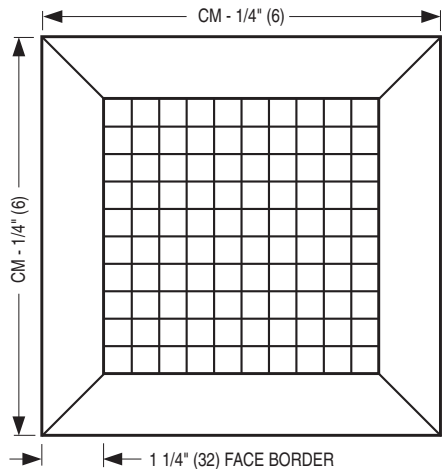
## DIMENSIONAL DATA:

### 61EC SERIES STEEL EGGCRATE RETURN AND EXHAUST



Dimension	1/2" x 1/2" x 1/2" Standard Core	Optional 1/2" x 1/2" x 1" or 1" x 1" x 1" Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

**Frame/Border Type S – Surface Mount**

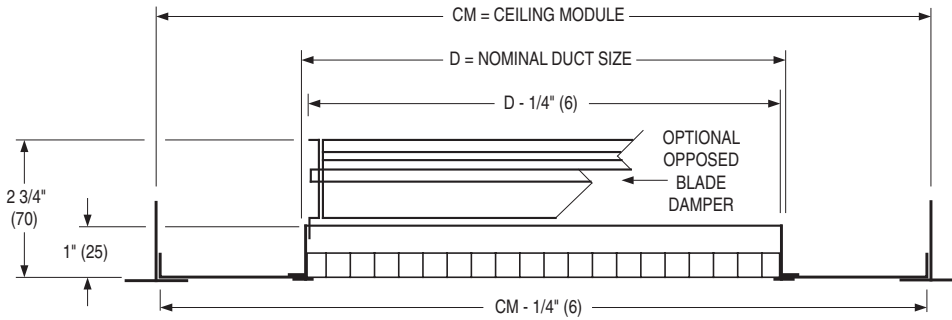


Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	With 1/2" x 1/2" x 1" or 1" x 1" x 1" Optional Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

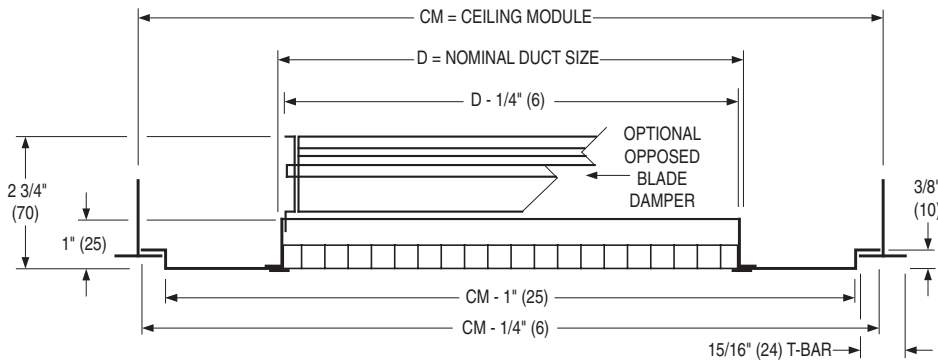
**Frame/Borders Type L – Lay-in T-Bar**

## DIMENSIONAL DATA:

### 61EC SERIES STEEL EGGCRATE RETURN AND EXHAUST



**Frame/Border Type PLS – Panel Mounted – Lay-in T-Bar Type**



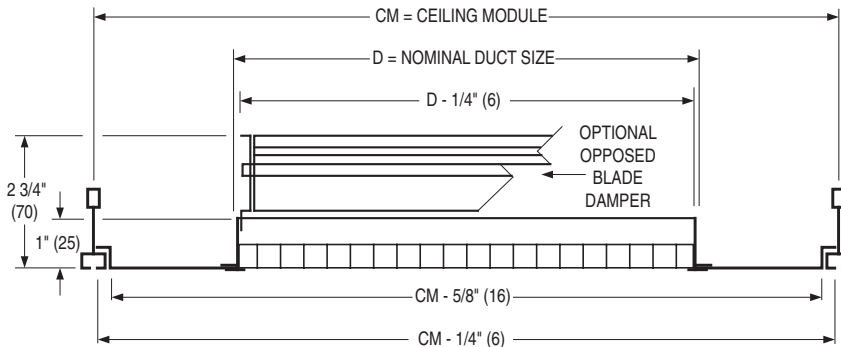
**Frame/Border Type TPS – Tegular Panel Mounted – Lay-in T-Bar Type**

Available Ceiling Module Sizes		
Imperial Modules		Metric Modules
Imperial Units (in.)	Metric Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
24 x 12	610 x 305	600 x 300
36 x 12	914 x 305	900 x 300
48 x 12	1219 x 305	1200 x 300
20 x 20	508 x 508	500 x 500
24 x 24	610 x 610	600 x 600
36 x 24	914 x 610	900 x 600
48 x 24	1219 x 610	1200 x 600

Max. Duct/Neck Size D = Ceiling Module – 3" (76)

GRILLES AND REGISTERS

F



**Frame/Border Type FPS – Panel Mounted Lay-in – Narrow Regressed T-Bar Type**

Available Ceiling Module Sizes			Available Duct/Neck Sizes
Imperial Modules		Metric Modules	
Imperial Units (in.)	Metric Units (mm)	S.I. Units (mm)	
20 x 20	508 x 508	500 x 500	6" x 6" (152 x 152) up to 16" x 16" (406 x 406) in 2" (51) increments
24 x 24	610 x 610	600 x 600	6" x 6" (152 x 152) up to 20" x 20" (508 x 508) in 2" (51) increments

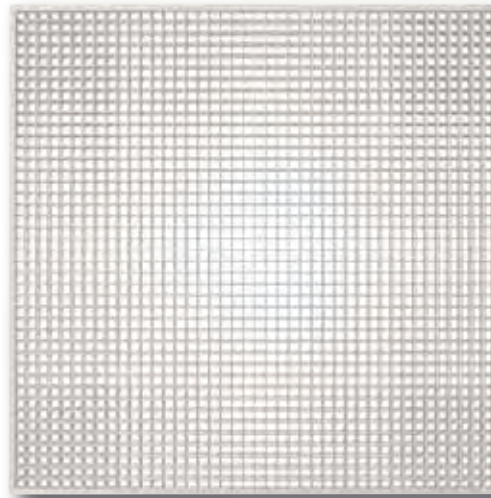
## STEEL FRAME EGGCRATE GRILLES AND REGISTERS

- EXHAUST AND RETURN
- ALUMINUM CORE
- HIGH CAPACITY
- FINELINE®

### Models:

#### 61ECF

- Suffix '-O' adds a steel opposed blade damper



Model 61ECF

Model 61ECF Eggcrate Return Grilles and Registers have grid cores capable of transferring or returning high air volumes at minimum pressure requirements. Their appearance matches the grid louvers on parabolic light fixtures and has been specially designed to integrate with and complement Narrow Regressed T-Bar "Fineline®" type suspended ceiling systems. Suited for non-ducted plenum return air applications, the corrosion-resistant steel frame includes a support rail on four sides, allowing the full area of the ceiling module to be utilized.

### STANDARD FEATURES:

- 1/2" x 1/2" x 1/2" (13 x 13 x 13) grid core is standard (Code CA).
- Available in CM sizes 24 x 12 and 24 x 24 (610 x 305 and 610 x 610).
- Specially designed for high capacity (90% free area) return air applications to integrate with and complement Fineline® type suspended ceiling systems.
- Support rail on four sides, allows full area of the ceiling module to be utilized.

### CONSTRUCTION MATERIAL:

- Aluminum core with corrosion-resistant steel frame.
- Optional roll-formed steel opposed blade damper has a screwdriver slot operator accessible through the face of the register.

### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

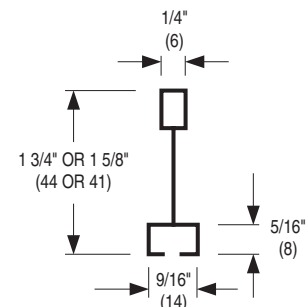
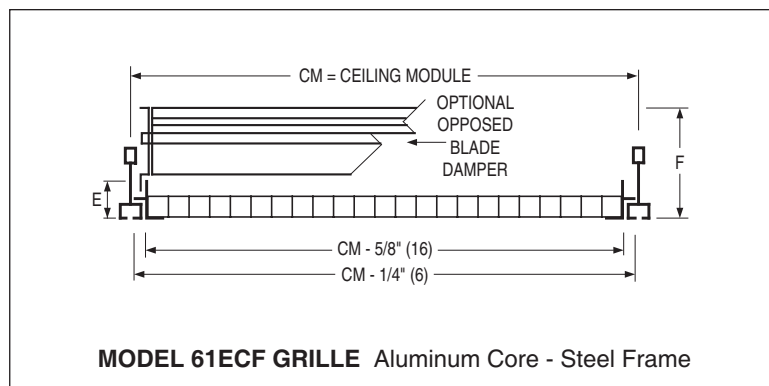
### OPTIONS AND ACCESSORIES:

- CB Core size is 1/2" x 1/2" x 1" (13 x 13 x 25).
- CC Core size is 1" x 1" x 1" (25 x 25 x 25).
- IS Insect Screen
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

Dimension	Standard Frame w/ 1/2" x 1/2" x 1/2" Standard Core	With 1/2" x 1/2" x 1" or 1" x 1" x 1" Optional Core
E	7/8" (22)	1 1/4" (32)
F	2 5/8" (67)	3" (76)

IMPERIAL MODULES		METRIC MODULES
Imperial Units (in.)	S.I. Units (mm)	S.I. Units (mm)
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600



**REGRESSED T-BAR DETAIL**



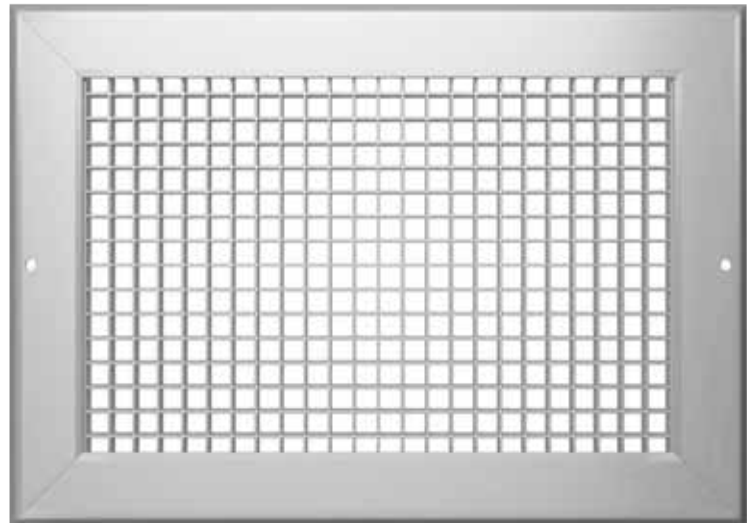
## STAINLESS STEEL EGGCRATE GRILLES AND REGISTERS

- EXHAUST AND RETURN

### Models:

#### 67EC

- Suffix '-O' adds a stainless steel opposed blade damper



Model 67EC

Nailor Model Series 67EC Eggcrate Return and Exhaust Grilles and Registers have grid cores that are capable of transferring or returning high air volumes at minimum pressure requirements. The stainless steel grid core is 1/2" x 1/2" x 1/2" (13 x 13 x 13) and the appearance matches the grid louvers on parabolic light fixtures.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, cleanrooms, laboratories, industrial and manufacturing facilities.

### STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- 1/2" x 1/2" x 1/2" (13 x 13 x 13) grid core.
- Available from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in most models.

### CONSTRUCTION MATERIAL:

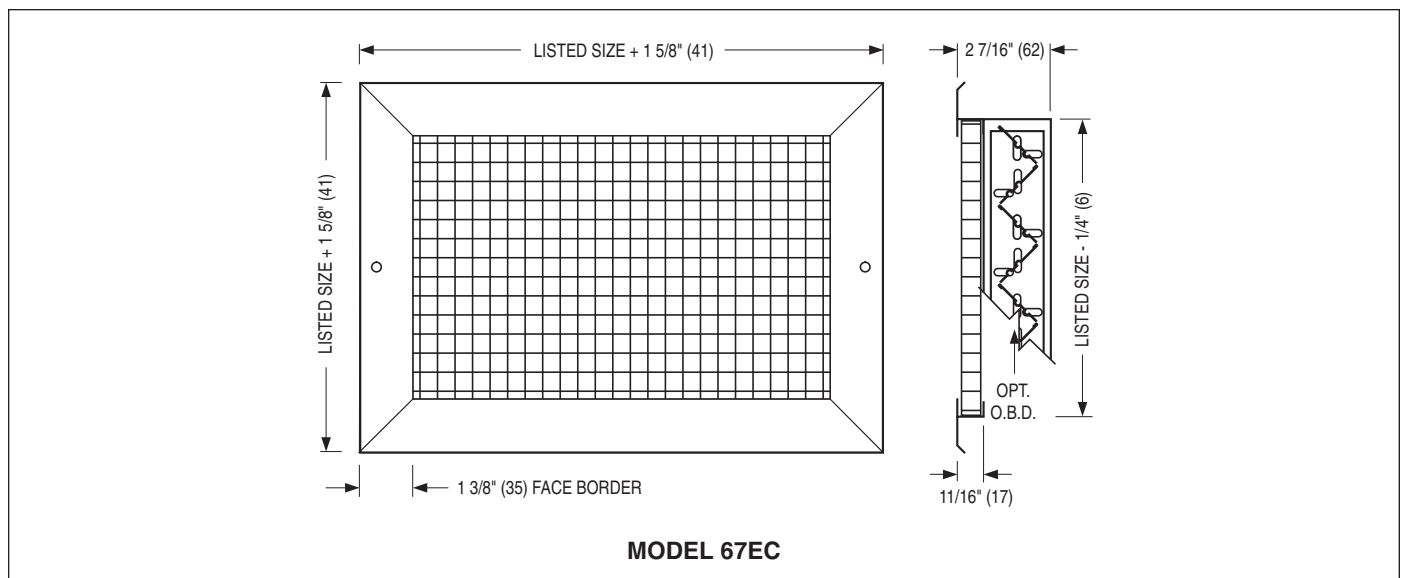
- Type 304 stainless steel construction.
- Optional dampers – roll-formed stainless steel opposed blade design with a screwdriver slot operator.

### FINISH OPTIONS:

- #4 Brushed Satin Polished finish is standard. AW Appliance White finish is optional. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- 316 Type 316 stainless steel construction is available.
- PFS Stainless Steel Plaster Frame



## PERFORMANCE DATA:

### EGGCRATE RETURN AND EXHAUST GRILLES AND REGISTERS • 5100, 6100 & 6700 SERIES

#### MODELS: 51EC, 61EC, 67EC, 51FE, 61FE

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300	400	500	600	700	800	900	1000	1200	1400
					.006 .012	.010 .021	.016 .033	.022 .048	.031 .065	.040 .085	.050 .107	.062 .132	.090 .190	.122 .259
6 x 6	8 x 4 10 x 4	0.20	0.25	CFM Noise Criteria	60 -	80 -	100 -	120 -	140 -	160 15	180 20	200 23	240 29	280 34
8 x 6	10 x 5 12 x 4	0.27	0.33	CFM Noise Criteria	81 -	108 -	135 -	162 -	189 -	216 17	243 21	270 24	324 30	378 35
10 x 6	12 x 5 16 x 4	0.35	0.41	CFM Noise Criteria	105 -	140 -	175 -	210 -	245 -	280 18	315 22	350 25	420 31	490 36
8 x 8	14 x 5	0.38	0.44	CFM Noise Criteria	114 -	152 -	190 -	228 -	266 15	304 18	342 23	380 26	456 32	532 37
12 x 6	18 x 4	0.42	0.50	CFM Noise Criteria	126 -	168 -	210 -	252 -	294 15	336 19	378 23	420 26	504 32	588 37
12 x 8	16 x 6 24 x 4	0.58	0.66	CFM Noise Criteria	174 -	232 -	290 -	348 -	406 17	464 20	522 24	580 27	696 33	812 38
10 x 10	14 x 7 26 x 4	0.61	0.69	CFM Noise Criteria	183 -	244 -	305 -	366 -	427 17	488 20	549 25	610 28	732 34	854 39
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.74	CFM Noise Criteria	195 -	260 -	325 -	390 -	455 17	520 21	585 25	650 28	780 34	910 39
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.82	CFM Noise Criteria	222 -	296 -	370 -	444 -	518 18	592 21	666 25	740 29	888 35	1036 40
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.99	CFM Noise Criteria	270 -	360 -	450 -	540 -	630 18	720 22	810 26	900 30	1080 36	1260 41
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.35	CFM Noise Criteria	372 -	496 -	620 -	744 -	868 19	992 23	1116 27	1240 31	1488 37	1736 42
18 x 12	16 x 14 28 x 8 20 x 10 38 x 6	1.37	1.49	CFM Noise Criteria	411 -	548 -	685 -	822 -	959 20	1096 24	1233 27	1370 31	1644 37	1918 42
24 x 10	20 x 12 30 x 8	1.52	1.65	CFM Noise Criteria	456 -	608 -	760 -	912 15	1064 20	1216 24	1368 28	1520 32	1824 38	420 43
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.76	CFM Noise Criteria	492 -	656 -	820 -	984 15	1148 20	1312 24	1476 28	1640 32	1968 38	2296 43
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.98	CFM Noise Criteria	555 -	740 -	925 -	1110 15	1295 20	1480 24	1665 28	1850 32	2220 38	2590 43
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.23	CFM Noise Criteria	630 -	840 -	1050 -	1260 15	1470 20	1680 25	1890 28	2100 32	2520 38	2940 43
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.48	CFM Noise Criteria	696 -	928 -	1160 -	1392 16	1624 20	1856 26	2088 29	2320 33	2784 39	3248 44
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.75	CFM Noise Criteria	783 -	1044 -	1305 -	1566 16	1827 20	2088 26	2349 29	2610 33	3132 39	3654 44
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.33	CFM Noise Criteria	951 -	1268 -	1585 -	1902 17	2219 21	2536 26	2853 30	3170 34	3804 40	4438 45
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.71	CFM Noise Criteria	1062 -	1416 -	1770 -	2124 17	2478 22	2832 26	3186 30	3540 34	4248 40	4956 45
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.96	CFM Noise Criteria	1137 -	1516 -	1895 -	2274 18	2653 23	3032 27	3411 31	3790 35	4548 41	5306 46
36 x 18	32 x 20 46 x 14 40 x 16	4.29	4.46	CFM Noise Criteria	1287 -	1716 -	2145 -	2574 18	3003 23	3432 27	3861 31	4290 35	5148 41	6006 46
26 x 26	28 x 24 48 x 14	4.47	4.65	CFM Noise Criteria	1341 -	1788 -	2235 -	2682 19	3129 24	3576 28	4023 32	4470 36	5364 42	6258 47
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.95	CFM Noise Criteria	1431 -	1908 -	2385 15	2862 19	3339 24	3816 29	4293 32	4770 36	5724 42	6678 47
28 x 28	30 x 26 40 x 20 36 x 22	5.20	5.39	CFM Noise Criteria	1560 -	2080 -	2600 -	3120 19	3640 24	4160 29	4680 32	5200 36	6240 41	7280 46
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.94	CFM Noise Criteria	1722 -	2296 -	2870 -	3444 20	4018 25	4592 29	5166 33	5740 37	6888 43	8036 48
30 x 30	34 x 26 48 x 20 38 x 24	5.99	6.19	CFM Noise Criteria	1797 -	2396 -	2995 -	3594 20	4193 25	4792 29	5391 33	5990 37	7188 43	8386 48

For performance data notes, see F107.

## PERFORMANCE DATA:

### EGGCRATE RETURN AND EXHAUST GRILLES AND REGISTERS • 5100, 6100 & 6700 SERIES

#### MODELS: 51EC, 61EC, 67EC, 51FE, 61FE

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300	400	500	600	700	800	900	1000	1200	1400
					.006 .012	.010 .021	.016 .033	.022 .048	.031 .065	.040 .085	.050 .107	.062 .132	.090 .190	.122 .259
32 x 32	36 x 30	6.84	7.0	CFM	2052	2736	3420	4104	4788	5472	6156	6840	8208	9576
	46 x 22			Noise Criteria	—	—	15	20	26	30	34	37	44	49
48 x 24	34 x 34	7.69	7.92	CFM	2307	3076	3845	4614	5383	6152	6921	7690	9228	10776
	38 x 30			Noise Criteria	—	—	16	21	26	30	35	38	44	49
36 x 36	38 x 34	8.69	8.91	CFM	2607	3476	4345	5214	6083	6952	7821	8690	10428	12166
	46 x 28			Noise Criteria	—	—	16	22	27	31	35	38	44	49
38 x 38	42 x 34	9.70	9.93	CFM	2910	3880	4850	5820	6790	7760	8730	9700	11640	13580
	48 x 30			Noise Criteria	—	—	16	22	27	31	36	39	45	50
40 x 40	42 x 36	10.77	11.00	CFM	3231	4308	5385	6462	7539	8616	9693	10770	12924	15078
	48 x 32			Noise Criteria	—	—	16	22	28	32	37	40	46	51
42 x 42	44 x 40	11.89	12.13	CFM	3567	4756	5945	7134	8323	9512	10701	11890	14260	16646
	48 x 36			Noise Criteria	—	—	17	23	28	32	37	40	46	51
44 x 44	46 x 42	13.07	13.31	CFM	3921	5228	6535	7842	9149	10456	11763	13070	15684	18298
				Noise Criteria	—	—	17	23	28	33	37	40	46	51
46 x 46		14.30	14.55	CFM	4290	5720	7150	8580	10010	11440	12870	14300	17160	20020
				Noise Criteria	—	—	18	24	29	33	37	40	46	52
48 x 48		15.59	15.84	CFM	4677	6236	7795	9354	10913	12472	14031	15590	18708	21826
				Noise Criteria	—	—	18	24	29	33	37	40	46	52

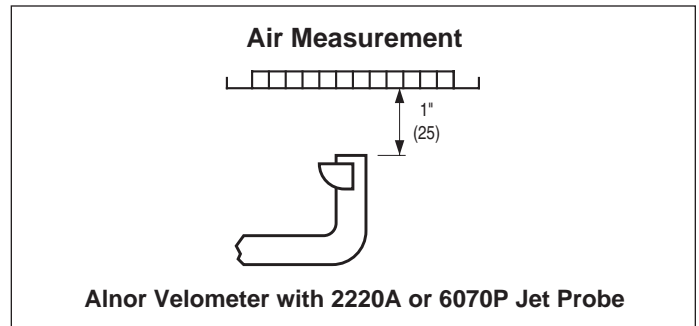
#### Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille tested without damper. Apply the following correction factors for addition of opposed blade damper to grille.

**Neg. Static Pressure** Listed Value x 1.25.

**Noise Criteria** Add + 6 to listed value.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (—) in space denotes a Noise Criteria level of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



#### Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.

$$\text{Airflow (CFM)} = \text{Average velocity (V}_k\text{)} \times \text{Ak}$$

## PERFORMANCE DATA:

### SIGHT-PROOF EGGCRATE RETURN AND EXHAUST GRILLES AND REGISTERS • 5100

#### MODEL: 51EC45

Listed Duct Size (inches)	Nominal Duct Area (sq. ft.)	Duct Velocity, FPM Velocity Pressure Neg. Static Pressure	200	250	300	350	400	450	500	550	600	650
			.002 .016	.004 .025	.006 .037	.008 .050	.010 .065	.013 .082	.016 .101	.019 .123	.022 .146	.026 .171
10 x 10	0.69	Airflow, CFM	139	174	208	243	278	313	347	382	417	451
		Noise Criteria	–	–	16	20	24	27	30	33	35	37
22 x 10	1.53	Airflow, CFM	306	382	458	535	611	688	764	840	917	993
		Noise Criteria	–	–	18	22	26	30	33	36	38	41
22 x 22	3.36	Airflow, CFM	672	840	1008	1176	1344	1513	1681	1849	2017	2185
		Noise Criteria	–	16	22	27	31	34	38	41	43	46
46 x 22	7.03	Airflow, CFM	1406	1757	2108	2460	2811	3163	3514	3865	4217	4568
		Noise Criteria	21	26	30	34	37	40	42	45	47	49

#### Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille tested without damper. Apply the following correction factors for addition of opposed blade damper to grille.

**Neg. Static Pressure** Listed Value x 1.10.

**Noise Criteria** Add 5 dB to listed value.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (–) in space denotes a Noise Criteria level of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

### MODEL SERIES: 51EC

### ALUMINUM EGGCRATE RETURN GRILLES AND REGISTERS

EXAMPLE: 51EC - O - 24 x 12 - S - — - AW - A - CA - DMI - —

1. **Models**  
 51EC Aluminum  
 51EC-MRI 100% Aluminum  
 51EC45 Sight-proof
2. **Damper (OBD)**  
 (Not available on 51EC-MRI)  
 (model suffix)  
 O Steel  
 OA Aluminum  
 — None
3. **Nominal Width x Height**  
 inches (mm)  
 For Type S, NF, PL, SP, MP, FP and TP,  
 W x H = Duct Size  
 For Type L and A and C,  
 W x H = Ceiling Module Size
4. **Frame/Border Type**  
**Surface Mount:**  
 S Surface Mount  
 Border 1 1/4" (32)  
 (default)  
 NF Narrow Frame/Border 1" (25)  
**Ceiling Grid:**  
 L Lay-in T-Bar \*  
 A Angle Frame  
 C Core only  
**Panel Mount: \*\***  
 PLS Steel Lay-in T-Bar Panel  
 PLA Aluminum Lay-in T-Bar Panel  
 FPS Steel Finline® Panel  
 FPA Aluminum Finline® Panel  
 SPS Steel Spline Panel  
 SPA Aluminum Spline Panel  
 MPS Steel Metal Pan Panel  
 MPA Aluminum Metal Pan Panel  
 TPS Steel Tegular Panel  
 TPA Aluminum Tegular Pan Panel
5. **Ceiling Module Size**  
**Panel Size**  
 (Use only for panel mounting, frame/  
 border Types PL, SP, MP, FP and TP)  
 — None (default)  
**Imperial (inches)**  
 12 x 12, 20 x 20, 24 x 8, 24 x 12,  
 24 x 24, 36 x 12, 36 x 24, 48 x 12,  
 48 x 24  
**Metric (mm)**  
 300 x 300, 500 x 500, 600 x 200,  
 600 x 300, 600 x 600, 900 x 300,  
 900 x 600, 1200 x 300, 1200 x 600
6. **Finish**  
 AW Appliance White (default)  
 AL Aluminum  
 BK Black  
 BW British White  
 LBP Light Bronze Paint  
 MBP Medium Bronze Paint  
 DBP Dark Bronze Paint  
 MI Mill  
 PC Prime Coat  
 SA Satin Anodized (clear)\*\*\*  
 SP Special Custom Color
7. **Fastening**  
 (only for frame/border Types S, NF)  
 A Screw Holes (standard) (default)  
 C Concealed Mounting Straps  
 N None
8. **Core Style**  
 CA Standard 1/2" x 1/2" x 1/2"  
 (default)  
 CB 1/2" x 1/2" x 1"  
 CC 1" x 1" x 1"
9. **Opposed Blade Damper Finish**  
 DMI Mill (default)  
 DBK Painted Black  
 — None

### OPTIONS & ACCESSORIES:

- None
- 10. **Insect Screen**  
 IS Insect Screen
- 11. **Plaster Sub-Frame**  
 PF Plaster Sub-Frame
- 12. **Gaskets**  
 GK Foam Gasket
- 13. **Earthquake Tabs**  
 EQT Earthquake Tabs

### Notes:

1. Model 51EC-MRI is only available with Frame/Border Type L.
2. \* For Type L Lay-in, grille neck size is ceiling module size – 2" (51).  
 \*\* For Panel mounting, maximum grille neck size is ceiling module size – 3" (76).  
 \*\*\* Satin Anodized finish only available on 51EC and 51EC45 Frame/Border Type S and L (frame only, mill core).

## HOW TO SPECIFY

### MODEL SERIES: 51EC

### ALUMINUM EGGCRATE RETURN GRILLES AND REGISTERS

#### SUGGESTED SPECIFICATION:

##### 51EC – Aluminum Eggcrate Return Grille

Furnish and install **Nailor Model 51EC Eggcrate Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grilles shall have a 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and extruded aluminum frame that has reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 51EC-MRI – Eggcrate Return Grille – 100% Aluminum

Furnish and install **Nailor Model 51EC-MRI Eggcrate Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from aluminum with a 1/2" x 1/2" x 1/2" (13 x 13 x 13) grid core and welded frame that has reinforced mitered corners. The grilles shall be available to suit lay-in T-Bar openings in suspended grid ceilings. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 51EC45 – Aluminum Eggcrate Return Grille - 45° Deflection

Furnish and install **Nailor Model 51EC45 Eggcrate Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grilles shall have a 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core angled at 45° to prevent see through from three directions. The frame shall be constructed from heavy gauge extruded aluminum and mechanically interlocked with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



## HOW TO ORDER

### MODEL SERIES: 61EC

### STEEL EGGCRATE RETURN GRILLES AND REGISTERS

EXAMPLE: 61EC - O - 24 x 12 - S - — - AW - DMI - A - CA - —

- |  |   |   |
|--|---|---|
| <p>1. <b>Models</b><br/>61EC Aluminum</p> <p>2. <b>Damper (OBD)</b><br/>(model suffix)<br/>O Steel<br/>— None</p> <p>3. <b>Nominal Width x Height</b><br/>inches (mm)<br/>For Type S, PLS, SPS, MPS, FPS and TPS, W x H = Duct Size<br/>For Type L, W x H = Ceiling Module Size</p> <p>4. <b>Frame/Border Type</b><br/><b>Surface Mount:</b><br/>S Surface Mount<br/>Border 1 1/4" (32) (default)<br/>NF Narrow Frame/Border 1" (25)<br/><b>Ceiling Grid:</b><br/>L Lay-in T-Bar *</p> <p><b>Panel Mount: **</b><br/>PLS Steel Lay-in T-Bar Panel<br/>FPS Steel Finline® Panel<br/>SPS Steel Spline Panel<br/>MPS Steel Metal Pan Panel<br/>TPS Steel Tegular Panel</p> <p>5. <b>Ceiling Module Size</b><br/><b>Panel Size</b><br/>(Use only for panel mounting, frame/border Types PLS, SPS, MPS, FPS and TPS)<br/>— None (default)</p> | <p><b>Imperial (inches)</b><br/>12 x 12, 20 x 20, 24 x 8, 24 x 12, 24 x 24, 36 x 12, 36 x 24, 48 x 12, 48 x 24</p> <p><b>Metric (mm)</b><br/>300 x 300, 500 x 500, 600 x 200, 600 x 300, 600 x 600, 900 x 300, 900 x 600, 1200 x 300, 1200 x 600</p> <p>6. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>LBP Light Bronze Paint<br/>MBP Medium Bronze Paint<br/>DBP Dark Bronze Paint<br/>MI Mill<br/>PC Prime Coat<br/>SP Special Custom Color</p> <p>7. <b>Opposed Blade Damper Finish</b><br/>DMI Mill (default)<br/>DBK Painted Black<br/>— None</p> <p>8. <b>Fastening</b><br/>(only for frame/border Types S)<br/>A Screw Holes (default)<br/>C Concealed Mounting Straps<br/>N None</p> | <p>9. <b>Core Style</b><br/>CA Standard 1/2" x 1/2" x 1/2" (default)<br/>CB 1/2" x 1/2" x 1"<br/>CC 1" x 1" x 1"</p> <p><b>OPTIONS &amp; ACCESSORIES:</b><br/>— None</p> <p>10. <b>Insect Screen</b><br/>IS Insect Screen</p> <p>11. <b>Plaster Sub-Frame</b><br/>PF Plaster Sub-Frame</p> <p>12. <b>Gaskets</b><br/>GK Foam Gasket</p> <p>13. <b>Earthquake Tabs</b><br/>EQT Earthquake Tabs</p> <p><b>Notes:</b><br/>1. * For Type L Lay-in, grille neck size is ceiling module size – 2" (51).<br/>** For Panel mounting, maximum grille neck size is ceiling module size – 3" (76).</p> |
|--|---|---|

GRILLES AND REGISTERS



## HOW TO SPECIFY

### MODEL SERIES: 61EC

### STEEL EGGCRATE RETURN GRILLES AND REGISTERS

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 61EC Eggcrate Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grilles shall have a 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and a corrosion-resistant frame that has reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

### MODEL SERIES: 61ECF

### STEEL EGGCRATE RETURN GRILLES AND REGISTERS

EXAMPLE: 61ECF - O - 24 x 12 - AW - DMI - CA - —

- |  |  |   |
|--|--|---|
| <ol style="list-style-type: none"> <li>1. <b>Model</b><br/>61ECF Finesline® Steel Frame</li> <li>2. <b>Damper (OBD)</b><br/>(model suffix)<br/>O Steel (standard)<br/>— None</li> <li>3. <b>Ceiling Module Size</b><br/><b>Imperial (inches)</b><br/>24 x 12, 24 x 24<br/><b>Metric (mm)</b><br/>600 x 300, 600 x 600</li> </ol> | <ol style="list-style-type: none"> <li>4. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>LBP Light Bronze Paint<br/>MBP Medium Bronze Paint<br/>DBP Dark Bronze Paint<br/>MI Mill<br/>PC Prime Coat<br/>SP Special Custom Color</li> <li>5. <b>Opposed Blade Damper Finish</b><br/>DMI Mill (default)<br/>DBK Painted Black<br/>— None</li> <li>6. <b>Core Style</b><br/>CA Standard 1/2" x 1/2" x 1/2"<br/>(default)<br/>CB 1/2" x 1/2" x 1"<br/>CC 1" x 1" x 1"</li> </ol> | <p><b>OPTIONS &amp; ACCESSORIES:</b><br/>— None</p> <ol style="list-style-type: none"> <li>7. <b>Insect Screen</b><br/>IS Insect Screen</li> <li>8. <b>Earthquake Tabs</b><br/>EQT Earthquake Tabs</li> </ol> |
|--|--|---|

GRILLES AND REGISTERS

F

## HOW TO SPECIFY

### MODEL SERIES: 61ECF

### STEEL EGGCRATE RETURN GRILLE - FINELINE®

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 61ECF Eggcrate Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grilles shall have a 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core with a free area of 90%. The grille frame shall be constructed from corrosion-resistant steel with support rails on four sides. The grilles shall be used in ductless return air applications for Narrow Regressed T-Bar Finesline® type suspended ceiling systems. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

### MODEL SERIES: 67EC

### STAINLESS STEEL EGGCRATE RETURN GRILLES AND REGISTERS

**EXAMPLE: 67EC - O - 24 x 12 - S - #4 - A - 304**

- |  |   |  |
|--|---|--|
| <p>1. <b>Models</b><br/>67EC Stainless Steel Eggcrate</p> <p>2. <b>Damper (OBD)</b><br/>(model suffix)<br/>O Stainless Steel<br/>— None</p> <p>3. <b>Nominal Width x Height</b><br/>inches (mm)</p> <p>4. <b>Frame/Border Type</b><br/>S Surface Mount<br/>Border 1 3/8" (35) (default)</p> <p>5. <b>Finish</b><br/>#4 Brushed Satin Polished (default)<br/>AW Appliance White<br/>SP Special Custom Color</p> | <p>6. <b>Fastening</b><br/>A Screw Holes (standard)(default)<br/>N None</p> <p><b>OPTIONS &amp; ACCESSORIES:</b></p> <p>7. <b>Construction</b><br/>304 Type 304 Stainless Steel (default)<br/>316 Type 316 Stainless Steel</p> <p>8. <b>Plaster Sub-Frame</b><br/>PFS Stainless Steel Plaster Sub-Frame</p> |  |
|--|---|--|

**Notes:**

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a Type 304 stainless steel register, eggcrate core, and stainless steel damper is Model 67EC-O. Unit will be supplied with screw holes and #4 Brushed Satin Polished finish.

## HOW TO SPECIFY

### MODEL SERIES: 67EC

### STAINLESS STEEL EGGCRATE RETURN GRILLES AND REGISTERS

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 67EC Eggcrate Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional). The grid core shall be 1/2" x 1/2" x 1/2" (13 x 13 x 13). The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #4 Brushed Satin Polished finish (optional AW Appliance White finish is available).

(Optional) A stainless steel opposed blade damper, adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORATED RETURN GRILLES AND REGISTERS

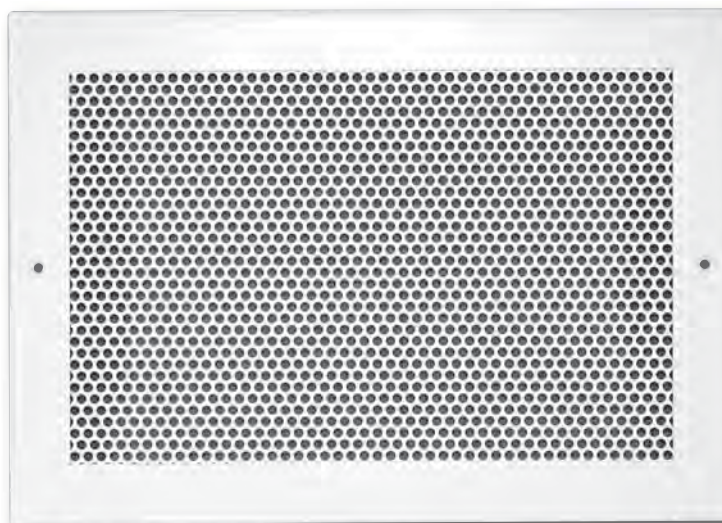
- ALUMINUM OR STEEL

### Model:

51PR Aluminum

61PR Steel

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper (available on Model 51PR only)



Model 51PR

Nailor Model Series 51PR and 61PR Perforated Return Grilles and Registers are medium capacity return or exhaust outlets. The perforated cores have 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Their design is clean and unobtrusive, providing the uncluttered appearance preferred by many architects and a face that is easy to maintain and clean. Their general appearance matches and complements the popular perforated supply diffusers (refer to the range of 4300 Series in the diffuser section of the catalog).

Models are available to suit both lay-in T-Bar openings in suspended ceiling systems and overlap openings in hard walls and ceilings.

**Frame/Border Type S Surface Mount** – This style has a flanged frame with an overall face dimension that is 1 3/4" (44) larger than the listed duct size. It is furnished as standard with countersunk screw holes and mounting screws.

**Frame/Border Type L Lay-in T-Bar** – This style is similar to above, but is sized on the overall face dimension to suit standard lay-in T-Bar ceiling modules and is supplied less screw holes. It is the model of choice for ducted return air applications. The nominal duct size is 2" (51) smaller than the ceiling module. When installed, the frame/border is partially visible within the perimeter of the ceiling opening and provides a visually appealing architectural finish.

Panel mounting is also available in an assortment of styles to suit most other ceiling types. Refer to page number F194 in the Options and Accessories section for further information.

### STANDARD FEATURES:

- Frame/Border Type S has a 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.
- Available from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219).

### CONSTRUCTION MATERIAL:

- Available in all aluminum construction with extruded frames or cost effective, corrosion-resistant steel with roll-formed frames.
- Steel or aluminum integral dampers are opposed blade design with a screwdriver slot operator.
- Frames are staked and mechanically interlocked to provide reinforced mitered corners.

### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- NF Narrow Frame with 1" (25) face border optional on Model 51PR.
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

## DIMENSIONAL DATA:

### PERFORATED RETURN GRILLES AND REGISTERS - ALUMINUM OR STEEL

#### MODELS: 51PR, 61PR

**Model 51PR**

**Model 51PR**

**Note:** Model 51PR is available with an optional Type NF Frame. It has a 3/4" (19) overlap margin.  
Overall flange to flange dimensions = listed size + 1 1/4" (32).

**Frame/Border Type S – Surface Mount**

**Model 61PR**

**Model 61PR**

**Frame/Border Type L – Lay-in T-Bar**



## PERFORATED RETURN GRILLES AND REGISTERS

### • STAINLESS STEEL

#### Model:

**67PR Stainless Steel**

- Suffix '-O' adds a stainless steel opposed blade damper



Model 67PR

Nailor Model Series 67PR Perforated Return Grilles and Registers are medium capacity return or exhaust outlets. The perforated cores have 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Their design is clean and unobtrusive, providing the uncluttered appearance preferred by many architects.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

#### STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Available from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).

#### CONSTRUCTION MATERIAL:

- Type 304 stainless steel construction.
- Optional dampers – roll-formed stainless steel opposed blade design with a screwdriver slot operator.

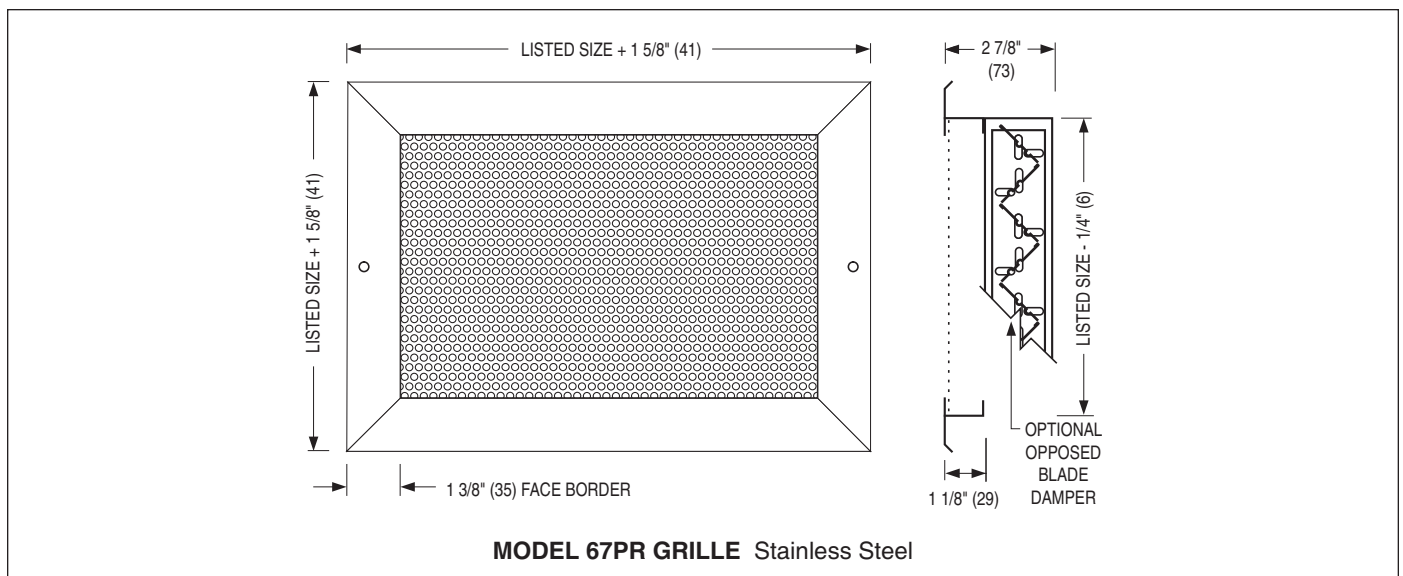
#### FINISH OPTIONS:

- #4 Brushed Satin Polished finish is standard. AW Appliance White finish is optional. Other finishes are available.

#### OPTIONS AND ACCESSORIES:

- 316 Type 316 stainless steel construction is available.
- PFS Stainless Steel Plaster Frame

For additional options and accessories, see page F191.





## PERFORMANCE DATA:

### PERFORATED RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

#### MODELS: 51PR, 51FP, 61PR, 61FP, 67PR, 51PRC, 61PRC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300	400	500	600	700	800	900	1000	1200
					.006 .024	.010 .042	.016 .067	.022 .095	.031 .130	.040 .170	.051 .215	.062 .265	.090 .382
6 x 6	8 x 4 10 x 4	0.20	0.20	CFM Noise Criteria	60 -	80 -	100 -	120 15	140 21	160 26	180 32	200 37	240 44
8 x 6	10 x 5 12 x 4	0.27	0.27	CFM Noise Criteria	81 -	108 -	135 -	162 16	189 22	216 28	243 33	270 38	324 45
10 x 6	12 x 5 16 x 4	0.35	0.33	CFM Noise Criteria	105 -	140 -	175 -	210 17	245 24	280 29	315 34	350 39	420 46
8 x 8	14 x 5	0.38	0.36	CFM Noise Criteria	114 -	152 -	190 -	228 18	266 25	304 29	342 35	380 40	456 47
12 x 6	18 x 4	0.42	0.40	CFM Noise Criteria	126 -	168 -	210 -	252 18	294 25	336 30	378 35	420 40	504 47
12 x 8	16 x 6 24 x 4	0.58	0.53	CFM Noise Criteria	174 -	232 -	290 -	348 20	406 27	464 31	522 36	580 41	696 48
10 x 10	14 x 7	0.61	0.56	CFM Noise Criteria	183 -	244 -	305 -	366 20	427 27	488 31	549 37	610 42	732 49
18 x 6	14 x 8    30 x 4 28 x 4	0.65	0.60	CFM Noise Criteria	195 -	260 -	325 -	390 20	455 27	520 32	585 37	650 42	780 49
12 x 10	16 x 8    20 x 6 24 x 5	0.74	0.67	CFM Noise Criteria	222 -	296 -	370 -	444 21	518 28	592 32	666 37	740 43	888 50
12 x 12	14 x 10    24 x 6 18 x 8    38 x 4	0.90	0.80	CFM Noise Criteria	270 -	360 -	450 15	540 22	630 28	720 33	810 38	900 44	1080 51
14 x 14	16 x 12    24 x 8 20 x 10    34 x 6	1.24	1.09	CFM Noise Criteria	372 -	496 -	620 16	744 23	868 29	992 34	1116 39	1240 45	1488 52
18 x 12	16 x 14    28 x 8 22 x 10    38 x 6	1.37	1.20	CFM Noise Criteria	411 -	548 -	685 17	822 23	959 30	1096 35	1233 39	1370 45	1644 52
24 x 10	20 x 12    30 x 8	1.52	1.33	CFM Noise Criteria	456 -	608 -	760 17	912 24	1064 30	1216 35	1368 40	1520 46	1824 53
16 x 16	18 x 14    30 x 8 22 x 12	1.64	1.42	CFM Noise Criteria	492 -	656 -	820 17	984 24	1148 30	1312 35	1476 40	1640 46	1968 53
24 x 12	18 x 16    30 x 10 20 x 14    36 x 8	1.85	1.60	CFM Noise Criteria	555 -	740 -	925 17	1110 24	1295 30	1480 35	1665 40	1850 46	2220 53
18 x 18	20 x 16    28 x 12 24 x 14    32 x 10	2.10	1.80	CFM Noise Criteria	630 -	840 -	1050 17	1260 24	1470 30	1680 36	1890 40	2100 46	2520 53
30 x 12	20 x 18    26 x 14 22 x 16    36 x 10	2.32	2.00	CFM Noise Criteria	696 -	928 -	1160 17	1392 25	1624 30	1856 37	2088 41	2320 47	2784 54
20 x 20	24 x 18    30 x 14 26 x 16    36 x 12	2.61	2.22	CFM Noise Criteria	783 -	1044 -	1305 18	1566 25	1827 30	2088 37	2349 41	2610 47	3132 54
22 x 22	24 x 20    30 x 16 26 x 18    36 x 14	3.17	2.69	CFM Noise Criteria	951 -	1268 -	1585 18	1902 26	2219 31	2536 37	2853 42	3170 48	3804 55
30 x 18	24 x 22    40 x 14 34 x 16	3.54	3.00	CFM Noise Criteria	1062 -	1416 -	1770 19	2124 26	2478 32	2832 37	3186 42	3540 48	4248 55
24 x 24	26 x 22    32 x 18 28 x 20    36 x 16	3.79	3.20	CFM Noise Criteria	1137 -	1516 -	1895 19	2274 27	2653 33	3032 38	3411 43	3790 49	4548 56
36 x 18	32 x 20    46 x 14 40 x 16	4.29	3.60	CFM Noise Criteria	1287 -	1716 -	2145 19	2574 27	3003 33	3432 38	3861 43	4290 49	5148 56
26 x 26	28 x 24    36 x 20 48 x 14    40 x 18	4.47	3.76	CFM Noise Criteria	1341 -	1788 -	2235 20	2682 28	3129 34	3576 39	4025 44	4470 50	5364 57
30 x 24	28 x 26    36 x 20 32 x 22    40 x 18	4.77	4.00	CFM Noise Criteria	1431 -	1908 -	2385 21	2862 28	3339 34	3816 39	4293 44	4770 50	5724 57
28 x 28	30 x 26    40 x 20 36 x 22	5.20	4.36	CFM Noise Criteria	1560 -	2080 -	2600 21	3120 28	3640 34	4160 40	4680 44	5200 50	6240 57
36 x 24	30 x 28    44 x 20 40 x 22	5.74	4.80	CFM Noise Criteria	1722 -	2296 -	2870 22	3444 29	4018 35	4592 40	5166 45	5740 50	6888 58
30 x 30	34 x 26    48 x 20 38 x 24	5.99	5.00	CFM Noise Criteria	1797 -	2396 -	2995 22	3594 29	4193 35	4792 40	5391 45	5990 51	7188 58

GRILLES AND REGISTERS



For performance data notes, see F118.

## PERFORMANCE DATA:

### PERFORATED RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

#### MODELS: 51PR, 51FP, 61PR, 61FP, 67PR, 51PRC, 61PRC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300	400	500	600	700	800	900	1000	1200
					.006 .024	.010 .042	.016 .067	.022 .095	.031 .130	.040 .170	.051 .215	.062 .265	.090 .382
32 x 32	36 x 30 46 x 22 38 x 28	6.84	5.69	CFM	2052	2736	3420	4104	4788	5472	6156	6840	8208
				Noise Criteria	-	15	23	29	36	41	46	51	58
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	6.40	CFM	2307	3076	3845	4614	5383	6152	6921	7690	9228
				Noise Criteria	-	16	24	30	36	41	47	52	59
36 x 36	38 x 34 26 x 28 42 x 30 48 x 26	8.69	7.20	CFM	2607	3476	4345	5214	6083	6952	7821	8690	10428
				Noise Criteria	-	16	24	31	37	42	47	52	59
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.02	CFM	2910	3880	4850	5820	6790	7760	8730	9700	11640
				Noise Criteria	-	17	24	31	37	42	48	53	60
40 x 40	42 x 36 48 x 32 46 x 34	10.77	8.89	CFM	3231	4308	5385	6462	7539	8616	9693	10770	12924
				Noise Criteria	-	17	24	31	38	43	49	54	61
42 x 42	44 x 40 48 x 36 46 x 38	11.89	9.80	CFM	3567	4756	5945	7134	8323	9512	10701	11890	14268
				Noise Criteria	-	18	25	32	38	43	49	54	61
44 x 44	46 x 42	13.07	10.76	CFM	3921	5228	6535	7842	9149	10456	11763	13070	15684
				Noise Criteria	-	18	25	32	38	44	49	54	61
46 x 46		14.30	11.76	CFM	4290	5720	7150	8580	10010	11440	12870	14300	17160
				Noise Criteria	-	19	26	33	39	44	49	54	61
48 x 48		15.59	12.80	CFM	4677	6236	7795	9354	10913	12472	14031	15590	18708
				Noise Criteria	-	19	26	33	39	44	49	54	61

#### Performance Notes:

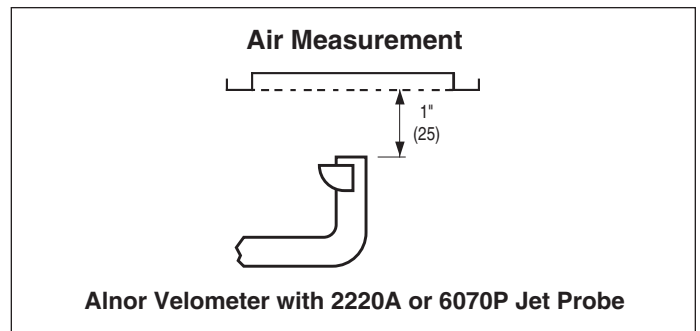
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille tested without damper. Apply the following correction factors for addition of opposed blade damper to grille.

**Neg. Static Pressure** Listed Value x 1.10.

**Noise Criteria** Add 5 dB to listed value.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a Noise Criteria level of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



#### Airflow Measurements

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.

$$\text{Airflow (CFM)} = \text{Average velocity (V}_k\text{)} \times \text{Ak.}$$

**HOW TO ORDER**

**MODEL SERIES: 51PR**

**ALUMINUM PERFORATED RETURN GRILLES AND REGISTERS**

**EXAMPLE: 51PR - O - 24 x 12 - S - - - AW - DMI - A - -**

- |   |   |   |
|---|---|---|
| <p>1. <b>Models</b><br/>51PR Aluminum Construction</p> <p>2. <b>Damper (OBD)</b><br/>(model suffix)<br/>O Steel<br/>OA Aluminum<br/>— None</p> <p>3. <b>Nominal Width x Height</b><br/>inches (mm)<br/>For Type S, NF, PL, SP, MP, FP and TP,<br/>W x H = Duct Size<br/>For Type L,<br/>W x H = Ceiling Module Size</p> <p>4. <b>Frame/Border Type</b><br/><b>Surface Mount:</b><br/>S Surface Mount<br/>Border 1 1/4" (32) (default)<br/>NF Narrow Frame/Border 1" (25)<br/><b>Ceiling Grid:</b><br/>L Lay-in T-Bar *<br/><b>Panel Mount: **</b><br/>PLS Steel Lay-in T-Bar Panel<br/>PLA Aluminum Lay-in T-Bar Panel<br/>FPS Steel Finline® Panel<br/>FPA Aluminum Finline® Panel<br/>SPS Steel Spline Panel<br/>SPA Aluminum Spline Panel<br/>MPS Steel Metal Pan Panel<br/>MPA Aluminum Metal Pan Panel</p> | <p>TPS Steel Tegular Panel<br/>TPA Aluminum Tegular Pan Panel</p> <p>5. <b>Ceiling Module Size</b><br/><b>Panel Size</b><br/>(Use only for panel mounting, frame/<br/>border Types PL, SP, MP, FP and TP)<br/>— None (default)<br/><b>Imperial (inches)</b><br/>12 x 12, 20 x 20, 24 x 12, 24 x 24,<br/>36 x 12, 36 x 24, 48 x 12, 48 x 24<br/><b>Metric (mm)</b><br/>300 x 300, 500 x 500, 600 x 300,<br/>600 x 600, 900 x 300, 900 x 600,<br/>1200 x 300, 1200 x 600</p> <p>6. <b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>LBP Light Bronze Paint<br/>MBP Medium Bronze Paint<br/>DBP Dark Bronze Paint<br/>MI Mill<br/>PC Prime Coat<br/>SP Special Custom Color</p> <p>7. <b>Opposed Blade Damper Finish</b><br/>DMI Mill (default)<br/>DBK Painted Black<br/>— None</p> | <p>8. <b>Fastening</b><br/>(only for frame/border Types S, NF)<br/>A Screw Holes (standard) (default)<br/>N None</p> <p><b>OPTIONS &amp; ACCESSORIES:</b></p> <p>9. <b>Insect Screen</b><br/>IS Insect Screen</p> <p>10. <b>Plaster Sub-Frame</b><br/>PF Plaster Sub-Frame</p> <p>11. <b>Gaskets</b><br/>GK Foam Gasket</p> <p>12. <b>Earthquake Tabs</b><br/>EQT Earthquake Tabs</p> <p><b>Notes:</b><br/>1. Refer to individual model submittal for guidance on availability of options and accessories.<br/>2. * For Type L Lay-in, grille neck size is ceiling module size – 2" (51).<br/>** For Panel mounting, maximum grille neck size is ceiling module size – 3" (76).</p> |
|---|---|---|

GRILLES AND REGISTERS

F

**HOW TO SPECIFY**

**MODEL SERIES: 51PR**

**ALUMINUM PERFORATED RETURN GRILLES AND REGISTERS**

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 51PR Perforated Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have an aluminum perforated core with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The frame is to be constructed from extruded aluminum and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**HOW TO ORDER**

**MODEL SERIES: 61PR**

**STEEL PERFORATED RETURN GRILLES AND REGISTERS**

**EXAMPLE: 61PR - O - 24 x 12 - S - — - AW - DMI - A —**

- |   |  |   |
|---|--|---|
| <p><b>1. Models</b><br/>61PR Steel Construction</p> <p><b>2. Damper (OBD)</b><br/>(model suffix)<br/>O Steel<br/>— None</p> <p><b>3. Nominal Width x Height</b><br/>inches (mm)<br/>For Type S, PLS, SPS, MPS, FPS and TPS,<br/>W x H = Duct Size<br/>For Type L,<br/>W x H = Ceiling Module Size</p> <p><b>4. Frame/Border Type</b><br/><b>Surface Mount:</b><br/>S Surface Mount<br/>Border 1 1/4" (32)<br/>(default)<br/><b>Ceiling Grid:</b><br/>L Lay-in T-Bar *</p> <p><b>Panel Mount: **</b><br/>PLS Steel Lay-in T-Bar Panel<br/>FPS Steel Finline® Panel<br/>SPS Steel Spine Panel<br/>MPS Steel Metal Pan Panel<br/>TPS Steel Tegular Panel</p> | <p><b>5. Ceiling Module Size</b><br/><b>Panel Size</b><br/>(Use only for panel mounting, frame/ border Types PLS, SPS, MPS, FPS and TPS)<br/>— None (default)<br/><b>Imperial (inches)</b><br/>12 x 12, 20 x 20, 24 x 12, 24 x 24, 36 x 12, 36 x 24, 48 x 12, 48 x 24<br/><b>Metric (mm)</b><br/>300 x 300, 500 x 500, 600 x 300, 600 x 600, 900 x 300, 900 x 600, 1200 x 300, 1200 x 600</p> <p><b>6. Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>LBP Light Bronze Paint<br/>MBP Medium Bronze Paint<br/>DBP Dark Bronze Paint<br/>MI Mill<br/>PC Prime Coat<br/>SP Special Custom Color</p> <p><b>7. Opposed Blade Damper Finish</b><br/>DMI Mill (default)<br/>DBK Painted Black<br/>— None</p> | <p><b>8. Fastening</b><br/>(only for frame/border Type S)<br/>A Screw Holes (default)<br/>N None</p> <p><b>OPTIONS &amp; ACCESSORIES:</b></p> <p><b>9. Insect Screen</b><br/>IS Insect Screen</p> <p><b>10. Plaster Sub-Frame</b><br/>PF Plaster Sub-Frame</p> <p><b>11. Gaskets</b><br/>GK Foam Gasket</p> <p><b>12. Earthquake Tabs</b><br/>EQT Earthquake Tabs</p> <p><b>Notes:</b><br/>1. Refer to individual model submittal for guidance on availability of options and accessories.<br/>2. * For Type L Lay-in, grille neck size is ceiling module size – 2" (51).<br/>** For Panel mounting, maximum grille neck size is ceiling module size – 3" (76).</p> |
|---|--|---|

GRILLES AND REGISTERS

F

**HOW TO SPECIFY**

**MODEL SERIES: 61PR**

**STEEL PERFORATED RETURN GRILLES AND REGISTERS**

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 61PR Perforated Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a corrosion-resistant steel perforated core with 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area. The frame is to be constructed from roll-formed corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**HOW TO ORDER**

**MODEL SERIES: 67PR**

**STAINLESS STEEL PERFORATED RETURN GRILLES AND REGISTERS**

**EXAMPLE: 67PR - O - 24 x 12 - S - #4 - A - 304**

- |  |  |   |
|--|--|---|
| <p><b>1. Models</b><br/>67PR Stainless Steel Perforated Return</p> <p><b>2. Damper (OBD)</b><br/>(model suffix)<br/>— None<br/>O Stainless Steel</p> <p><b>3. Nominal Width x Height</b><br/>inches (mm)</p> <p><b>4. Frame/Border Type</b><br/>S Surface Mount<br/>Border 1 3/8" (35) (default)</p> | <p><b>5. Finish</b><br/>#4 Brushed Satin Polished (default)<br/>AW Appliance White<br/>SP Special Custom Color</p> <p><b>6. Fastening</b><br/>A Screw Holes (default)<br/>N None</p> | <p><b>OPTIONS &amp; ACCESSORIES:</b></p> <p><b>7. Construction</b><br/>304 Type 304 Stainless Steel (default)<br/>316 Type 316 Stainless Steel</p> <p><b>8. Plaster Sub-Frame</b><br/>— None (default)<br/>PFS Stainless Steel Plaster Sub-Frame</p> <p><b>Notes:</b><br/>1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a Type 304 stainless steel register, surface mount with damper is Model 67PR-O. Unit will be supplied with screw holes and #4 Brushed Satin Polished finish.</p> |
|--|--|---|

**GRILLES AND REGISTERS**



**HOW TO SPECIFY**

**MODEL SERIES: 67PR**

**STAINLESS STEEL PERFORATED RETURN GRILLES AND REGISTERS**

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model 67PR Perforated Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional). The perforated core shall have 3/16" (5) dia. perforated holes on 1/4" (6) staggered centers, providing 51% free area. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #4 Brushed Satin Polished finish (optional AW Appliance White finish).

(Optional) A stainless steel opposed blade damper adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## FILTER RETURN AND EXHAUST GRILLES

- ACCOMMODATES 1" (25) STANDARD FILTER
- AVAILABLE WITH LOUVERED, EGGRATE OR PERFORATED CORE STYLES



Models 51FBS, 51FB55 and 67FB45

### Models:

- 51F "Series" Aluminum
- 61F "Series" Steel
- 67F "Series" Stainless Steel

Nailor Model Series 51F, 61F and 67F Filter Return and Exhaust Grilles are a convenient and economical means of filtering primary return air locally. They are especially suited to recirculating air systems such as fan powered terminal units, fan coils and heat pumps. They have been designed to match and complement their respective base models in appearance.

### SELECTION GUIDE:

#### ALUMINUM MODELS

- 51FB45 Fixed 45° Deflection, 3/4" (19) Spacing
- 51FB55 Fixed 45° Deflection, 1/2" (13) Spacing
- 51FBS Fixed 0° Deflection, 3/4" (19) Spacing
- 51FE Eggcrate Grid Core
- 51FE45 Eggcrate Grid Core, 45° Deflection (Contact factory for performance data).
- 51FP Perforated Face Core

#### STAINLESS STEEL MODELS

- 67FB45 Fixed 45° Deflection, 3/4" (19) Spacing, Surface Mount.
- 67FB55 Fixed 55° Deflection, 1/2" (13) Spacing, Surface Mount.

Contact factory for availability of other frame/core combinations.

**PERFORMANCE DATA:** Refer to the appropriate base model and add pressure drop for the installed filter. Fixed Blade pages F41 thru F46. Eggcrate Grid Core pages F106 and F107. Perforated Face pages F117 and F118.

#### STANDARD FEATURES:

- Type S Surface Mount.  
Installed with sheet metal screws (or similar by others) through the neck of the outer frame. Provides an aesthetically clean visual appearance. Type A countersunk screw holes are an available option.
- Type L Lay-in T-Bar.  
Available to suit both imperial and metric ceiling modules.

- Frames and sub-frames are mechanically interlocked with reinforced mitered corners.
- Inner core is hinged on one side and secured on the opposite side with convenient 1/4 turn fasteners.
- Accepts standard 1" (25) thick, throw-away type filters (by others).

#### CONSTRUCTION MATERIAL:

- Extruded aluminum construction, roll-formed corrosion-resistant steel or stainless steel construction.

#### STEEL MODELS

- 61FB45 Fixed 45° Deflection, 3/4" (19) Spacing
- 61FB55 Fixed 45° Deflection, 1/2" (13) Spacing
- 61FBS Fixed 0° Deflection, 3/4" (19) Spacing
- 61FE Eggcrate Grid Core
- 61FP Perforated Face Core

#### FINISH OPTIONS:

- AW Appliance White finish is standard on steel and aluminum constructed models. #4 Brushed Satin Polished finish is standard on stainless steel models. Other finishes are available.

#### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs
- Optional 2" (51) filter frame is available.

For additional options and accessories, see page F191.



## DIMENSIONAL DATA:

### FILTER RETURN AND EXHAUST GRILLES • 51FB, 61FB, 67FB

TYPE S = LISTED SIZE + 3 3/4" (95)  
 TYPE L = CEILING MODULE - 1/4" (6)

A = 2" (51) for 1" (25) filter. Standard.  
 = 3" (76) for 2" (51) filter. Optional.

TYPE L = CEILING MODULE - 4 3/4" (121)  
 TYPE S = LISTED SIZE - 3/4" (19)  
 1 1/4" (32)  
 TYPE L = CEILING MODULE - 4" (102)  
 TYPE S = LISTED SIZE  
 TYPE L DUCT = CEILING MODULE - 3 3/4" (95)  
 TYPE S DUCT = LISTED SIZE + 1/4" (6)

3/4" (19)  
 TYPE L = CEILING MODULE - 4" (102)  
 TYPE S = LISTED SIZE  
 TYPE L DUCT = CEILING MODULE - 3 3/4" (95)  
 TYPE S DUCT = LISTED SIZE + 1/4" (6)

**MODELS:**  
 51FB45, 51FB55,  
 61FB45, 61FB55

**MODELS:**  
 51FBS,  
 61FBS

**Aluminum or Steel Construction • Fixed Louvered Blades**  
 Type S (surface mount) is available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) maximum.  
 Type L (lay-in) is available in ceiling module sizes 12" x 12" (305 x 305) through 48" x 24" (1219 x 610) maximum.  
 Core is hinged and secured to outer frame with 1/4 turn fasteners.

LISTED SIZE + 2 3/4" (70)

LISTED SIZE + 2 3/4" (70)

1 7/8" (48) FACE BORDER

1/4 TURN SLOTTED QUICK RELEASE FASTENERS

With OBD: B = 3 7/8" (98) for 1" (25) filter. Standard.  
 = 4 7/8" (124) for 2" (51) filter. Optional.

2 7/8" (73)  
 B  
 1/2" (13) OR 3/4" (19)  
 LISTED SIZE - 1/16" (2)  
 DUCT = LISTED SIZE + 1/4" (6)  
 OPTIONAL OBD  
 FILTER CLIPS  
 1 3/4" (44)  
 A

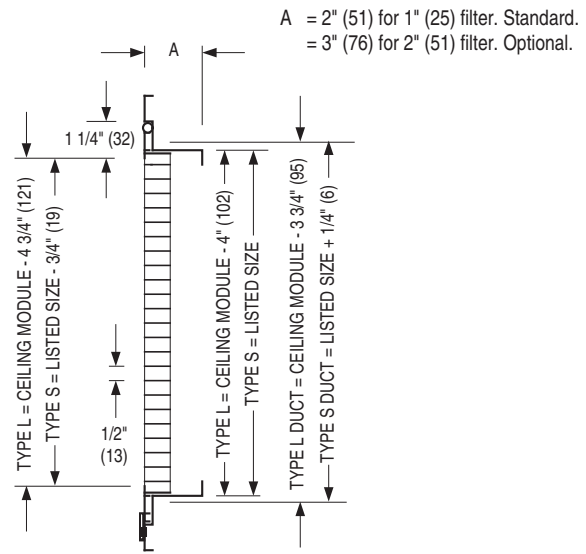
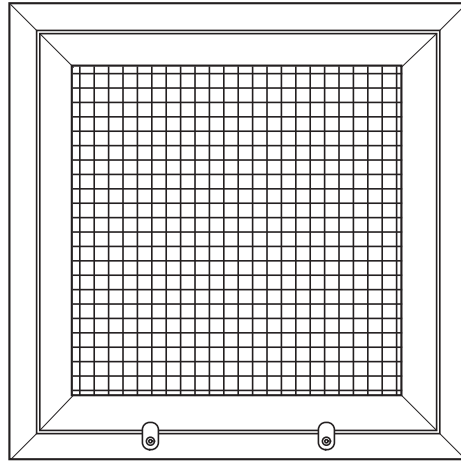
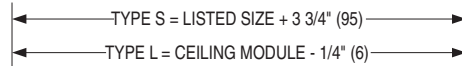
**MODELS:**  
 67FB45, 67FB55

Without OBD: A = 2 1/4" (57) for 1" (25) filter. Standard.  
 = 3 1/4" (83) for 2" (51) filter. Optional.

**Stainless Steel Construction • Fixed Louvered Blades • Removable Face**  
 Type S (surface mount) is available in nominal sizes 4" x 4" (102 x 102) through 60" x 48" (1524 x 1219).  
 Type L (lay-in) is available by ordering a listed size that is 3" (76) smaller than ceiling module size.  
 Core is secured to outer frame with Type QT stainless steel 1/4 turn slotted fasteners.

## DIMENSIONAL DATA:

### FILTER RETURN GRILLES • 51FE, 51FE45, 51FP, 61FE, 61FP



**MODELS:**  
 51FE, 61FE

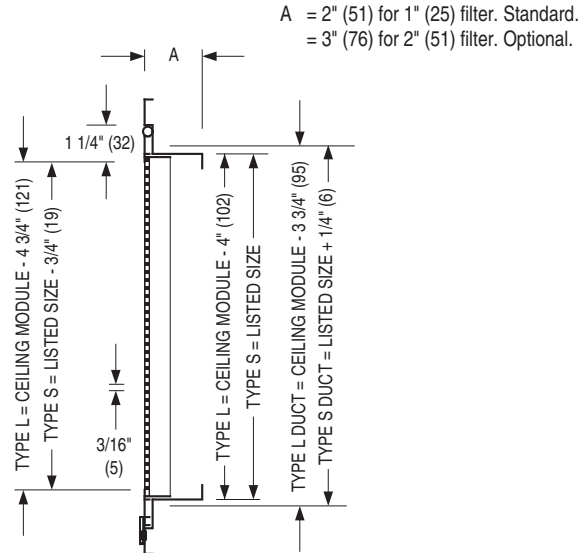
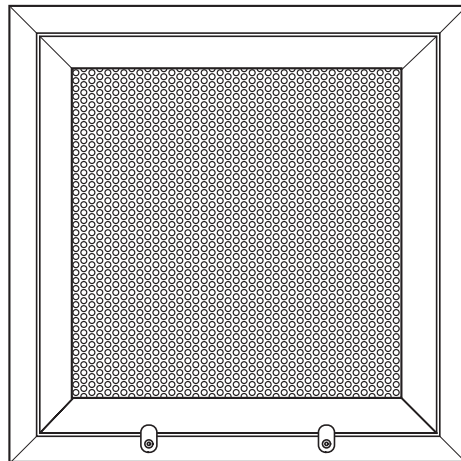
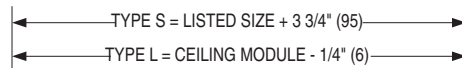
#### Eggcrate Core • 1/2 x 1/2 x 1/2 (13 x 13 x 13) Aluminum Core

Type S (surface mount) is available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) in 1" (25) increments. Maximum size for Model 51FE45 is 48" x 24" (1219 x 610).

Core is hinged on width dimension at top as standard (HT).

For other hinging requirements, specify HB Hinged bottom, HL Hinged left, HR Hinged right.

Type L (lay-in mount) is available in ceiling modules sizes: 12" x 12", 24" x 12", 24" x 24", 36" x 12", 20" x 20", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 610 x 610, 914 x 305, 508 x 508, 914 x 610 and 1219 x 610). Also available to suit metric ceiling modules.



**MODELS:**  
 51FP, 61FP

#### Perforated Face • 3/16" (5) dia. holes on 1/4" (6) staggered centers

Type S (surface mount) is available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) in 1" (25) increments.

Core is hinged on width dimension at top as standard (HT).

For other hinging requirements, specify HB Hinged bottom, HL Hinged left, HR Hinged right.

Type L (lay-in mount) is available in ceiling modules sizes: 12" x 12", 24" x 12", 24" x 24", 36" x 12", 20" x 20", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 610 x 610, 914 x 305, 508 x 508, 914 x 610 and 1219 x 610). Also available to suit metric ceiling modules.

## HOW TO ORDER

### MODEL SERIES: 51F, 61F

### FILTER RETURN GRILLES AND REGISTERS

EXAMPLE: 61FB45 - 16 x 16 - S - AW - N - HT - QTL - —

**1. Models**

**Fixed Louver Blades:**

- 51FB45 Aluminum, 45° Deflection, 3/4" (19) spacing
- 61FB45 Steel, 45° Deflection, 3/4" (19) spacing
- 51FB55 Aluminum, 45° Deflection, 1/2" (13) spacing
- 61FB55 Steel, 45° Deflection, 1/2" (13) spacing
- 51FBS Aluminum, 0° Deflection, 3/4" (19) spacing
- 61FBS Steel, 0° Deflection, 3/4" (19) spacing

**Eggcrate:**

- 51FE Aluminum, 1/2" x 1/2" x 1/2" (13 x 13 x 13) core
- 61FE Steel, 1/2" x 1/2" x 1/2" (13 x 13 x 13) core
- 51FE45 Aluminum, 1/2" x 1/2" x 1/2" (13 x 13 x 13) core, 45° Deflection, Sight Proof

**Perforated Core:**

- 51FP Aluminum, Perforated Face
- 61FP Steel, Perforated Face

**2. Nominal Width x Height**

inches (mm)

**Surface Mount:**

W x H = Duct Size

**Lay-in T-Bar:**

W x H = Ceiling Module Size

**3. Frame/Border Type**

- S Surface Mount  
Border 1 1/4" (32) (default)
- L Lay-in T-Bar

**4. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint
- MI Mill
- PC Prime Coat
- SP Special Custom Color

**5. Fastening**

- (only for frame/border Types S)
- N None (default)
- A Screw Holes

**6. Hinge**

- HT Top (default)
- HB Bottom
- HL Left
- HR Right

**7. Core Fastening**

- QTL 1/4 Turn Latch (default)
- KK Knurled Knob
- QT 1/4 Turn Slotted

**OPTIONS & ACCESSORIES:**

**8. Filter**

- F2 Provision for 2" (51)

**9. Gaskets**

- GK Foam Gasket

**10. Earthquake Tabs**

- EQT Earthquake Tabs

**Notes:**

1. For Type S, duct size is ceiling size + 1/4" (6).
2. For Type L, duct size is ceiling size – 3 3/4" (95).
3. Core Fastening: Standard core is hinged and secured with 1/4 turn latches.

## HOW TO ORDER

### MODEL SERIES: 67F

### STAINLESS STEEL FILTER RETURN GRILLES & REGISTERS • REMOVABLE FACE W/ SUBFRAME

EXAMPLE: 67FB45 - O - 24 x 12 - S - #4 - A - 304 - F1 - QT

**1. Models**

- 67FB45 45° Deflection, 3/4" (19) spacing,
- 67FB55 45° Deflection, 1/2" (13) spacing,

**2. Damper (OBD)**

- (model suffix)
- None
- O Stainless Steel

**3. Nominal Width x Height**

inches (mm)

**4. Frame/Border Type**

- S Surface Mount (default)

**5. Finish**

- #4 Brushed Satin Polished (default)
- AW Appliance White
- SP Special Custom Color

**6. Fastening**

- A Screw Holes (standard) (default)
- N None

**OPTIONS & ACCESSORIES:**

**7. Construction**

- 304 Type 304 Stainless Steel (default)
- 316 Type 316 Stainless Steel

**8. Filter Clips**

- F1 For 1" (25) filter (default)
- F2 For 2" (51)
- FN None

**9. Core Fastening**

- QT 1/4 Turn Slotted Fasteners (default)
- HTQT Hinged at Top / 1/4 Turn Slotted
- WT 1/4 Turn "Wingnut" Fasteners

**Notes:**

1. These grilles feature a subframe as standard for applications which may require frequent removal for cleaning.
2. Frame/Border Type S is standard. Duct size = Listed Size + 1/4" (6).
3. For Lay-in T-Bar applications, order a listed size (neck/filter size) that is 3" (76) smaller than ceiling module size.
4. Core Fastening: Standard core is secured with four 1/4 turn slotted fasteners.
5. Louvered blades are parallel to width (first dimension).

## HOW TO SPECIFY

### MODEL SERIES: 51F

### ALUMINUM FILTER RETURN GRILLES

#### SUGGESTED SPECIFICATION:

##### **51FB45, 51FB55, 51FBS Aluminum Louvered Blade**

Furnish and install **Nailor Model** (select one) **51FB45, 51FB55 or 51FBS Fixed Blade Filter Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grille shall have extruded aluminum fixed blades and frame. The frame is to be hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### **51FE Aluminum Eggcrate Grid Core**

Furnish and install **Nailor Model 51FE Eggcrate Grid Core Filter Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and an extruded aluminum frame, that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### **51FE45 – Aluminum Eggcrate Grid Core - 45° Deflection**

Furnish and install **Nailor Model 51FE45 Eggcrate Grid Core Filter Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core angled at 45° and an extruded aluminum frame, that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### **51FP Aluminum Perforated Face Core**

Furnish and install **Nailor Model 51FP Perforated Core Filter Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have an aluminum perforated core that has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area and an extruded aluminum frame that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate a standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO SPECIFY

### MODEL SERIES: 61F

### STEEL FILTER RETURN GRILLES

#### SUGGESTED SPECIFICATION:

##### 61FB45, 61FB55, 61FBS Steel Louvered Blade

Furnish and install **Nailor Model** (select one) **61FB45, 61FB55 or 61FBS Fixed Blade Filter Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have roll-formed corrosion-resistant steel fixed blades and frame. The frame is to be hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 61FE Steel Eggcrate Grid Core

Furnish and install **Nailor Model 61FE Eggcrate Grid Core Filter Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and a corrosion-resistant steel frame, that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 61FP Steel Perforated Face Core

Furnish and install **Nailor Model 61FP Perforated Core Filter Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have a corrosion-resistant steel perforated core that has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area and a corrosion-resistant steel frame that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate a standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO SPECIFY

### MODEL SERIES: 67F

### STAINLESS STEEL FILTER RETURN GRILLES

#### SUGGESTED SPECIFICATION:

##### 67FB45 Stainless Steel – 3/4" (19) Blade Spacing

Furnish and install **Nailor Model 67FB45 Fixed Blade Filter Return Grilles with Subframe** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have be constructed entirely from Type 304 stainless steel (Type 316 is optional). The grille core shall be secured to the subframe with stainless steel 1/4 turn fasteners to allow for complete removal and access to the interior for cleaning. All exposed surfaces shall be a #4 Brushed Satin Polished finish (optional finish is AW Appliance White).

(Optional) A stainless steel opposed blade damper that is adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 67FB55 Stainless Steel – 1/2" (13) Blade Spacing

Furnish and install **Nailor Model 67FB55 Fixed Blade Filter Return Grilles with Subframe** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have be constructed entirely from Type 304 stainless steel (Type 316 is optional). The grille core shall be secured to the subframe with stainless steel 1/4 turn fasteners to allow for complete removal and access to the interior for cleaning. All exposed surfaces shall be a #4 Brushed Satin Polished finish (optional finish is AW Appliance White).

(Optional) A stainless steel opposed blade damper that is adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



## ALUMINUM DOOR/TRANSFER GRILLES

- SIGHT-PROOF

### Models:

51DGD Double Flange

51DGS Single Flange



Model 51DGD

Nailor Model Series 51DG Door/Transfer Grilles are designed to meet the demand for top quality and competitive prices. The grilles are carefully constructed to be unobtrusive in appearance for architectural excellence.

Model Series 51DG offers the largest free area possible (average > 50%) with a completely sight-proof design, utilizing an inverted "V" shape louver on 3/4" (19) centers.

Widely used, not only in doors and partitions, but also in place of conventional exhaust and return grilles where it is important that the interior of the plenum or duct be concealed.

The inverted-V blades not only block vision, but also provide strength. When mounted in the lower portion of a door, a door grille is naturally subjected to bumps and kicks. The 51DG durability assures good looks and long service.

Screw holes in the frame are countersunk for smooth appearance after installation.

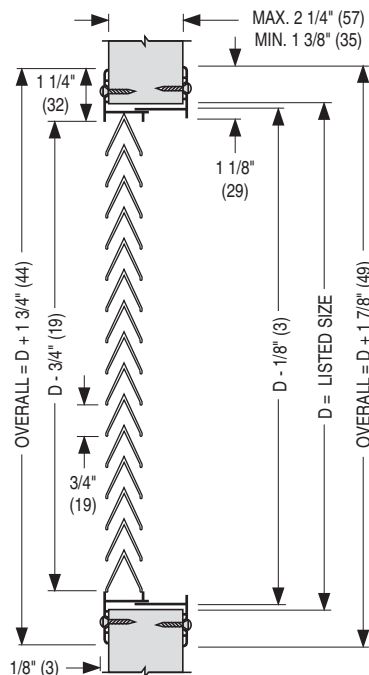
Available sizes 4" x 4" (102 x 102) through 36" x 36" (914 x 914) in 2" (51) increments.

### CONSTRUCTION MATERIAL:

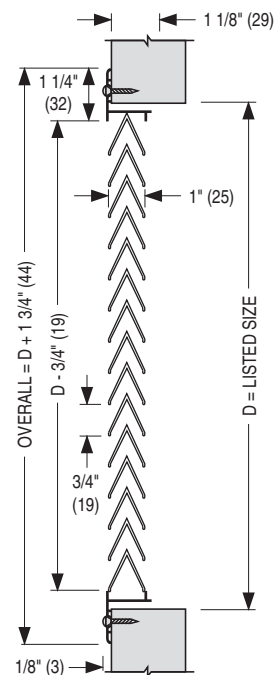
- Heavy gauge, extruded aluminum.

### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.



**MODEL 51DGD (Double Flange)**  
Auxiliary Frame Assembly



**MODEL 51DGS (Single Flange)**  
Core and Flange Frame Assembly

## STEEL DOOR/TRANSFER GRILLES

- SIGHT-PROOF

### Models:

- 61DGD Double Flange
- 61DGS Single Flange
- 61DGC Core Only



Models 61DGD, 61DGC

Nailor Model Series 61DG Door/Transfer Grilles are designed to meet the demand for top quality and competitive prices. The grilles are carefully constructed to be unobtrusive in appearance for architectural excellence.

Model Series 61DG offers the largest free area possible (average > 50%) with a completely sight-proof design, utilizing a 90° inverted 'V' louver on 1/2" (13) centers.

Widely used, not only in doors and partitions, but also in place of conventional exhaust and return grilles where it is important that the interior of the plenum or duct be concealed.

The inverted-V blades not only block vision, but also provide strength. When mounted in the lower portion of a door, a door grille is naturally subjected to bumps and kicks. The 61DG durability assures good looks and long service.

Screw holes in the frame are countersunk for smooth appearance after installation.

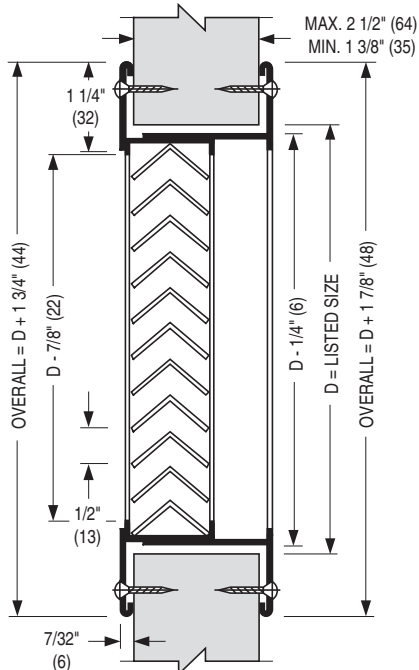
Available sizes 6" x 4" (152 x 102) through 36" x 36" (914 x 914) in 2" (51) increments.

### CONSTRUCTION MATERIAL:

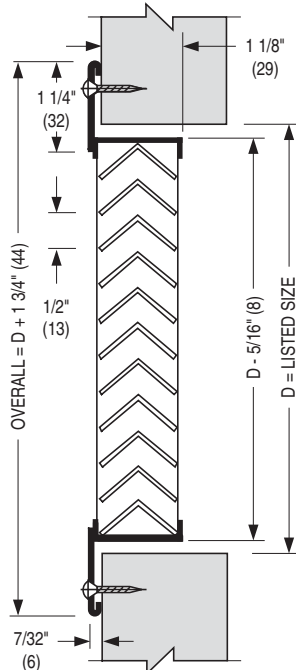
- Heavy gauge, corrosion-resistant steel.

### FINISH OPTIONS:

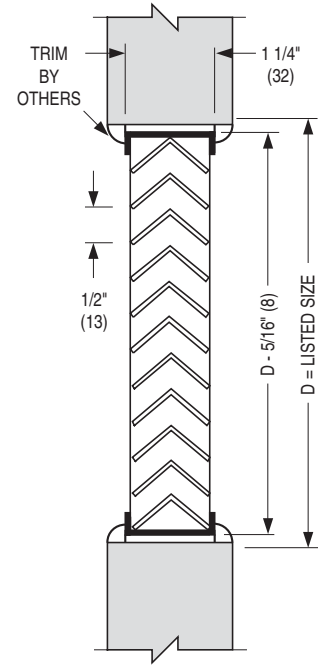
- AW Appliance White finish is standard. Other finishes are available.



**MODEL 61DGD (Double Flange)**  
Auxiliary Frame Assembly



**MODEL 61DGS (Single Flange)**  
Core and Flange Frame Assembly



**MODEL 61DGC (Core Only)**  
Core and Channel Frame Assembly

## STEEL FIRE RATED DOOR GRILLES

- LOUVERED FACE
- UL LISTED
- SELF ATTACHING  
AUXILIARY FRAME



Model 61DGD-FR

**Model:**  
**61DGD-FR**

Nailor Model Series 61DGD-FR Fire Rated Door Grilles are listed by Underwriters Laboratories for use in hollow metal and composite type fire doors with up to a 1 1/2 hour rating.

The frame is designed to suit doors that are 1 3/4" (44) thick, and includes a self-attaching auxiliary frame which eliminates the need to drill holes in the door. The 18 gauge formed steel blades are "Z" shaped and are adjustable using the pull operator. 45% free area. The closing assembly features a 160°F (71° C) UL listed fusible link with stainless steel operating spring and dead lock bar.

### STANDARD FEATURES:

- Material: 18 gauge cold rolled steel frame and blades.
- 1 1/8" (29) wide face border with a 3/16" (5) bevelled edge.
- UL Listed with up to a 1 1/2 hr. rating, 160° F (71° C) fusible link.

- Available in 2" (51) incremental sizes from 10" x 6" (254 x 152) to 24" x 24" (610 x 610).

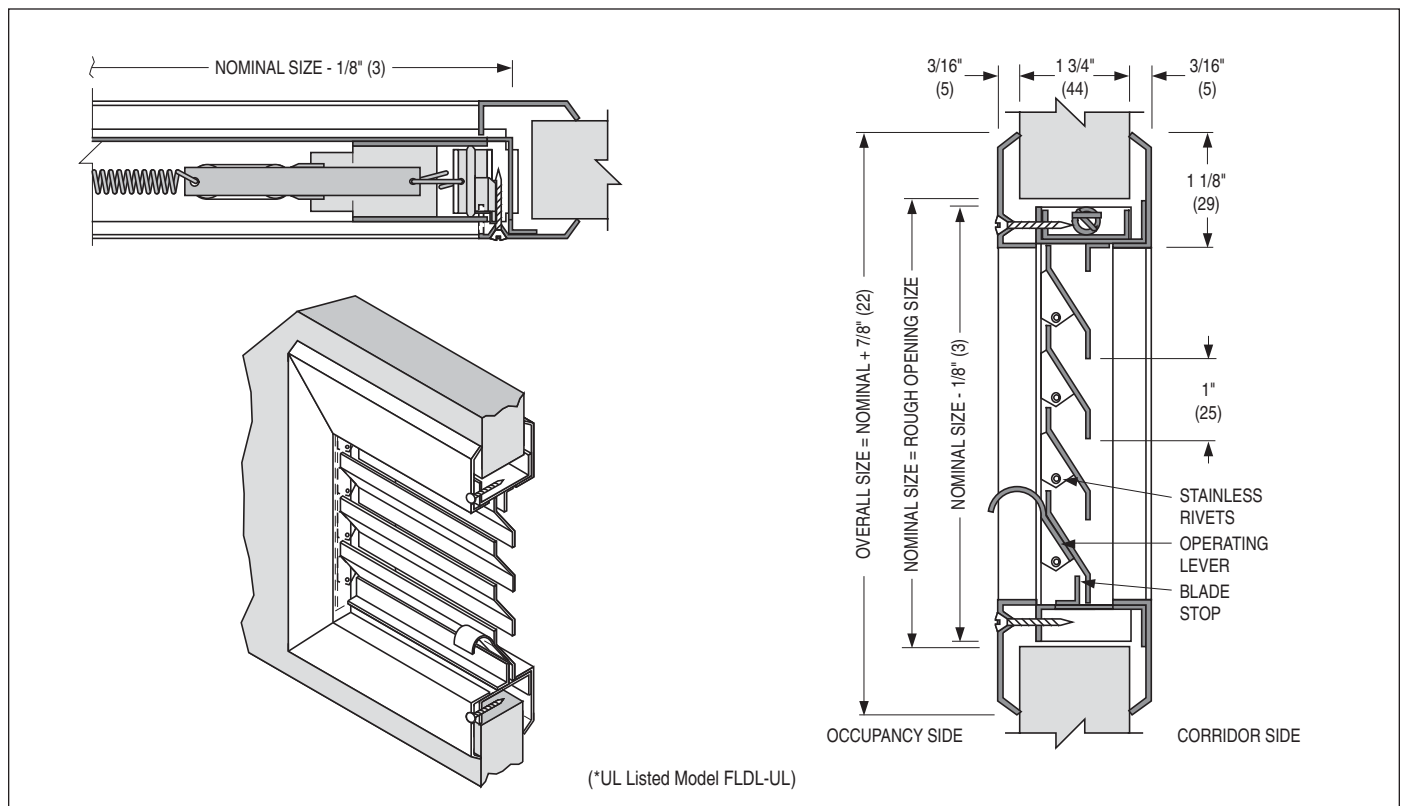
For your convenience, size Quick Delivery sizes are available. Contact your Nailor representative for details.

### CONSTRUCTION MATERIAL:

- Cold rolled steel construction.

### FINISH OPTIONS:

- BP Dark Bronze primer is standard. Other finishes are available.



## PERFORMANCE DATA:

### DOOR/TRANSFER GRILLES – 5100 AND 6100 SERIES

#### MODELS: 51DG, 61DG

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	150	200	250	300	350	400	450
					.001 .005	.001 .012	.002 .021	.004 .033	.006 .048	.008 .065	.010 .085	.013 .108
6 x 6	8 x 4 10 x 4	0.18	0.25	CFM	18	27	36	45	54	63	72	81
				Noise Criteria	-	-	-	18	22	25	28	30
8 x 6	12 x 4	0.25	0.33	CFM	25	38	50	63	75	88	100	113
				Noise Criteria	-	-	-	19	23	26	29	31
10 x 6	16 x 4	0.32	0.41	CFM	32	48	64	80	96	112	128	144
				Noise Criteria	-	-	15	20	24	27	30	33
8 x 8		0.35	0.44	CFM	35	53	70	88	105	123	140	158
				Noise Criteria	-	-	15	20	24	27	30	32
12 x 6	18 x 4	0.40	0.50	CFM	40	60	80	100	120	140	160	180
				Noise Criteria	-	-	16	21	25	28	31	33
12 x 8	16 x 6 24 x 4	0.55	0.66	CFM	58	83	110	138	165	193	220	248
				Noise Criteria	-	-	17	22	26	29	32	34
10 x 10	26 x 4	0.58	0.69	CFM	61	87	116	145	174	203	232	261
				Noise Criteria	-	-	17	22	26	29	32	35
12 x 10	16 x 8 20 x 6	0.70	0.82	CFM	74	105	140	175	210	245	280	315
				Noise Criteria	-	-	19	23	27	30	33	36
12 x 12	14 x 10 24 x 6 18 x 8	0.86	0.99	CFM	90	129	172	215	258	301	344	387
				Noise Criteria	-	-	20	24	28	31	34	36
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.20	1.35	CFM	124	180	240	300	420	420	480	540
				Noise Criteria	-	15	21	25	29	32	35	37
18 x 12	16 x 14 28 x 8 22 x 10	1.32	1.49	CFM	132	198	264	330	396	462	528	594
				Noise Criteria	-	16	22	26	30	33	36	38
16 x 16	18 x 14 30 x 8 22 x 12	1.59	1.76	CFM	159	239	318	398	477	557	636	716
				Noise Criteria	-	16	22	27	32	34	36	39
24 x 12	18 x 16 30 x 10 20 x 14	1.79	1.98	CFM	179	269	358	448	537	627	716	806
				Noise Criteria	-	17	23	28	33	35	37	40
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.04	2.23	CFM	204	306	408	510	612	714	816	918
				Noise Criteria	-	18	24	29	34	36	38	41
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.25	2.48	CFM	225	338	450	563	675	788	900	1013
				Noise Criteria	-	18	24	29	34	36	38	41
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.54	2.75	CFM	254	381	508	635	762	889	1016	1143
				Noise Criteria	-	19	25	30	35	43	39	42
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.10	3.33	CFM	310	465	620	775	930	1085	1240	1395
				Noise Criteria	-	19	25	30	35	38	40	43
30 x 18	24 x 22 40 x 14 34 x 16	3.46	3.71	CFM	346	519	692	865	1038	1211	1384	1557
				Noise Criteria	-	20	26	30	35	38	40	43
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.71	3.96	CFM	371	557	742	928	1113	1299	1484	1670
				Noise Criteria	-	20	26	30	35	38	41	44
36 x 18	32 x 20 46 x 14 40 x 16	4.18	4.46	CFM	418	627	836	1045	1254	1463	1672	1881
				Noise Criteria	-	20	26	30	35	39	41	44
26 x 26	28 x 24	4.38	4.65	CFM	438	657	876	1095	1314	1533	1752	1971
				Noise Criteria	-	20	27	31	36	39	41	44
30 x 24	28 x 26 36 x 20 32 x 22	4.68	4.95	CFM	468	702	936	1170	1404	1638	1872	2106
				Noise Criteria	-	21	27	31	36	39	41	44
28 x 28	30 x 26 36 x 22	5.11	5.39	CFM	511	767	1022	1278	1533	1789	2044	2300
				Noise Criteria	-	21	28	32	37	40	42	45
36 x 24	30 x 28	5.64	5.94	CFM	564	846	1128	1410	1692	1974	2256	2538
				Noise Criteria	-	22	28	32	37	40	42	45
30 x 30	34 x 26	5.89	6.19	CFM	589	884	1178	1473	1767	2062	2356	2651
				Noise Criteria	-	22	28	32	37	40	42	45

#### Performance Notes:

- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Ak balancing factors are based on an Alnor velometer with a 2220A or 6070P Jet Probe.

Position probe 1" (25) out from face of grille and take the average of several readings at various positions.

$$\text{Airflow (CFM)} = \text{Average Velocity (V}_k\text{)} \times \text{A}_k$$

- Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a Noise Criteria level of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

### MODEL SERIES: 51DG • ALUMINUM DOOR/TRANSFER GRILLE

EXAMPLE: 51DGD - 24 x 12 - AW

- |                              |     |                      |
|------------------------------|-----|----------------------|
| 1. <b>Models</b>             | BK  | Black                |
| 51DGD Double Flange          | BW  | British White        |
| 51DGS Single Flange          | LBP | Light Bronze Paint   |
| 2. <b>Width x Height</b>     | MBP | Medium Bronze Paint  |
| inches (mm)                  | DBP | Dark Bronze Paint    |
| 3. <b>Finish</b>             | MI  | Mill                 |
| AW Appliance White (default) | PC  | Prime Coat           |
| AL Aluminum                  | SA  | Satin Anodized       |
|                              | SP  | Special Custom Color |

**Notes:**

1. For a standard grille with no special requirements, the "default" will automatically be selected. For example, an aluminum door grille with a double flange, is Model 51DGD. Unit will be supplied with screw holes and AW Appliance White finish.

### MODEL SERIES: 61DG • STEEL DOOR/TRANSFER GRILLE

EXAMPLE: 61DGD - 24 x 12 - AW

- |                                    |     |                        |
|------------------------------------|-----|------------------------|
| 1. <b>Models</b>                   | BK  | Black                  |
| 61DGD Double Flange                | BW  | British White          |
| 61DGS Single Flange                | LBP | Light Bronze Paint     |
| 61DGC No Flange (core only)        | MBP | Medium Bronze Paint    |
| 61DGD-FR Double Flange, Fire Rated | DBP | Dark Bronze Paint      |
| 2. <b>Width x Height</b>           | BP  | Dark Bronze Primer **  |
| inches (mm)                        | MI  | Mill                   |
| 3. <b>Finish</b>                   | PC  | Prime Coat             |
| AW Appliance White *               | SP  | Special Custom Color * |
| AL Aluminum                        |     |                        |

**Notes:**

1. For a standard grille with no special requirements, the "default" will automatically be selected. Example: a steel door grille with a double flange, is Model 61DGD. Unit supplied with AW Appliance White finish.

2. \* AW Appliance White is default on Models 61DGD, 61DGS and 61DGC.

\*\* BP Dark Bronze Primer is the only available finish on Model 61DGD-FR.

GRILLES AND REGISTERS

F

## HOW TO SPECIFY

### MODEL SERIES: 51DG • ALUMINUM DOOR/TRANSFER GRILLE

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **51DGD** or **51DGS Door/Transfer Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have extruded aluminum inverted 'V' shaped blades and an extruded aluminum frame. The door grille is to be sight-proof. The finish shall be AW Appliance White (optional finishes are available). The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

### MODEL SERIES: 61DGD, 61DGS, 61DGC • STEEL NON-FIRE RATED DOOR/TRANSFER GRILLE

### MODEL SERIES: 61DGD-FR • STEEL FIRE RATED DOOR/TRANSFER GRILLE

**SUGGESTED SPECIFICATION:**

**61DGD, 61DGS AND 61DGC – Steel Non-Fire Rated Door/Transfer Grille**

Furnish and install **Nailor Model** (select one) **61DGD, 61DGS** or **61DGC Door/Transfer Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have corrosion-resistant steel inverted 'V' shaped blades and frames. The door grille is to be sight-proof. The finish shall be AW Appliance White (optional finishes are available). The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

**61DGD-FR – Steel Fire Rated Door/Transfer Grille**

Furnish and install **Nailor Model 61DGD-FR Fire Rated Door/Transfer Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have corrosion-resistant steel blades and frames, UL Listed with a fire-rating up to 1 1/2 hours. The finish shall be BP Dark Bronze Primer. The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



## ALUMINUM REVERSIBLE CORE GRILLES AND REGISTERS

- SUPPLY OR RETURN

### Models:

51RC

51RCD

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51RCD

Nailor Models 51RC and 51RCD Reversible Core 'Linear Style' Grilles and Registers are designed to combine rugged aluminum construction, pleasing architectural design and flexible air pattern versatility. The blade core is removable and may be rotated or reversed to achieve any one of four air deflection patterns. The Model 51RCD incorporates a set of rear directional vanes that are individually adjustable for additional air pattern control in supply applications.

### STANDARD FEATURES:

- Blade core is secured by a minimum of four sliding friction latches and is removable without the need for special tools.
- For additional air pattern control in supply applications, these grilles are available with optional rear deflection vanes, (on 3/4" [19] centers), which are friction pivoted and adjustable in order to provide horizontal spread of the air pattern from 0° to 45°.
- Type N standard fastening is with sheet metal screws through neck of grille frame while core is removed, providing a clean, architectural appearance.
- Optional Type A countersunk screw holes on frame available.
- Available in sizes from 6" x 4" to 48" x 24" (152 x 102 to 1219 x 610) in single section construction.

### CONSTRUCTION MATERIAL:

- High quality extruded aluminum frame with reinforced mitered corners.
- Horizontal aluminum blades are spaced on 1/4" (6) centers and feature mandrel tube construction.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.
- Optional aluminum opposed blade damper is available.

### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

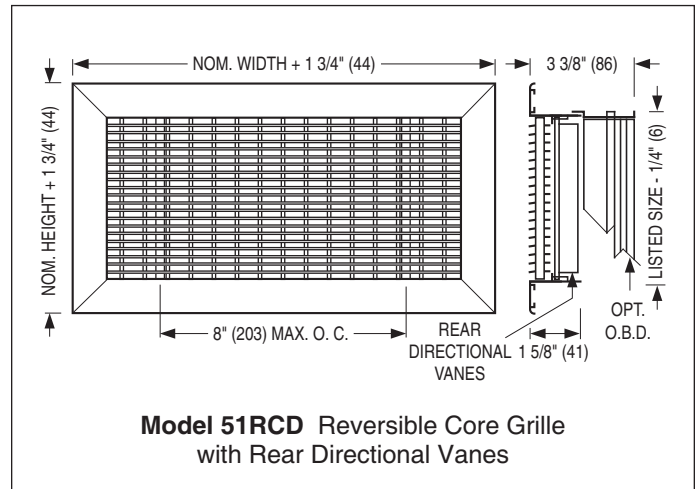
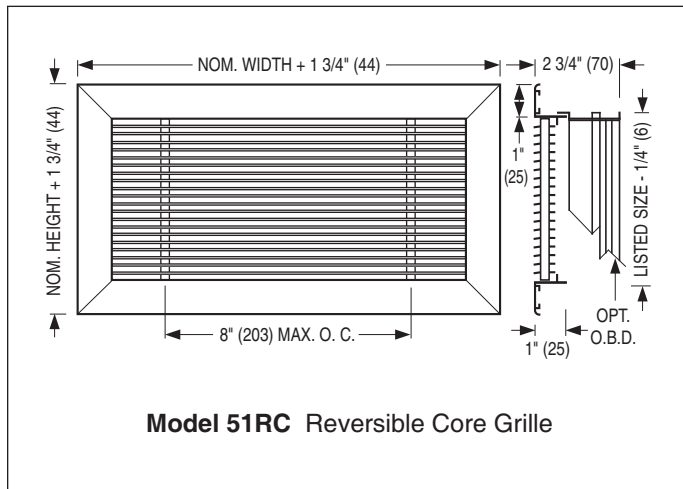
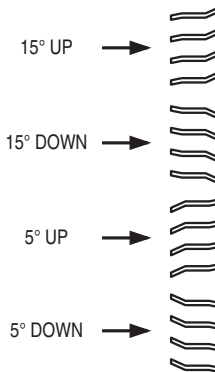
### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket

- EQT Earthquake Tabs

For additional options and accessories, see page F191.

Reversible core provides 4 different vertical deflections:





## PERFORMANCE DATA:

### REVERSIBLE CORE GRILLES AND REGISTERS • 51RC SERIES

#### MODELS: 51RC, 51RCD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		200	300	400	500	600	700	800	900	1000
				Velocity	Pressure	.003	.006	.010	.016	.022	.031	.040	.051	.062
6 x 6	8 x 4 10 x 4	0.20		CFM		40	60	80	100	120	140	160	180	200
				Noise Criteria		-	-	-	-	18	23	27	30	33
				Throw	0°	2-5-10	5-7-13	7-9-16	8-12-18	10-14-20	11-15-21	12-16-23	14-17-24	15-18-25
22 1/2°	2-4-8	4-6-10	6-7-13		6-10-14	8-11-16	9-12-17	10-13-18	11-14-19	12-14-20				
		45°	1-2-5	3-4-7	4-5-8	5-7-10	6-8-11	6-8-12	7-8-12	8-9-13				
8 x 6	10 x 5 12 x 4	0.27		CFM		54	81	108	135	162	189	216	243	270
				Noise Criteria		-	-	-	-	19	24	28	31	34
				Throw	0°	2-5-12	5-8-15	8-12-18	10-14-20	11-16-23	13-18-25	15-19-27	16-20-28	17-21-30
22 1/2°	2-4-10	4-6-12	6-10-14		8-11-16	9-13-18	10-14-20	12-15-22	13-16-22	14-17-24				
		45°	1-2-6	3-4-8	4-6-9	5-7-10	6-8-12	7-9-13	8-10-14	8-10-14	9-11-15			
10 x 6	12 x 5 16 x 4	0.35		CFM		70	105	140	175	210	245	280	315	350
				Noise Criteria		-	-	-	15	20	25	29	32	35
				Throw	0°	3-6-14	6-9-18	9-13-21	10-16-24	12-19-26	15-20-28	17-21-30	19-22-31	20-23-33
22 1/2°	2-5-11	5-7-14	7-10-17		8-13-19	10-15-21	12-16-22	14-17-24	15-18-25	16-18-26				
		45°	1-3-7	3-5-9	5-7-11	5-8-12	6-10-13	8-10-14	9-11-15	9-11-15	10-12-17			
8 x 8	14 x 5	0.38		CFM		76	114	152	190	228	266	304	342	380
				Noise Criteria		-	-	-	16	21	26	30	33	36
				Throw	0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	18-23-32	19-24-34
22 1/2°	2-5-12	5-7-15	7-11-18		9-13-20	10-15-22	13-17-23	14-18-26	14-18-26	15-19-27				
		45°	1-3-7	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17			
12 x 6	18 x 4	0.42		CFM		84	126	168	210	252	294	336	378	420
				Noise Criteria		-	-	-	16	21	26	30	33	36
				Throw	0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-30	18-22-32	18-23-32	19-11-16
22 1/2°	2-5-12	5-7-15	7-11-18		9-13-20	10-15-22	13-17-24	14-18-26	14-18-26	15-19-27				
		45°	1-3-7	3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17			
14 x 6	10 x 8	0.50		CFM		100	150	200	250	300	350	400	450	500
				Noise Criteria		-	-	-	17	22	27	31	34	37
				Throw	0°	3-7-16	6-11-20	10-15-23	12-18-25	15-20-28	16-22-31	19-23-33	20-24-34	21-25-36
22 1/2°	2-6-13	5-9-16	8-12-18		10-14-20	12-16-22	13-18-25	15-18-26	16-19-27	17-20-29				
		45°	1-3-8	3-6-10	5-8-12	6-9-13	8-10-14	8-11-16	10-12-17	10-12-17	11-13-18			
12 x 8	16 x 6 24 x 4	0.58		CFM		116	174	232	290	348	406	464	522	580
				Noise Criteria		-	-	-	18	23	28	32	35	38
				Throw	0°	3-7-17	7-11-21	10-15-24	12-19-27	15-21-30	17-23-32	20-24-34	21-26-36	22-27-38
22 1/2°	2-6-14	6-9-17	8-12-19		10-15-22	12-17-24	14-18-26	16-19-27	17-21-29	18-22-30				
		45°	1-3-8	4-6-11	5-8-12	6-10-14	8-11-15	9-12-16	10-12-17	10-13-18	11-14-19			
10 x 10	14 x 7 26 x 4	0.61		CFM		122	183	244	305	366	427	488	549	610
				Noise Criteria		-	-	-	18	23	28	32	35	38
				Throw	0°	3-7-17	7-11-21	10-16-24	13-19-28	16-21-30	17-23-32	20-24-35	22-27-37	23-28-39
22 1/2°	2-6-14	6-9-17	8-13-19		10-15-22	13-17-24	14-18-26	16-19-28	18-22-30	18-22-31				
		45°	1-3-8	4-6-11	5-8-12	7-10-14	8-11-15	9-12-16	10-12-18	11-13-18	12-14-20			
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM		130	195	260	325	390	455	520	585	650
				Noise Criteria		-	-	-	19	24	29	33	36	39
				Throw	0°	3-8-18	7-12-22	11-16-25	13-20-29	16-22-32	18-24-34	21-25-36	23-27-38	24-29-40
22 1/2°	2-6-14	6-10-18	9-13-20		10-16-23	13-18-26	14-19-27	17-20-29	18-22-30	19-23-32				
		45°	1-3-9	4-6-11	6-8-13	7-10-15	8-11-16	9-12-17	11-13-18	11-13-19	12-15-20			
12 x 10	20 x 6 24 x 5	0.74		CFM		148	222	296	370	444	518	592	666	740
				Noise Criteria		-	-	-	19	24	29	33	36	39
				Throw	0°	4-8-19	8-13-24	11-17-27	14-21-31	17-24-33	20-26-36	22-27-39	24-29-41	25-31-43
22 1/2°	3-6-15	6-10-19	9-14-22		11-17-25	14-19-26	16-21-29	18-22-31	19-23-33	20-25-34				
		45°	1-3-9	4-7-12	6-9-14	7-11-16	9-12-17	10-13-18	11-14-20	12-14-20	13-16-22			
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM		160	240	320	400	480	560	640	720	800
				Noise Criteria		-	-	-	20	25	30	34	37	40
				Throw	0°	4-8-20	8-13-25	11-18-28	15-22-32	18-25-35	20-27-38	23-28-41	25-30-43	26-32-45
22 1/2°	3-6-16	6-10-20	9-14-22		12-18-26	14-20-28	16-22-30	18-22-33	20-24-34	21-26-36				
		45°	1-3-10	4-7-13	6-9-14	8-11-16	9-13-18	10-14-19	12-14-21	12-15-21	13-16-23			
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM		180	270	360	450	540	630	720	810	900
				Noise Criteria		-	-	-	20	25	30	34	37	40
				Throw	0°	4-9-21	9-14-26	12-18-29	15-23-33	18-26-36	21-27-39	24-29-42	26-31-45	27-33-47
22 1/2°	3-7-17	7-11-21	10-14-23		12-18-26	14-21-29	17-22-31	19-23-34	21-25-36	22-26-38				
		45°	1-4-10	5-7-13	6-9-15	8-12-17	9-13-18	11-14-20	12-15-21	13-15-22	14-17-24			



For performance data notes, see F137.



## PERFORMANCE DATA:

### REVERSIBLE CORE GRILLES AND REGISTERS • 51RC SERIES

#### MODELS: 51RC, 51RCD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		200	300	400	500	600	700	800	900	1000
				Velocity	Pressure	.003	.006	.010	.016	.022	.031	.040	.051	.062
42 x 12	36 x 14	3.27	1.95 1.81 1.68	CFM	0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				Noise Criteria	22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318	
30 x 18	24 x 22 34 x 16 40 x 14	3.54	2.10 1.95 1.81	CFM	0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				Noise Criteria	22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318	
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79	2.25 2.09 1.93	CFM	0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				Noise Criteria	22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318	
36 x 18	32 x 20 40 x 16 46 x 14	4.29	2.53 2.36 2.18	CFM	0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				Noise Criteria	22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318	
26 x 26	28 x 24 48 x 14	4.47	2.62 2.44 2.25	CFM	0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				Noise Criteria	22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318	
30 x 24	32 x 22 36 x 20 40 x 18	4.77	2.81 2.62 2.42	CFM	0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				Noise Criteria	22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318	
28 x 28	30 x 26 36 x 22 40 x 20	5.20	3.09 2.88 2.66	CFM	0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				Noise Criteria	22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318	
36 x 24	40 x 22 44 x 20	5.74	3.38 3.15 2.91	CFM	0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				Noise Criteria	22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318	
42 x 24	36 x 28 42 x 24 46 x 22	6.72	3.95 3.68 3.40	CFM	0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				Noise Criteria	22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318	
36 x 30	38 x 28	7.22	4.23 3.94 3.64	CFM	0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				Noise Criteria	22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318	
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69	4.51 4.20 3.88	CFM	0°	.007	.016	.029	.045	.065	.089	.117	.147	.181
				Noise Criteria	22 1/2°	.008	.019	.033	.052	.075	.102	.134	.169	.209
				45°	.013	.029	.051	.079	.113	.156	.205	.258	.318	

GRILLES AND REGISTERS

L

#### Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Tabulated data includes opposed blade damper. Without OBD, multiply Total Pressure (TP) by x 0.8. Subtract 4 Noise Criteria (NC) from the Noise Criteria value shown.
4. Throw values are given for terminal velocities

- of 150, 100 and 50 fpm under isothermal conditions.
5. Noise Criteria (NC) values were obtained using a 0° horizontal deflection rear blade setting. For deflection settings of 22 1/2° and 45°, add 2 and 7 NC to the tabulated NC level respectively.
6. When used as a return grille, the negative static pressure is obtained by multiplying the

- tabulated Total Pressure @ 0° deflection by x 0.8. Add 4 Noise Criteria to the Noise Criteria value shown.
7. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a Noise Criteria level of less than 15.
8. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

**MODEL SERIES: 51RC, 51RCD**

**REVERSIBLE CORE GRILLES AND REGISTER**

**EXAMPLE: 51RC - O - 24 x 12 - S - AW - DMI - N - —**

- |  |  |  |
|--|--|--|
| <p><b>1. Models</b><br/>                     51RC Aluminum Construction<br/>                     51RCD Aluminum Construction with Rear Vanes</p> <p><b>2. Damper (OBD)</b><br/>                     (model suffix)<br/>                     O Steel<br/>                     OA Aluminum<br/>                     — None</p> <p><b>3. Nominal Width x Height</b><br/>                     inches (mm)</p> <p><b>4. Frame/Border Type</b><br/>                     S Surface Mount<br/>                     Border 1 1/4" (32)<br/>                     (default)</p> | <p><b>5. Finish</b><br/>                     AW Appliance White (default)<br/>                     AL Aluminum<br/>                     BK Black<br/>                     BW British White<br/>                     LBP Light Bronze Paint<br/>                     MBP Medium Bronze Paint<br/>                     DBP Dark Bronze Paint<br/>                     MI Mill<br/>                     PC Prime Coat<br/>                     PPA Paint Prepared Aluminum<br/>                     SP Special Custom Color</p> <p><b>6. Opposed Blade Damper Finish</b><br/>                     DMI Mill (default)<br/>                     DBK Painted Black</p> <p><b>7. Fastening</b><br/>                     N None (default)<br/>                     A Countersunk Screw Holes</p> | <p><b>OPTIONS &amp; ACCESSORIES:</b><br/>                     — None (default)</p> <p><b>8. Plaster Sub-Frame</b><br/>                     PF Plaster Sub-Frame</p> <p><b>9. Insect Screen</b><br/>                     IS Insect Screen</p> <p><b>10. Gaskets</b><br/>                     GK Foam Gasket</p> <p><b>11. Earthquake Tabs</b><br/>                     EQT Earthquake Tabs</p> <p><b>Notes:</b><br/>                     1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum reversible core register, and steel damper, is Model 51RC-O. Unit will be supplied with no screw holes and AW Appliance White finish.</p> |
|--|--|--|

GRILLES AND REGISTERS

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## HOW TO SPECIFY

**MODEL SERIES: 51RC, 51RCD**

**REVERSIBLE CORE GRILLES AND REGISTER**

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **51RC** or **51RCD (with rear vanes)** **Reversible Core Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have extruded aluminum blades and frame. The blade core is to be removable and may be rotated or reversed to achieve any one of four air deflection patterns. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

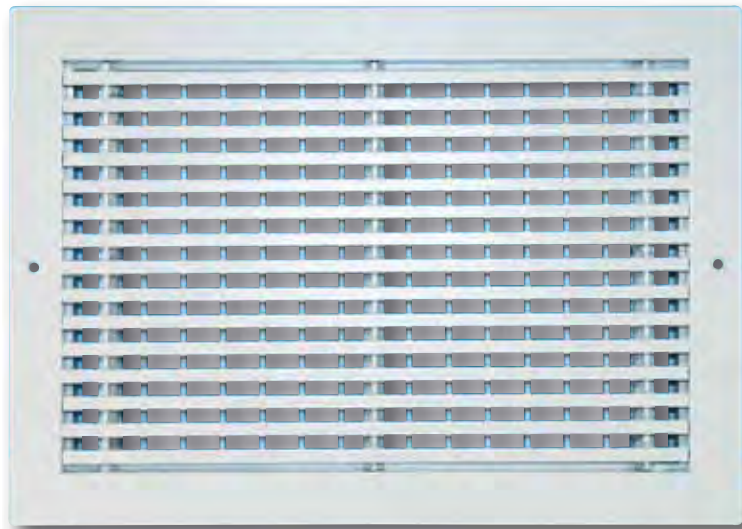
## ALUMINUM HEAVY DUTY BAR GRILLES AND REGISTERS

- SUPPLY

### Models:

- 51D30H-HD 30° Horizontal Blades
- 51D30V-HD 30° Vertical Blades
- 51D15H-HD 15° Horizontal Blades
- 51D15V-HD 15° Vertical Blades
- 51DFH-HD 0° Horizontal Blades
- 51DFV-HD 0° Vertical Blades

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51D15H-HD

Nailor Model Series 51D00-HD Heavy Duty Supply Grilles and Registers are designed to combine heavy duty aluminum construction, pleasing architectural design and flexible air pattern versatility. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance. The heavy duty extruded aluminum frame is staked and welded for maximum strength. Fixed front bars are reinforced and supported by a deep profile cross-bar on maximum 8" (203) centers. All models are supplied with a set of friction pivoted rear vanes on 3/4" (19) centers that are individually adjustable for directional control and air pattern spread.

### STANDARD FEATURES:

- Fixed front bars on 1/2" (13) centers are available in 0°, 15° or 30° deflection.
- 0° and 15° models feature 1/8" (3) bars and the 30° model features 1/4" (6) bars.
- Rear deflection vanes on 3/4" (19) centers are friction pivoted and adjustable in order to provide directional control and air pattern spread.
- 1" (25) wide face border with a 3/4" (19) overlap margin is standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.

- Available in sizes from 6" x 4" to 48" x 36" (152 x 102 to 1219 x 910) in single section construction.

### CONSTRUCTION MATERIAL:

- High quality heavy duty extruded aluminum frame with reinforced mitered corners.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.
- Optional aluminum opposed blade damper is available.

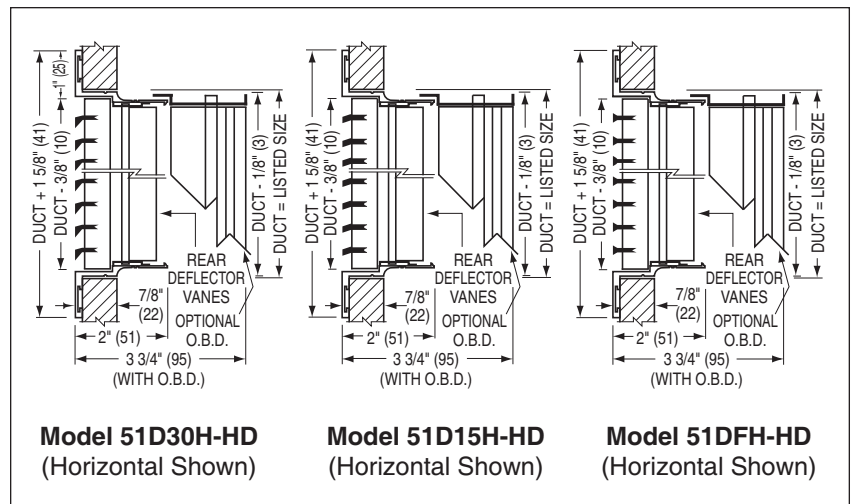
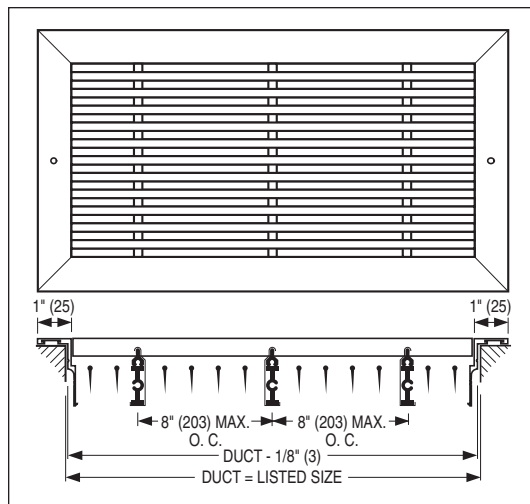
### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.





## PERFORMANCE DATA:

### ALUMINUM HEAVY DUTY BAR GRILLES AND REGISTERS • 51D00-HD SERIES

#### MODELS: 51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD, 51DFV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		200	300	400	500	600	700	800	900	1000
				Velocity	Pressure	.003	.006	.010	.016	.022	.031	.040	.051	.062
6 x 6	8 x 4 10 x 4	0.20		CFM		40	60	80	100	120	140	160	180	200
				Noise Criteria		-	-	-	-	24	29	33	36	39
				Throw	0°	2-5-10	5-7-13	7-9-16	8-12-18	10-14-20	11-15-21	12-16-23	14-17-24	15-18-25
22 1/2°	2-4-8	4-6-10	6-7-13		6-10-14	8-11-16	9-12-17	10-13-18	11-14-19	12-14-20				
45°	1-2-5	3-4-7	4-5-8		4-6-9	5-7-10	6-8-11	6-8-12	7-8-12	8-9-13				
8 x 6	10 x 5 12 x 4	0.27		CFM		54	81	108	135	162	189	216	243	270
				Noise Criteria		-	-	-	20	25	30	34	37	40
				Throw	0°	2-5-12	5-8-15	8-12-18	10-14-20	11-16-23	13-18-25	15-19-27	16-20-28	17-21-30
22 1/2°	2-4-10	4-6-12	6-10-14		8-11-16	9-13-18	10-14-20	12-15-22	13-16-22	14-17-24				
45°	1-2-6	3-4-8	4-6-9		5-7-10	6-8-12	7-9-13	8-10-14	8-10-14	9-11-15				
10 x 6	12 x 5 16 x 4	0.35		CFM		70	105	140	175	210	245	280	315	350
				Noise Criteria		-	-	-	21	26	31	35	38	41
				Throw	0°	3-6-14	6-9-18	9-13-21	10-16-24	12-19-26	15-20-28	17-21-30	19-22-31	20-23-33
22 1/2°	2-5-11	5-7-14	7-10-17		8-13-19	10-15-21	12-16-22	14-17-24	15-18-25	16-18-26				
45°	1-3-7	3-5-9	5-7-11		5-8-12	6-10-13	8-10-14	9-11-15	9-11-15	10-12-17				
8 x 8	14 x 5	0.38		CFM		76	114	152	190	228	266	304	342	380
				Noise Criteria		-	-	-	22	27	33	36	39	43
				Throw	0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	18-23-32	19-24-34
22 1/2°	2-5-12	5-7-15	7-11-18		9-13-20	10-15-22	13-17-23	14-18-26	14-18-26	15-19-27				
45°	1-3-7	3-5-10	5-7-11		6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17				
12 x 6	18 x 4	0.42		CFM		84	126	168	210	252	294	336	378	420
				Noise Criteria		-	-	-	22	27	33	36	39	42
				Throw	0°	3-6-15	6-9-19	9-14-22	11-16-25	13-19-27	16-21-30	18-22-32	18-23-32	19-11-16
22 1/2°	2-5-12	5-7-15	7-11-18		9-13-20	10-15-22	13-17-24	14-18-26	14-18-26	15-19-27				
45°	1-3-7	3-5-10	5-7-11		6-8-13	7-10-14	8-11-15	9-11-16	9-11-16	10-12-17				
14 x 6	10 x 8	0.50		CFM		100	150	200	250	300	350	400	450	500
				Noise Criteria		-	-	16	23	28	33	37	40	43
				Throw	0°	3-7-16	6-11-20	10-15-23	12-18-25	15-20-28	16-22-31	19-23-33	20-24-34	21-25-36
22 1/2°	2-6-13	5-9-16	8-12-18		10-14-20	12-16-22	13-18-25	15-18-26	16-19-27	17-20-29				
45°	1-3-8	3-6-10	5-8-12		6-9-13	8-10-14	8-11-16	10-12-17	10-12-17	11-13-18				
12 x 8	16 x 6 24 x 4	0.58		CFM		116	174	232	290	348	406	464	522	580
				Noise Criteria		-	-	17	25	29	34	38	41	44
				Throw	0°	3-7-17	7-11-21	10-15-24	12-19-27	15-21-30	17-23-32	20-24-34	21-26-36	22-27-38
22 1/2°	2-6-14	6-9-17	8-12-19		10-15-22	12-17-24	14-18-26	16-19-27	17-21-29	18-22-30				
45°	1-3-8	4-6-11	5-8-12		6-10-14	8-11-15	9-12-16	10-12-17	10-13-18	11-14-19				
10 x 10	14 x 7 26 x 4	0.61		CFM		122	183	244	305	366	427	488	549	610
				Noise Criteria		-	-	17	24	29	34	38	41	44
				Throw	0°	3-7-17	7-11-21	10-16-24	13-19-28	16-21-30	17-23-32	20-24-35	22-27-37	23-28-39
22 1/2°	2-6-14	6-9-17	8-13-19		10-15-22	13-17-24	14-18-26	16-19-28	18-22-30	18-22-31				
45°	1-3-8	4-6-11	5-8-12		7-10-14	8-11-15	9-12-16	10-12-18	11-13-18	12-14-20				
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM		130	195	260	325	390	455	520	585	650
				Noise Criteria		-	-	19	25	30	35	39	42	45
				Throw	0°	3-8-18	7-12-22	11-16-25	13-20-29	16-22-32	18-24-34	21-25-36	23-27-38	24-29-40
22 1/2°	2-6-14	6-10-18	9-13-20		10-16-23	13-18-26	14-19-27	17-20-29	18-22-30	19-23-32				
45°	1-3-9	4-6-11	6-8-13		7-10-15	8-11-16	9-12-17	11-13-18	11-13-19	12-15-20				
12 x 10	20 x 6 24 x 5	0.74		CFM		148	222	296	370	444	518	592	666	740
				Noise Criteria		-	-	18	25	30	35	39	42	45
				Throw	0°	4-8-19	8-13-24	11-17-27	14-21-31	17-24-33	20-26-36	22-27-39	24-29-41	25-31-43
22 1/2°	3-6-15	6-10-19	9-14-22		11-17-25	14-19-26	16-21-29	18-22-31	19-23-33	20-25-34				
45°	1-3-9	4-7-12	6-9-14		7-11-16	9-12-17	10-13-18	11-14-20	12-14-20	13-16-22				
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM		160	240	320	400	480	560	640	720	800
				Noise Criteria		-	-	19	26	31	36	40	43	46
				Throw	0°	4-8-20	8-13-25	11-18-28	15-22-32	18-25-35	20-27-38	23-28-41	25-30-43	26-32-45
22 1/2°	3-6-16	6-10-20	9-14-22		12-18-26	14-20-28	16-22-30	18-22-33	20-24-34	21-26-36				
45°	1-3-10	4-7-13	6-9-14		8-11-16	9-13-18	10-14-19	12-14-21	12-15-21	13-16-23				
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM		180	270	360	450	540	630	720	810	900
				Noise Criteria		-	-	19	26	31	36	40	43	46
				Throw	0°	4-9-21	9-14-26	12-18-29	15-23-33	18-26-36	21-27-39	24-29-42	26-31-45	27-33-47
22 1/2°	3-7-17	7-11-21	10-14-23		12-18-26	14-21-29	17-22-31	19-23-34	21-25-36	22-26-38				
45°	1-4-10	5-7-13	6-9-15		8-12-17	9-13-18	11-14-20	12-15-21	13-15-22	14-17-24				

For performance data notes, see F142.



## PERFORMANCE DATA:

### ALUMINUM HEAVY DUTY BAR GRILLES AND REGISTERS • 51D00-HD SERIES

MODELS: 51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD, 51DFV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		200	300	400	500	600	700	800	900	1000
				Velocity Pressure		.003	.006	.010	.016	.022	.031	.040	.051	.062
				Total Pressure	0°	.014	.031	.057	.088	.127	.174	.228	.287	.353
18 x 10	30 x 6	1.13		CFM	0°	226	339	452	565	678	791	904	1130	1130
				Noise Criteria	22 1/2°	—	—	20	27	32	37	41	44	47
				Throw	45°	4-10-23	9-15-29	14-20-33	17-25-36	20-29-40	24-30-43	27-33-46	28-34-48	30-36-51
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM	0°	248	372	496	620	744	868	992	1116	1240
				Noise Criteria	22 1/2°	—	—	20	27	32	37	41	44	47
				Throw	45°	5-12-26	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	33-40-57	35-42-60
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM	0°	274	411	548	685	822	959	1096	1233	1370
				Noise Criteria	22 1/2°	—	—	21	28	33	38	42	45	48
				Throw	45°	5-12-26	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	33-41-58	35-43-61
24 x 10	20 x 12 30 x 8	1.52		CFM	0°	304	456	608	760	912	1064	1216	1368	1520
				Noise Criteria	22 1/2°	—	—	21	28	33	38	42	45	48
				Throw	45°	6-12-28	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	35-43-61	37-45-64
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM	0°	328	492	656	820	984	1148	1312	1476	1640
				Noise Criteria	22 1/2°	—	—	21	28	33	38	42	45	48
				Throw	45°	6-13-30	12-20-37	17-26-42	22-32-47	26-37-51	31-40-56	35-42-59	37-45-64	39-47-67
24 x 12	18 x 16 22 x 14 30 x 10 36 x 8	1.85		CFM	0°	370	555	740	925	1110	1295	1480	1665	1850
				Noise Criteria	22 1/2°	—	15	22	29	34	39	43	46	49
				Throw	45°	6-13-30	12-20-38	18-27-44	22-33-48	27-38-54	32-40-58	36-44-62	38-46-65	40-48-69
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM	0°	420	630	840	1050	1260	1470	1680	1890	2100
				Noise Criteria	22 1/2°	—	15	22	29	34	39	43	46	49
				Throw	45°	6-14-32	13-21-40	19-29-47	24-36-52	29-40-57	33-43-62	38-47-66	40-49-70	42-52-74
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM	0°	464	696	928	1160	1392	1624	1856	2088	2320
				Noise Criteria	22 1/2°	—	16	23	30	35	40	44	47	50
				Throw	45°	7-15-34	14-23-43	21-31-50	26-39-56	31-43-61	36-47-67	41-50-71	44-53-75	46-56-79
24 x 16	32 x 12	2.50		CFM	0°	500	750	1000	1250	1500	1750	2000	2250	2500
				Noise Criteria	22 1/2°	—	16	23	30	35	40	44	47	50
				Throw	45°	7-16-36	14-24-45	22-32-52	27-40-58	32-45-64	37-49-68	43-52-74	46-55-78	48-58-82
20 x 20	22 x 18	2.61		CFM	0°	522	783	1044	1305	1566	1827	2088	2349	2610
				Noise Criteria	22 1/2°	—	16	23	30	35	40	44	47	50
				Throw	45°	7-16-37	15-24-46	22-32-53	27-41-59	32-46-65	38-50-70	44-53-75	46-56-80	49-59-84
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM	0°	558	837	1116	1395	1674	1953	2232	2511	2790
				Noise Criteria	22 1/2°	—	16	23	30	35	40	44	47	50
				Throw	45°	7-16-38	15-25-48	23-34-55	28-42-61	34-48-68	4-51-73	45-55-77	47-58-82	50-61-86
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM	0°	634	951	1268	1585	1902	2219	2536	2853	3170
				Noise Criteria	22 1/2°	—	17	24	31	36	41	45	48	51
				Throw	45°	8-18-40	17-27-50	24-36-58	29-45-65	36-50-71	42-54-77	47-58-82	50-62-87	53-65-92

GRILLES AND REGISTERS

F

For performance data notes, see F142.

## PERFORMANCE DATA:

### ALUMINUM HEAVY DUTY BAR GRILLES AND REGISTERS • 51D00-HD SERIES

#### MODELS: 51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD, 51DFV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		200	300	400	500	600	700	800	900	1000
				Velocity	Pressure	.003	.006	.010	.016	.022	.031	.040	.051	.062
				0°	22 1/2°	.014	.031	.057	.088	.127	.174	.228	.287	.353
Total Pressure				45°	.016	.037	.064	.101	.146	.199	.261	.330	.408	
CFM				0°	.025	.057	.099	.154	.220	.304	.400	.503	.620	
Noise Criteria				45°	654	981	1308	1635	1962	2289	2616	2943	3270	
42 x 12	36 x 14	3.27	1.68 1.56 1.44	CFM	0°	8-18-41	17-27-51	24-36-59	30-45-66	36-51-72	42-55-77	48-59-83	50-63-88	53-66-93
				Throw	22 1/2°	6-14-33	14-22-41	19-29-47	24-36-53	29-41-58	34-44-58	38-47-66	40-50-70	42-53-74
					45°	4-9-20	9-14-26	12-18-30	15-23-33	18-26-36	24-30-42	25-31-44	27-33-47	
30 x 18	24 x 22 34 x 16 40 x 14	3.54	1.81 1.68 1.56	CFM	0°	9-18-42	18-28-53	25-37-61	31-47-69	37-53-75	44-57-81	50-61-86	53-65-92	56-69-97
				Throw	22 1/2°	7-14-34	14-22-42	20-30-49	25-38-55	30-42-60	35-46-65	40-49-69	42-52-74	45-55-78
					45°	4-9-20	9-14-27	13-19-31	16-24-35	19-27-38	22-29-41	25-31-43	26-32-46	28-35-49
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79	1.93 1.80 1.66	CFM	0°	9-19-44	18-29-55	26-39-62	33-48-70	39-55-77	45-59-83	51-62-89	54-66-94	57-70-99
				Throw	22 1/2°	7-15-35	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	45-53-75	46-56-79
					45°	4-9-22	9-15-28	13-20-31	17-24-35	20-28-39	23-30-42	26-31-45	27-33-47	29-35-50
36 x 18	32 x 20 40 x 16 46 x 14	4.29	2.18 2.03 1.87	CFM	0°	9-20-46	19-31-58	28-42-68	35-52-75	42-58-83	48-63-89	55-68-95	58-71-101	61-75-106
				Throw	22 1/2°	7-16-37	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	46-57-81	49-60-85
					45°	4-10-23	10-16-29	14-21-34	18-26-38	21-29-42	24-32-45	28-34-48	29-35-50	31-38-53
26 x 26	28 x 24 48 x 14	4.47	2.25 2.10 1.93	CFM	0°	9-21-47	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	60-73-103	63-77-109
				Throw	22 1/2°	7-17-38	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	48-58-82	50-62-87
					45°	4-10-23	10-16-30	14-22-35	18-27-32	22-30-43	25-33-46	28-35-49	30-36-51	32-39-55
30 x 24	32 x 22 36 x 20 40 x 18	4.77	2.42 2.25 2.08	CFM	0°	10-22-49	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	62-75-106	65-79-112
				Throw	22 1/2°	8-18-39	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	50-60-85	52-63-90
					45°	5-11-24	10-17-31	15-22-36	18-27-40	22-31-44	26-34-47	29-36-51	31-37-53	33-40-56
28 x 28	30 x 26 36 x 22 40 x 20	5.20	2.66 2.48 2.29	CFM	0°	10-22-50	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	64-78-110	67-82-116
				Throw	22 1/2°	8-18-40	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	51-62-88	54-66-93
					45°	5-11-25	11-17-32	15-23-37	19-28-41	23-32-45	27-35-49	30-37-52	32-39-55	34-41-58
36 x 24	40 x 22 44 x 20	5.74	2.91 2.71 2.50	CFM	0°	11-24-54	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	68-84-118	72-88-124
				Throw	22 1/2°	9-19-43	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	54-67-94	58-70-99
					45°	5-12-27	12-18-34	16-25-39	21-30-44	25-34-48	29-37-52	32-39-56	34-42-59	36-44-62
42 x 24	36 x 28 42 x 24 46 x 22	6.72	3.40 3.16 2.31	CFM	0°	12-26-58	24-39-72	34-51-83	43-64-93	51-72-102	60-78-111	68-84-118	73-88-125	77-93-132
				Throw	22 1/2°	10-21-46	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	58-70-100	62-74-106
					45°	6-13-29	12-20-36	17-26-42	22-32-47	26-36-51	30-39-56	34-42-59	36-44-62	
36 x 30	38 x 28	7.22	3.64 3.39 3.13	CFM	0°	12-26-61	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	76-93-132	80-98-139
				Throw	22 1/2°	10-21-49	20-32-61	29-43-70	36-54-78	43-61-86	50-66-93	57-70-99	61-74-106	64-78-111
					45°	6-13-30	13-20-38	18-27-44	23-34-49	27-38-54	32-41-58	36-44-62	38-46-66	40-49-70
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69	3.88 3.61 3.34	CFM	0°	13-27-62	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	78-95-135	82-200-142
				Throw	22 1/2°	10-22-50	21-33-62	30-44-72	37-55-80	44-62-87	51-67-94	58-72-102	62-76-108	66-80-114
					45°	6-13-31	13-22-39	19-28-45	23-45-50	28-39-55	32-42-59	37-45-64	39-47-67	41-50-71

#### Performance Notes:

- Performance data is based on Models 51DFH-HD and 51DFV-HD with 0° deflection front blades. For 15° and 30° deflection models, use: —
- Tabulated data includes OBD (damper). Without OBD, multiply Total Pressure (TP) by 0.8. Subtract 4 NC from the NC value given.

- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Noise Criteria values were obtained using a 0° horizontal deflection near blade setting. For deflection settings of 22 1/2° and 45°, add 2 and 7 Noise Criteria (NC) to the tabulated NC level respectively.

- Data derived from tests conducted with ANSI/ASHRAE Standard 70 – 2006.

#### Correction Factor

Model	Deflection	TP	NC
51D15	15°	x 1.2	+ 3
51D30	30°	x 1.5	+ 7

## HOW TO ORDER

### MODEL SERIES: 51D00-HD

### HEAVY DUTY BAR SUPPLY GRILLES AND REGISTERS – ALUMINUM

EXAMPLE: 51D15H-HD - O - 24 x 12 - S - AW - DMI - A - —

- |  |   |   |
|--|---|---|
| <p>1. <b>Models</b><br/> <b>Double Deflection</b><br/> <b>Horizontal/Long Dimension Blades:</b><br/>                     51DFH-HD Fixed 0° Deflection<br/>                     51D15H-HD Fixed 15° Deflection<br/>                     51D30H-HD Fixed 30° Deflection<br/> <b>Vertical/Short Dimension Blades:</b><br/>                     51DFV-HD Fixed 0° Deflection<br/>                     51D15V-HD Fixed 15° Deflection<br/>                     51D30V-HD Fixed 30° Deflection</p> <p>2. <b>Damper (OBD)</b><br/>                     O Steel<br/>                     OA Aluminum<br/>                     — No Damper</p> <p>3. <b>Nominal Width x Height</b><br/>                     inches (mm)</p> <p>4. <b>Frame/Border Type</b><br/>                     S Surface Mount (default)</p> | <p>5. <b>Finish</b><br/>                     AW Appliance White (default)<br/>                     AL Aluminum<br/>                     BK Black<br/>                     BW British White<br/>                     LBP Light Bronze Paint<br/>                     MBP Medium Bronze Paint<br/>                     DBP Dark Bronze Paint<br/>                     MI Mill<br/>                     PC Prime Coat<br/>                     SA Satin (Clear) Anodized<br/>                     SP Special Custom Color</p> <p>6. <b>Opposed Blade Damper Finish</b><br/>                     DMI Mill (default)<br/>                     DBK Painted Black</p> <p>7. <b>Fastening</b><br/>                     A Screw Holes (default)<br/>                     C Concealed Mounting Straps<br/>                     N None</p> | <p><b>OPTIONS &amp; ACCESSORIES:</b><br/>                     — None (default)</p> <p>8. <b>Plaster Sub-Frame</b><br/>                     PF Plaster Sub-Frame</p> <p>9. <b>Insect Screen</b><br/>                     IS Insect Screen</p> <p>10. <b>Gaskets</b><br/>                     GK Foam Gasket</p> <p>11. <b>Earthquake Tabs</b><br/>                     EQT Earthquake Tabs</p> <p><b>Notes:</b></p> <p>1. Front bars are fixed deflection. Rear directional vanes (blades) are adjustable and perpendicular to front bars.</p> <p>2. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum 30° fixed deflection with rear deflection vane register, horizontal blade direction and steel damper, is Model 51D30H-HD-O. Unit will be supplied with screw holes and AW Appliance White finish.</p> <p>3. The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).</p> |
|--|---|---|

GRILLES AND REGISTERS

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## HOW TO SPECIFY

### MODEL SERIES: 51D00-HD

### HEAVY DUTY BAR SUPPLY GRILLES AND REGISTERS – ALUMINUM

#### SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **51D30H-HD, 51D30V-HD, 51D15H-HD, 51D15V-HD, 51DFH-HD** or **51DFV-HD Aluminum Heavy Duty Bar Supply Grilles** with rear deflection vanes of the type and size as shown on the plans and air distribution schedules. The grille shall have extruded aluminum reinforced blades and welded frame. The front bars are to be fixed on 1/2" (13) centers and the rear deflection vanes are to be adjustable on 3/4" (19) centers. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## ALUMINUM HEAVY DUTY BAR RETURN GRILLES

- GYMNASIUM

### Models:

- 5130H-HD 30° Horizontal Blades
- 5130V-HD 30° Vertical Blades
- 51FH-HD 0° Horizontal Blades
- 51FV-HD 0° Vertical Blades

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 5130H-HD

Nailor Model Series 5100-HD Heavy Duty Return Grilles and Registers are designed to combine heavy duty aluminum construction and pleasing architectural design. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance.

The heavy duty extruded aluminum frame is staked and welded for maximum strength. Fixed front bars are reinforced and supported by a deep profile cross-bar on maximum 8" (203) centers.

### STANDARD FEATURES:

- Fixed front bars on 1/2" (13) centers are available in 0° or 30° deflection.
- 0° models feature 1/8" (3) bars and the 30° model features 1/4" (6) bars.
- 1" (25) wide face border with a 3/4" (19) overlap margin is standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Available in sizes from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219) in single section construction.

### CONSTRUCTION MATERIAL:

- High quality heavy duty extruded aluminum frame with reinforced mitered corners.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.
- Optional aluminum opposed blade damper is available.

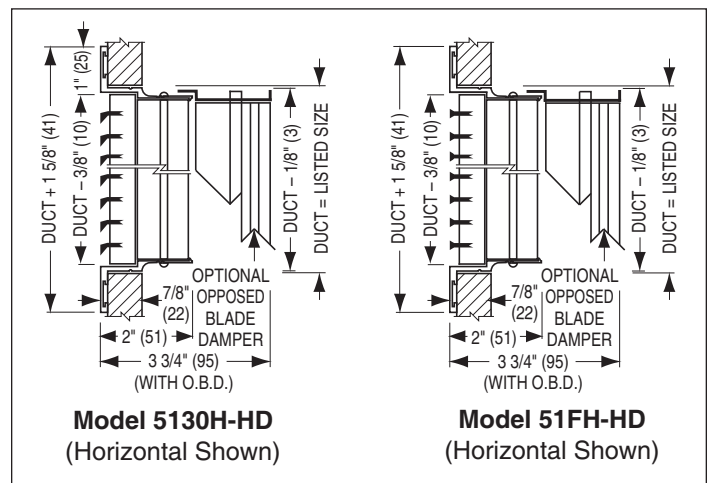
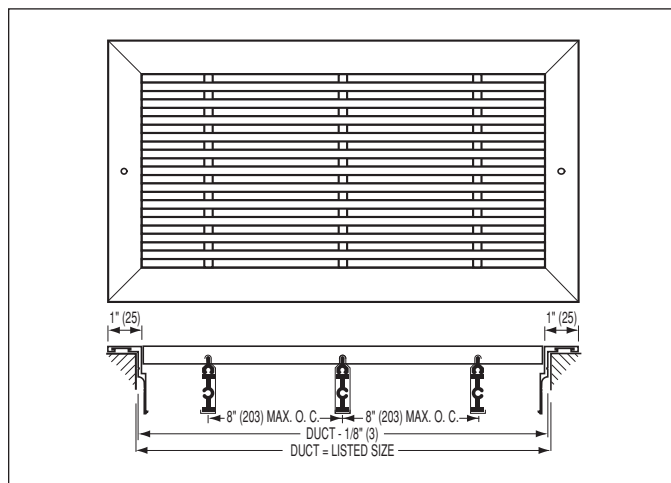
### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



## PERFORMANCE DATA:

### ALUMINUM HEAVY DUTY BAR RETURN GRILLES • GYMNASIUM • 5100-HD SERIES

#### MODELS: 5130H-HD, 5130V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .004	.002 .016	.006 .037	.010 .065	.016 .102	.022 .146	.031 .199	.040 .260	.050 .330	.062 .407
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 15	60 21	80 27	100 31	120 35	140 37	160 40	180 44	200 49
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 15	84 21	112 27	140 32	168 36	196 38	224 41	252 45	280 50
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 16	105 22	140 28	175 33	210 37	245 39	280 42	315 46	350 51
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 16	114 22	152 28	190 33	228 38	266 40	304 43	342 47	380 51
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 17	126 23	168 29	210 34	252 38	294 41	336 44	378 48	420 52
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 17	174 23	232 29	290 34	348 38	406 41	464 45	522 49	580 53
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 18	183 24	244 29	305 34	366 38	427 41	488 46	549 49	610 54
18 x 6	14 x 8    30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 18	195 24	260 30	325 35	390 39	455 42	520 46	585 50	650 54
12 x 10	16 x 8    20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 18	222 25	296 30	370 35	444 40	518 43	592 47	666 51	740 54
12 x 12	14 x 10    24 x 6 18 x 8    38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 19	270 25	360 31	450 36	540 40	630 43	720 48	810 51	900 54
14 x 14	16 x 12    24 x 8 20 x 10    34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 20	372 26	496 31	620 36	744 41	868 44	992 48	1116 52	1240 55
18 x 12	16 x 14    28 x 8 22 x 10    38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 20	411 26	548 32	685 37	822 42	959 45	1096 50	1233 53	1370 56
24 x 10	20 x 12    30 x 8	1.52	1.49	CFM Noise Criteria	152 15	304 21	456 26	608 32	760 37	912 42	1064 46	1216 51	1368 54	1520 57
16 x 16	18 x 14    30 x 8 22 x 12	1.64	1.58	CFM Noise Criteria	164 15	328 21	492 27	656 33	820 38	984 42	1148 46	1312 51	1476 54	1640 57
24 x 12	18 x 16    30 x 10 20 x 14    36 x 8	1.85	1.78	CFM Noise Criteria	185 15	370 21	555 27	740 33	925 38	1110 43	1295 46	1480 51	1665 54	1850 58
18 x 18	20 x 16    28 x 12 24 x 14    32 x 10	2.10	2.01	CFM Noise Criteria	210 16	420 22	630 27	840 33	1050 38	1260 43	1470 47	1680 52	1890 55	2100 58
30 x 12	20 x 18    26 x 14 22 x 16    36 x 10	2.32	2.23	CFM Noise Criteria	232 16	464 22	696 27	928 33	1160 38	1392 43	1624 47	1856 52	2088 55	2320 59
20 x 20	24 x 18    30 x 14 26 x 16    36 x 12	2.61	2.48	CFM Noise Criteria	261 17	522 22	783 27	1044 33	1305 38	1566 43	1827 47	2088 52	2349 55	2610 59
22 x 22	24 x 20    30 x 16 26 x 18    36 x 14	3.17	3.00	CFM Noise Criteria	317 17	634 23	951 28	1268 34	1585 39	1902 44	2219 48	2536 52	2853 55	3170 59
30 x 18	24 x 22    40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 18	708 24	1062 28	1416 34	1770 39	2124 44	2478 48	2832 53	3186 56	3540 60
24 x 24	26 x 22    32 x 18 28 x 20    36 x 16	3.79	3.56	CFM Noise Criteria	379 18	758 24	1137 28	1516 34	1895 39	2274 44	2653 49	3032 53	3411 56	3790 60
36 x 18	32 x 20    46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 18	854 24	1281 29	1708 36	2135 41	2562 45	2989 49	3416 54	3843 57	4270 61
26 x 26	28 x 24    48 x 14	4.47	4.19	CFM Noise Criteria	447 19	894 25	1341 30	1788 36	2235 41	2682 45	3129 49	3576 54	4023 57	4470 61
30 x 24	28 x 26    36 x 20 32 x 22    40 x 18	4.77	4.46	CFM Noise Criteria	477 19	954 25	1431 30	1908 37	2385 42	2862 46	3339 50	3816 54	4293 58	4770 62
28 x 28	30 x 26    40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 19	1040 25	1560 30	2080 37	2600 42	3120 46	3640 50	4160 55	4680 58	5200 62
36 x 24	30 x 28    44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 19	1148 25	1722 30	2296 37	2870 42	3444 46	4018 50	4592 55	5166 59	5740 63
30 x 30	34 x 26    48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 20	1198 26	1797 31	2396 37	2995 42	3594 47	4193 51	4792 55	5391 59	5990 63

GRILLES AND REGISTERS

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For performance data notes, see F146.



## PERFORMANCE DATA:

### ALUMINUM HEAVY DUTY BAR RETURN GRILLES • GYMNASIUM • 5100-HD SERIES

#### MODELS: 5130H-HD, 5130V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .004	.002 .016	.006 .037	.010 .065	.016 .102	.022 .146	.031 .199	.040 .260	.050 .330	.062 .407
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				Noise Criteria	20	26	31	37	43	47	51	56	60	64
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria	21	26	31	37	43	48	52	56	60	64
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				Noise Criteria	21	27	32	38	43	48	53	57	61	65
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				Noise Criteria	22	27	33	38	44	49	53	57	61	65
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				Noise Criteria	22	27	33	39	45	49	54	57	62	66
42 x 42	44 x 40 48 x 36 46 x 36	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	22	27	33	39	45	50	54	58	62	66
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				Noise Criteria	22	28	34	39	45	50	54	58	62	66
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				Noise Criteria	23	29	34	40	46	51	55	59	63	67
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				Noise Criteria	23	29	35	40	46	51	55	59	63	67

#### Performance Notes:

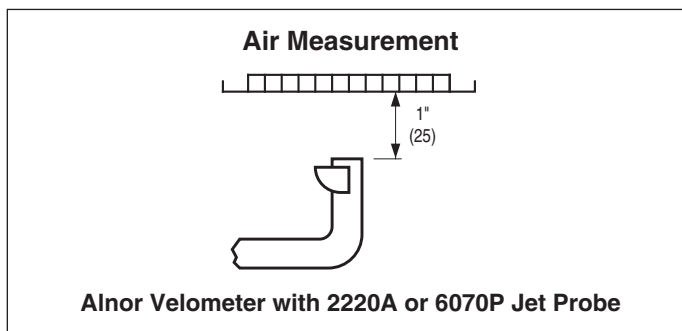
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

**Neg. Static Pressure** Listed Value x 0.91.

**Noise Criteria** Listed value – 4.

- Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (—) in space denotes a Noise Criteria level of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



#### Airflow Measurements

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (CFM) = Average velocity (V<sub>k</sub>) x Ak.



## PERFORMANCE DATA:

### ALUMINUM HEAVY DUTY BAR RETURN GRILLES • GYMNASIUM • 5100-HD SERIES

#### MODELS: 51FH-HD, 51FV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .003	.002 .010	.006 .023	.010 .041	.016 .065	.022 093	.031 .127	.040 .166	.050 .210	.062 .259
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 15	100 19	120 23	140 25	160 28	180 32	200 37
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 15	140 20	168 24	196 26	224 29	252 33	280 38
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 16	175 21	210 25	245 27	280 30	315 34	350 39
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 -	190 21	228 26	266 28	304 31	342 35	380 39
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 -	210 22	252 26	294 29	336 32	378 36	420 40
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 -	290 22	348 26	406 29	464 33	522 37	580 41
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 -	305 22	366 26	427 29	488 34	549 37	610 42
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 18	325 23	390 27	455 30	520 34	585 38	650 42
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 18	370 23	444 28	518 31	592 35	666 39	740 42
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 19	450 24	540 28	630 31	720 36	810 39	900 42
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 -	496 19	620 24	744 29	868 32	992 36	1116 40	1240 43
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 -	548 20	685 25	822 30	959 33	1096 38	1233 41	1370 44
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 -	608 20	760 25	912 30	1064 34	1216 39	1368 42	1520 45
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 15	656 21	820 26	984 31	1148 34	1312 39	1476 42	1640 45
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM Noise Criteria	185 -	370 -	555 15	740 21	925 26	1110 31	1295 34	1480 39	1665 42	1850 46
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM Noise Criteria	210 -	420 -	630 15	840 21	1050 26	1260 31	1470 35	1680 40	1890 43	2100 46
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM Noise Criteria	232 -	464 -	696 15	928 21	1160 26	1392 31	1624 35	1856 40	2088 43	2320 47
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM Noise Criteria	261 -	522 -	783 15	1044 21	1305 26	1566 31	1827 35	2088 40	2349 43	2610 47
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM Noise Criteria	317 -	634 -	951 15	1268 22	1585 27	1902 32	2219 36	2536 40	2853 43	3170 47
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 -	708 -	1062 16	1416 22	1770 27	2124 32	2478 36	2832 41	3186 44	3540 48
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM Noise Criteria	379 -	758 -	1137 16	1516 22	1895 27	2274 32	2653 37	3032 41	3411 44	3790 48
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 -	854 -	1281 17	1708 24	2135 29	2562 33	2989 37	3416 42	3843 45	4270 49
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM Noise Criteria	447 -	894 -	1341 18	1788 24	2235 29	2682 33	3129 37	3576 42	4023 45	4470 49
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM Noise Criteria	477 -	954 -	1431 18	1908 25	2385 30	2862 34	3339 38	3816 42	4293 46	4770 50
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 -	1040 -	1560 18	2080 25	2600 30	3120 34	3640 38	4160 43	4680 46	5200 50
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 -	1148 -	1722 18	2296 25	2870 30	3444 34	4018 38	4592 43	5166 47	5740 51
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 -	1198 -	1797 19	2396 25	2995 30	3594 35	4193 39	4792 43	5391 47	5990 51

For performance data notes, see F148.

## PERFORMANCE DATA:

### ALUMINUM HEAVY DUTY BAR RETURN GRILLES • GYMNASIUM • 5100-HD SERIES

#### MODELS: 51FH-HD, 51FV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .003	.002 .010	.006 .023	.010 .041	.016 .065	.022 .093	.031 .127	.040 .166	.050 .210	.062 .259
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM Noise Criteria	684 -	1368 -	2052 19	2736 25	3420 31	4104 35	4788 39	5472 44	6156 48	6840 52
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM Noise Criteria	769 -	1538 -	2307 19	3076 25	3845 31	4614 36	5383 40	6152 44	6921 48	7690 52
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM Noise Criteria	869 -	1738 -	2607 20	3476 26	4345 31	5214 36	6083 41	6952 45	7821 49	8690 53
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM Noise Criteria	970 -	1940 15	2910 21	3880 26	4850 32	5820 37	6790 41	7760 45	8730 49	9700 53
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM Noise Criteria	1077 -	2154 15	3231 21	4308 27	5385 33	6462 37	7539 42	8616 45	9693 50	10770 54
42 x 42	46 x 42 48 x 36 46 x 38	11.89	10.92	CFM Noise Criteria	1189 -	2378 15	3567 21	4756 27	5945 33	7134 38	8323 42	9512 46	10701 50	11890 54
44 x 44	46 x 42	13.07	11.98	CFM Noise Criteria	1307 -	2614 16	3921 22	5228 27	6535 33	7842 38	9149 42	10456 46	11763 50	13070 54
46 x 46		14.30	13.10	CFM Noise Criteria	1430 -	2860 17	4290 22	5720 28	7150 34	8580 39	10010 43	11440 47	12870 51	14300 55
48 x 48		15.59	14.26	CFM Noise Criteria	1559 -	3118 17	4677 23	6236 28	7795 34	9354 39	10913 43	12472 47	14031 51	15590 55

#### Performance Notes:

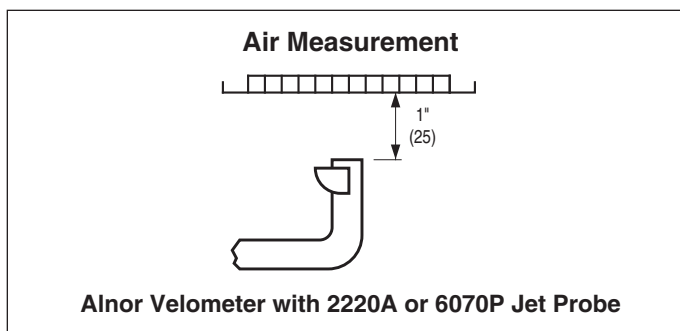
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

**Neg. Static Pressure** Listed Value x 0.91.

**Noise Criteria** Listed value - 4.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10<sup>-12</sup> watts. Dash (-) in space denotes a Noise Criteria level of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 2006.



#### Airflow Measurements:

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
  2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
  3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
  4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
- Airflow (CFM) = Average velocity (Vk) x Ak.

## HOW TO ORDER

### MODEL SERIES: 5100-HD

### HEAVY DUTY BAR RETURN GRILLES AND REGISTERS • ALUMINUM • GYMNASIUM

EXAMPLE: 5130H - HD - O - 24 x 12 - S - AW - DMI - A - —

**1. Models**

**Horizontal/Long Dimension Blades:**

- 51FH-HD Fixed 0° Deflection
- 5130H-HD Fixed 30° Deflection

**Vertical/Short Dimension Blades:**

- 51FV-HD Fixed 0° Deflection
- 5130V-HD Fixed 30° Deflection

**2. Damper (OBD)**

- O Steel
- OA Aluminum
- No Damper

**3. Nominal Width x Height**

inches (mm)

**4. Frame/Border Type**

- S Surface Mount (default)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint
- MI Mill
- PC Prime Coat
- SA Satin (Clear) Anodized
- SP Special Custom Color

**6. Opposed Blade Damper Finish**

- DMI Mill (default)
- DBK Painted Black

**7. Fastening**

- A Screw Holes (default)
- C Concealed Mounting Straps
- N None

**OPTIONS & ACCESSORIES:**

- None (default)

**8. Plaster Sub-Frame**

- PF Plaster Sub-Frame

**9. Insect Screen**

- IS Insect Screen

**10. Gaskets**

- GK Foam Gasket

**11. Earthquake Tabs**

- EQT Earthquake Tabs

**Notes:**

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminum 30° deflection register, horizontal blade direction and steel damper, is Model 5130H-HD-O. Unit will be supplied with screw holes and AW Appliance White finish.

2. The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

## HOW TO SPECIFY

### MODEL SERIES: 5100-HD

### HEAVY DUTY BAR RETURN GRILLES AND REGISTERS • ALUMINUM • GYMNASIUM

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **5130H-HD, 5130V-HD, 51FH-HD** or **51FV-HD Aluminum Heavy Duty Bar Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have extruded aluminum reinforced fixed blades and welded frame with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS

- GYMNASIUM

### Double Deflection Models:

61DH-HD and 61DV-HD

### Single Deflection Models:

61SH-HD and 61SV-HD

- Suffix '-O' adds a steel opposed blade damper



Model 61SH-HD

Nailor Model Series 6100-HD Heavy Duty Return Grilles and Registers are designed to combine heavy duty steel construction and pleasing architectural design. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance.

The single deflection models include 14 gauge individually adjustable blades spaced on 1/2" (13) centers. The double deflection models incorporate two sets of individually adjustable perpendicular blades that provide air control in two planes. The front blades are 14 gauge spaced on 1/2" (13) centers and the rear "teardrop" blades are spaced on 3/4" (19) centers. All models have frames that are manufactured from 16 gauge steel and include reinforced mitered corners and welded construction.

### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin is standard, furnished with countersunk screw holes and mounting screws.
- Available in sizes from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219) in single section construction.

### CONSTRUCTION MATERIAL:

- The single deflection models have 14 gauge steel blades spaced on 1/2" (13) centers.
- The double deflection models feature two sets of perpendicular adjustable blades. Front blades are 14 gauge steel blades spaced on 1/2" (13) centers. Rear "teardrop" blades are spaced on 3/4" (19) centers.
- Heavy duty 16 gauge steel frame with welded and reinforced mitered corners.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.

### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

### OPTIONS AND ACCESSORIES:

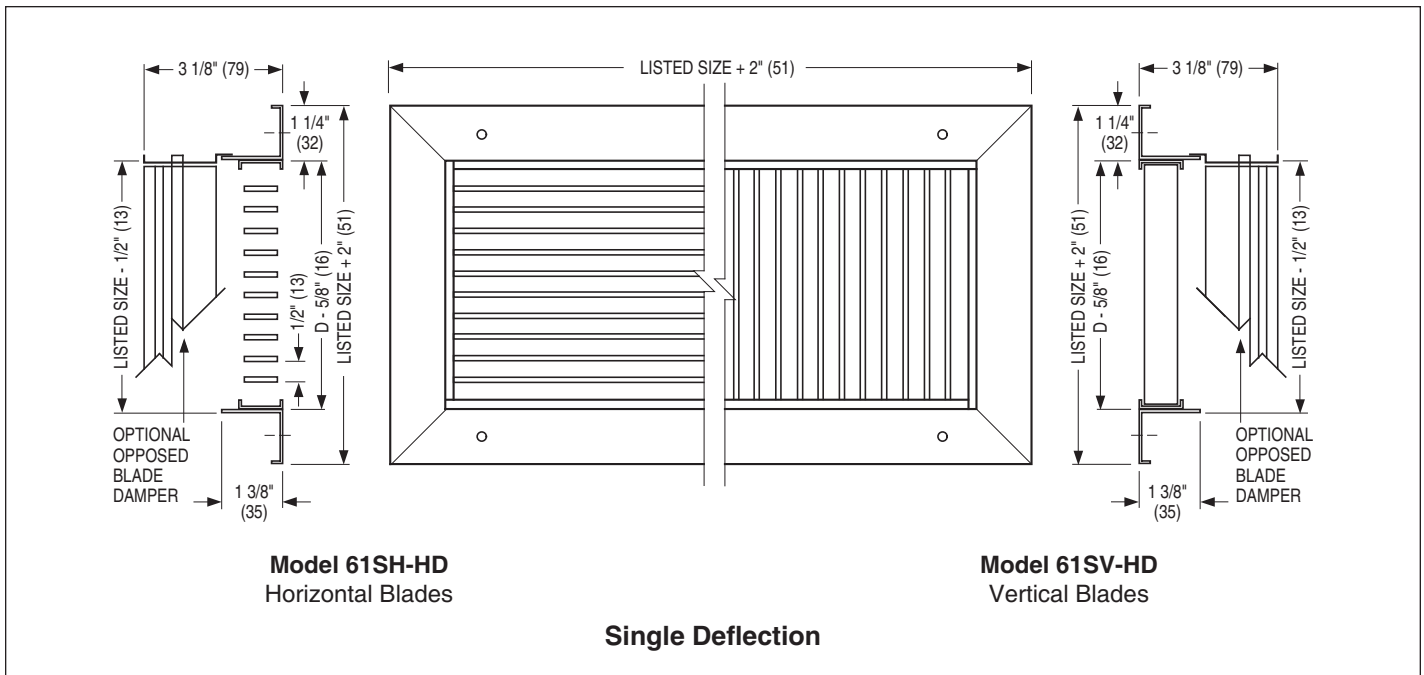
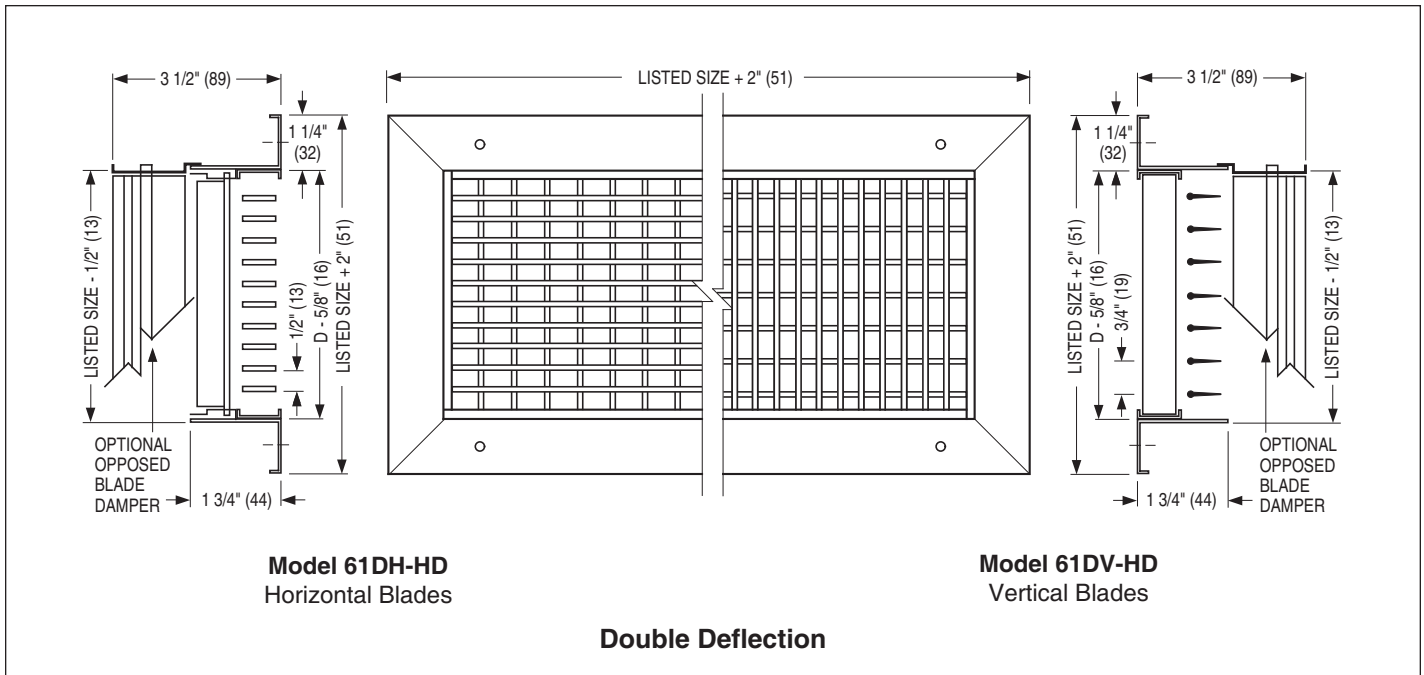
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

## DIMENSIONAL DATA:

### STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

#### MODEL SERIES: 6100-HD



## PERFORMANCE NOTES FOR HEAVY DUTY SUPPLY GRILLES AND REGISTERS: MODEL SERIES: 6100-HD

### THROW, SPREAD AND DROP:

The isovel diagrams shown below, illustrate in plan view, the relationship of horizontal spread to throw for three standard vertical blade deflections and represent a typical high side wall supply outlet. The isovels (throw values) are for the cataloged terminal velocities of 150, 100 and 50 fpm.

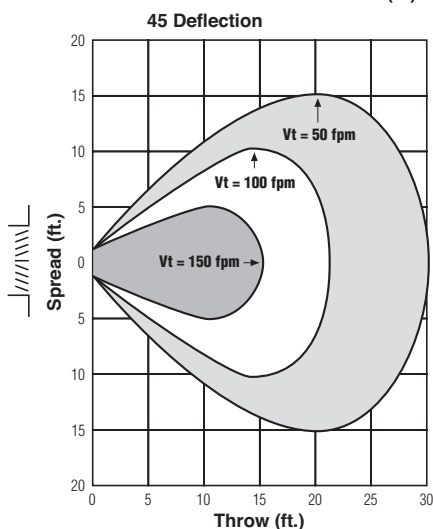
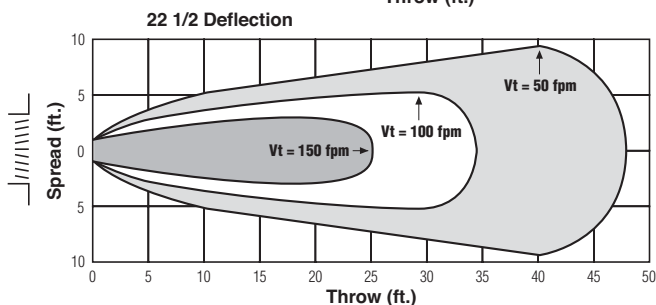
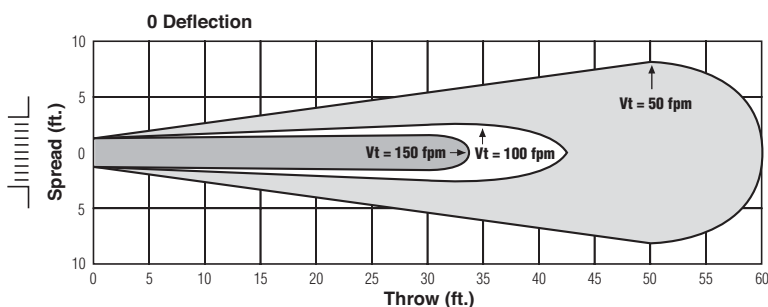
Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by multiplying the cataloged throw by x 0.7.

In order to offset potential draft problems caused by premature drop, it is recommended to set the blades with an upward deflection setting of 15 – 20° in free space conditions. The angle of spread and temperature differential between the supply air and room air ( $\Delta T$ ) also effects the drop of the airstream.

Under constant conditions of temperature, volume and core velocity, the wider the spread, the smaller the drop. Typical cold supply air (20°F  $\Delta T$ ) reduces horizontal throw by approximately 30%. Warm air will increase throw by approximately 30% and reduce drop.

For a full explanation of the effects of spread, throw, temperature and drop, refer to the engineering guide at the back of the catalog.

### SPREAD CHARACTERISTICS WITH THREE DEFLECTION SETTINGS



### NC Corrections for Blade Deflection (add)

Model Type	Damper	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	0	+ 2	+ 7
	Without	- 4	- 2	+ 3
Single Deflection	With	- 4	- 1	+ 4
	Without	- 8	- 6	+ 1

Note: Damper corrections are for wide open damper.

### TP Correction Factors for Grilles Without Damper (multiply)

Blade Deflection	0°	22 1/2°	45°
Double Deflection Factor	x .80	x .83	x .89
Single Deflection Factor	x .73	x .76	x .85

### NC Corrections for Throttling Damper (add)

Additional Pressure Drop (in. w.g.)	.05"	.15"	.25"
Approx. Damper Opening	75%	67%	50%
NC add	+ 6	+ 11	+ 18



## PERFORMANCE DATA:

### STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

#### MODELS: 61DH-HD, 61DV-HD, 61SH-HD, 61SV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400	
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122	
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324	
				Pressure	22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373	
					45°	.026	.046	.072	.103	.142	.186	.289	.417	.567	
6 x 6	8 x 4 10 x 4	0.20		CFM		60	80	100	120	140	160	200	240	280	
				Noise Criteria		-	-	-	-	19	23	29	35	40	
				Throw	0°	5-7-13	7-9-16	8-12-18	10-14-20	11-15-21	12-16-23	15-18-25	16-20-27	17-21-30	
					22 1/2°	4-6-10	6-7-13	6-10-14	8-11-16	9-12-17	10-13-18	12-14-20	13-16-22	14-17-24	
					3-4-7	4-5-8	4-6-9	5-7-10	6-8-11	6-8-12	8-9-13	8-10-14	9-11-15		
8 x 6	10 x 5 12 x 4	0.27		CFM		81	108	135	162	189	216	270	324	378	
				Noise Criteria		-	-	-	15	20	24	30	36	41	
				Throw	0°	5-8-15	8-12-18	10-14-20	11-16-23	13-18-25	15-19-27	17-21-30	18-23-32	19-24-35	
					22 1/2°	4-6-12	6-10-14	8-11-16	9-13-18	10-14-20	12-15-22	14-17-24	14-18-26	15-19-28	
					3-4-8	4-6-9	5-7-10	6-8-12	7-9-13	8-10-14	9-11-15	9-12-16	10-12-18		
10 x 6	12 x 5 16 x 4	0.35		CFM		105	140	175	210	245	280	350	420	490	
				Noise Criteria		-	-	-	16	21	25	31	37	42	
				Throw	0°	6-9-18	9-13-21	10-16-24	12-19-26	15-20-28	17-21-30	20-23-33	21-25-36	22-27-39	
					22 1/2°	5-7-14	7-10-17	8-13-19	10-15-21	12-16-22	14-17-24	16-18-26	17-20-29	18-22-31	
					3-5-9	5-7-11	5-8-12	6-10-13	8-10-14	9-11-15	10-12-17	11-13-18	11-14-20		
8 x 8	14 x 5	0.38		CFM		114	152	190	228	266	304	380	456	532	
				Noise Criteria		-	-	-	17	22	26	32	38	43	
				Throw	0°	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	19-24-34	21-26-37	23-28-40	
					22 1/2°	5-7-15	7-11-18	9-13-20	10-15-22	13-17-23	14-18-26	15-19-27	17-21-30	18-22-32	
					3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	10-12-17	11-13-19	12-14-20		
12 x 6	18 x 4	0.42		CFM		126	168	210	252	294	336	420	504	588	
				Noise Criteria		-	-	-	17	22	26	32	38	43	
				Throw	0°	6-9-19	9-14-22	11-16-25	13-19-27	16-21-30	18-22-32	19-24-34	21-28-38	23-29-41	
					22 1/2°	5-7-15	7-11-18	9-13-20	10-15-22	13-17-24	14-18-26	15-19-27	17-22-30	18-23-33	
					3-5-10	5-7-11	6-8-13	7-10-14	8-11-15	9-11-16	10-12-17	11-14-19	12-15-21		
14 x 6	10 x 8	0.50		CFM		150	200	250	300	350	400	500	600	700	
				Noise Criteria		-	-	-	18	23	27	33	39	44	
				Throw	0°	6-11-20	10-15-23	12-18-25	15-20-28	16-22-31	19-23-33	21-25-36	23-28-40	25-31-43	
					22 1/2°	5-9-16	8-12-18	10-14-20	12-16-22	13-18-25	15-18-26	17-20-29	18-22-32	20-25-34	
					3-6-10	5-8-12	6-9-13	8-10-14	8-11-16	10-12-17	11-13-18	12-14-20	13-16-22		
12 x 8	16 x 6 24 x 4	0.58		CFM		174	232	290	348	406	464	580	696	812	
				Noise Criteria		-	-	-	19	24	28	34	40	45	
				Throw	0°	7-11-21	10-15-24	12-19-27	15-21-30	17-23-32	20-24-34	22-27-38	24-30-42	26-32-45	
					22 1/2°	6-9-17	8-12-19	10-15-22	12-17-24	14-18-26	16-19-27	18-22-30	19-24-34	21-26-36	
					4-6-11	5-8-12	6-10-14	8-11-15	9-12-16	10-12-17	11-14-19	12-15-21	13-16-23		
10 x 10	14 x 7 26 x 4	0.61		CFM		183	244	305	366	427	488	610	732	854	
				Noise Criteria		-	-	-	19	24	28	34	40	45	
				Throw	0°	7-11-21	10-16-24	13-19-28	16-21-30	17-23-32	20-24-35	23-28-39	24-30-42	27-32-46	
					22 1/2°	6-9-17	8-13-19	10-15-22	13-17-24	14-18-26	16-19-28	18-22-31	19-24-34	22-26-37	
					4-6-11	5-8-12	7-10-14	8-11-15	9-12-16	10-12-18	12-14-20	12-15-21	14-16-23		
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM		195	260	325	390	455	520	650	780	910	
				Noise Criteria		-	-	-	15	20	25	29	35	41	46
				Throw	0°	7-12-22	11-16-25	13-20-29	16-22-32	18-24-34	21-25-36	24-29-40	25-32-45	28-34-48	
					22 1/2°	6-10-18	9-13-20	10-16-23	13-18-26	14-19-27	17-20-29	19-23-32	20-26-36	22-27-38	
					4-6-11	6-8-13	7-10-15	8-11-16	9-12-17	11-13-18	12-15-20	13-16-23	14-17-24		
12 x 10	20 x 6 24 x 5	0.74		CFM		222	296	370	444	518	592	740	888	1036	
				Noise Criteria		-	-	-	15	20	25	29	35	41	46
				Throw	0°	8-13-24	11-17-27	14-21-31	17-24-33	20-26-36	22-27-39	25-31-43	27-33-48	30-36-51	
					22 1/2°	6-10-19	9-14-22	11-17-25	14-19-26	16-21-29	18-22-31	20-25-34	22-26-38	24-29-41	
					4-7-12	6-9-14	7-11-16	9-12-17	10-13-18	11-14-20	13-16-22	14-17-24	15-18-26		
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM		240	320	400	480	560	640	800	960	1120	
				Noise Criteria		-	-	-	16	21	26	30	36	42	47
				Throw	0°	8-13-25	11-18-28	15-22-32	18-25-35	20-27-38	23-28-41	26-32-45	28-35-50	31-38-53	
					22 1/2°	6-10-20	9-14-22	12-18-26	14-20-28	16-22-30	18-22-33	21-26-36	22-28-40	25-30-42	
					4-7-13	6-9-14	8-11-16	9-13-18	10-14-19	12-14-21	13-16-23	14-18-25	16-19-27		
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM		270	360	450	540	630	720	900	1080	1260	
				Noise Criteria		-	-	-	16	21	26	30	36	42	47
				Throw	0°	9-14-26	12-18-29	15-23-33	18-26-36	21-27-39	24-29-42	27-33-47	29-36-51	32-39-56	
					22 1/2°	7-11-21	10-14-23	12-18-26	14-21-29	17-22-31	19-23-34	22-26-38	23-29-41	26-31-45	
					5-7-13	6-9-15	8-12-17	9-13-18	11-14-20	12-15-21	14-17-24	15-18-26	16-20-28		

GRILLES AND REGISTERS

F

For performance data notes, see F156.

## PERFORMANCE DATA:

### STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

#### MODELS: 61DH-HD, 61DV-HD, 61SH-HD, 61SV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
18 x 10	30 x 6	1.13		CFM	0°	.017	.030	.047	.068	.093	.122	.190	.274	.373
				Noise Criteria	22 1/2°	.026	.046	.072	.103	.142	.186	.289	.417	.567
				Throw	45°	9-15-29	14-20-33	17-25-36	20-29-40	24-30-43	27-33-46	30-36-51	33-40-57	35-43-61
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM	0°	11-18-33	16-25-39	20-29-42	24-33-47	27-36-51	31-39-54	35-42-60	39-47-66	41-51-71
				Noise Criteria	22 1/2°	9-14-26	13-20-31	16-23-34	19-26-38	22-29-41	25-31-43	28-34-48	31-38-53	33-41-57
				Throw	45°	6-9-17	8-13-20	10-15-21	12-17-24	14-18-26	16-20-27	18-21-30	20-24-33	21-26-36
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37		CFM	0°	11-18-33	16-25-39	20-30-43	24-33-47	28-36-51	32-39-54	35-43-61	39-47-67	41-51-72
				Noise Criteria	22 1/2°	9-14-26	13-20-31	16-24-34	19-26-38	22-29-41	26-31-43	30-36-51	31-38-54	33-41-58
				Throw	45°	6-9-17	8-13-20	10-15-22	12-17-24	14-18-26	16-20-27	18-22-31	20-24-34	21-26-36
24 x 10	20 x 12 30 x 8	1.52		CFM	0°	12-19-35	16-25-41	21-32-45	25-35-50	29-38-53	34-41-57	37-45-65	41-50-70	43-53-76
				Noise Criteria	22 1/2°	10-15-28	13-20-33	17-26-36	20-28-40	23-30-42	27-33-46	30-36-51	33-40-56	37-45-63
				Throw	45°	6-10-18	8-13-21	11-16-23	13-18-25	15-19-27	17-21-29	19-23-32	21-25-35	22-27-38
16 x 16	18 x 14 22 x 12 30 x 8	1.64		CFM	0°	12-20-37	17-26-42	22-32-47	26-37-51	31-40-56	35-42-59	39-47-67	42-51-73	46-56-79
				Noise Criteria	22 1/2°	10-16-30	14-21-34	18-26-38	21-30-41	25-32-45	28-34-47	31-38-54	34-41-58	37-45-63
				Throw	45°	6-10-19	9-13-21	11-16-24	13-19-26	16-20-28	18-21-30	20-24-34	21-26-37	23-28-40
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85		CFM	0°	12-20-38	18-27-44	22-33-48	27-38-54	32-40-58	36-44-62	40-48-69	44-54-76	48-58-82
				Noise Criteria	22 1/2°	10-16-30	14-22-35	18-26-38	22-30-43	26-32-46	29-35-50	32-38-55	35-43-61	38-46-66
				Throw	45°	6-10-19	9-14-22	11-17-24	14-19-27	16-20-29	18-22-31	20-24-35	22-27-38	24-29-41
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10		CFM	0°	13-21-40	19-29-47	24-36-52	29-40-57	33-43-62	38-47-66	42-52-74	47-57-81	50-62-87
				Noise Criteria	22 1/2°	10-17-32	15-23-38	19-29-42	23-32-46	26-34-50	30-38-53	34-42-59	38-46-65	40-50-70
				Throw	45°	7-11-20	10-15-24	12-18-26	15-20-29	17-22-31	19-24-33	21-26-37	24-29-41	25-31-44
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32		CFM	0°	14-23-43	21-31-50	26-39-56	31-43-61	36-47-67	41-50-71	46-56-79	50-61-86	54-67-94
				Noise Criteria	22 1/2°	11-18-34	17-25-40	21-31-45	25-34-49	29-38-54	33-40-57	32-45-63	40-49-69	43-54-75
				Throw	45°	7-12-22	11-16-25	13-20-28	16-22-31	18-24-34	21-25-36	23-28-40	25-31-43	27-34-47
24 x 16	32 x 12	2.50		CFM	0°	14-24-45	22-32-52	27-40-58	32-45-64	37-49-68	43-52-74	48-58-82	52-64-90	56-68-97
				Noise Criteria	22 1/2°	11-19-36	18-26-42	22-32-46	26-36-51	30-39-54	34-42-59	38-46-66	42-51-72	45-54-78
				Throw	45°	7-12-23	11-16-26	14-20-29	16-23-32	19-25-34	22-26-37	24-29-41	26-32-45	28-34-49
20 x 20	22 x 18	2.61		CFM	0°	15-24-46	22-32-53	27-41-59	32-46-65	38-50-70	44-53-75	49-59-84	53-65-92	58-70-99
				Noise Criteria	22 1/2°	12-19-37	18-26-42	22-33-47	26-37-52	30-40-56	35-42-60	39-47-67	42-52-74	46-56-79
				Throw	45°	8-12-23	11-16-27	14-21-30	16-23-33	19-25-35	22-27-38	25-30-42	28-33-46	30-37-52
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79		CFM	0°	15-25-48	23-34-55	28-42-61	34-48-68	4-51-73	45-55-77	50-61-86	55-68-95	59-73-103
				Noise Criteria	22 1/2°	12-20-38	18-27-44	22-34-49	27-38-54	32-41-58	36-44-62	40-49-69	44-54-76	47-58-82
				Throw	45°	8-13-24	12-17-28	14-21-31	17-24-34	20-26-37	23-28-39	25-31-43	28-34-48	30-37-52
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17		CFM	0°	17-27-50	24-36-58	29-45-65	36-50-71	42-54-77	47-58-82	53-65-92	58-71-101	62-77-109
				Noise Criteria	22 1/2°	14-22-40	19-29-46	23-36-52	29-40-57	34-43-62	38-46-66	42-52-74	46-57-81	50-62-87
				Throw	45°	9-14-25	12-18-29	15-23-33	18-25-36	21-27-39	24-29-41	27-33-46	29-36-51	31-39-55

For performance data notes, see F156.

## PERFORMANCE DATA:

### STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

#### MODELS: 61DH-HD, 61DV-HD, 61SH-HD, 61SV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
				22 1/2°	.017	.030	.047	.068	.093	.122	.190	.274	.373	
				45°	.026	.046	.072	.103	.142	.186	.289	.417	.567	
42 x 12	36 x 14	3.27		CFM		981	1308	1635	1962	2289	2616	3270	3924	4578
				Noise Criteria		-	-	21	26	31	35	41	47	52
				Throw	0°	17-27-51	24-36-59	30-45-66	36-51-72	42-55-77	48-59-83	53-66-93	59-72-101	63-77-109
				22 1/2°	14-22-41	19-29-47	24-36-53	29-41-58	34-44-62	38-47-66	42-53-74	47-58-81	50-62-87	
				45°	9-14-26	12-18-30	15-23-33	18-26-36	21-28-39	24-30-42	27-33-47	3-36-51	32-39-55	
30 x 18	24 x 22 34 x 16 40 x 14	3.54		CFM		1062	1416	1770	2124	2478	2832	3540	4248	4956
				Noise Criteria		-	-	21	26	31	35	41	47	52
				Throw	0°	18-28-53	25-37-61	31-47-69	37-53-75	44-57-81	50-61-86	56-69-97	61-75-106	66-81-115
				22 1/2°	14-22-42	20-30-49	25-38-55	30-42-60	35-46-65	40-49-69	45-55-78	49-60-85	53-65-92	
				45°	9-14-27	13-19-31	16-24-35	19-27-38	22-29-41	25-31-43	28-35-49	31-38-53	33-41-58	
24 x 24	32 x 20 40 x 16 46 x 14	?		CFM		1137	1516	1895	2274	2653	3032	3790	4548	5306
				Noise Criteria		-	-	21	26	31	35	41	47	52
				Throw	0°	18-29-55	29-36-62	33-48-70	39-55-77	45-59-83	51-62-89	57-70-99	62-77-108	68-83-117
				22 1/2°	14-23-44	21-31-50	26-38-56	31-44-62	36-47-66	41-50-71	46-56-79	50-62-86	54-66-94	
				45°	9-15-28	13-20-31	17-24-35	20-28-39	23-30-42	26-31-45	29-35-50	31-39-54	34-42-59	
36 x 18	32 x 20 40 x 16 46 x 14	4.29		CFM		1287	1716	2145	2574	3003	3432	4290	5148	6006
				Noise Criteria		-	15	22	27	32	36	42	48	53
				Throw	0°	19-31-58	28-42-68	35-52-75	42-58-83	48-63-89	55-68-95	61-75-106	68-83-117	73-89-125
				22 1/2°	15-25-46	22-34-54	28-42-60	34-46-66	38-50-71	44-54-76	49-60-85	54-66-94	58-71-100	
				45°	10-16-29	14-21-34	18-26-38	21-29-42	24-32-45	28-34-48	31-38-53	34-42-59	37-45-63	
26 x 26	28 x 24 48 x 14	4.47		CFM		1341	1788	2235	2682	3129	3576	4470	5364	6258
				Noise Criteria		-	15	22	27	32	36	42	48	53
				Throw	0°	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	63-77-109	69-85-120	75-91-129
				22 1/2°	15-26-47	22-34-55	28-42-62	34-47-68	39-52-73	45-55-78	50-62-87	55-68-96	60-73-103	
				45°	10-16-30	14-22-35	18-27-32	22-30-43	25-33-46	28-35-49	32-39-55	35-43-60	38-46-65	
30 x 24	32 x 22 36 x 20 40 x 18	4.77		CFM		1431	1908	2385	2862	3339	3816	4770	5724	6678
				Noise Criteria		-	15	22	27	32	36	42	48	53
				Throw	0°	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	65-79-112	71-87-123	77-94-133
				22 1/2°	16-26-49	23-35-57	29-43-63	35-49-70	41-54-75	46-57-81	52-63-90	57-70-98	62-75-106	
				45°	10-17-31	15-22-36	18-27-40	22-31-44	26-34-47	29-36-51	33-40-56	36-44-62	39-47-67	
42 x 18	28 x 26	4.99		CFM		1497	1997	2495	2994	3493	3992	4990	5988	6986
				Noise Criteria		-	16	23	28	33	37	43	49	54
				Throw	0°	20-33-62	30-44-72	37-55-80	44-62-88	52-67-95	59-72-102	66-80-114	72-88-125	77-95-135
				22 1/2°	16-26-50	24-35-58	30-44-64	35-50-70	42-54-76	47-58-82	53-64-91	58-70-100	62-76-108	
				45°	10-17-31	15-22-36	19-28-40	22-31-44	26-34-48	30-36-51	33-40-57	36-44-63	39-48-68	
28 x 28	30 x 26 36 x 22 40 x 20	5.20		CFM		1560	2080	2600	3120	3640	4160	5200	6240	7280
				Noise Criteria		-	16	23	28	33	37	43	49	54
				Throw	0°	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	67-82-116	74-90-128	79-97-137
				22 1/2°	17-27-50	24-36-59	30-45-66	36-50-72	42-55-78	48-59-83	54-66-93	59-72-102	63-78-110	
				45°	11-17-32	15-23-37	19-28-41	23-32-45	27-35-49	30-37-52	34-41-58	37-45-64	40-49-69	
42 x 20	30 x 28	5.57		CFM		1671	2228	2785	3342	3899	4456	5570	6684	7798
				Noise Criteria		-	16	23	28	33	37	43	49	54
				Throw	0°	22-35-66	31-47-76	39-58-84	47-66-93	55-71-100	62-76-107	70-84-120	76-93-131	82-100-142
				22 1/2°	18-28-53	25-38-61	31-46-67	38-53-74	44-57-80	50-61-86	56-67-96	61-74-105	66-80-114	
				45°	11-18-33	16-24-38	20-29-42	24-33-47	28-36-50	31-38-54	35-42-60	38-47-66	41-50-71	
36 x 24	40 x 22 44 x 20	5.74		CFM		1722	2296	2870	3444	4018	4592	5740	6888	8036
				Noise Criteria		-	16	23	28	33	37	43	49	54
				Throw	0°	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	72-88-124	78-96-137	85-104-148
				22 1/2°	18-29-54	26-39-62	33-48-70	39-54-77	46-59-83	51-62-90	58-70-99	62-77-110	68-83-118	
				45°	12-18-34	16-25-39	21-30-44	25-34-48	29-37-52	32-39-56	36-44-62	39-48-69	43-52-74	
30 x 30	34 x 26 38 x 24 48 x 20	5.99		CFM		1797	2396	2995	3594	4193	4792	5990	7188	8386
				Noise Criteria		-	16	23	28	33	37	43	49	54
				Throw	0°	23-36-69	33-49-80	41-61-89	49-69-98	57-75-106	65-80-113	73-89-126	80-98-138	86-106-150
				22 1/2°	18-29-55	26-39-64	33-49-71	39-55-78	46-60-85	52-64-90	58-71-101	64-78-110	69-85-120	
				45°	12-18-35	17-25-40	21-31-45	25-35-49	29-38-53	33-40-57	37-45-63	40-49-69	43-53-75	
42 x 24	36 x 28 42 x 24 46 x 22	6.72		CFM		2016	2688	3360	4032	4704	5376	6720	8064	9408
				Noise Criteria		-	17	24	29	34	38	44	50	55
				Throw	0°	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	77-93-132	84-102-144	90-111-157
				22 1/2°	19-31-58	27-41-67	34-51-74	41-58-82	48-62-89	54-67-94	62-74-106	67-82-115	72-89-126	
				45°	12-20-36	17-26-42	22-32-47	26-36-51	30-39-56	34-42-59	39-47-66	42-51-72	45-56-79	

GRILLES AND REGISTERS

F

For performance data notes, see F156.

## PERFORMANCE DATA:

### STEEL HEAVY DUTY SUPPLY GRILLES AND REGISTERS • GYMNASIUM

#### MODELS: 61DH-HD, 61DV-HD, 61SH-HD, 61SV-HD

**GRILLES AND REGISTERS**
**F**

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
				0°	22 1/2°	.015	.026	.041	.059	.081	.106	.165	.238	.324
32 x 32	40 x 26	6.84	4.65 4.04 3.52	CFM		2052	2736	3420	4104	4788	5472	6840	8208	9576
				Noise Criteria		-	17	24	29	34	38	44	50	55
				Throw	0°	24-39-73	34-52-84	43-65-94	52-73-103	61-79-112	69-84-119	77-94-133	84-103-146	91-112-158
36 x 30	38 x 28	7.22	4.91 4.26 3.72	CFM		2166	2888	3610	4332	5054	5776	7220	8664	10108
				Noise Criteria		-	17	24	29	34	38	44	50	55
				Throw	0°	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	80-98-139	87-108-151	94-116-164
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69	5.23 4.54 3.96	CFM		2307	3076	3845	4614	5383	6152	7690	9228	10766
				Noise Criteria		-	18	25	30	35	39	45	51	56
				Throw	0°	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	82-100-142	90-109-155	97-118-167
36 x 34	38 x 32 40 x 30 48 x 26	8.20	5.58 4.84 4.22	CFM		2460	3280	4100	4920	5740	6560	8200	9840	11480
				Noise Criteria		-	18	25	30	35	39	45	51	56
				Throw	0°	26-42-79	37-57-91	47-70-102	57-79-111	65-85-121	75-91-129	84-102-144	91-111-158	98-121-171
36 x 36	38 x 34 42 x 30 46 x 28	8.69	5.91 5.13 4.48	CFM		2607	3476	4345	5214	6083	6952	8690	10428	12166
				Noise Criteria		-	18	25	30	35	39	45	51	56
				Throw	0°	28-45-84	36-60-96	49-74-108	60-84-117	69-90-127	78-96-136	88-108-152	96-117-166	104-127-180
38 x 38	42 x 34	9.70	6.60 5.72 5.00	CFM		2910	3880	4850	5820	6790	7760	9700	11640	13580
				Noise Criteria		-	19	26	31	36	40	46	52	57
				Throw	0°	28-47-88	42-62-101	53-78-114	62-88-125	73-95-134	83-101-143	93-114-161	101-125-176	109-134-190
42 x 36	44 x 34 48 x 30	10.16	6.91 5.99 5.23	CFM		3048	4064	5080	6096	7112	8128	10160	12192	14224
				Noise Criteria		-	19	26	31	36	40	46	52	57
				Throw	0°	29-48-90	43-64-104	53-80-117	64-90-127	75-97-138	85-104-147	95-117-165	104-127-180	112-138-195
40 x 40	42 x 38 46 x 34 48 x 32	10.77	7.32 6.35 5.55	CFM		3231	4308	5385	6462	7539	8616	10770	12924	15078
				Noise Criteria		-	19	26	31	36	40	46	52	57
				Throw	0°	31-50-94	44-67-108	56-84-121	67-94-132	77-102-143	88-108-153	99-121-171	108-132-187	117-143-203
42 x 42	44 x 40 46 x 38 48 x 36	11.89	8.09 7.02 6.12	CFM		3567	4756	5945	7134	8323	9512	11890	14268	16646
				Noise Criteria		-	20	27	32	37	41	47	53	58
				Throw	0°	32-52-97	46-69-112	58-86-125	69-97-138	81-105-149	92-112-159	102-125-178	112-138-195	122-145-210
44 x 44	46 x 42	13.07	8.89 7.71 6.73	CFM		3921	5228	6535	7842	9149	10456	13070	15684	18298
				Noise Criteria		-	20	27	32	37	41	47	53	58
				Throw	0°	34-55-104	49-74-120	61-92-133	74-104-146	86-112-158	97-120-168	109-133-189	120-146-207	129-158-223
46 x 46	14.30	9.72 8.44 7.36	CFM		4290	5720	7150	8580	10010	11440	14300	17160	20020	
			Noise Criteria		-	20	27	32	37	41	47	53	58	
			Throw	0°	35-57-107	51-76-124	63-95-138	76-107-151	89-116-163	101-124-174	113-138-195	124-151-214	134-163-231	
48 x 48	15.59	10.60 9.20 8.03	CFM		4677	6236	7795	9354	10913	12472	15590	18708	21826	
			Noise Criteria		-	21	28	33	38	42	48	54	59	
			Throw	0°	37-60-113	53-80-131	67-100-146	80-113-159	94-122-173	106-131-185	119-146-206	131-159-226	140-173-244	

#### Performance Notes:

1. Performance data is based on double deflection grille with opposed blade damper (register).

2. 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.

3. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.

4. Additional performance notes and correction factors for various models and settings may be found on page F152.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

### MODEL SERIES: 6100-HD

### HEAVY DUTY SUPPLY GRILLES AND REGISTERS – STEEL – GYMNASIUM

EXAMPLE: 61DH-HD - O - 24 x 12 - S - AW - DMI - A - —

- |  |   |   |
|--|---|---|
| <p>1. <b>Models</b><br/> <b>Double Deflection:</b><br/>         61DH-HD Horizontal Front Blades<br/>         61DV-HD Vertical Front Blades<br/> <b>Single Deflection:</b><br/>         61SH-HD Horizontal Blades<br/>         61SV-HD Vertical Blades</p> <p>2. <b>Damper (OBD)</b><br/>         O Steel<br/>         — None</p> <p>3. <b>Nominal Width x Height</b><br/>         inches (mm)</p> <p>4. <b>Frame/Border Type</b><br/>         S Surface Mount (default)</p> <p>5. <b>Finish</b><br/>         AW Appliance White (default)<br/>         AL Aluminum<br/>         BK Black<br/>         BW British White</p> | <p>LBP Light Bronze Paint<br/>         MBP Medium Bronze Paint<br/>         DBP Dark Bronze Paint<br/>         MI Mill<br/>         PC Prime Coat<br/>         SP Special Custom Color</p> <p>6. <b>Opposed Blade Damper Finish</b><br/>         DMI Mill (default)<br/>         DBK Painted Black</p> <p>7. <b>Fastening</b><br/>         A Screw Holes (default)<br/>         N None</p> <p><b>OPTIONS &amp; ACCESSORIES:</b><br/>         — None (default)</p> <p>8. <b>Plaster Sub-Frame</b><br/>         PF Plaster Sub-Frame</p> <p>9. <b>Insect Screen</b><br/>         IS Insect Screen</p> | <p>10. <b>Gaskets</b><br/>         GK Foam Gasket</p> <p>11. <b>Earthquake Tabs</b><br/>         EQT Earthquake Tabs</p> <p><b>Notes:</b><br/>         1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a steel heavy duty double deflection register, front blades vertical and steel damper, is Model 61DV-HD-O. Unit will be supplied with screw holes and AW Appliance White finish.<br/>         2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.<br/>         3. The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).</p> |
|--|---|---|

GRILLES AND REGISTERS

F

## HOW TO SPECIFY

### MODEL SERIES: 6100-HD

### HEAVY DUTY SUPPLY GRILLES AND REGISTERS – STEEL – GYMNASIUM

#### SUGGESTED SPECIFICATION:

##### 61DV-HD, 61DH-HD Double Deflection

Furnish and install **Nailor Model** (select one) **61DV-HD** or **61DH-HD Steel Heavy Duty Double Deflection Supply Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have a dual set of perpendicular blades that are adjustable. The front blades are to be 14 gauge steel spaced on 1/2" (13) centers and the rear blades are to be "teardrop" shaped spaced on 3/4" (19) centers. The frame is to be constructed from 16 gauge steel and have reinforced mitered corners and welded construction. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 61SV-HD, 61SH-HD Single Deflection

Furnish and install **Nailor Model** (select one) **61SV-HD** or **61SH-HD Steel Heavy Duty Single Deflection Supply Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have a single set of 14 gauge steel blades that are adjustable and spaced on 1/2" (13) centers. The frame is to be constructed from 16 gauge steel and have reinforced mitered corners and welded construction. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



## STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS

- GYMNASIUM
- LOUVERED

### Models:

- 6145H-HD 45° Deflection Horizontal Blades
- 6145V-HD 45° Deflection Vertical Blades
- 61FH-HD 0° Deflection Horizontal Blades
- 61FV-HD 0° Deflection Vertical Blades

- Suffix '-O' adds a steel opposed blade damper



Model 6145H-HD

Nailor Model Series 6100-HD Heavy Duty Return Grilles and Registers are designed to combine heavy duty steel construction and pleasing architectural design. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance.

Heavy duty 14 gauge blades on 1/2" (13) centers are available with either a 45° or 0° fixed deflection setting. Blades are individually welded in position and are supported on maximum 6" (152) centers with heavy duty concealed support mullions for added strength, which are in turn welded to the grille frame. Frames are manufactured from 16 gauge steel and include reinforced mitered corners and welded construction.

### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin is standard, furnished with countersunk screw holes and mounting screws.
- Available in sizes from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219) in single section construction.

### CONSTRUCTION MATERIAL:

- Fixed 14 gauge steel blades on 1/2" (13) centers are available in 0° or 45° deflection.
- Heavy duty 16 gauge steel frame with welded and reinforced mitered corners.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.

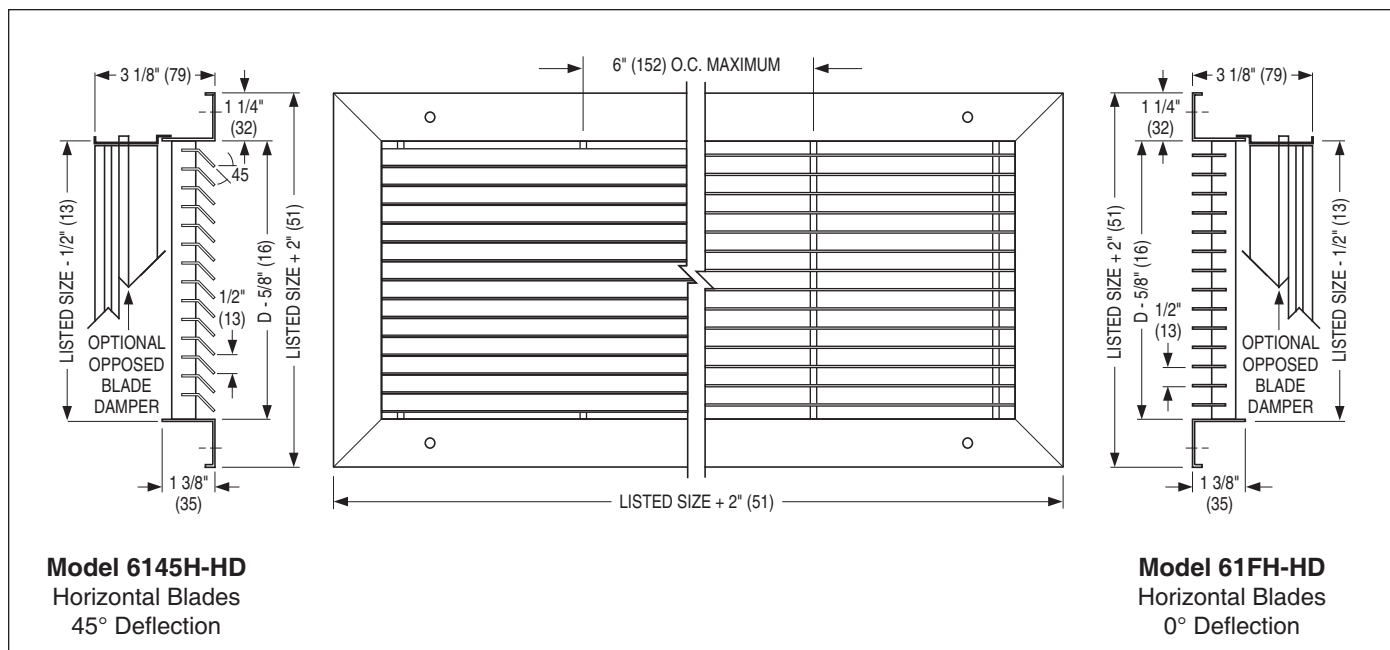
### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.





## STAINLESS STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS

- FIXED 45° BLADE
- 1/2" (13) SPACING

### Models:

**6755H-HD 45° Deflection Horizontal Blades**

**6755V-HD 45° Deflection Vertical Blades**

- Suffix '-O' adds a stainless steel opposed blade damper



Model 6755H-HD

Models 6755H-HD and 6755V-HD Heavy Duty Return Grilles and Registers have fixed horizontal and vertical blades respectively, spaced on 1/2" (13) centers with a 45° fixed deflection.

The streamlined blades and open spacing maintain a minimum effective free area of 40%, which minimizes intake velocity, reduces inlet pressure and provides quiet operation. The smooth blade shapes do not accumulate lint and plug up.

The 1/2" (13) blade centers on these models provide a return grille for return air or exhaust applications which has a 'no see-through' design, not only when the grille is viewed with the blade deflection facing away from the line of sight, but also when viewed from straight ahead.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

### STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined airfoil shaped roll-formed blades on 1/2" (13) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

- Blades are reinforced by an additional support mullion on maximum 8" (203) centers.

- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).

### CONSTRUCTION MATERIAL:

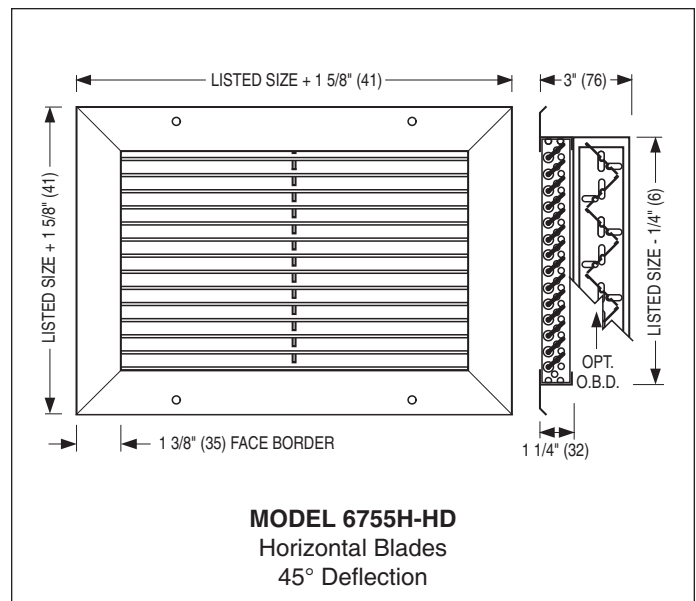
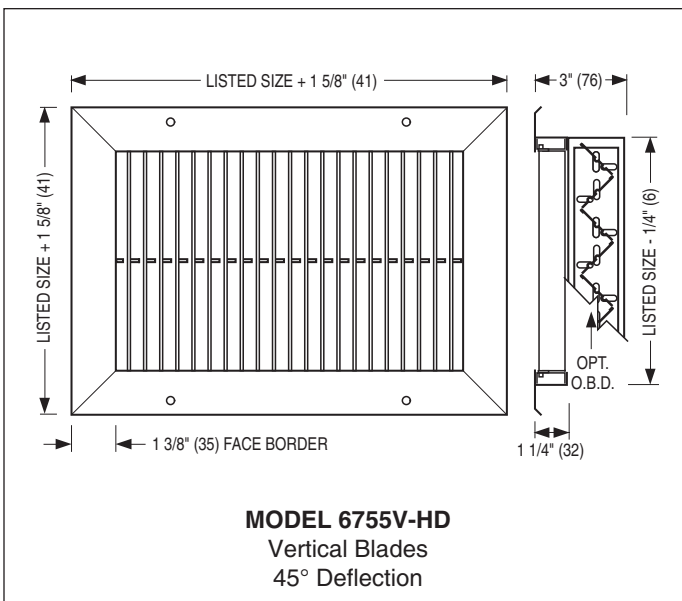
- Type 304 stainless steel construction.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.

### FINISH OPTIONS:

- #4 Brushed Satin Polished Finish is standard. AW Appliance White finish is optional. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- 316 Type 316 stainless steel construction available as an option.
  - PFS Stainless Steel Plaster Frame
- For additional options and accessories, see page F191.



## PERFORMANCE DATA:

### STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 45° DEFLECTION

#### MODELS: 6145H-HD, 6145V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .005	.002 .021	.006 .046	.010 .082	.016 .129	.022 .185	.031 .252	.040 .330	.050 .417	.062 .515
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 15	100 20	120 25	140 30	160 34	180 38	200 42
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 16	140 21	168 26	196 31	224 35	252 39	280 43
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 17	175 22	210 27	245 32	280 36	315 40	350 44
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 18	190 23	228 28	266 33	304 37	342 41	380 45
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 19	210 24	252 29	294 33	336 38	378 42	420 46
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 15	232 20	290 25	348 30	406 34	464 39	522 43	580 47
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 15	244 20	305 25	366 30	427 35	488 40	549 43	610 47
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 15	260 21	325 26	390 31	455 36	520 40	585 44	650 47
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 16	296 21	370 26	444 31	518 36	592 41	666 45	740 48
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 17	360 22	450 27	540 32	630 37	720 42	810 45	900 48
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 18	496 22	620 27	744 32	868 37	992 42	1116 46	1240 49
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 19	548 24	685 29	822 34	959 39	1096 44	1233 47	1370 50
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 19	608 24	760 29	912 34	1064 39	1216 45	1368 48	1520 51
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 20	656 25	820 30	984 35	1148 40	1312 45	1476 48	1640 51
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM Noise Criteria	185 -	370 15	555 20	740 25	925 30	1110 35	1295 40	1480 45	1665 48	1850 52
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM Noise Criteria	210 -	420 15	630 20	840 25	1050 30	1260 36	1470 41	1680 46	1890 49	2100 52
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM Noise Criteria	232 -	464 15	696 20	928 26	1160 31	1392 36	1624 41	1856 46	2088 49	2320 53
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM Noise Criteria	261 -	522 15	783 20	1044 26	1305 31	1566 37	1827 42	2088 47	2349 50	2610 53
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM Noise Criteria	317 -	634 16	951 21	1268 27	1585 32	1902 38	2219 42	2536 47	2853 50	3170 54
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 -	708 16	1062 21	1416 27	1770 32	2124 38	2478 43	2832 48	3186 51	3540 55
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM Noise Criteria	379 -	758 16	1137 21	1516 27	1895 32	2274 38	2653 43	3032 48	3411 51	3790 55
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 -	854 17	1281 22	1708 29	2135 34	2562 40	2989 45	3416 50	3843 53	4270 57
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM Noise Criteria	447 -	894 17	1341 22	1788 29	2235 34	2682 40	3129 45	3576 50	4023 53	4470 57
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM Noise Criteria	477 -	954 18	1431 23	1908 30	2385 35	2862 41	3339 46	3816 50	4293 54	4770 58
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 -	1040 18	1560 23	2080 30	2600 35	3120 41	3640 46	4160 51	4680 54	5200 58
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 -	1148 18	1722 23	2296 30	2870 36	3444 42	4018 47	4592 51	5166 55	5740 59
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 -	1198 18	1797 23	2396 30	2995 36	3594 42	4193 47	4792 51	5391 55	5990 59

For performance data notes, see F161.

## PERFORMANCE DATA:

### STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 45° DEFLECTION

#### MODELS: 6145H-HD, 6145V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .005	.002 .021	.006 .046	.010 .082	.016 .129	.022 .185	.031 .252	.040 .330	.050 .417	.062 .515
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				Noise Criteria	15	19	24	31	37	43	47	52	56	60
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria	16	20	25	31	37	43	48	52	56	60
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				Noise Criteria	17	21	25	32	37	44	49	53	57	61
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				Noise Criteria	17	22	26	32	38	44	49	53	57	61
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				Noise Criteria	17	22	27	33	39	45	51	54	59	63
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	18	23	28	34	40	46	51	55	59	63
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				Noise Criteria	18	23	28	34	40	46	51	55	59	63
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				Noise Criteria	19	24	29	35	41	47	52	56	60	64
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				Noise Criteria	19	24	29	35	41	47	52	56	60	64

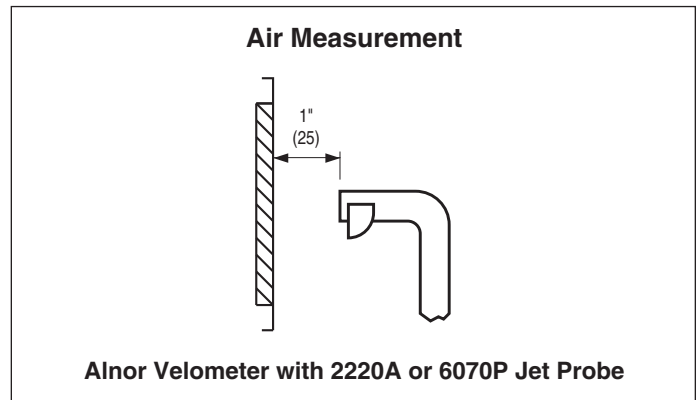
#### Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

**Neg. Static Pressure** Listed Value x 0.91.

**Noise Criteria** Listed value – 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (-) in space indicates a Noise Criteria of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



#### Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (CFM) = Average velocity (V<sub>k</sub>) x Ak.

## PERFORMANCE DATA:

### STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 0° DEFLECTION

#### MODELS: 61FH-HD, 61FV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .002	.002 .009	.006 .020	.010 .036	.016 .057	.022 .082	.031 .111	.040 .145	.050 .183	.062 .226
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 -	100 -	120 18	140 20	160 23	180 27	200 32
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 -	140 15	168 19	196 21	224 24	252 28	280 33
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 -	175 16	210 20	245 22	280 25	315 29	350 34
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 -	190 16	228 21	266 23	304 26	342 30	380 34
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 -	210 17	252 21	294 24	336 27	378 31	420 35
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 -	290 17	348 21	406 24	464 28	522 32	580 36
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 -	305 17	366 21	427 24	488 29	549 32	610 37
18 x 6	14 x 8    30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 -	325 18	390 22	455 25	520 29	585 33	650 37
12 x 10	16 x 8    20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 -	370 18	444 23	518 26	592 30	666 34	740 37
12 x 12	14 x 10    24 x 6 18 x 8    38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 -	450 19	540 23	630 26	720 31	810 34	900 37
14 x 14	16 x 12    24 x 8 20 x 10    34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 -	496 -	620 19	744 24	868 27	992 31	1116 35	1240 38
18 x 12	16 x 14    28 x 8 20 x 10    38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 -	548 15	685 20	822 25	959 28	1096 33	1233 36	1370 39
24 x 10	20 x 12    30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 -	608 15	760 20	912 25	1064 29	1216 34	1368 37	1520 40
16 x 16	18 x 14    30 x 8 22 x 12	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 -	656 16	820 21	984 25	1148 29	1312 34	1476 37	1640 40
24 x 12	18 x 16    30 x 10 20 x 14    36 x 8	1.85	1.78	CFM Noise Criteria	185 -	370 -	555 -	740 16	925 21	1110 26	1295 29	1480 34	1665 37	1850 41
18 x 18	20 x 16    28 x 12 24 x 14    32 x 10	2.10	2.01	CFM Noise Criteria	210 -	420 -	630 -	840 16	1050 21	1260 26	1470 30	1680 35	1890 38	2100 41
30 x 12	20 x 18    26 x 14 22 x 16    36 x 10	2.32	2.23	CFM Noise Criteria	232 -	464 -	696 -	928 16	1160 21	1392 26	1624 30	1856 35	2088 38	2320 42
20 x 20	24 x 18    30 x 14 26 x 16    36 x 12	2.61	2.48	CFM Noise Criteria	261 -	522 -	783 -	1044 16	1305 21	1566 26	1827 30	2088 35	2349 38	2610 42
22 x 22	24 x 20    30 x 16 26 x 18    36 x 14	3.17	3.00	CFM Noise Criteria	317 -	634 -	951 -	1268 17	1585 22	1902 27	2219 31	2536 35	2853 38	3170 42
30 x 18	24 x 22    40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 -	708 -	1062 -	1416 17	1770 22	2124 27	2478 31	2832 36	3186 39	3540 43
24 x 24	26 x 22    32 x 18 28 x 20    36 x 16	3.79	3.56	CFM Noise Criteria	379 -	758 -	1137 -	1516 17	1895 22	2274 27	2653 32	3032 36	3411 39	3790 43
36 x 18	32 x 20    46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 -	854 -	1281 -	1708 19	2135 24	2562 28	2989 32	3416 37	3843 40	4270 44
26 x 26	28 x 24    48 x 14	4.47	4.19	CFM Noise Criteria	447 -	864 -	1341 -	1788 19	2235 24	2682 28	3129 32	3576 37	4023 40	4470 44
30 x 24	28 x 26    36 x 20 32 x 22    40 x 18	4.77	4.46	CFM Noise Criteria	477 -	954 -	1431 -	1908 20	2385 25	2862 29	3339 33	3816 37	4293 41	4770 45
28 x 28	30 x 26    40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 -	1040 -	1560 -	2080 20	2600 25	3120 29	3640 33	4160 38	4680 41	5200 45
36 x 24	30 x 28    44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 -	1148 -	1722 -	2296 20	2870 25	3444 29	4018 33	4592 38	5166 42	5740 46
30 x 30	34 x 26    48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 -	1198 -	1797 -	2396 20	2995 25	3594 30	4193 34	4792 38	5391 42	5990 46

For performance data notes, see F163.

## PERFORMANCE DATA:

### STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 0° DEFLECTION

#### MODELS: 61FH-HD, 61FV-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .002	.002 .009	.006 .020	.010 .036	.016 .057	.022 .082	.031 .111	.040 .145	.050 .183	.062 .226
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				Noise Criteria	-	-	-	20	26	30	34	39	43	47
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria	-	-	-	20	26	31	35	39	43	47
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				Noise Criteria	-	-	-	21	26	31	36	40	44	48
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				Noise Criteria	-	-	-	21	27	32	36	40	44	48
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				Noise Criteria	-	-	-	22	28	32	37	40	45	49
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	-	-	-	22	28	33	37	41	45	49
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				Noise Criteria	-	-	-	22	28	33	37	41	45	49
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				Noise Criteria	-	-	-	23	29	34	38	42	46	50
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				Noise Criteria	-	-	-	23	29	34	38	42	46	50

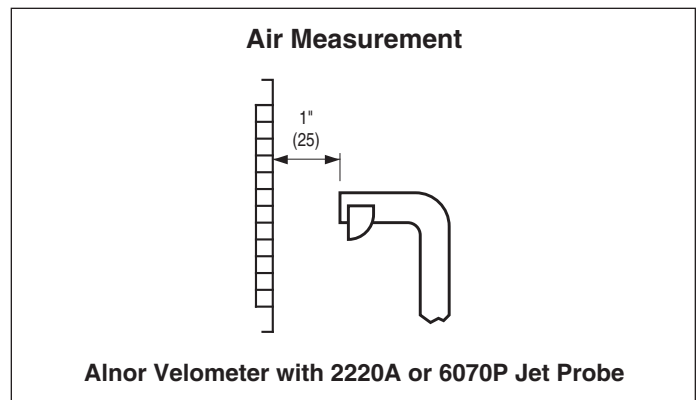
#### Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

**Neg. Static Pressure** Listed Value x 0.91.

**Noise Criteria** Listed value - 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (-) in space indicates a Noise Criteria of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 2006.



#### Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
  2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
  3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
  4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
- Airflow (CFM) = Average velocity (Vk) x Ak.



## PERFORMANCE DATA:

### STAINLESS STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 45° DEFLECTION

#### MODELS: 6755H-HD, 6755V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .005	.002 .021	.006 .046	.010 .082	.016 .129	.022 .185	.031 .252	.040 .330	.050 .417	.062 .515
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 -	100 17	120 22	140 27	160 31	180 35	200 39
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 -	140 18	168 23	196 28	224 32	252 36	280 40
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 -	175 19	210 24	245 29	280 33	315 37	350 41
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 15	190 20	228 25	266 30	304 34	342 38	380 42
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 16	210 21	252 26	294 30	336 35	378 39	420 43
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 17	290 22	348 27	406 31	464 36	522 40	580 44
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 17	305 22	366 27	427 32	488 37	549 40	610 44
18 x 6	14 x 8    30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 18	325 23	390 28	455 33	520 37	585 41	650 44
12 x 10	16 x 8    20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 18	370 23	444 28	518 33	592 38	666 42	740 45
12 x 12	14 x 10    24 x 6 18 x 8    38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 19	450 24	540 29	630 34	720 39	810 42	900 45
14 x 14	16 x 12    24 x 8 20 x 10    34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 -	496 19	620 24	744 29	868 34	992 39	1116 43	1240 46
18 x 12	16 x 14    28 x 8 22 x 10    38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 16	548 21	685 26	822 31	959 36	1096 41	1233 44	1370 47
24 x 10	20 x 12    30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 16	608 21	760 26	912 31	1064 36	1216 42	1368 45	1520 48
16 x 16	18 x 14    30 x 8 22 x 12	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 17	656 22	820 27	984 32	1148 37	1312 42	1476 45	1640 48
24 x 12	18 x 16    30 x 10 20 x 14    36 x 8	1.85	1.78	CFM Noise Criteria	185 -	370 -	555 17	740 22	925 27	1110 32	1295 37	1480 42	1665 45	1850 49
18 x 18	20 x 16    28 x 12 24 x 14    32 x 10	2.10	2.01	CFM Noise Criteria	210 -	420 -	630 17	840 22	1050 27	1260 33	1470 38	1680 43	1890 46	2100 49
30 x 12	20 x 18    26 x 14 22 x 16    36 x 10	2.32	2.23	CFM Noise Criteria	232 -	464 -	696 17	928 23	1160 28	1392 33	1624 38	1856 43	2088 46	2320 50
20 x 20	24 x 18    30 x 14 26 x 16    36 x 12	2.61	2.48	CFM Noise Criteria	261 -	522 -	783 17	1044 23	1305 28	1566 34	1827 39	2088 44	2349 47	2610 50
22 x 22	24 x 20    30 x 16 26 x 18    36 x 14	3.17	3.00	CFM Noise Criteria	317 -	634 -	951 18	1268 24	1585 29	1902 35	2219 39	2536 44	2853 47	3170 51
30 x 18	24 x 22    40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 -	708 -	1062 18	1416 24	1770 29	2124 35	2478 40	2832 45	3186 48	3540 52
24 x 24	26 x 22    32 x 18 28 x 20    36 x 16	3.79	3.56	CFM Noise Criteria	379 -	758 -	1137 18	1516 24	1895 29	2274 35	2653 40	3032 45	3411 48	3790 52
36 x 18	32 x 20    46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 -	854 -	1281 19	1708 26	2135 30	2562 37	2989 42	3416 47	3843 50	4270 54
26 x 26	28 x 24    48 x 14	4.47	4.19	CFM Noise Criteria	447 -	894 -	1341 19	1788 26	2235 31	2682 37	3129 42	3576 47	4023 50	4470 54
30 x 24	28 x 26    36 x 20 32 x 22    40 x 18	4.77	4.46	CFM Noise Criteria	477 -	954 -	1431 20	1908 27	2385 32	2862 38	3339 43	3816 47	4293 51	4770 55
28 x 28	30 x 26    40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 -	1040 -	1560 20	2080 27	2600 32	3120 38	3640 43	4160 48	4680 51	5200 55
36 x 24	30 x 28    44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 -	1148 -	1722 20	2296 27	2870 33	3444 39	4018 43	4592 48	5166 52	5740 56
30 x 30	34 x 26    48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 -	1198 -	1797 20	2396 27	2995 33	3594 39	4193 44	4792 48	5391 52	5990 56

For performance data notes, see F165.



## PERFORMANCE DATA:

### STAINLESS STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 45° DEFLECTION

#### MODELS: 6755H-HD, 6755V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .005	.002 .019	.006 .042	.010 .075	.016 .117	.022 .169	.031 .230	.040 .300	.050 .380	.062 .469
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				Noise Criteria	-	16	21	28	34	40	44	49	53	57
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria	-	17	22	28	34	40	45	49	53	57
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				Noise Criteria	-	18	22	29	34	41	46	50	54	58
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				Noise Criteria	-	19	23	29	35	41	46	50	54	58
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				Noise Criteria	-	19	24	30	36	42	48	51	56	60
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	15	20	25	31	37	43	48	52	56	60
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				Noise Criteria	15	20	25	31	37	43	48	52	56	60
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				Noise Criteria	16	21	26	32	38	44	49	53	57	61
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				Noise Criteria	16	21	26	32	38	44	49	53	57	61

#### Performance Notes:

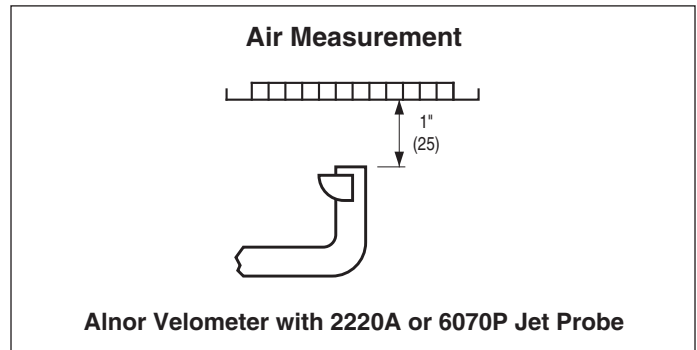
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

**Neg. Static Pressure** Listed Value x 0.91.

**Noise Criteria** Listed value - 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (-) in space indicates a Noise Criteria of less than 15.

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 - 2006.



#### Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
  2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
  3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (Vk in FPM).
  4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
- Airflow (CFM) = Average velocity (Vk) x Ak.

## HOW TO ORDER

### MODEL SERIES: 6100-HD

### STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS – GYMNASIUM

EXAMPLE: 6145H-HD - O - 24 x 12 - S - AW - DMI - A - —

- |   |   |   |
|---|---|---|
| <p>1. <b>Models</b><br/> <b>Horizontal/Long Dimension Blades:</b><br/>         6145H-HD Fixed 45° Deflection<br/>         61FH-HD Fixed 0° Deflection<br/> <b>Vertical/Short Dimension Blades:</b><br/>         6145V-HD Fixed 45° Deflection<br/>         61FV-HD Fixed 0° Deflection</p> <p>2. <b>Damper (OBD)</b><br/>         O Steel<br/>         — No Damper</p> <p>3. <b>Nominal Width x Height</b><br/>         inches (mm)</p> <p>4. <b>Frame/Border Type</b><br/>         S Surface Mount (default)</p> | <p>5. <b>Finish</b><br/>         AW Appliance White (default)<br/>         AL Aluminum<br/>         BK Black<br/>         BW British White<br/>         LBP Light Bronze Paint<br/>         MBP Medium Bronze Paint<br/>         DBP Dark Bronze Paint<br/>         MI Mill<br/>         PC Prime Coat<br/>         SP Special Custom Color</p> <p>6. <b>Opposed Blade Damper Finish</b><br/>         DMI Mill (default)<br/>         DBK Painted Black</p> <p>7. <b>Fastening</b><br/>         A Screw Holes (default)<br/>         N None</p> | <p><b>OPTIONS &amp; ACCESSORIES:</b><br/>         — None (default)</p> <p>8. <b>Plaster Sub-Frame</b><br/>         PF Plaster Sub-Frame</p> <p>9. <b>Insect Screen</b><br/>         IS Insect Screen</p> <p>10. <b>Gaskets</b><br/>         GK Foam Gasket</p> <p>11. <b>Earthquake Tabs</b><br/>         EQT Earthquake Tabs</p> <p><b>Notes:</b><br/>         1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a steel 45° deflection register, horizontal blade orientation and steel damper, is Model 6145H-HD-O. Unit will be supplied with screw holes and AW Appliance White finish.<br/>         2. The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).</p> |
|---|---|---|

GRILLES AND REGISTERS

F

## HOW TO SPECIFY

### MODEL SERIES: 6100-HD

### STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS – GYMNASIUM

#### SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **6145H-HD, 6145V-HD, 61FH-HD** or **61FV-HD Steel Heavy Duty Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have fixed 14 gauge steel blades spaced on 1/2" (13) centers and a heavy duty 16 gauge steel welded frame. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

### MODEL SERIES: 6700-HD

### STAINLESS STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS

EXAMPLE: 6755H-HD - O - 12 x 12 - S - #4 - A - 304 - PFS

- |   |  |
|---|--|
| <p>1. <b>Models</b><br/> <b>Horizontal/Long Dimension Blades:</b><br/>         6755H-HD 45° Deflection,<br/>         1/2 (13) Spacing<br/> <b>Vertical/Short Dimension Blades:</b><br/>         6755V-HD 45° Deflection,<br/>         1/2 (13) Spacing</p> <p>2. <b>Damper (OBD)</b><br/>         O Steel<br/>         — No Damper</p> <p>3. <b>Nominal Width x Height</b><br/>         inches (mm)</p> <p>4. <b>Frame/Border Type</b><br/>         S Surface Mount (default)</p> <p>5. <b>Finish</b><br/>         #4 Brushed Satin Polished (default)<br/>         AW Appliance White<br/>         SP Special Custom Color</p> <p>6. <b>Fastening</b><br/>         A Screw Holes (default)<br/>         N None</p> | <p><b>OPTIONS &amp; ACCESSORIES:</b><br/>         — None (default)</p> <p>7. <b>Construction</b><br/>         304 Type 304 Stainless Steel (default)<br/>         316 Type 316 Stainless Steel</p> <p>8. <b>Plaster Sub-Frame</b><br/>         PFS Stainless Steel Plaster Sub-Frame</p> |
|---|--|

- Notes:**
- For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a stainless steel 45° deflection register, horizontal blade direction and stainless steel damper, is Model 6755H-HD-O. Unit will be supplied with screw holes and #4 Brushed Satin Polished finish.
  - The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).
  - Refer to individual model submittal for guidance on availability of options and accessories.

GRILLES AND REGISTERS

F

## HOW TO SPECIFY

### MODEL SERIES: 6700-HD

### STAINLESS STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **6755H-HD** or **6755V-HD Stainless Steel Heavy Duty Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional) with welded and reinforced frames. The blades shall be fixed at 45°, spaced on 1/2" (13) centers, and shall be reinforced by a support mullion on maximum 8" (203) centers. All exposed surfaces shall have a #4 Brushed Satin Polished finish (optional finish is AW Appliance White).

(Optional) A stainless steel opposed blade damper, adjustable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## DRUM LOUVERS 45DLC SERIES

- SPIRAL DUCT MOUNT
- HIGH CAPACITY
- LONG THROW
- ALUMINUM CONSTRUCTION

### Models:

45DLC1 Single Vanes

45DLC2 Split Vanes



Model 45DLC1

Model Series 45DLC Spiral Duct Mount Drum Louvers are supply air outlets that have been engineered for use in cooling, heating and ventilating applications requiring long throws and accurate directional control of conditioned air in large enclosed spaces where ductwork cannot be brought close to the occupants. The high capacity drum louvers ideally suited for use in sports arenas, shopping malls, exhibition halls, manufacturing and industrial plants and stadiums.

Model Series 45DLC are designed to provide jet or diffused air patterns in exposed duct applications. The drum louvers are constructed of aluminum and feature a curved frame that installs directly on spiral ducts without the use of duct taps, reducing installation time and costs. Length of throw, direction and horizontal spread can be controlled by rotating the drum and pivoted adjustable vanes.

Model Series 45DLC are ideal for vertical spot cooling or heating when mounted on the exposed ductwork. They are capable of supplying straight flow primary air jet streams at 0° deflection for long throws, and a diffused pattern of primary air at 15° and 30° deflections for shorter throws and greater spread. There is a difference of approximately 35 percent in throw between jet and diffused air patterns. The cylindrical drum enables primary air to be directed horizontally or vertically within a 60° arc, and when coupled with the adjustable louvers provides accurate directional control of primary air for people, plant or product.

Model 45DLC2 features a split-vane option. The individual vanes are separated by a central divider and may be adjusted in opposite directions to produce a 'counter flow' air pattern. This creates more rapid mixing of primary and room air and a further reduction in the length of throw. The robust design of the spiral duct mount drum louvers has been built to last and provide the utmost versatility for most applications.

### STANDARD FEATURES:

- Curved frame mounts directly to spiral ducts without the use of duct taps.
- Felt seal around the drum minimizes air leakage and holds the drum securely in the selected position.
- Length of throw, direction and horizontal spread can be controlled by rotating the drum and pivoted adjustable vanes.
- Paddle-size deflection vanes are rear pivoted on nylon bushings in the rectangular drum opening, and tightly hold deflection angle settings regardless of duct velocity and pressure levels.

- Sizes available are 6" (152), 10" (254), 12" (305) and 15" (381) in height and 9" (229) through 60" (1524) in width. See dimensional data on next page for available increments.
- Model 45DLC2 Split Vane option allows bi-directional horizontal throw.

### CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.

### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

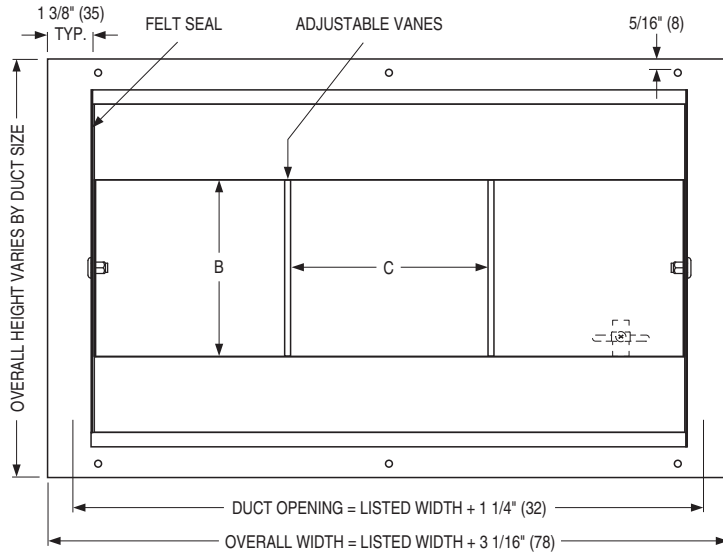
### OPTIONS AND ACCESSORIES:

- PB Pole Operator is available to allow directional control of airflow in remote mounted locations
- DEX Damper/Extractor (Air Scoop)

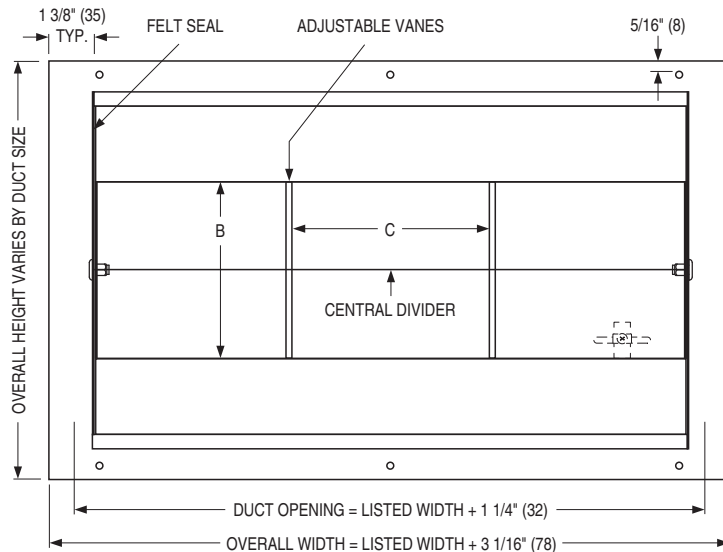
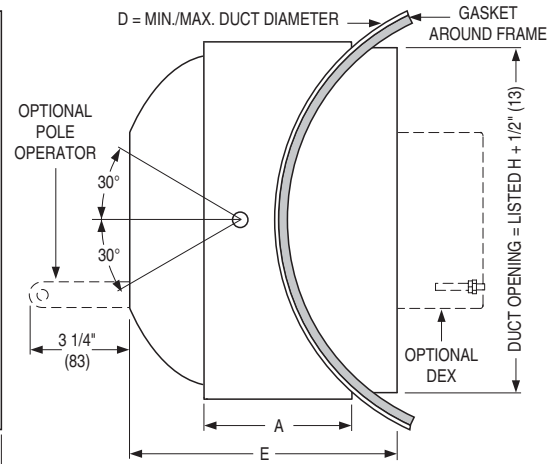
For additional options and accessories, see page F191.

## DIMENSIONAL DATA:

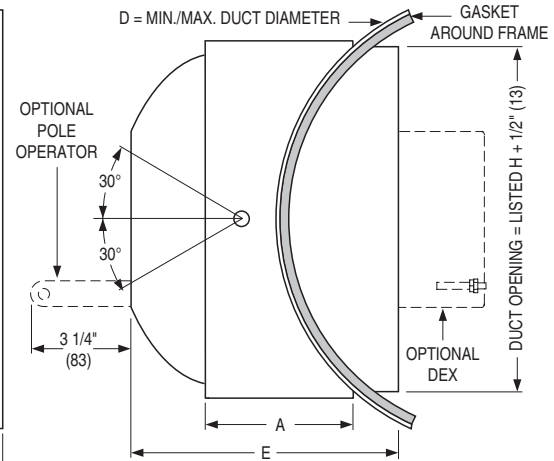
### SPIRAL DUCT DRUM LOUVERS • MODEL SERIES: 45DLC



**MODEL 45DLC1**



**MODEL 45DLC2**



LISTED SIZES NOMINAL WIDTH x HEIGHT IN INCHES	6		10		12		15	
	W x H	NO. OF VANES	W x H	NO. OF VANES	W x H	NO. OF VANES	W x H	NO. OF VANES
9 x 6		2	18 x 10	2	18 x 12	2	18 x 15	2
12 x 6		3	24 x 10	3	24 x 12	3	24 x 15	3
15 x 6		4	30 x 10	4	30 x 12	4	30 x 15	4
18 x 6		5	36 x 10	5	36 x 12	5	36 x 15	5
24 x 6		7	42 x 10	6	42 x 12	6	42 x 15	6
30 x 6		9	48 x 10	7	48 x 12	7	48 x 15	7
36 x 6		11	54 x 10	8	54 x 12	8	54 x 15	8
48 x 6		15	60 x 10	9	60 x 12	9	60 x 15	9
54 x 6		17	-	-	-	-	-	-
60 x 6		19	-	-	-	-	-	-

DIMENSIONS IN INCHES (MM)	A	2 3/4 (70)	4 1/2 (114)	5 1/2 (140)	7 (178)
	B	3 3/8 (86)	5 3/8 (137)	6 3/8 (162)	9 3/8 (238)
	C	3 (76)	6 (152)	6 (152)	6 (152)
	D	10 – 36 (254 – 914)	14 – 36 (356 – 914)	16 – 36 (406 – 914)	20 – 36 (508 – 914)
	E	5 (127)	8 1/8 (206)	9 9/16 (243)	11 9/16 (294)

## DRUM LOUVERS 45DL SERIES

- HIGH CAPACITY
- LONG THROW
- ALUMINUM CONSTRUCTION

### Models:

45DL1 Single Vanes

45DL2 Split Vanes

- Suffix '-O' adds a steel opposed blade damper



Models 45DL1-O and 45DL2

Model Series 45DL Drum Louvers are supply air outlets engineered for use in cooling, heating, and ventilating applications requiring long throws and accurate directional control of conditioned air in large enclosed spaces where ductwork cannot be brought close to the occupants. Typically, they are used in sport arenas, exhibition halls, manufacturing and industrial plants, office building entrances, lobbies, shopping malls and atriums.

Model Series 45DL Drum Louvers are designed to provide jet or diffused air patterns in ceiling, sidewall and exposed duct applications. In sidewall and exposed duct installations, the Model Series 45DL can be mounted vertically or horizontally.

Model Series 45DL are ideal for vertical spot cooling or heating when mounted in the ceiling or on the bottom of exposed ductwork. They are capable of supplying straight flow primary air jet streams at 0° deflection for long throws, and a diffused pattern of primary air at 15° and 30° deflections for shorter throws and greater spread. There is a difference of approximately 35 percent in throw between jet and diffused air patterns. The cylindrical drum enables primary air to be directed horizontally or vertically within a 60° arc, and when coupled with the adjustable louvers provides accurate directional control of primary air for people, plant or product.

Model 45DL2 features a split-vane option. The individual vanes are separated by a central divider and may be adjusted in opposite directions to produce a 'counter flow' air pattern. This creates more rapid mixing of primary and room air and a further reduction in the length of throw. With this option you therefore have the utmost versatility for most applications.

### STANDARD FEATURES:

- Rotating adjustable cylindrical drums are tightly pivoted to the end caps of the 1 1/4" (32) wide border frames and are supplied with 3/16" (5) diameter face screw mounting holes and a perimeter frame gasket.
- Felt seal around the rotating drum to minimize air leakage.
- Paddle-size deflection vanes are rear pivoted on nylon bushings in the rectangular drum opening, and tightly hold deflection angle settings regardless of duct velocity and pressure levels.
- The Drum Louver is rated for use at capacities ranging from 100 to 14,000 cfm.

- Sizes available are 6" (152), 10" (254), 12" (305) and 15" (381) in height and 9" (229) through 72" (1829) in width. See dimensional data on next page for available increments.

### CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- An optional opposed blade damper is available with a screwdriver slot operator accessible through the discharge opening. However, they are not recommended where the static pressure drop across the drum louver exceeds 0.25" w.g.. Under these conditions balancing should be performed by a remote damper installed in the take-off.

### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

### OPTIONS AND ACCESSORIES:

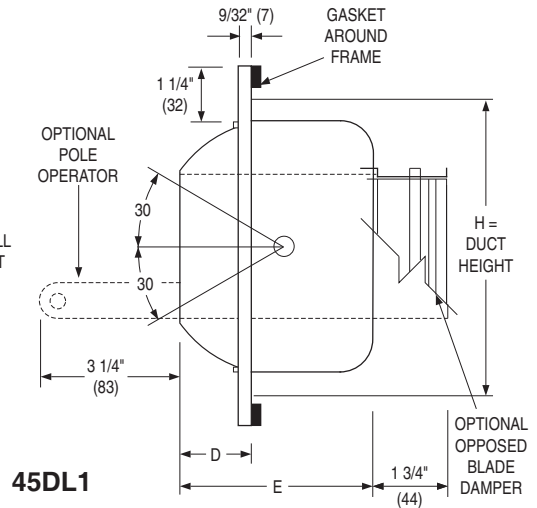
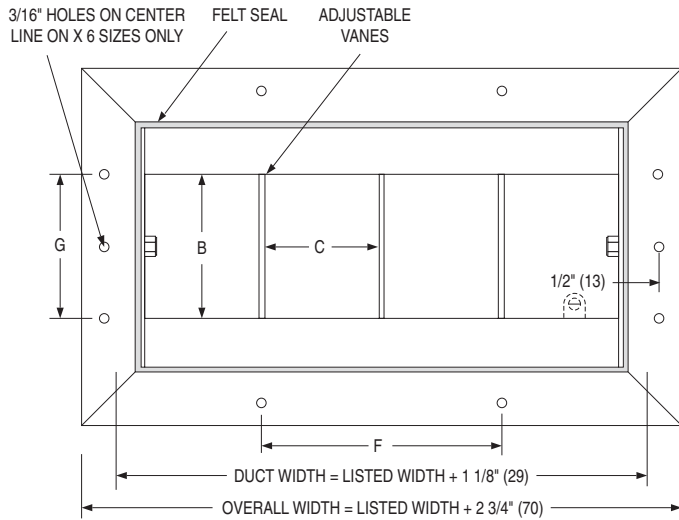
- PB Pole Operator is available to allow directional control of airflow in remote mounted locations

For additional options and accessories, see page F191.

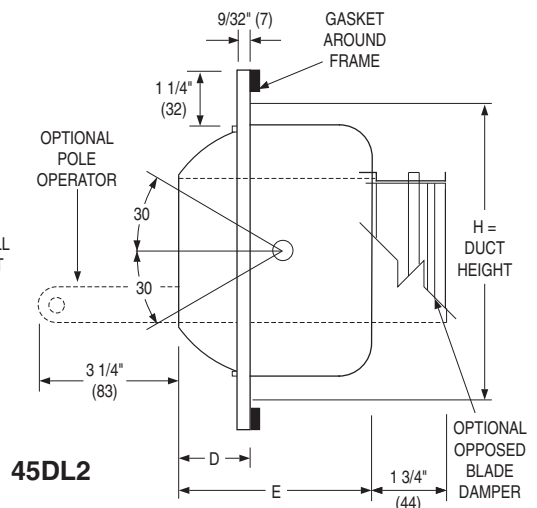
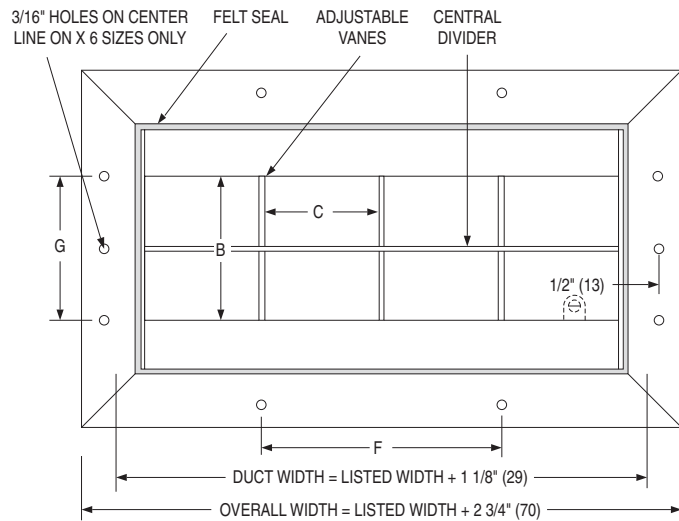


## DIMENSIONAL DATA:

### DRUM LOUVERS • MODEL SERIES: 45DL



**45DL1**



**45DL2**

LISTED SIZES NOMINAL WIDTH x HEIGHT IN INCHES	6		10		12		15	
	W x H	NO. OF VANES	W x H	NO. OF VANES	W x H	NO. OF VANES	W x H	NO. OF VANES
9 x 6		2	18 x 10	2	18 x 12	2	18 x 15	2
12 x 6		3	24 x 10	3	24 x 12	3	24 x 15	3
15 x 6		4	30 x 10	4	30 x 12	4	30 x 15	4
18 x 6		5	36 x 10	5	36 x 12	5	36 x 15	5
24 x 6		7	42 x 10	6	42 x 12	6	42 x 15	6
30 x 6		9	48 x 10	7	48 x 12	7	48 x 15	7
36 x 6		11	54 x 10	8	54 x 12	8	54 x 15	8
48 x 6		15	60 x 10	9	60 x 12	9	60 x 15	9
54 x 6		17	66 x 10	10	66 x 12	10	66 x 15	10
60 x 6		19	72 x 10	11	72 x 12	11	72 x 15	11

DIMENSIONS IN INCHES (MM)	H	6 7/8 (175)	10 1/2 (267)	12 1/2 (3188)	15 1/2 (384)
	A	8 1/2 (216)	12 1/8 (308)	14 1/8 (359)	17 1/8 (435)
	B	3 3/8 (86)	5 3/8 (137)	6 3/8 (162)	9 3/8 (238)
	C	3 (76)	6 (152)	6 (152)	6 (152)
	D	1 11/16 (43)	2 21/32 (67)	3 9/32 (83)	3 3/4 (95)
	E	4 1/2 (114)	6 1/4 (159)	7 1/8 (181)	8 3/4 (222)
	F	6 (152)	6 (152)	6 (152)	6 (152)
	G	-	6 (152)	6 (152)	9 (229)

## PERFORMANCE DATA:

### MODEL SERIES: 45DL1 SPIRAL DUCT DRUM LOUVER AND 45DL2 DRUM LOUVER • 6" (152)

SIZE	Neck Velocity, FPM Velocity Pressure	280 .005	420 .011	560 .020	700 .031	840 .044	980 .060	1120 .078	1400 .122	1680 .176
9 x 6	Airflow, CFM	105	158	210	263	315	368	420	525	630
	Total Pressure	.022	.06	.10	.16	.21	.30	.40	.60	.90
	Throw	7-10-18	10-14-24	13-18-30	15-21-35	17-23-40	20-28-46	22-30-50	26-35-56	30-40-66
	Noise Criteria	–	–	–	22	27	32	36	41	46
12 x 6	Airflow, CFM	140	210	280	350	420	490	560	700	840
	Total Pressure	.03	.06	.10	.16	.23	.32	.40	.63	.90
	Throw	8-11-18	12-16-27	16-21-34	18-24-40	20-26-45	23-31-50	25-34-55	30-40-66	35-47-76
	Noise Criteria	–	–	–	23	28	33	37	42	47
18 x 6	Airflow, CFM	210	315	420	525	630	735	840	1050	1260
	Total Pressure	.022	.06	.10	.16	.24	.33	.40	.60	.90
	Throw	12-16-27	17-22-36	21-27-45	25-32-52	28-37-62	31-42-70	34-46-76	42-54-90	48-62-101
	Noise Criteria	–	–	–	24	29	34	38	43	49
24 x 6	Airflow, CFM	280	420	560	700	840	980	1120	1400	1680
	Total Pressure	.03	.06	.10	.16	.24	.32	.40	.63	.90
	Throw	16-21-33	21-28-44	26-33-54	31-40-64	35-45-72	38-50-80	42-52-88	48-64-100	52-71-110
	Noise Criteria	–	–	–	26	31	36	40	47	52
30 x 6	Airflow, CFM	350	525	700	875	1050	1225	1400	1750	2100
	Total Pressure	.022	.06	.10	.16	.21	.32	.40	.63	.90
	Throw	19-24-38	25-32-50	30-38-60	35-45-70	39-50-78	43-56-86	47-60-94	54-70-100	60-78-120
	Noise Criteria	–	–	20	27	32	37	41	48	53
36 x 6	Airflow, CFM	420	630	840	1050	1260	1470	1680	2100	2520
	Total Pressure	.03	.06	.10	.16	.22	.30	.40	.60	.90
	Throw	20-26-40	26-35-54	32-41-64	36-46-74	40-52-82	44-55-90	48-62-100	54-72-115	62-80-130
	Noise Criteria	–	–	21	28	33	38	42	49	55
48 x 6	Airflow, CFM	565	848	1130	1412	1695	1978	2260	2825	3390
	Total Pressure	.03	.06	.10	.16	.24	.32	.40	.63	.90
	Throw	24-31-39	31-42-63	37-49-76	44-56-89	48-62-100	50-70-110	58-74-120	65-82-130	74-95-150
	Noise Criteria	–	–	22	29	34	39	43	50	56
60 x 6	Airflow, CFM	700	1050	1400	1750	2100	2450	2800	3500	4200
	Total Pressure	.03	.06	.10	.16	.24	.32	.40	.63	.90
	Throw	28-36-54	34-46-66	43-55-84	49-63-96	52-70-110	60-75-120	65-82-130	75-90-150	84-105-170
	Noise Criteria	–	–	23	30	35	40	44	51	57

#### Performance Notes:

- All pressures are in inches w.g..
- Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Total pressure, throw and Noise Criteria are based on 45DL1 at 0° deflection. Correction factors for other conditions are listed in the chart.

- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (–) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Correction Factor

Model	Deflection	TP	Throw	NC
45DL1	15°	x 1.5	x .85	+ 4
	30°	x 1.9	x .73	+ 9
45DL2	0°	x 1.3	—	—
	15°	x 1.7	x .85	+ 4
	30°	x 2.2	x .73	+ 9

## PERFORMANCE DATA:

### MODEL SERIES: 45DLC SPIRAL DUCT DRUM LOUVER AND 45DL DRUM LOUVER • 10" (254)

SIZE	Neck Velocity, FPM Velocity Pressure	270 .005	400 .012	536 .018	670 .028	800 .040	940 .055	1075 .072	1340 .112	1610 .162
18 x 10	Airflow, CFM	336	504	672	840	1008	1176	1344	1680	2016
	Total Pressure	.02	.05	.08	.10	.18	.19	.25	.40	.60
	Throw	15-20-32	21-28-45	26-35-52	32-42-64	34-44-74	36-50-78	44-54-90	48-65-100	54-72-110
	Noise Criteria	–	–	–	26	33	39	44	52	60
24 x 10	Airflow, CFM	450	675	900	1125	1350	1575	1800	2250	2700
	Total Pressure	.02	.05	.08	.13	.18	.20	.3	.45	.7
	Throw	19-25-40	25-35-52	30-42-64	35-46-74	38-52-80	44-54-94	50-65-100	54-72-110	64-82-125
	Noise Criteria	–	–	21	30	34	43	48	58	63
30 x 10	Airflow, CFM	560	840	1120	1400	1680	1960	2240	2800	3360
	Total Pressure	.02	.05	.08	.13	.18	.24	.31	.48	.7
	Throw	22-28-46	29-40-62	36-50-82	42-55-86	46-62-96	50-68-100	54-72-110	65-82-130	72-92-145
	Noise Criteria	–	–	23	31	38	46	50	58	64
36 x 10	Airflow, CFM	670	1005	1340	1675	2010	2345	2680	3350	4020
	Total Pressure	.02	.04	.08	.13	.18	.25	.32	.48	.70
	Throw	23-32-52	30-43-68	36-50-82	44-60-100	50-68-105	56-76-115	60-80-120	70-90-140	80-115-180
	Noise Criteria	–	–	25	35	40	47	52	60	69
42 x 10	Airflow, CFM	785	1177	1570	1962	2355	2748	3140	3925	4710
	Total Pressure	.02	.05	.08	.13	.19	.26	.34	.52	.75
	Throw	25-34-54	32-45-70	40-54-86	46-62-100	54-72-110	60-80-120	66-86-140	75-100-150	88-115-180
	Noise Criteria	–	–	26	35	42	48	53	60	69
48 x 10	Airflow, CFM	895	1342	1790	2238	2685	3133	3580	4475	5370
	Total Pressure	.02	.04	.08	.13	.17	.24	.32	.48	.68
	Throw	26-34-58	33-48-73	43-58-94	53-74-108	56-76-116	60-80-120	66-90-140	78-105-150	90-110-180
	Noise Criteria	–	–	26	35	41	47	52	61	68
54 x 10	Airflow, CFM	1010	1515	2020	2525	3030	3535	4040	5050	6060
	Total Pressure	.02	.05	.08	.13	.17	.24	.31	.46	.68
	Throw	28-36-60	35-50-75	50-68-100	55-76-110	60-80-120	65-88-135	70-95-145	90-120-180	95-120-190
	Noise Criteria	–	–	27	35	42	48	53	61	68
60 x 10	Airflow, CFM	1120	1120	2240	2800	3360	3920	4480	5600	6720
	Total Pressure	.02	.05	.08	.13	.17	.23	.30	.46	.68
	Throw	28-36-60	40-54-72	50-68-100	58-76-120	65-84-130	70-92-140	78-100-150	90-120-180	100-13-190
	Noise Criteria	–	–	27	35	42	48	53	61	68
72 x 10	Airflow, CFM	1345	2018	2690	3362	4035	4707	5380	6725	8070
	Total Pressure	.02	.05	.08	.13	.19	.26	.35	.52	.75
	Throw	34-44-72	44-58-90	54-70-110	62-82-130	70-92-140	78-100-160	85-110-170	98-130-200	110-140-230
	Noise Criteria	–	–	28	37	44	48	54	63	70

#### Performance Notes:

1. All pressures are in inches w.g..
2. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Total pressure, throw and Noise Criteria are based on 45DL1 at 0° deflection. Correction factors for other conditions are listed in the chart.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (–) in space indicates a Noise Criteria of less than 15.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Correction Factor

Model	Deflection	TP	Throw	NC
45DL1	15°	x 1.5	x .85	+ 4
	30°	x 1.9	x .73	+ 9
45DL2	0°	x 1.3	—	—
	15°	x 1.7	x .85	+4
	30°	x 2.2	x .73	+9

## PERFORMANCE DATA:

### MODEL SERIES: 45DLC SPIRAL DUCT DRUM LOUVER AND 45DL DRUM LOUVER • 12" (305)

SIZE	Neck Velocity, FPM Velocity Pressure	265 .004	400 .010	530 .018	660 .027	795 .039	930 .054	1060 .070	1325 .109	1600 .160
18 x 12	Airflow, CFM	400	600	800	1000	1200	1400	1600	2000	2400
	Total Pressure	.033	.08	.14	.22	.30	.44	.55	.86	1.04
	Throw	14-20-34	19-27-46	24-34-60	30-40-70	35-47-78	38-56-95	44-60-100	50-70-120	55-80-130
	Noise Criteria	–	–	–	25	32	36	40	47	52
24 x 12	Airflow, CFM	530	795	1060	1325	1590	1855	2120	2650	3180
	Total Pressure	.03	.07	.13	.20	.29	.42	.53	.82	1.10
	Throw	17-24-42	24-34-54	26-37-64	35-47-78	38-56-95	45-65-110	52-72-120	65-85-140	72-98-160
	Noise Criteria	–	–	–	27	32	35	40	46	52
30 x 12	Airflow, CFM	665	998	1330	1662	1993	2328	2660	3324	3990
	Total Pressure	.03	.06	.10	.14	.21	.28	.35	.58	.80
	Throw	18-25-44	26-37-64	33-45-76	37-54-90	45-65-110	50-70-120	58-80-130	67-92-155	85-110-180
	Noise Criteria	–	–	21	27	32	38	40	48	54
36 x 12	Airflow, CFM	800	1200	1600	2000	2400	2800	3200	4000	4800
	Total Pressure	.03	.05	.08	.12	.17	.22	.30	.46	.63
	Throw	22-31-54	30-44-74	38-54-90	46-64-110	50-70-120	58-80-135	65-90-150	78-105-180	90-120-200
	Noise Criteria	–	–	22	28	34	38	42	50	55
42 x 12	Airflow, CFM	930	1395	1860	2325	2790	3255	3720	4650	5580
	Total Pressure	.03	.05	.10	.16	.22	.31	.40	.62	.80
	Throw	25-35-60	34-46-80	44-58-100	50-70-120	58-80-130	65-90-150	75-100-170	85-115-200	100-140-230
	Noise Criteria	–	–	26	31	35	41	45	52	55
48 x 12	Airflow, CFM	1065	1598	2130	2663	3195	3728	4260	5326	6390
	Total Pressure	.03	.06	.08	.14	.20	.28	.36	.56	.80
	Throw	25-33-53	35-46-80	44-56-96	52-70-115	58-78-125	60-98-150	75-100-170	88-120-210	100-140-230
	Noise Criteria	–	–	26	31	36	41	45	52	55
54 x 12	Airflow, CFM	1200	1800	2400	3000	3600	4200	4800	6000	7200
	Total Pressure	.03	.06	.11	.17	.25	.34	.42	.68	.95
	Throw	28-37-65	37-50-88	46-62-108	56-75-130	65-85-145	72-98-160	80-105-180	95-125-220	110-150-250
	Noise Criteria	–	–	24	31	36	41	45	52	55
60 x 12	Airflow, CFM	1350	2025	2700	3375	4050	4725	5400	6750	8100
	Total Pressure	.03	.06	.11	.17	.22	.30	.38	.58	.83
	Throw	28-37-65	42-56-100	47-63-110	54-74-130	64-84-150	72-100-170	80-110-190	92-120-240	110-140-260
	Noise Criteria	–	–	20	28	33	37	42	48	54
72 x 12	Airflow, CFM	1600	2400	3200	4000	4800	9600	6400	8000	9600
	Total Pressure	.03	.06	.11	.17	.22	.83	.38	.58	.83
	Throw	32-42-72	42-54-100	52-72-120	62-74-140	72-100-170	120-160-290	92-120-240	110-140-260	120-160-290
	Noise Criteria	–	–	25	31	36	55	45	52	55

#### Performance Notes:

- All pressures are in inches w.g..
- Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Total pressure, throw and Noise Criteria are based on 45DL1 at 0° deflection. Correction factors for other conditions are listed in the chart.

- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (–) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Correction Factor

Model	Deflection	TP	Throw	NC
45DL1	15°	x 1.5	x .85	+ 4
	30°	x 1.9	x .73	+ 9
45DL2	0°	x 1.3	—	—
	15°	x 1.7	x .85	+4
	30°	x 2.2	x .73	+9

## PERFORMANCE DATA:

### MODEL SERIES: 45DLC SPIRAL DUCT DRUM LOUVER AND 45DL DRUM LOUVER • 15" (381)

SIZE	Neck Velocity, FPM Velocity Pressure	312 .006	470 .014	625 .024	780 .038	935 .054	1090 .074	1250 .097	1560 .152	1870 .218
18 x 15	Airflow, CFM	585	878	1170	1463	1755	2048	2340	2925	3510
	Total Pressure	.02	.05	.09	.14	.21	.27	.36	.55	.82
	Throw	15-21-36	21-30-52	28-40-67	32-45-75	37-51-94	42-59-100	47-65-110	58-82-140	66-92-160
	Noise Criteria	–	–	22	28	33	38	42	49	54
24 x 15	Airflow, CFM	780	1170	1560	1950	2340	2730	3120	3900	4680
	Total Pressure	.02	.04	.08	.12	.19	.25	.34	.50	.68
	Throw	18-25-45	25-35-62	33-46-80	40-55-100	45-65-110	54-75-130	60-84-140	70-100-170	80-110-190
	Noise Criteria	–	–	22	28	34	39	43	50	55
30 x 15	Airflow, CFM	975	1463	1950	2438	2925	3413	3900	4875	5850
	Total Pressure	.02	.05	.08	.13	.20	.25	.34	.50	.72
	Throw	21-30-52	30-42-74	38-54-97	45-64-110	54-75-130	60-84-140	66-94-160	80-110-190	92-130-225
	Noise Criteria	–	–	22	29	35	40	44	51	56
36 x 15	Airflow, CFM	1170	1755	2340	2925	3510	4095	4680	5850	7020
	Total Pressure	.025	.05	.10	.15	.20	.26	.36	.55	.78
	Throw	23-33-58	32-45-80	40-56-100	47-65-110	56-76-130	62-88-150	70-100-170	80-110-190	110-130-220
	Noise Criteria	–	–	25	32	37	42	45	52	58
42 x 15	Airflow, CFM	1365	2048	2730	3413	4095	4778	5460	6825	8190
	Total Pressure	.02	.05	.10	.15	.22	.30	.38	.60	.85
	Throw	27-37-66	38-52-92	47-65-110	56-76-130	62-88-150	70-100-170	80-110-190	100-130-220	110-150-260
	Noise Criteria	–	–	25	31	36	41	44	51	57
48 x 15	Airflow, CFM	1565	2348	3130	3913	4695	5478	6260	7825	9390
	Total Pressure	.02	.05	.08	.13	.18	.25	.33	.50	.8
	Throw	28-40-70	40-55-100	50-70-120	60-82-140	70-98-160	80-110-190	90-130-220	110-150-260	120-180-300
	Noise Criteria	–	–	25	32	37	42	45	52	58
54 x 15	Airflow, CFM	1760	2640	3520	4400	5280	6160	7040	8800	10560
	Total Pressure	.025	.05	.10	.16	.21	.30	.40	.65	.85
	Throw	30-44-75	44-60-110	54-78-130	65-90-160	75-105-180	90-120-210	10-135-240	120-160-280	130-180-310
	Noise Criteria	–	–	26	32	37	42	45	52	58
60 x 15	Airflow, CFM	1950	2925	3900	4875	5850	6825	7800	9750	11700
	Total Pressure	.02	.045	.08	.12	.17	.25	.30	.50	.75
	Throw	34-45-76	44-60-110	54-78-130	65-90-160	75-105-180	90-120-210	10-135-240	120-160-280	130-180-310
	Noise Criteria	–	–	26	33	38	43	46	53	59
72 x 15	Airflow, CFM	2345	3518	4690	5863	7035	8208	9380	11725	14070
	Total Pressure	.02	.05	.10	.14	.20	.26	.33	.55	.80
	Throw	37-50-90	50-70-120	62-88-160	76-100-190	90-125-220	100-140-250	115-150-280	130-190-330	160-220-400
	Noise Criteria	–	–	27	34	39	44	47	54	60

#### Performance Notes:

1. All pressures are in inches w.g..
2. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Total pressure, throw and Noise Criteria are based on 45DL1 at 0° deflection. Correction factors for other conditions are listed in the chart.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (–) in space indicates a Noise Criteria of less than 15.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

#### Correction Factor

Model	Deflection	TP	Throw	NC
45DL1	15°	x 1.5	x .85	+ 4
	30°	x 1.9	x .73	+ 9
45DL2	0°	x 1.3	—	—
	15°	x 1.7	x .85	+4
	30°	x 2.2	x .73	+9

## HOW TO ORDER

### MODEL SERIES: 45DLC

### SPIRAL DUCT DRUM LOUVERS

EXAMPLE: 45DLC1 - 24 x 10 - 16 - S - AW - A - —

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li><b>Models</b><br/>45DLC1 Spiral Duct, Single Vanes<br/>45DLC2 Spiral Duct, Split Vanes</li> <li><b>Width x Height</b><br/>inches (mm)</li> <li><b>Duct Diameter</b><br/>inches 10 through 36<br/>(in 2" increments)</li> <li><b>Frame/Border Type</b><br/>S Surface Mount (default)</li> </ol> | <ol style="list-style-type: none"> <li><b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>MI Mill<br/>PC Prime Coat<br/>SP Special Custom Color</li> <li><b>Fastening</b><br/>A Screw Holes</li> </ol> |
|---|--|

#### OPTIONS & ACCESSORIES:

- None (default)
- 7. **Pole Operator**  
PB Pole Operator
- 8. **Damper / Extractor**  
DEX Damper / Extractor (Air Scoop)

Available Sizes		
Grille Width Min. - Max.	Grille Height	Duct Dia. Min. - Max.
9" - 60"	6"	10" - 36"
18" - 60"	10"	14" - 36"
18" - 60"	12"	16" - 36"
18" - 60"	15"	20" - 36"

### MODEL SERIES: 45DL

### DRUM LOUVERS

EXAMPLE: 45DL1 - O - 24 x 10 - S - AW - A - —

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li><b>Models</b><br/>45DL1 Single Vanes<br/>45DL2 Split Vanes</li> <li><b>Damper (OBD)</b><br/>O With Steel Damper<br/>— None</li> <li><b>Width x Height</b><br/>inches (mm)</li> <li><b>Frame/Border Type</b><br/>S Surface Mount (default)</li> </ol> | <ol style="list-style-type: none"> <li><b>Finish</b><br/>AW Appliance White (default)<br/>AL Aluminum<br/>BK Black<br/>BW British White<br/>MI Mill<br/>PPA Paint Prepared Aluminum<br/>SP Special Custom Color</li> <li><b>Fastening</b><br/>A Screw Holes</li> </ol> |
|---|--|

#### OPTIONS & ACCESSORIES:

- None (default)
- 7. **Pole Operator**  
PB Pole Operator

#### Notes:

- Damper not recommended where the static pressure drop across the drum louver exceeds 0.25" w.g..

## HOW TO SPECIFY

### MODELS: 45DLC1, 45DLC2, 45DL1, 45DL2

### SPIRAL DUCT DRUM LOUVERS AND DRUM LOUVERS

#### SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **45DLC1** or **45DLC2 Spiral Duct Drum Louvers** or **Nailor Model** (select one) **45DL1** or **45DL2 Drum Louvers** of the types and sizes as shown on the plans and air distribution schedules. The louver is to be manufactured from extruded aluminum and have a cylindrical adjustable drum that rotates. The blades are to have a paddle like profile that pivot on nylon bushings. A perimeter gasket is to be included around the frame and a felt seal is to be around the drum. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the louver, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.



## INDUSTRIAL SUPPLY GRILLES AND REGISTERS

- HIGH CAPACITY
- EXTRUDED ALUMINUM
- 1 1/2 (38) OR 3 (76) SPACING

### Double Deflection Models:

81DV, 81DH, 813DV, 813DH

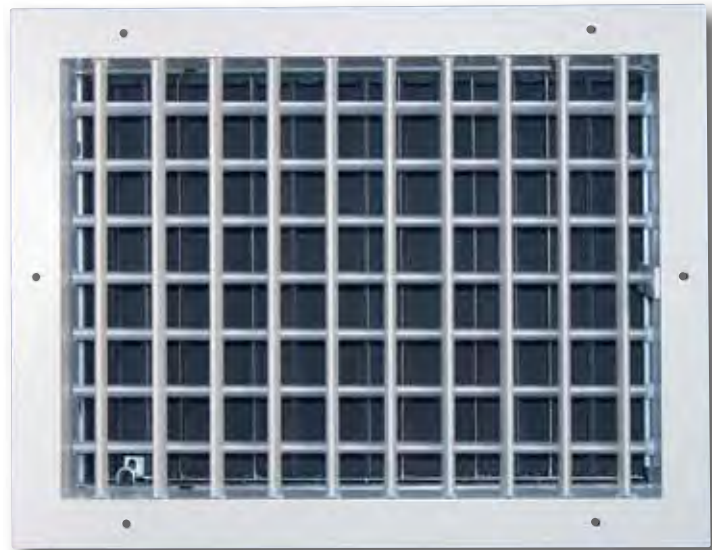
### Single Deflection Models:

81SV, 81SH, 813SV, 813SH

### Gang Operated Models:

81GDV, 81GDH

- Suffix '-O' adds a steel opposed blade damper



Model 81GDV-O

Model Series 8100 Industrial Supply Grilles and Registers have been specially designed to handle the large air volumes common in industrial applications and provide a product that is superior in design and performance when compared to the industry standard. The exclusive use of heavy gauge extrusions and attention to assembly detail ensure the product is well suited to handling the higher face velocities commonly associated with industrial applications where longer throws are desired. Such applications include factories, warehouses, textile mills and commercial projects where longer than normal throws or a more robust grille design are required.

### STANDARD FEATURES:

- Surface mount 1 1/4" (32) face border frame, furnished with screw holes and painted screws.
- The single deflection models have one set of blades and the double deflection have two sets of perpendicular blades. Blades are individually friction pivoted on screws and nylon washers to securely hold deflection setting.
- Models with 1 1/2" (38) blade spacing on centers, feature 1 1/2" (38) deep, smooth contoured airfoil blades with a minimum wall thickness of 0.05" (1.27) for optimum performance.

- The double deflection 1 1/2" (38) blade spacing models are available with front or rear gang operated blades to allow directional control of airflow in remote mounted locations. A pole operated lever on the face of the unit permits deflection of the ganged blades 45° from either side of center. The second set of perpendicular blades are individually adjustable from the face of the grille for additional directional control.
- Models with 3" (76) blade spacing, feature robust 3" (76) deep, smooth contoured airfoil blades.
- The 1 1/2" (38) blade spacing models are available in sizes 6" x 4" (152 x 102) through 36" x 36" (914 x 914) in single section construction. The 3" (76) blade spacing models are available in sizes 12" x 12" (305 x 305) through 48" x 48" (1219 x 1219) in single section construction. Multiple sections are furnished for larger sizes.

### CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Heavy gauge, extruded frame with reinforced mitered corners.
- Optional opposed blade damper has a screwdriver slot operator.

### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

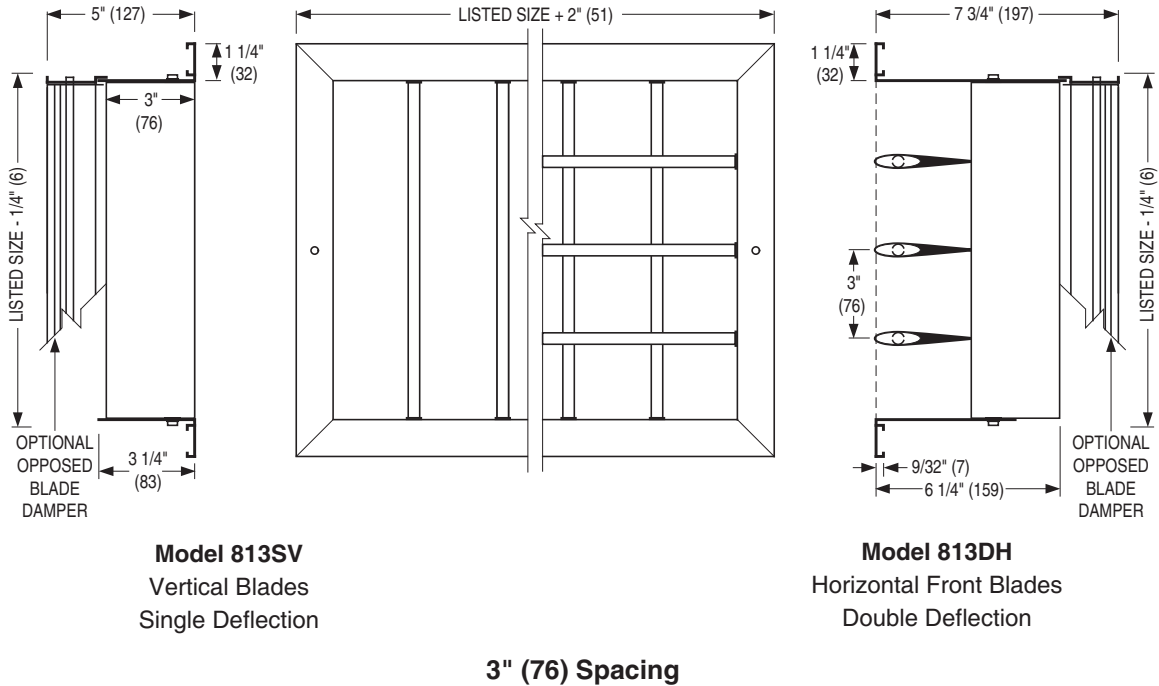
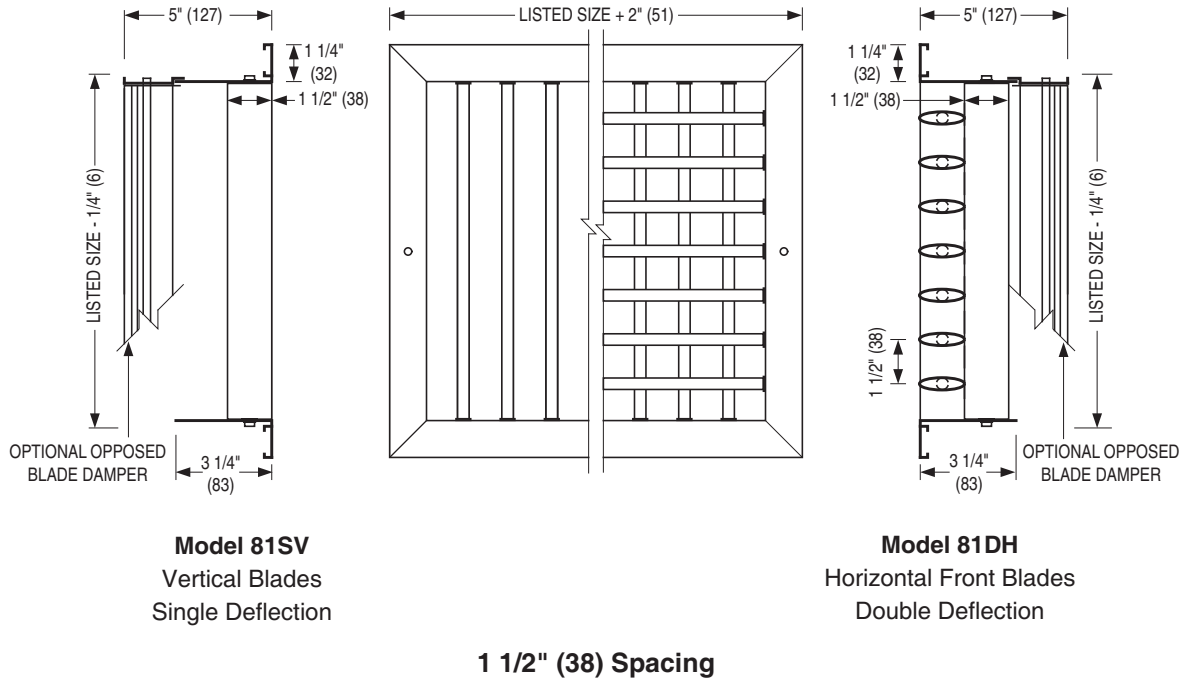
### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket

For additional options and accessories, see page F191.

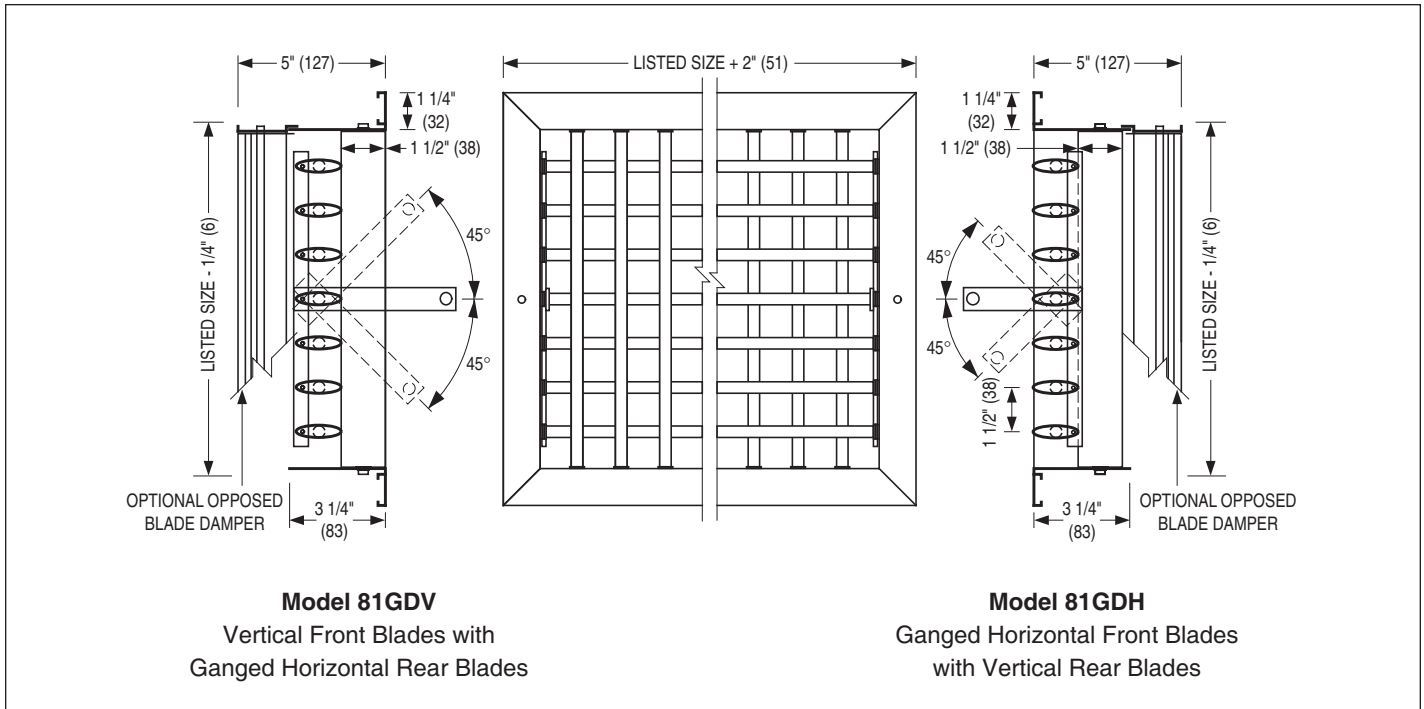
## DIMENSIONAL DATA:

### MODEL SERIES 8100 • INDUSTRIAL SUPPLY GRILLES AND REGISTERS



## DIMENSIONAL DATA:

### MODEL SERIES 81DG • GANG OPERATED INDUSTRIAL SUPPLY GRILLES AND REGISTERS



## PERFORMANCE DATA:

### MODEL SERIES 8100 AND 81GD • INDUSTRIAL SUPPLY GRILLES AND REGISTERS

#### MODELS: 81DV, 81DH, 81SV, 81SH, 813DV, 813DH, 813SV, 813SH, 81GDV, 81GDH

Listed Duct Size (inches)	Ak Factor	Neck Velocity, FPM	500	600	700	800	1000	1200	1400	1600	1800	
		Velocity Pressure	.016	.022	.031	.040	.062	.090	.122	.160	.202	
		Total Pressure	0°	.035	.050	.068	.088	.138	.198	.271	.354	.448
			22 1/2°	.039	.056	.076	.099	.155	.222	.305	.398	.503
			45°	.059	.084	.115	.149	.233	.334	.458	.598	.757
18 x 4 14 x 5 12 x 6		CFM		250	300	350	400	500	600	700	800	900
		Noise Criteria		–	–	–	–	26	30	34	38	41
		Throw	0°	13-20-28	15-22-31	17-24-34	19-26-36	22-28-39	24-30-42	26-32-45	28-34-48	30-36-51
			22 1/2°	10-16-22	12-18-24	13-20-26	15-21-28	17-23-31	18-25-33	20-27-35	22-29-37	23-31-39
			45°	7-10-13	8-11-14	9-12-16	10-12-17	11-13-19	12-14-20	13-15-22	14-16-23	15-17-25
26 x 6 18 x 8 16 x 10 12 x 12		CFM		500	600	700	800	1000	1200	1400	1600	1800
		Noise Criteria		–	–	–	23	29	34	38	41	44
		Throw	0°	17-26-37	20-29-41	23-32-45	26-35-49	29-38-53	33-42-58	36-45-62	39-48-66	42-51-70
			22 1/2°	14-20-29	16-23-32	19-25-36	21-28-39	24-31-43	26-33-46	28-36-49	31-39-53	33-42-56
			45°	9-12-18	10-14-20	12-15-22	13-17-24	15-19-26	16-20-29	17-22-31	19-24-33	20-26-35
24 x 8 20 x 10 16 x 12 14 x 14		CFM		750	900	1050	1200	1500	1800	2100	2400	2700
		Noise Criteria		–	–	22	25	31	36	40	43	46
		Throw	0°	24-35-48	28-38-53	31-42-58	35-45-63	39-49-69	42-52-74	46-56-79	50-59-84	53-63-89
			22 1/2°	19-28-38	22-31-42	25-34-46	27-36-50	30-39-55	33-42-59	36-45-63	39-48-67	42-51-71
			45°	12-17-24	14-19-26	16-21-29	17-23-31	19-25-34	21-27-36	23-29-39	25-31-41	27-33-44
36 x 8 30 x 10 24 x 12 20 x 14 18 x 16		CFM		1000	1200	1400	1600	2000	2400	2800	3200	3600
		Noise Criteria		–	–	23	26	32	37	41	44	48
		Throw	0°	25-37-54	29-41-60	34-46-66	39-51-73	43-55-79	48-60-85	52-64-92	57-69-98	61-73-104
			22 1/2°	20-30-44	24-33-49	27-37-54	31-41-58	35-44-63	38-48-68	42-51-73	46-55-78	50-58-83
			45°	12-18-27	14-20-30	17-23-33	19-25-36	22-28-39	24-30-42	26-32-45	29-35-48	31-37-51
36 x 12 30 x 14 26 x 16 24 x 18		CFM		1500	1800	2100	2400	3000	3600	4200	4800	5400
		Noise Criteria		–	21	25	28	34	39	43	46	49
		Throw	0°	30-44-66	36-50-74	42-56-81	47-62-89	53-68-97	59-74-104	65-80-112	71-86-120	77-92-127
			22 1/2°	24-35-53	28-40-59	33-45-65	37-50-71	42-55-78	46-60-84	51-65-90	55-70-96	60-75-102
			45°	15-22-33	18-25-37	21-28-41	23-31-44	26-34-48	29-37-52	32-40-56	35-43-60	38-46-64
48 x 12 36 x 16 30 x 20 24 x 24		CFM		2000	2400	2800	3200	4000	4800	5600	6400	7200
		Noise Criteria		–	22	26	30	36	40	44	48	51
		Throw	0°	33-49-76	40-56-85	47-63-94	53-70-102	60-77-111	67-85-120	74-92-129	81-99-138	88-106-147
			22 1/2°	27-40-61	32-45-68	38-51-75	43-57-82	49-62-89	54-68-96	59-73-103	65-79-110	70-84-117
			45°	16-25-38	19-28-42	23-32-47	27-35-51	30-39-56	34-42-60	37-45-64	41-49-69	44-52-73
60 x 12 54 x 14 48 x 16 42 x 18 36 x 20 30 x 24		CFM		2500	3000	3500	4000	5000	6000	7000	8000	9000
		Noise Criteria		–	23	27	31	37	41	45	49	52
		Throw	0°	38-56-87	45-64-96	52-72-105	60-79-115	67-87-124	74-95-133	82-103-143	89-111-152	96-119-161
			22 1/2°	30-45-70	36-51-77	42-57-85	47-63-92	53-70-100	59-76-107	65-83-114	71-89-122	77-95-129
			45°	19-28-44	23-32-48	26-36-53	30-39-58	34-43-62	37-47-67	41-51-71	45-55-76	49-59-80
72 x 12 60 x 14 54 x 16 48 x 18 36 x 24		CFM		3000	3600	4200	4800	6000	7200	8400	9600	10800
		Noise Criteria		–	24	28	32	38	42	46	50	53
		Throw	0°	42-62-95	50-70-105	58-79-115	66-88-126	74-96-136	82-105-146	90-113-157	98-122-167	106-130-177
			22 1/2°	33-50-75	39-57-83	46-64-91	53-70-99	59-77-107	66-84-115	72-91-123	79-98-131	85-105-139
			45°	21-32-48	25-36-53	29-40-58	33-44-63	37-48-68	41-53-74	45-57-79	49-61-84	53-65-89
72 x 14 60 x 16 54 x 18 48 x 20 30 x 30		CFM		3500	4200	4900	5600	7000	8400	9800	11200	12600
		Noise Criteria		20	25	29	32	38	43	47	50	54
		Throw	0°	44-55-101	53-66-112	62-77-124	70-88-136	79-99-147	88-111-159	97-122-170	106-133-182	115-144-193
			22 1/2°	35-53-80	42-60-89	49-68-98	57-76-108	64-83-117	71-91-126	79-98-136	86-106-145	93-113-154
			45°	22-32-50	26-37-56	31-42-62	35-47-67	40-52-73	44-57-79	48-62-85	53-67-91	57-72-97

#### Performance Notes:

- All pressures are in inches w.g..
- Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Total pressures are based upon a grille without an opposed blade damper. Correction for grille with opposed blade damper – Multiply total pressure by 1.12.

- Noise Criteria values are based upon a grille without an opposed blade damper and a 0° deflection. Correction for grille with opposed blade damper – Add 5 dB to Noise Criteria. Correction for 22 1/2° deflection – Add 1 dB to Noise Criteria. Correction for 45° deflection – Add 7 dB to Noise Criteria.

- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts @ 0° deflection. Dash (–) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA:

### MODEL SERIES 8100 AND 81GD • INDUSTRIAL SUPPLY GRILLES AND REGISTERS

#### MODELS: 81DV, 81DH, 81SV, 81SH, 813DV, 813DH, 813SV, 813SH, 81GDV, 81GDH

Listed Duct Size (inches)	Ak Factor	Neck Velocity, FPM	500	600	700	800	1000	1200	1400	1600	1800	
		Velocity Pressure	.016	.022	.031	.040	.062	.090	.122	.160	.202	
		Total	0°	.035	.050	.068	.088	.138	.198	.271	.354	.448
		Pressure	22 1/2°	.039	.056	.076	.099	.155	.222	.305	.398	.503
			45°	.059	.084	.115	.149	.233	.334	.458	.598	.757
64 x 18 58 x 20 54 x 22 48 x 24 44 x 26 38 x 30		CFM		4000	4800	5600	6400	8000	9600	11200	12800	14000
		Noise Criteria		21	26	30	33	39	44	48	51	54
	6.10 5.90 4.71	Throw	0°	47-59-108	56-71-120	66-83-132	75-94-145	85-106-157	94-118-169	103-130-182	113-142-194	122-154-206
			22 1/2°	37-57-85	45-65-95	53-73-105	60-81-115	68-89-125	76-97-135	84-105-145	92-113-155	100-121-165
			45°	23-34-53	28-39-59	33-44-65	37-50-72	42-55-78	47-60-84	52-66-91	57-71-97	62-76-103
72 x 18 60 x 22 54 x 24 48 x 28 36 x 36		CFM		4500	5400	6300	7200	9000	10800	12600	14400	16200
		Noise Criteria		22	26	30	34	40	44	48	52	55
	6.94 6.72 5.36	Throw	0°	50-63-115	60-76-128	70-88-141	80-101-154	90-113-167	100-126-181	110-139-194	120-151-207	130-164-220
			22 1/2°	39-61-91	47-69-101	56-78-112	64-87-123	73-95-133	81-104-144	89-112-154	98-121-165	106-129-175
			45°	25-36-56	30-42-63	35-47-69	40-53-76	45-59-83	51-64-89	56-70-96	61-76-103	68-82-110

#### Performance Notes:

1. All pressures are in inches w.g..
2. Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
3. Total pressures are based upon a grille without an opposed blade damper. Correction for grille with opposed blade damper – Multiply total pressure by 1.12.

4. Noise Criteria values are based upon a grille without an opposed blade damper and a 0° deflection.  
Correction for grille with opposed blade damper – Add 5 dB to Noise Criteria.  
Correction for 22 1/2° deflection – Add 1 dB to Noise Criteria.  
Correction for 45° deflection – Add 7 dB to Noise Criteria.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts @ 0° deflection. Dash (-) in space indicates a Noise Criteria of less than 15.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

### MODEL SERIES: 8100

### ALUMINUM INDUSTRIAL SUPPLY GRILLES AND REGISTERS

EXAMPLE: 81DV - O - 24 x 12 - S - AW - DMI - A - —

1. **Models**

**Single Deflection**

81SH Horizontal Front Blades,  
1 1/2" (38) Spacing

81SV Vertical Front Blades,  
1 1/2" (38) Spacing

813SH Horizontal Front Blades,  
3" (76) Spacing

813SV Vertical Front Blades,  
3" (76) Spacing

**Double Deflection**

81DH Horizontal Front Blades,  
1 1/2" (38) Spacing

81DV Vertical Front Blades,  
1 1/2" (38) Spacing

813DH Horizontal Front Blades,  
3" (76) Spacing

813DV Vertical Front Blades,  
3" (76) Spacing

**Gang Operated Double Deflection**

81GDH Horizontal Front with Vertical  
Rear Blades, 1 1/2" (38)  
Spacing

81GDV Vertical Front with Horizontal  
Rear Blades, 1 1/2" (38)  
Spacing

2. **Damper (OBD)**

- O Steel
- OA Aluminum
- No Damper

3. **Width x Height**

inches (mm)

4. **Frame/Border Type**

S Surface Mount (default)

5. **Finish**

AW Appliance White (default)

AL Aluminum

BK Black

BW British White

LBP Light Bronze Paint

MBP Medium Bronze Paint

DBP Dark Bronze Paint

MI Mill

PPA Paint Prepared Aluminum

SP Special Custom Color

6. **Opposed Blade Damper Finish**

DMI Mill (default)

DBK Painted Black

— None

7. **Fastening**

A Screw Holes (default)

N None

**OPTIONS & ACCESSORIES:**

— None

8. **Plaster Sub-Frame**

PF Plaster Sub-Frame

9. **Insect Screen**

IS Insect Screen

10. **Gaskets**

GK Foam Gasket

**Notes:**

1. On double deflection gang operated models, the horizontal blades (parallel to width) are ganged, whether front (81GDH) or rear (81GDV). The other set are individually adjustable.

2. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a double deflection register with 3" (76) blade spacing, vertical front blades, and a damper is Model 813DV-O. Unit will be supplied with screw holes and AW Appliance White finish.

3. The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).



## HOW TO SPECIFY

### MODEL SERIES: 8100

### ALUMINUM INDUSTRIAL SUPPLY GRILLES AND REGISTERS

#### SUGGESTED SPECIFICATION:

##### **81DV, 81DH Double Deflection – 1 1/2" (38) Blade Spacing**

Furnish and install **Nailor Model** (select one) **81DV** or **81DH Double Deflection Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of perpendicular extruded aluminum adjustable blades that are airfoil shaped and spaced on 1 1/2" (38) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### **81SV, 81SH Single Deflection – 1 1/2" (38) Blade Spacing**

Furnish and install **Nailor Model** (select one) **81SV** or **81SH Single Deflection Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 1 1/2" (38) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### **813DV, 813DH Double Deflection – 3" (76) Blade Spacing**

Furnish and install **Nailor Model** (select one) **813DV** or **813DH Double Deflection Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of perpendicular extruded aluminum adjustable blades that are airfoil shaped and spaced on 3" (76) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### **813SV, 813SH Single Deflection – 3" (76) Blade Spacing**

Furnish and install **Nailor Model** (select one) **813SV** or **813SH Single Deflection Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum adjustable blades that are airfoil shaped and spaced on 3" (76) centers. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### **81GDV, 81GDH Double Deflection Gang Operated – 1 1/2" (38) Blade Spacing**

Furnish and install **Nailor Model** (select one) **81GDV** or **81GDH Double Deflection Gang Operated Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of perpendicular extruded aluminum adjustable blades that are airfoil shaped and spaced on 1 1/2" (38) centers. The horizontal blades shall be gang operated. The frame is to be constructed from heavy gauge extruded aluminum with reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## INDUSTRIAL SUPPLY GRILLES AND REGISTERS

- MODULAR CORE
- HIGH CAPACITY

### Models:

**81MG1 - One Module**

**81MG2 - Two Modules**

**81MG3 - Three Modules**

**81MG4 - Four Modules**

- Suffix '-O' adds a steel opposed blade damper



Model 81GDV-O

Model Series 81MG Industrial Supply Grilles and Registers have been specially designed to incorporate the industry leading characteristics of the 8100 Series into a unique modular mounting arrangement. The double deflection blade design incorporates two sets of heavy duty extruded aluminum, individually adjustable airfoil blades on 1 1/2" (38) centers allowing maximum flexibility. Quick release fasteners on each module allow them to be quickly removed and adjusted or rotated to control the spread, throw distance and air pattern.

Ideal for use in applications such as factories, warehouses, shopping malls, atriums and stadiums, the removable modules can be easily readjusted to suit almost any application.

### STANDARD FEATURES:

- Grilles are attached to modular frame by quick release 1/4 turn fasteners. Modular frame has pre-punched holes for attachment to flanged duct.
- Blades are friction pivoted on screws and nylon washers to securely hold deflection setting.
- Individual grille modules are available in sizes 8" x 8", 10" x 10", 12" x 12" and 15" x 15", (203 x 203, 254 x 254, 305 x 305 and 381 x 381).

### CONSTRUCTION MATERIAL:

- Heavy duty 18 gauge galvanized steel frame accommodates up to four individual grilles.
- Each grille features a heavy duty extruded aluminum frame with reinforced mitered corners.
- Streamlined airfoil shaped, individually adjustable, heavy duty aluminum blades 1 1/2" (38) deep with a minimum wall thickness of 0.05" (1.27) on 1 1/2" (38) centers for optimum performance.
- Optional opposed blade damper has a screwdriver slot operator.

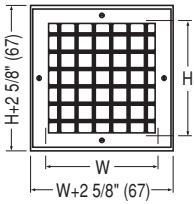
### FINISH OPTIONS:

- AW Appliance White finish is standard. Other finishes are available.

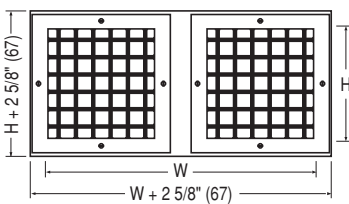
## DIMENSIONAL DATA:

### MODEL SERIES 81MG • INDUSTRIAL SUPPLY GRILLES • MODULAR FRAMES

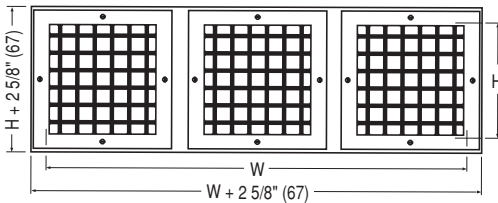
#### 81MG1 One Module



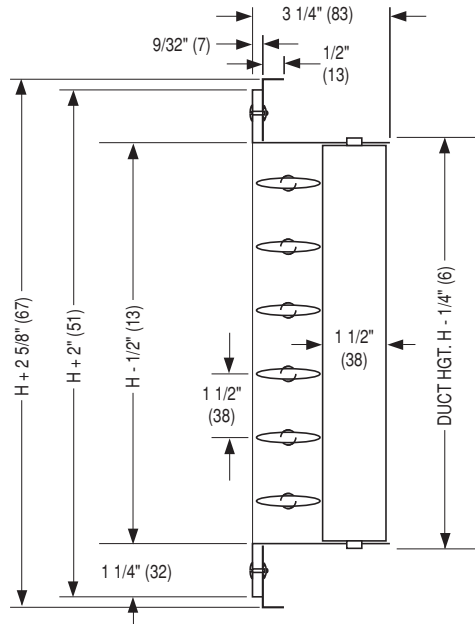
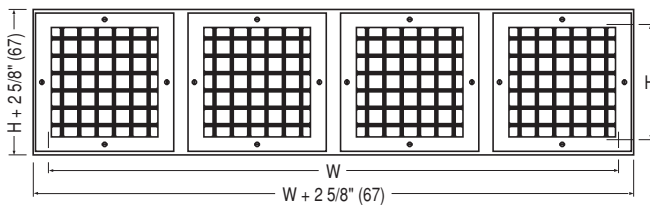
#### 81MG2 Two Modules



#### 81MG3 Three Modules



#### 81MG4 Four Modules



#### Dimensional Data / Imperial (inches)

H – Listed Size (Duct)	W – Listed Size (Duct)			
	1 Module	2 Modules	3 Modules	4 Modules
8	8	19	30	41
10	10	23	36	49
12	12	27	42	57
15	15	33	51	69

#### Dimensional Data / Metric (mm)

H – Listed Size (Duct)	W – Listed Size (Duct)			
	1 Module	2 Modules	3 Modules	4 Modules
203	203	483	762	1041
254	254	584	914	1245
305	305	686	1067	1448
381	381	838	1295	1753

## PERFORMANCE DATA:

### INDUSTRIAL SUPPLY GRILLES & REGISTERS • MODULAR CORE MODELS • 81MG SERIES

#### Model 81MG1 • One Module

Listed Duct Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity, FPM		500	600	700	800	1000	1200	1400	1600	1800	
			Velocity	Pressure	.016	.022	.031	.040	.062	.090	.122	.160	.202	
8	0.38		CFM											
			Noise Criteria											
			Throw	0°	11-18-25	12-19-27	14-21-29	16-22-30	19-24-33	21-26-36	23-28-39	25-30-41	27-32-44	
				22 1/2°	9-14-20	10-16-22	11-17-23	13-17-24	15-19-26	17-21-29	18-22-31	20-24-33	22-25-35	
10	0.61		CFM											
			Noise Criteria											
			Throw	0°	14-22-30	17-24-33	19-26-36	22-28-39	25-30-42	27-33-45	29-35-49	31-37-52	33-40-55	
				22 1/2°	11-17-24	14-19-26	15-21-29	18-22-31	20-24-34	22-26-36	23-28-39	25-30-41	26-32-44	
12	0.90		CFM											
			Noise Criteria											
			Throw	0°	17-27-37	20-29-40	22-31-43	25-33-46	28-36-50	31-39-54	34-42-58	37-44-62	40-47-66	
				22 1/2°	14-21-30	16-23-32	18-25-34	20-26-37	22-29-40	25-31-43	27-33-46	30-35-50	32-37-53	
15	1.44		CFM											
			Noise Criteria											
			Throw	0°	23-33-46	27-37-52	31-41-57	34-44-61	38-48-67	42-52-72	45-55-77	49-59-82	52-63-87	
				22 1/2°	18-26-37	22-30-42	25-33-46	27-35-49	30-39-54	33-41-58	36-44-62	39-47-66	42-50-70	

#### Model 81MG2 • Two Module

Listed Duct Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity, FPM		500	600	700	800	1000	1200	1400	1600	1800	
			Velocity	Pressure	.016	.022	.031	.040	.062	.090	.122	.160	.202	
8	0.76		CFM											
			Noise Criteria											
			Throw	0°	15-23-32	18-26-36	20-29-40	22-31-43	26-33-46	29-36-50	31-39-54	34-41-57	36-44-61	
				22 1/2°	12-18-26	14-21-29	16-23-32	18-25-34	21-26-37	23-29-40	25-31-43	27-33-46	29-35-49	
10	1.22		CFM											
			Noise Criteria											
			Throw	0°	18-30-42	22-34-47	27-37-52	30-40-56	34-43-60	37-46-65	41-50-69	44-53-74	47-55-78	
				22 1/2°	14-24-34	28-27-38	22-30-42	24-32-45	27-35-48	30-37-52	32-40-55	35-42-59	38-44-62	
12	1.80		CFM											
			Noise Criteria											
			Throw	0°	24-37-52	28-42-59	32-46-64	36-49-68	41-54-75	45-57-81	50-61-86	54-65-92	58-69-97	
				22 1/2°	19-30-42	22-34-47	26-37-51	29-39-54	33-43-60	36-46-64	40-49-69	43-52-73	46-55-78	
15	2.87		CFM											
			Noise Criteria											
			Throw	0°	29-47-65	35-52-72	40-57-80	45-62-87	51-67-95	57-73-102	63-78-110	69-83-117	75-88-124	
				22 1/2°	23-37-52	28-41-58	32-45-64	36-49-70	41-54-76	46-58-82	50-62-88	55-66-93	60-70-99	

#### Performance Notes:

- All pressures are in inches w.g..
- Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Total pressures are based upon a grille without an opposed blade damper. Correction for grille with opposed blade damper – Multiply total pressure by 1.12.

- Noise Criteria values are based upon a grille without an opposed blade damper and a 0° deflection. Correction for grille with opposed blade damper – Add 5 dB to Noise Criteria. Correction for 22 1/2° deflection – Add 1 dB to Noise Criteria. Correction for 45° deflection – Add 7 dB to Noise Criteria.

- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts @ 0° deflection. Dash (-) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA:

### INDUSTRIAL SUPPLY GRILLES & REGISTERS • MODULAR CORE MODELS • 81MG SERIES

#### Model 81MG3 • Three Modules

Listed Duct Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity, FPM		500	600	700	800	1000	1200	1400	1600	1800
			VP		.016	.022	.031	.040	.062	.090	.122	.160	.202
			Total Pressure	0° 22 1/2° 45°	.036 .042 .061	.052 .060 .088	.071 .081 .119	.092 .106 .156	.144 .166 .244	.208 .239 .351	.283 .325 .478	.370 .425 .624	.468 .538 .790
8	1.15		CFM		565	678	791	904	1130	1356	1582	1808	2034
			Noise Criteria		–	15	19	23	29	34	38	41	45
		0.91 0.88 0.70	Throw	0° 22 1/2° 45°	17-29-40 14-23-32 8-14-19	21-32-44 17-25-35 10-15-21	25-35-49 20-28-39 12-17-24	28-38-53 22-31-42 13-18-25	31-41-57 25-33-46 15-20-27	34-44-61 27-35-49 16-21-29	38-46-66 30-38-52 20-24-33	41-50-70 33-40-56 20-24-33	44-53-74 35-42-59 21-25-36
10	1.83		CFM		915	1098	1281	1464	1830	2196	2562	2928	3294
			Noise Criteria		–	17	22	25	31	36	40	43	47
		1.46 1.42 1.14	Throw	0° 22 1/2° 45°	24-37-52 19-30-42 12-18-25	28-42-59 22-34-47 13-20-28	32-46-64 26-37-51 15-22-31	36-50-69 29-40-55 17-24-33	41-55-76 33-44-61 20-26-36	45-58-82 36-46-65 22-28-39	50-62-88 40-50-70 24-30-42	54-66-93 43-53-75 26-32-45	58-7099 46-56-79 28-34-48
12	2.70		CFM		1350	1620	1890	2160	2700	3240	3780	4320	4860
			Noise Criteria		15	19	23	27	33	38	42	46	49
		2.16 2.09 1.67	Throw	0° 22 1/2° 45°	29-45-63 23-36-50 14-22-30	35-50-70 28-40-56 17-24-34	40-55-77 32-44-62 19-27-37	45-60-84 36-48-67 22-29-40	50-65-92 40-52-74 24-31-44	56-70-99 44-56-79 27-34-48	61-76-107 49-60-85 29-36-51	67-81-114 53-65-91 32-39-55	72-86-121 58-69-97 35-41-58
15	4.31		CFM		2155	2586	3017	3448	4310	5172	6034	6896	7758
			Noise Criteria		18	22	26	30	36	40	44	48	51
		3.44 3.34 2.67	Throw	0° 22 1/2° 45°	35-58-82 28-47-66 17-28-39	42-63-89 34-51-71 20-30-43	49-69-97 39-55-78 24-33-47	55-75-105 44-60-84 26-36-50	62-82-115 50-65-92 30-39-55	69-88-124 55-71-99 33-42-60	77-95-134 61-76-107 37-45-64	84-101-143 67-81-114 40-49-69	91-108-152 73-86-122 44-52-73

#### Model 81MG4 • Four Modules

Listed Duct Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity, FPM		500	600	700	800	1000	1200	1400	1600	1800
			VP		.016	.022	.031	.040	.062	.090	.122	.160	.202
			Total Pressure	0° 22 1/2° 45°	.036 .042 .061	.052 .060 .088	.071 .081 .119	.092 .106 .156	.144 .166 .244	.208 .239 .351	.283 .325 .478	.370 .425 .624	.468 .538 .790
8	1.51		CFM		755	906	1057	1208	1510	1812	2114	2416	2718
			Noise Criteria		–	18	22	25	31	36	40	43	46
		1.21 1.17 0.94	Throw	0° 22 1/2° 45°	24-34-48 19-27-38 12-16-23	28-38-53 22-30-42 13-18-25	31-41-58 25-33-46 15-20-28	35-45-63 28-36-50 17-21-30	39-49-69 31-39-55 19-24-33	42-53-74 34-42-59 20-25-36	46-56-79 37-45-63 22-27-38	50-60-84 40-48-67 24-29-40	53-63-89 42-51-71 25-30-43
10	2.44		CFM		1220	1464	1708	1952	2440	2928	3416	3904	4392
			Noise Criteria		17	20	24	28	34	38	42	45	48
		1.95 1.89 1.51	Throw	0° 22 1/2° 45°	27-43-60 22-34-48 13-20-29	32-47-66 26-37-53 15-22-32	37-52-73 30-41-58 18-25-35	41-57-80 33-45-64 20-27-38	47-62-87 38-49-70 23-30-42	52-67-94 42-53-75 25-32-45	58-71-101 46-57-80 28-34-48	63-76-107 50-61-86 30-37-51	68-81-114 54-65-91 33-39-55
12	3.59		CFM		1795	2154	2513	2872	3590	4308	5026	5744	6462
			Noise Criteria		18	22	26	30	36	40	44	48	51
		2.88 2.78 2.23	Throw	0° 22 1/2° 45°	32-53-73 26-42-58 15-25-35	39-57-80 31-45-64 19-27-38	45-63-89 36-51-71 22-30-43	51-69-97 41-55-78 24-33-47	57-75-105 46-60-84 27-36-50	64-81-114 51-64-91 31-39-54	71-87-122 56-69-98 34-42-59	77-93-131 62-74-104 37-44-63	84-99-139 67-79-111 40-48-67
15	5.74		CFM		2870	3444	4018	4592	5740	6888	8036	9184	10332
			Noise Criteria		20	24	28	32	38	42	46	50	53
		4.59 4.45 3.56	Throw	0° 22 1/2° 45°	39-66-92 31-53-74 19-32-44	47-72-102 38-58-82 23-35-49	55-80-112 44-64-90 26-38-54	63-87-123 50-70-98 30-42-59	71-94-133 57-76-106 34-45-64	79-102-143 63-81-115 38-49-69	87-109-154 70-87-123 42-52-74	95-116-164 76-93-131 46-56-79	103-127-174 82-102-139 49-61-84

#### Performance Notes:

- All pressures are in inches w.g.
- Throw values are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Total pressures are based upon a grille without an opposed blade damper. Correction for grille with opposed blade damper – Multiply total pressure by 1.12.

- Noise Criteria values are based upon a grille without an opposed blade damper and a 0° deflection. Correction for grille with opposed blade damper – Add 5 dB to Noise Criteria. Correction for 22 1/2° deflection – Add 1 dB to Noise Criteria. Correction for 45° deflection – Add 7 dB to Noise Criteria.

- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts @ 0° deflection. Dash (–) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

### MODEL SERIES: 81MG

### MODULAR CORE INDUSTRIAL SUPPLY GRILLES AND REGISTERS

EXAMPLE: 81MG2 - O - 10 - S - AW - DMI

**1. Models**

- 81MG1 1 Modular Core Grille
- 81MG2 2 Modular Core Grilles
- 81MG3 3 Modular Core Grilles
- 81MG4 4 Modular Core Grilles

**2. Damper (OBD)**

- O Steel
- No Damper

**3. Module Size**

- | Imperial (inches) | Metric (mm) |
|-------------------|-------------|
| 08 8 x 8          | (203 x 203) |
| 10 10 x 10        | (254 x 254) |
| 12 12 x 12        | (305 x 305) |
| 15 15 x 15        | (381 x 381) |

**4. Frame/Border Type**

- S Surface Mount (default)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint
- MI Mill
- PPA Paint Prepared Aluminum
- SP Special Custom Color

**6. Opposed Blade Damper Finish**

- DMI Mill (default)
- DBK Painted Black
- None

**Notes:**

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, a two module register with a damper is Model 81MG2-O. Unit will be supplied with AW Appliance White finish.

2. Refer to individual model submittal for guidance on availability of options and accessories.

## HOW TO SPECIFY

### MODEL SERIES: 81MG

### MODULAR CORE INDUSTRIAL SUPPLY GRILLES AND REGISTERS

**SUGGESTED SPECIFICATION:**

Furnish and install **Nailor Model** (select one) **81MG1, 81MG2, 81MG3 or 81MG4 Double Deflection Modular Core Industrial Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a double set of perpendicular extruded aluminum adjustable blades that are airfoil shaped and spaced on 1 1/2" (38) centers. The frame is to be constructed from heavy gauge extruded aluminum and have reinforced mitered corners. Grilles are to be attached to a modular frame by quick release 1/4 turn fasteners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, adjustable from the face of the grille, shall be provided with all units. Dampers shall be attached to the grille core and be completely removable.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

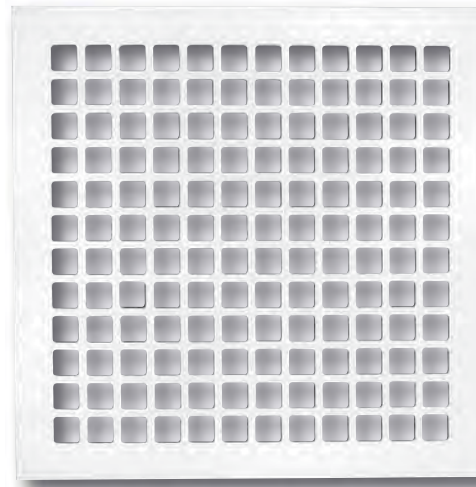


## LATTICE FACE GRILLES

- VARIOUS CONFIGURATIONS AVAILABLE
- ALUMINUM, STEEL OR STAINLESS STEEL

### Models:

- 51LG** Aluminum
- 61LG** Steel
- 67LG** Stainless Steel



Model 61LG75

The Nailor Model Series 51LG, 61LG and 67LG Lattice Face Grilles are available for return air, architectural and minimum security applications. The standard Model 61LG75 features 3/4" (19) square holes on 1" (25) centers in 14 gauge steel construction.

### STANDARD FEATURES:

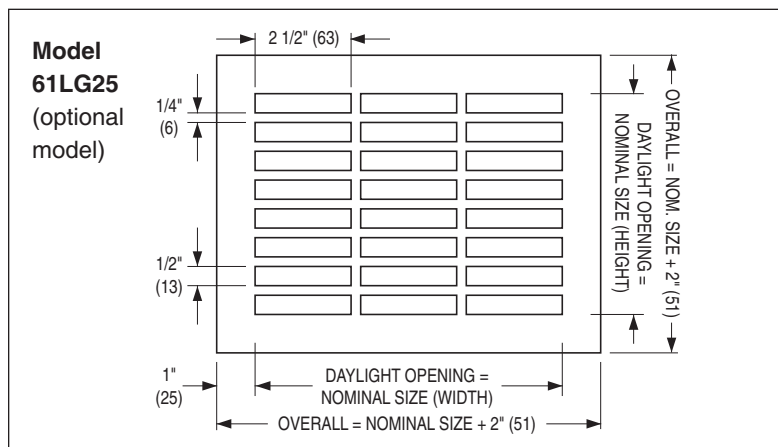
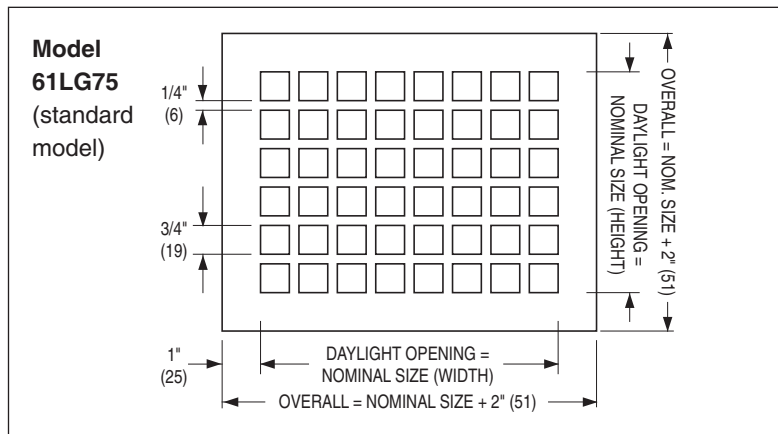
- Many choices of lattice design to suit any application (see table below).
- Available in sizes from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219).
- Model Series 51LG standard 12 gauge aluminum construction.
- Model Series 67LG standard 14 gauge 304 stainless steel construction.
- Optional countersunk screw holes and mounting screws are available.
- Optional opposed blade damper has a screwdriver slot operator.

### FINISH OPTIONS:

- AW Appliance White finish is standard on steel and aluminum models. Stainless steel models have #4 Brushed Satin Polished finish as standard. Other finishes are available.

### CONSTRUCTION MATERIAL:

- Model Series 61LG standard 14 gauge steel construction. Optional 10 or 12 gauge steel construction is available.



### Lattice Configurations and Free Area:

Model No. Suffix e.g. 61LG __	Hole Pattern	Average Free Area
75	3/4" (19) square holes on 1" (25) centers	60%
50	1/2" (13) square holes on 3/4" (19) centers	50%
13	13/16" (21) square holes on 1" (25) centers	70%
10	1" (25) square holes on 1 1/4" (32) centers	68%
25	2 1/2" x 1/2" (64 x 13) rectangular holes on 2 3/4" x 3/4" (70 x 19) centers	65%

Suffix 75 is standard.

## SIZING SCHEDULE AND PERFORMANCE DATA:

### MODEL SERIES: 51LG, 61LG AND 67LG • LATTICE FACE GRILLES

No. of Holes	LG75 3/4" Square		LG50 1/2" Square		LG13 13/16" Square		LG10 1" Square		No. of Holes	LG25 2 1/2" x 1/2"			
										Width		Height	
	in.	mm	in.	mm	in.	mm	in.	mm		in.	mm	in.	mm
6	5 3/4	146	4 1/4	108	5 13/16	148	7 1/4	184	3	6 1/2	165	2	51
8	7 3/4	197	5 3/4	146	7 13/16	198	9 3/4	248	4	8 3/4	222	2 3/4	70
10	9 3/4	248	7 1/4	184	8 13/16	249	12 1/4	311	5	11	279	3 1/2	89
12	11 3/4	298	8 3/4	222	11 13/16	300	14 3/4	375	6	13 1/4	337	4 1/4	118
14	13 3/4	349	10 1/4	260	13 13/16	335	17 1/4	438	7	15 1/2	394	5	127
16	15 3/4	400	11 3/4	298	15 13/16	402	19 3/4	502	8	17 3/4	451	5 3/4	146
18	17 3/4	451	13 1/4	337	17 13/16	452	22 1/4	565	9	20	508	6 1/2	165
20	19 3/4	502	14 3/4	375	19 13/16	503	24 3/4	629	10	22 1/4	565	7 1/4	184
22	21 3/4	552	16 1/4	413	21 13/16	554	27 1/4	692	11	24 1/2	622	8	203
24	23 3/4	603	17 3/4	451	23 13/16	605	29 3/4	756	12	26 3/4	679	8 3/4	222
26	25 3/4	654	19 1/4	489	25 13/16	656	32 1/4	819	13	29	737	9 1/2	241
28	27 3/4	705	20 3/4	527	27 13/16	706	34 3/4	883	14	31 1/4	794	10 1/4	260
30	29 3/4	756	22 1/4	565	29 13/16	757	37 1/4	946	15	33 1/2	851	11	279
32	31 3/4	806	23 3/4	603	31 13/16	808	39 3/4	1010	16	35 3/4	908	11 3/4	298
34	33 3/4	857	25 1/4	641	33 13/16	859	42 1/4	1073	17	38	965	12 1/2	317
36	35 3/4	908	26 3/4	679	35 13/16	910	44 3/4	1137	18	40 1/4	1022	13 1/4	336
38	37 3/4	959	28 1/4	718	37 13/16	960	47 1/4	1200	19	42 1/2	1079	14	356
40	39 3/4	1010	29 3/4	756	39 13/16	1011	-	-	20	44 3/4	1136	14 3/4	375
42	41 3/4	1060	31 1/4	794	41 13/16	1062	-	-	21	47	1194	15 1/2	394
44	43 3/4	1111	32 3/4	832	43 13/16	1113	-	-	-	-	-	-	-
46	45 3/4	1162	34 1/4	870	45 13/16	1164	-	-	-	-	-	-	-
48	47 3/4	1213	35 3/4	908	47 13/16	1214	-	-	-	-	-	-	-
50	-	-	37 1/4	946	-	-	-	-	-	-	-	-	-
52	-	-	38 3/4	984	-	-	-	-	-	-	-	-	-
54	-	-	40 1/4	1022	-	-	-	-	-	-	-	-	-
56	-	-	41 3/4	1060	-	-	-	-	-	-	-	-	-
58	-	-	43 1/4	1099	-	-	-	-	-	-	-	-	-
60	-	-	44 3/4	1137	-	-	-	-	-	-	-	-	-
62	-	-	46 1/4	1175	-	-	-	-	-	-	-	-	-
64	-	-	47 3/4	1213	-	-	-	-	-	-	-	-	-

## PRESSURE LOSS THROUGH LATTICE GRILLE

Model (Free Area)	Core Velocity VP	300 .006	400 .010	500 .016	600 .022	700 .031	800 .040	900 .051	1000 .062	1200 .090	1400 .122
LG75 (60%)	Neg. SP	.019	.034	.053	.077	.105	.137	.173	.213	.307	.418
LG50 (50%)		.032	.057	.089	.128	.174	.228	.288	.356	.512	.697
LG13 (70%)		.011	.020	.031	.044	.060	.078	.099	.122	.176	.240
LG10 (68%)		.012	.022	.034	.050	.068	.089	.112	.138	.198	.270
LG25 (65%)		.015	.027	.042	.061	.083	.108	.137	.167	.243	.331

### Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Core represents daylight opening dimensions.

## PRODUCT OVERVIEW OPTIONS AND ACCESSORIES FOR GRILLES AND REGISTERS

### MOUNTING FRAMES

- Up to four methods of fastening available for most models.
- Sub-frame available for professionally finished openings.
- Surface mount adapter frame for plaster and sheet rock ceilings are available in steel and aluminum. They simplify installation, save time and allow ceiling plenum access.
- Panel mounting available to suit architectural ceiling systems.

### OPTIONS

- A selection of optional items that are available on grilles and registers.
- Information on custom sizing for special applications.

### FINISHES

- Selection of standard and non-standard finishes to choose from.
- Anodizing of aluminum products.

### AIR BALANCING DEVICES

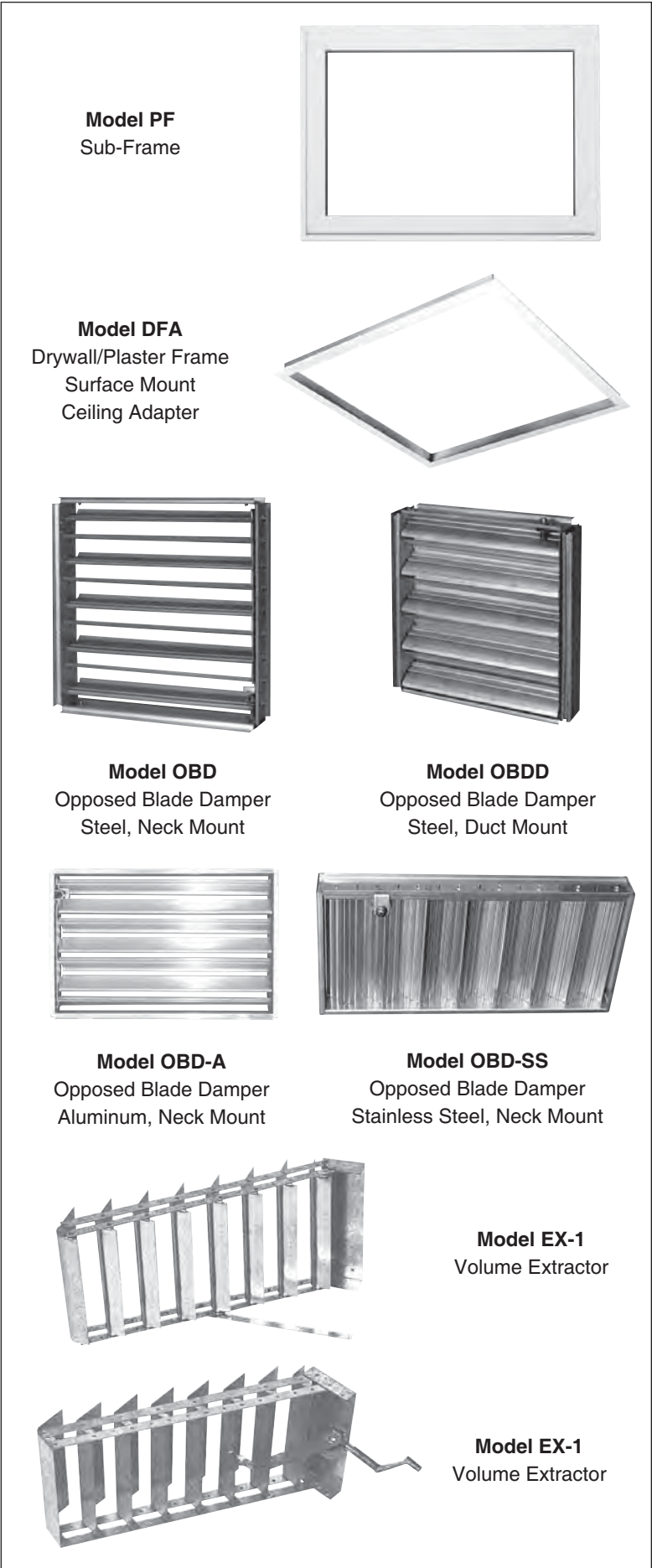
- Opposed blade dampers for every application.
- Volume extractors.

Effective air balancing of an HVAC System requires the correct selection, specification and installation of the right product to suit the system design.

Nailor offers a comprehensive range of models and options to cover all applications.

Nailor balancing devices are:

- Easy to select and specify. Many items can be supplied as factory mounted or packaged accessories on grilles and registers.
- Designed to offer a smooth, accurate and predictable response during adjustment for precise air metering.
- Designed to provide quick access and adjustment.
- Engineered with attention to optimizing airflow, in order to minimize noise, turbulence and pressure drop.

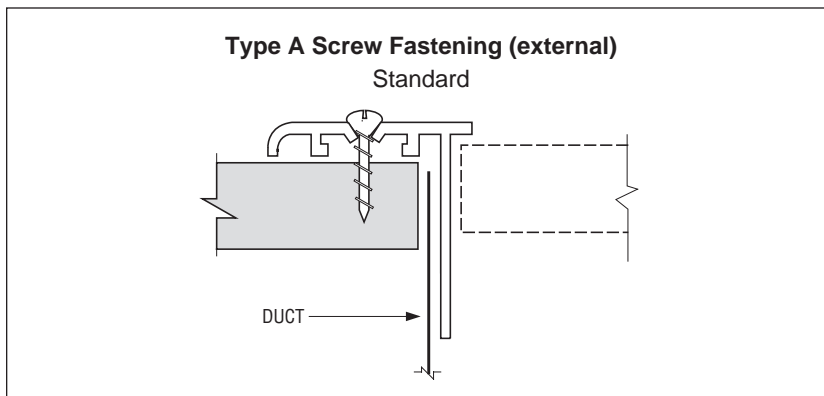


## Fastening and Border Frames

### Type A Screw Fastening (External)

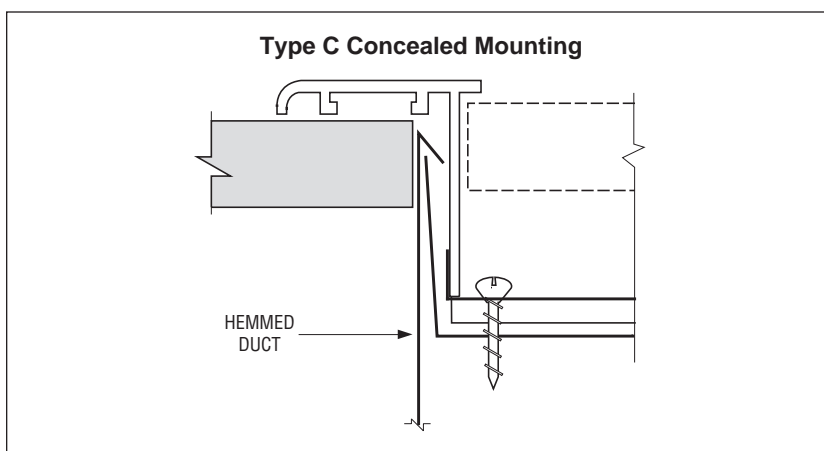
Standard method of fastening for all Nailor grilles and registers in surface mount applications. All Nailor grilles and registers are supplied this way unless specified otherwise. Universal application for all models and cost effective installation.

Screw holes are countersunk in the frame for most models to provide an aesthetically pleasing appearance and are sized for #8 x 1 1/2" (38) oval-head screws which are supplied from the factory packed with each grille or register and are painted to match the specified finish.



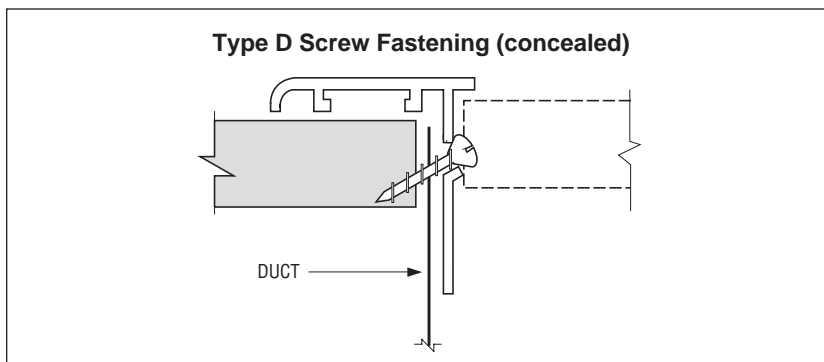
### Type C Concealed Mounting

Grilles and registers are supplied with concealed mounting straps (at additional cost) which permit surface mounting with concealed screws, allowing a clean frame appearance. The bracket is shipped loose for installation in the field (by others). The bracket attaches to the back of the grille screws to an adjustable mounting strap which can either be secured directly to the duct wall or hooked into a hem formed in the end of the duct. Not available on return air grilles with 1/2" (13) spacing and a fixed angled blade deflection. Maximum size: 36" x 36" (914 x 914).



### Type D Screw Fastening (Concealed)

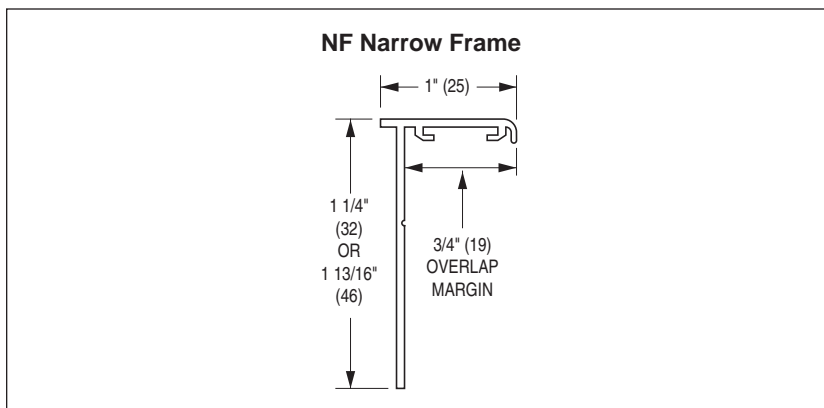
Screw holes are provided in the neck of the grille or register frame. Screws are field installed at an angle through the grille frame and into the ductwork, providing a clean frame appearance. Installation is more difficult than Type A due to the space constriction between the grille blades. Care must be taken not to bend or scratch the grille. Not recommended on return air grilles with a fixed angled blade deflection as accessibility to screw holes is greatly restricted.



### Type NF Narrow Frame

An optional reduced 1" (25) wide narrow border frame is available on most aluminum models to satisfy architectural considerations.

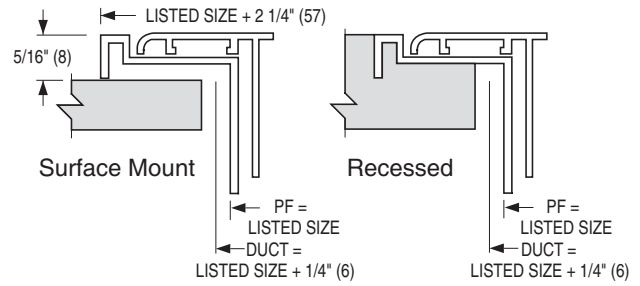
See individual models for availability.



## Mounting Frames

### PF Plaster/Mounting Frame

Available (at additional cost) with most standard steel and aluminum grilles and registers. The Model PF Plaster Frame is constructed from extruded aluminum and provides a convenient and professional way for finishing off the grille or register opening. It provides a stable anchor for attachment, while enabling the grille or register to be detached and replaced readily without disturbing the finished surface of the wall or ceiling opening. It may be used for surface mounting on various materials or recess mounted in wet plaster.



Model PF Plaster Frame

### DFS (Steel), DFA (Aluminum) Drywall/Plaster Frame

The DF Series are for mounting in finished drywall or plaster ceilings to accept any standard lay-in type grille, register, diffuser or other ceiling component. Installation of the air outlet is as simple as inserting them in a standard lay-in T-Bar type ceiling system.

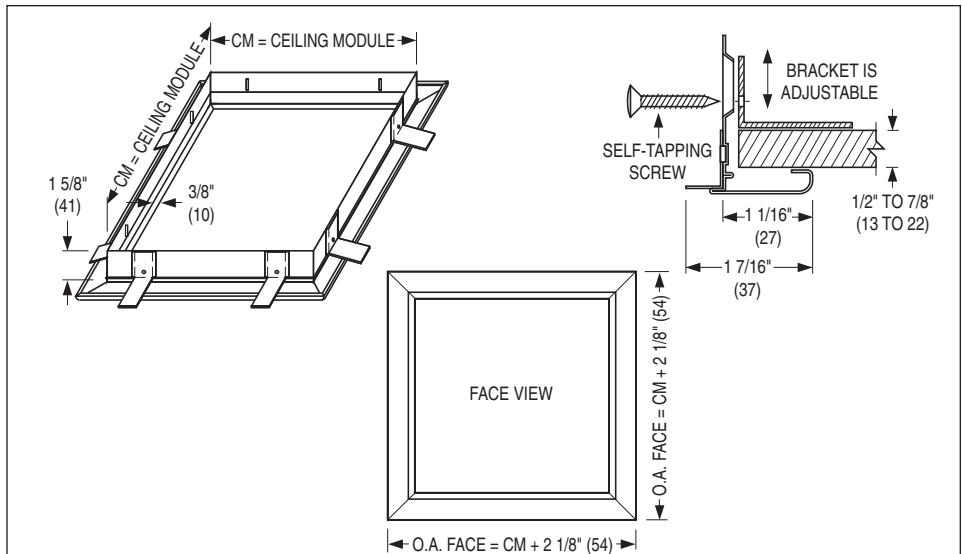
The DF Series simplifies and reduces installation time compared with surface mount type diffusers. This is especially true where flexible duct is utilized. A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access doors. The finished appearance is professional and aesthetically pleasing.

**Standard Finish:** AW Appliance White. Other finishes are available.

**Model DFS** is installed quickly and easily using adjustable fastening angle brackets which adapt to various ceiling thicknesses. Frames are roll-formed corrosion-resistant steel with staked and mitered corners.

IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600

Ceiling opening = CM + 1/4" (6)

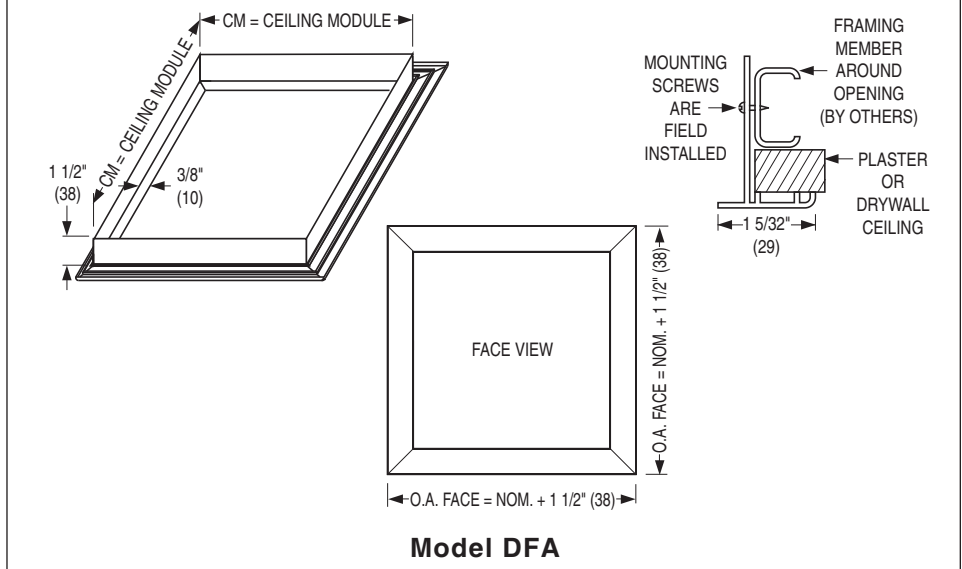


Model DFS

**Model DFA** requires framing of the ceiling opening with 'C' channel or wood studs for attachment with mounting screws (by others).

IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600
36 x 24	914 x 610	900 x 600
48 x 12	1219 x 305	1200 x 300
48 x 24	1219 x 1219	1200 x 600
60 x 12	1524 x 305	1500 x 300

Ceiling opening = CM + 1/4" (6)



Model DFA

## Panel Mounting/Ceiling Modules

A panel can be added to the majority of Nailor's steel and aluminum return grilles to suit many special architectural ceiling designs and ceiling module sizes. These panel mount grilles are available in corrosion-resistant steel for the 6100 series steel grilles and both aluminum and corrosion-resistant steel for the 5100 and 7100 series aluminum grilles.

To specify a steel panel; add the suffix S to the end of the selected panel variant. To specify an aluminum panel; add the suffix A to the end of the selected panel variant. e.g. If a steel panel is required with a Spline Type ceiling module, the variant code will become SPS.

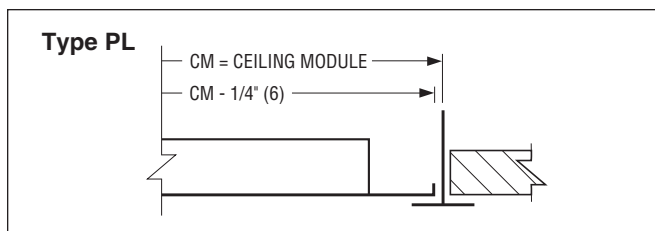
The maximum grille neck sizes available for panel mounting will be the ceiling module size selected - 3" (76).

### Available Ceiling Module Sizes

Ceiling Module	
Imperial Units (in.)	Metric Units (mm)
12 x 12	300 x 300
24 x 12	600 x 300
36 x 12	900 x 300
48 x 12	1200 x 300
20 x 20	500 x 500
24 x 24	600 x 600
36 x 24	900 x 600
48 x 24	1200 x 600

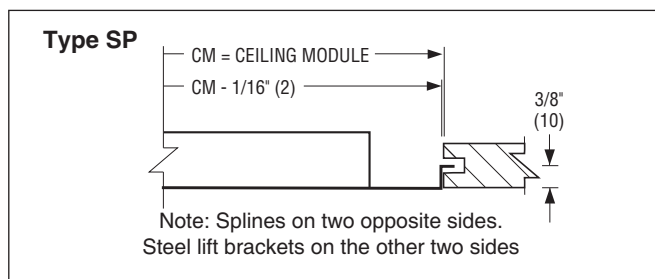
### Border Type PL: Lay-in T-Bar

Grille or register is mounted in an extended panel to suit standard T-Bar Lay-in Type ceilings.



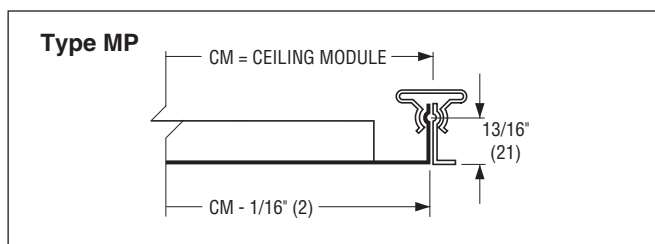
### Border Type SP: Spline

The grille or register is mounted in an extended panel to suit spline type ceiling modules.



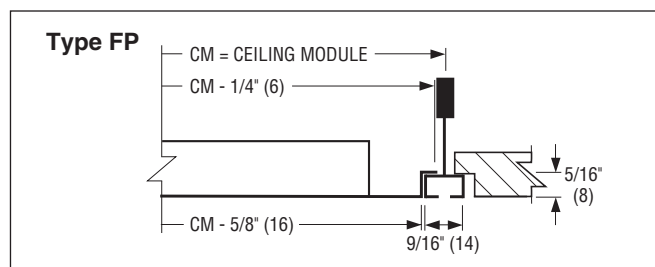
### Border Type MP: Metal Pan/Snap-in

The grille or register is mounted in an extended panel to suit metal pan ceilings that have snap-in type ceiling modules.



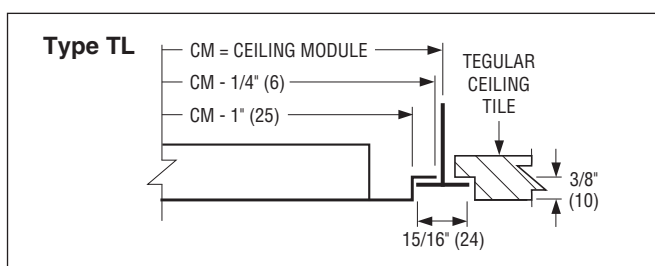
### Border Type FP: Narrow Regressed T-Bar (Fineline®)

The grille or register is mounted in an extended panel that will fit a narrow regressed T-Bar ceiling grid.



### Border Type TL: Tegular Type T-Bar

The grille or register is mounted in a panel that will extend below the T-Bar ceiling grid.





## Options, Custom Sizing and Finishes

### OPTIONS:

#### **RACA Return Air Crosstalk Attenuator**

Return Air Crosstalk Attenuator is designed to greatly reduce the amount of sound transferred from the return air plenum through open vents or return grilles, into the adjoining space.

#### **EQT Earthquake Tabs**

Earthquake (seismic) retaining safety tabs are available; factory installed on grilles or registers when required by local building code that units be independently restrained and safety wired to supporting structure.

#### **GK Foam Gaskets**

An optional foam gasket is available factory installed on the rear of all Type S corrosion-resistant steel and aluminum surface mount grilles and registers.

Eliminates air leakage and the possibility of dirt streaking and smudging from entrainment, particularly when installed on unevenly finished surfaces such as stucco.

#### **IS Insect Screen**

1/16" (2) galvanized steel mesh, factory installed.

### CUSTOM SIZING:

#### **Oversized Units**

For specialized applications and architectural considerations; certain grilles and registers can be manufactured in single sections larger than the standard published maximum size at additional cost. Aspect ratio, tolerances, manufacturing capability and weight have all to be considered by the factory prior to acceptance. Consult your Nailor representative for specific applications.

#### **Fractional/Hard Metric Sizes**

Nailor grilles and registers have been designed and are manufactured to suit HVAC systems where the duct design has been done using Imperial Units of measurement (i.e. feet and inches). The majority of Nailor grilles and registers are fabricated as standard in 1" (25) nominal incremental units, giving the designer great flexibility during sizing selection.

At additional cost, the majority of Nailor grilles and registers can be custom fabricated in fractional sizes for special applications and in Hard Metric (S.I. Units) when the HVAC duct design has been done using the Metric System.

Consult your Nailor representative for availability on specific project applications.

### FINISHES:

#### **POWDER COAT**

##### **AW Appliance White (standard)**

A white finish that is currently the industry standard. Closely matches standard finishes supplied by the majority of T-Bar ceiling system manufacturers. (No additional cost).

##### **AL Aluminum**

Contains suspended metal particles to give the appearance of a silver grey metallic or anodized finish. (No additional cost).

##### **WH Off-White**

Has a creamy appearance. (Additional cost)

##### **BW British White**

Matches most white ceiling tiles. (No additional cost)

##### **LBP Light Bronze Paint**

An economical alternative that closely matches industry standard anodizing in color, sheen and appearance. (Additional cost)

##### **MBP Medium Bronze Paint**

An economical alternative that closely matches industry standard anodizing in color, sheen and appearance. (Additional cost)

##### **DBP Dark Bronze Paint**

An economical alternative that closely matches industry standard anodizing in color, sheen and appearance. (Additional cost)

##### **BK Black**

This black has a matte finish. (Additional cost)

##### **SP Special**

The Nailor range of diffusers are available in any color for special architectural consideration. Custom colors are individually mixed to match customer supplied samples. (Additional cost)

### ALUMINUM PRODUCT FINISHES:

##### **SA Satin (Clear) Anodized**

Adds a smooth satin finish to further protect the aluminum from corrosion (clear). (Additional cost)

### STAINLESS STEEL PRODUCT FINISH ONLY:

##### **#4 Brushed Satin Polished**

Stainless Steel models only. (No additional cost)

### ALSO AVAILABLE:

##### **MI Mill Finish**

(No additional cost).

##### **PPA Paint Prepared Aluminum (Washed only)**

(No additional cost).

##### **PC Prime Coat Paint**

Color will vary (Additional cost).

## Sound Reduction for Return Air Grilles

### RETURN AIR CROSSTALK ATTENUATOR – STEEL – RETURN AIR GRILLES

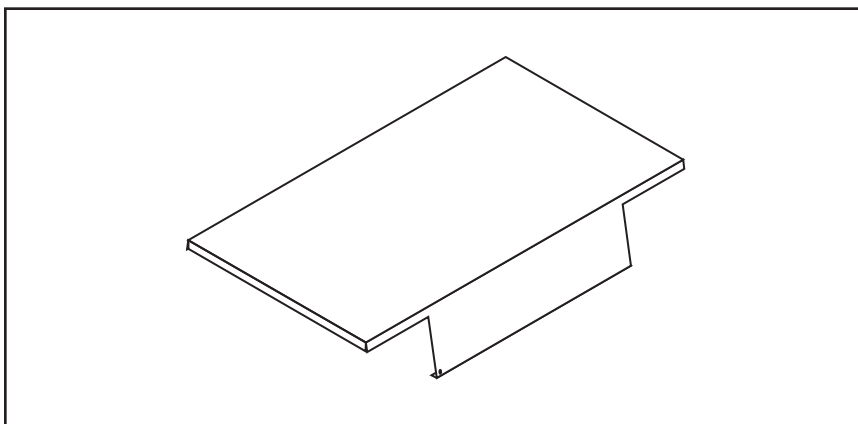
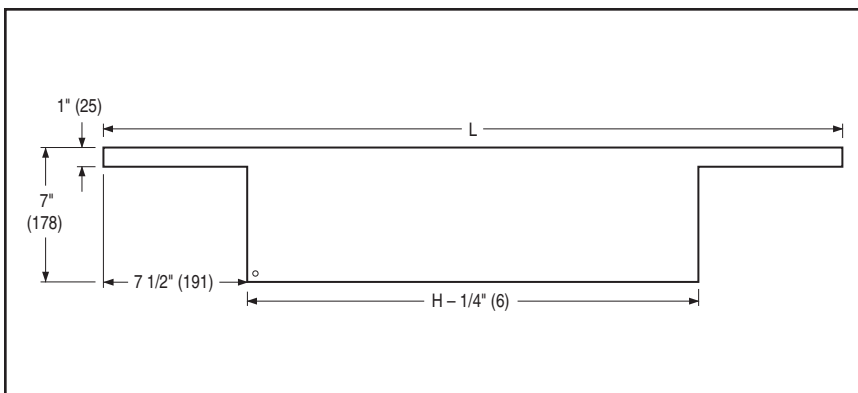
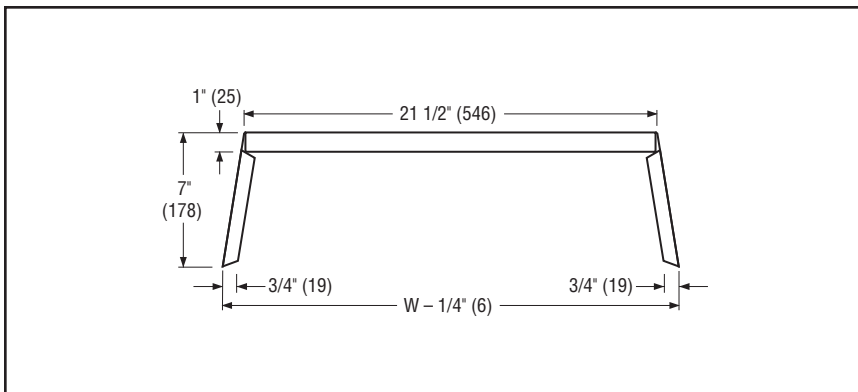
Nailor Model RACA Return Air Crosstalk Attenuator is designed to greatly reduce the amount of sound transferred from the return air plenum through open vents or return grilles, into the adjoining space. For use with non-ducted return grilles in Lay-in T-Bar applications, the RACA allows return air to flow through with minimal pressure drop, while reducing the sound transmission by 7 – 10 NC. Constructed of 22 gauge galvanized steel, the compact, light weight design takes up minimal space in the return plenum, rests on the ceiling grid for easy installation and works effectively as a light shield. Available with 1" (25) fiberglass insulation as standard or optional 1" (25) fiber-free closed cell foam insulation. The RACA fits standard grille sizes and is ideal for interior offices, conference rooms, hotel rooms as well as recording studios.

#### FEATURES:

- Economical and light- weight design.
- Fits standard grille sizes.
- Easy installation sits on ceiling grid.
- Compact design takes up minimal space in return plenum.
- 1" (25) fiberglass insulation (standard).

#### DIMENSIONAL DATA:

CM Ceiling Module	W	H	L
12" x 12" (305 x 305)	12" (305)	12" (305)	26 1/2" (673)
24" x 12" (610 x 305)	24" (610)	12" (305)	26 1/2" (673)
20" x 20" (508 x 508)	20" (508)	20" (508)	34 1/2" (876)
24" x 24" (610 x 610)	24" (610)	24" (610)	38 1/2" (978)
30" x 30" (762 x 762)	30" (762)	30" (762)	44 1/2" (1130)
48" x 24" (1219 x 610)	48" (1219)	24" (610)	38 1/2" (978)



## PERFORMANCE DATA

### MODEL: RACA RETURN AIR CROSSTALK ATTENUATOR

#### NOISE REDUCTION (dB)

Octave Band/Center Frequency (Hz)							
1	2	3	4	5	6	7	8
63	125	250	500	1000	2000	4000	8000
9	8	10	13	18	19	20	24

#### PRESSURE DROP (in. w.g.)

Face Velocity (fpm)	100	200	300	400	500	600
in w.g.	.01	.04	.08	.15	.23	.33

#### Performance Notes:

1. For optimum performance the RACA should be used in applications with grille face velocities below 500 fpm (2.54 m/s) or 2000 cfm (944 l/s) for a 24" x 24" (600 x 600) return grille.

2. Noise Reduction data derived from modified testing in accordance with ASTM Standard E477-13.

3. Velocity based on grille (W x H) core cross-sectional area.

4. Performance data based on a 24" x 24" (600 x 600) unit.

## Air Balancing Devices

### OPPOSED BLADE DAMPERS — STEEL AND ALUMINUM

Nailor Opposed Blade Dampers are manufactured from heavy gauge, roll-formed, corrosion-resistant steel or extruded aluminum blades and frame with miscellaneous steel components.

The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

#### GRILLE MOUNT MODELS:

**OBD Steel**

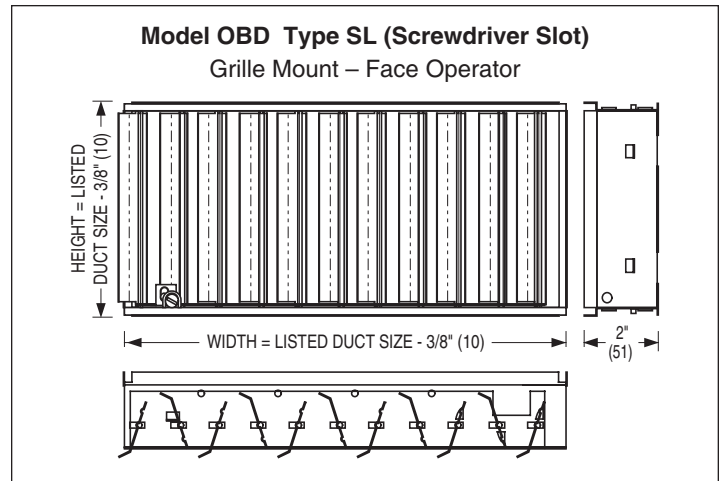
**OBD-A Aluminum**

This style of damper mounts directly on the neck of the grille and is sized to fit most Nailor grilles. Uses steel barbed S-clips for easy field mounting or removal when ordered separately. Supplied as standard with a screwdriver slot operator (Type SL) on supply registers and a screwdriver pivot lever operator (Type PL) on fixed, angled deflection return registers. Type SL operator is standard if damper is ordered separately from grille. A lever operator (Type GL) is available as an option on fixed, angled deflection return registers. Can be specified as an integral part of the grille (register) by adding a - O (steel) or - OA (aluminum) suffix to the grille model.

Min. Size = 4" x 2 1/2" (102 x 64) Max. Size = 24" x 24" (610 x 610).

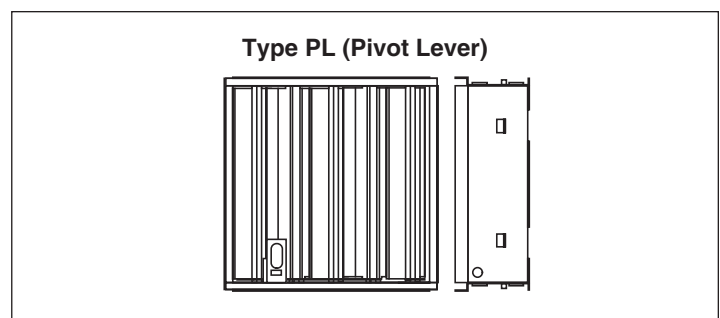
#### Type SL Operator

The SL Operator incorporates a screwdriver slot, which adjusts from the face of the register. This operator is the standard supplied with supply air registers such as the single and double deflection adjustable blade.



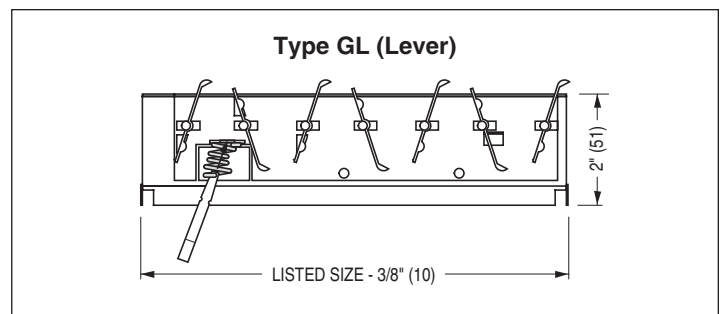
#### Type PL Operator

The PL Operator is a concealed pivot lever, which is adjusted from the face of the register using a screwdriver. This operator is for use only on fixed blade, angled deflection, return air grilles. When specifying, the blade orientation of the damper must be opposite of the grille.



#### Type GL Operator

The GL Operator incorporates a lever that adjusts without the use of tools. The lever operator extends through the grille face and is an alternative for fixed blade, angled deflection, return air grilles. When specifying, the blade orientation of the damper must be opposite of the grille being used and the grille model must be specified.



## Air Balancing Devices

### DUCT MOUNT MODELS:

**OBDD Steel**

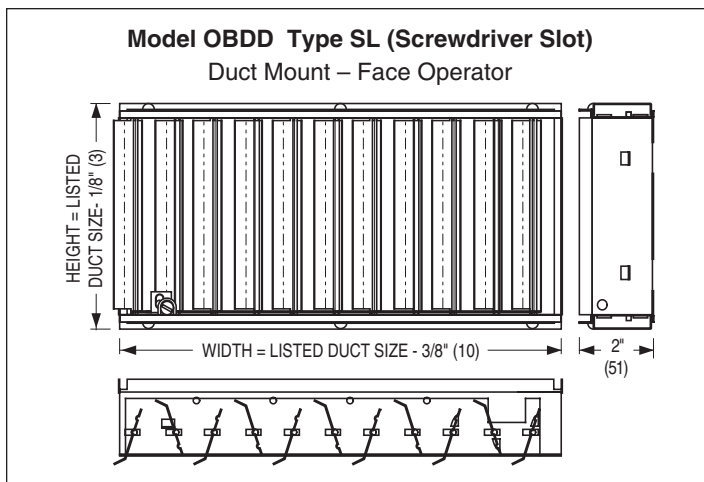
**OBDD-A Aluminum**

Designed for field installation, this damper mounts independently in the duct, separate from and behind the grille. Sized to suit and offer a friction fit in nominally sized ducts. Secure the dampers with 1/2" (13) long sheet metal screws (by others) through the double walled sub-frame. Supplied as standard with a screwdriver slot operator (Type SL).

Min. Size = 4" x 2 1/2" (102 x 64) Max. Size = 24" x 24" (610 x 610)

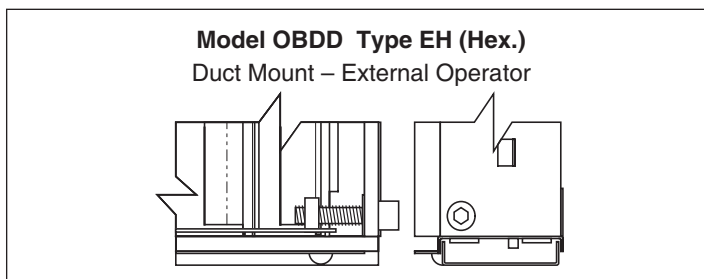
### Type SL Operator

These models are supplied with a screwdriver slot face operator that is accessed from inside the duct by removing the grille.



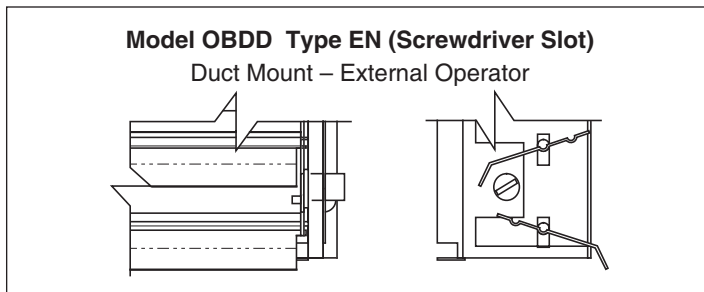
### Type EH Operator

The EH Operator incorporates an external hex device that penetrates the duct wall to provide control. For use with 3/16" (5) Allen key wrench (by others).



### Type EN Operator

The EN Operator incorporates an external (nylon) screwdriver slot device. This device is controlled externally through the duct.



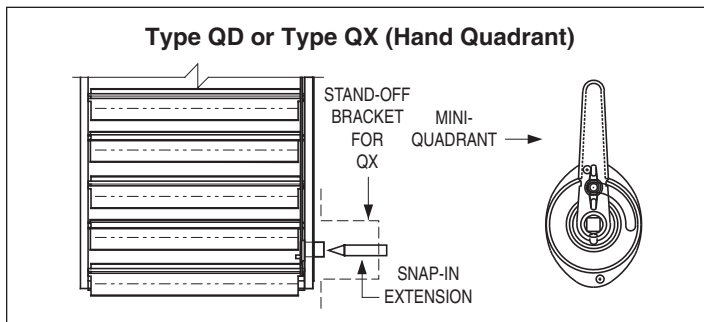
### Type QD Operator \*

The QD Operator includes a nylon snap-in extension that fits an external (nylon) operator. This device also includes a hand locking quadrant operator for control and position indication.

### Type QX Operator \*

The QX Operator includes a nylon snap-in extension that fits an external (nylon) operator. This device also includes a 2" (51) stand-off bracket and hand locking quadrant for control and position indication. To ensure quadrant is located on vertical side of duct, specify damper with blades parallel to the horizontal duct dimension.

\*Not available on Model OBDD-A



## Air Balancing Devices

### OPPOSED BLADE DAMPERS — STAINLESS STEEL

Nailor Stainless Steel Opposed Blade Dampers feature heavy gauge, roll-formed blades and a heavy duty frame in all stainless steel construction. Type 304 stainless steel is standard with Type 316 as an available option.

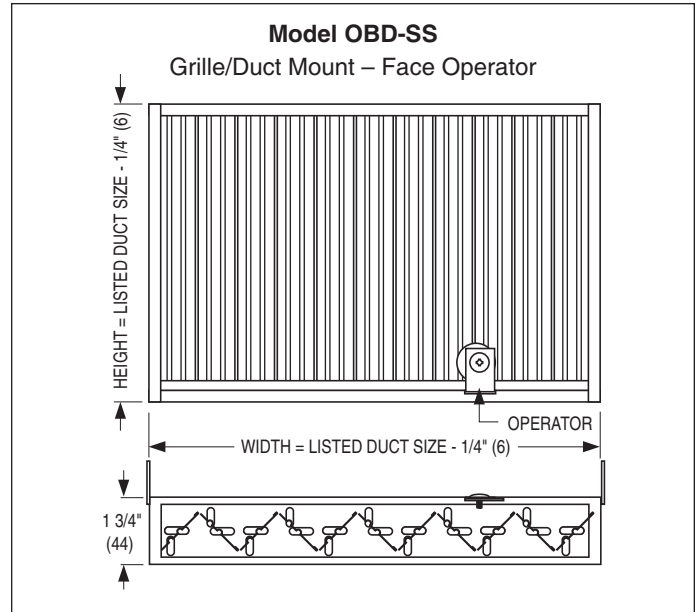
The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

#### GRILLE/DUCT MOUNT MODELS:

##### OBD-SS Stainless Steel

When ordered as part of the stainless steel grille, (using the suffix '-O' on the model number), the dampers are factory welded to the grille frame to provide a secure non-removable connection. If the dampers are ordered separately, they are supplied with mounting tabs. The tabs allow the dampers to be field installed onto a grille or to be mounted independently in the duct, separate from and behind the grille.

All Nailor stainless steel dampers feature a Philip's head screwdriver operator that is accessed through the face of the grille.





## Volume Extractors

### MODEL SERIES

**EX** Blades on 2" centers

**EXD** Blades on 1" centers

The **Model Series EX Volume Extractors** uniformly divert air from the main duct into the branch take-off and across the face of a grille or diffuser. Gang-operated parallel blades available on 2" (51) or 1" (25) centers pivot from full open to full closed with blades overlapping for shut-off. The curved blade design improves airflow by reducing turbulence, thereby reducing noise and pressure drop.

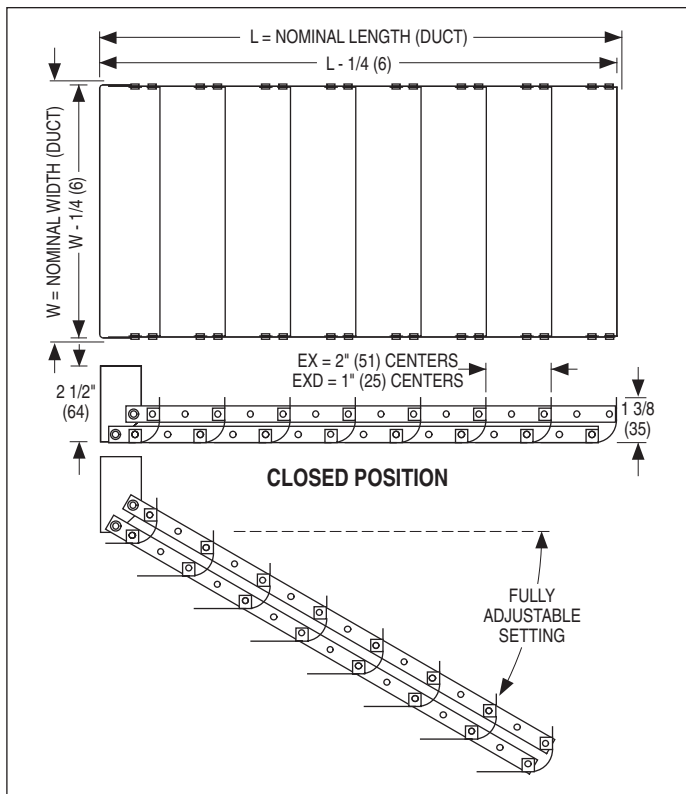
Specify or order: Length x Width. (Length is first dimension. Blades are parallel to width, second dimension).

### FEATURES:

- Material: Galvanized steel.
- Minimum size: 6" x 4" (152 x 102).
- Maximum size: 36" x 36" (914 x 914).

### Operator Types

<p><b>EX/EXD-1</b> Standard unit with adjusting strap.</p>	
<p><b>EX/EXD-1-R</b> Rod operator for external operation.</p>	
<p><b>EX/EXD-2</b> Linkage with 7/16" (11) square hole (2 per unit). Remote operator (eg. Young Regulator #1) by others.</p>	
<p><b>EX/EXD-3</b> Screw gear operator. Adjusts with 3/16" (48) wrench (by others).</p>	



### Optional Accessories

<p><b>RLD</b> Locking device for Models <b>EX/EXD-1-R</b>.</p>	
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# SECURITY PRODUCTS



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<b>Minimum Security Bar Grilles &amp; Registers</b>	
Aluminum • Fixed Bars • 0° Deflection	
Model SG-280 • 1/2" (13) Spacing	<b>G15</b>
Model SG-480 • 1/4" (6) Spacing	<b>G15</b>
<b>Minimum Security Louvered Supply Grilles &amp; Registers</b>	
Double Deflection • 3/4" (19) Spacing • Lattice Face	
Models SG-67DV and H • Stainless Steel	<b>G17</b>
Models SG-61DV and H • Steel	<b>G18</b>
Models SG-51DV and H • Aluminum	<b>G18</b>
Single Deflection • 3/4" (19) Spacing • Lattice Face	
Models SG-61SV and H • Steel	<b>G19</b>
Models SG-51SV and H • Aluminum	<b>G19</b>
<b>Minimum Security Louvered Return Grilles &amp; Registers</b>	
45° Deflection • 3/4" (19) Spacing • Lattice Face	
Models SG-6145H and V • Steel	<b>G20</b>
Models SG-5145H and V • Aluminum	<b>G20</b>
0° Deflection • 3/4" (19) Spacing • Lattice Face	
Models SG-61FH and V • Steel	<b>G21</b>
Models SG-51FH and V • Aluminum	<b>G21</b>
<b>Minimum Security Lattice Face Grilles</b>	
Model SG-LGS • Steel	<b>G22</b>
Model SG-LGA • Aluminum	<b>G22</b>
<b>Options &amp; Accessories</b>	<b>G24</b>

## GENERAL PRODUCT OVERVIEW

### Security Products

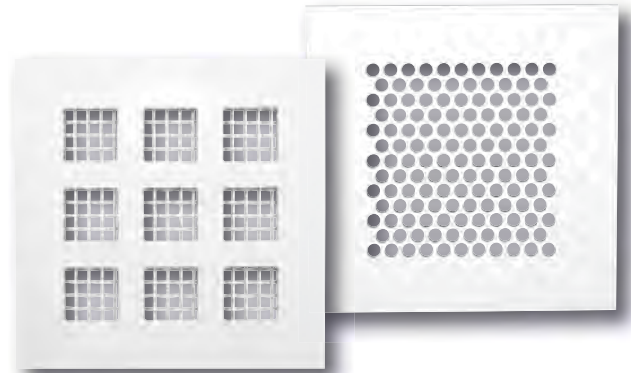
Nailor offers a complete line of Security Grilles, Registers and Diffusers. The product line includes grilles and registers for maximum, medium and minimum security and a diffuser for minimum security applications. The grilles and registers that are for use in the highest security areas are constructed from very heavy gauge welded steel that provides exceptional strength and durability. A wide range of options and accessories are available that can enhance the strength and performance of the grilles and registers.

#### MAXIMUM SECURITY GRILLES & REGISTERS

Nailor's maximum security grilles and registers are constructed from heavy gauge welded steel and are for use in areas where maximum security is vital. These grilles can be used for both supply and return air applications.

**Lattice Face w/Mesh** Model SG-LM  
**Perforated Face Plate** Model SG-PR

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**Page G8**



Models SG-LM & SG-PR



Model SG-BM4

#### MEDIUM/MINIMUM SECURITY GRILLES & REGISTERS

This sidewall bar grille is constructed from 14 gauge steel and has blades that are fixed at 40° or 0° deflection. The louvered blade and steel mesh screen are reinforced with heavy gauge steel mullions and a welded sleeve. These grilles can be used for both supply and return air applications.

**40° Deflection** Model SG-BM4  
**0° Deflection** Model SG-BMZ

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**Page G11**

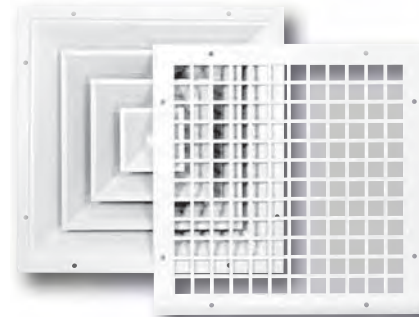
#### MINIMUM SECURITY DIFFUSERS

These diffusers are a combination of a louvered pattern diffuser with a lattice face plate for minimum security protection. The diffusers are available with a choice of 1, 2, 3 or 4-way throw patterns. Use these diffusers in applications where constant supervision occurs.

**Steel** Model SG-6500  
**Aluminum** Model SG-6200

**Page G13**  
**Page G13**

Suffix '-O' adds an opposed blade damper.



Model SG-6500



Model SG-480

#### MINIMUM SECURITY BAR GRILLES & REGISTERS

These minimum security bar grilles are all aluminum rust-proof construction, which makes them ideal for use in showers and wet areas. The frame and blades are welded for extra strength. These grilles have 0° deflection blades that are spaced on either 1/2" (13) or 1/4" (6) centers.

**1/2" (13) Spacing** Model SG-280  
**1/4" (6) Spacing** Model SG-480

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**Page G15**



## MINIMUM SECURITY GRILLES & REGISTERS

These louvered blade grilles and registers are paired up with a lattice face plate to meet minimum security requirements. They are available for both supply and return air applications with a choice of steel or aluminum construction.

### Double Deflection Supply

**Stainless Steel** - Models SG-67DV, 67DH

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**Steel** - Models SG-61DV, SG-61DH

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**Aluminum** - Models SG-51DV, SG-51DH

**Page G18**

Suffix '-O' adds an opposed blade damper.

### Single Deflection Supply

**Steel** - Models SG-61SV, SG-61SH

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**Aluminum** - Models SG-51SV, SG-51SH

**Page G19**

Suffix '-O' adds an opposed blade damper.

### Fixed, 45° Deflection

**Steel** - Models SG-6145H, SG-6145V

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**Aluminum** - Models SG-5145H, SG-5145V

**Page G20**

Suffix '-O' adds an opposed blade damper.

### Fixed, 0° Deflection

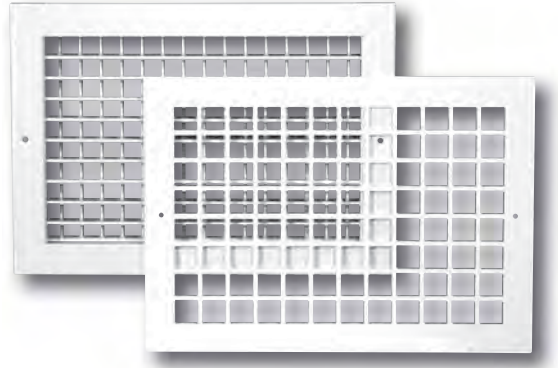
**Steel** - Models SG-61FH, SG-61FV

**Page G21**

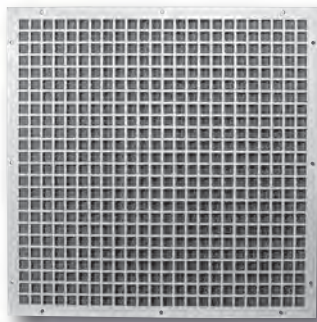
**Aluminum** - Models SG-51FH, SG-51FV

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Suffix '-O' adds an opposed blade damper.



Models SG-67DH, SG-61DH, SG-6145H



Model SG-LGS-B3

## MINIMUM SECURITY LATTICE FACE GRILLES

These lattice face grilles are offered as an economical return air grille for minimum security applications. They are available in heavy gauge steel or heavy gauge aluminum with a selection of hole pattern designs.

**Steel** Model SG-LGS

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**Aluminum** Model SG-LGA

**Page G22**

## OPTIONS & ACCESSORIES

A selection of mounting angles, security bars, opposed blade dampers and directional blades are the enhancements that are offered on the maximum and medium security grilles.

**Mounting Angles**

**Page G24**

**Masonry Anchor Tabs**

**Page G24**

**Security Bars**

**Page G24**

**Opposed Blade Dampers**

**Page G25**

**Directional Blades**

**Page G25**



Options A and J shown

## MAXIMUM SECURITY GRILLES AND REGISTERS

- SUPPLY OR RETURN
- STEEL CONSTRUCTION
- SQUARE LATTICE FACE
- MESH SCREEN

**Model:**  
**SG-LM**



Model SG-LM

Model SG-LM meets the industry standard for maximum security applications. It can be used as a supply or return grille where maximum security is paramount, supervision is minimal and absolute grille integrity must be maintained. These units are constructed of welded heavy gauge steel that allows the grille to become an integral part of the wall structure, providing additional strength.

### STANDARD FEATURES:

- Face Plate: 3/16" (5) steel lattice plate with 2" (51) square holes and 1" (25) fret bars.
- Backer Plate: 3/16" (5) steel lattice plate standard to match face.
- Sleeve: 3/16" (5) steel, of length required, with continuously welded seams and stitch welded to face plate.
- Protective screen sandwiched between face and backer plate.
- 10 gauge x 3/8" (10) clear opening (No. 2 mesh) woven steel wire.

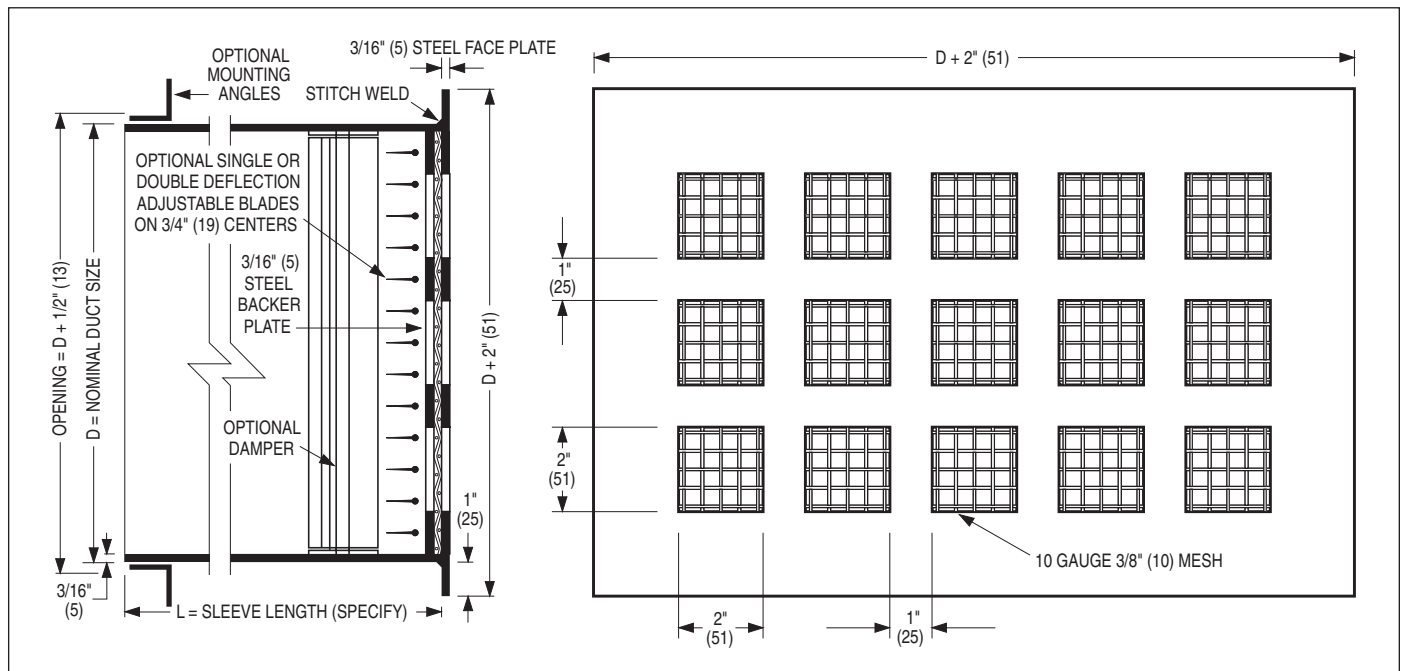
### FINISH OPTIONS:

- Standard finish is prime coat for field painting.

### OPTIONS & ACCESSORIES:

- Mounting Angles: Option A, B or C. See page G24.
- Masonry Anchor Tabs: Option D. See page G24.
- Additional Security Barrier: Option E, F, G or H. See page G24.

- Opposed Blade Damper: Option J, Face operator (screwdriver slot). Option K, Rear operator (screwdriver slot). See page G25.
- Adjustable Blade Packs: Single deflection: Option L, horizontal blades. Option M, vertical blades. Double deflection: Option N, horizontal front blades. Option P, vertical front blades. See page G25.





## PERFORMANCE DATA:

### MODEL SG-LM • SUPPLY

Neck Size	FPM	100	150	200	250	300	350	400	450	500
	<b>Total Pressure</b>	<b>.011</b>	<b>.026</b>	<b>.046</b>	<b>.072</b>	<b>.103</b>	<b>.141</b>	<b>.184</b>	<b>.232</b>	<b>.287</b>
6 x 6	<b>CFM</b>	<b>25</b>	<b>38</b>	<b>50</b>	<b>63</b>	<b>75</b>	<b>88</b>	<b>100</b>	<b>113</b>	<b>125</b>
	<b>Noise Criteria</b>	–	–	–	–	19	23	27	30	33
	<b>Throw</b>	2-3-6	3-5-10	4-6-12	5-8-13	6-10-14	8-11-15	9-12-17	10-12-17	11-12-18
9 x 6	<b>CFM</b>	<b>38</b>	<b>56</b>	<b>75</b>	<b>94</b>	<b>113</b>	<b>131</b>	<b>150</b>	<b>169</b>	<b>188</b>
	<b>Noise Criteria</b>	–	–	–	16	21	25	29	32	35
	<b>Throw</b>	2-4-8	4-6-12	5-8-14	7-10-16	8-12-17	9-14-19	11-14-20	12-15-21	13-16-23
12 x 6	<b>CFM</b>	<b>50</b>	<b>75</b>	<b>100</b>	<b>125</b>	<b>150</b>	<b>175</b>	<b>200</b>	<b>225</b>	<b>250</b>
	<b>Noise Criteria</b>	–	–	–	19	25	29	32	34	38
	<b>Throw</b>	3-4-9	4-7-13	6-9-16	8-12-18	9-14-20	11-15-22	13-16-24	14-19-25	15-18-26
15 x 6	<b>CFM</b>	<b>63</b>	<b>94</b>	<b>125</b>	<b>156</b>	<b>188</b>	<b>219</b>	<b>250</b>	<b>281</b>	<b>313</b>
	<b>Noise Criteria</b>	–	–	15	21	26	30	34	37	40
	<b>Throw</b>	3-5-10	5-8-15	7-10-18	9-12-21	10-15-23	12-17-25	13-18-26	15-19-28	17-21-29
18 x 6	<b>CFM</b>	<b>75</b>	<b>113</b>	<b>150</b>	<b>188</b>	<b>225</b>	<b>263</b>	<b>300</b>	<b>338</b>	<b>375</b>
	<b>Noise Criteria</b>	–	–	16	22	27	31	35	38	41
	<b>Throw</b>	3-5-11	5-8-16	7-11-20	9-13-23	11-16-25	13-19-27	14-20-29	16-21-30	18-23-32
21 x 6	<b>CFM</b>	<b>88</b>	<b>131</b>	<b>175</b>	<b>219</b>	<b>263</b>	<b>306</b>	<b>350</b>	<b>394</b>	<b>438</b>
	<b>Noise Criteria</b>	–	–	17	23	28	32	35	39	41
	<b>Throw</b>	4-6-12	6-9-18	8-12-22	10-15-25	12-18-27	14-20-29	17-22-31	18-23-33	20-25-34
24 x 6	<b>CFM</b>	<b>100</b>	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	<b>Noise Criteria</b>	–	–	17	23	38	32	36	39	42
	<b>Throw</b>	4-6-13	6-10-19	9-13-24	11-16-26	13-19-29	15-22-31	17-24-33	19-25-35	22-26-37
9 x 9	<b>CFM</b>	<b>56</b>	<b>84</b>	<b>113</b>	<b>141</b>	<b>169</b>	<b>197</b>	<b>225</b>	<b>253</b>	<b>281</b>
	<b>Noise Criteria</b>	–	–	–	20	25	29	33	36	39
	<b>Throw</b>	3-5-10	5-7-14	6-10-17	8-12-19	10-14-21	12-16-23	13-17-25	14-18-27	16-19-28
12 x 9	<b>CFM</b>	<b>75</b>	<b>113</b>	<b>150</b>	<b>188</b>	<b>225</b>	<b>263</b>	<b>300</b>	<b>338</b>	<b>375</b>
	<b>Noise Criteria</b>	–	–	16	22	27	31	35	38	41
	<b>Throw</b>	3-5-11	5-8-16	7-11-20	9-14-23	11-16-25	13-19-27	14-20-29	16-21-30	18-23-32
15 x 9	<b>CFM</b>	<b>94</b>	<b>141</b>	<b>188</b>	<b>234</b>	<b>281</b>	<b>328</b>	<b>375</b>	<b>422</b>	<b>469</b>
	<b>Noise Criteria</b>	–	–	16	23	28	32	36	39	42
	<b>Throw</b>	4-6-12	6-10-19	8-12-23	11-15-26	12-19-28	14-21-30	16-23-32	19-24-34	21-26-36
18 x 9	<b>CFM</b>	<b>113</b>	<b>169</b>	<b>225</b>	<b>281</b>	<b>338</b>	<b>394</b>	<b>450</b>	<b>506</b>	<b>563</b>
	<b>Noise Criteria</b>	–	–	18	24	29	33	37	40	43
	<b>Throw</b>	4-7-13	7-10-20	9-13-25	12-17-28	13-20-30	16-23-33	18-25-35	20-21-37	23-28-39
21 x 9	<b>CFM</b>	<b>131</b>	<b>197</b>	<b>263</b>	<b>328</b>	<b>394</b>	<b>459</b>	<b>525</b>	<b>591</b>	<b>656</b>
	<b>Noise Criteria</b>	–	–	19	25	30	34	35	41	44
	<b>Throw</b>	5-7-14	7-11-22	10-14-27	13-18-30	14-22-33	17-25-35	20-27-38	22-29-40	25-30-43
24 x 9	<b>CFM</b>	<b>150</b>	<b>225</b>	<b>300</b>	<b>375</b>	<b>450</b>	<b>525</b>	<b>600</b>	<b>675</b>	<b>750</b>
	<b>Noise Criteria</b>	–	–	19	25	30	35	38	41	44
	<b>Throw</b>	5-8-15	8-12-24	11-15-29	13-20-32	15-24-35	18-27-38	21-29-41	24-30-43	26-32-46
12 x 12	<b>CFM</b>	<b>100</b>	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>400</b>	<b>450</b>	<b>500</b>
	<b>Noise Criteria</b>	–	–	17	23	28	32	36	39	42
	<b>Throw</b>	4-6-13	6-10-19	9-12-24	11-16-26	13-19-29	15-22-32	17-24-34	19-25-36	21-26-38
15 x 12	<b>CFM</b>	<b>125</b>	<b>188</b>	<b>250</b>	<b>313</b>	<b>375</b>	<b>438</b>	<b>500</b>	<b>563</b>	<b>625</b>
	<b>Noise Criteria</b>	–	–	18	24	29	34	37	40	43
	<b>Throw</b>	5-7-13	7-11-22	10-14-26	12-18-30	14-22-33	17-25-35	19-26-38	22-28-40	24-30-42
18 x 12	<b>CFM</b>	<b>150</b>	<b>225</b>	<b>300</b>	<b>375</b>	<b>450</b>	<b>525</b>	<b>600</b>	<b>675</b>	<b>750</b>
	<b>Noise Criteria</b>	–	–	19	25	30	35	38	41	44
	<b>Throw</b>	5-8-15	8-12-24	11-15-29	13-20-33	15-24-36	18-27-39	21-29-41	24-30-43	26-32-46
21 x 12	<b>CFM</b>	<b>175</b>	<b>263</b>	<b>350</b>	<b>438</b>	<b>525</b>	<b>613</b>	<b>700</b>	<b>788</b>	<b>875</b>
	<b>Noise Criteria</b>	–	–	20	26	31	35	39	42	45
	<b>Throw</b>	6-9-17	9-12-26	12-17-31	14-21-34	17-26-38	20-29-41	23-31-44	26-33-47	29-34-50
24 x 12	<b>CFM</b>	<b>200</b>	<b>300</b>	<b>400</b>	<b>500</b>	<b>600</b>	<b>700</b>	<b>800</b>	<b>900</b>	<b>1000</b>
	<b>Noise Criteria</b>	–	–	21	27	32	36	40	43	46
	<b>Throw</b>	6-9-18	9-13-28	12-18-33	15-23-37	18-28-41	21-31-44	25-33-48	28-35-50	30-37-52

### Performance Notes:

- All pressure are in inches w.g..
- Performance data is based on supply air and standard construction.
- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Return Performance: Negative static pressure approximates to listed total pressure. Add + 2 to listed Noise Criteria value.
- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts.
- Dash (–) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



## PERFORMANCE DATA:

### MODEL SG-LM • SUPPLY

Neck Size	FPM	100	150	200	250	300	350	400	450	500
	Total Pressure	.011	.026	.046	.072	.103	.141	.184	.232	.287
15 x 15	CFM	156	234	313	391	469	547	625	703	781
	Noise Criteria	–	–	20	26	31	35	38	42	44
	Throw	5-8-16	8-12-24	11-16-30	13-20-32	16-24-37	19-28-39	22-30-42	24-31-44	27-32-47
18 x 15	CFM	188	281	375	469	563	656	750	844	938
	Noise Criteria	–	–	21	27	32	36	39	43	45
	Throw	6-9-17	9-13-27	12-17-32	14-22-36	17-27-39	21-30-43	24-32-46	27-34-49	30-36-52
21 x 15	CFM	219	328	438	547	656	766	875	984	1094
	Noise Criteria	–	–	21	27	32	37	40	43	46
	Throw	6-10-19	10-14-29	13-19-34	16-24-39	19-29-43	22-32-46	26-34-50	29-37-53	31-39-56
24 x 15	CFM	250	375	500	625	750	875	1000	1125	1250
	Noise Criteria	–	–	22	28	33	37	41	42	47
	Throw	7-10-20	10-15-30	13-20-37	17-26-42	20-30-46	24-34-50	28-37-53	30-39-57	34-42-60
18 x 18	CFM	225	338	450	563	675	788	900	1013	1125
	Noise Criteria	–	–	22	28	33	37	40	43	46
	Throw	6-10-19	10-14-29	13-19-35	16-24-39	19-30-43	23-33-47	26-35-51	30-37-54	32-39-57
21 x 18	CFM	263	394	525	656	788	919	1050	1181	1313
	Noise Criteria	–	–	22	28	33	37	41	44	47
	Throw	7-11-21	11-15-31	14-21-38	17-26-43	21-31-47	25-35-51	28-38-55	31-40-58	34-43-62
24 x 18	CFM	300	450	600	750	900	1050	1200	1350	1500
	Noise Criteria	–	15	23	29	34	38	42	45	48
	Throw	7-11-22	11-16-33	15-22-41	18-28-46	22-33-51	26-38-55	30-41-59	33-43-62	37-46-66
21 x 21	CFM	306	459	613	766	919	1072	1225	1378	1531
	Noise Criteria	–	15	23	29	34	38	42	45	48
	Throw	8-12-24	12-17-34	15-23-41	19-29-46	22-34-51	27-39-55	30-41-59	34-44-63	37-46-67
24 x 21	CFM	350	525	700	875	1050	1225	1400	1575	1750
	Noise Criteria	–	16	24	30	35	39	43	46	49
	Throw	8-12-25	12-18-36	16-24-44	20-30-50	24-36-55	29-41-59	33-45-64	36-47-68	40-50-71
24 x 24	CFM	400	600	800	1000	1200	1400	1600	1800	2000
	Noise Criteria	–	17	25	31	36	40	43	46	49
	Throw	9-13-26	13-19-39	17-26-48	22-33-53	26-39-59	31-44-64	35-48-68	39-51-73	43-53-77

#### Performance Notes:

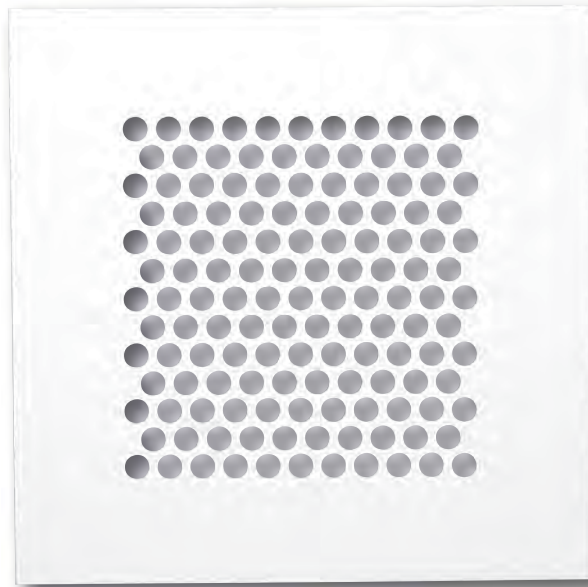
- All pressure are in inches w.g..
- Performance data is based on supply air and standard construction.
- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Return Performance:  
Negative static pressure approximates to listed total pressure.  
Add + 2 to listed Noise Criteria value.
- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts.

- Dash (–) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## MAXIMUM SECURITY GRILLES AND REGISTERS

- SUPPLY OR RETURN
- STEEL CONSTRUCTION
- PERFORATED FACE

**Model:**  
**SG-PR**



Model SG-PR

Model SG-PR is utilized in maximum security areas. Its design features a perforated face plate with 5/16" (8) dia. holes that allows a greater effective free area, but still upholds the required level of security and safety. It can be used as a supply or return grille. These units are constructed of welded heavy gauge steel that allows the grille to become an integral part of the wall structure, providing additional strength.

### STANDARD FEATURES:

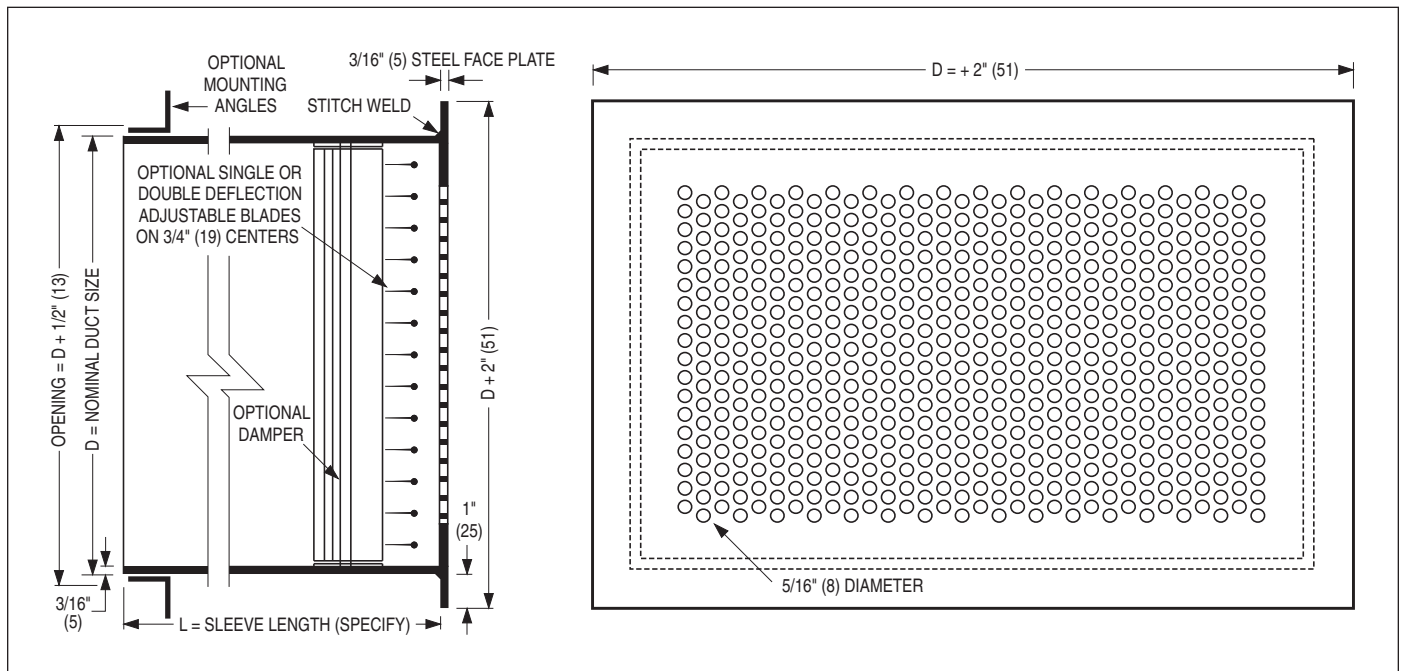
- Face Plate: 3/16" (5) steel lattice plate with 5/16" (8) dia. holes on staggered 7/16" (11) centers.
- Sleeve: 3/16" (5) steel, of length required, with continuously welded seams and stitch welded to face plate.

### FINISH OPTIONS:

- Standard finish is prime coat for field painting.

### OPTIONS & ACCESSORIES:

- Mounting Angles: Option A, B or C. See page G24.
- Masonry Anchor Tabs: Option D. See page G24.
- Additional Security Barrier: Option E, F, G or H. See page G24.
- Opposed Blade Damper: Option J, Face operator (screwdriver slot).
- Option K, Rear operator (screwdriver slot). See page G25.
- Adjustable Blade Packs: Single deflection: Option L, horizontal blades. Option M, vertical blades. Double deflection: Option N, horizontal front blades. Option P, vertical front blades. See page G25.



## PERFORMANCE DATA:

### MODEL SG-PR • SUPPLY

Neck Size	FPM	100	150	200	250	300	350	400	450	500
	Total Pressure	.005	.011	.020	.031	.044	.060	.079	.100	.123
6 x 6	CFM	25	38	50	63	75	88	100	113	125
	Noise Criteria	-	-	-	-	-	16	20	24	27
	Throw	1-2-5	2-3-7	3-5-10	4-6-12	5-7-12	5-8-13	6-10-14	7-11-15	8-12-16
9 x 6	CFM	38	56	75	94	113	131	150	169	188
	Noise Criteria	-	-	-	-	-	18	22	25	29
	Throw	2-3-6	3-4-9	4-6-12	5-7-14	6-9-15	7-10-17	8-12-18	9-13-19	10-14-20
12 x 6	CFM	50	75	100	125	150	175	200	225	250
	Noise Criteria	-	-	-	-	15	19	23	27	30
	Throw	2-3-7	3-5-10	4-7-13	6-9-16	7-10-18	8-12-10	9-13-21	10-15-22	12-16-24
15 x 6	CFM	63	94	125	156	188	219	250	281	313
	Noise Criteria	-	-	-	-	16	20	24	28	31
	Throw	2-4-8	4-6-12	5-8-17	6-10-18	8-12-20	9-13-22	10-15-24	12-17-25	13-18-27
18 x 6	CFM	75	113	150	188	225	263	300	338	375
	Noise Criteria	-	-	-	-	17	21	25	28	32
	Throw	2-4-8	4-6-12	5-8-16	7-11-20	8-12-22	10-14-24	11-16-26	12-18-28	13-20-29
21 x 6	CFM	88	131	175	219	263	306	350	394	438
	Noise Criteria	-	-	-	-	18	22	26	29	32
	Throw	3-4-9	4-7-13	6-9-18	7-11-22	9-13-24	11-15-26	12-18-28	13-20-29	14-22-31
24 x 6	CFM	100	150	200	250	300	350	400	450	500
	Noise Criteria	-	-	-	-	18	22	26	30	33
	Throw	3-5-10	5-7-14	6-10-19	8-12-24	10-14-26	11-16-28	13-19-29	14-21-33	16-24-34

9 x 9	CFM	56	84	113	141	169	197	225	253	281
	Noise Criteria	-	-	-	-	15	20	24	27	30
	Throw	2-3-7	3-5-11	5-7-14	6-9-17	7-11-19	8-12-21	10-14-22	11-16-24	12-17-25
12 x 9	CFM	75	113	150	188	225	263	300	338	375
	Noise Criteria	-	-	-	-	17	21	25	28	32
	Throw	2-4-8	4-6-12	5-8-16	7-11-20	8-12-22	10-14-24	11-16-26	12-18-28	13-20-29
15 x 9	CFM	94	141	188	234	281	328	375	422	469
	Noise Criteria	-	-	-	-	18	22	26	29	33
	Throw	3-4-9	4-7-13	6-9-18	8-12-23	9-13-25	11-16-27	12-18-29	13-21-30	15-23-32
18 x 9	CFM	113	169	225	281	338	394	450	506	563
	Noise Criteria	-	-	-	-	18	23	27	30	33
	Throw	3-5-10	5-8-15	7-10-20	9-12-25	10-15-28	12-17-29	13-20-31	15-23-33	17-25-35
21 x 9	CFM	131	197	263	328	394	459	525	591	656
	Noise Criteria	-	-	-	-	19	24	27	31	34
	Throw	3-5-11	5-8-16	7-11-22	9-13-27	11-16-29	12-19-32	14-22-34	16-25-36	18-27-38
24 x 9	CFM	150	225	300	375	450	525	600	675	750
	Noise Criteria	-	-	-	-	19	24	28	31	35
	Throw	4-6-12	6-9-17	8-12-23	10-14-29	12-17-31	13-20-34	15-23-36	17-27-39	19-29-41

12 x 12	CFM	100	150	200	250	300	350	400	450	500
	Noise Criteria	-	-	-	-	18	22	26	30	33
	Throw	3-5-10	5-7-14	6-10-19	8-12-24	10-14-26	11-16-28	12-19-29	14-21-31	16-24-33
15 x 12	CFM	125	188	250	313	375	438	500	563	625
	Noise Criteria	-	-	-	-	19	23	27	31	34
	Throw	3-5-11	5-8-16	7-11-21	9-13-27	11-16-29	12-18-31	14-21-33	16-24-35	18-27-37
18 x 12	CFM	150	225	300	375	450	525	600	675	750
	Noise Criteria	-	-	-	-	20	24	28	31	35
	Throw	4-6-12	6-9-17	8-12-23	10-14-29	12-17-31	13-20-34	15-23-36	17-27-39	19-29-41
21 x 12	CFM	175	263	350	438	525	613	700	788	875
	Noise Criteria	-	-	-	15	21	25	29	32	35
	Throw	4-6-12	6-10-19	8-13-25	11-15-31	12-19-34	14-22-37	16-25-39	19-29-42	21-32-44
24 x 12	CFM	200	300	400	500	600	700	800	900	1000
	Noise Criteria	-	-	-	15	21	25	29	33	36
	Throw	4-7-13	7-10-20	9-14-27	12-17-33	14-20-36	15-24-39	18-27-42	20-30-45	23-33-48

#### Performance Notes:

1. All pressure are in inches w.g..
2. Performance data is based on supply air and standard construction.
3. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

4. Return Performance:  
Negative static pressure approximates to listed total pressure.  
Add + 2 to listed Noise Criteria value.
5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts.

- Dash (-) in space indicates a Noise Criteria of less than 15.
6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA:

### MODEL SG-PR • SUPPLY

Neck Size	FPM	100	150	200	250	300	350	400	450	500
	Total Pressure	.011	.026	.046	.072	.103	.141	.184	.232	.287
15 x 15	CFM	156	234	313	391	469	547	625	703	781
	Noise Criteria	–	–	–	–	20	24	28	32	35
	Throw	4-6-12	6-9-18	8-12-24	10-14-29	12-18-32	14-21-35	16-24-37	18-27-40	20-29-42
18 x 15	CFM	188	281	375	469	563	656	750	844	938
	Noise Criteria	–	–	–	15	21	25	29	32	35
	Throw	4-6-13	6-10-19	9-13-26	11-16-33	13-19-36	15-23-38	17-26-41	19-29-44	22-33-46
21 x 15	CFM	219	328	438	547	656	766	875	984	1094
	Noise Criteria	–	–	–	15	21	26	30	33	36
	Throw	5-7-14	7-11-22	10-14-28	12-17-35	14-21-38	16-25-42	19-29-44	21-31-47	24-35-50
24 x 15	CFM	250	375	500	625	750	875	1000	1125	1250
	Noise Criteria	–	–	–	16	22	26	30	34	37
	Throw	5-8-15	8-12-23	10-15-29	13-19-37	15-23-41	17-27-44	20-30-48	23-34-51	25-37-54
18 x 18	CFM	225	338	450	563	675	788	900	1013	1125
	Noise Criteria	–	–	–	16	21	26	30	33	36
	Throw	5-7-14	7-11-21	10-14-29	11-18-35	14-21-39	16-25-42	19-28-45	21-32-48	24-35-51
21 x 18	CFM	263	394	525	656	788	919	1050	1181	1313
	Noise Criteria	–	–	–	17	22	26	30	34	37
	Throw	5-8-15	8-12-23	11-15-31	12-19-38	15-23-42	18-27-46	21-31-49	23-35-52	25-38-55
24 x 18	CFM	300	450	600	750	900	1050	1200	1350	1500
	Noise Criteria	–	–	–	17	23	27	31	34	38
	Throw	5-8-16	8-13-25	11-16-34	13-21-41	16-25-45	19-29-49	22-34-52	25-37-56	28-41-59
21 x 21	CFM	306	459	613	766	919	1072	1225	1378	1531
	Noise Criteria	–	–	–	18	23	27	31	35	38
	Throw	5-8-16	8-13-25	11-16-33	13-21-41	16-25-46	19-29-49	22-34-53	25-38-56	29-41-59
24 x 21	CFM	350	525	700	875	1050	1225	1400	1575	1750
	Noise Criteria	–	–	–	18	23	28	32	35	38
	Throw	6-9-18	9-14-27	12-18-36	14-22-44	18-27-49	21-31-53	24-36-57	27-40-60	30-44-64
24 x 24	CFM	400	600	800	1000	1200	1400	1600	1800	2000
	Noise Criteria	–	–	–	18	24	28	32	36	39
	Throw	6-10-19	10-14-29	13-19-39	16-24-48	19-29-52	22-33-57	2-38-61	28-43-65	33-48-68

#### Performance Notes:

- All pressure are in inches w.g..
- Performance data is based on supply air and standard construction.
- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Return Performance:  
Negative static pressure approximates to listed total pressure.  
Add + 2 to listed Noise Criteria value.
- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts.
- Dash (–) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

**MEDIUM / MINIMUM SECURITY GRILLES AND REGISTERS**

- SUPPLY OR RETURN
- STEEL CONSTRUCTION
- FIXED BARS

**Models:**

- SG-BM4** 40° deflection
- SG-BMZ** 0° deflection



Model SG-BM4

Model Series SG-BM may be used for sidewall applications in medium or minimum security areas. Model Series SG-BM construction includes a stamped, heavy gauge steel, one piece frame welded to the sleeve. The louvered bars and steel mesh screen are reinforced with heavy gauge steel support mullions on 3" (76) maximum centers and welded to a steel sleeve passing through the wall. This design makes the Model Series SG-BM the highest quality standard security grille of its kind, providing exceptional strength and impact resistance.

**STANDARD FEATURES:**

- Face Plate (frame) constructed from 14 gauge steel.
- 1/2" (13) x 14 gauge blades on 1/2" (13) centers passing through 14 gauge vertical support bars on 3" (76) centers. Blades are fixed at 40° or 0° deflection.
- Sleeve: 14 gauge steel, of length required, with welded seams and welded to face plate.

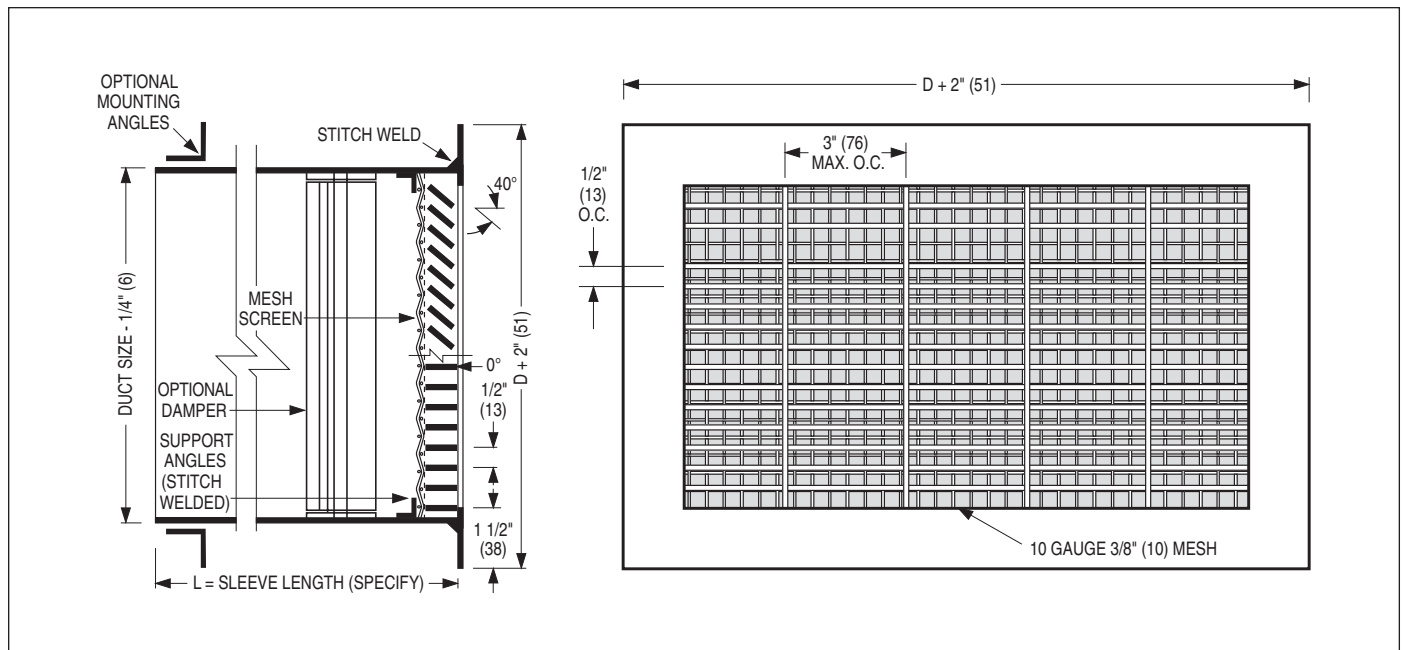
- Protective screen behind face bars of 10 gauge x 3/8" (10) clear opening (No. 2 mesh) woven steel wire, secured in place by stitch welded support angles.

**FINISH OPTIONS:**

- Standard finish is prime coat for field painting.

**OPTIONS & ACCESSORIES:**

- Mounting Angles: Option A, B or C. See page G24.
- Masonry Anchor Tabs: Option D. See page G24.
- Additional Security Barrier: Option E or F. See page G24.
- Opposed Blade Damper: Face operator (lever): Option J, Rear operator (screwdriver slot): Option K, See page G25.





## PERFORMANCE DATA:

### MODEL SG-BM4 • SUPPLY

Core Area Sq. Feet	Nominal Duct Size, Inches		Core Velocity	300	400	500	600	800	1000	1200
			Total Pressure	.041	.067	.108	.149	.27	.420	.615
.18	8 x 4	6 x 6	CFM	55	70	90	110	145	180	215
			Noise Criteria	–	–	21	27	36	42	48
			Throw	5-8-12	7-9-13	9-11-15	10-12-16	11-13-19	13-15-21	14-16-23
.39	18 x 4	12 x 6	CFM	115	155	195	235	310	390	470
			Noise Criteria	–	–	25	30	39	45	52
			Throw	8-12-16	11-13-20	12-15-22	14-17-24	16-19-28	17-21-31	19-24-33
.52	24 x 4	16 x 6	CFM	155	210	260	310	415	520	625
			Noise Criteria	–	–	26	31	40	46	53
			Throw	9-13-19	12-16-23	13-17-24	16-19-28	18-21-31	21-26-36	24-29-4
1.18	14 x 12	16 x 12	CFM	355	470	590	710	945	1180	1420
			Noise Criteria	–	23	29	34	43	50	55
			Throw	13-20-30	17-24-33	22-27-38	25-30-42	29-33-48	32-38-54	34-41-58
1.60	30 x 8	24 x 10	CFM	480	640	800	960	1280	1600	1920
			Noise Criteria	–	27	33	38	47	53	59
			Throw	14-22-33	20-29-40	24-31-45	29-35-50	32-40-55	37-45-64	38-48-68
2.78	30 x 14	24 x 18	CFM	835	1110	1320	1676	2220	2780	3340
			Noise Criteria	–	27	33	38	47	53	60
			Throw	20-30-46	26-35-55	31-40-58	37-47-69	45-55-78	48-60-85	54-66-91
4.29	30 x 22	28 x 24	CFM	1290	1720	2140	2570	3430	4290	5150
			Noise Criteria	20	28	35	40	49	55	61
			Throw	24-36-55	32-42-61	41-51-72	46-56-80	51-62-87	58-71-97	67-82-111

### MODEL SG-BM4 • RETURN

Core Area Sq. Feet	Nominal Duct Size, Inches		Core Velocity	200	300	400	500	600	800	1000
			Neg. Static Pressu	.018	.055	.091	.146	.200	.364	.565
.18	8 x 4	6 x 6	CFM	35	55	70	90	110	145	180
			Noise Criteria	–	–	–	25	29	36	42
			CFM	80	115	155	195	235	310	390
.39	18 x 4	12 x 6	Noise Criteria	–	–	25	31	35	42	48
			CFM	105	155	210	260	310	415	520
			Noise Criteria	–	–	26	32	37	44	49
1.18	14 x 14	16 x 12	CFM	235	355	470	590	710	945	1180
			Noise Criteria	–	26	32	37	43	50	55
			CFM	320	480	640	800	960	1280	1600
1.60	30 x 8	24 x 10	Noise Criteria	–	28	34	40	45	52	58
			CFM	555	835	1110	1390	1670	2220	2780
			Noise Criteria	20	32	38	44	49	56	61
2.78	30 x 14	24 x 18	CFM	860	1290	1720	2140	2570	3430	4290
			Noise Criteria	24	35	41	47	52	60	64

#### Performance Notes:

- All pressure are in inches w.g..
- Core Velocity is in feet per minute
- Throws are given at 150, 100 and 50 fpm terminal velocities.
- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (–) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

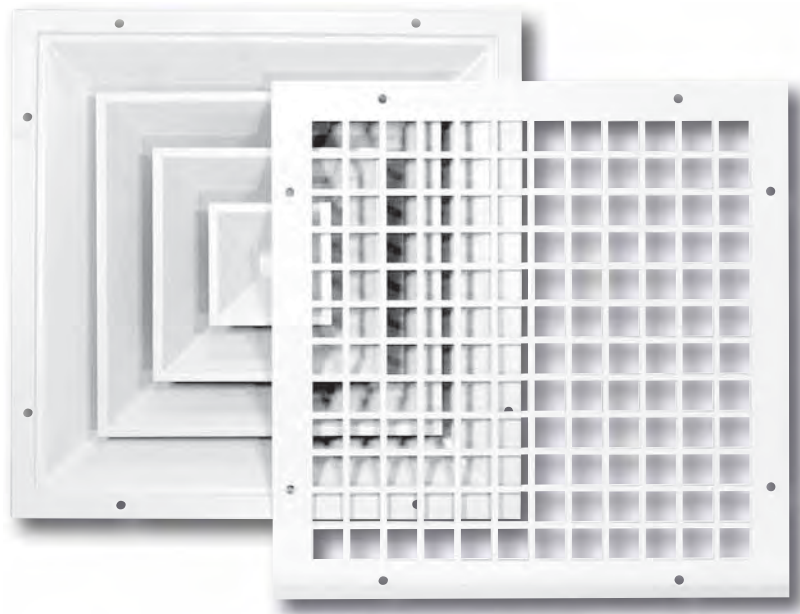
## MINIMUM SECURITY DIFFUSERS

- LOUVERED CORE
- LATTICE FACE
- 1, 2, 3 OR 4-WAY BLOW PATTERN

### Models:

- SG-6500 Steel
- SG-6200 Aluminum

- Suffix '-O' adds an opposed blade damper



Model SG-6500

Model SG-6500 is most often used in minimum security areas such as lobbies and foyers where constant supervision is required. This ceiling diffuser assembly combines the high performance Model Series 6500 Pattern Diffuser with a heavy gauge steel lattice grille mounted on the diffuser face. Also available in aluminum construction as Model SG-6200.

### STANDARD FEATURES:

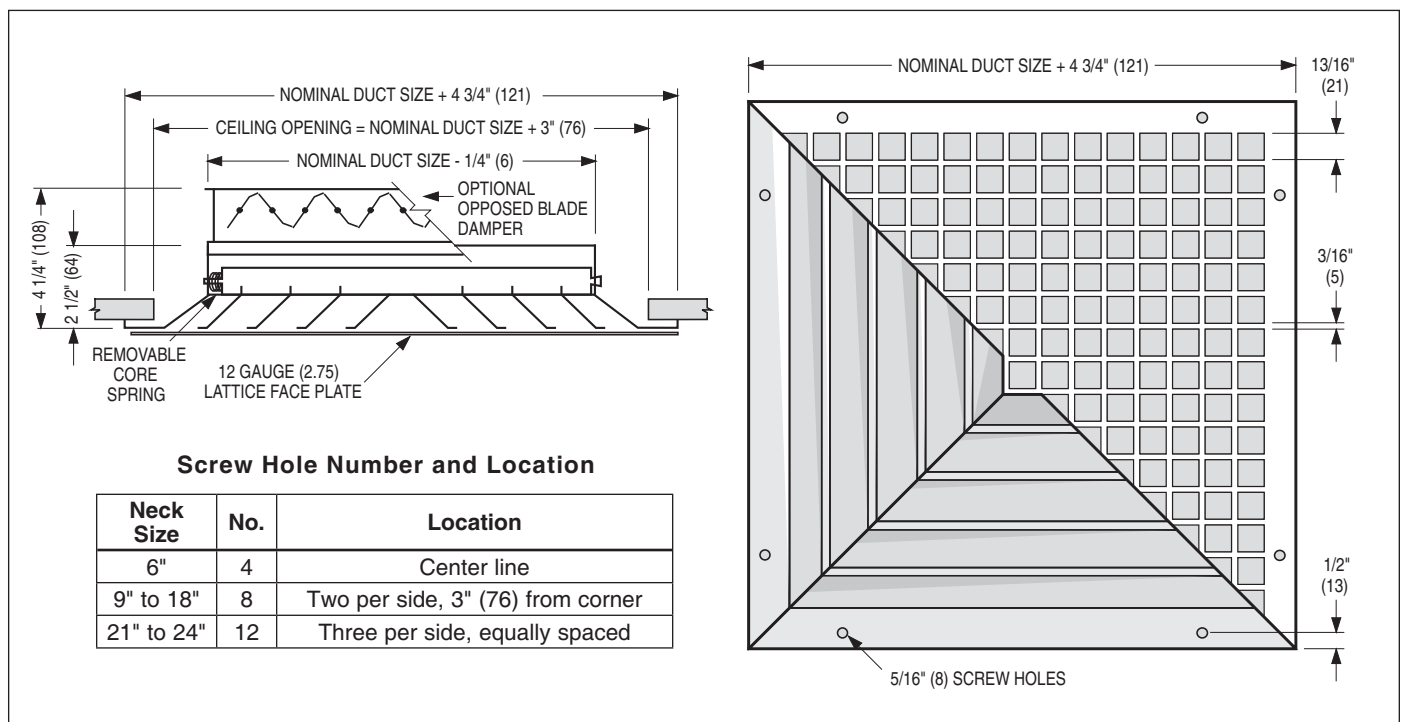
- Model Series 6500 or 6200 diffusers with Frame Type S and 1, 2, 3 or 4-way blow pattern.
- Face plate is constructed of 12 gauge steel with 13/16" (21) square holes on 1" (25) centers. 3/16" (5) fret bars.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.
- Available in square neck sizes 6" x 6" (152 x 152) through 24" x 24" (610 x 610) in 3" (76) increments.

### FINISH OPTIONS:

- Standard finish is AW Appliance White. Other finishes are available.

### OPTIONS & ACCESSORIES:

- Opposed blade damper. Adjustable from the face with lattice and core removed.



## PERFORMANCE DATA:

### MODELS SG-6500 AND SG-6200

Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Total Pressure	.006	.022	.049	.087	.134	.193	.270
6 x 6 .25 Sq. ft.	CFM	25	50	75	100	125	150	175
	Noise Criteria	–	–	–	–	23	30	34
	Throw	1-1-2	1-2-3	1-3-5	3-5-7	3-6-8	4-7-10	5-7-11
9 x 9 .56 Sq. ft.	CFM	55	110	170	225	280	335	390
	Noise Criteria	–	–	–	22	29	36	40
	Throw	1-1-2	1-3-5	3-5-7	5-7-10	6-8-12	7-10-15	8-10-17
12 x 12 1.0 Sq. ft.	CFM	100	200	300	400	500	600	700
	Noise Criteria	–	–	–	26	34	40	45
	Throw	1-1-2	2-4-5	4-6-9	6-9-12	7-10-15	9-13-20	10-13-21
15 x 15 1.56 Sq. ft.	CFM	155	310	470	625	780	935	1090
	Noise Criteria	–	–	21	29	37	43	48
	Throw	1-2-4	2-5-8	4-8-12	8-11-13	10-13-21	11-16-26	13-18-29
18 x 18 2.25 Sq. ft.	CFM	225	450	675	900	1125	1350	1575
	Noise Criteria	–	–	24	34	41	45	51
	Throw	1-2-4	3-7-11	5-9-15	8-12-20	11-16-27	13-19-31	14-21-35
21 x 21 3.06 Sq. ft.	CFM	305	610	920	1225	1530	1835	2140
	Noise Criteria	–	–	26	35	43	48	53
	Throw	1-3-5	3-8-12	7-11-18	10-15-24	13-20-29	15-22-36	17-24-40
24 x 24 4.0 Sq. ft.	CFM	400	800	1200	1600	2000	2400	2800
	Noise Criteria	–	–	28	37	44	50	54
	Throw	1-3-5	4-6-13	8-12-21	12-15-28	16-22-35	18-26-42	20-29-45

#### Performance Notes:

- All pressure are in inches w.g..
- Throws are given at 150, 100 and 50 fpm terminal velocities.
- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (–) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## MINIMUM SECURITY GRILLES AND REGISTERS

- SUPPLY OR RETURN
- ALUMINUM CONSTRUCTION
- FIXED BARS 0° DEFLECTION

### Models:

**SG-280** 1/2" (13) spacing

**SG-480** 1/4" (6) spacing



Model SG-480

Models SG-280 and SG-480 are all aluminum minimum security grilles. Rust-proof construction makes these models ideal for use in showers and wet areas where they are constantly exposed to humid conditions. Models have fixed 1/8" (3) thick, extruded horizontal bars on 1/4" (6) or 1/2" (13) centers. They are fixed at 0° deflection and are individually welded to their cross-bar spacers, which in turn are supported by heavy duty extruded aluminum members welded to the grille frame. This grille is securely fastened with a heavy gauge aluminum sleeve welded to the grille frame which passes through the wall. The sleeve is fastened with an optional extruded aluminum wall flange on the reverse side.

### STANDARD FEATURES:

- Frame: Heavy gauge extruded aluminum with welded mitered corners.
- Bars: 1/8" (3) thick extruded aluminum on 1/4" (6) or 1/2" (13) centers, welded to cross-bars and supported by 1 1/8" x 3/8" (29 x 10) heavy duty extruded support members on maximum 6" (152) centers welded to frame.

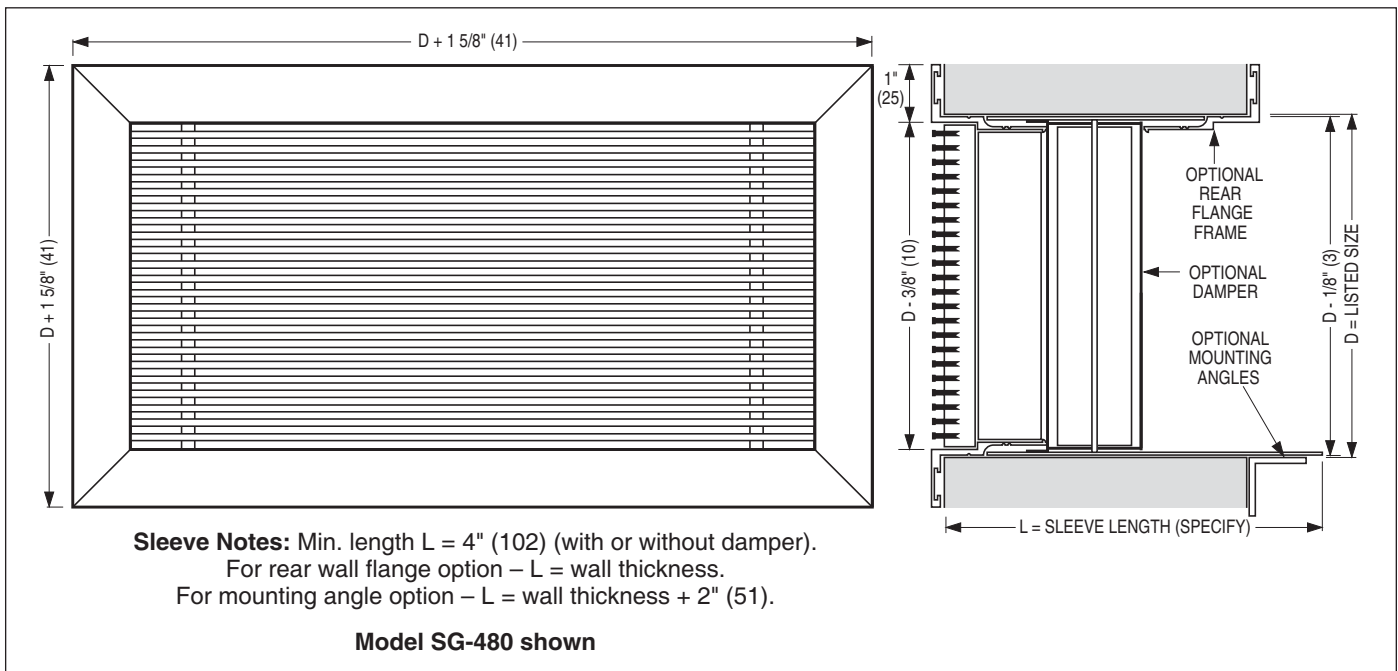
- Sleeve: 10 gauge aluminum welded to frame. Length as specified to suit wall thickness.
- Available in sizes 6" x 6" (152 x 152) through 36" x 36" (914 x 914) in single piece construction.

### FINISH OPTIONS:

- Standard finish is AW Appliance White. Other finishes are available.

### OPTIONS & ACCESSORIES:

- Rear wall flange. Same construction as grille frame. Shipped loose to be field welded to sleeve.
- Mounting angles: Option A, B or C. See page G24.
- Opposed Blade Damper: Face operator (screwdriver slot or lever), Option J, Rear operator (screwdriver slot), Option K, see page G25.



## PERFORMANCE DATA:

### MODEL SG-280 • SUPPLY

Core Area Sq. Feet	Nominal Duct Size, Inches		Core Velocity	300	400	500	600	800	1000	1200
			Total Pressure	.033	.055	.087	.120	.220	.338	.491
.18	8 x 4	6 x 6	CFM	55	70	90	110	145	180	215
			Noise Criteria	-	-	-	21	30	36	42
			Throw	6-9-13	7-10-14	10-12-16	11-13-18	12-14-21	14-17-23	15-18-26
			CFM	80	105	130	155	210	260	310
.26	12 x 4	8 x 6	Noise Criteria	-	-	-	22	31	37	43
			Throw	7-11-15	11-13-18	11-14-19	13-15-22	14-18-26	16-20-28	18-21-30
			CFM	155	210	260	310	415	520	625
			Noise Criteria	-	-	23	29	34	40	46
.52	24 x 4	16 x 6	Throw	10-14-22	12-17-25	16-20-27	18-23-31	21-26-37	23-29-40	25-31-44
			CFM	245	325	405	485	650	810	970
			Noise Criteria	-	-	25	30	37	43	47
			Throw	12-17-27	16-22-30	20-26-32	24-30-38	27-32-45	29-34-50	30-38-55
.81	14 x 10	16 x 8	CFM	480	640	800	960	1280	1600	1920
			Noise Criteria	-	-	26	31	38	44	50
			Throw	16-24-37	24-31-41	30-36-46	34-41-54	40-46-64	41-49-67	43-53-75
			CFM	835	1110	1320	1676	2220	2780	3340
2.78	30 x 14	24 x 18	Noise Criteria	-	21	27	34	41	47	53
			Throw	23-33-51	30-45-58	38-46-67	42-50-71	49-59-82	57-68-92	60-71-105
			CFM	1290	1720	2140	2570	3430	4290	5150
			Noise Criteria	-	23	29	36	43	49	56
4.29	30 x 22	28 x 24	Throw	27-39-63	37-53-73	44-58-81	50-63-92	60-73-105	66-80-119	70-85-130

### MODEL SG-280 • RETURN

Core Area Sq. Feet	Nominal Duct Size, Inches		Core Velocity	200	300	400	500	600	800	1000
			Neg. Static Pressu	.011	.032	.053	.084	.116	.210	.326
.18	8 x 4	6 x 6	CFM	35	55	70	90	110	145	180
			Noise Criteria	-	-	-	-	21	28	34
			CFM	50	80	105	130	155	210	260
.39	12 x 4	8 x 6	Noise Criteria	-	-	-	-	24	30	37
			CFM	105	155	210	260	310	415	520
			Noise Criteria	-	-	-	25	29	36	42
.52	24 x 4	16 x 6	CFM	160	245	325	405	485	650	810
			Noise Criteria	-	-	22	28	32	39	45
			CFM	320	480	640	800	960	1280	1600
1.18	14 x 10	16 x 8	Noise Criteria	-	-	26	32	36	43	49
			CFM	555	835	1110	1390	1670	2220	2780
			Noise Criteria	-	22	30	36	40	48	53
2.78	30 x 14	24 x 18	CFM	860	1290	1720	2140	2570	3430	4290
			Noise Criteria	-	26	33	39	43	50	57

#### Performance Notes:

- All pressure are in inches w.g..
- Core Velocity is in feet per minute
- Throws are given at 150, 100 and 50 fpm terminal velocities.
- Correction factors for Model SG-480 are as follows:  
Total Pressure = Listed value x 1.5  
Noise Criteria level, add + 5 to listed value.
- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (-) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## MINIMUM SECURITY DOUBLE DEFLECTION SUPPLY GRILLES AND REGISTERS

- LATTICE FACE
- LOUVERED BLADES

### Models:

SG-67DV and DH Stainless Steel

- Suffix '-O' adds an opposed blade damper



Model SG-67DV

These models are suitable for minimum security applications where the location is either hard to reach, such as high walls or ceilings in day rooms, or where there is constant supervision. The actual size of the unit may have a bearing on its application if the grille size selected is small enough that physical removal and/or bodily entry would not be contemplated. These models are essentially the same as the corresponding Nailor 6700 Series grilles with the addition of a lattice face for additional security.

### STANDARD FEATURES:

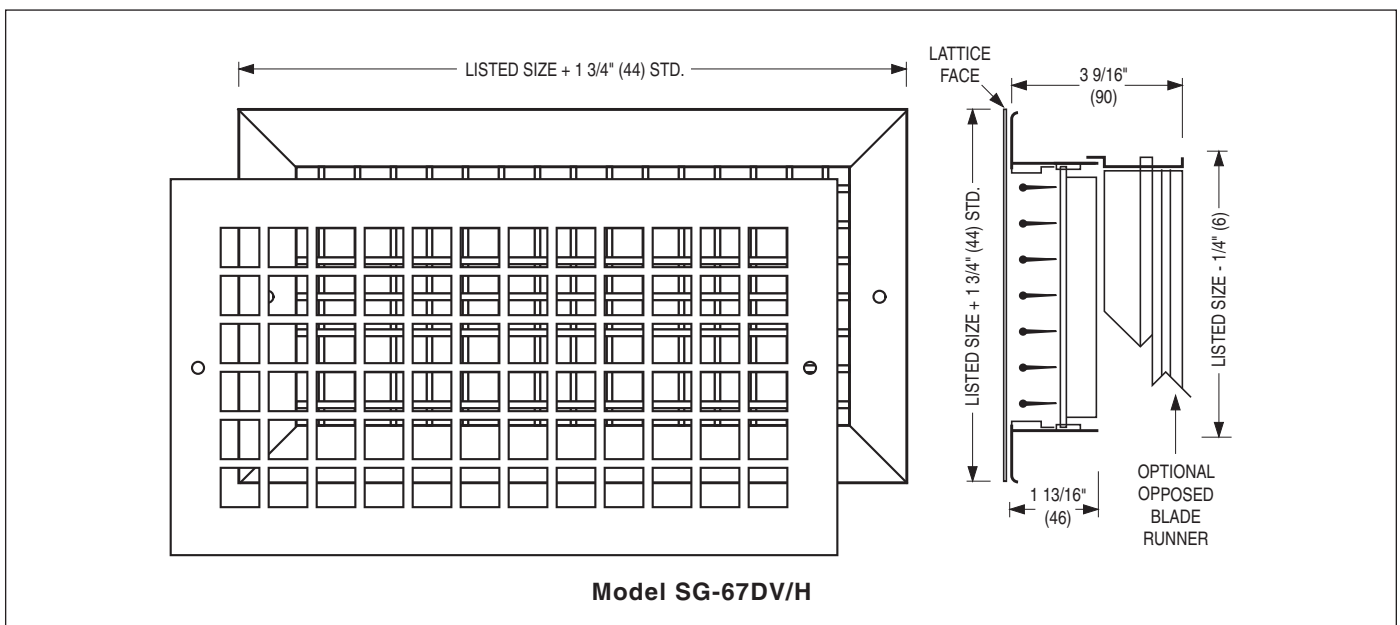
- Lattice Face: 12 gauge Type 304 stainless steel with 13/16" (21) square holes on 1" (25) centers. 3/16" (5) fret bars. Other lattice configurations are available.
- Grille or register is same as corresponding 6700 Series.
- Blades on 3/4" (19) centers are individually adjustable.
- Front blades are vertical (V) or horizontal (H) with the rear blades having the opposite orientation.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.
- Performance Data: See the appropriate base model and add the pressure drop of lattice face from table on page G23.
- Available in sizes 6" x 4" (152 x 102) through 48" x 24" (1219 x 610) in one piece construction.

### FINISH OPTIONS:

- Standard finish is #4 Brushed Satin Polished. AW Appliance White is optional. Other finishes are available.

### OPTIONS & ACCESSORIES:

- Opposed blade damper (stainless steel) has a screwdriver slot operator accessible through face of register.





## MINIMUM SECURITY DOUBLE DEFLECTION SUPPLY GRILLES AND REGISTERS

- LATTICE FACE
- LOUVERED BLADES

### Models:

- SG-61DV and DH Steel
- SG-51DV and DH Aluminum

- Suffix '-O' adds an opposed blade damper



Model SG-61DV

These models are suitable for minimum security applications where the location is either hard to reach, such as high walls or ceilings in day rooms, or where there is constant supervision. The actual size of the unit may have a bearing on its application if the grille size selected is small enough that physical removal and/or bodily entry would not be contemplated. These models are essentially the same as the corresponding Nailor 6100 and 5100 Series range of grilles with the addition of a lattice face for additional security.

### STANDARD FEATURES:

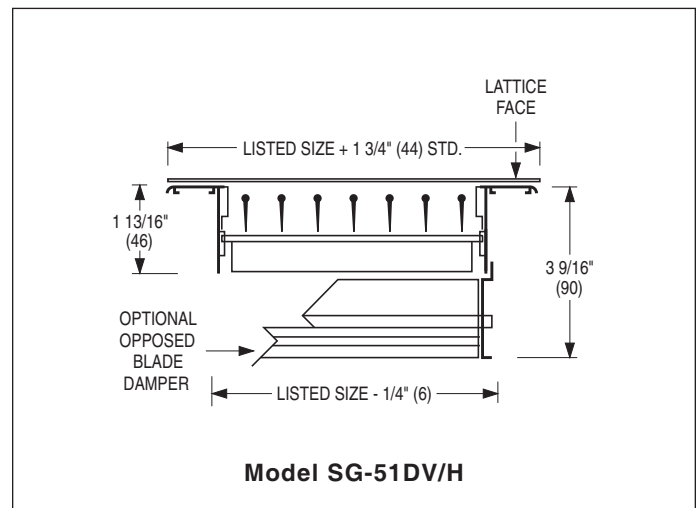
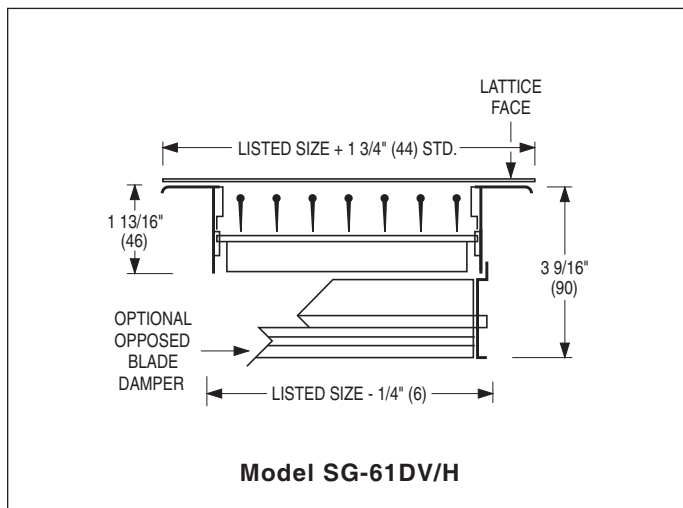
- Lattice Face: 12 gauge steel or aluminum with 13/16" (21) square holes on 1" (25) centers. 3/16" (5) fret bars. Other lattice configurations are available.
- Grille or register is same as corresponding 6100 or 5100 Series.
- Blades on 3/4" (19) centers are individually adjustable.
- Front blades are vertical (V) or horizontal (H) with the rear blades having the opposite orientation.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.
- Performance Data: See the appropriate base model and add the pressure drop of lattice face from table on page G23.
- Available in sizes 6" x 4" (152 x 102) through 48" x 24" (1219 x 610) in one piece construction.

### FINISH OPTIONS:

- Standard finish is AW Appliance White. Other finishes are available.

### OPTIONS & ACCESSORIES:

- Opposed blade damper (steel or aluminum) has a screwdriver slot operator accessible through face of register.



## MINIMUM SECURITY SINGLE DEFLECTION SUPPLY GRILLES AND REGISTERS

- LATTICE FACE
- LOUVERED BLADES

### Models:

**SG-61SV and SH Steel**

**SG-51SV and SH Aluminum**

- Suffix '-O' adds an opposed blade damper



Model SG-61SH

These models are suitable for minimum security applications where the location is either hard to reach, such as high walls or ceilings in day rooms, or where there is constant supervision. The actual size of the unit may have a bearing on its application if the grille size selected is small enough that physical removal and/or bodily entry would not be contemplated. These models are essentially the same as the corresponding Nailor 6100 and 5100 Series range of grilles with the addition of a lattice face for additional security.

### STANDARD FEATURES:

- Lattice Face: 12 gauge steel or aluminum with 13/16" (21) square holes on 1" (25) centers. 3/16" (5) fret bars. Other lattice configurations are available.
- Grille or register is same as corresponding 6100 or 5100 Series.
- Blades on 3/4" (19) centers are individually adjustable.
- Available with vertical (V) or horizontal (H) blades.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.

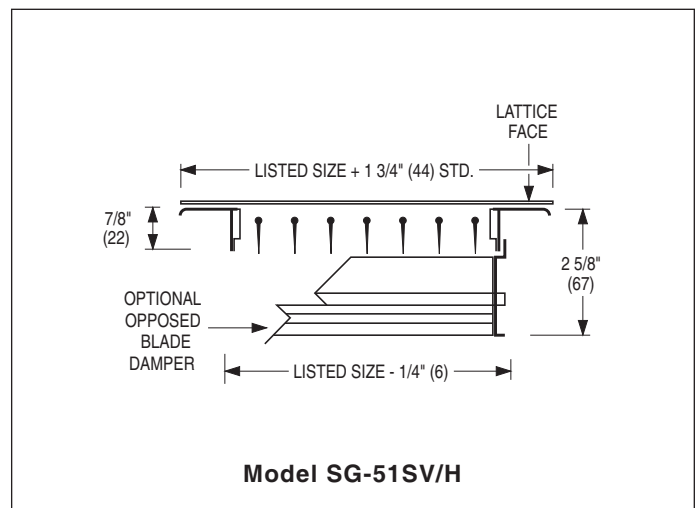
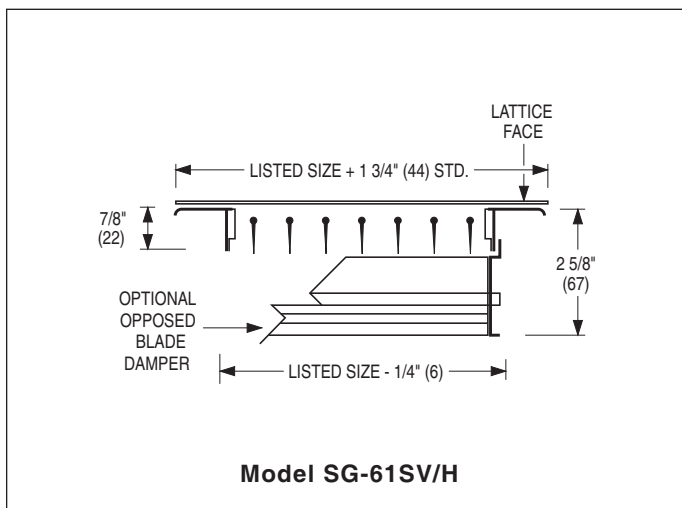
- Performance Data: See the appropriate base model and add the pressure drop of lattice face from table on page G23.
- Available in sizes 6" x 4" (152 x 102) through 48" x 24" (1219 x 610) in one piece construction.

### FINISH OPTIONS:

- Standard finish is AW Appliance White. Other finishes are available.

### OPTIONS & ACCESSORIES:

- Opposed blade damper (steel or aluminum) has a screwdriver slot operator accessible through face of register.



## MINIMUM SECURITY FIXED BLADE RETURN GRILLES AND REGISTERS

- LATTICE FACE
- 45° DEFLECTION BLADES

### Models:

**SG-6145H and 45V Steel**

**SG-5145H and 45V Aluminum**

- Suffix '-O' adds an opposed blade damper



Model SG-6145H

These models are suitable for minimum security applications where the location is either hard to reach, such as high walls or ceilings in day rooms, or where there is constant supervision. The actual size of the unit may have a bearing on its application if the grille size selected is small enough that physical removal and/or bodily entry would not be contemplated. These models are essentially the same as the corresponding Nailor 6100 and 5100 Series range of return grilles with the addition of a lattice face for additional security.

### STANDARD FEATURES:

- Lattice Face: 12 gauge steel or aluminum with 13/16" (21) square holes on 1" (25) centers. 3/16" (5) fret bars. Other lattice configurations are available.
- Grille or register is same as corresponding 6100 or 5100 Series.
- Blades on 3/4" (19) centers are individually adjustable.
- Available with vertical (V) or horizontal (H) blades.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.

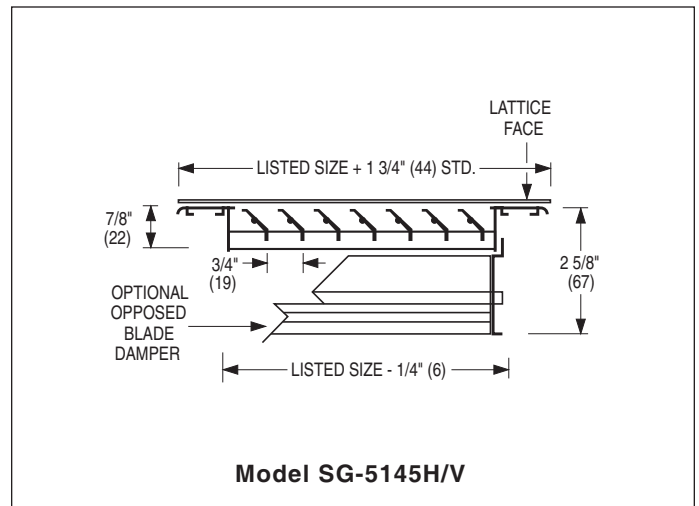
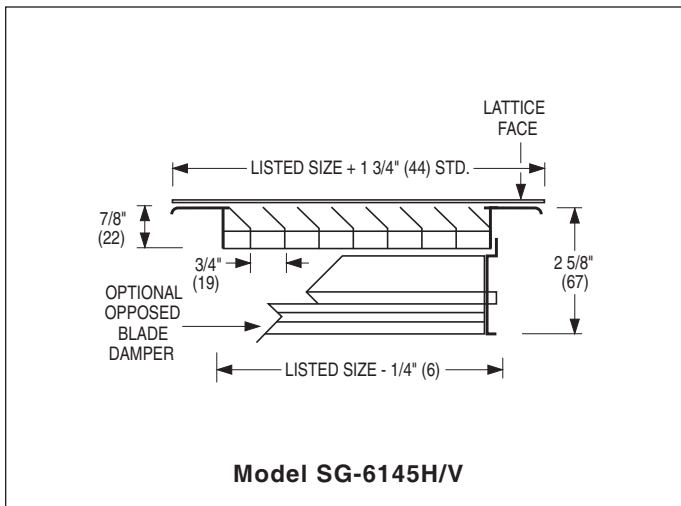
- Performance Data: See the appropriate base model and add the pressure drop of lattice face from table on page G23.
- Available in sizes 6" x 4" (152 x 102) through 48" x 24" (1219 x 610) in one piece construction.

### FINISH OPTIONS:

- Standard finish is AW Appliance White. Other finishes are available.

### OPTIONS & ACCESSORIES:

- Opposed blade damper (steel or aluminum) has a screwdriver slot operator accessible through face of register.



## MINIMUM SECURITY FIXED BLADE RETURN GRILLES AND REGISTERS

- LATTICE FACE
- 0° DEFLECTION BLADES

### Models:

**SG-61FH and FV** Steel

**SG-51FH and FV** Aluminum

- Suffix '-O' adds an opposed blade damper



Model SG-61FH

These models are suitable for minimum security applications where the location is either hard to reach, such as high walls or ceilings in day rooms, or where there is constant supervision. The actual size of the unit may have a bearing on its application if the grille size selected is small enough that physical removal and/or bodily entry would not be contemplated. These models are essentially the same as the corresponding Nailor 6100 and 5100 Series range of return grilles with the addition of a lattice face for additional security.

### STANDARD FEATURES:

- Lattice Face: 12 gauge steel or aluminum with 13/16" (21) square holes on 1" (25) centers. 3/16" (5) fret bars. Other lattice configurations are available.
- Grille or register is same as corresponding 6100 or 5100 Series.
- Blades on 3/4" (19) centers are individually adjustable.
- Available with vertical (V) or horizontal (H) blades.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.

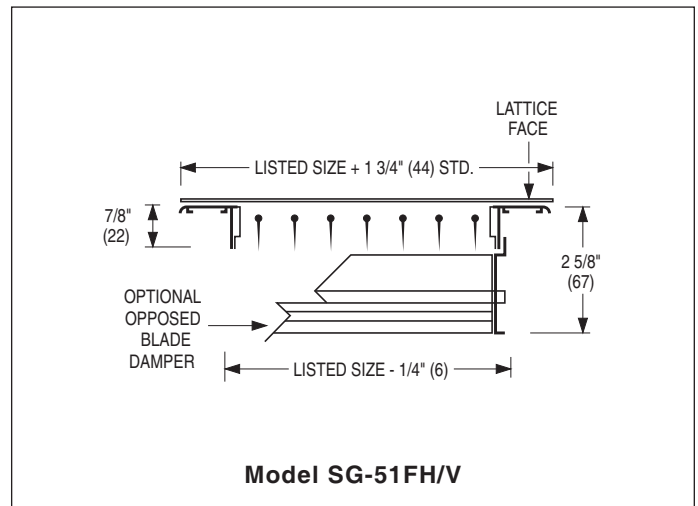
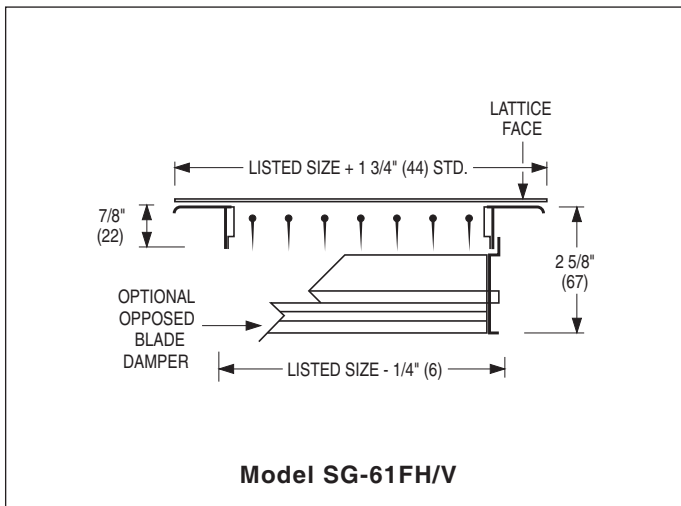
- Performance Data: See the appropriate base model and add the pressure drop of lattice face from table on page G23.
- Available in sizes 6" x 4" (152 x 102) through 48" x 24" (1219 x 610) in one piece construction.

### FINISH OPTIONS:

- Standard finish is AW Appliance White. Other finishes are available.

### OPTIONS & ACCESSORIES:

- Opposed blade damper (steel or aluminum) has a screwdriver slot operator accessible through face of register.

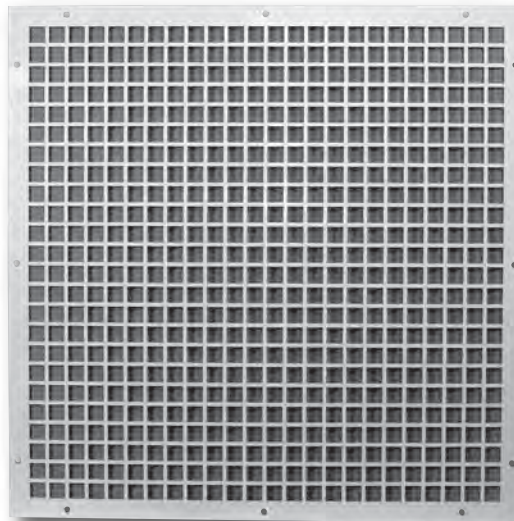


## MINIMUM SECURITY LATTICE FACE GRILLES

- RETURN
- 13/16" (21) SQUARE HOLES ON 1" (25) CENTERS
- 12 GAUGE MATERIAL

### Models:

- SG-LGS Steel
- SG-LGA Aluminum



Model SG-LGS-B3

Model Series SG-LG Series Lattice Face Grilles are available as an economical return air grille for minimum security applications.

Model Series SG-LG are available with an optional PF Plaster/Mounting Sub-frame which provides not only a professional finish, but also allows the option of an opposed blade damper mounted inside the neck for air balancing.

### STANDARD FEATURES:

- Model Series SG-LG features 13/16" (21) square holes on 1" (25) centers with 3/16" (5) fret bars in 12 gauge (2.75) steel or aluminum construction.
- Screw holes provided in face plate. Tamper proof/security screws by others to suit local requirements.

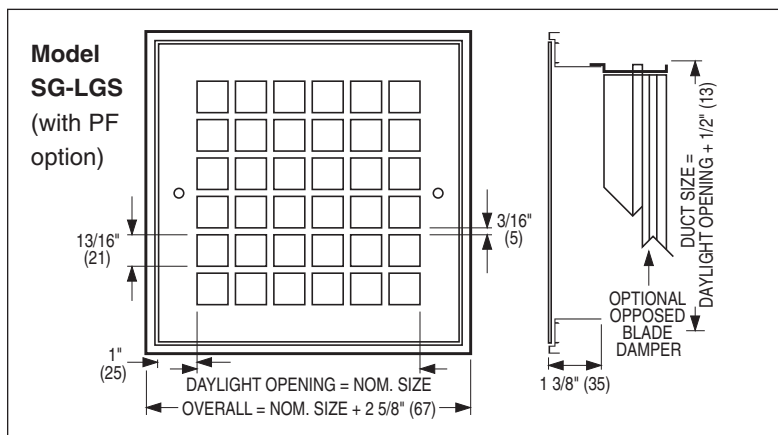
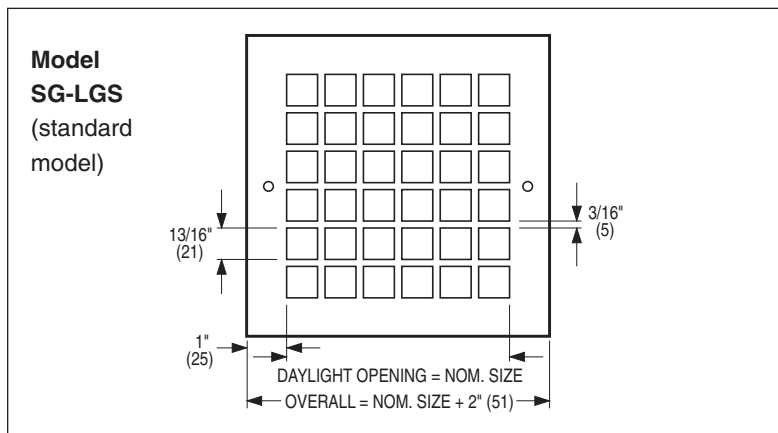
### FINISH OPTIONS:

- Standard finish is AW Appliance White. Other finishes are available.

### OPTIONS & ACCESSORIES:

- PF Plaster/Mounting sub-frame.

- Opposed blade damper with screwdriver slot operator, operable from face, available with PF option.
- Other material gauges: 10 gauge or 14 gauge steel or aluminum.
- Other lattice designs. See table.



### OPTIONAL LATTICE CONFIGURATIONS

Hole Pattern	Code Option		
	10 ga.	12 ga.	14 ga.
3/4" (19) square holes on 1" (25) centers	A1	B1	C1
1/2" (13) square holes on 3/4" (19) centers	A2	B2	C2
13/16" (21) square holes on 1" (25) centers	A3	B3	C3
1" (25) square holes on 1 1/4" (32) centers	A4	B4	C4
2 1/2" x 1/2" (64 x 13) rectangular holes on 2 3/4" x 3/4" (70 x 19) centers	A5	B5	C5

Code option B3 is standard.

## SIZING SCHEDULE AND PERFORMANCE DATA:

### MODEL SERIES SG-LGS & SG-LGA • LATTICE FACE GRILLES

DAYLIGHT OPENING DIMENSION													
NO. OF HOLES	CODE A1, B1, C1 3/4" SQ.		CODE A2, B2, C2 1/2" SQ.		CODE A3, B3, C3 13/16" SQ.		CODE A4, B4, C4 1" SQ.		NO. OF HOLES	CODE A5, B5, C5 2 1/2" x 1/2"			
	WIDTH		Height		in.		mm			in.		mm	
	in.	mm	in.	mm	in.	mm	in.	mm		in.	mm	in.	mm
6	5 3/4	146	4 1/4	108	5 13/16	148	7 1/4	184	3	6 1/2	165	2	51
8	7 3/4	197	5 3/4	146	7 13/16	198	9 3/4	248	4	8 3/4	222	2 3/4	70
10	9 3/4	248	7 1/4	184	8 13/16	224	12 1/4	311	5	11	279	3 1/2	89
12	11 3/4	298	8 3/4	222	11 13/16	300	14 3/4	375	6	13 1/4	337	4 1/4	108
14	13 3/4	349	10 1/4	260	13 13/16	351	17 1/4	438	7	15 1/2	394	5	127
16	15 3/4	400	11 3/4	298	15 13/16	402	19 3/4	502	8	17 3/4	451	5 3/4	146
18	17 3/4	451	13 1/4	337	17 13/16	452	22 1/4	565	9	20	508	6 1/2	165
20	19 3/4	502	14 3/4	375	19 13/16	503	24 3/4	629	10	22 1/4	565	7 1/4	184
22	21 3/4	552	16 1/4	413	21 13/16	554	27 1/4	692	11	24 1/2	622	8	203
24	23 3/4	603	17 3/4	451	23 13/16	605	29 3/4	756	12	26 3/4	679	8 3/4	222
26	25 3/4	654	19 1/4	489	25 13/16	656	32 1/4	819	13	29	737	9 1/2	241
28	27 3/4	705	20 3/4	527	27 13/16	706	34 3/4	883	14	31 1/4	794	10 1/4	260
30	29 3/4	756	22 1/4	565	29 13/16	757	37 1/4	946	15	33 1/2	851	11	279
32	31 3/4	806	23 3/4	603	31 13/16	808	39 3/4	1010	16	35 3/4	908	11 3/4	298
34	33 3/4	857	25 1/4	641	33 13/16	859	42 1/4	1073	17	38	965	12 1/2	318
36	35 3/4	908	26 3/4	679	35 13/16	910	44 3/4	1137	18	40 1/4	1022	13 1/4	337
38	37 3/4	959	28 1/4	718	37 13/16	960	47 1/4	1200	19	42 1/2	1080	14	356
40	39 3/4	1010	29 3/4	756	39 13/16	1011			20	44 3/4	1137	14 3/4	375
42	41 3/4	1060	31 1/4	794	41 13/16	1062			21	47	1194	15 1/2	394
44	43 3/4	1111	32 3/4	832	43 13/16	1113							
46	45 3/4	1162	34 1/4	870	45 13/16	1164							
48	47 3/4	1213	35 3/4	908	47 13/16	1214							
50			37 1/4	946									
52			38 3/4	984									
54			40 1/4	1022									
56			41 3/4	1060									
58			43 1/4	1099									
60			44 3/4	1137									
62			46 1/4	1175									
64			47 3/4	1213									

SECURITY PRODUCTS

### Pressure Loss Through Lattice Grille

Option Code	Core Velocity	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	.006	.010	.016	.022	.031	.040	.051	.062	.090	.122
A1, B1, C1 (60%)	Negative Static Pressure	.019	.034	.053	.077	.105	.137	.173	.213	.307	.418
A2, B2, C2 (50%)		.032	.057	.089	.128	.174	.228	.288	.356	.512	.697
A3, B3, C3 (70%)		.011	.020	.031	.044	.060	.078	.099	.122	.176	.240
A4, B4, C4 (68%)		.012	.022	.034	.050	.068	.089	.112	.138	.198	.270
A5, B5, C5 (65%)		.015	.027	.042	.061	.083	.108	.137	.167	.243	.331

#### Performance Notes:

1. All pressure are in inches w.g..
2. Core Velocity is in feet per minute.
3. Core represents daylight opening dimensions.

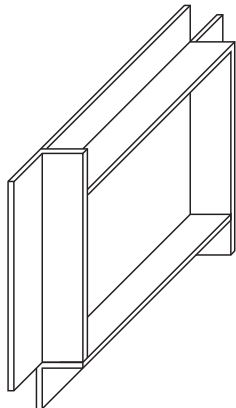




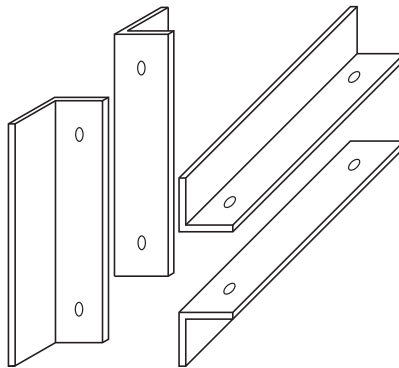
## Options and Accessories

### MOUNTING ANGLES:

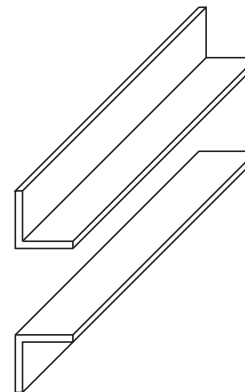
**Option A** 1" x 1" x 1/8" (25 x 25 x 3) welded rear angle frame. Shipped loose for field attachment (weld or bolt).



**Option B** 4 pcs. 1" x 1" x 1/8" (25 x 25 x 3) mounting angles, with holes and bolts. Shipped loose for field attachment.

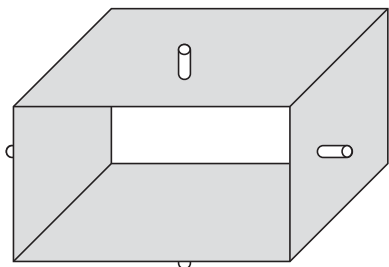


**Option C** 2 pcs. 1" x 1" x 1/8" (25 x 25 x 3) mounting angles (long dim.). Shipped loose for field attachment (weld or bolt).

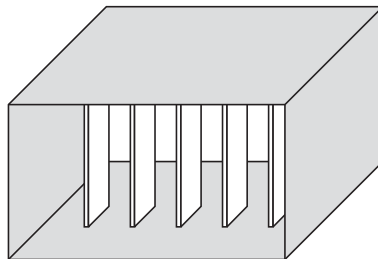


### MASONRY ANCHOR TABS AND SECURITY BARS:

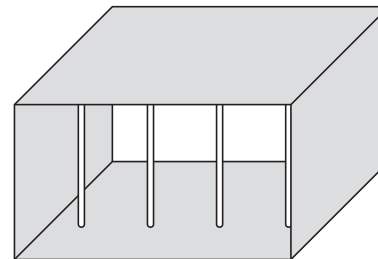
**Option D** 1/2" (13) dia. steel anchor tabs. 3" (76) long for concrete or brick walls. Minimum one per side.



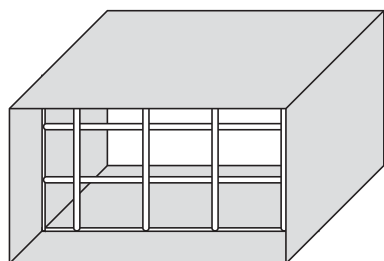
**Option E** 2 1/2" x 3/8" (64 x 10) flat security bars welded in sleeve, 4" (102) max. on center.



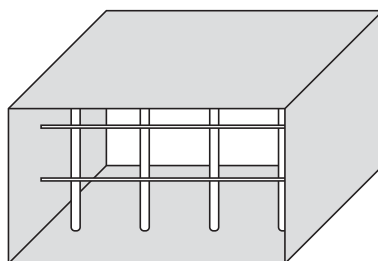
**Option F** 1/2" (13) dia. round security bars welded in sleeve, 6" (152) max. on center.



**Option G** Barrier Grille. 1/2" (13) dia. round security bars, vertical and horizontal, 6" (152) max. on center welded to sleeve and at each cross-point.



**Option H** Barrier Grille. 3/4" (19) dia. vertical bars with 2" x 1/4" (51 x 6) horizontal flat bars welded to sleeve and at each cross-point.



Options and Accessories

OPPOSED BLADE DAMPERS:

**Option J** Opposed Blade Damper. Face operator (screwdriver slot or lever).

**Option K** Opposed Blade Damper. Rear operator (screwdriver slot).

DIRECTIONAL BLADES:

**Option L** Adjustable single deflection horizontal blades on 3/4" (19) centers.

**Option M** Adjustable single deflection vertical blades on 3/4" (19) centers.

**Option N** Adjustable double deflection blades on 3/4" (19) centers. Horizontal front blades.

**Option P** Adjustable double deflection blades on 3/4" (19) centers. Vertical front blades.

**Important note for all options and accessories:**  
 Not all options shown, or certain combinations, are necessarily available on individual security products. Consult the individual model description to determine which options apply.



NOTES:

defined as energy per unit volume of pressure and Velocity Pressure that are later, designated in. w.g. of a duct or other boundaries. It is a of as the pressure in a tire or in a tank extends an equivalent velocity in moving air. Velocity density, the relationship between velocity pressure

**ENERGISTICS LABORATORY**  
AND JACK STEGALL RESEARCH FACILITY

# ENGINEERING GUIDE

## METRIC CONVERSION

Metric Guide Conversion Factors

U.S. Unit	U.S. Equivalent	Metric Unit	Metric Symbol	From U.S. to Metric	From Metric to U.S.
Area	square foot	square meter	(m <sup>2</sup> )	0.0929	10.764
	square inch	square millimeter	(mm <sup>2</sup> )	645.16	0.0155
Density	pounds per cubic foot	kilograms per cubic meter	(kg/m <sup>3</sup> )	16.018	0.024
	British Thermal Unit (BTU)	kilocalories	(kcal)	1055.056	0.000948
Energy	kilowatt hour	kilowatt hour	(kWh)	3.6	2778
	foot-pounds	joules	(J)	1.35	1.0
Force	newton	newton	(N)	2.2046	3.507
	pound force	newton	(N)	4.4482	2248
Heat	BTU per hour	watt	(W)	293.1	3.412
	BTU per square foot	watt per square meter	(W/m <sup>2</sup> )	2926.0	0.00043
Length	inch	millimeter	(mm)	25.4	0.0254
	foot	meter	(m)	304.8	0.00328
Mass (weight)	ounce (avoirdupois)	gram	(g)	28.350	0.0353
	pound (avoirdupois)	kilogram	(kg)	453.6	2.2046
Power	horsepower	watt	(W)	745.7	1.341
	horsepower (metric)	watt	(W)	735.5	1.019
Pressure	foot-candle	candle	(cd)	0.226	44.254
	inch of water column	millimeter of water	(mm H <sub>2</sub> O)	2.54	29.92
Temperature	Fahrenheit	Celsius	(°C)	5/9(F-32)	(F+32)/9
	torque - force inch	millimeter-newton	(mm·N)	7.0616	1416
Torque	torque - force inch	newton-meter	(N·m)	1.129	0.8496
	torque - force foot	newton-meter	(N·m)	1.3558	0.7376
Velocity	feet per second	meters per second	(m/s)	0.3048	3.2808
	feet per minute	meters per second	(m/s)	0.0508	196.85
Volume (capacity)	cubic foot	cubic meter	(m <sup>3</sup> )	0.0283	35.315
	cubic inch	cubic centimeter	(cm <sup>3</sup> )	16.387	0.0106
Volume (flow)	cubic yard	cubic meter	(m <sup>3</sup> )	0.764	1.358
	gallon (U.S.)	liter	(l)	3.785	0.2642
Volume (flow)	gallon (imperial)	liter	(l)	4.546	0.220
	cubic feet per minute (cfm)	cubic meters per second	(m <sup>3</sup> /s)	0.0283	35.315
Volume (flow)	cubic feet per minute (cfm)	cubic meters per second	(m <sup>3</sup> /s)	0.0283	35.315
	cubic feet per hour (cfh)	liters per second	(l/s)	0.00077	1271.33
Volume (flow)	gallon per minute (U.S.)	liters per second	(l/s)	0.06309	15.850
	gallon per minute (imperial)	liters per second	(l/s)	0.07597	13.198

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## ENGINEERING PERFORMANCE DATA

### Engineering Performance Data

The performance data shown in this catalog has been derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006. This standard incorporates ISO 5219 and ADC 1062 Test Standards by inclusion and also includes provisions for acoustical tests for ratings of diffusers using reverberant room test procedures, referencing ANSI Acoustical Test Procedures. Where possible, applicable ASHRAE standards are referenced for measurement specifications and procedures.

## COMFORTABLE ENVIRONMENT

### Comfortable in Today's Environment

The human body feels comfortable when four conditions in the immediate environment are correctly controlled. These are radiant temperature, air dry bulb temperature, relative humidity, and air motion.

Ideal comfort conditions are reached when the heat generated within the body is in balance with the heat lost to the surrounding air. Body heat is lost through radiation, evaporation of sweat by convection to air currents and conduction through surfaces with which it is in contact.

Not everyone is comfortable under identical conditions. Some prefer more air movement or higher or lower temperatures or higher or lower humidity. Generally speaking most people are comfortable when the relative humidity is between 30% and 65% and the dry bulb temperature is between 22° and 24° centigrade (72° – 76°F). However, in the summertime when people wear lighter clothing, they can become accustomed to higher temperatures.

Radiant panels can affect body comfort. One degree F change in the temperature of a radiant panel will affect body comfort in the same way that 0.5°F change in air temperature will.

Humidity is very important to the feeling of comfort. Under normal conditions a relative humidity of 40% to 60% is ideal. As the ambient temperature rises, the body attempts to achieve a lower temperature by sweating. The sweat will evaporate and thus lower the skin surface temperature. The higher the relative humidity, the less sweat will evaporate. Therefore, as temperature rises, it is desirable to maintain lower humidities.

Air motion is also important to the feeling of comfort. The desirable velocity in normal situations for individuals who are moderately active and normally clothed is between 30 and 50 feet per minute. When velocities are too high, people complain of drafts. On the other hand, reduced air motion creates a feeling of oppressive discomfort because lower thermal conductivity rates between body and air result in higher skin temperature and less body heat loss. Even when the body is sweating profusely, low air motion inhibits evaporation. A rapidly moving air stream lowers skin temperature by convection and will evaporate sweat even under conditions of high humidity. The resulting lower skin temperature makes the body feel more comfortable. Drafts at ankle level can be 4°F cooler than at neck level and still be equally tolerable.

The basic criteria for room air movement may be obtained from the curves shown in Figure 1.

### The Art of Comfort Ventilation

To maintain ideal comfort conditions in a space, ambient temperature, air movement, and humidity must meet design criteria. Heat losses in winter and heat gains in summer must be controlled. Sufficient "conditioned" air must be introduced unobtrusively into the space to mix with room air so that the resulting diluted conditions meet comfort requirements. The usual method is to supply air through circular or linear ceiling diffusers. Wall or floor grilles are often used in residences. Heating or cooling devices located in the space, supply air through specially designed outlet grilles. The art is to supply the air so that there will be no objectionable drafts in the occupied zone. High velocity streams of conditioned air should be supplied outside this zone, in the space one foot from the walls and above six feet from the floor.

The desired room temperature may be maintained by varying the volume of air supplied in response to a thermostat. This will be chilled air to cool or hot air for heating.

Alternatively the volume of air supplied can remain constant and only its temperature varied in response to load conditions.



Effect of Drafts on the Feeling of Comfort

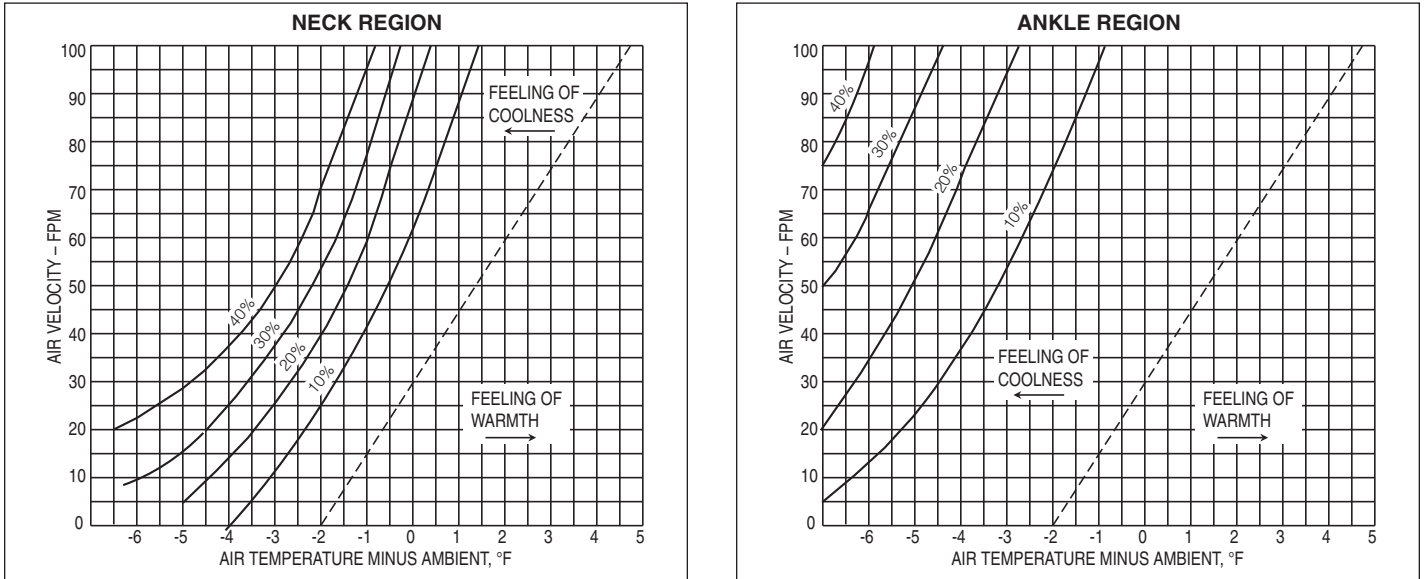


Fig. 1. Percentage of Occupants Objecting to Drafts in Air Conditioned Rooms.

ISOTHERMAL JETS

Isothermal Free Air Jets

In order to perform this task of draft free ventilation we must first learn how high velocity air jets behave. An isothermal jet is a jet of air at the same temperature as the ambient air into which it is being introduced.

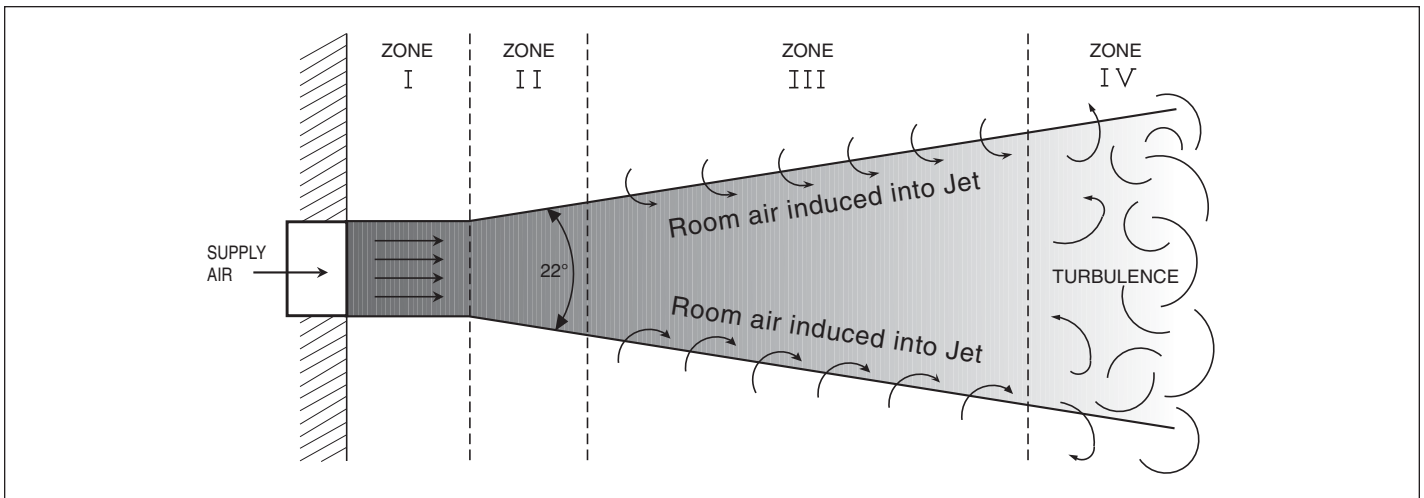


Fig. 2. Zones of Expansion of an Isothermal Jet.

For isothermal air jets, the relationship between average outlet face velocity and distance from the outlet has been shown to change as the jet progresses through four characteristic zones.

**Zone I:** A short zone, extending to about 4 diameters from the outlet, in which the centerline velocity remains practically unchanged.

$$V_x / V_o = \text{constant} (1)$$

**Zone II:** A transition zone, extending to about eight diameters for round outlets, or for slots of large aspect ratio, to a distance of approximately the width multiplied by four times the aspect ratio. In this zone, velocities vary inversely to the square root of the distance from the outlet.

$$V_x \propto \frac{1}{\sqrt{X}} \quad (2)$$

**Zone III:** A long zone of turbulent flow where the jet expands as it draws room air into it. It may be 25 to 100 diameters long. In this zone, velocity varies inversely with the distance from the outlet.

$$V_x = \frac{K V_o \sqrt{A_o}}{X} \quad (3)$$

or

$$V_x = \frac{K Q_o}{X \sqrt{A_o}} \quad (4)$$

Where: K = Proportionality constant.

V<sub>x</sub> = Centerline velocity at distance X from outlet.

V<sub>o</sub> = Outlet velocity.

A<sub>o</sub> = Area of primary air stream (outlet) at the Vena Contracta.

X = Distance from outlet.

Q = Supply airflow rate (cfm).

**Zone IV:** A terminal zone in which the maximum velocity decreases rapidly to a velocity below 50 fpm and becomes a rolling mass of air at a temperature differential of about 1° to 2°F above or below room temperature, depending on whether the air jet is heating or cooling.

Air velocity at distance X from the outlet is approximately:

$$V_x = \frac{0.8 K Q_o}{X \sqrt{A_o}} \quad (5)$$

## For Non-isothermal Jets at Terminal Velocities Below 150 fpm

K = Free openings, round or square	5.8
Rectangular slots aspect ratio ( < 40 )	5.0
Radial slots ( use X / H instead of X √A <sub>o</sub> )	3.9
Grilles & Grids ( > 40% Free Area )	4.8
Perforated panels	4.0

## Performance of Non-isothermal Jets

Formulas for isothermal jet behavior have been determined for jets projected into a space where the space air temperature is the same temperature as that of the jet. In normal heating, ventilating and air conditioning installations the temperature conditions are non-isothermal; that is, the temperature of the supply air jet is higher or lower than the temperature of the air in the space into which it is projected. The K factors in non-isothermal formulas have been adjusted to suit actual conditions.

**COANDA EFFECT**

**Coanda Effect**

The techniques of modern comfortable draft free air conditioning would not be possible were it not for the "Coanda Effect". This refers to the behavior of a jet of air on a flat surface. If the jet hits the surface at an angle less than 40 degrees, it will hug the surface, whether it be a soffit, a wall, or ceiling and progress along it. This is why air flowing from a side wall supply outlet 12" below the ceiling, will jump up to the ceiling and cling to it as it progresses across the room. Supply air from ceiling diffusers works in the same way.

The phenomenon is due to the creation of a low pressure area between the jet and the surface and the reduced induction on the surface side of the jet. The "Coanda Effect" increases the throw for all types of outlets and reduces the drop for air projected horizontally as, for example, from a ceiling diffuser.

**JET INTERFERENCE**

**Jet Interference**

A jet of air projected across a ceiling needs a clear smooth path to distribute its temperorizing effect in an efficient manner. Beams, light fixtures, or architectural features, which interfere with the flow of the jet stream, will deflect it into the occupied zone. This not only causes uncomfortable drafts, but it also prevents the air conditioning system from doing a satisfactory job.

**Air Through Grilles**

When a jet of ventilation air is projected into a space, it begins to expand. The edges of the jet induce room air into the jet stream. This dilutes the primary jet reducing its temperature and slowing its forward motion. When the forward motion slows to 75 to 50 fpm, called the terminal velocity, there is no longer enough energy left to push room air out of the way and the jet breaks down into a rolling mass of turbulent air.

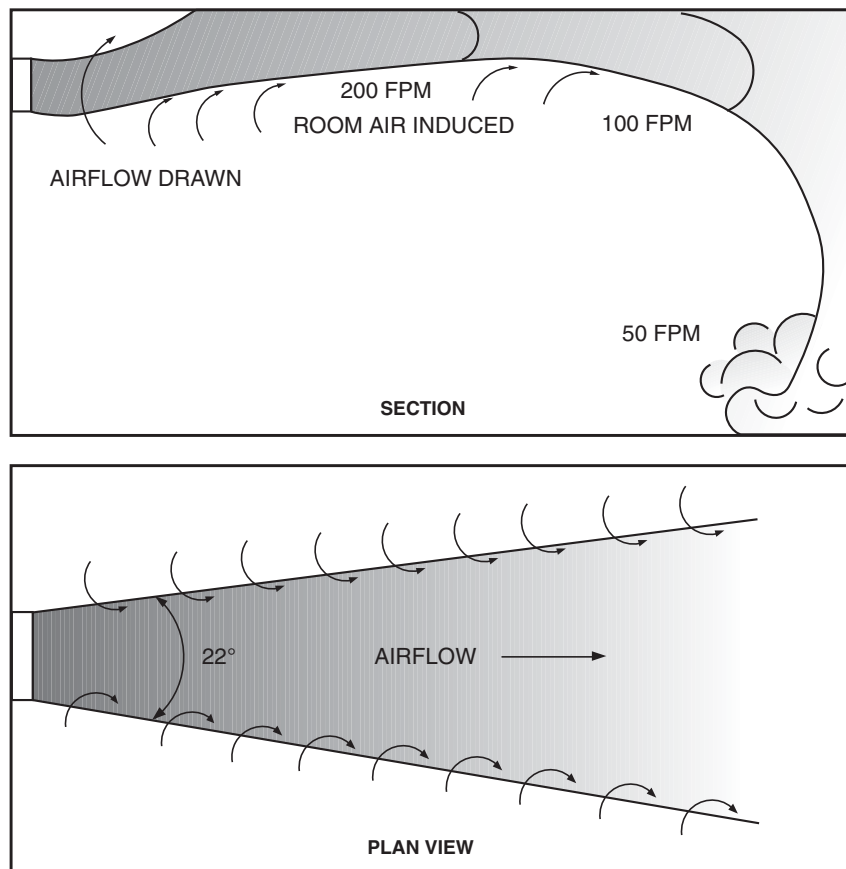


Fig. 3. A Jet of Ventilating Air from a Wall Outlet a Few Inches Below the Ceiling.

### High Ceilings

Catalog data for diffuser throw is based on a 9 foot ceiling height. Diffuser supply conditions would be chosen so that throw terminal velocity of 100 fpm would occur midway between adjacent diffusers or at a wall. This will result in a room residual velocity of about 35 fpm. Where ceiling heights are above 10 feet, higher terminal velocities are required. Increase terminal velocities one foot for each foot the ceiling height is above 10 feet.

### Return Air Inlets

Air return inlets affect air patterns only in their immediate vicinity. For heating, the return should be at the floor to drain off the cold air. For cooling locate the return in the stagnant zone.

### Air Volume Requirements

The primary air jets supplying air to a space must contain enough energy to keep the room air mass in the occupied zone moving at a velocity of 20 to 50 fpm. Excessive velocities create uncomfortable drafts and should be avoided. Cold air is heavier than warm air and tends to fall to the floor. Warm air, being lighter, tends to rise. Because of this, pockets of stagnant air will form where room air motion is minimal, often resulting in large temperature gradients. Temperature differential near the floor, between average room air and stagnant air zones greater than 4°F, are undesirable. Higher primary air velocities will get room air moving and reduce stagnant air pockets.

Air volume of 0.75 to 1 cfm per square foot may satisfy cooling or heating loads at the low end of variable volume systems, however this may not provide enough air to prevent stuffy and stagnant room conditions. Changing the primary air temperature, higher for cooling and lower for heating, will increase supply air volumes and greatly improve comfort conditions.

At the high end of a variable volume system, interior zones may require as much as 3 cfm per square foot. Exterior zones may require more, often as high as 4 cfm per square foot. Air volumes for perimeter diffusers can vary from 20 to 200 cfm per linear foot. These volumes are governed by external wall heat transfer coefficients, wall height and infiltration rates.

### Jet Temperature Change

As the jet progresses into the room, air next to the jet is drawn into it. The moving mass of air becomes more and more diluted by mixing with room air. The more it is diluted, the closer the jet temperature approaches room temperature. Temperature may be approximated by this equation:

$$\Delta t_x = 0.8 \Delta t_o \left( \frac{V_x}{V_o} \right) \quad (6)$$

Where:  $\Delta t_x$  = Temperature differential degrees F at distance X ft. from outlet.

$\Delta t_o$  = Temperature differential degrees F at outlet.

$V_x$  = Velocity at centerline of jet distance X ft. from outlet.

$V_o$  = Velocity of jet at outlet.

Jet Temperature						
$\Delta t_o = 20^\circ\text{F}$	$V_x$ fpm					
$V_o$ fpm	500	400	300	200	100	50
2000	4	3.2	2.4	1.6	0.8	0.4
1500	5.3	4.3	3.2	2.1	1.1	0.5
1000	8	6.4	4.8	3.2	1.6	0.8
500	16	12.8	9.6	6.4	3.2	1.6

**Table 1. Temperature Differential - Supply Air Stream Minus Ambient Room Temperature.**

THROW, SPREAD, DROP

**Throw**

Throw is defined as the distance from the outlet to a location where the jet velocity, or terminal velocity, is some pre-determined value; usually 150, 100, 75 or 50 fpm. At 100 fpm the jet pattern is beginning to break down. At 50 fpm the jet has entered the fourth zone and has become a rolling mass of air. Here, air temperatures are within 1.0 degrees F of room temperature.

$$\text{For zone III: } Tv = \frac{K Qo}{Vt \sqrt{Ao}} \tag{7}$$

$$\text{For zone IV: } Tv = K \left( \frac{Qo}{Vt} \right) \tag{8}$$

Where:  $Tv$  = Throw to a distance where the centerline jet velocity is  $V$  fpm.  
 $Qo$  = Supply Airflow Rate (cfm).  
 $Vt$  = Terminal Velocity.

**Spread**

The divergence of an air stream vertically and horizontally after it leaves the outlet. In a free jet the spread proceeds at 22 degrees. Vertical grille vanes are adjustable to any angle. When set to deflect the outer 1/3 of the outlet in various degree patterns, the throw is reduced.

e.g. 22 1/2° pattern reduces throw by one quarter.  
 45° pattern reduces throw by one half.

**Drop**

Drop results from the vertical spread of an air stream in combination with the tendency for warm air to rise or cold air to fall.

**Total Air Drop From Sidewall Outlet in Feet**

Vk Outlet Velocity fpm	Sidewall Throw In Feet													
	10		15		20		25		30		40		50	
	-18F	-25F	-18F	-25F	-18F	-25F	-18F	-25F	-18F	-25F	-18F	-25F	-18F	-25F
500	3.5	4.0	5.5	6.0	7.5	8.5	9.0	10.0	10.5	13.5	15.5	18.0	18.5	23.0
750	2.5	3.5	4.0	5.5	6.0	6.5	7.0	8.0	8.5	10.5	11.5	14.5	15.0	18.5
1000	2.0	3.0	3.5	4.0	5.0	5.5	6.0	6.5	7.0	8.5	10.0	12.0	12.5	16.0
1250	2.0	2.5	3.0	3.5	4.5	5.0	5.5	6.0	6.5	7.5	9.0	11.0	11.5	13.5
1500	1.5	2.0	3.0	3.5	4.0	4.5	5.0	5.5	6.0	7.0	8.5	9.5	10.5	12.5
1750	1.0	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.5	8.0	9.0	10.0	11.5
2000	1.0	1.5	2.5	3.0	3.5	4.0	4.0	4.5	5.0	6.0	7.5	8.5	9.5	10.5

Table 2. Drop Due to Spread Plus Cold Air Fall.

Drop can be significantly lessened by projecting the air path upward. This is done by setting horizontal bars at 15° to 20° up.

	Throw in Feet						
	10	15	20	25	30	40	50
Drop Reduction in Feet	2.5	3.5	4.5	6.0	7.0	9.0	11.5

Table 3. Drop Correction Using 15° to 20° Upward Deflection Bars.

**Effective Area**

The effective area (Ak) of an outlet is not necessarily the area of the duct from which the air is projected. For grilles, the frame and vertical and horizontal bars restrict the opening. The spaces between bars are not completely filled with air. The sum of all these openings multiplied by the coefficient of contraction gives the effective area. The effective area, Ak, for each product is obtained by laboratory tests and will be found in the manufacturer’s catalog.

$$A_k = \frac{Q_o}{V_k} \quad (9)$$

- Where: Ak = The outlet effective area in sq. ft.  
 Qo = Quantity of air flowing, cfm.  
 Vk = Outlet velocity measured in a specified manner.

**Entrainment Ratio**

Also called the induction ratio, is the increased volumetric flow at a distance X from the face of the outlet, divided by the discharge volume.

$$\frac{Q_x}{Q_o} = C \frac{V_o}{V_x} \quad (10)$$

$$C = \left( \frac{X}{K\sqrt{A_o}} \right) \quad (11)$$

- Where: Qx = Flow rate at section X feet from outlet.  
 Qo = Flow rate at outlet.  
 C = Entrainment coefficient  
     - 1.4 for slots.  
     - 2.0 for free round jets.  
 Vo = Outlet velocity, fpm.  
 Vx = Centerline velocity at X, fpm.  
 K = See equation 4.

**Jet Behavior**

- Free jets tend to become circular regardless of the original shape of the outlet, whether round, rectangular or a long slot. Jets hugging the ceiling or wall tend to become semi-circular.
- Wall air outlets within one foot of the ceiling project an air pattern which hugs the ceiling.
- Static room air drifts toward the fast flowing primary air stream where it is drawn into the expanding jet.
- The 'Coanda' surface effect propels the air further than if it were a free jet in space.
- Warm air has a buoyant effect and tends to rise.
- Cold air is heavier than warm room air and tends to fall.
- To reduce throw and drop, increase the spread.
- More outlets with less air each, will reduce throw and drop.
- Adjust vertical grille vanes to create a wide pattern and reduce throw. This reduces room temperature gradients, floor to ceiling.
- To achieve a wide pattern with shorter throw from a side wall diffuser, direct the air up to the ceiling at 45°.
- To reduce room air temperature gradients from floor to ceiling, increase primary air volumes or supply velocities.
- A spreading pattern produces shorter throws and thinner air stream with greater induction of room air.



Effect of Supply Air Patterns on Room Air Motion

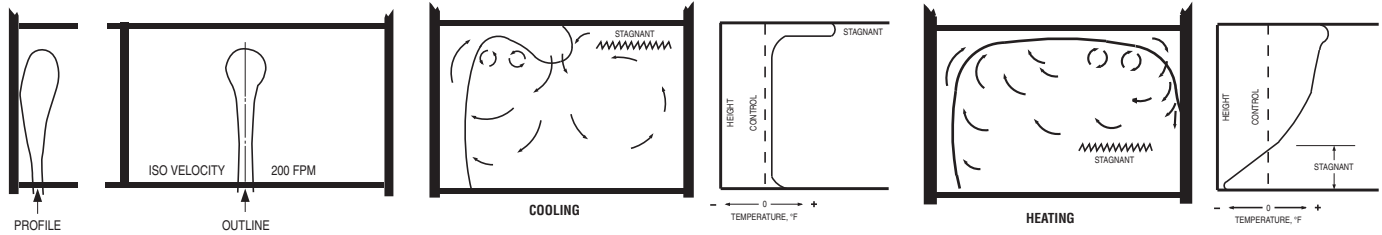


Fig. 4. Non-spreading Vertical Upward Jet. Perimeter Floor Grille.

- A long throw reaching far into the room. Room air is drawn to the jet in the center of the room.

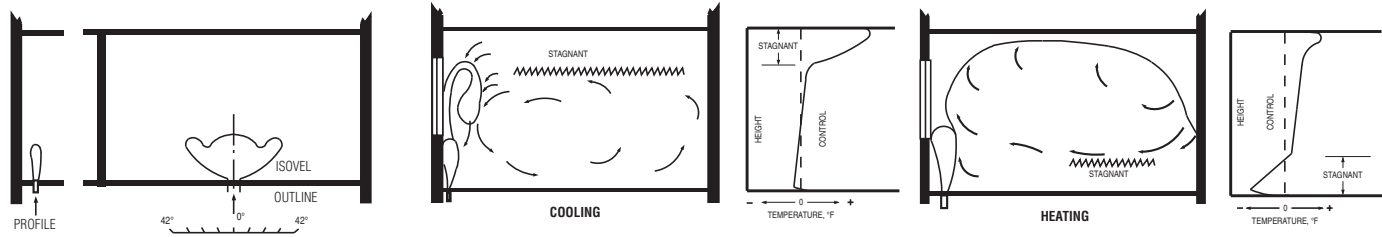


Fig. 5. Spreading Vertical Upward Jet. Floor Diffuser.

- When heating, large temperature variations occur near the floor in the stagnant zone.
- A spreading pattern provides a thinner air stream with greater room air induction, but does not project as far into the room. The tendency to drop is also reduced.

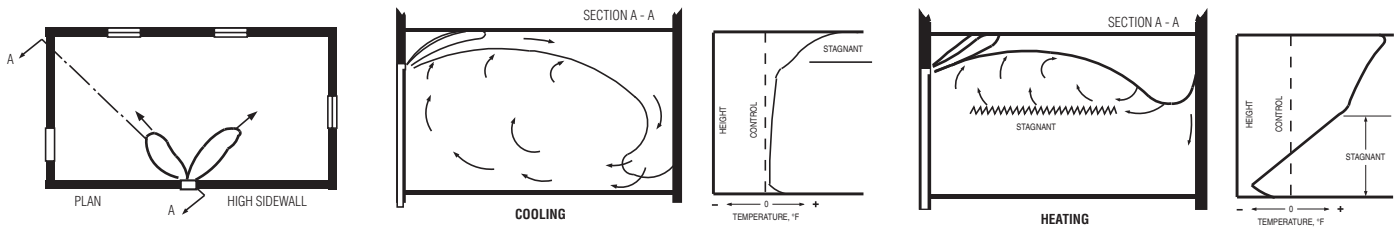


Fig. 6. Spreading Horizontal Projection at Ceiling Level. High Sidewall Grille.

- The air pattern will be across the ceiling and down the wall to the floor. When heating, this results in a smaller stagnant zone with more even temperatures in the occupied zone.

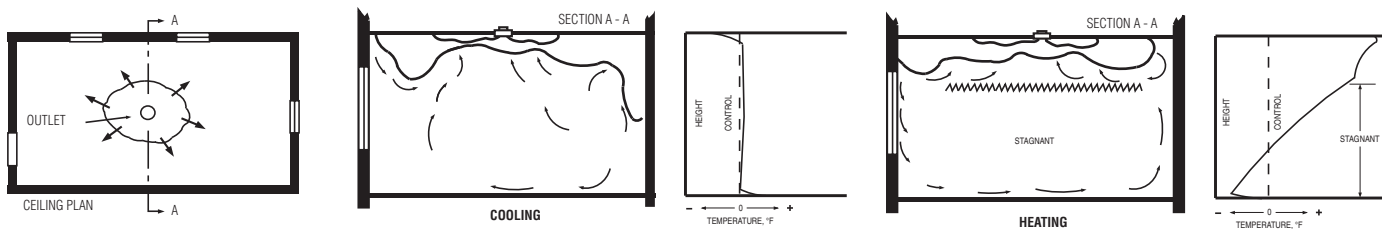


Fig. 7. Radial Horizontal Projection. Ceiling Diffuser.

- Ideal for year round cooling. Thinner air pattern gives greater spread and more uniform space temperatures.
- Wide temperature variations when heating.

### Heating From Above

Heating a space by the downward projection of hot air from the ceiling is not recommended. However, if it becomes necessary, the designer should be guided by the following notes:

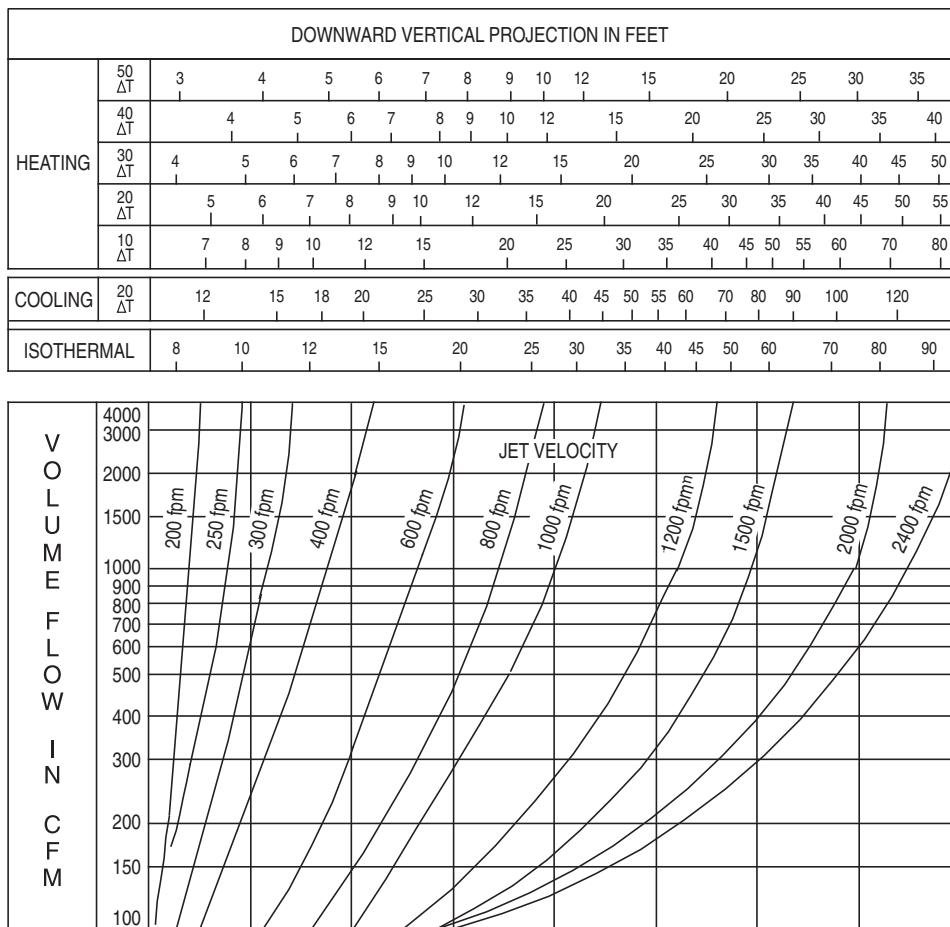
- Where possible, heat outside walls and windows by radiation, floor outlets, or under window units. Heat should be supplied at the location where it is lost to the outside.
- Temperature of downward projected hot air should not be more than 20° to 25°F higher than room temperature.
- When projecting air horizontally from slots, locate the slot several feet from a cold wall so that the jet 150 fpm throw distance occurs at the junction of the ceiling and wall. The air envelope will spread over the wall as it progresses toward the floor. The terminal 50 fpm throw point cannot be easily determined. It may occur close to the floor, but because of the buoyancy of the warm air it will be much less than the catalog throw data for cold air.

- Consideration must be made for outlet performance during the summer cooling season. Outlet throw to 150 fpm is the same as for heating, i.e., equal to the distance to the wall. The distance from 150 fpm to 50 fpm should be the same as approximately the distance from ceiling to the floor.
- A continuous slot directed toward the wall should be broken into active and inactive sections to allow the warm air to spread over the wall surface.

**Table 4. Location of Inactive Sections of Slot Diffuser.**

<b>Length of Active Sections in Feet</b>	1	5	10
<b>Length of Inactive Sections in Feet</b>	1	2	3

**Fig. 8. Downward Projection of Hot Air from Grilles.**



## Air Temperature and Direction

A temperature of 80°F is recommended when air is blowing directly on the subject. Air should be directed to the front upper torso.

People's tolerance to air temperature, air motion, and humidity varies a great deal. Provisions should be made for the individual to control air direction and velocity.

## Outlet Location

For local area ventilation, outlets should be at about the 10 foot level. For spot cooling the outlet should be at about the 7 foot level and as close to the subject as is practical. The closer to the subject the less room air is induced into the jet stream.

## High Velocity Jets

High outlet velocities are usually chosen in the 1000 to 2000 fpm range, although in extremely uncomfortable conditions velocities of up to 4000 fpm may be directed at a worker, and only for very short periods of time.

Higher velocities require higher pressures. This will create higher noise levels and induce more hot local air into the jet.

## Discharge Volume

For spot cooling, volumes between 1500 and 5000 cfm per outlet are frequently used. For large areas volume may exceed 10,000 cfm per outlet. When the supply outlet is far away from the work station large amounts of room air are induced into the primary air, making it less effective. The longer the throw the greater the air volume required.

## Directional Control

There should be some means of controlling the direction of the air for the following reasons:

- Seasonal: up in winter, down in summer.
- Change from one work station to another.
- Direct the air away from the product or process.
- Personal preference of the worker.

Individual volume control units are desirable for each outlet. Their use simplifies balancing of the system and ensures that the balance is not changed when one outlet is adjusted.

## Special Features Are Available

- Insect screens or bird screens.
- Filter grilles.
- Special fastenings for quick and easy grille removal.
- Concealed fasteners and tamper-proof screws for security.
- Heavy duty security grilles.
- Stainless steel construction for corrosive atmospheres.
- Fire dampers.

## INDUSTRIAL VENTILATION

### Industrial Ventilation

Maintaining satisfactory working conditions in industrial situations often requires special treatment. A common problem is how to improve the environment for workers who are subject to high temperatures or noxious fumes. There are generally three problem categories:

**(a)** The hot and dry environment where the worker is subject to sensible and radiant heat exposure. An exposed worker will sweat profusely but heat loss by evaporation cannot match the high radiant heat gain the worker is receiving. Examples are found in the steel industry, rolling mills, open hearth furnaces, foundries and forging operations.

**(b)** High ambient temperatures due to weather, aggravated by the low air motion in the building. Examples are warehouses, and the light manufacturing industries where the working area is so large that it is not practical to air condition it. The worker cannot get cool enough by sweating because of high humidity and lack of air motion.

**(c)** Warm moist environments where the worker is subject to latent heat from wet processes. Examples are dye houses, textile mills, laundries and tanneries. The high humidity inhibits the evaporation of sweat and prevents the worker from keeping cool by natural processes.

### Heat Shields

For hot, dry exposure use heat shields to reduce radiant heat loads. Where possible lower the temperature of hot objects by insulation, water cooling, or shielding. Heat reflective clothing is used with success. Install exhaust hoods to draw off process heat. Cooler air will flow over the worker as it progresses toward an exhaust hood.

### Local Ventilation

When it is impractical to supply treated air in volumes large enough to control temperature, humidity, or air motion, the best method is to blow air directly on an individual worker or into a work station. The worker is now cooled by convection and the evaporation of sweat.

Supply air to the desired location by ducts or use "man cooler" portable fans.

Treated air is supplied at the 8 to 12 foot level to displace air heated by machines, processes, lights and people. No attempt is made to treat air above or outside the chosen work area.

In some cases the best method is to supply conditioned air to an enclosure which surrounds the worker.

Spot cool by blowing high velocity air directly on the worker.

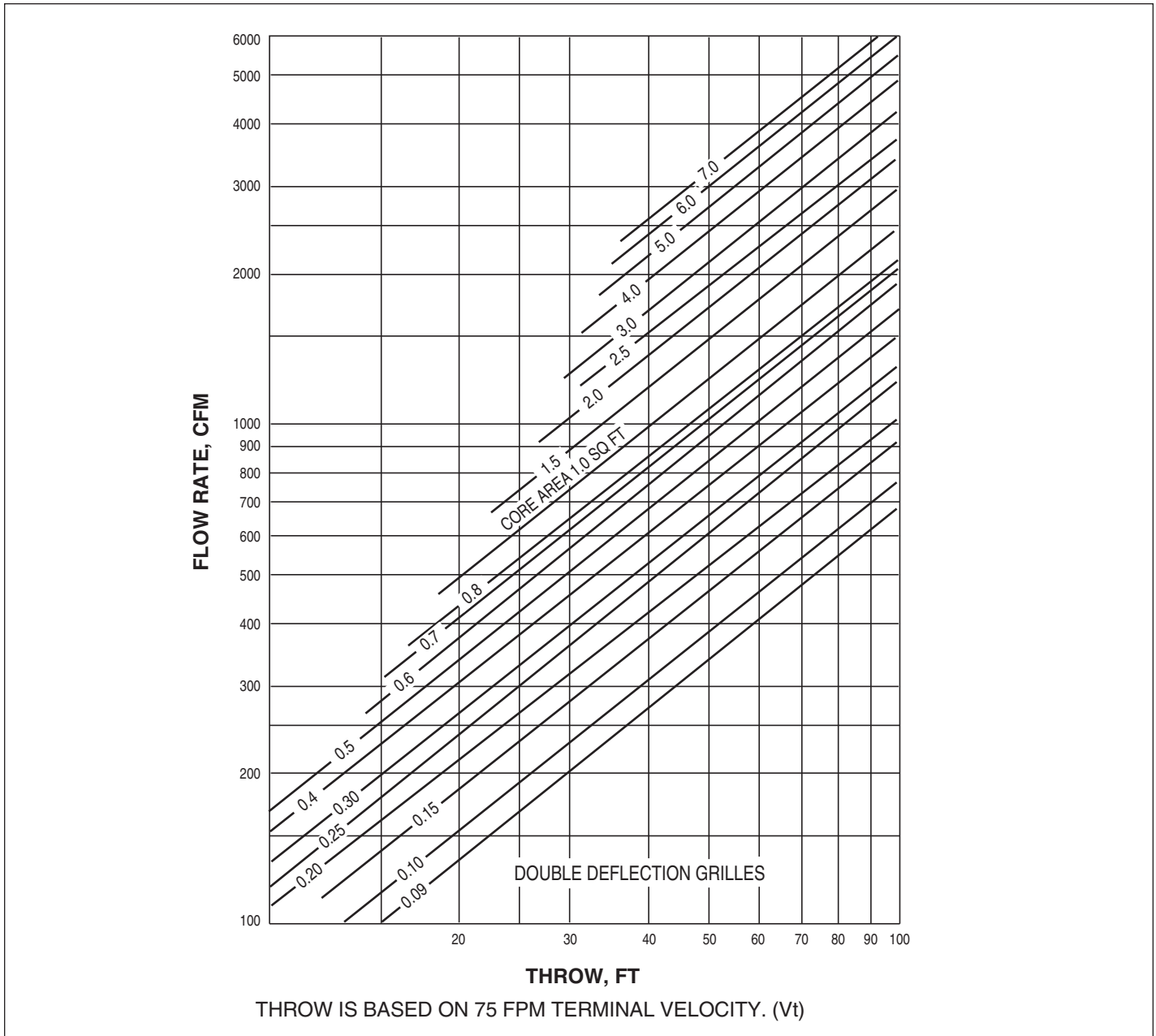
### Tolerable Velocities

Air velocities from 50 to 80 fpm are acceptable in areas of light activity.

Calculated jet velocity is the centerline velocity of the jet. The average velocity away from the center of the jet will be much less.

It is undesirable to blow air directly on a worker at a velocity greater than 200 fpm for a long period of time.

**Double Deflection Grilles and Registers**  
**Supply Grille and Register Selection for Commercial Applications**



**Fig. 9. Grille and Register Selection for Commercial Applications – Double Deflection Grilles with a Damper, 3/4" Blade Spacing.**

For other terminal velocities multiply by factor.					
Vt 50	Vt 75	Vt 100	Vt 150	Vt 200	Vt 300
1.5	1.0	0.75	0.50	0.375	0.25

Vt = Terminal Velocity.

Adjustable Vane Supply Single and Double Deflection Grilles

Outlet Area In Square Feet

Example: Listed size 28 x 28 @ 0°,  
Ao area factor = 3.54 square feet.

LISTED HEIGHT	LISTED HEIGHT												AO													
	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	0°	22.5°
4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	0.14	0.12	0.10
8	10	6																						0.18	0.16	0.14
12	12	10	8																					0.24	0.21	0.18
16	12	10																						0.26	0.22	0.20
	14		8																					0.29	0.25	0.22
18		12																						0.34	0.30	0.26
		14	10																					0.39	0.34	0.30
24	16	12																						0.41	0.36	0.31
26			10																					0.44	0.38	0.33
30		18	14																					0.50	0.44	0.38
	24	20		12																				0.54	0.47	0.41
36	28	22	16																					0.61	0.53	0.46
38	24	18	14	12																				0.77	0.67	0.58
		30	18																					0.84	0.73	0.64
		34	24	20	16	14																		0.93	0.81	0.71
		38	28	22	18	16																		1.03	0.90	0.78
			30	24	20																			1.12	0.97	0.84
				22	18	16																		1.26	1.09	0.95
				36	30	24	20	18																1.43	1.24	1.08
					32	28	24	20	18															1.58	1.37	1.19
						36	30	26	22	20														1.70	1.48	1.29
									22	20														1.77	1.54	1.34
									36	30	26	24	22											1.90	1.65	1.44
									40	30	26	24	22											2.16	1.87	1.63
										42														2.22	1.93	1.68
											36	30	24											2.41	2.09	1.82
												36	32	28	26	24								2.58	2.24	1.95
													40	36	32									2.92	2.53	2.21
																								3.04	2.64	2.30
																								3.24	2.81	2.46
																								3.39	2.94	2.57
																								3.54	3.07	2.68
																								3.79	3.29	2.87
																								3.90	3.39	2.96
																								4.07	3.53	3.08
																								4.57	3.96	3.46
																								4.65	4.04	3.52
																								4.91	4.26	3.72
																								5.23	4.54	3.96
																								5.58	4.84	4.22
																								5.91	5.13	4.48
																								6.60	5.72	5.00
																								6.91	5.99	5.23
																								7.32	6.35	5.55
																								8.09	7.02	6.12
																								8.89	7.71	6.73
																								9.72	8.44	7.36
																								10.60	9.20	8.03

Table 5.

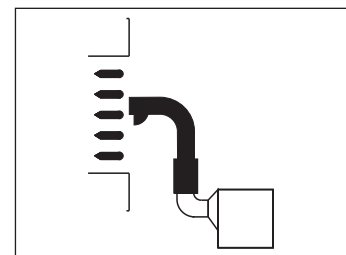
Grille Air Measurement

cfm = AoVo (12)

Ao = Outlet Area, sq. ft.

Vo = Outlet Velocity, fpm.

Fig. 10. Using 2220A Velometer Tip to Measure Vo Outlet Velocity.



High Capacity Grilles and Registers Supply Grille and Register Selection for High Capacity Industrial Applications

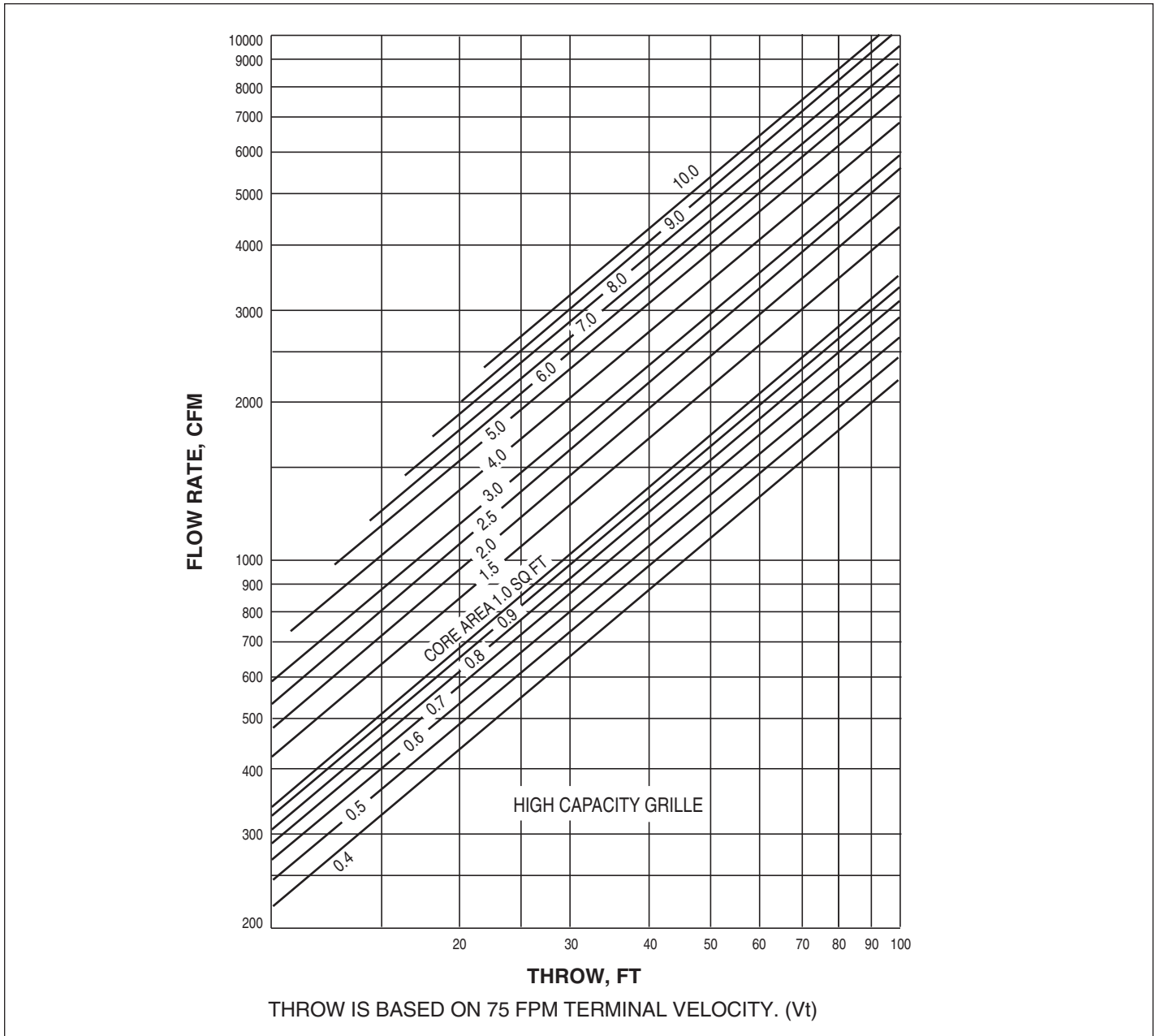


Fig. 11. Grille and Register Selection for Industrial Applications – Double Deflection Grilles with a Damper, 1 1/2" Blade Spacing.

For other terminal velocities multiply by factor.				
Vt 50	Vt 75	Vt 100	Vt 150	Vt 200
2.0	1.3	1.0	0.7	0.5

Vt = Terminal Velocity.



Fixed Vane Return Single Deflection Grilles

Outlet Area In Square Feet

Example: Listed size 28 x 28,  
Ao area factor = 4.85 square feet.

	LISTED HEIGHT																AO								
	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32		34	36	38	40	42	44	46	48
L I S T E D	8		6																						0.23
	12	10	8																						0.30
	16	12	10																						0.37
			14		8																				0.40
	18		12																						0.45
	24		16	12																					0.59
	26				10																				0.62
	28			18	14																				0.67
		24	20	16	12																				0.74
	38		24	18	14	12																			0.89
W I D T H			34	24	20	16	14																		1.22
			38	28	22	18	16																		1.34
				30	24	20																			1.49
				30		22	18	16																	1.58
				36	30	24	20	18																	1.78
					32	28	24	20	18																2.01
					36	30	26	22	20																2.23
						36	30	26	24	20															2.48
							36	30	26	24	22														3.00
							40	34	30		24														3.34
							36	32	28	26	24													3.56	
						46	40	36	32															4.01	
						48				28	26													4.19	
							40	36	32	30	28	26												4.46	
								40	36	30	28	26												4.85	
								44	40	36	30	28												5.35	
								48		38	34	30												5.57	
									46		38	36	32											6.34	
										48	48	38	36	34										7.13	
											48	46	42	38	36									8.02	
													48	42										8.94	
														48	46	42								9.90	
															48	46	44	42						10.92	
																	46	44						11.98	
																			46					13.10	
																					48			14.26	

Table 6.

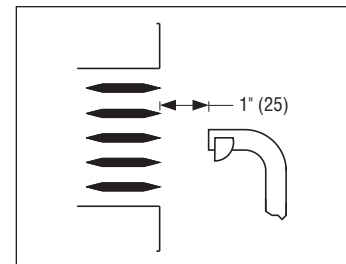
Grille Air Measurement

cfm = AoVo (13)

Ao = Outlet Area, sq. ft.

Vo = Outlet Velocity, fpm.

Fig. 12. Using 2220A Velometer Tip to Measure Vo Outlet Velocity.



**NOISE CRITERIA**

**Noise Level in a Ventilated Space**

Noise in a ventilated space may come from a wide variety of sources. Noises in the room can result from air flowing through ceiling diffusers or sidewall grilles. Air outlets also radiate noise generated in the duct system, such as fan noise, air flowing around dampers, turning vanes, or through terminal units. Noise from outside the room may be machinery noise, or traffic noise. Our interest in this discussion is limited to the noise generated by grilles, ceiling diffusers, and noise emanating from air supply or return outlets.

It is generally assumed that it is desirable to have completely silent air systems. Although this is necessary for some situations, such as concert halls or live theatre, it is not always the case. For example, in office areas without suitable masking noise, it is often necessary to provide background music. A comfortable background noise level will mask sudden disruptive noises such as from traffic or garbage collection. Another important effect of background noise is that it provides a degree of speech privacy so there is no need to talk behind closed doors.

The ideal background noise should not be loud enough to interfere with normal speech. It should be well balanced, not all high pitched sounds or all low sounds.

For example, a low duct noise will complement higher octave diffuser noise and provide a balanced pleasant acoustic background.

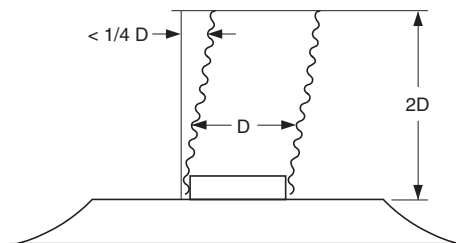
Noise from the duct system may be falsely attributed to the performance of the diffuser. Removal of the diffuser core quickly determines whether the offending noise is from the duct system or from the diffuser. Duct system noise should be 5 dB less than the diffuser dB rating.

The level of noise is measured in decibels. Air outlet manufacturers catalog noise values in NC numbers for air flowing through their products. The more air handled, the higher the NC value. It is generally assumed that an average office or ventilated space will have a room attenuation of 10 dB so suppliers' catalogs give product NC numbers as Sound Pressure Level with the 10 dB already deducted.

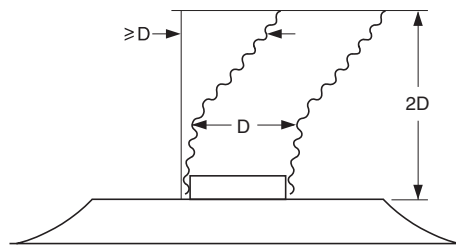
**Diffuser Inlet Conditions**

Performance data as shown in this catalog is obtained in accordance with ANSI/ASHRAE Standard 70 – 2006. This standard provides the laboratory method for testing and rating the performance of air outlets and inlets. The standard does not however, take into effect the real world conditions often encountered in typical installations. For example, it assumes a uniform velocity distribution throughout the grille or diffuser neck. This is obviously not always the case in practice, with the use of flexible duct, elbows, inlet dampers, etc... the velocity could vary substantially. These conditions could cause greatly increased turbulence and substantially higher sound levels than those indicated by the tested catalog data. Also, the sound levels are for only one diffuser, multiple diffusers in the same area will increase the resultant sound level.

Inlet conditions are crucial in the proper performance of an outlet. With the common use of flexible duct, this is often overlooked and can result in significant increases in sound levels. If the flexible duct connection is misaligned less than 1/4 the diffuser neck diameter over a connection length equal to twice the inlet diameter, no significant change in sound levels will occur. However, if the connection is misaligned equal to or more than the neck diameter over a distance of twice the inlet diameter, the resultant sound levels can increase by as much as 12 dB.



**Good Inlet Conditions**  
(Sound levels as catalogued)



**Poor Inlet Conditions**  
(Sound levels up to 12 dB higher than catalog)

Balancing dampers are another significant source of noise in any HVAC system. Ideally, balancing dampers should be located as far from the air outlet as possible, (5 to 10 duct diameters), and acoustic duct should be used between them. The use of volume dampers on diffuser inlets can significantly increase sound levels due to the effect on the air turbulence between the damper and the diffuser as well as the resultant increase in pressure drop.

### Diffuser Damper Sound Correction

The following table provides an addition to be added for ceiling diffusers with neck mounted opposed blade dampers.

**Table 7. Diffuser Damper Sound Correction.**

	Pressure Drop – In. w.g.		
	0.05"	0.15"	0.25"
Damper throttling effect	0.05"	0.15"	0.25"
Approximate damper opening	3/4	2/3	1/2
NC add to single outlet sound rating	5	10	15

The following table provides an addition to be added for linear diffusers based on the damper pressure ratio. This is the pressure drop across the partially closed damper divided by the pressure drop across the fully open damper.

**Table 8. Decibels to Be Added to Diffuser Sound Rating to Allow for Throttling of Volume Damper**

	Damper Pressure Ratio					
	1.5	2	2.5	3	4	6
<b>Location of Volume Damper</b>	<b>dB to be added to Diffuser Sound Rating</b>					
In neck of linear diffuser	5	9	12	15	18	24
In inlet of plenum of linear diffuser	2	3	4	5	6	9
In supply duct at least 5 ft. (1.5 m) from inlet plenum of linear diffuser	0	0	0	2	3	5

Air extractors are another commonly used accessory that must be applied properly in order to avoid a detrimental effect on the system design. They should only be used when the duct is wide enough to allow the device to open to its maximum position without causing undue restriction of the airflow in the duct. Otherwise, they could limit downstream airflow, increase duct velocity and increase sound levels.

Equalizing grids can have positive impact on diffuser inlet conditions and reduce the resultant sound levels if they are used properly. A poor inlet condition that results in a noise problem can sometimes be helped substantially by using equalizing grids in the neck of the diffusers or at the branch take off to the diffuser. However, an equalizing grid will not help a good inlet condition and can in fact add 2 - 3 dB to the diffuser sound levels in ideal conditions.

Flow generated noise should be minimized wherever possible by locating elbows or branch takeoffs at least 4 to 5 duct diameters from each other. This will also help to reduce sound transmission from one room to another through the duct.

### Sound Pressure Level

The noise we hear in a space is not the absolute "Sound Power Level" noise generated by these sources, but it is the Sound Power Level minus the attenuating value of the space. This is called "Sound Pressure Level". The space attenuation is due to the sound absorptive value of ceiling tiles, walls, drapes, windows, floor, rugs, furniture, people, etc...

### Sound Pressure Levels for Evenly Distributed Ceiling Diffusers

Where there are four or more similar ceiling diffusers, evenly distributed about the room,  $L_p$  may be calculated using formula 15. Where there are rows of linear diffusers, use the sound power level of a single section for  $L_w$ s and the number of sources as the number of sections in the array.

$$L_{pt}, 5 \text{ ft.} = L_w s - 5 \log X - 28 \log h + 1.3 \log N - 3 \log f + 31 \text{ dB} \quad (15)$$

Where:  $L_{pt}$  = The average sound pressure level (+ or - 1 dB) in a plane 5 feet off the floor, in dB re 20  $\mu$ Pa.

- $L_w s$  = Sound power level of a single outlet (outlet sound power plus duct noise and any noise created at the air terminal) in dB re  $10^{-12}$  watts.
- $X$  = Ratio of floor area served by each outlet to the square of the ceiling height.
- $h$  = Ceiling height in feet.
- $N$  = Number of ceiling outlets in the room ( 4 or more ).
- $f$  = Octave band center frequency in Hz.

### Estimating Sound Pressure Levels

$$L_p = L_w - 5 \log V - 3 \log f - 10 \log r + 25 \text{ dB} \quad (14)$$

Where:  $L_p$  = Room sound pressure level at a reference location in dB re 20  $\mu$ Pa.

- $L_w$  = Source sound power level in dB re  $10^{-12}$  watts.
- $V$  = Room volume in cubic feet.
- $f$  = Octave band center frequency in Hz.
- $r$  = Distance from the sound source to reference location in feet.

This equation is for a single noise source in the room. The total sound pressure level is obtained by adding the  $L_p$  at  $r$  distance from the reference location for each additional noise source, on an energy basis.

Fig. 13. Combining Two Sound Levels.

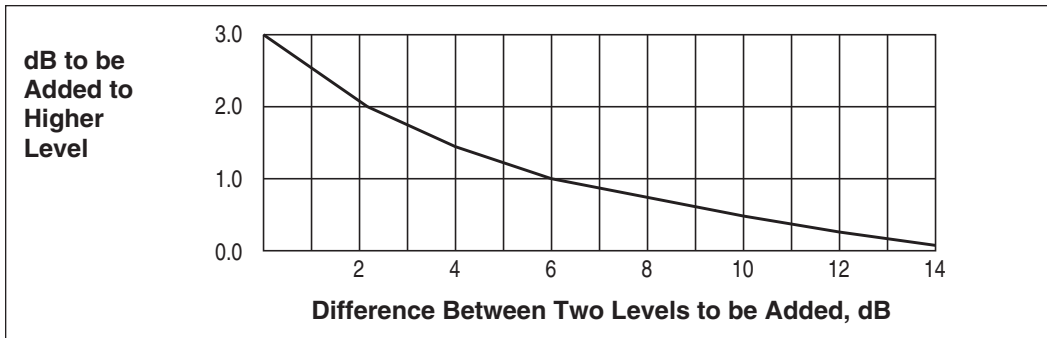


Table 9. Combining Several Sound Levels.

Number of Multiple Outlets	2	3	4	5	6	8	10
Increase in Noise Level, dB	3	5	6	7	8	9	10

### RC (Room Criterion) Curves

It has been the practice to use NC curves to specify the noise level in an occupied space. This simple one number method of specifying acoustic conditions has been used successfully for many projects. However, there are some HVAC duct values specified which, although the installation may meet the NC values indicated, are still not acceptable. It has been found that predominant low octave band noise which does not exceed the specified NC curve can generate a low rumble. This is difficult if not impossible to correct once the installation is complete. At the other end of the scale, a predominant high octave band noise may follow the specified NC curve but will generate a hissing sound which can not be tolerated. To try to prevent system designs which result in such conditions, a revised set of curves has been developed called RC curves.

Chapter 42 of the ASHRAE Fundamentals Handbook recommends the use of RC curves in the design of air conditioning ventilating systems as a tool to help prevent acoustical disasters. RC curves eliminate the 8000 Hz octave band but use the 31.5 Hz octave band and the 16 Hz band to avoid the possibility of low frequency fan noise. An RC designation is based on a speech interference rating, a dB rating and a letter of the alphabet to describe the quality of the sound.

#### Determining an RC Noise Rating

1. Plot the octave band sound pressure level spectrum on an RC chart.
2. Calculate the Speech Interference Level (SIL) by taking the arithmetic average in dB of the sound level reading in the 500, 1000, 2000 Hz octave bands.
3. Mark the SIL on the 1000 Hz band line.
4. Draw a line with a slope upward to the left of 5 dB per octave through the SIL point, from the 4000 to 31.5 Hz octave band lines. This has established a reference line for evaluating the sound quality of the sound spectrum.
5. Draw a line from the 500 to 31.5 Hz octave band line parallel to, and 5 dB above, the line drawn in step 4. Draw a second line from the 1000 to 4000 Hz octave band 3 dB above the lines drawn in step 4. If the sound spectrum does not extend above these boundary lines the RC noise rating is labeled neutral (N).

6. The RC noise rating is the value of the SIL point on the 1000 Hz band line.
7. The quality of the sound can be determined by the manner in which the sound spectrum goes beyond the boundary limits. This is specified alphabetically as follows:

#### Neutral Spectrum (N)

The plotted levels in the octave bands must not exceed the levels of the boundary lines constructed as above. Example Fig. 14.

#### Rumbly Spectrum (R)

The levels of the octave bands less than 500 Hz exceed the lower octave band boundary line levels. Example Fig. 15.

#### Hissy Spectrum (H)

The levels in the octave bands higher than 1000 Hz exceed the higher octave band boundary line level. Example Fig 16.

#### Tonal Spectrum (T)

A sharp peak in the sound spectrum in a particular octave band, which is 3 dB or more above a line joining the readings of the octave bands on either side of the sound spike.

#### Acoustically Induced Perceptible Vibration (RV)

If the sound spectrum reaches the cross-hatched region on the RC chart, the sound energy could be sufficient to induce vibration in walls and ceilings of light building structures. Sound pressure readings in the 16 Hz octave band are important because they reveal any HVAC noises of significant energy. Besides creating a deep rumbling noise, these can induce audible rattles in light fixtures, air diffusers and grilles. Example Fig 17.

RC Noise Ratings

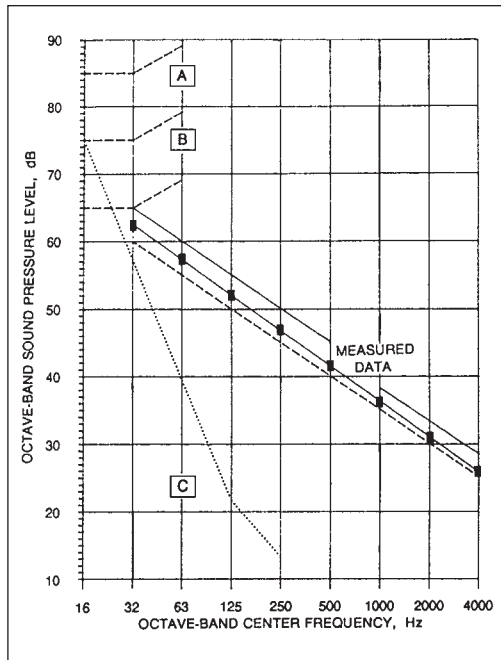


Fig. 14.  
Neutral RC 35 (N).

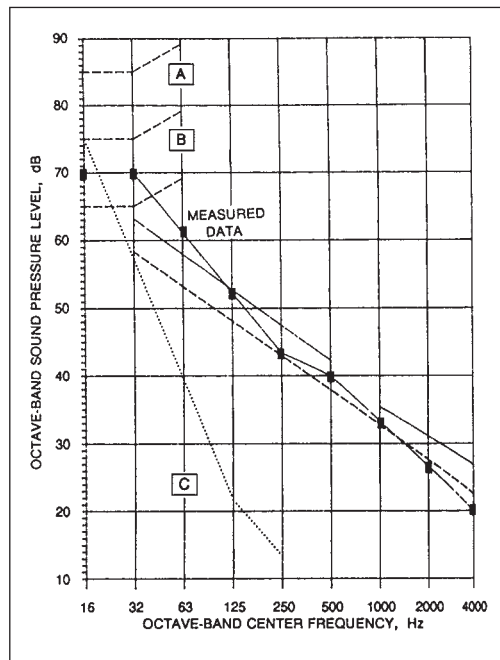


Fig. 15.  
Rumbly RC 33 (R).

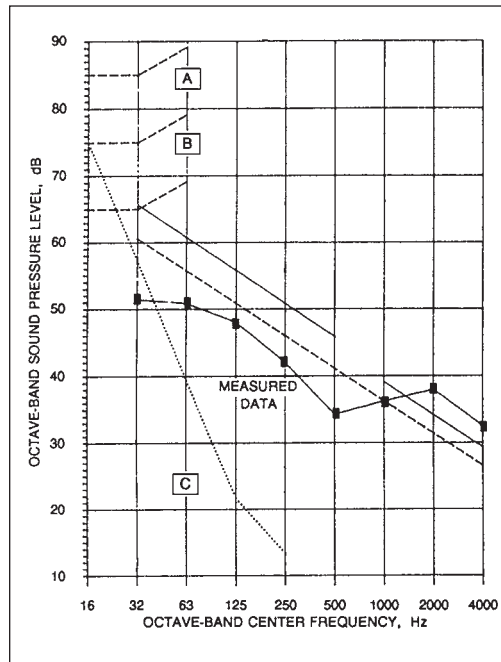


Fig. 16.  
Hissy RC 37 (H).

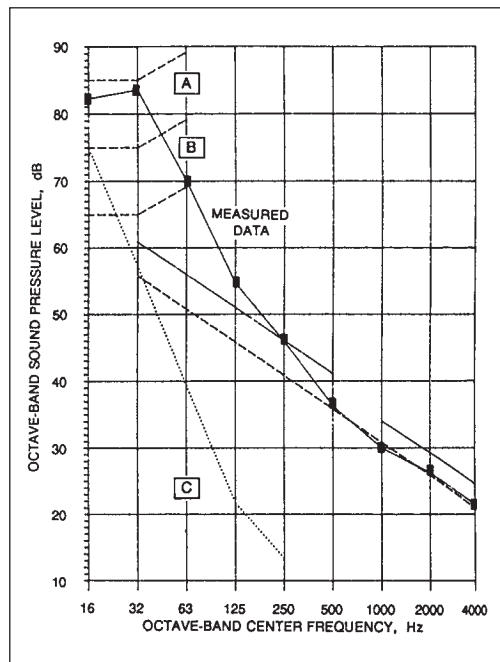


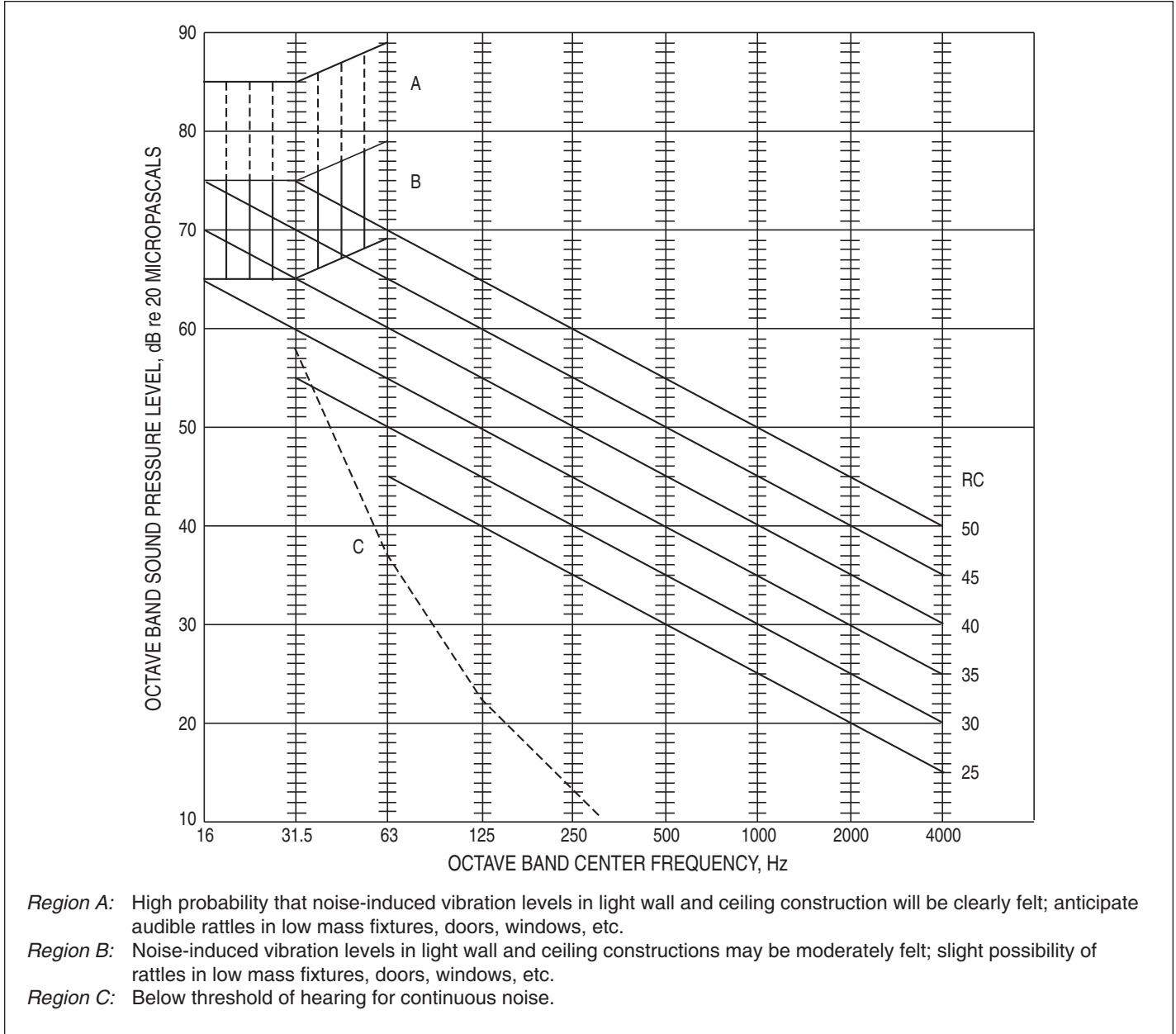
Fig. 17.  
Rumbly and Induced Vibration  
RC 31 (RV).

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**Acceptable HVAC Noise Levels**

Room noise levels must not mask sounds that people want to hear nor be of an obtrusive or annoying character. The RC system of rating noise levels should be used where a neutral unobtrusive background sound is desired. If rumbles, hisses and tonal noise is acceptable, then the alternate NC method of specifying sound can be used.

**RC Curves**



**Fig.18. RC (Room Criteria) Curves for Specifying Design Levels to give a Balanced Sound Spectrum.**

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**Alternate NC Noise Criteria Curves**

Noise Criteria, or NC numbers provide a single number method of specifying a noise spectrum. To determine a Noise Criteria number, the Sound Pressure Level in each octave band is plotted on an NC Chart. The resulting NC number is the number of the maximum NC curve on the chart, tangent to the plotted data.

**NC Curves**

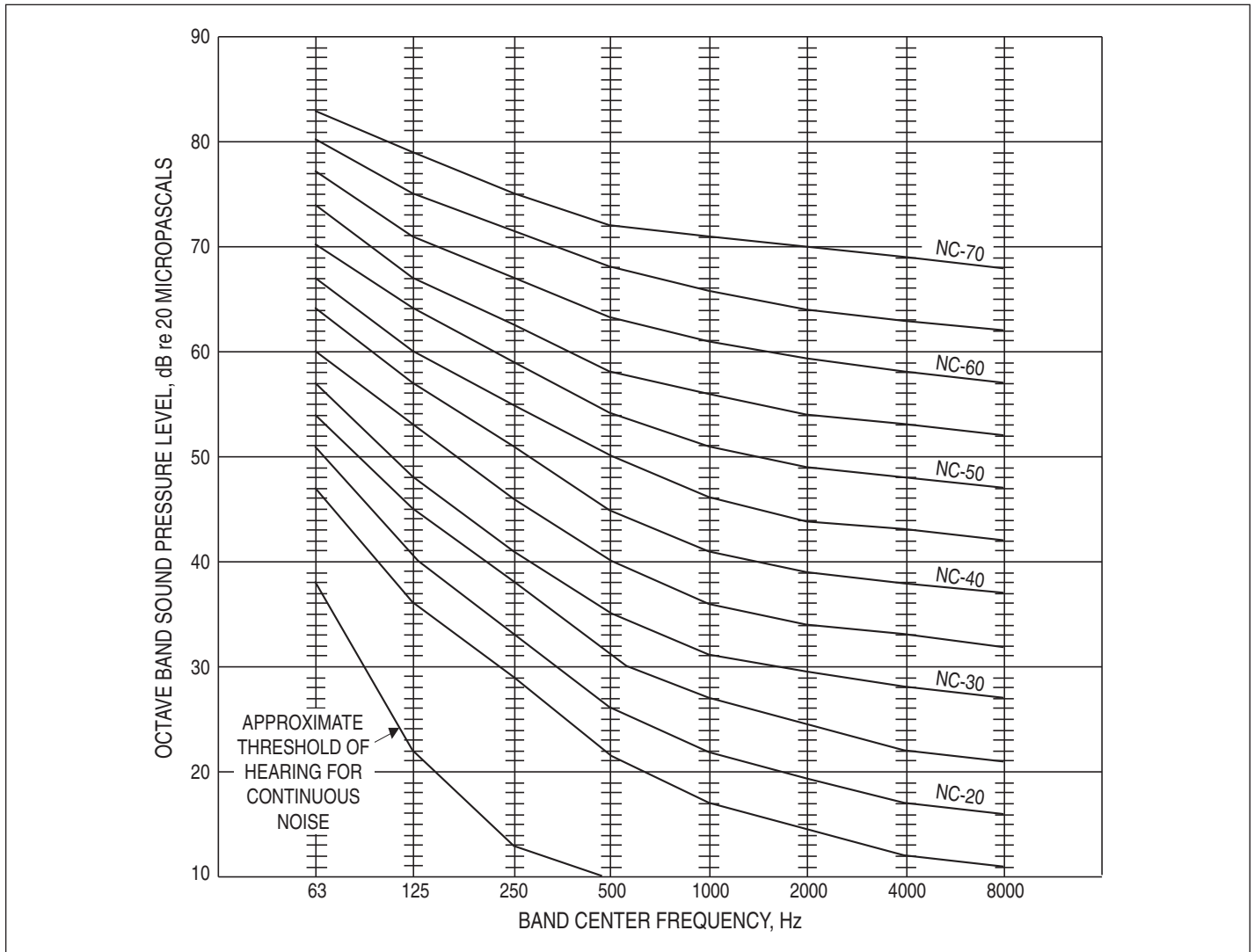


Fig. 19. Noise Criteria Curves for Specifying Desired Sound Levels.

**Table 10. Acceptable HVAC Noise Levels in Unoccupied Rooms.**

	<b>Preferred</b>	<b>Alternate</b>
Private Residences	RC 25-30 (N)	
Apartments	RC 30-35 (N)	NC 30-35
Hotel/Motel		
Bedrooms/Suites	RC 30-35 (N)	NC 30-35
Meeting/Banquet Rooms	RC 30-35 (N)	NC 30-35
Halls, Lobbies, Corridors	RC 35-40 (N)	NC 35-40
Service Areas	RC 40-45 (N)	NC 40-45
Offices		
Executive	RC 25-30 (N)	
Conference Rooms	RC 25-30 (N)	
Private	RC 30-35 (N)	
Open-plan Areas	RC 35-40 (N)	NC 35-40
Business Machines/Computers	RC 40-45 (N)	NC 40-45
Public Circulation	RC 40-45 (N)	NC 40-45
Hospitals		
Private Rooms	RC 25-30 (N)	
Wards	RC 30-35 (N)	
Operating Rooms	RC 25-30 (N)	
Laboratories	RC 35-40 (N)	NC 35-40
Corridors	RC 30-35 (N)	NC 30-35
Public Areas	RC 35-40 (N)	NC 35-40
Churches	RC 30-35 (N)	
Schools		
Lecture/Classrooms	RC 25-30 (N)	
Open Plan Classrooms	RC 35-40 (N)	NC 35-40
Libraries	RC 35-40 (N)	
Courtrooms	RC 35-40 (N)	
Legitimate Theaters	RC 20-25 (N)	
Movie Theaters	RC 30-35 (N)	NC 30-35
Restaurants	RC 40-45 (N)	NC 40-45
Concert and Recital Halls	RC 15-20 (N)	
Recording Studios	RC 15-20 (N)	
TV Studios	RC 20-25 (N)	

## AIR DIFFUSION PERFORMANCE INDEX

### ADPI

#### Air Diffusion Performance Index

Dr. Ralph Nevins has made a thorough study of room comfort conditions under the following circumstances. He has tested room air velocity and temperature patterns using a variety of air supply systems, each with different room heating and cooling loads. The air supply systems tested were:

- Floor grilles with non-spreading and spreading air patterns.
- Sill grilles with vertical blow, 22 1/2° and 45° upward blow.
- High sidewall grilles.
- 2 slot and 4 slot ceiling diffusers to  $V_t$  of 50 and 100 fpm.
- Groups of 4 and 8 troffer diffusers.
- Circular ceiling diffusers.
- Square perforated and louvered ceiling diffusers.

Airflow rates – cfm/sq ft of floor – 0.5, 1, 2, 3, 4, 5

Room heating loads – Btuh/sq. ft. of floor – min, 17.5, 35, 50, 70

Dr. Nevins developed Air Diffusion Performance Index numbers for each different ventilating system. These ADPI numbers were based on criteria which he judged would satisfy the comfort expectations of most people.

The **Air Diffusion Performance Index** is the percentage of measurements of air velocity and temperature, made on a horizontal and vertical grid pattern in an occupied space, which meet the following conditions:

- room air velocities 70 fpm or less.
- temperature difference from floor to head height within -3 degrees or +2 degrees F of the room ambient temperature.

Curves were plotted for each system, ADPI against  $T_{50}/L$ .

These curves give the designer a tool which enables him to pick the best diffuser system for the project.

$T_{50}$  = the distance in feet from the diffuser outlet to the place where the centerline jet velocity is 50 fpm.

L = the desired length of throw to give proper air distribution.

Comfort Index (APDI) vs. Throw Ratio ( $T_{50} / L$ )

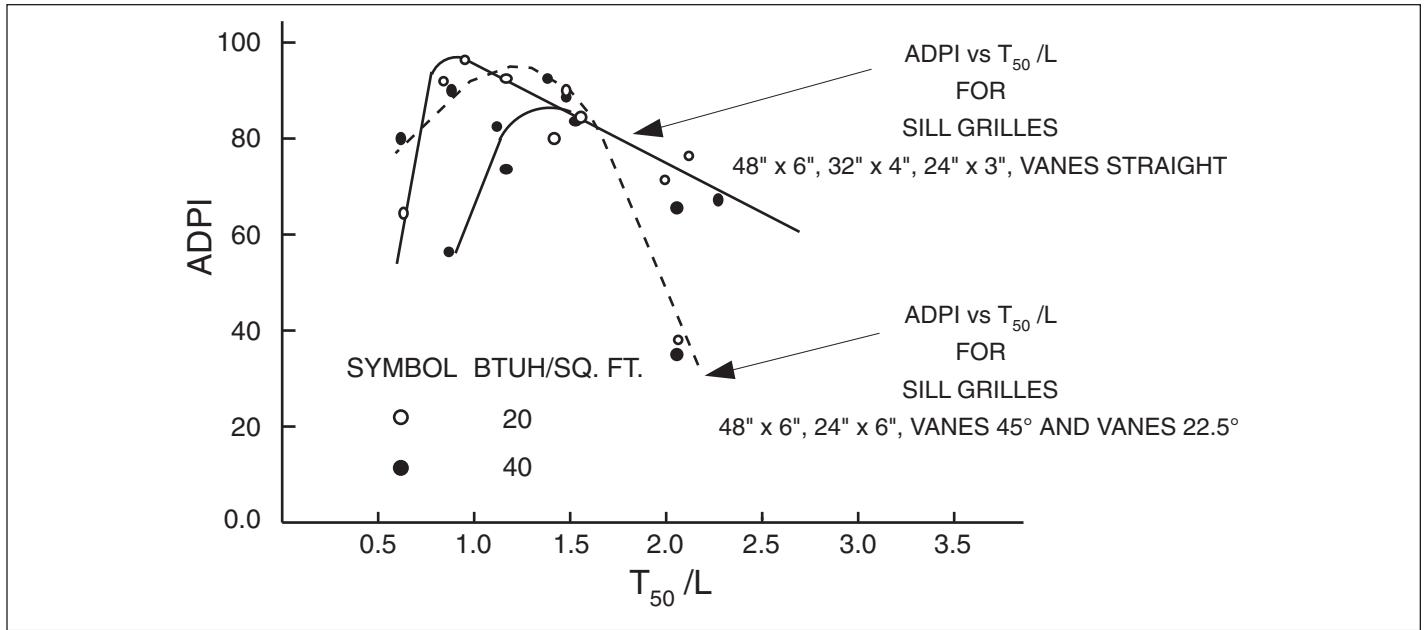


Fig. 20. Sill Grilles.

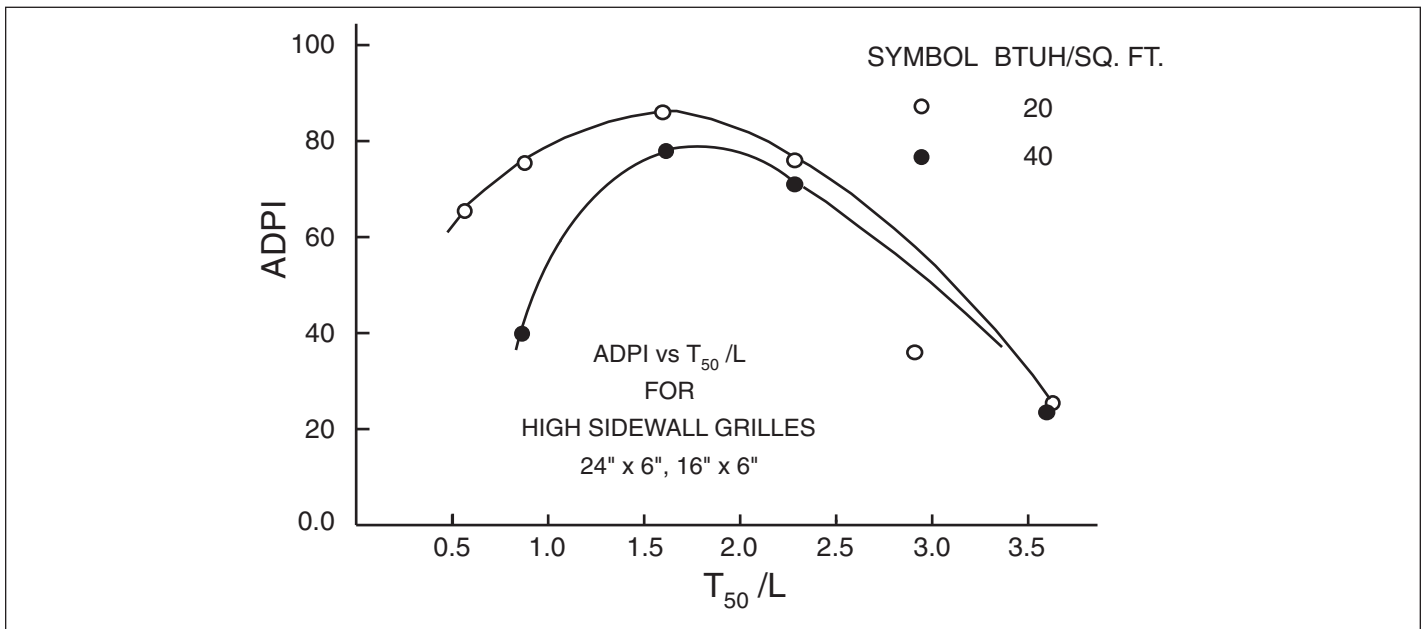


Fig. 21. High Sidewall Grilles.

Comfort Index (APDI) vs. Throw Ratio ( $T_{50} / L$ )

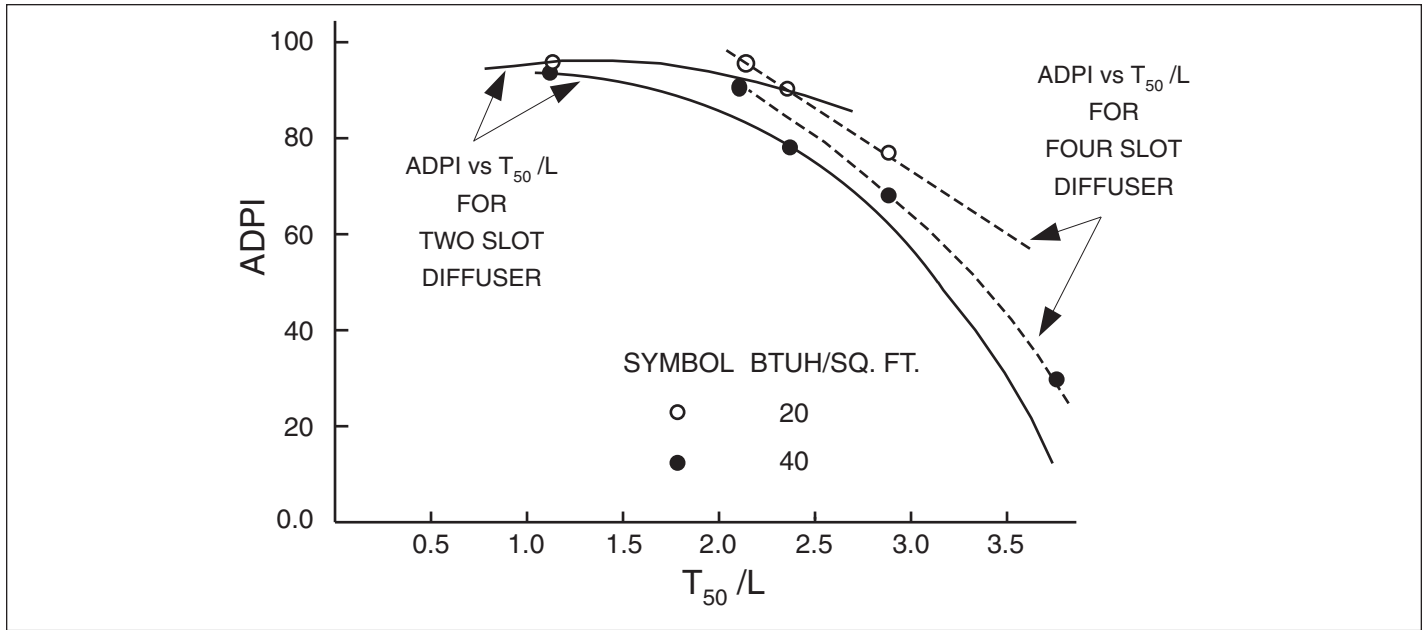


Fig. 22. 2 and 4 Slot Diffusers.

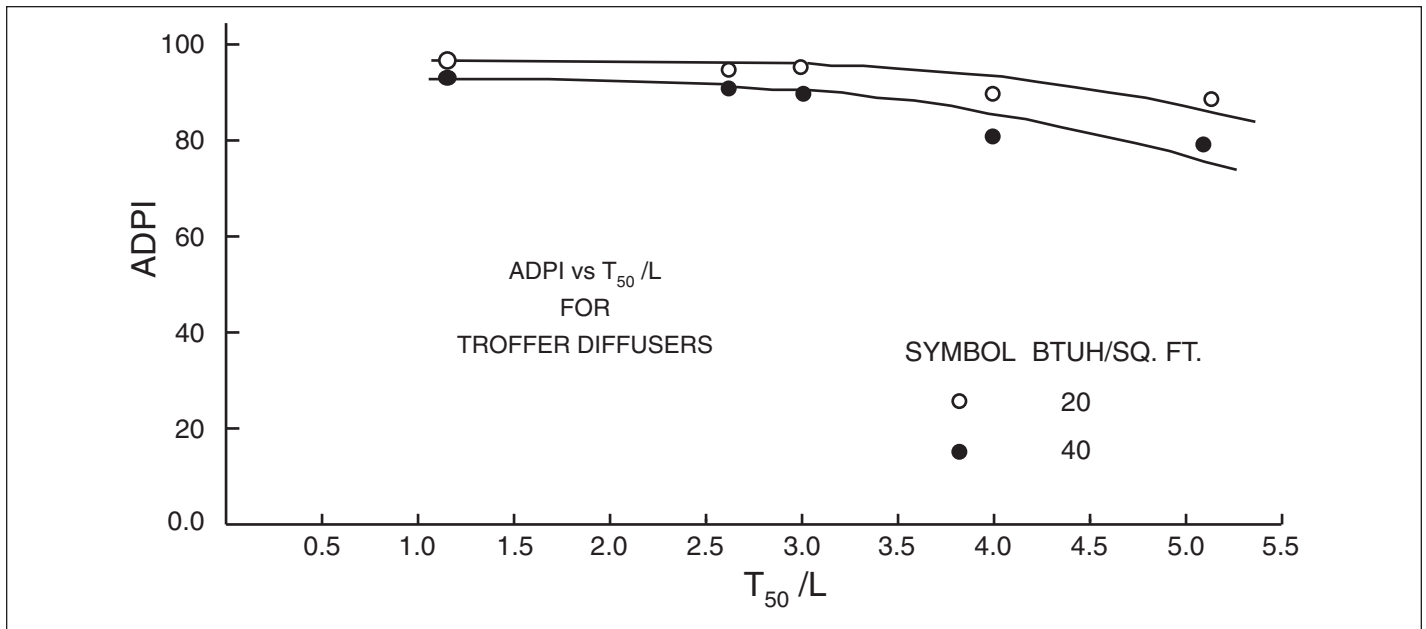


Fig. 23. Troffer Diffusers.

Comfort Index (APDI) vs. Throw Ratio ( $T_{50} / L$ )

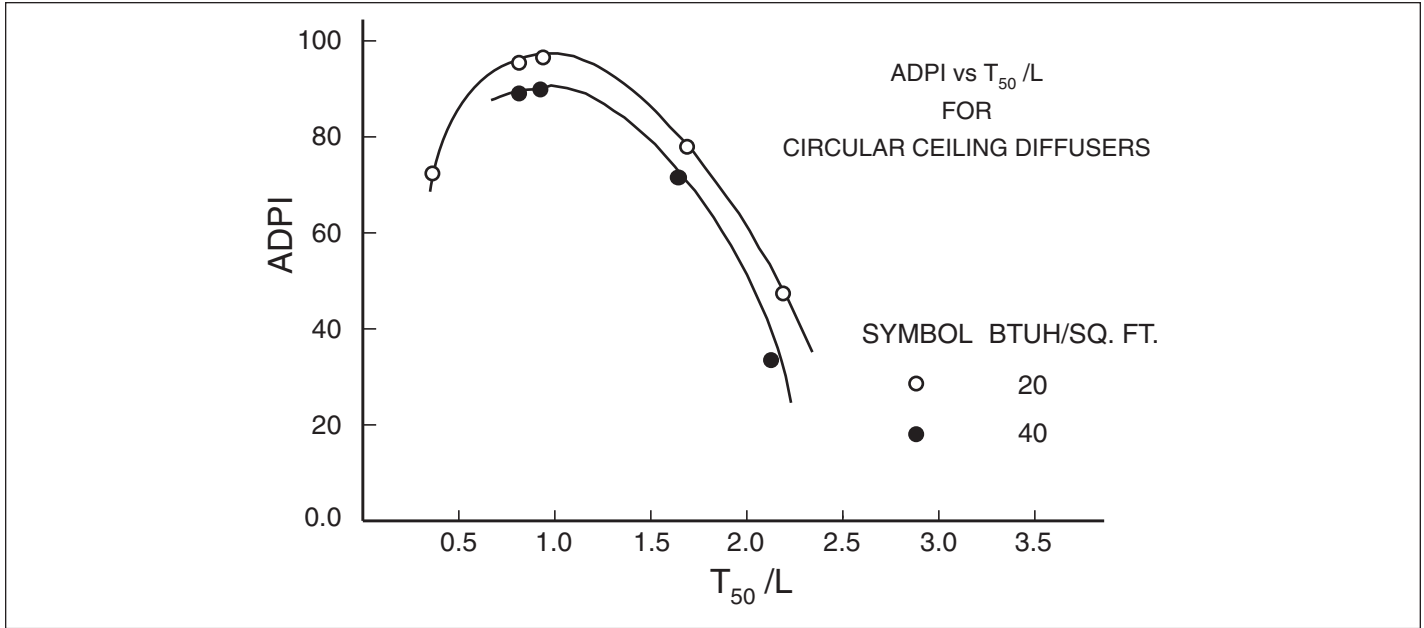


Fig. 24. Round Ceiling Diffusers.

Comfort Index (APDI) vs. Throw Ratio ( $T_{50} / L$ )

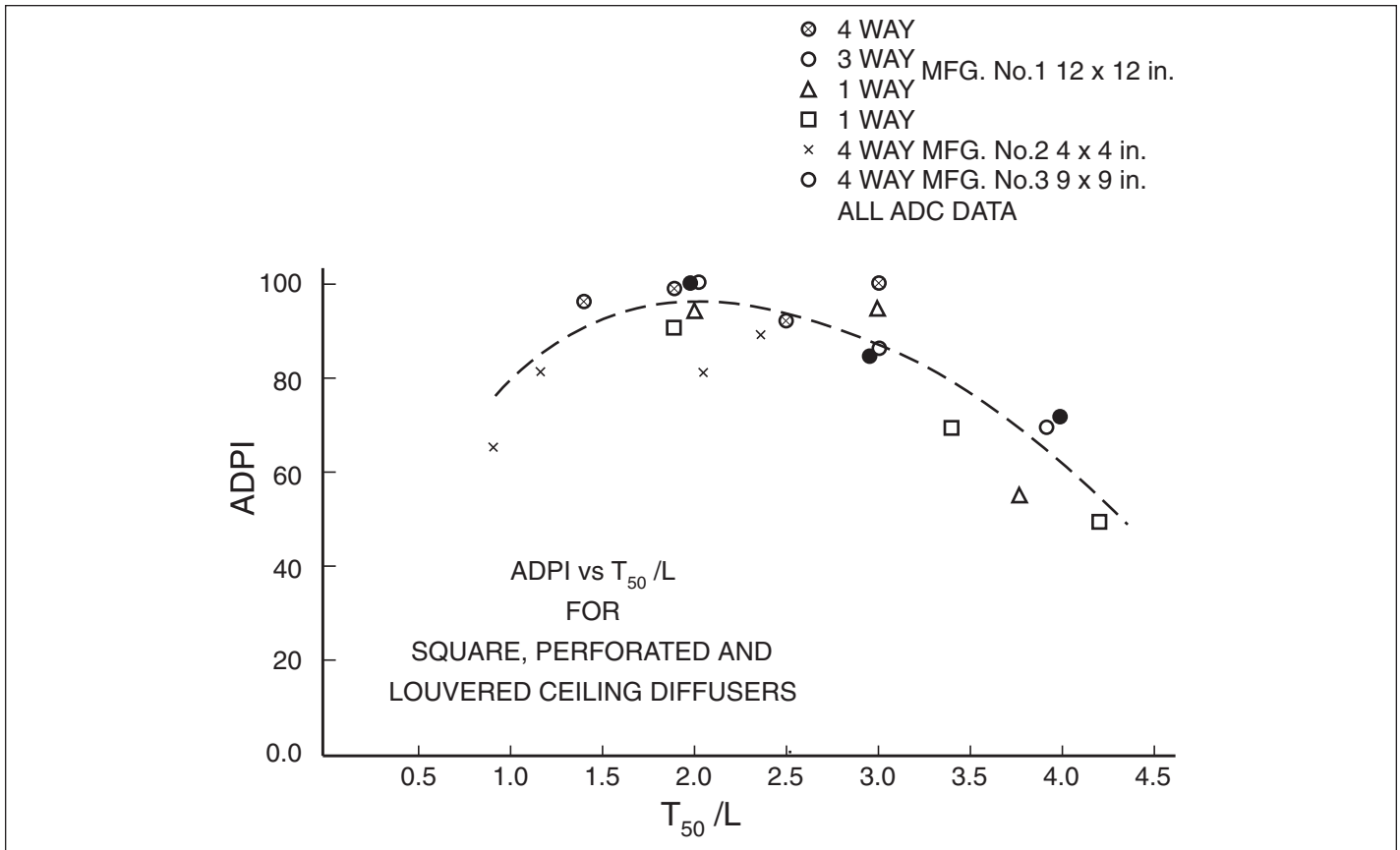


Fig. 25. Square, Perforated and Louvered Ceiling Diffusers. Room loads from 11 to 51 Btuh/sq. ft.



**Table 11.**

Room Length 'L' for Several Diffuser Types	
Diffuser Type	Length 'L', Distance
High Side Wall Grille	- to wall perpendicular to jet.
Circular Ceiling Diffuser	- to closest wall, or intersecting jet.
Sill Grille	- length of room in direction of throw.
Ceiling Slot Diffuser	- to wall or mid-plane between outlets.
Light Troffer Diffuser	- to mid-plane between outlets + distance ceiling to top of occupied zone.
Perforated Louvered Ceiling Diffusers	- to wall or mid-plane between outlets.

**Table 12. ADPI Selection Guide**

Terminal Device	Room Load Btuh/ft	T50/L	Maximum ADPI	For ADPI Greater Than	T50/L
High Side Wall Grilles	80 60 40 20	1.8 1.8 1.6 1.5	68 72 78 85	— 70 70 80	— 1.5 - 2.2 1.2 - 2.3 1.0 - 1.9
Circular Ceiling Diffusers	80 60 40 20	0.8 0.8 0.8 0.8	76 83 88 93	70 80 80 90	0.7 - 1.3 0.7 - 1.2 0.5 - 1.5 0.7 - 1.3
Sill Grille Straight Vanes	80 60 40 20	1.7 1.7 1.3 0.9	61 72 86 95	60 70 80 90	1.5 - 1.7 1.4 - 1.7 1.2 - 1.8 0.8 - 1.3
Sill Grille Spread Vanes	80 60 40 20	0.7 0.7 0.7 0.7	94 94 94 94	90 80 — —	0.8 - 1.5 0.6 - 1.7 — —
Ceiling Slot Diffuser	80 60 40 20	0.3* 0.3* 0.3* 0.3*	85 88 91 92	80 80 80 80	0.3 - 0.7 0.3 - 0.8 0.3 - 1.1 0.3 - 1.5
Light Troffer Diffuser	60 40 20	2.5 1.0 1.0	86 92 95	80 90 90	<3.8 <3.0 <4.5
Perforated & Louvered Ceiling Diffusers**	11 -51	2.0	96	90 80	1.4 - 2.7 1.0 - 3.4
Air Distributing Ceilings	80 60 40 20	— — — —	57 68 78 88	— — — —	— — — —

\* T<sub>100</sub>/L (\*\* Square face)

**PRESSURE MEASUREMENT**

**Pressure Measurement**

**Concepts of pressure.** Pressure is force per unit area. This may also be defined as energy per unit volume of fluid. There are three categories of pressure — Total Pressure, Static Pressure and Velocity Pressure that are associated with air handling. Unit of pressure is expressed in inches of water, designated **in. w.g.**

**Static Pressure** is the normal force per unit area at a small hole in the wall of a duct or other boundaries. It is a function of air density and degree of compression. It may be thought of as the pressure in a tire or in a tank; extends in all directions.

**Velocity Pressure** is the force per unit area capable of causing an equivalent velocity in moving air. Velocity pressure is a function of air density and velocity. At standard air density, the relationship between velocity pressure and velocity is expressed in the following formula:

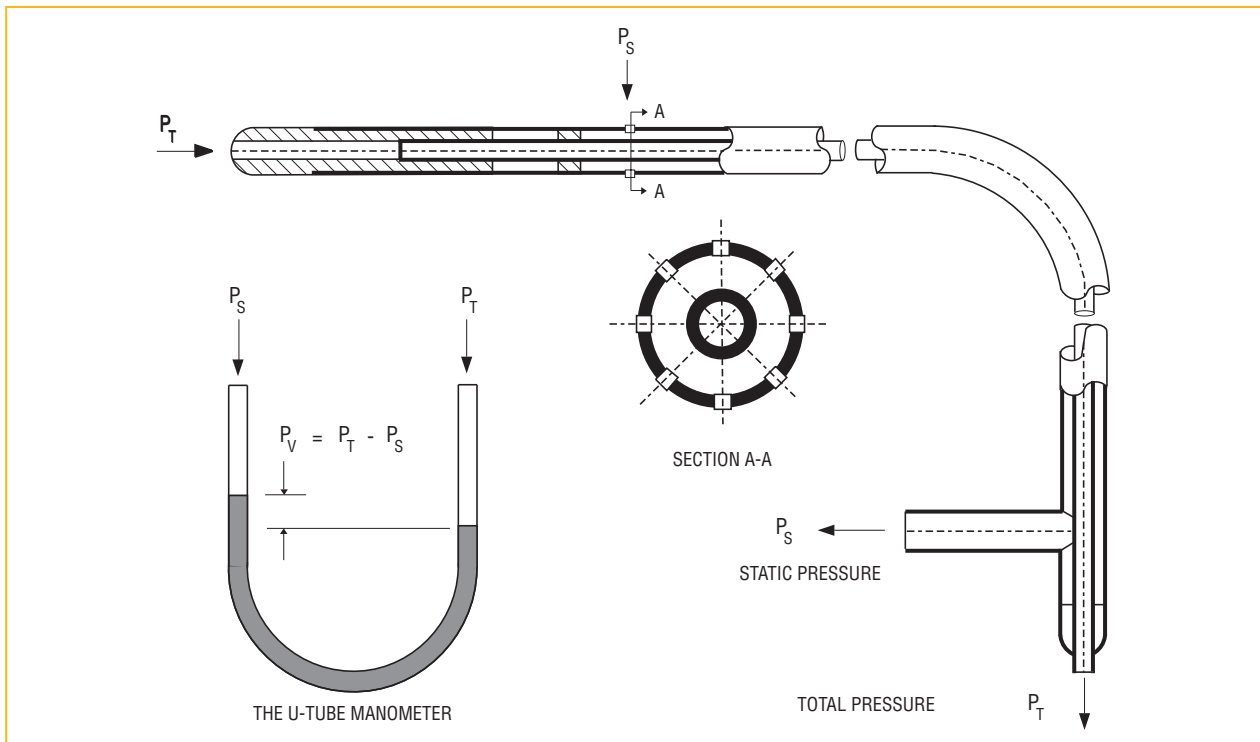
$$P_v = \left( \frac{V}{4005} \right)^2 \text{ or } V = 4005 \sqrt{P_v}$$

Where:  $V$  = Air Velocity (FPM)  
 $P_v$  = Velocity Pressure (in. w.g.)

**Total Pressure**, as its name implies, is the sum of static pressure and velocity pressure.

**The Pitot Static Tube** is an instrument used to measure pressure and velocities as illustrated below. It is constructed of two tubes. The inner, or impact, tube senses the total pressure as the impact opening faces upstream. The outer tube senses only the static pressure, which communicates with the airstream through small holes in its wall.

**The V-Tube Manometer** connects both parts of the Pitot static tube. The manometer functions as a subtracting device to give a reading of velocity pressure.



VELOCITY PRESSURE CHART

**CONVERSION CHART** for converting **VELOCITY PRESSURE**  
in inches of water to **VELOCITY** in feet per minute

**Note:** This chart is based upon standard air conditions of 70° Fahrenheit and 29.92 inches of mercury (barometric pressure), and assumes that the airflow is essentially non-compressible (under 10 inches of water pressure); as reflected by the following formula.

$$\text{Velocity (fpm)} = 4005 \sqrt{\text{Velocity Pressure in inches of water}}$$

VP	V	VP	V	VP	V	VP	V	VP	V	VP	V	VP	V	VP	V	VP	V	VP	V	VP	V
.001"	127	.062"	996	.123"	1404	.184"	1718	.245"	1982	.306"	2215	.367"	2426	.77"	3514	1.38"	4705	1.99"	5651	2.60"	6458
.002"	179	.063"	1004	.124"	1410	.185"	1723	.246"	1987	.307"	2219	.368"	2429	.78"	3537	1.39"	4722	2.00"	5664	2.61"	6470
.003"	219	.064"	1012	.125"	1416	.186"	1727	.247"	1991	.308"	2223	.369"	2433	.79"	3560	1.40"	4739	2.01"	5678	2.62"	6482
.004"	253	.065"	1020	.126"	1422	.187"	1732	.248"	1995	.309"	2226	.370"	2436	.80"	3582	1.41"	4756	2.02"	5692	2.63"	6495
.005"	283	.066"	1029	.127"	1427	.188"	1737	.249"	1999	.310"	2230	.371"	2439	.81"	3604	1.42"	4773	2.03"	5706	2.64"	6507
.006"	310	.067"	1037	.128"	1433	.189"	1741	.250"	2003	.311"	2233	.372"	2443	.82"	3625	1.43"	4790	2.04"	5720	2.65"	6519
.007"	335	.068"	1045	.129"	1439	.190"	1746	.251"	2007	.312"	2236	.373"	2445	.83"	3657	1.44"	4806	2.05"	5734	2.66"	6532
.008"	358	.069"	1052	.130"	1444	.191"	1750	.252"	2011	.313"	2239	.374"	2449	.84"	3669	1.45"	4823	2.06"	5748	2.67"	6544
.009"	380	.070"	1060	.131"	1449	.192"	1755	.253"	2015	.314"	2242	.375"	2453	.85"	3690	1.46"	4840	2.07"	5762	2.68"	6556
.010"	400	.071"	1067	.132"	1455	.193"	1759	.254"	2019	.315"	2245	.376"	2456	.86"	3709	1.47"	4856	2.08"	5776	2.69"	6569
.011"	420	.072"	1075	.133"	1461	.194"	1764	.255"	2023	.316"	2248	.377"	2459	.87"	3729	1.48"	4873	2.09"	5790	2.70"	6581
.012"	439	.073"	1082	.134"	1466	.195"	1768	.256"	2027	.317"	2251	.378"	2462	.88"	3758	1.49"	4889	2.10"	5804	2.71"	6593
.013"	457	.074"	1089	.135"	1471	.196"	1773	.257"	2031	.318"	2254	.379"	2466	.89"	3779	1.50"	4905	2.11"	5817	2.72"	6605
.014"	474	.075"	1097	.136"	1477	.197"	1777	.258"	2035	.319"	2257	.380"	2469	.90"	3800	1.51"	4921	2.12"	5831	2.73"	6617
.015"	491	.076"	1104	.137"	1482	.198"	1782	.259"	2039	.320"	2260	.381"	2472	.91"	3821	1.52"	4938	2.13"	5845	2.74"	6629
.016"	507	.077"	1111	.138"	1488	.199"	1787	.260"	2042	.321"	2264	.382"	2475	.92"	3842	1.53"	4954	2.14"	5859	2.75"	6641
.017"	522	.078"	1119	.139"	1493	.200"	1791	.261"	2046	.322"	2268	.383"	2479	.93"	3863	1.54"	4970	2.15"	5872	2.76"	6654
.018"	537	.079"	1125	.140"	1498	.201"	1795	.262"	2050	.323"	2272	.384"	2481	.94"	3884	1.55"	4986	2.16"	5886	2.77"	6666
.019"	552	.080"	1133	.141"	1504	.202"	1800	.263"	2054	.324"	2276	.385"	2485	.95"	3904	1.56"	5002	2.17"	5899	2.78"	6678
.020"	566	.081"	1140	.142"	1509	.203"	1804	.264"	2058	.325"	2280	.386"	2488	.96"	3924	1.57"	5018	2.18"	5913	2.79"	6690
.021"	580	.082"	1147	.143"	1515	.204"	1809	.265"	2062	.326"	2284	.387"	2491	.97"	3945	1.58"	5034	2.19"	5927	2.80"	6702
.022"	594	.083"	1154	.144"	1520	.205"	1813	.266"	2066	.327"	2289	.388"	2495	.98"	3965	1.59"	5050	2.20"	5940	2.81"	6714
.023"	607	.084"	1161	.145"	1525	.206"	1818	.267"	2070	.328"	2293	.389"	2499	.99"	3985	1.60"	5066	2.21"	5954	2.82"	6725
.024"	620	.085"	1167	.146"	1530	.207"	1822	.268"	2074	.329"	2297	.390"	2501	1.00"	4005	1.61"	5082	2.22"	5967	2.83"	6737
.025"	633	.086"	1175	.147"	1536	.208"	1827	.269"	2078	.330"	2301	.40"	2533	1.01"	4025	1.62"	5098	2.23"	5981	2.84"	6749
.026"	645	.087"	1181	.148"	1541	.209"	1831	.270"	2081	.331"	2304	.41"	2563	1.02"	4045	1.63"	5114	2.24"	5994	2.85"	6761
.027"	658	.088"	1188	.149"	1546	.210"	1835	.271"	2085	.332"	2308	.42"	2595	1.03"	4064	1.64"	5129	2.25"	6008	2.86"	6773
.028"	670	.089"	1193	.150"	1551	.211"	1839	.272"	2089	.333"	2311	.43"	2626	1.04"	4084	1.65"	5144	2.26"	6021	2.87"	6785
.029"	682	.090"	1201	.151"	1556	.212"	1844	.273"	2093	.334"	2315	.44"	2656	1.05"	4103	1.66"	5160	2.27"	6034	2.88"	6797
.030"	694	.091"	1208	.152"	1561	.213"	1848	.274"	2097	.335"	2318	.45"	2687	1.06"	4123	1.67"	5175	2.28"	6047	2.89"	6809
.031"	705	.092"	1215	.153"	1567	.214"	1853	.275"	2101	.336"	2322	.46"	2716	1.07"	4142	1.68"	5191	2.29"	6060	2.90"	6820
.032"	716	.093"	1222	.154"	1572	.215"	1857	.276"	2105	.337"	2325	.47"	2746	1.08"	4162	1.69"	5206	2.30"	6074	2.91"	6832
.033"	727	.094"	1228	.155"	1577	.216"	1862	.277"	2119	.338"	2329	.48"	2775	1.09"	4181	1.70"	5222	2.31"	6087	2.92"	6844
.034"	738	.095"	1234	.156"	1582	.217"	1866	.278"	2113	.339"	2332	.49"	2804	1.10"	4200	1.71"	5237	2.32"	6100	2.93"	6855
.035"	749	.096"	1241	.157"	1587	.218"	1870	.279"	2116	.340"	2335	.50"	2832	1.11"	4219	1.72"	5253	2.33"	6113	2.94"	6867
.036"	759	.097"	1247	.158"	1592	.219"	1875	.280"	2119	.341"	2338	.51"	2860	1.12"	4238	1.73"	5268	2.34"	6126	2.95"	6879
.037"	770	.098"	1254	.159"	1597	.220"	1879	.281"	2123	.342"	2342	.52"	2888	1.13"	4257	1.74"	5283	2.35"	6139	2.96"	6890
.038"	780	.099"	1260	.160"	1602	.221"	1883	.282"	2127	.343"	2345	.53"	2916	1.14"	4276	1.75"	5298	2.36"	6152	2.97"	6902
.039"	791	.100"	1266	.161"	1607	.222"	1887	.283"	2131	.344"	2349	.54"	2943	1.15"	4295	1.76"	5313	2.37"	6165	2.98"	6913
.040"	801	.101"	1273	.162"	1612	.223"	1892	.284"	2135	.345"	2352	.55"	2970	1.16"	4314	1.77"	5328	2.38"	6179	2.99"	6925
.041"	811	.102"	1279	.163"	1617	.224"	1896	.285"	2139	.346"	2356	.56"	2997	1.17"	4332	1.78"	5343	2.39"	6191	3.00"	6937
.042"	821	.103"	1285	.164"	1622	.225"	1900	.286"	2143	.347"	2360	.57"	3024	1.18"	4350	1.79"	5359	2.40"	6204	3.01"	6948
.043"	831	.104"	1292	.165"	1627	.226"	1905	.287"	2147	.348"	2363	.58"	3050	1.19"	4368	1.80"	5374	2.41"	6217	3.02"	6960
.044"	840	.105"	1298	.166"	1632	.227"	1909	.288"	2151	.349"	2366	.59"	3076	1.20"	4386	1.81"	5388	2.42"	6230	3.03"	6971
.045"	849	.106"	1304	.167"	1637	.228"	1913	.289"	2154	.350"	2369	.60"	3102	1.21"	4405	1.82"	5403	2.43"	6243	3.04"	6983
.046"	859	.107"	1310	.168"	1642	.229"	1917	.290"	2157	.351"	2372	.61"	3127	1.22"	4423	1.83"	5418	2.44"	6256	3.05"	6994
.047"	868	.108"	1316	.169"	1646	.230"	1921	.291"	2161	.352"	2376	.62"	3153	1.23"	4442	1.84"	5433	2.45"	6269	3.06"	7006
.048"	877	.109"	1322	.170"	1651	.231"	1925	.292"	2164	.353"	2379	.63"	3179	1.24"	4460	1.85"	5447	2.46"	6281	3.07"	7017
.049"	887	.110"	1328	.171"	1656	.232"	1929	.293"	2168	.354"	2383	.64"	3204	1.25"	4478	1.86"	5462	2.47"	6294	3.08"	7028
.050"	896	.111"	1334	.172"	1661	.233"	1933	.294"	2171	.355"	2386	.65"	3229	1.26"	4495	1.87"	5477	2.48"	6307	3.09"	7040
.051"	904	.112"	1340	.173"	1666	.234"	1937	.295"	2175	.356"	2389	.66"	3254	1.27"	4513	1.88"	5491	2.49"	6319	3.10"	7051
.052"	913	.113"	1346	.174"	1670	.235"	1941	.296"	2179	.357"	2393	.67"	3279	1.28"	4531	1.89"	5506	2.50"	6332	3.11"	7063
.053"	922	.114"	1352	.175"	1675	.236"	1945	.297"	2182	.358"	2396	.68"	3303	1.29"	4549	1.90"	5521	2.51"	6345	3.12"	7074
.054"	931	.115"	1358	.176"	1680	.237"	1950	.298"	2186	.359"	2400	.69"	3327	1.30"	4566	1.91"	5535	2.52"	6358	3.13"	7085
.055"	939	.116"	1364	.177"	1685	.238"	1954	.299"	2189	.360"	2403	.70"	3351	1.31"	4583	1.92"	5550	2.53"	6370	3.14"	7097
.056"	948	.117"	1370	.178"	1690	.239"	1958	.300"	2193	.361"	2406	.71"	3375	1.32"	4601	1.93"	5564	2.54"	6383	3.15"	7108
.057"	956	.118"	1376	.179"	1695	.240"	1962	.301"	2197	.362"	2410	.72"	3398	1.33"	4619	1.94"	5579	2.55"	6395	3.16"	7119
.058"	964	.119"	1382	.180"	1699	.241"	1966	.302"	2200	.363"	2413	.73"	3422	1.34"	4636	1.95"	5593	2.56"	6408	3.17"	7131
.059"	973	.120"	1387	.181"	1704	.242"	1970	.303"	2204	.364"	2416	.74"	3445	1.35"	4653	1.96"	5608	2.57"	6420	3.18"	7142
.060"	981	.121"	1393	.182"	1709	.243"	1974	.304"	2208	.365"	2420	.75"	3468	1.36"	4671	1.97"	5623	2.58"	6433	3.19"	7153
.061"	989	.122"	1399	.183"	1713	.244"	1978	.305"	2212	.366"	2423	.76"	3491	1.37"	4688	1.98"	5637	2.59"	6445	3.20"	7164

**DEFINITIONS AND FORMULAE**

**Definitions and Formulae**

- CFM = Cubic Feet per Minute
- FPM = Feet per Minute (Velocity)
- Ak = Area Factor Expressed in Square Feet
- TP = Total Pressure Expressed in Inches of Water
- SP = Static Pressure Expressed in Inches of Water
- VP = Velocity Pressure Expressed in Inches of Water
- VP =  $(FPM \div 4005)^2$
- $\Delta P$  = Differential Pressure
- $\Delta P_S$  = Static Differential Pressure
- $\Delta P_T$  = Total Differential Pressure
- CFM = FPM x Ak
- FPM = CFM  $\div$  Ak
- VP = TP - SP
- TP = SP + VP
- SP = TP - VP
- $\Delta P_T = TP_1 - TP_2$
- $\Delta P_S = SP_1 - SP_2$

**THERMAL LINEAR TYPE GRILLE EXPANSION**

**Thermal Linear Type Grille Expansion**

$\Delta T$ Temperature Differential ( °F )	Expansion (inches/ft.)		
	Aluminum	Steel	Copper
0	0	0	0
10	.00156	.00076	.00112
20	.00313	.00152	.00224
30	.00469	.00228	.00336
40	.00625	.00304	.00448
50	.00782	.00380	.00560
60	.00938	.00456	.00672
70	.01094	.00532	.00784
80	.01250	.00608	.00896
90	.01407	.00684	.01008
100	.01563	.00760	.01120

**MEASURES OF FORCE AND PRESSURE**

**Measures of Force and Pressure**

- Dyne** = force necessary to accelerate a 1 gram mass 1 centimeter per second squared = 0.000072 poundal.
- Poundal** = force necessary to accelerate a 1 pound mass 1 foot per second squared = 13,825.5 dynes = 0.138255 newtons.
- Newton** = force needed to accelerate a 1 kilogram mass 1 meter per second squared.
- Pascal** (pressure) = 1 newton per square meter = 0.020885 pound per square foot.
- Atmosphere** (air pressure at sea level) = 2,116.102; pounds per square foot = 14.6952; pounds per square inch = 1.0332; kilograms per square centimeter = 101,323 newtons per square meter.

EQUIVALENT MEASURES OF PRESSURE

Equivalent Measures of Pressure

1 lb. per square inch	=	144 lbs. per sq. ft. 2.036 in. Mercury at 32°F. 2.311 ft. Water at 70°F. 27.74 in. Water at 70°F.	1 inch Water at 70°F	=	.03609 lb. per sq. in. .5774 oz. per sq. in. 5.196 lbs. per sq. ft.
1 ounce per square inch	=	1272 in. Mercury at 32°F. 1.733 in. Water at 70°F.	1 foot Water at 70°F	=	.433 lbs. per sq. in. 62.31 lbs. sq. ft.
1 Atmosphere	=	14.696 lbs. per sq. in. 2116.3 lbs. per sq. ft. 33.96 ft. Water at 70°F. 29.92 in. Mercury at 32°F.	1 inch Mercury at 32°F	=	.491 lbs. per sq. in. 7.86 oz. per sq. in. 1.136 ft. Water at 70°F. 13.63 in. Water at 70°F.

SHEET METAL THICKNESS

Sheet Metal Thickness (Inches) and Weight (Lbs./Sq. Ft.)

Gauge No.	Steel		Galvanized Steel		Aluminum	
	Thickness	Weight	Thickness	Weight	Thickness	Weight
3	.2391	10.000			.2294	3.23
4	.2242	9.375			.2043	2.88
5	.2092	8.750			.1819	2.56
6	.1943	8.125			.1620	2.29
7	.1793	7.500			.1443	2.04
8	.1644	6.875	.1681	7.031	.1285	1.81
9	.1495	6.250	.1532	6.406	.1144	1.61
10	.1345	5.625	.1382	5.781	.1019	1.44
11	.1196	5.000	.1233	5.156	.0907	1.28
12	.1046	4.375	.1084	4.531	.0808	1.14
13	.0897	3.750	.0934	3.906	.0720	1.02
14	.0747	3.125	.0785	3.281	.0641	.905
15	.0673	2.812	.0710	2.969	.0571	.806
16	.0598	2.500	.0635	2.656	.0508	.717
17	.0538	2.250	.0575	2.406	.0453	.639
18	.0478	2.000	.0516	2.156	.0403	.569
19	.0418	1.750	.0456	1.906	.0359	.507
20	.0359	1.500	.0396	1.656	.0320	.452
21	.0329	1.375	.0366	1.531	.0285	.402
22	.0299	1.250	.0336	1.406	.0254	.357
23	.0269	1.125	.0306	1.281	.0226	.319
24	.0239	1.000	.0276	1.156	.0201	.284
25	.0209	.875	.0247	1.031	.0179	.253
26	.0179	.750	.0217	.906	.0159	.224
27	.0164	.688	.0202	.844	.0142	.200
28	.0149	.625	.0187	.781	.0126	.178
29	.0135	.562	.0172	.719	.0113	.159
30	.0120	.500	.0157	.656	.0100	.141
31	.0105	.438	.0142	.594	.0089	.126
32	.0097	.406	.0134	.563	.0080	.113

† Steel – U.S. Standard (Revised)  
 Galvanized – Galvanized Gauge No.  
 Aluminum – American Gauge and Brown & Sharpe

ROUND DUCT AREA

Round Duct Area and Circumference

Dia. In Inches	Area Sq. Ft.	Circum. Inches	Dia. In Inches	Area Sq. Ft.	Circum. Inches
1	.00545	3.142	26	3.687	81.68
2	.0218	6.283	27	3.976	84.82
3	.0491	9.425	28	4.276	87.96
4	.0873	12.57	29	4.587	91.11
5	.1364	15.71	30	4.909	94.25
6	.1963	18.85	31	5.241	97.39
7	.2673	21.99	32	5.585	100.5
8	.3491	25.13	33	5.940	103.7
9	.4418	28.27	34	6.305	106.8
10	.5454	31.42	35	6.681	110.0
11	.6600	34.56	36	7.069	113.1
12	.7854	37.70	37	7.467	116.2
13	.9218	40.84	38	7.876	119.4
14	1.069	43.98	39	8.296	122.5
15	1.227	47.12	40	8.727	125.7
16	1.396	50.27	41	9.168	128.8
17	1.576	53.41	42	9.621	131.9
18	1.767	56.55	43	10.08	135.1
19	1.969	59.69	44	10.56	138.2
20	2.182	62.83	45	11.04	141.4
21	2.405	65.97	46	11.54	144.5
22	2.640	69.12	47	12.05	147.7
23	2.885	72.26	48	12.57	150.8
24	3.142	75.40	49	13.09	153.9
25	3.409	78.54	50	13.64	157.1

COMMON FRACTIONS

Common Fractions Reduced to Decimals

8ths	16ths	32ds	64ths		8ths	16ths	32ds	64ths		8ths	16ths	32ds	64ths		
			1	.015625				23	.359375				45	.703125	
		1	2	.03125	3	6	12	24	.375				23	46	.71875
			3	.046875				25	.390625				47	.734375	
	1	2	4	.0625			13	26	.40625	6	12	24	48	.75	
			5	.078125				27	.421875				49	.765625	
		3	6	.09375		7	14	28	.4375			25	50	.78125	
			7	.109375				29	.453125				51	.796875	
1	2	4	8	.125			15	30	.46875		13	26	52	.8125	
			9	.140625				31	.484375				53	.828125	
		5	10	.15625	4	8	16	32	.5			27	54	.84375	
			11	.171875				33	.515625				55	.859375	
	3	6	12	.1875			17	34	.53125	7	14	28	56	.875	
			13	.203125				35	.546875				57	.890625	
		7	14	.21875		9	18	36	.5625			29	58	.90625	
			15	.234375				37	.578125				59	.921875	
2	4	8	16	.25			19	38	.59375		15	30	60	.9375	
			17	.265625				39	.609375				61	.953125	
		9	18	.28125	5	10	20	40	.625			31	62	.96875	
			19	.296875				41	.640625				63	.984375	
	5	10	20	.3125			21	42	.65625	8	16	32	64	1.	
			21	.328125				43	.671875						
		11	22	.34375		11	22	44	.6875						

MATHEMATICAL FORMULAE

Mathematical Formulae

To find the CIRCUMFERENCE of a:

**Circle** — Multiply the diameter by 3.14159265 (usually 3.1416).

To find the AREA of a:

**Circle** — Multiply the square of the diameter by .785398 (usually .7854).

**Rectangle** — Multiply the length of the base by the height.

**Sphere (surface)** — Multiply the square of the radius by 3.1416 and multiply by 4.

**Square** — Square the length of one side.

**Trapezoid** — Add the two parallel sides, multiply by the height and divide by 2.

**Triangle** — Multiply the base by the height and divide by 2.

To find the VOLUME of a:

**Cone** — Multiply the square of the radius of the base by 3.1416, multiply by the height, and divide by 3.

**Cube** — Cube the length of one edge.

**Cylinder** — Multiply the square of the radius of the base by 3.1416 and multiply by the height.

**Pyramid** — Multiply the area of the base by the height and divide by 3.

**Rectangular Prism** — Multiply the length by the width by the height.

**Sphere** — Multiply the cube of the radius by 3.1416, multiply by 4 and divide by 3.



METRIC CONVERSION

Metric Guide Conversion Factors

Quantity	Imperial Unit	Metric Unit	From Imperial To Metric Multiply By:	From Metric To Imperial Multiply By:
<b>Area</b>	square foot	square meter (m <sup>2</sup> )	0.0929	10.764
	square inch	square millimeter (mm <sup>2</sup> )	645.16	.00155
<b>Density</b>	pounds per cubic foot	kilograms per cubic meter (kg/M <sup>3</sup> )	16.018	.0624
<b>Energy</b>	British thermal unit (BTU)	joule (J)	1055.056	.000948
	kilowatt hour	megajoule (MJ)	3.6	.2778
	watts per second	joule (J)	1.0	1.0
	horsepower hour	megajoule (MJ)	2.6845	.3725
<b>Force</b>	ounce force	newton (N)	.278	3.597
	pound force	newton (N)	4.4482	.2248
	kilogram force	newton (N)	9.8067	.102
<b>Heat</b>	BTU per hour	watt (W)	.2931	3.412
	BTU per pound	joules per kilogram (J/kg)	2326.0	.00043
<b>Length</b>	inch	millimeter (mm)	25.4	.0394
	foot	millimeter (mm)	304.8	.00328
	foot	meter (m)	.3048	3.2808
	yard	meter (m)	.9144	1.0936
<b>Mass (weight)</b>	ounce (avoirdupois)	gram (g)	28.350	.0353
	pound (avoirdupois)	kilogram (kg)	.4536	2.2046
<b>Power</b>	horsepower	kilowatt (kW)	.7457	1.341
	horsepower (boiler)	kilowatt (kW)	9.8095	.1019
	foot pound - force per minute	watt (W)	.0226	44.254
	ton of refrigeration	kilowatt (kW)	3.517	.2843
<b>Pressure</b>	inch of water column	kilopascal (kPa)	.2486	4.0219
	foot of water column	kilopascal (kPa)	2.9837	.3352
	inch of mercury column	kilopascal (kPa)	3.3741	.2964
	ounces per square inch	kilopascal (kPa)	.4309	2.3206
	pounds per square inch	kilopascal (kPa)	6.8948	.145
<b>Temperature</b>	Fahrenheit	Celsius (°C)	5/9(°F-32)	(9/5°C)+32
<b>Torque</b>	ounce - force inch	millinewton-meter (mN.m)	7.0616	.1416
	pound - force inch	newton-meter (N.m)	.1130	8.8495
	pound - force foot	newton-meter (N.m)	1.3558	.7376
<b>Velocity</b>	feet per second	meters per second (m/s)	.3048	3.2808
	feet per minute	meters per second (m/s)	.00508	196.85
	miles per hour	meters per second (m/s)	.44704	2.2369
<b>Volume (capacity)</b>	cubic foot	liter (l)	28.3168	.03531
	cubic inch	cubic centimeter (cm <sup>3</sup> )	16.3871	.06102
	cubic yard	cubic meter (m <sup>3</sup> )	.7646	1.308
	gallon (U.S.)	liter (l)	3.785	.2642
	gallon (imperial)	liter (l)	4.546	.2120
<b>Volume (flow)</b>	cubic feet per minute (cfm)	liters per second (l/s)	.4719	2.119
	cubic feet per minute (cfm)	cubic meters per second (m <sup>3</sup> /s)	.0004719	2119.0
	cubic feet per hour (cfh)	milliliters per second (ml/s)	7.8658	.127133
	gallons per minute (U.S.)	liters per second (l/s)	.06309	15.850
	gallons per minute (imperial)	liters per second (l/s)	0.07577	13.198

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## INDEX • AIR DISTRIBUTION



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81MD1	Industrial Supply Grilles and Registers • Aluminum • Modular Frame • Double Deflection - 1 1/2" (38) Spacing - One Module	0182
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TL Border Type	Grilles and Registers Options and Accessories • Panel Mounting/Ceiling Modules - Tapered Type T-Bar	0182
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SG-LGS	Minimum Security Lattice Face Grilles • 13/16" (21) Square Holes on 1" (25) Centers - 12 gauge material - Steel	G22
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**NOTES:**



## NAILOR WOODGRAIN FINISHES • A NEW WAVE OF ARCHITECTURAL VERSATILITY

Woodgrain finishes offer a cosmetically appealing, environmentally friendly solution for many Nailor Air Distribution products such as Architectural Square Plaque Ceiling Diffusers, Linear Bar Grilles, Slot Diffusers and Flowline.

Woodgrain finishes can be applied to extrusions in almost any length and to most flat steel or aluminum panels and cabinets. Ideally suited for applications where architects prefer not to see the HVAC equipment, the finishes blend beautifully with wood floors, ceilings or panels, offering a very congenial, sophisticated appearance.

These highly durable products are easy to clean, scratch and chip resistant and do not require the high maintenance upkeep of real wood. They can be used for interior, exterior and high traffic architectural applications, offering high resistance toward all atmospheric agents and are resistant to heat, acids, humidity, salt, detergents and UV.

Available in a broad range of color selections, the standard is a textured finish which closely resembles “real wood” or an optional smooth coating finish that is glossy and shiny. Unlike any other finish in our industry, woodgrain redefines beauty and elegance.



### HOW DOES IT WORK?

#### PREPARATION

Pretreatment is the initial step in the preparation process, in which the raw, unfinished product undergoes a 5 stage wash system, allowing for greater adhesion of the powder during the heat transfer.

#### COATING

Next, the product is coated with a 2.5 mils layer of nonhazardous dry powder paint that is applied electrostatically. It is then cured under a temperature of 400° F for several minutes, creating a strong base coat for the final product, adding durability and protection from light, weather, abrasion, corrosion and humidity. After cooling down from coating, the product is then wrapped with a preprinted transfer film consisting of organic photosensitive pigments and cellulose resin. Air is vacuumed from the inside in order to make the film fully adhere to the product. The film-wrapped product is then moved to a special oven where the sublimation process occurs (the ink pigments used will turn from a solid to gas and are transferred from the film into the coating layer of the object). Finally, the product is taken out of the oven and the transfer film is removed.

#### DECORATION

The result is a beautifully decorated workpiece so natural looking, you have to touch it to tell the difference between real wood.

ARCHITECTURAL  
SQUARE PLAQUE  
DIFFUSERS  
(MODELS: UNI, AUNI,  
UNI2, AUNI2, UNI-PD)



LINEAR BAR GRILLES  
(MODELS: 49-240, 49-241, 49-243,  
49-280, 49-281, 49-480, 49-481)



LINEAR SLOT DIFFUSERS  
(MODELS: 5050, 5075, 5010, 5015, 5050R, 5075R, 5010R, 5015R)





# NAILOR WOODGRAIN FINISHES • FOR DIFFUSERS, LINEAR BAR GRILLES AND LINEAR SLOT DIFFUSERS

Standard finish is textured.  
\*Also available in a smooth gloss finish.



American Nut WG01



American Oak WG02



American Walnut WG03



Barnwood WG04



Black Walnut WG05



Cherry WG06



Cinnamon Red WG07



Cordoba Cherry WG08



Dark Knotty Pine WG09



Dark National Walnut WG10



English Walnut\* WG11



Fine Wenge WG12



Fonthill WG13



Honey Cherry WG14



Lighter Maple WG15



Light National Walnut WG16



Mahogany 1406 WG17



Maple WG18



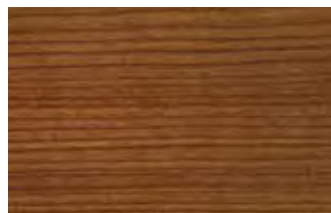
Mediterranean WG19



Oak WG20



Rustic Cherry WG21



Straight Cherry WG22



Table Walnut WG23



Wide Grain WG24





## Spiral Duct Mount Drum Louvers Models: 45DLC1 & 45DLC2

Nailor 45DLC Spiral Duct Drum Louvers have been specially designed to handle large air capacities and provide long throws. These high capacity supply grilles are constructed of aluminum and ideally suited for large conditioned spaces such as shopping malls, industrial plants and stadiums where ductwork cannot be brought close to the occupants.



### **BENEFITS:**

- High Capacity
- Long throws
- Accurate directional control of primary air
- Curved frame mounts directly to spiral ducts without the use of duct taps, reducing installation time and costs
- Length of throw, direction and horizontal spread can be controlled by rotating the drum and pivoted adjustable vanes
- Felt seal around the drum minimizes air leakage and holds the drum securely in the selected position

### **STANDARD FEATURES:**

- High quality, extruded aluminum construction
- Rotating adjustable cylindrical drums
- Mounting holes and perimeter frame gasket
- Felt seal around drum to minimize leakage
- Paddle-size deflection vanes are rear pivoted on nylon bushings in the drum opening
- Sizes available 6" - 15" in height and 9" - 60" in width
- Standard Appliance White with optional finishes

### **OPTIONS:**

- Damper/Extractor (Air Scoop)
- Pole Operator





## ***"Complete Air Control and Distribution Solutions"***

### **International Group Locations:**

**International and United States  
Headquarters, Sales, Manufacturing,  
Research and Development and Test  
Laboratory:**

Nailor Industries of Texas Inc.  
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U.S.A.

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www.nailor.com

### **Canadian Headquarters, Sales and Manufacturing:**

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Tel: (702) 648-5400  
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Unit F, 4427 - 72nd Avenue S.E.,  
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Fax: (403) 279-5035

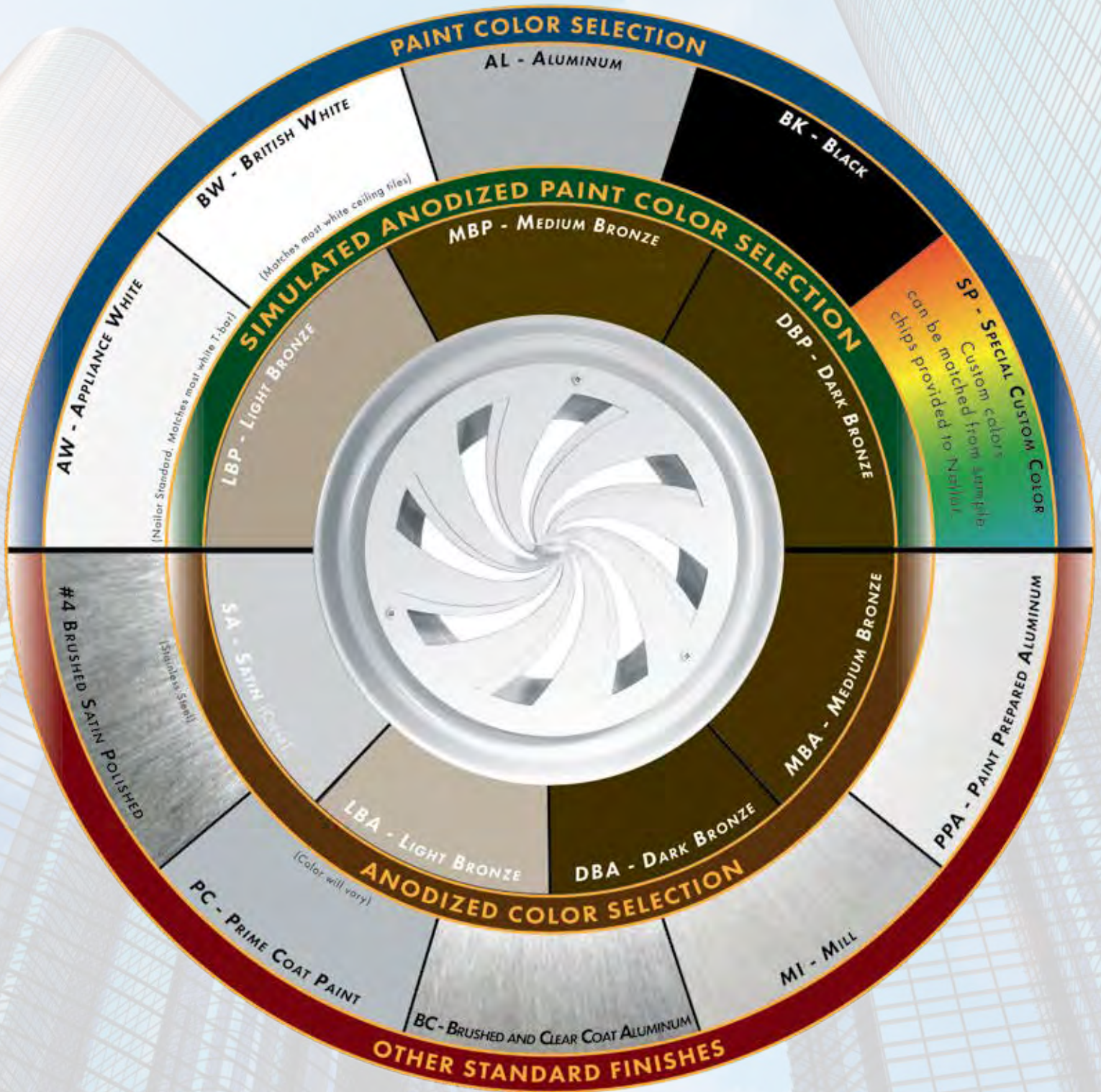


**Nailor**<sup>®</sup>  
Industries Inc.



**STANDARD AND OPTIONAL FINISHES FOR GRILLES AND DIFFUSERS**

The following standard colors and finishes are available on applicable Nailor air distribution products. Consult individual product pages for availability.



The pictured finishes have been represented as best as possible within printing limitations. However, actual finish may vary.

Contact your Nailor representative for a color chip sample on the material specified for a more accurate representation.

**DBK** - Black (for registers ordered with factory mounted dampers) - **BA** - Perforated Diffusers (4300 series only) Appliance White (AW) face with black back pan and pattern controllers.





#### **Terminal Units:**

- Single Duct
- Dual Duct
- Fan Powered
- Bypass
- Retrofit



#### **Air Control Products:**

- Louvers
- Control & Backdraft Dampers
- Curtain Fire Dampers
- Multi-Blade Fire Dampers
- Smoke Dampers
- Combination Fire/Smoke Dampers
- Ceiling Dampers
- Access Doors



#### **Green Building Products:**

- Underfloor Air Distribution Systems
- Displacement Ventilation



#### **Electric Duct Heaters:**

- Slip-in/Insert Mount
- Flanged Mount
- Round Duct Connection



#### **Fan Coil Units:**

- Vertical HI-Rise & Closet
- Horizontal Fan Coil Units
- Vertical Sill Fan Coil Units

WADCB

## Complete Air Control and Distribution Solutions

For the most up to date catalog information go to  
[www.nailor.com](http://www.nailor.com)

