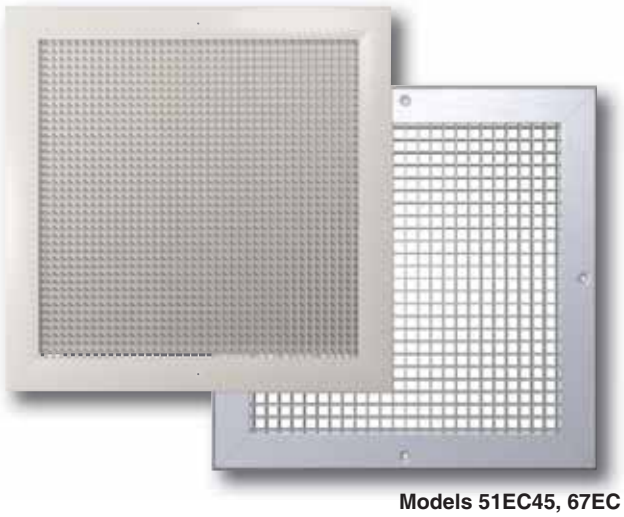
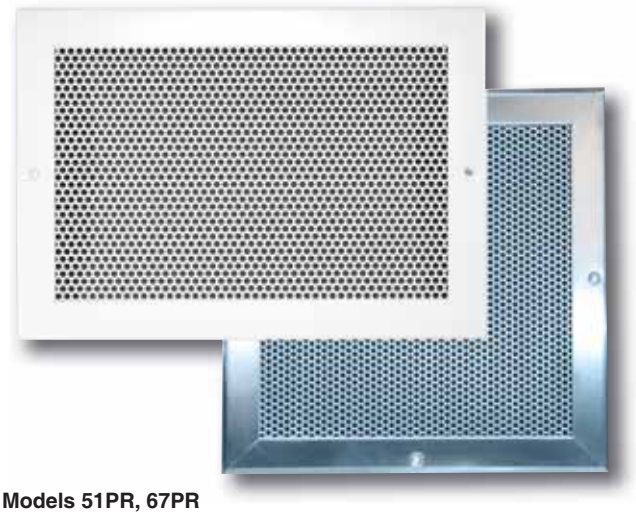
EGGCRATE RETURN AND EXHAUST GRILLES

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



Models 51PR, 67PR

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

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

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:

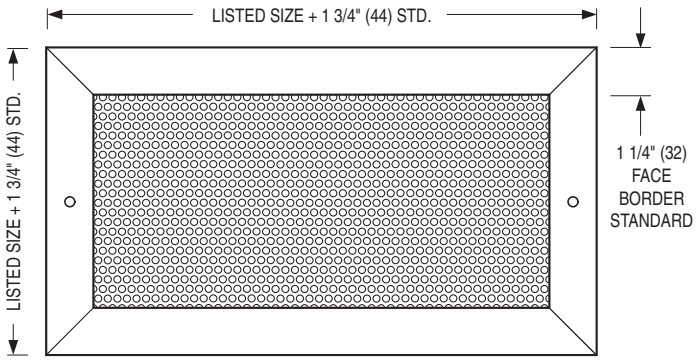
- AW Appliance White finish is standard. Other finishes are available.

OPTIONS AND ACCESSORIES:

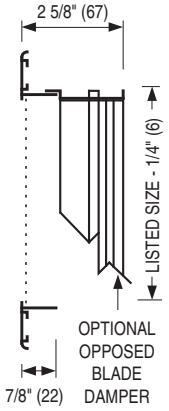
- NF Narrow Frame with 1" (25) face border optional on Model 51PR.
- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.

DIMENSIONAL DATA:
PERFORATED RETURN GRILLES AND REGISTERS - ALUMINUM OR STEEL
MODELS: 51PR, 61PR



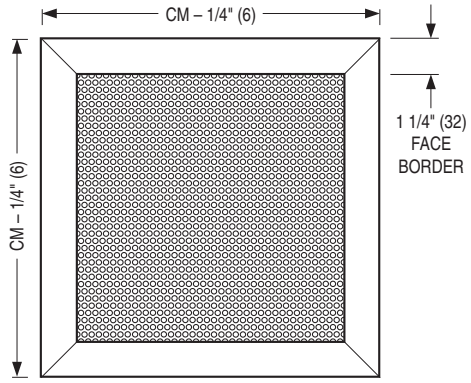
Model 51PR



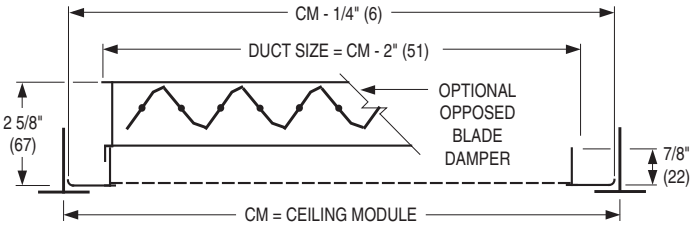
Model 51PR

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

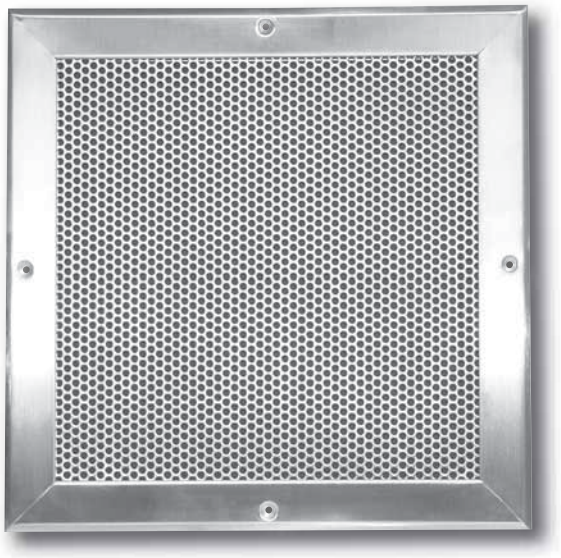
Frame/Border Type L – Lay-in T-Bar

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.

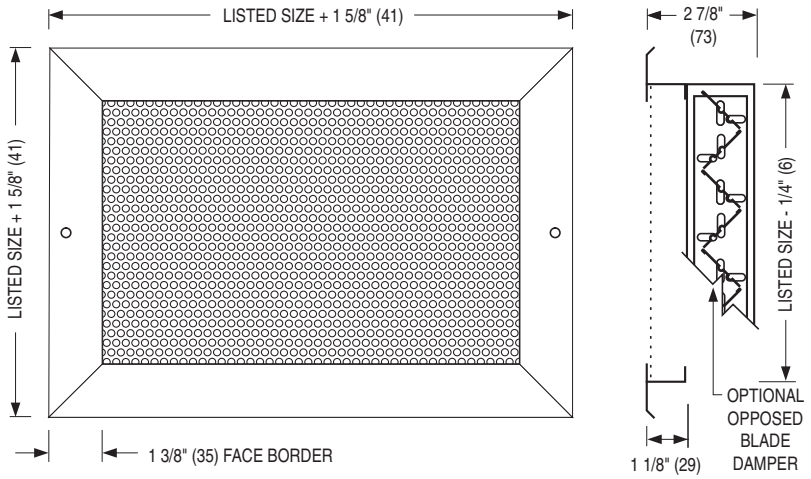
FINISH OPTIONS:

- #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.



MODEL 67PR GRILLE Stainless Steel

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 .006 .024	400 .010 .042	500 .016 .067	600 .022 .095	700 .031 .130	800 .040 .170	900 .051 .215	1000 .062 .265	1200 .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 48 x 14	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

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 .006 .024	400 .010 .042	500 .016 .067	600 .022 .095	700 .031 .130	800 .040 .170	900 .051 .215	1000 .062 .265	1200 .090 .382
32 x 32	36 x 30 46 x 22 38 x 28	6.84	5.69	**CFM** Noise Criteria	**2052** –	**2736** 15	**3420** 23	**4104** 29	**4788** 36	**5472** 41	**6156** 46	**6840** 51	**8208** 58
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	6.40	**CFM** Noise Criteria	**2307** –	**3076** 16	**3845** 24	**4614** 30	**5383** 36	**6152** 41	**6921** 47	**7690** 52	**9228** 59
36 x 36	38 x 34 26 x 28 42 x 30 48 x 26	8.69	7.20	**CFM** Noise Criteria	**2607** –	**3476** 16	**4345** 24	**5214** 31	**6083** 37	**6952** 42	**7821** 47	**8690** 52	**10428** 59
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.02	**CFM** Noise Criteria	**2910** –	**3880** 17	**4850** 24	**5820** 31	**6790** 37	**7760** 42	**8730** 48	**9700** 53	**11640** 60
40 x 40	42 x 36 48 x 32 46 x 34	10.77	8.89	**CFM** Noise Criteria	**3231** –	**4308** 17	**5385** 24	**6462** 31	**7539** 38	**8616** 43	**9693** 49	**10770** 54	**12924** 61
42 x 42	44 x 40 48 x 36 46 x 38	11.89	9.80	**CFM** Noise Criteria	**3567** –	**4756** 18	**5945** 25	**7134** 32	**8323** 38	**9512** 43	**10701** 49	**11890** 54	**14268** 61
44 x 44	46 x 42	13.07	10.76	**CFM** Noise Criteria	**3921** –	**5228** 18	**6535** 25	**7842** 32	**9149** 38	**10456** 44	**11763** 49	**13070** 54	**15684** 61
46 x 46		14.30	11.76	**CFM** Noise Criteria	**4290** –	**5720** 19	**7150** 26	**8580** 33	**10010** 39	**11440** 44	**12870** 49	**14300** 54	**17160** 61
48 x 48		15.59	12.80	**CFM** Noise Criteria	**4677** –	**6236** 19	**7795** 26	**9354** 33	**10913** 39	**12472** 44	**14031** 49	**15590** 54	**18708** 61

Performance Notes:

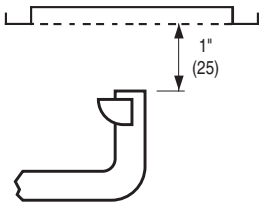
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille tested without damper. Apply the following correction factors for addition of opposed blade damper to grille.

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^{-12} 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.

Air Measurement



Alnor Velometer with 2220A or 6070P Jet Probe

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: 51PR
ALUMINUM PERFORATED RETURN GRILLES AND REGISTERS

EXAMPLE: 51PR - O - 24 x 12 - S - — - AW - DMI - A —

1. **Models**
   51PR Aluminum Construction
2. **Damper (OBD)**
   (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,
   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 *
   Panel Mount: **
   PLS Steel Lay-in T-Bar Panel
   PLA Aluminum Lay-in T-Bar Panel
   FPS Steel Fineline® Panel
   FPA Aluminum Fineline® 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 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 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
   SP Special Custom Color
7. **Opposed Blade Damper Finish**
   DMI Mill (default)
   DBK Painted Black
   — None
8. **Fastening**
   (only for frame/border Types S, NF)
   A Screw Holes (standard) (default)
   N None

OPTIONS & ACCESSORIES:

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. Refer to individual model submittal for guidance on availability of options and accessories.

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).

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 —

1. **Models**
   61PR Steel Construction
2. **Damper (OBD)**
   (model suffix)
   O Steel
   — None
3. **Nominal Width x Height**
   inches (mm)
   For Type S, PLS, SPS, MPS, FPS and TPS,
   W x H = Duct Size
   For Type L,
   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 *
   Panel Mount: **
   PLS Steel Lay-in T-Bar Panel
   FPS Steel Fineline® Panel
   SPS Steel Spline Panel
   MPS Steel Metal Pan Panel
   TPS Steel Tegular Panel
5. **Ceiling Module Size**
   Panel Size
   (Use only for panel mounting, frame/border Types PLS, SPS, MPS, FPS and TPS)
   — None (default)
   Imperial (inches)
   12 x 12, 20 x 20, 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 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
   SP Special Custom Color
7. **Opposed Blade Damper Finish**
   DMI Mill (default)
   DBK Painted Black
   — None
8. **Fastening**
   (only for frame/border Type S)
   A Screw Holes (default)
   N None

OPTIONS & ACCESSORIES:

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. Refer to individual model submittal for guidance on availability of options and accessories.

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).

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

1. **Models**
   - 67PR Stainless Steel Perforated Return
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
   - SP Special Custom Color
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**
   - — None (default)
   - 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 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.

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.

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.

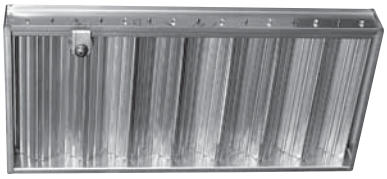
Model PF
Sub-Frame

Model DFA
Drywall/Plaster Frame
Surface Mount
Ceiling Adapter

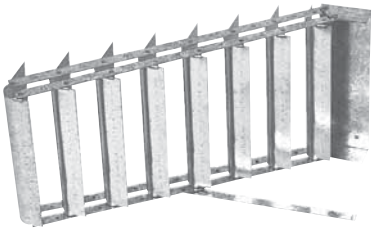
Model OBD
Opposed Blade Damper
Steel, Neck Mount

Model OBDD
Opposed Blade Damper
Steel, Duct Mount

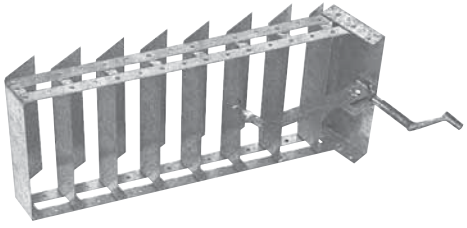
Model OBD-A
Opposed Blade Damper
Aluminum, Neck Mount



Model OBD-SS
Opposed Blade Damper
Stainless Steel, Neck Mount



Model EX-1
Volume Extractor



Model EX-1
Volume Extractor

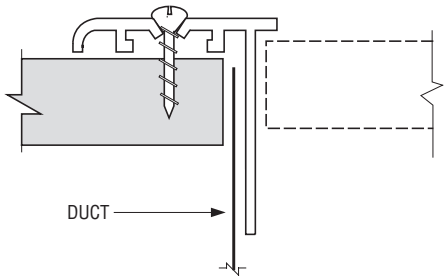
Fastening and Border Frames

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.

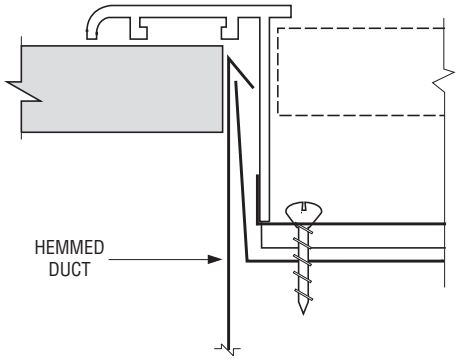
Type A Screw Fastening (external)
Standard



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 grilles with 1/2" (13) spacing and a fixed angled blade deflection. Maximum size: 36" x 36" (914 x 914).

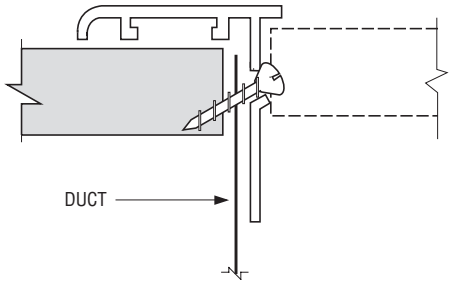
Type C Concealed Mounting



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 D Screw Fastening (concealed)

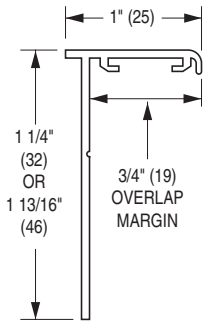


Type NF Narrow Frame

An optional reduced 1" (25) wide narrow border frame is available on most aluminum models to satisfy architectural considerations.

See individual models for availability.

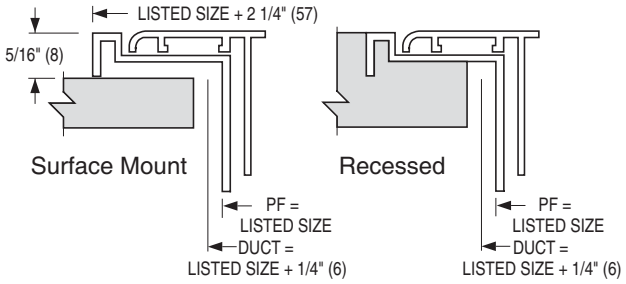
NF Narrow Frame



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.

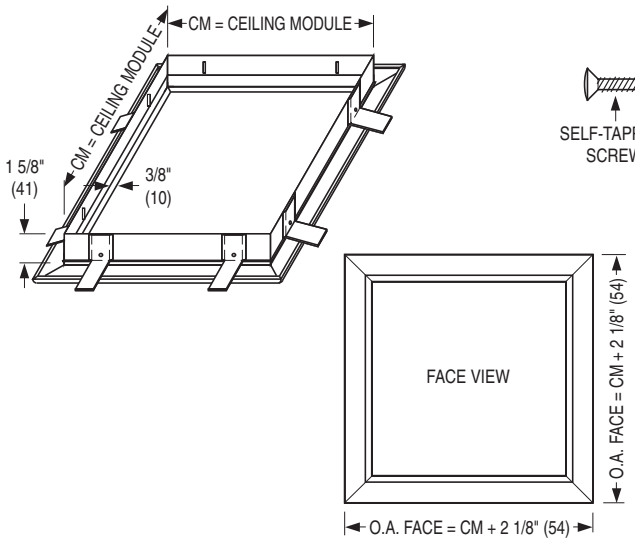
IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600

Ceiling opening = CM + 1/4" (6)

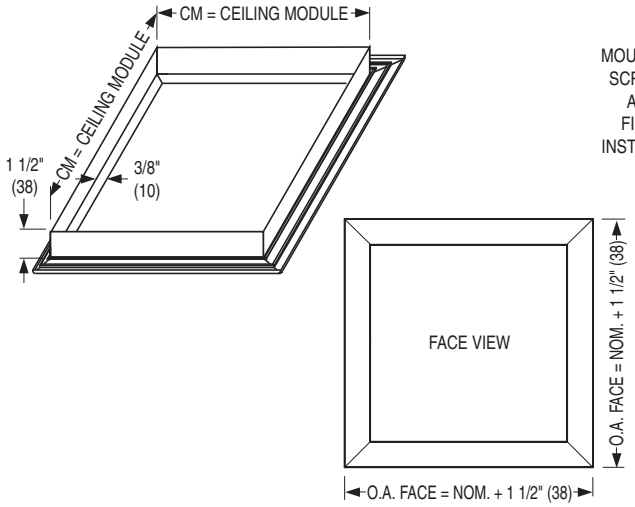
Model DFA requires framing of the ceiling opening with 'C' channel or wood studs for attachment with mounting screws (by others).

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 DFS



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).

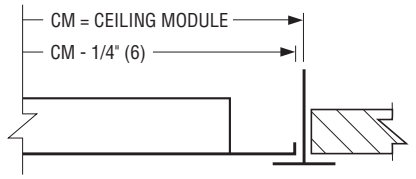
Available Ceiling Module Sizes

Ceiling Module	
Imperial Units (in.)	Metric Units (mm)
12 x 12 24 x 12 36 x 12	300 x 300 600 x 300 900 x 300
48 x 12 20 x 20 24 x 24	1200 x 300 500 x 500 600 x 600
36 x 24 48 x 24	900 x 600 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.

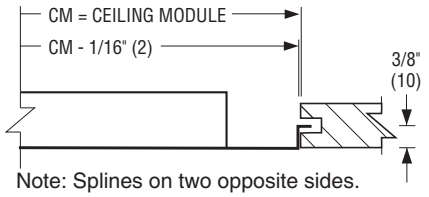
Type PL



Border Type SP: Spline

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

Type SP

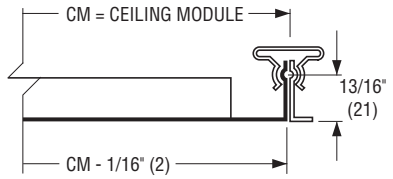


Note: Splines on two opposite sides.
Steel lift brackets on the other two sides

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.

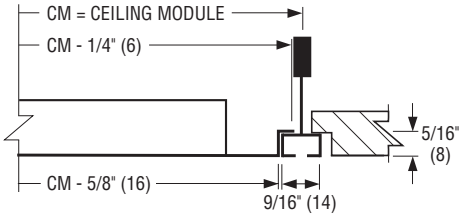
Type MP



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.

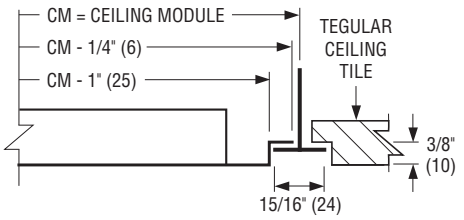
Type FP



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.

Type TL



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

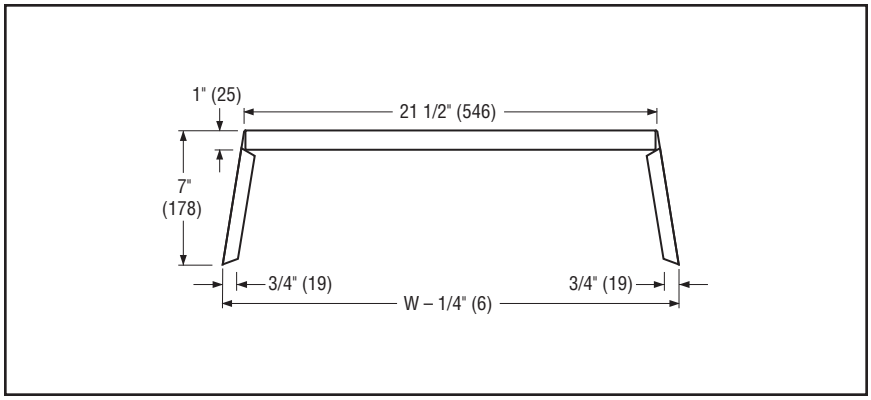
Nailor Model RACA Return Air Crosstalk Attenuator is designed to greatly reduce the amount of sound transferred from the return air plenum through open vents or return grilles, into the adjoining space. For use with non-ducted return grilles in Lay-in T-Bar applications, the RACA allows return air to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

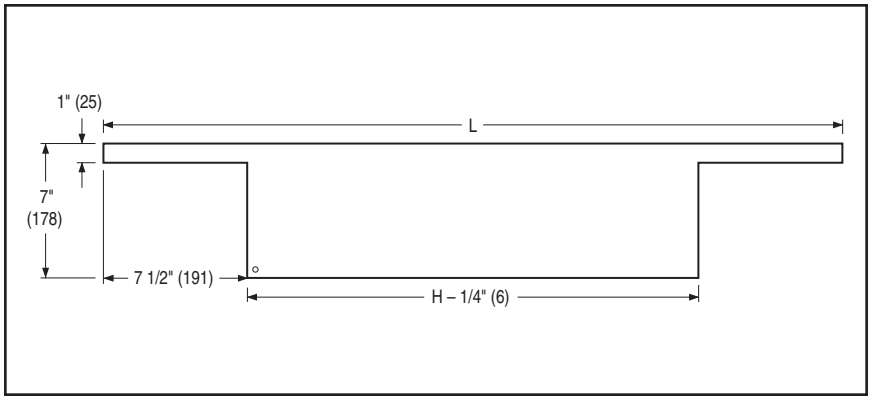
FEATURES:

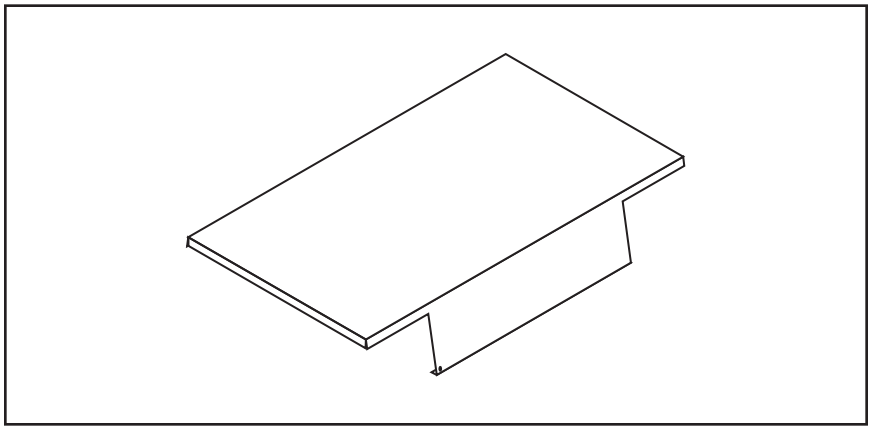
- Economical and light- weight design.
- Fits standard grille sizes.
- Easy installation sits on ceiling grid.
- Compact design takes up minimal space in return plenum.
- 1" (25) fiberglass insulation (standard).

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)







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.

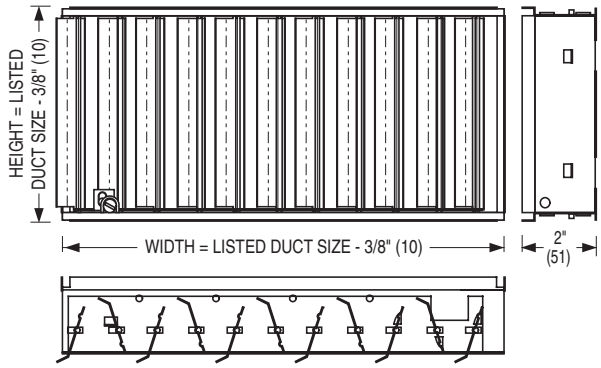
Can be specified as an integral part of the grille (register) by adding a - O (steel) or - OA (aluminum) suffix to the grille model.

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.

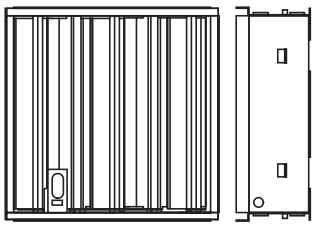
Model OBD Type SL (Screwdriver Slot)
Grille Mount – Face Operator



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.

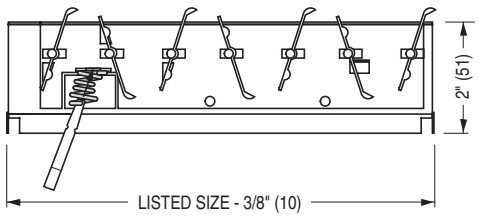
Type PL (Pivot Lever)



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.

Type GL (Lever)



Air Balancing Devices

DUCT MOUNT MODELS:

OBDD Steel

OBDD-A Aluminum

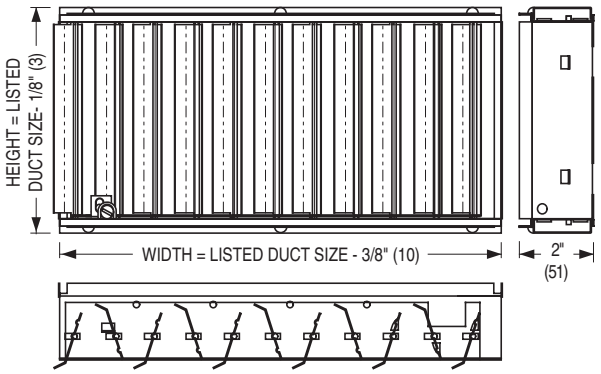
Designed for field installation, this damper mounts independently in the duct, separate from and behind the grille. Sized to suit and offer a friction fit in nominally sized ducts. Secure the dampers with 1/2" (13) long sheet metal screws (by others) through the double walled sub-frame. Supplied as standard 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.

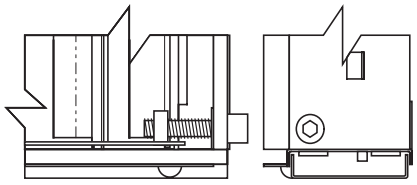
Model OBDD Type SL (Screwdriver Slot)
Duct Mount – Face Operator



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).

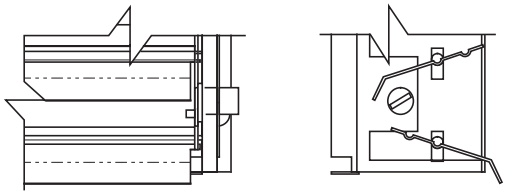
Model OBDD Type EH (Hex.)
Duct Mount – External Operator



Type EN Operator

The EN Operator incorporates an external (nylon) screwdriver slot device. This device is controlled externally through the duct.

Model OBDD Type EN (Screwdriver Slot)
Duct Mount – External Operator



Type QD Operator *

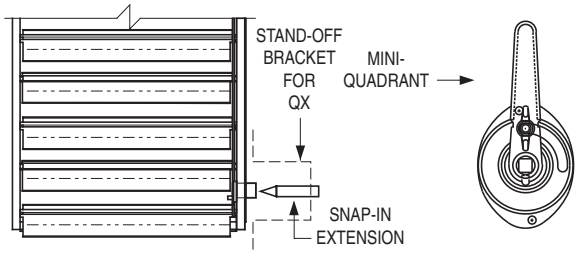
The QD Operator includes a nylon snap-in extension that fits an external (nylon) operator. This device also includes a hand locking quadrant operator for control and position indication.

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

Type QD or Type QX (Hand Quadrant)



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:

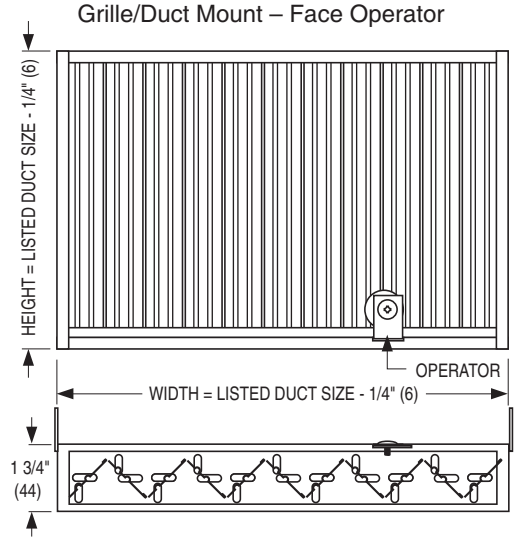
OBD-SS Stainless Steel

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.

Model OBD-SS

Grille/Duct Mount – Face Operator



Volume Extractors

MODEL SERIES

EX Blades on 2" centers

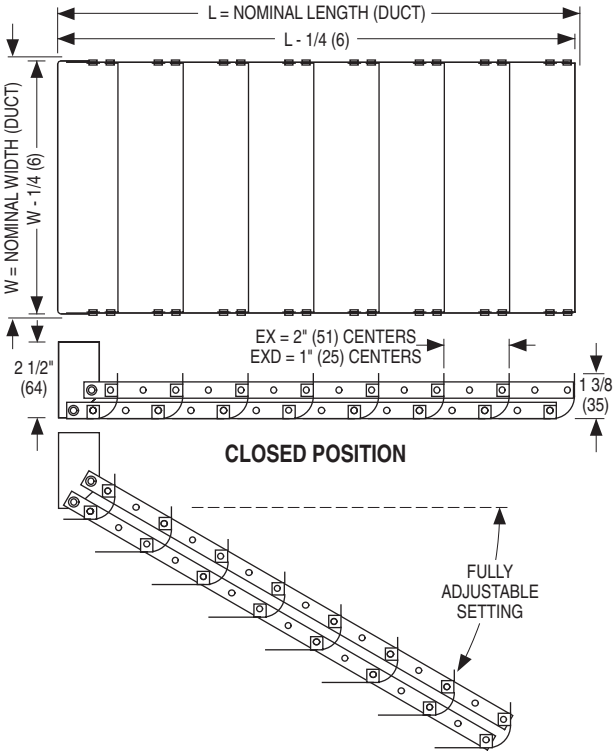
EXD Blades on 1" centers

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).

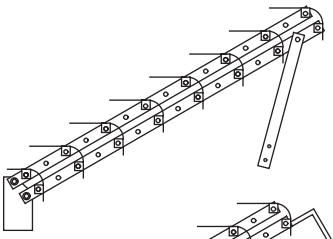
FEATURES:

- Material: Galvanized steel.
- Minimum size: 6" x 4" (152 x 102).
- Maximum size: 36" x 36" (914 x 914).

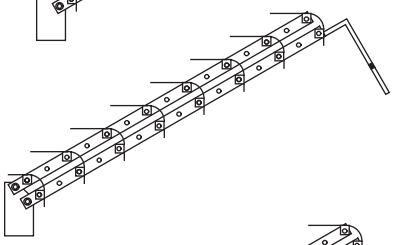


Operator Types

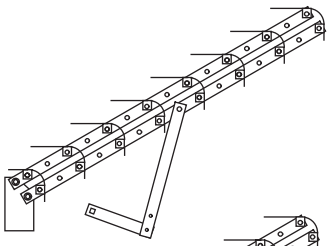
EX/EXD-1
Standard unit with adjusting strap.



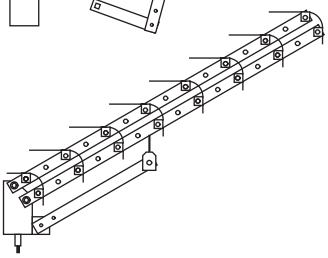
EX/EXD-1-R
Rod operator for external operation.



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" (48) wrench (by others).



Optional Accessories

RLD
Locking device for Models **EX/EXD-1-R**.