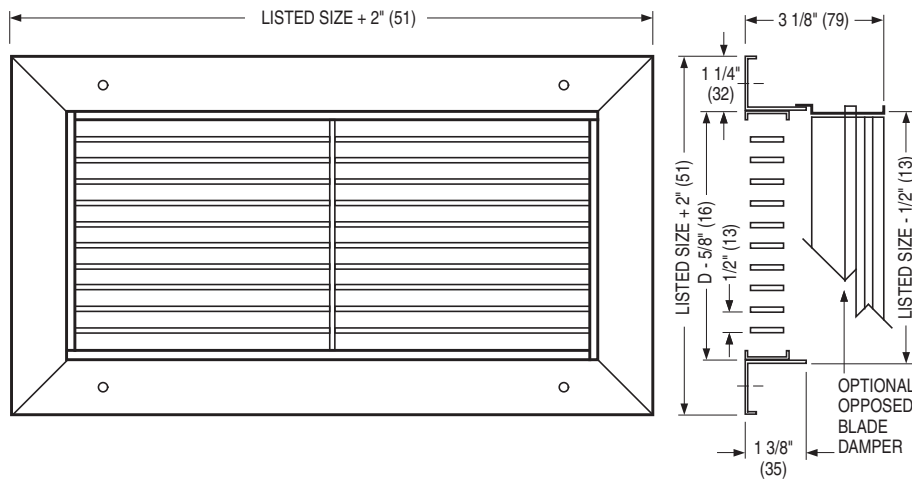


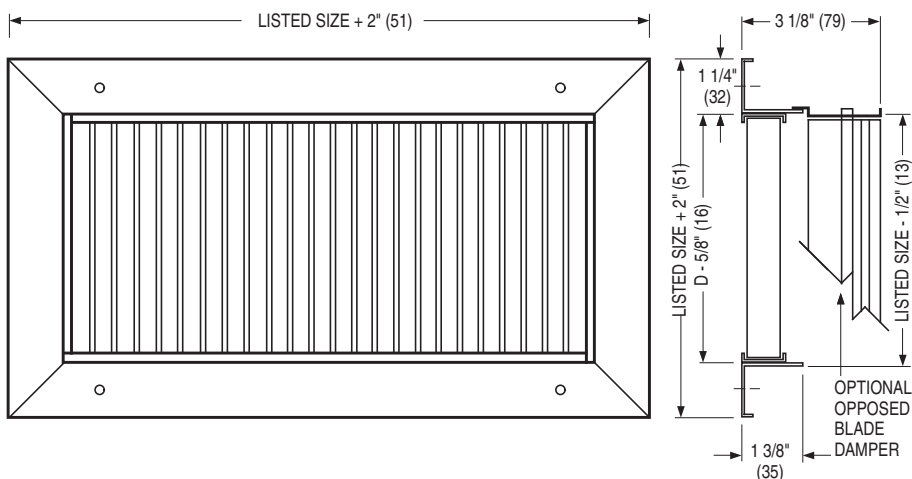


**STEEL HEAVY DUTY SUPPLY GRILLES & REGISTERS • GYMNASIUM**  
**SINGLE DEFLECTION • LOUVERED**  
**MODELS: 61SH-HD(-O) AND 61SV-HD(-O)**



**MODEL 61SH-HD**  
 Single Deflection Grille  
 Horizontal Blades

**MODEL 61SH-HD-O**  
 Single Deflection Register  
 Horizontal Blades  
 (Includes O. B. Damper)



**MODEL 61SV-HD**  
 Single Deflection Grille  
 Vertical Blades

**MODEL 61SV-HD-O**  
 Single Deflection Register  
 Vertical Blades  
 (Includes O. B. Damper)

**DESCRIPTION:**

1. Material: Heavy gauge steel.
2. Construction: A single set of 14 gauge blades on 1/2" (13) centers provide air control in a single plane. Blades are individually adjustable, 0 - 40° deflection. Frame is heavy duty 16 gauge material with welded and reinforced mitered corners.
3. The 6100-HD Series heavy duty grilles are constructed to offer the strength and rigidity required in order to withstand abuse in applications such as gymnasiums, schools, parking lots and other locations requiring strong impact resistance.
4. Optional opposed blade damper has a screwdriver slot operator accessible through the face of the register.
5. Available in duct sizes 6" x 4" (152 x 102) through 48" x 48" (1219 x 1219) maximum.

6. Fastening: Countersunk screwholes with oval head screws.
7. Standard Finish is AW Appliance White.

**OPTIONS:**

1. Finish:
  - SP Special \_\_\_\_\_ .
2. Other: \_\_\_\_\_ .

**SCHEDULE TYPE:**

**PROJECT:**

**ENGINEER:**

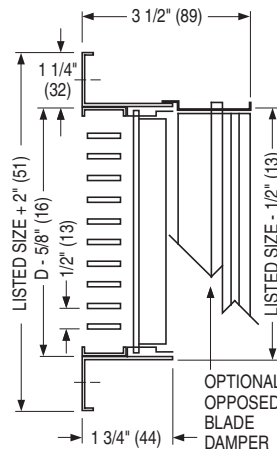
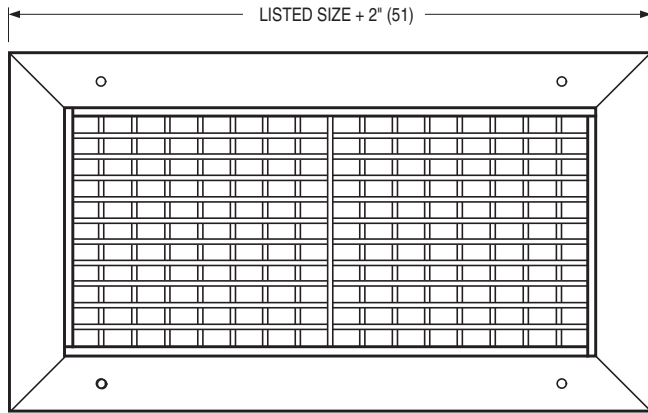
**CONTRACTOR:**

Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
2 - 1 - 11	6100	1 - 30 - 04	6100HD-1

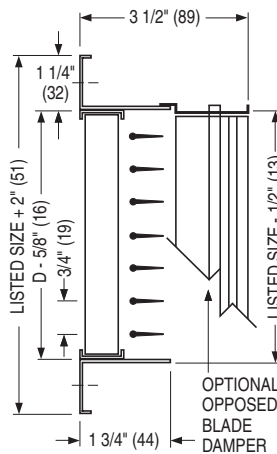
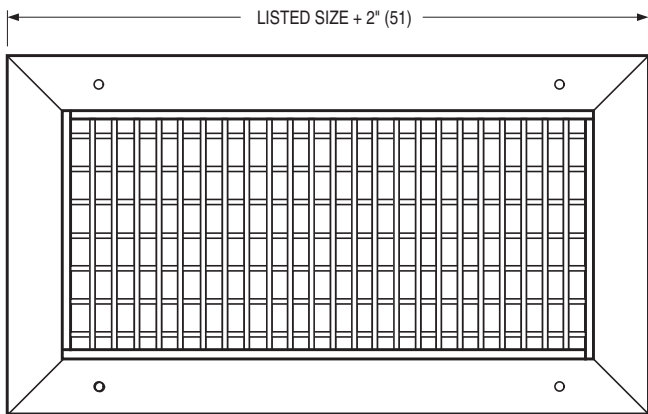


**STEEL HEAVY DUTY SUPPLY GRILLES & REGISTERS • GYMNASIUM**  
**DOUBLE DEFLECTION • LOUVERED**  
**MODELS: 61DH-HD(-O) AND 61DV-HD(-O)**



**MODEL 61DH-HD**  
 Double Deflection Grille  
 Horizontal Front Blades

**MODEL 61DH-HD-O**  
 Double Deflection Register  
 Horizontal Front Blades  
 (Includes O. B. Damper)



**MODEL 61DV-HD**  
 Double Deflection Grille  
 Vertical Front Blades

**MODEL 61DV-HD-O**  
 Double Deflection Register  
 Vertical Front Blades  
 (Includes O. B. Damper)

**DESCRIPTION:**

1. Material: Heavy gauge steel.
2. Construction: Two sets of perpendicular blades provide air control in two planes. Front blades are 14 gauge on 1/2" (13) centers. Rear "teardrop" blades are on 3/4" (19) centers. Frame is heavy duty 16 gauge material with welded and reinforced mitered corners.
3. The 6100-HD Series Heavy duty air grilles are constructed to offer the strength and rigidity required in order to withstand abuse in applications such as gymnasiums, schools, parking lots and other locations requiring strong impact resistance.
4. Optional opposed blade damper has a screwdriver slot operator accessible through the face of the register.
5. Available in duct sizes 6" x 4" (152 x 102) through 48" x 48" (1219 x 1219) maximum.

6. Fastening: Countersunk screwholes with oval head screws.
7. Standard Finish is AW Appliance White.

**OPTIONS:**

1. Finish:
  - SP Special \_\_\_\_\_ .
2. Other: \_\_\_\_\_ .

**SCHEDULE TYPE:**

**PROJECT:**

**ENGINEER:**

**CONTRACTOR:**

Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
2 - 1 - 11	6100	6 - 1 - 04	6100HD-2

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**

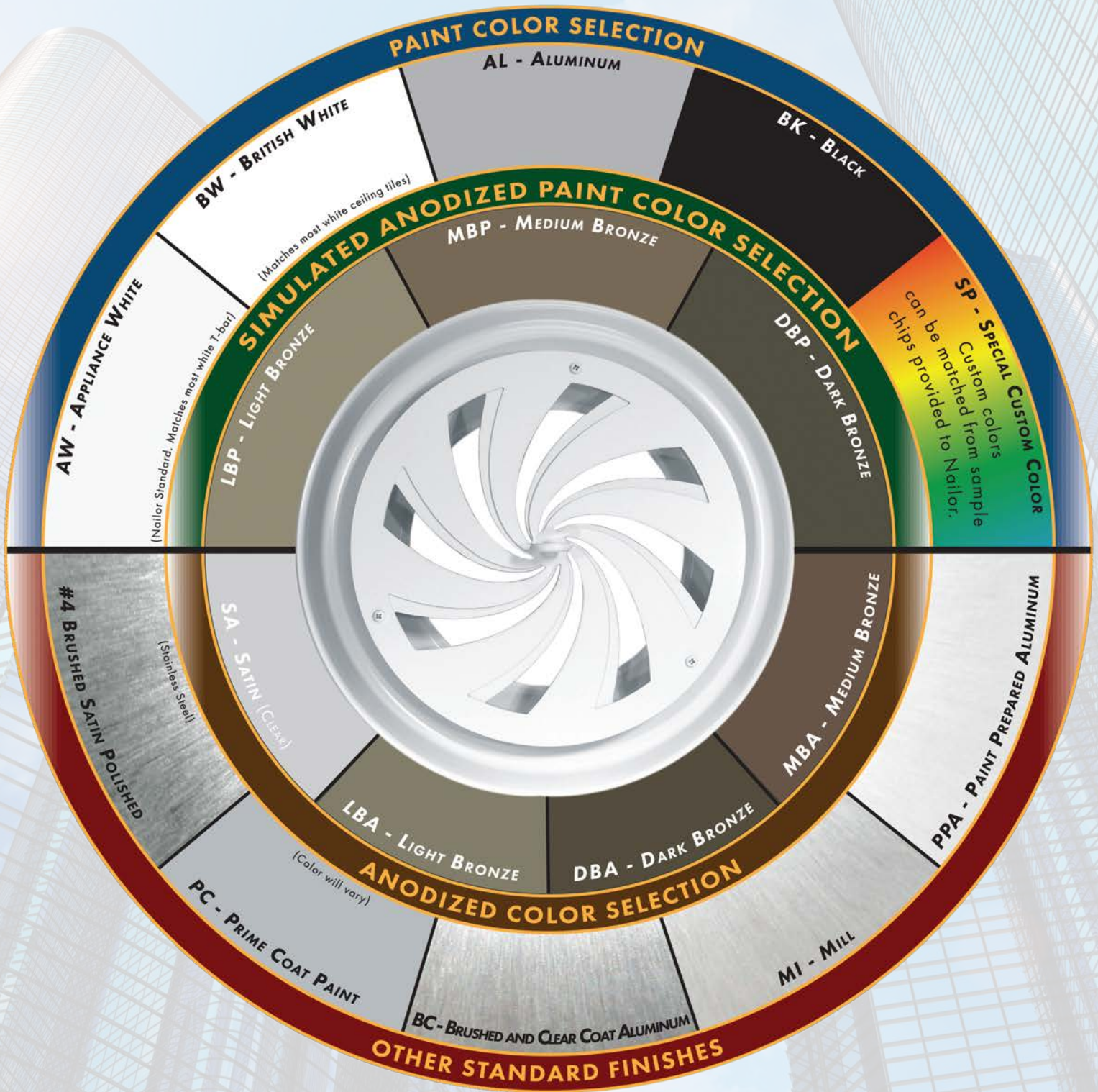
Surface is left untreated and requires cleaning, degreasing, etc. in the field before final finish can be applied if required.



**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.

"Complete Air Control and Distribution Solutions."

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## 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.

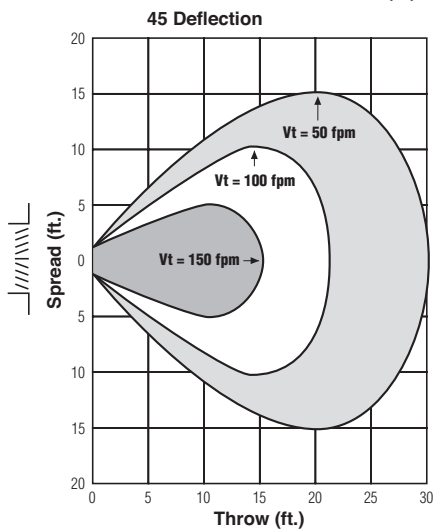
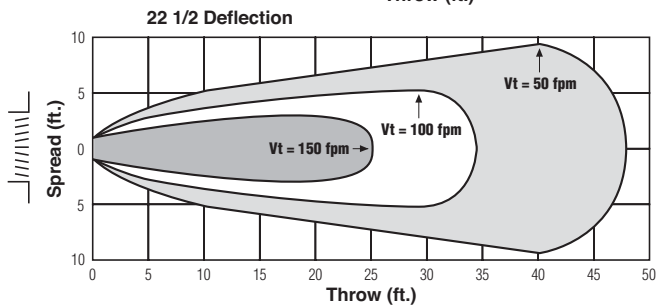
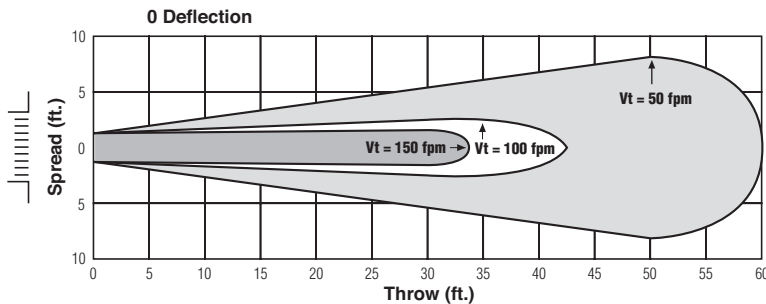
Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by 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	
6 x 6	8 x 4 10 x 4	0.20		CFM	0°	60	80	100	120	140	160	200	240	280	
				Noise Criteria	22 1/2°	—	—	—	—	19	23	29	35	40	
				Throw	45°	5-7-13 4-6-10 3-4-7	7-9-16 6-7-13 4-5-8	8-12-18 6-10-14 4-6-9	10-14-20 8-11-16 5-7-10	11-15-21 9-12-17 6-8-11	12-16-23 10-13-18 8-10-12	15-18-25 12-14-20 8-9-13	16-20-27 13-16-22 9-10-14	17-21-30 14-17-24 9-11-15	
8 x 6	10 x 5 12 x 4	0.27		CFM	0°	81	108	135	162	189	216	270	324	378	
				Noise Criteria	22 1/2°	—	—	—	15	20	24	30	36	41	
				Throw	45°	5-8-15 4-6-12 3-4-8	8-12-18 6-10-14 4-6-9	10-14-20 8-11-16 5-7-10	11-16-23 9-13-18 6-8-12	13-18-25 10-14-20 7-9-13	15-19-27 12-15-22 8-10-14	17-21-30 14-17-24 9-11-15	18-23-32 14-18-26 9-12-16	19-24-35 15-19-28 10-12-18	
10 x 6	12 x 5 16 x 4	0.35		CFM	0°	105	140	175	210	245	280	350	420	490	
				Noise Criteria	22 1/2°	—	—	—	16	21	25	31	37	42	
				Throw	45°	6-9-18 5-7-14 3-5-9	9-13-21 7-10-17 5-7-11	10-16-24 8-13-19 5-8-12	12-19-26 10-15-21 6-10-13	15-20-28 12-16-22 8-10-14	17-21-30 14-17-24 9-11-15	20-23-33 16-18-26 10-12-17	21-25-36 17-20-29 11-13-18	22-27-39 18-22-31 11-14-20	
8 x 8	14 x 5	0.38		CFM	0°	114	152	190	228	266	304	380	456	532	
				Noise Criteria	22 1/2°	—	—	—	17	22	26	32	38	43	
				Throw	45°	6-9-19 5-7-15 3-5-10	9-14-22 7-11-18 5-7-11	11-16-25 9-13-20 6-8-13	13-19-27 10-15-22 7-10-14	16-21-29 13-17-23 8-11-15	18-22-32 14-18-26 9-11-16	19-24-34 15-19-27 10-12-17	21-26-37 17-21-30 11-13-19	23-28-40 18-22-32 12-14-20	
12 x 6	18 x 4	0.42		CFM	0°	126	168	210	252	294	336	420	504	588	
				Noise Criteria	22 1/2°	—	—	—	17	22	26	32	38	43	
				Throw	45°	6-9-19 5-7-15 3-5-10	9-14-22 7-11-18 5-7-11	11-16-25 9-13-20 6-8-13	13-19-27 10-15-22 7-10-14	16-21-30 13-17-24 8-11-15	18-22-32 14-18-26 9-11-16	19-24-34 15-19-27 10-12-17	21-26-37 17-22-30 11-14-19	23-29-41 18-23-33 12-15-21	
14 x 6	10 x 8	0.50		CFM	0°	150	200	250	300	350	400	500	600	700	
				Noise Criteria	22 1/2°	—	—	—	18	23	27	33	39	44	
				Throw	45°	6-11-20 5-9-16 3-6-10	10-15-23 8-12-18 5-8-12	12-18-25 10-14-20 6-9-13	15-20-28 12-16-22 8-10-14	16-22-31 13-18-25 8-11-16	19-23-33 15-18-26 10-12-17	21-25-36 17-20-29 11-13-18	23-28-40 18-22-32 12-14-20	25-31-43 20-25-34 13-16-22	
12 x 8	16 x 6 24 x 4	0.58		CFM	0°	174	232	290	348	406	464	580	696	812	
				Noise Criteria	22 1/2°	—	—	—	19	24	28	34	40	45	
				Throw	45°	7-11-21 6-9-17 4-6-11	10-15-24 8-12-19 5-8-12	12-19-27 10-15-22 6-10-14	15-21-30 12-17-24 8-11-15	17-23-32 14-18-26 9-12-16	20-24-34 16-19-27 10-12-17	22-27-38 18-22-30 11-14-19	24-30-42 19-24-34 12-15-21	26-32-45 21-26-36 13-16-23	
10 x 10	14 x 7 26 x 4	0.61		CFM	0°	183	244	305	366	427	488	610	732	854	
				Noise Criteria	22 1/2°	—	—	—	19	24	28	34	40	45	
				Throw	45°	7-11-21 6-9-17 4-6-11	10-16-24 8-13-19 5-8-12	13-19-28 10-15-22 7-10-14	16-21-30 13-17-24 8-11-15	17-23-32 14-18-26 9-12-16	20-24-35 16-19-28 10-12-18	23-28-39 18-22-31 12-14-20	24-30-42 19-24-34 12-15-21	27-32-46 22-26-37 14-16-23	
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM	0°	195	260	325	390	455	520	650	780	910	
				Noise Criteria	22 1/2°	—	—	—	15	20	25	29	35	41	46
				Throw	45°	7-12-22 6-10-18 4-6-11	11-16-25 9-13-20 6-8-13	13-20-29 10-16-23 7-10-15	16-22-32 13-18-26 8-11-16	18-24-34 14-19-27 9-12-17	21-25-36 17-20-29 11-13-18	24-29-40 19-23-32 12-15-20	25-32-45 20-26-36 13-16-23	28-34-48 22-27-38 14-17-24	
12 x 10	20 x 6 24 x 5	0.74		CFM	0°	222	296	370	444	518	592	740	888	1036	
				Noise Criteria	22 1/2°	—	—	—	15	20	25	29	35	41	46
				Throw	45°	8-13-24 6-10-19 4-7-12	11-17-27 9-14-22 6-9-14	14-21-31 11-17-25 7-11-16	17-24-33 14-19-26 9-12-17	20-26-36 16-21-29 10-13-18	22-27-39 18-22-31 11-14-20	25-31-43 20-25-34 13-16-22	27-33-48 22-26-38 14-17-24	30-36-51 24-29-41 15-18-26	
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM	0°	240	320	400	480	560	640	800	960	1120	
				Noise Criteria	22 1/2°	—	—	—	16	21	26	30	36	42	47
				Throw	45°	8-13-25 6-10-20 4-7-13	11-18-28 9-14-22 6-9-14	15-22-32 12-18-26 8-11-16	18-25-35 14-20-28 9-13-18	20-27-38 16-22-30 10-14-19	23-28-41 18-22-33 12-14-21	26-32-45 21-26-36 13-16-23	28-35-50 22-28-40 14-18-25	31-38-53 25-30-42 16-19-27	
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM	0°	270	360	450	540	630	720	900	1080	1260	
				Noise Criteria	22 1/2°	—	—	—	16	21	26	30	36	42	47
				Throw	45°	9-14-26 7-11-21 5-7-13	12-18-29 10-14-23 6-9-15	15-23-33 12-18-26 8-12-17	18-26-36 14-21-29 9-13-18	21-27-39 17-22-31 11-14-20	24-29-42 19-23-34 12-15-21	27-33-47 22-26-38 14-17-24	29-36-51 23-29-41 15-18-26	32-39-56 26-31-45 16-20-28	

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°	339	452	565	678	791	904	1130	1356	1582
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24		CFM	0°	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
				Noise Criteria	22 1/2°	7-12-23	11-16-26	14-20-29	16-23-32	19-24-34	22-26-37	24-29-41	26-32-46	28-34-49
				Throw	45°	6-9-17	8-13-20	9-13-18	10-15-20	12-15-22	14-17-23	15-18-26	17-20-29	18-22-31
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	20-29-42	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
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	28-34-48	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° 22 1/2° 45°	.015 .017 .026	.026 .030 .046	.041 .047 .072	.059 .068 .103	.081 .093 .142	.106 .122 .186	.165 .190 .289	.238 .274 .417	.324 .373 .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° 22 1/2° 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		1062	1416	1770	2124	2478	2832	3540	4248	4956
				Noise Criteria		-	-	21	26	31	35	41	47	52
				Throw	0° 22 1/2° 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
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° 22 1/2° 45°	18-29-55 14-23-44 9-15-28	29-36-62 21-31-50 13-20-31	33-48-70 26-38-56 17-24-35	39-55-77 31-44-62 20-28-39	45-59-83 36-47-66 23-30-42	51-62-89 41-50-71 26-31-45	57-70-99 46-56-79 29-35-50	62-77-108 50-62-86 31-39-54	68-83-117 54-66-94 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° 22 1/2° 45°	19-31-58 15-25-46 10-16-29	28-42-68 22-34-54 14-21-34	35-52-75 28-42-60 18-26-38	42-58-83 34-46-66 21-29-42	48-63-89 38-50-71 24-32-45	55-68-95 44-54-76 28-34-48	61-75-106 49-60-85 31-38-53	68-83-117 54-66-94 34-42-59	73-89-125 60-73-100 37-45-63

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	
				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	91-112-15873-90-126
				Throw	0° 22 1/2° 45°	24-39-73 19-31-58 12-20-37	34-52-84 27-42-67 17-26-42	43-65-94 34-52-75 22-33-47	52-73-103 42-58-82 26-37-52	61-79-112 49-63-90 31-40-56	69-84-119 55-67-95 35-42-60	77-94-133 62-75-106 39-47-67	84-103-146 67-82-117 42-52-73	46-56-79	
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	94-116-164
				Throw	0° 22 1/2° 45°	25-40-76 20-32-61 13-20-38	36-54-87 29-43-70 18-27-44	45-68-98 36-54-78 23-34-49	54-76-108 43-61-86 27-38-54	63-82-116 50-66-93 32-41-58	71-87-124 57-70-99 36-44-62	80-98-139 64-78-111 40-49-70	87-108-151 70-86-121 44-54-76	75-93-131	
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	97-118-167
				Throw	0° 22 1/2° 45°	26-41-77 21-33-62 13-22-39	37-55-90 30-44-72 19-28-45	46-69-100 37-55-80 23-45-50	55-77-109 44-62-87 28-39-55	64-84-118 51-67-94 32-42-59	73-90-127 58-72-102 37-45-64	82-100-142 66-80-114 41-50-71	90-109-155 72-87-124 45-55-78	97-118-167 78-94-134 49-59-84	
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	98-121-171
				Throw	0° 22 1/2° 45°	26-42-79 21-34-63 13-21-40	37-57-91 30-46-73 19-29-	47-70-102 38-56-82 24-35-51	57-79-111 46-63-89 29-40-56	65-85-121 52-68-97 33-43-61	75-91-129 60-73-103 38-46-65	84-102-144 67-82-115 42-51-72	91-111-158 73-89-126 46-56-79	98-121-171 78-97-137 49-61-86	
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	104-127-180
				Throw	0° 22 1/2° 45°	28-45-84 22-36-67 14-23-42	36-60-96 31-48-77 20-30-48	49-74-108 39-59-86 25-37-54	60-84-117 48-67-94 30-42-59	69-90-127 55-72-102 35-45-64	78-96-136 62-77-109 39-48-68	88-108-152 70-86-122 44-54-76	96-117-166 77-94-133 48-59-83	104-127-180 83-102-144 52-64-90	
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	109-134-190
				Throw	0° 22 1/2° 45°	28-47-88 22-38-70 14-24-44	42-62-101 34-50-81 21-31-51	53-78-114 42-62-91 27-39-57	62-88-125 50-70-100 31-44-63	73-95-134 58-76-107 37-48-67	83-101-143 66-81-114 42-51-72	93-114-161 74-91-129 47-57-81	101-125-176 81-100-141 51-63-88	109-134-190 87-107-152 55-67-95	
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	112-138-195
				Throw	0° 22 1/2° 45°	29-48-90 23-38-72 15-24-45	43-64-104 34-51-83 22-32-52	53-80-117 42-64-94 27-40-59	64-90-127 51-72-102 32-45-64	75-97-138 60-78-110 38-49-69	85-104-147 68-83-118 43-52-74	95-117-165 76-94-132 48-59-83	104-127-180 83-102-144 52-64-90	112-138-195 90-110-156 56-69-98	
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	117-143-203
				Throw	0° 22 1/2° 45°	31-50-94 25-40-75 16-25-47	44-67-108 35-54-86 22-34-54	56-84-121 45-67-97 28-42-61	67-94-132 54-75-106 34-47-66	77-102-143 62-82-114 39-51-72	88-108-153 70-86-122 44-54-77	99-121-171 79-97-137 50-61-86	108-132-187 86-106-150 54-66-94	117-143-203 94-114-162 59-72-102	
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	122-145-210
				Throw	0° 22 1/2° 45°	32-52-97 26-42-78 16-26-49	46-69-112 37-55-90 23-35-56	58-86-125 46-69-100 29-43-63	69-97-138 55-78-110 35-49-69	81-105-149 65-84-119 41-53-75	92-112-159 74-90-127 46-56-80	102-125-178 82-100-142 51-63-89	112-138-195 90-110-156 56-69-98	122-145-210 98-119-168 61-75-105	
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	129-158-223
				Throw	0° 22 1/2° 45°	34-55-104 27-44-83 17-28-52	49-74-120 39-59-96 25-37-60	61-92-133 49-74-106 31-46-67	74-104-146 59-83-117 38-54-76	86-112-158 69-90-126 43-56-79	97-120-168 78-96-134 49-60-84	109-133-189 87-106-151 55-67-95	120-146-207 96-117-166 60-73-104	129-158-223 103-126-178 65-79-112	
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	134-163-231	
			Throw	0° 22 1/2° 45°	35-57-107 28-46-86 18-29-54	51-76-124 41-61-99 26-38-62	63-95-138 50-76-110 32-48-69	76-107-151 61-86-121 38-54-76	89-116-163 71-93-130 45-58-82	101-124-174 81-99-139 51-62-87	113-138-195 90-110-156 57-69-98	124-151-214 99-121-171 62-76-107	134-163-231 107-130-185 62-82-116		
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	140-173-244	
			Throw	0° 22 1/2° 45°	37-60-113 30-48-90 19-30-57	53-80-131 42-64-105 27-40-66	67-100-146 54-80-117 34-50-73	80-113-159 64-90-127 40-57-80	94-122-173 75-98-138 47-61-87	106-131-185 85-105-148 53-66-93	119-146-206 95-117-165 60-73-103	131-159-226 105-127-181 62-80-113	140-173-244 112-138-195 70-87-122		

#### 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.