

## 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** **Page F159**  
 Suffix '-O' adds a stainless steel OBD



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

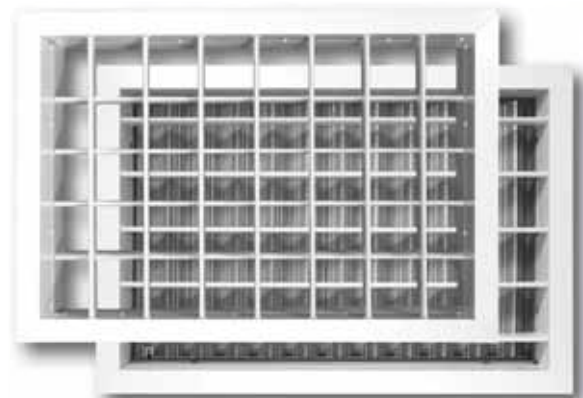
## INDUSTRIAL SUPPLY

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

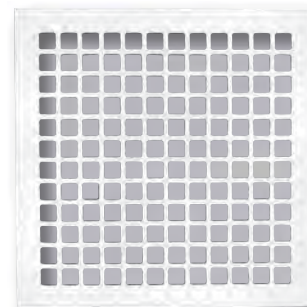
## LATTICE FACE

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

## 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.

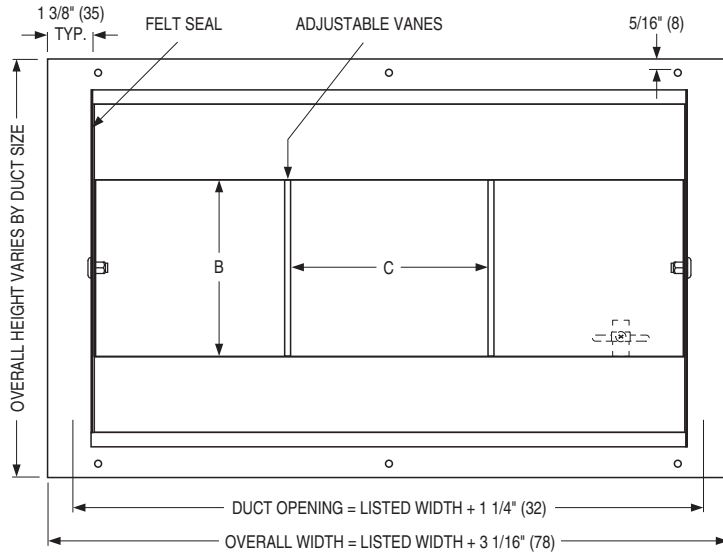
### OPTIONS AND ACCESSORIES:

- PB Pole Operator is available to allow directional control of airflow in remote mounted locations
- DEX Damper/Extractor (Air Scoop)

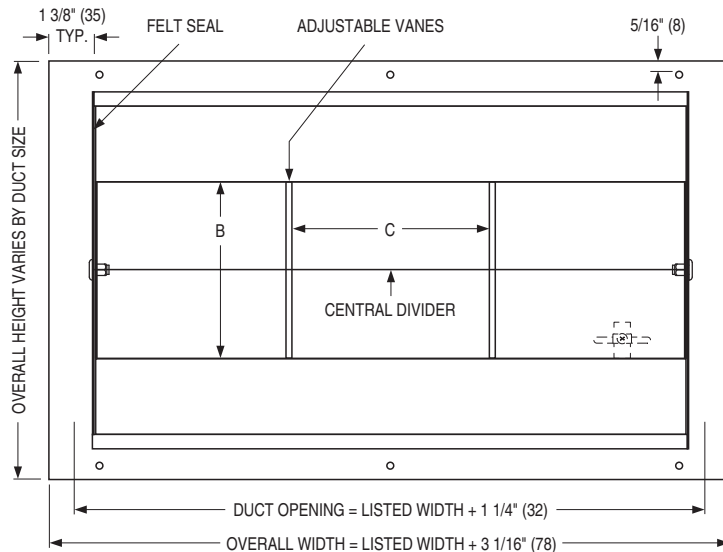
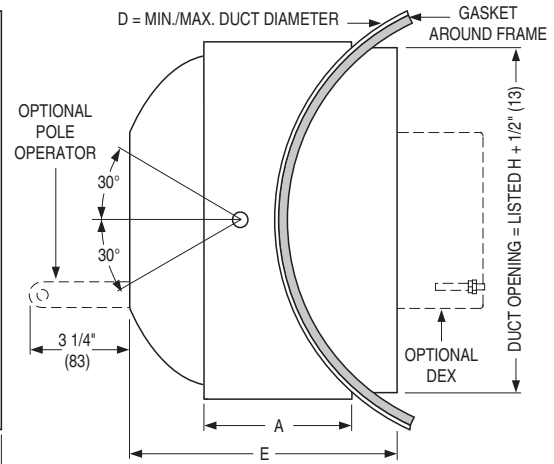
For additional options and accessories, see page F191.

## DIMENSIONAL DATA:

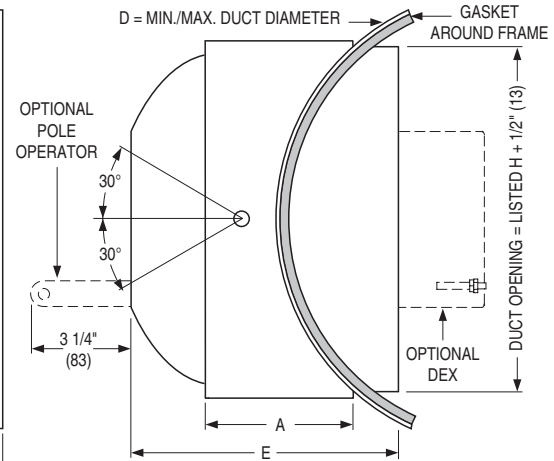
### SPIRAL DUCT DRUM LOUVERS • MODEL SERIES: 45DLC



**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.

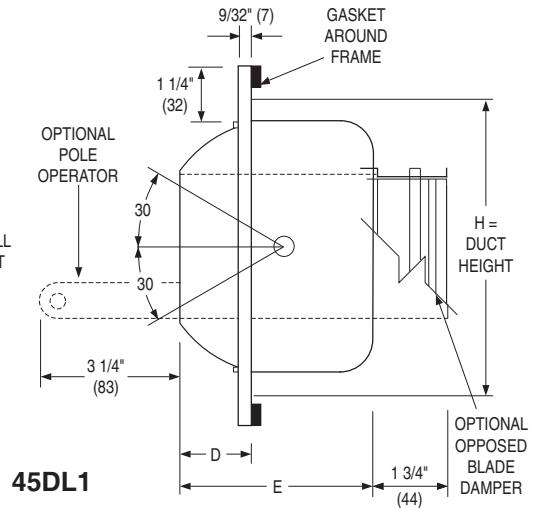
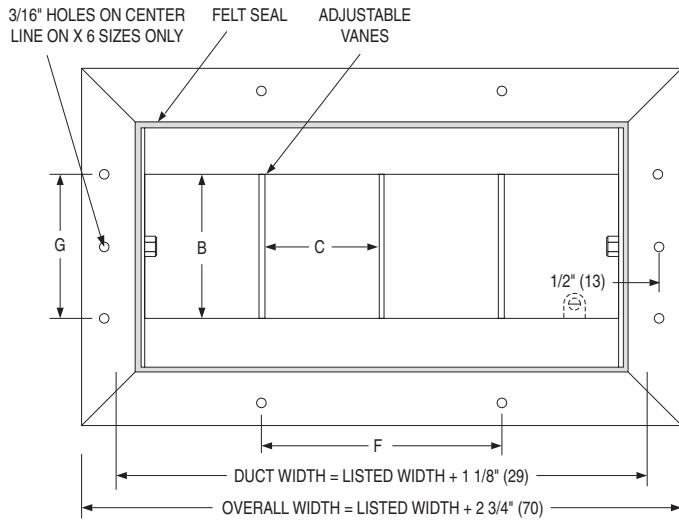
### OPTIONS AND ACCESSORIES:

- PB Pole Operator is available to allow directional control of airflow in remote mounted locations

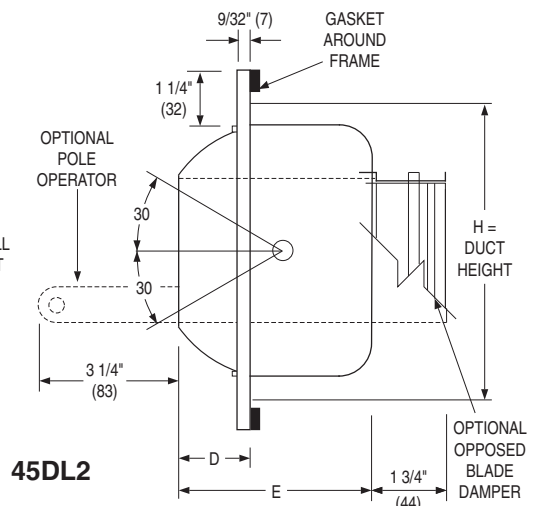
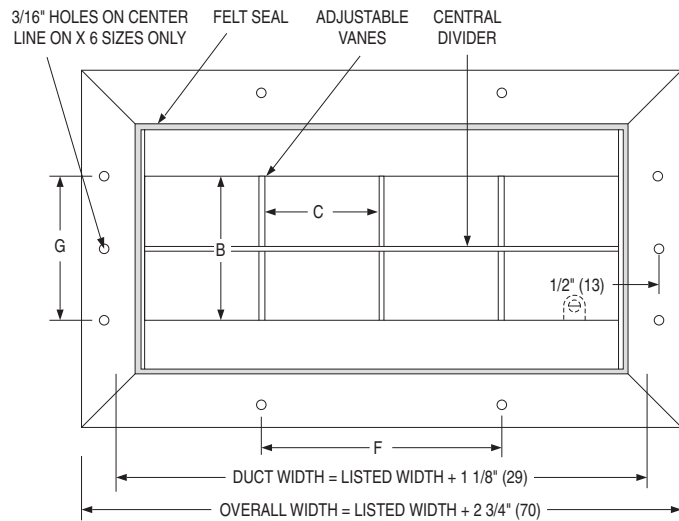
For additional options and accessories, see page F191.

## 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	5600	6400	8000	9600
	Total Pressure	.03	.06	.11	.17	.22	.30	.38	.58	.83
	Throw	32-42-72	42-54-100	52-72-120	62-74-140	72-100-170	82-110-190	92-120-240	110-140-260	120-160-290
	Noise Criteria	–	–	25	31	36	41	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 an 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>1. <b>Models</b><br/>45DLC1 Spiral Duct, Single Vanes<br/>45DLC2 Spiral Duct, Split Vanes</li> <li>2. <b>Width x Height</b><br/>inches (mm)</li> <li>3. <b>Duct Diameter</b><br/>inches 10 through 36<br/>(in 2" increments)</li> <li>4. <b>Frame/Border Type</b><br/>S Surface Mount (default)</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/>MI Mill<br/>PC Prime Coat<br/>SP Special Custom Color</li> <li>6. <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>1. <b>Models</b><br/>45DL1 Single Vanes<br/>45DL2 Split Vanes</li> <li>2. <b>Damper (OBD)</b><br/>O With Steel Damper<br/>— None</li> <li>3. <b>Width x Height</b><br/>inches (mm)</li> <li>4. <b>Frame/Border Type</b><br/>S Surface Mount (default)</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/>MI Mill<br/>PPA Paint Prepared Aluminum<br/>SP Special Custom Color</li> <li>6. <b>Fastening</b><br/>A Screw Holes</li> </ol> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### OPTIONS & ACCESSORIES:

- None (default)
- 7. **Pole Operator**  
PB Pole Operator

#### Notes:

1. 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.

## 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

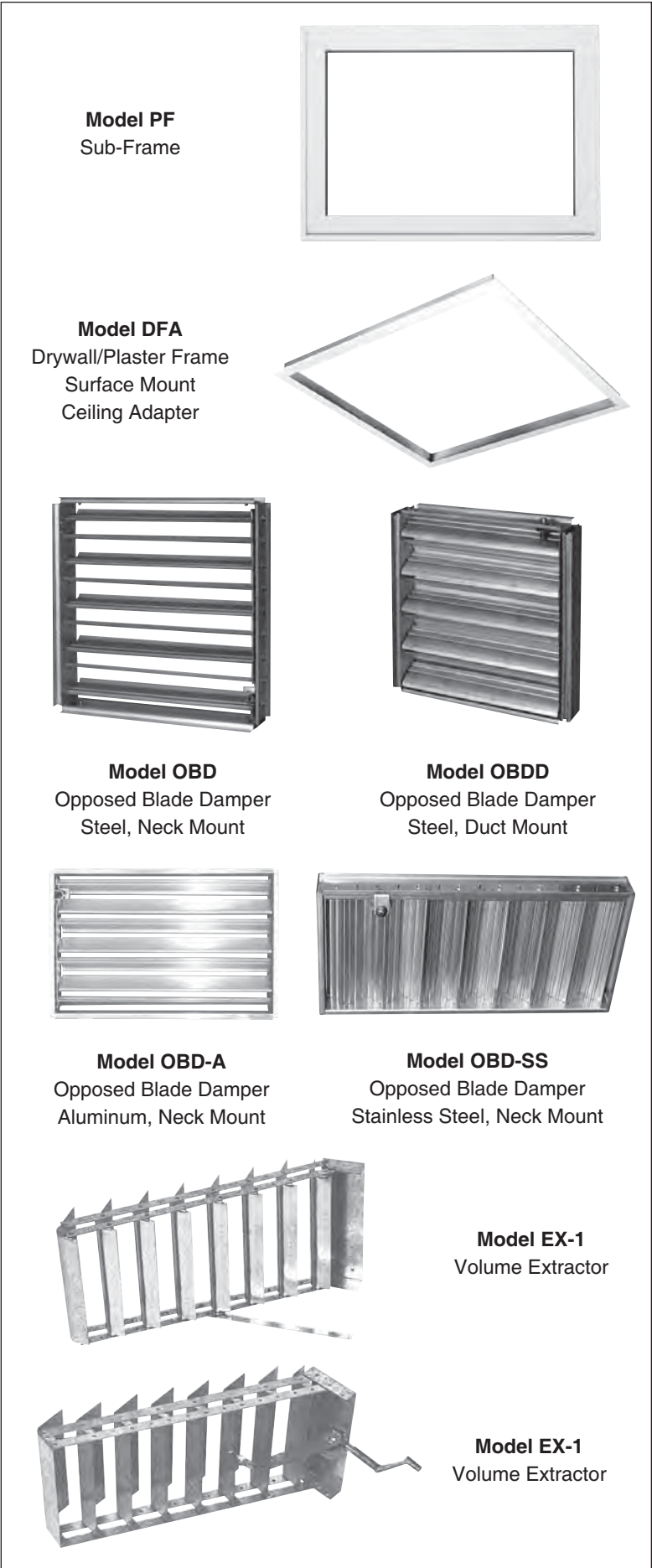
- Opposed blade dampers for every application.
- Volume extractors.

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.

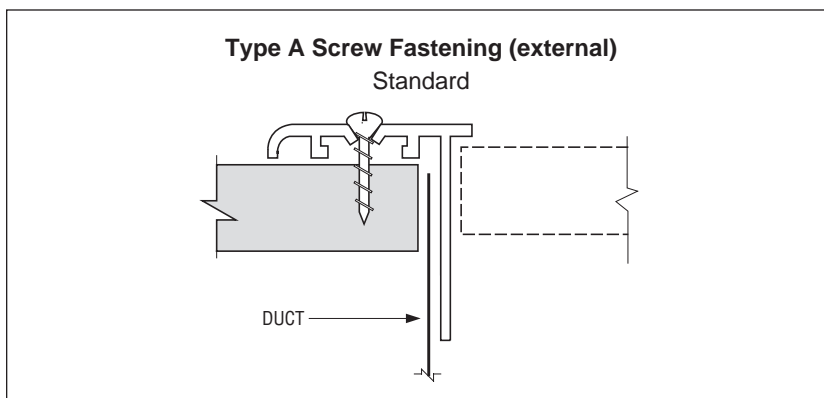


## Fastening and Border Frames

### Type A Screw Fastening (External)

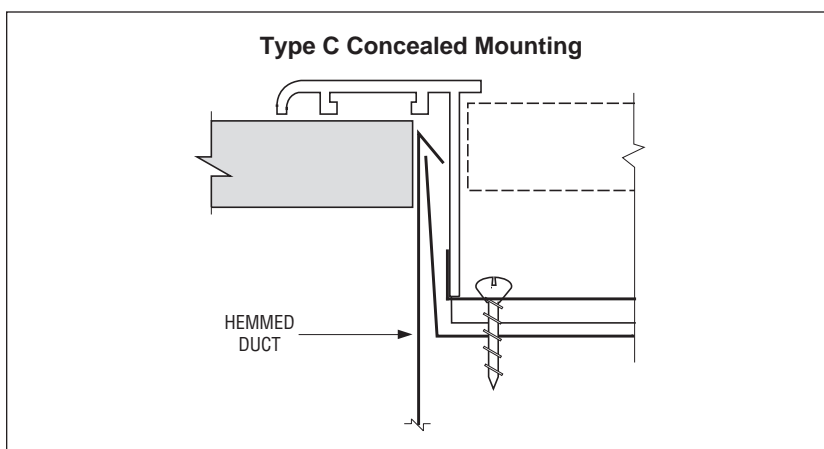
Standard method of fastening for all Nailor grilles and registers in surface mount applications. All Nailor grilles and registers are supplied this way unless specified otherwise. Universal application for all models and cost effective installation.

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.



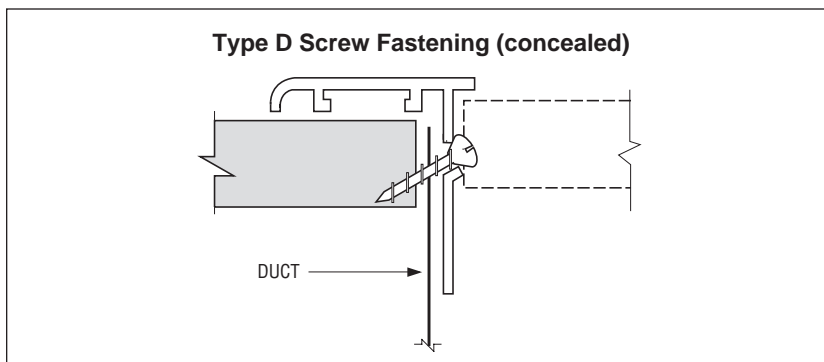
### Type C Concealed Mounting

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)

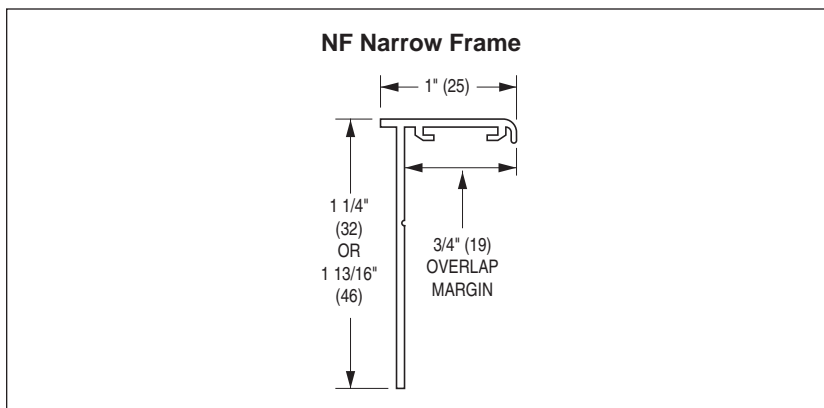
Screw holes are provided in the neck of the grille or register frame. Screws are field installed at an angle through the grille frame and into the ductwork, providing a clean frame appearance. Installation is more difficult than Type A due to the space constriction between the grille blades. Care must 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.

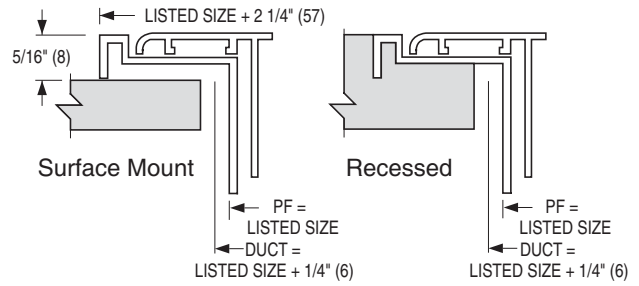
See individual models for availability.



## 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.

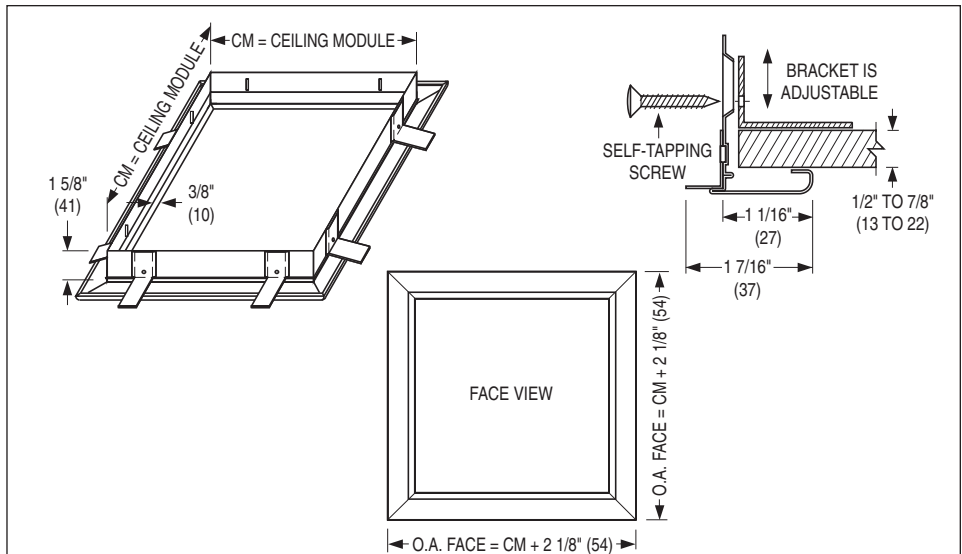
The DF Series simplifies and reduces installation time compared with surface mount type diffusers. This is especially true where flexible duct is utilized. A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access 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)

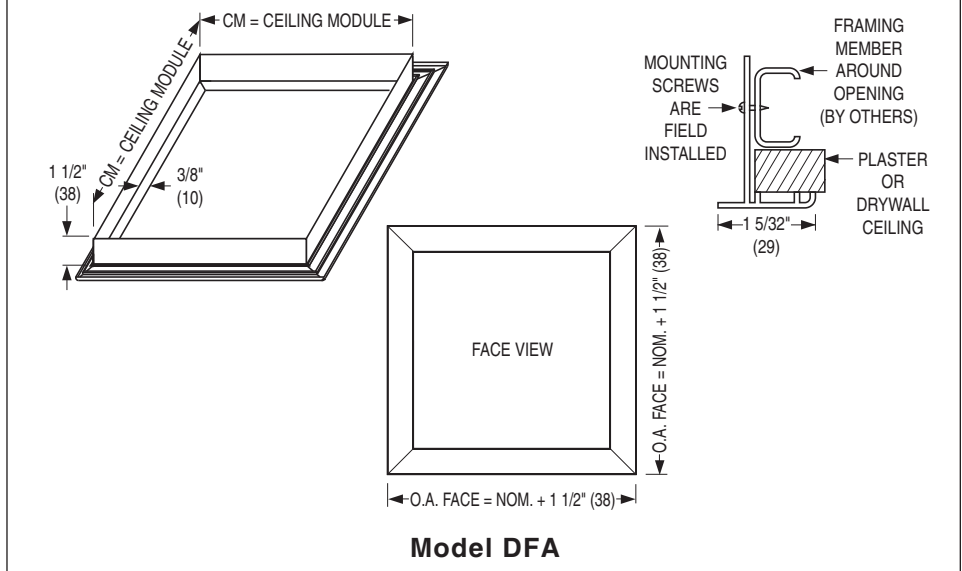


Model DFS

**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.

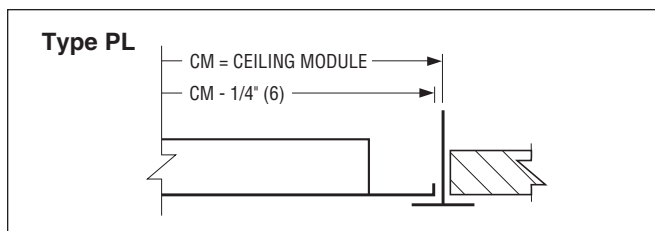
The maximum grille neck sizes available for panel mounting will be the ceiling module size selected - 3" (76).

### 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

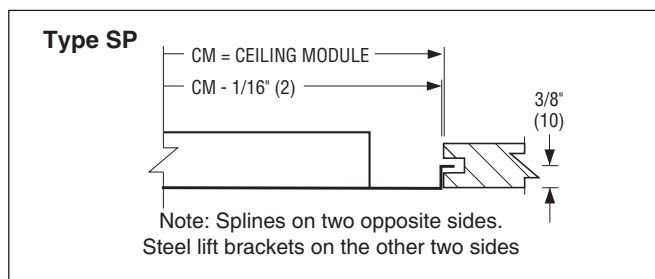
### Border Type PL: Lay-in T-Bar

Grille or register is mounted in an extended panel to suit standard T-Bar Lay-in Type ceilings.



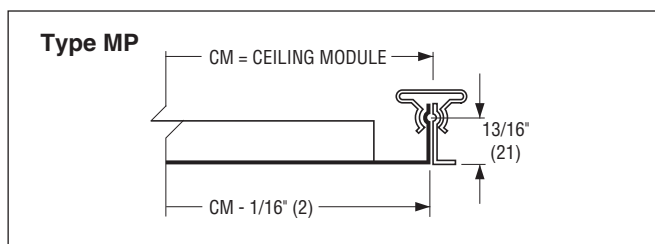
### Border Type SP: Spline

The grille or register is mounted in an extended panel to suit spline type ceiling modules.



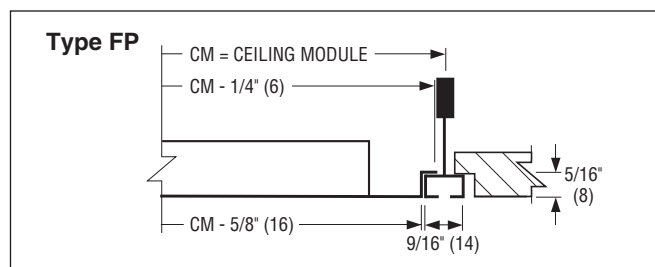
### Border Type MP: Metal Pan/Snap-in

The grille or register is mounted in an extended panel to suit metal pan ceilings that have snap-in type ceiling modules.



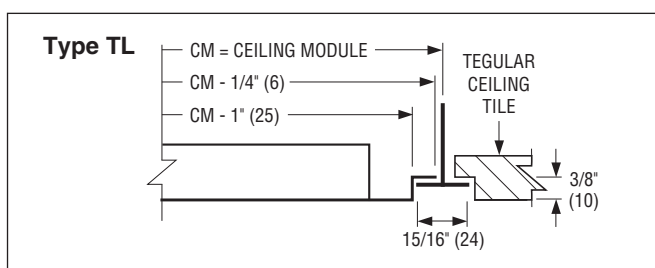
### Border Type FP: Narrow Regressed T-Bar (Fineline®)

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

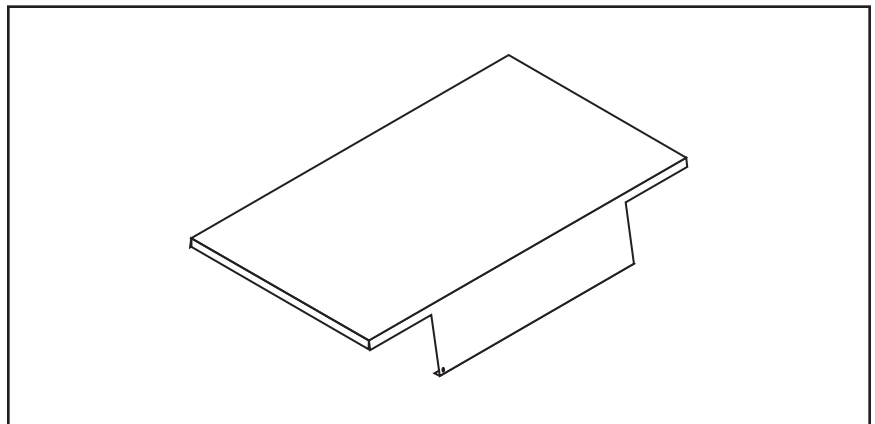
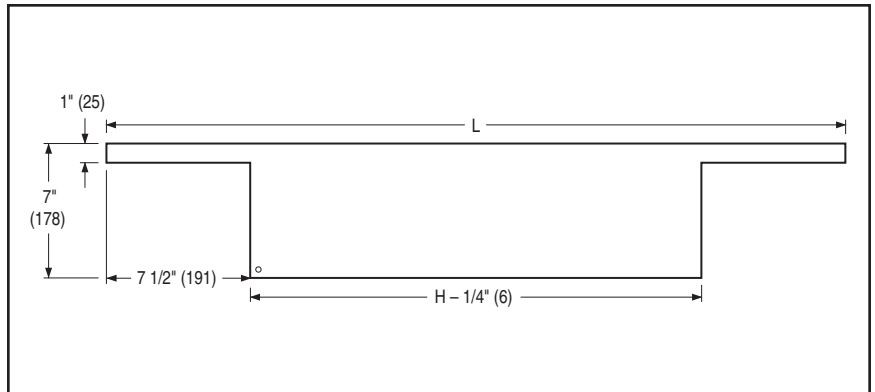
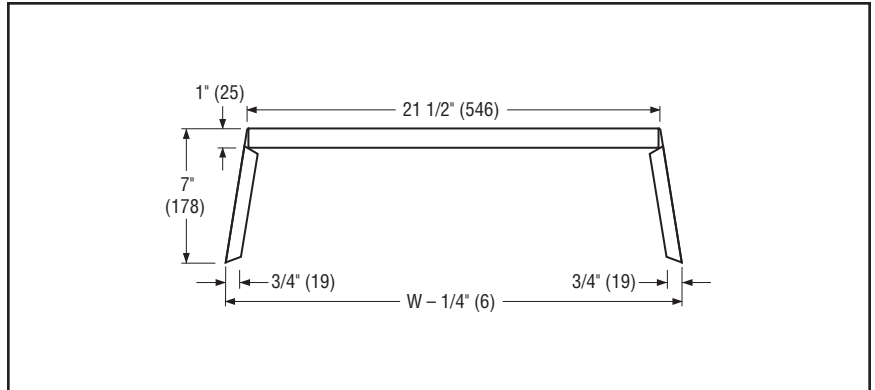
Nailor Model RACA Return Air Crosstalk Attenuator is designed to greatly reduce the amount of sound transferred from the return air plenum through open vents or return grilles, into the adjoining space. For use with non-ducted return grilles in Lay-in T-Bar applications, the RACA allows return air to 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**

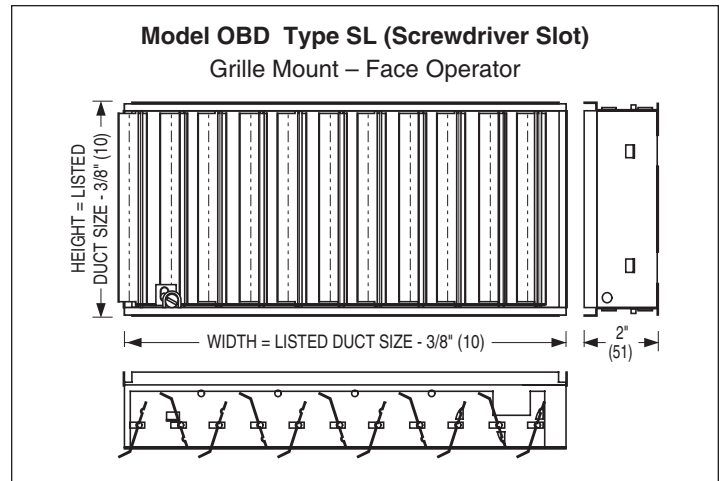
**OBD-A Aluminum**

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).

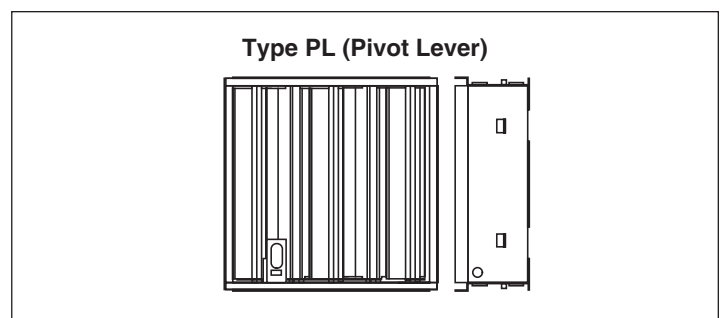
#### Type SL Operator

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.



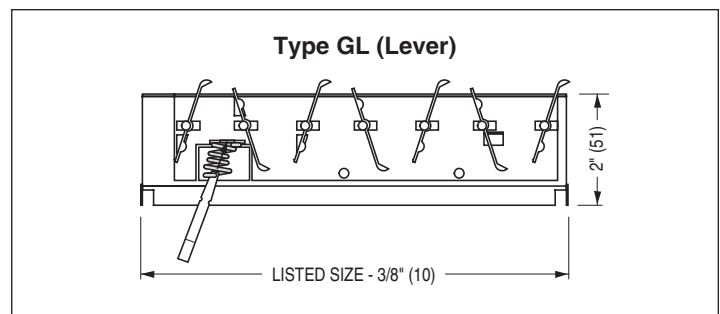
#### Type PL Operator

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**

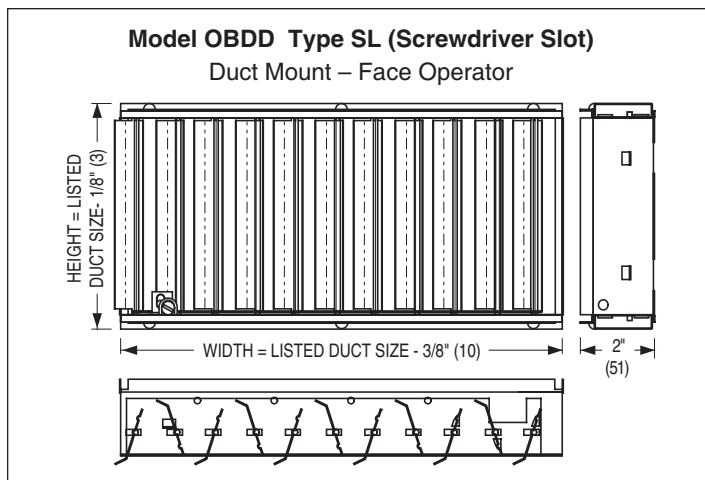
**OBDD-A Aluminum**

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)

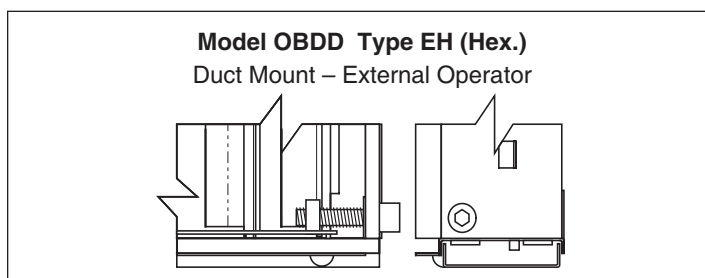
### Type SL Operator

These models are supplied with a screwdriver slot face operator that is accessed from inside the duct by removing the grille.



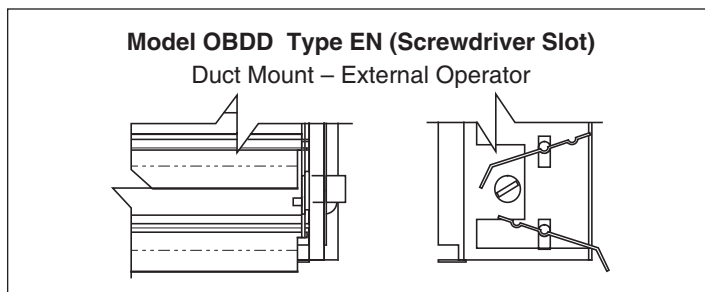
### Type EH Operator

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.



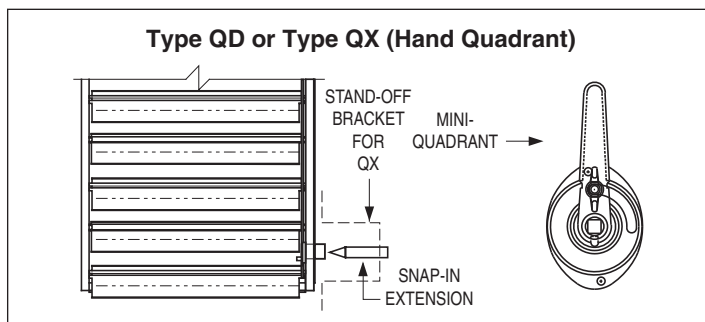
### Type QD Operator \*

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.

