

EGGCRATE RETURN AND EXHAUST GRILLES

The eggcrate grilles and registers are constructed of thin, interlocked aluminum or stainless steel strips assembled in a square grid fashion that is available in a variety of grid sizes. The standard grid size is 1/2" x 1/2" x 1/2" (13 x 13 x 13) with 1/2" x 1/2" x 1" (13 x 13 x 25) or 1" x 1" x 1" (25 x 25 x 25) as an option. Frame and border types are available in a variety of materials and mounting options.

Aluminum – Model 51EC Page F96

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

Aluminum – Model 51EC-MRI Page F99

Aluminum – Model 51EC45 Page F100

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

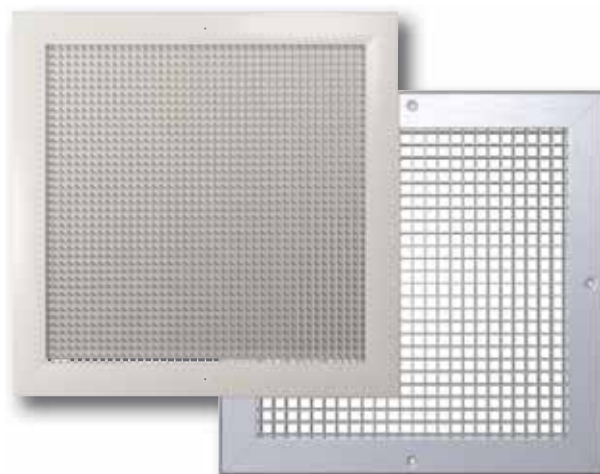
Steel – Model 61EC Page F101

Suffix '-O' adds a steel OBD

Steel – Fineline® – Model 61ECF Page F104

Stainless Steel – Model 67EC Page F105

Suffix '-O' adds a stainless steel OBD.



Models 51EC45, 67EC

PERFORATED RETURN GRILLES

The perforated face used on these grilles and registers have 3/16" (5) diameter holes on 1/4" (6) staggered centers (51% free area) and is available in a choice of aluminum, steel or stainless steel construction. Their general appearance matches and complements the popular perforated supply diffusers (refer to the **4300 Series** in the diffuser section of the catalog).

Aluminum – Model 51PR Page F114

Suffix '-O' adds a steel OBD

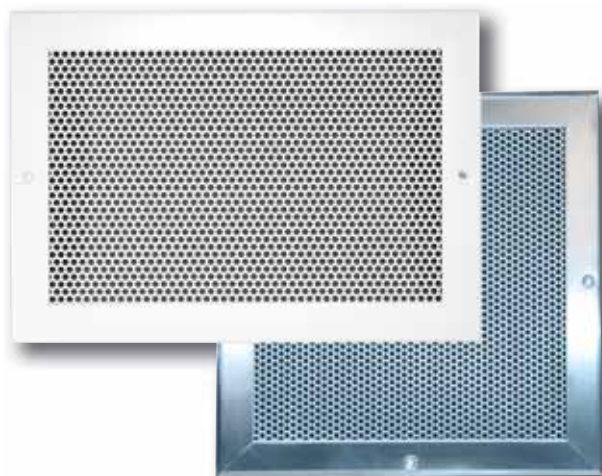
Suffix '-OA' adds an aluminum OBD

Steel – Model 61PR Page F114

Suffix '-O' adds a steel OBD

Stainless Steel – Model 67PR Page F116

Suffix '-O' adds a steel OBD



Models 51PR, 67PR

FILTER RETURN AND EXHAUST GRILLES

Nailor offers a large selection of filter grilles that are designed to match and complement their respective base models in appearance. The standard filter frame accepts a standard 1" (25) thick, throw away type filter (by others) with an option for a 2" (51) filter frame.

• **Louvered Face** Page F122

Aluminum – Models 51FB45, 51FB55, 51FB5

Steel – Models 61FB45, 61FB55, 61FB5

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 51FB5, 51FB55, 67FB45

EXCLUSIVE WARRANTY FOR NAILOR STEEL GRILLES, REGISTERS AND DIFFUSERS

LIMITED WARRANTY – SERIES 61C, 6100, 61EC, 61F, RNS, RNS2,
UNI, 4300, 6500, 7500 AND 61CC

Nailor Industries Inc. ('Nailor') warrants to the original and each subsequent owner of a new Nailor Series Grille, Register or Ceiling Air Diffuser in the model series titled above, constructed of corrosion-resistant steel with a factory applied paint finish that should rust become visible on the exposed portion of any individual product covered by this agreement Nailor will replace the rusted unit. Any diffuser affected by chemicals or misuse, including, without limitation, the failure to perform reasonable and necessary maintenance, will not be covered by this warranty. This warranty is for sixty (60) months from the date of the shipment by Nailor.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

The rusted unit will be shipped by the owner at its cost to Nailor for replacement. The cost of the replacement, including the cost of shipment to the owner, but excluding any costs for either the removal or preparation for shipment of the rusted unit and the re-installation of the replacement unit, will be borne by Nailor. A reasonable time should be allowed after shipment to Nailor for the replacement of the rusted unit.

This is the only warranty given with the purchase. Any warranties implied by law are limited to sixty (60) months from the date of shipment by Nailor. Nailor neither assumes nor authorizes any person to assume for it any other liability in connection with any diffuser covered by this agreement.

No payment or other compensation will be made for indirect or consequential damage such as, damage or injury to person or property or loss of revenue or profit which might be paid, incurred or sustained by reason of the use or inability to use a Nailor product listed above, even if such loss or damage could have been foreseen by Nailor.

Some states do not allow the exclusion of limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above may not apply to you.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 5145H, 6145H, 6745H, 5145V, 6145V, 6745V, 51FB45, 61FB45, 67FB45

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .003	.002 .014	.006 .031	.010 .055	.016 .086	.022 .124	.031 .168	.040 .220	.050 .278	.062 .344
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 -	100 -	120 19	140 24	160 28	180 32	200 36
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 -	140 15	168 20	196 25	224 29	252 33	280 37
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 -	175 16	210 21	245 26	280 30	315 34	350 38
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 -	190 17	228 22	266 27	304 31	342 35	380 39
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 -	210 18	252 23	294 27	336 32	378 36	420 40
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 -	290 19	348 24	406 28	464 33	522 37	580 41
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 -	305 19	366 24	427 29	488 34	549 37	610 41
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 15	325 20	390 25	455 30	520 34	585 38	650 41
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 15	370 20	444 25	518 30	592 35	666 39	740 42
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 16	450 21	540 26	630 31	720 36	810 39	900 42
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 -	496 16	620 21	744 26	868 31	992 36	1116 40	1240 43
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 -	548 17	685 22	822 27	959 32	1096 37	1233 40	1370 43
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 -	608 17	760 22	912 27	1064 32	1216 38	1368 41	1520 44
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 -	656 18	820 23	984 28	1148 33	1312 38	1476 41	1640 44
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM Noise Criteria	185 -	370 -	555 -	740 18	925 23	1110 28	1295 33	1480 38	1665 41	1850 45
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM Noise Criteria	210 -	420 -	630 -	840 18	1050 23	1260 29	1470 34	1680 39	1890 42	2100 45
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM Noise Criteria	232 -	464 -	696 -	928 19	1160 24	1392 29	1624 34	1856 39	2088 42	2320 46
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM Noise Criteria	261 -	522 -	783 -	1044 19	1305 24	1566 30	1827 35	2088 40	2349 43	2610 46
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM Noise Criteria	317 -	634 -	951 -	1268 20	1585 25	1902 31	2219 35	2536 40	2853 43	3170 47
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 -	708 -	1062 -	1416 20	1770 25	2124 31	2478 36	2832 41	3186 44	3540 48
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM Noise Criteria	379 -	758 -	1137 -	1516 20	1895 25	2274 31	2653 36	3032 41	3411 44	3790 48
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 -	854 -	1281 -	1708 21	2135 26	2562 32	2989 37	3416 42	3843 45	4270 49
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM Noise Criteria	447 -	894 -	1341 -	1788 21	2235 26	2682 32	3129 37	3576 42	4023 45	4470 49
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM Noise Criteria	477 -	954 -	1431 15	1908 22	2385 27	2862 33	3339 38	3816 42	4293 46	4770 50
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 -	1040 -	1560 15	2080 22	2600 27	3120 33	3640 38	4160 43	4680 46	5200 50
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 -	1148 -	1722 15	2296 22	2870 28	3444 34	4018 38	4592 43	5166 47	5740 51
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 -	1198 -	1797 15	2396 22	2995 28	3594 34	4193 39	4792 43	5391 47	5990 51

GRILLES AND REGISTERS

F

For performance data notes, see F42.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 5145H, 6145H, 6745H, 5145V, 6145V, 6745V, 51FB45, 61FB45, 67FB45

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .003	.002 .014	.006 .031	.010 .055	.016 .086	.022 .124	.031 .168	.040 .220	.050 .278	.062 .344
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				Noise Criteria	-	-	16	23	29	35	39	44	48	52
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria	-	-	17	23	29	35	40	44	48	52
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				Noise Criteria	-	-	17	24	29	36	41	45	49	53
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				Noise Criteria	-	-	18	24	30	36	41	45	49	53
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				Noise Criteria	-	-	18	24	30	36	42	45	50	54
42 x 42	46 x 42	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	-	-	19	25	31	37	42	46	50	54
44 x 44		13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				Noise Criteria	-	-	19	25	31	37	42	46	50	54
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				Noise Criteria	-	-	20	26	32	38	43	47	51	55
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				Noise Criteria	-	-	20	26	32	38	43	47	51	55

Performance Notes:

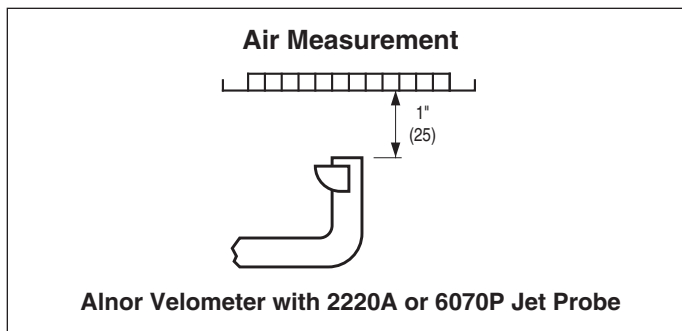
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Negative Static Pressure Listed Value x 0.91.

Noise Criteria Listed value - 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10⁻¹² watts. Dash (-) in space indicates a Noise Criteria of less than 15.

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



Airflow Measurements:

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51FH, 61FH, 67FH, 51FV, 61FV, 67FV, 51FBS, 61FBS

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .002	.002 .009	.006 .020	.010 .035	.016 .055	.022 .079	.031 .107	.040 .140	.050 .177	.062 .219
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 -	100 -	120 16	140 18	160 21	180 25	200 30
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 -	140 -	168 17	196 19	224 22	252 26	280 31
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 -	175 -	210 18	245 20	280 23	315 27	350 32
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 -	190 -	228 19	266 21	304 24	342 28	380 32
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 -	210 15	252 19	294 22	336 25	378 29	420 33
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 -	290 15	348 19	406 22	464 26	522 30	580 34
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 -	305 15	366 19	427 22	488 27	549 30	610 35
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 -	325 16	390 20	455 23	520 27	585 31	650 35
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 -	370 16	444 21	518 24	592 28	666 32	740 35
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 -	450 17	540 21	630 24	720 29	810 32	900 35
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 -	496 -	620 17	744 22	868 25	992 29	1116 33	1240 36
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 -	548 -	685 18	822 23	959 26	1096 31	1233 34	1370 37
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 -	608 -	760 18	912 23	1064 27	1216 32	1368 35	1520 38
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 -	656 -	820 19	984 23	1148 27	1312 32	1476 35	1640 38
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM Noise Criteria	185 -	370 -	555 -	740 -	925 19	1110 24	1295 27	1480 32	1665 35	1850 39
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM Noise Criteria	210 -	420 -	630 -	840 -	1050 19	1260 24	1470 28	1680 33	1890 36	2100 39
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM Noise Criteria	232 -	464 -	696 -	928 -	1160 19	1392 24	1624 28	1856 33	2088 36	2320 40
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM Noise Criteria	261 -	522 -	783 -	1044 -	1305 19	1566 24	1827 28	2088 33	2349 36	2610 40
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM Noise Criteria	317 -	634 -	951 -	1268 15	1585 20	1902 25	2219 29	2536 33	2853 36	3170 40
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 -	708 -	1062 -	1416 15	1770 20	2124 25	2478 29	2832 34	3186 37	3540 41
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM Noise Criteria	379 -	758 -	1137 -	1516 15	1895 20	2274 25	2653 30	3032 34	3411 37	3790 41
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 -	854 -	1281 -	1708 17	2135 22	2562 26	2989 30	3416 35	3843 38	4270 42
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM Noise Criteria	447 -	894 -	1341 -	1788 17	2235 22	2682 26	3129 30	3576 35	4023 38	4470 42
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM Noise Criteria	477 -	954 -	1431 -	1908 18	2385 23	2862 27	3339 31	3816 35	4293 39	4770 43
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 -	1040 -	1560 -	2080 18	2600 23	3120 27	3640 31	4160 36	4680 39	5200 43
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 -	1148 -	1722 -	2296 18	2870 23	3444 27	4018 31	4592 36	5166 40	5740 44
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 -	1198 -	1797 -	2396 18	2995 23	3594 28	4193 32	4792 36	5391 40	5990 44

GRILLES AND REGISTERS

F

For performance data notes, see F44.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51FH, 61FH, 67FH, 51FV, 61FV, 67FV, 51FBS, 61FBS

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .003	.002 .014	.006 .031	.010 .055	.016 .086	.022 .124	.031 .168	.040 .220	.050 .278	.062 .344
32 x 32	36 x 30 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				Noise Criteria	-	-	-	18	24	28	32	37	41	45
48 x 24	34 x 34 36 x 32	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria	-	-	-	18	24	29	33	37	41	45
36 x 36	38 x 34 42 x 30	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				Noise Criteria	-	-	-	19	24	29	34	38	42	46
38 x 38	42 x 34 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				Noise Criteria	-	-	-	19	25	30	34	38	42	46
40 x 40	42 x 36 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				Noise Criteria	-	-	-	20	26	30	35	38	43	47
42 x 42	46 x 42	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	-	-	-	20	26	31	35	39	43	47
44 x 44		13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
	Noise Criteria			-	-	15	20	26	31	35	39	43	47	
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
	Noise Criteria			-	-	15	21	27	32	36	40	44	48	
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
	Noise Criteria			-	-	16	21	27	32	36	40	44	48	

Performance Notes:

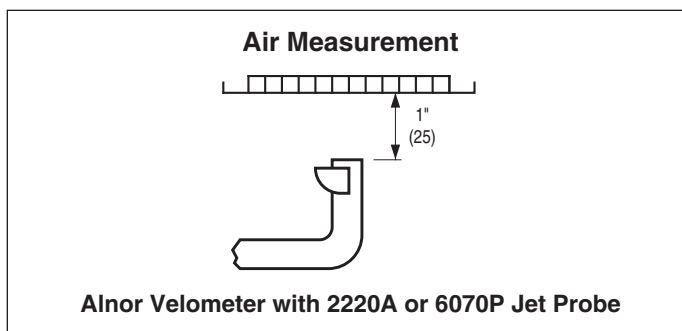
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Negative Static Pressure Listed Value x 0.91.

Noise Criteria Listed value - 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10⁻¹² watts. Dash (-) in space indicates an Noise Criteria of less than 15.

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



Airflow Measurements:

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 5155H, 6155H, 6755H, 5155V, 6155V, 6755V, 51FB55, 61FB55, 67FB55

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .005	.002 .018	.006 .041	.010 .073	.016 .114	.022 .164	.031 .223	.040 .292	.050 .369	.062 .456
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 -	100 16	120 21	140 26	160 30	180 34	200 38
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 -	140 17	168 22	196 27	224 31	252 35	280 39
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 -	175 18	210 23	245 28	280 32	315 36	350 40
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 -	190 19	228 24	266 29	304 33	342 37	380 41
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 15	210 20	252 25	294 29	336 34	378 38	420 42
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 16	290 21	348 26	406 30	464 35	522 39	580 43
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 16	305 21	366 26	427 31	488 36	549 39	610 43
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 17	325 22	390 27	455 32	520 36	585 40	650 43
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 17	370 22	444 27	518 32	592 37	666 41	740 44
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 18	450 23	540 28	630 33	720 38	810 41	900 44
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 -	496 18	620 23	744 28	868 33	992 38	1116 42	1240 45
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 15	548 20	685 25	822 30	959 35	1096 40	1233 43	1370 46
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 15	608 20	760 25	912 30	1064 35	1216 41	1368 44	1520 47
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 16	656 21	820 26	984 31	1148 36	1312 41	1476 44	1640 47
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM Noise Criteria	185 -	370 -	555 16	740 21	925 26	1110 31	1295 36	1480 41	1665 44	1850 48
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM Noise Criteria	210 -	420 -	630 16	840 21	1050 26	1260 32	1470 37	1680 42	1890 45	2100 48
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM Noise Criteria	232 -	464 -	696 16	928 22	1160 27	1392 32	1624 37	1856 42	2088 45	2320 49
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM Noise Criteria	261 -	522 -	783 16	1044 22	1305 27	1566 33	1827 38	2088 43	2349 46	2610 49
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM Noise Criteria	317 -	634 -	951 17	1268 23	1585 28	1902 34	2219 38	2536 43	2853 46	3170 50
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 -	708 -	1062 17	1416 23	1770 28	2124 34	2478 39	2832 44	3186 47	3540 51
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM Noise Criteria	379 -	758 -	1137 17	1516 23	1895 28	2274 34	2653 39	3032 44	3411 47	3790 51
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 -	854 -	1281 18	1708 25	2135 29	2562 36	2989 41	3416 46	3843 49	4270 53
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM Noise Criteria	447 -	894 -	1341 18	1788 25	2235 30	2682 36	3129 41	3576 46	4023 49	4470 53
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM Noise Criteria	477 -	954 -	1431 19	1908 26	2385 31	2862 37	3339 42	3816 46	4293 50	4770 54
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 -	1040 -	1560 19	2080 26	2600 31	3120 37	3640 42	4160 47	4680 50	5200 54
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 -	1148 -	1722 19	2296 26	2870 32	3444 38	4018 42	4592 47	5166 51	5740 55
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 -	1198 -	1797 19	2396 26	2995 32	3594 38	4193 43	4792 47	5391 51	5990 55

For performance data notes, see F46.

PERFORMANCE DATA:

FIXED BLADE RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 5155H, 6155H, 6755H, 5155V, 6155V, 6755V, 51FB55, 61FB55, 67FB55

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .005	.002 .018	.006 .041	.010 .073	.016 .114	.022 .164	.031 .223	.040 .292	.050 .369	.062 .456
32 x 32	36 x 30 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				Noise Criteria	-	15	20	27	33	39	43	48	52	56
48 x 24	34 x 34 36 x 32	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria	-	16	21	27	33	39	44	48	52	56
36 x 36	38 x 34 42 x 30	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				Noise Criteria	-	17	21	28	33	40	45	49	53	57
38 x 38	42 x 34 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				Noise Criteria	-	18	22	28	34	40	45	49	53	57
40 x 40	42 x 36 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				Noise Criteria	-	18	23	29	35	41	47	50	55	59
42 x 42	44 x 40 46 x 38	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	-	19	24	30	36	42	47	51	55	59
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				Noise Criteria	-	19	24	30	36	42	47	51	55	59
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				Noise Criteria	15	20	25	31	37	43	48	52	56	60
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				Noise Criteria	15	20	25	31	37	43	48	52	56	60

Performance Notes:

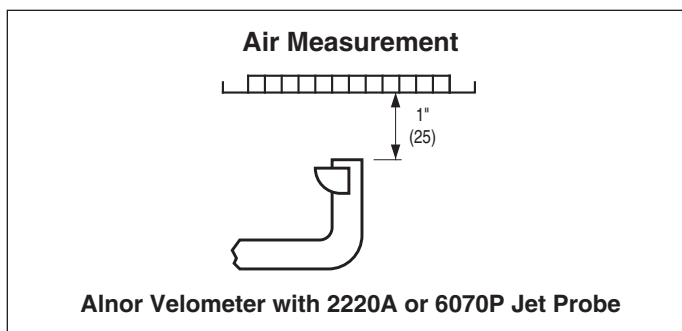
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Negative Static Pressure Listed Value x 0.91.

Noise Criteria Listed value - 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10⁻¹² watts. Dash (-) in space indicates a Noise Criteria of less than 15.

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



Airflow Measurements:

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

PERFORMANCE DATA:

EGGCRATE RETURN AND EXHAUST GRILLES AND REGISTERS • 5100, 6100 & 6700 SERIES

MODELS: 51EC, 61EC, 67EC, 51FE, 61FE

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300	400	500	600	700	800	900	1000	1200	1400
					.006 .012	.010 .021	.016 .033	.022 .048	.031 .065	.040 .085	.050 .107	.062 .132	.090 .190	.122 .259
6 x 6	8 x 4 10 x 4	0.20	0.25	CFM Noise Criteria	60 -	80 -	100 -	120 -	140 -	160 15	180 20	200 23	240 29	280 34
8 x 6	10 x 5 12 x 4	0.27	0.33	CFM Noise Criteria	81 -	108 -	135 -	162 -	189 -	216 17	243 21	270 24	324 30	378 35
10 x 6	12 x 5 16 x 4	0.35	0.41	CFM Noise Criteria	105 -	140 -	175 -	210 -	245 -	280 18	315 22	350 25	420 31	490 36
8 x 8	14 x 5	0.38	0.44	CFM Noise Criteria	114 -	152 -	190 -	228 -	266 15	304 18	342 23	380 26	456 32	532 37
12 x 6	18 x 4	0.42	0.50	CFM Noise Criteria	126 -	168 -	210 -	252 -	294 15	336 19	378 23	420 26	504 32	588 37
12 x 8	16 x 6 24 x 4	0.58	0.66	CFM Noise Criteria	174 -	232 -	290 -	348 -	406 17	464 20	522 24	580 27	696 33	812 38
10 x 10	14 x 7 26 x 4	0.61	0.69	CFM Noise Criteria	183 -	244 -	305 -	366 -	427 17	488 20	549 25	610 28	732 34	854 39
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.74	CFM Noise Criteria	195 -	260 -	325 -	390 -	455 17	520 21	585 25	650 28	780 34	910 39
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.82	CFM Noise Criteria	222 -	296 -	370 -	444 -	518 18	592 21	666 25	740 29	888 35	1036 40
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.99	CFM Noise Criteria	270 -	360 -	450 -	540 -	630 18	720 22	810 26	900 30	1080 36	1260 41
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.35	CFM Noise Criteria	372 -	496 -	620 -	744 -	868 19	992 23	1116 27	1240 31	1488 37	1736 42
18 x 12	16 x 14 28 x 8 20 x 10 38 x 6	1.37	1.49	CFM Noise Criteria	411 -	548 -	685 -	822 -	959 20	1096 24	1233 27	1370 31	1644 37	1918 42
24 x 10	20 x 12 30 x 8	1.52	1.65	CFM Noise Criteria	456 -	608 -	760 -	912 15	1064 20	1216 24	1368 28	1520 32	1824 38	420 43
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.76	CFM Noise Criteria	492 -	656 -	820 -	984 15	1148 20	1312 24	1476 28	1640 32	1968 38	2296 43
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.98	CFM Noise Criteria	555 -	740 -	925 -	1110 15	1295 20	1480 24	1665 28	1850 32	2220 38	2590 43
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.23	CFM Noise Criteria	630 -	840 -	1050 -	1260 15	1470 20	1680 25	1890 28	2100 32	2520 38	2940 43
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.48	CFM Noise Criteria	696 -	928 -	1160 -	1392 16	1624 20	1856 26	2088 29	2320 33	2784 39	3248 44
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.75	CFM Noise Criteria	783 -	1044 -	1305 -	1566 16	1827 20	2088 26	2349 29	2610 33	3132 39	3654 44
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.33	CFM Noise Criteria	951 -	1268 -	1585 -	1902 17	2219 21	2536 26	2853 30	3170 34	3804 40	4438 45
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.71	CFM Noise Criteria	1062 -	1416 -	1770 -	2124 17	2478 22	2832 26	3186 30	3540 34	4248 40	4956 45
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.96	CFM Noise Criteria	1137 -	1516 -	1895 -	2274 18	2653 23	3032 27	3411 31	3790 35	4548 41	5306 46
36 x 18	32 x 20 46 x 14 40 x 16	4.29	4.46	CFM Noise Criteria	1287 -	1716 -	2145 -	2574 18	3003 23	3432 27	3861 31	4290 35	5148 41	6006 46
26 x 26	28 x 24 48 x 14	4.47	4.65	CFM Noise Criteria	1341 -	1788 -	2235 -	2682 19	3129 24	3576 28	4023 32	4470 36	5364 42	6258 47
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.95	CFM Noise Criteria	1431 -	1908 -	2385 15	2862 19	3339 24	3816 29	4293 32	4770 36	5724 42	6678 47
28 x 28	30 x 26 40 x 20 36 x 22	5.20	5.39	CFM Noise Criteria	1560 -	2080 -	2600 -	3120 19	3640 24	4160 29	4680 32	5200 36	6240 41	7280 46
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.94	CFM Noise Criteria	1722 -	2296 -	2870 -	3444 20	4018 25	4592 29	5166 33	5740 37	6888 43	8036 48
30 x 30	34 x 26 48 x 20 38 x 24	5.99	6.19	CFM Noise Criteria	1797 -	2396 -	2995 -	3594 20	4193 25	4792 29	5391 33	5990 37	7188 43	8386 48

For performance data notes, see F107.

PERFORMANCE DATA:

EGGCRATE RETURN AND EXHAUST GRILLES AND REGISTERS • 5100, 6100 & 6700 SERIES

MODELS: 51EC, 61EC, 67EC, 51FE, 61FE

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300	400	500	600	700	800	900	1000	1200	1400
					.006 .012	.010 .021	.016 .033	.022 .048	.031 .065	.040 .085	.050 .107	.062 .132	.090 .190	.122 .259
32 x 32	36 x 30 46 x 22 38 x 28	6.84	7.0	CFM	2052	2736	3420	4104	4788	5472	6156	6840	6156	6840
				Noise Criteria	—	—	15	20	26	30	34	37	34	37
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.92	CFM	2307	3076	3845	4614	5383	6152	6921	7690	6921	7690
				Noise Criteria	—	—	16	21	26	30	35	38	35	38
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.91	CFM	2607	3476	4345	5214	6083	6952	7821	8690	10428	12166
				Noise Criteria	—	—	16	22	27	31	35	38	44	49
38 x 38	42 x 34 48 x 30 44 x 34	9.70	9.93	CFM	2910	3880	4850	5820	6790	7760	8730	9700	11640	13580
				Noise Criteria	—	—	16	22	27	31	36	39	45	50
40 x 40	42 x 36 48 x 32 46 x 34	10.77	11.00	CFM	3231	4308	5385	6462	7539	8616	9693	10770	12924	15078
				Noise Criteria	—	—	16	22	28	32	37	40	46	51
42 x 42	44 x 40 48 x 36 46 x 38	11.89	12.13	CFM	3567	4756	5945	7134	8323	9512	10701	11890	6921	7690
				Noise Criteria	—	—	17	23	28	32	37	40	46	51
44 x 44	46 x 42	13.07	13.31	CFM	3921	5228	6535	7842	9149	10456	11763	13070	15684	18298
				Noise Criteria	—	—	17	23	28	33	37	40	46	51
46 x 46		14.30	14.55	CFM	4290	5720	7150	8580	10010	11440	12870	14300	17160	20020
				Noise Criteria	—	—	18	24	29	33	37	40	46	52
48 x 48		15.59	15.84	CFM	4677	6236	7795	9354	10913	12472	14031	15590	18708	21826
				Noise Criteria	—	—	18	24	29	33	37	40	46	52

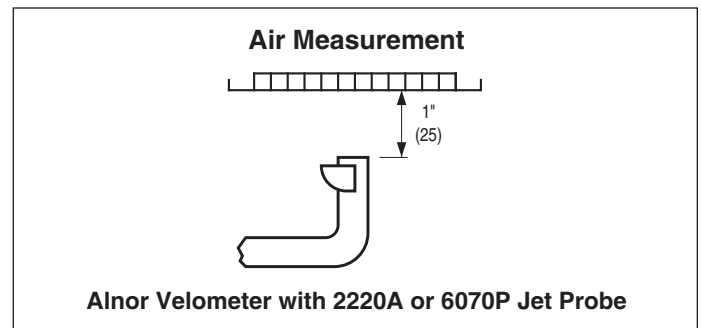
Performance Notes:

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

Neg. Static Pressure Listed Value x 1.25.

Noise Criteria Add + 6 to listed value.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10⁻¹² 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.



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.

$$\text{Airflow (CFM)} = \text{Average velocity (Vk)} \times \text{Ak}$$

PERFORMANCE DATA:

PERFORATED RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51PR, 51FP, 61PR, 61FP, 67PR, 51PRC, 61PRC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300	400	500	600	700	800	900	1000	1200
					.006 .024	.010 .042	.016 .067	.022 .095	.031 .130	.040 .170	.051 .215	.062 .265	.090 .382
6 x 6	8 x 4 10 x 4	0.20	0.20	CFM Noise Criteria	60 -	80 -	100 -	120 15	140 21	160 26	180 32	200 37	240 44
8 x 6	10 x 5 12 x 4	0.27	0.27	CFM Noise Criteria	81 -	108 -	135 -	162 16	189 22	216 28	243 33	270 38	324 45
10 x 6	12 x 5 16 x 4	0.35	0.33	CFM Noise Criteria	105 -	140 -	175 -	210 17	245 24	280 29	315 34	350 39	420 46
8 x 8	14 x 5	0.38	0.36	CFM Noise Criteria	114 -	152 -	190 -	228 18	266 25	304 29	342 35	380 40	456 47
12 x 6	18 x 4	0.42	0.40	CFM Noise Criteria	126 -	168 -	210 -	252 18	294 25	336 30	378 35	420 40	504 47
12 x 8	16 x 6 24 x 4	0.58	0.53	CFM Noise Criteria	174 -	232 -	290 -	348 20	406 27	464 31	522 36	580 41	696 48
10 x 10	14 x 7	0.61	0.56	CFM Noise Criteria	183 -	244 -	305 -	366 20	427 27	488 31	549 37	610 42	732 49
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.60	CFM Noise Criteria	195 -	260 -	325 -	390 20	455 27	520 32	585 37	650 42	780 49
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.67	CFM Noise Criteria	222 -	296 -	370 -	444 21	518 28	592 32	666 37	740 43	888 50
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.80	CFM Noise Criteria	270 -	360 -	450 15	540 22	630 28	720 33	810 38	900 44	1080 51
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.09	CFM Noise Criteria	372 -	496 -	620 16	744 23	868 29	992 34	1116 39	1240 45	1488 52
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.20	CFM Noise Criteria	411 -	548 -	685 17	822 23	959 30	1096 35	1233 39	1370 45	1644 52
24 x 10	20 x 12 30 x 8	1.52	1.33	CFM Noise Criteria	456 -	608 -	760 17	912 24	1064 30	1216 35	1368 40	1520 46	1824 53
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.42	CFM Noise Criteria	492 -	656 -	820 17	984 24	1148 30	1312 35	1476 40	1640 46	1968 53
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.60	CFM Noise Criteria	555 -	740 -	925 17	1110 24	1295 30	1480 35	1665 40	1850 46	2220 53
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	1.80	CFM Noise Criteria	630 -	840 -	1050 17	1260 24	1470 30	1680 36	1890 40	2100 46	2520 53
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.00	CFM Noise Criteria	696 -	928 -	1160 17	1392 25	1624 30	1856 37	2088 41	2320 47	2784 54
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.22	CFM Noise Criteria	783 -	1044 -	1305 18	1566 25	1827 30	2088 37	2349 41	2610 47	3132 54
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	2.69	CFM Noise Criteria	951 -	1268 -	1585 18	1902 26	2219 31	2536 37	2853 42	3170 48	3804 55
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.00	CFM Noise Criteria	1062 -	1416 -	1770 19	2124 26	2478 32	2832 37	3186 42	3540 48	4248 55
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.20	CFM Noise Criteria	1137 -	1516 -	1895 19	2274 27	2653 33	3032 38	3411 43	3790 49	4548 56
36 x 18	32 x 20 46 x 14 40 x 16	4.29	3.60	CFM Noise Criteria	1287 -	1716 -	2145 19	2574 27	3003 33	3432 38	3861 43	4290 49	5148 56
26 x 26	28 x 24 36 x 20 48 x 14 40 x 18	4.47	3.76	CFM Noise Criteria	1341 -	1788 -	2235 20	2682 28	3129 34	3576 39	4025 44	4470 50	5364 57
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.00	CFM Noise Criteria	1431 -	1908 -	2385 21	2862 28	3339 34	3816 39	4293 44	4770 50	5724 57
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.36	CFM Noise Criteria	1560 -	2080 -	2600 21	3120 28	3640 34	4160 40	4680 44	5200 50	6240 57
36 x 24	30 x 28 44 x 20 40 x 22	5.74	4.80	CFM Noise Criteria	1722 -	2296 -	2870 22	3444 29	4018 35	4592 40	5166 45	5740 50	6888 58
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.00	CFM Noise Criteria	1797 -	2396 -	2995 22	3594 29	4193 35	4792 40	5391 45	5990 51	7188 58

GRILLES AND REGISTERS

F

For performance data notes, see F118.

PERFORMANCE DATA:

PERFORATED RETURN GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES

MODELS: 51PR, 51FP, 61PR, 61FP, 67PR, 51PRC, 61PRC

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	300	400	500	600	700	800	900	1000	1200
					.006 .024	.010 .042	.016 .067	.022 .095	.031 .130	.040 .170	.051 .215	.062 .265	.090 .382
32 x 32	36 x 30 46 x 22 38 x 28	6.84	5.69	CFM	2052	2736	3420	4104	4788	5472	6156	6840	8208
				Noise Criteria	-	15	23	29	36	41	46	51	58
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	6.40	CFM	2307	3076	3845	4614	5383	6152	6921	7690	9228
				Noise Criteria	-	16	24	30	36	41	47	52	59
36 x 36	38 x 34 26 x 28 42 x 30 48 x 26	8.69	7.20	CFM	2607	3476	4345	5214	6083	6952	7821	8690	10428
				Noise Criteria	-	16	24	31	37	42	47	52	59
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.02	CFM	2910	3880	4850	5820	6790	7760	8730	9700	11640
				Noise Criteria	-	17	24	31	37	42	48	53	60
40 x 40	42 x 36 48 x 32 46 x 34	10.77	8.89	CFM	3231	4308	5385	6462	7539	8616	9693	10770	12924
				Noise Criteria	-	17	24	31	38	43	49	54	61
42 x 42	44 x 40 48 x 36 46 x 38	11.89	9.80	CFM	3567	4756	5945	7134	8323	9512	10701	11890	14268
				Noise Criteria	-	18	25	32	38	43	49	54	61
44 x 44	46 x 42	13.07	10.76	CFM	3921	5228	6535	7842	9149	10456	11763	13070	15684
				Noise Criteria	-	18	25	32	38	44	49	54	61
46 x 46		14.30	11.76	CFM	4290	5720	7150	8580	10010	11440	12870	14300	17160
				Noise Criteria	-	19	26	33	39	44	49	54	61
48 x 48		15.59	12.80	CFM	4677	6236	7795	9354	10913	12472	14031	15590	18708
				Noise Criteria	-	19	26	33	39	44	49	54	61

Performance Notes:

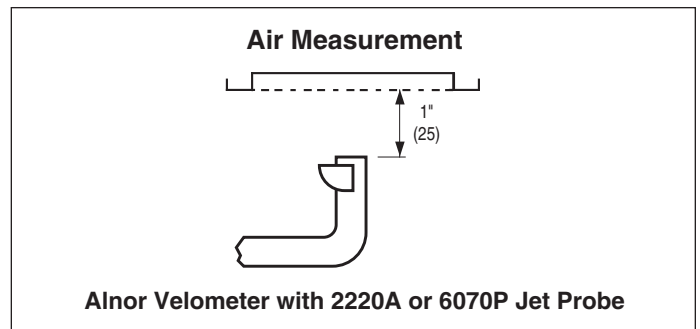
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille tested without damper. Apply the following correction factors for addition of opposed blade damper to grille.

Neg. Static Pressure Listed Value x 1.10.

Noise Criteria Add 5 dB to listed value.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10⁻¹² 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.



Alnor Velometer with 2220A or 6070P Jet Probe

Airflow Measurements

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.

$$\text{Airflow (CFM)} = \text{Average velocity (V}_k\text{)} \times \text{Ak}$$

FILTER RETURN AND EXHAUST GRILLES

- ACCOMMODATES 1" (25) STANDARD FILTER
- AVAILABLE WITH LOUVERED, EGGRATE OR PERFORATED CORE STYLES



Models 51FBS, 51FB55 and 67FB45

Models:

- 51F "Series" Aluminum
- 61F "Series" Steel
- 67F "Series" Stainless Steel

Nailor Model Series 51F, 61F and 67F Filter Return and Exhaust Grilles are a convenient and economical means of filtering primary return air locally. They are especially suited to recirculating air systems such as fan powered terminal units, fan coils and heat pumps. They have been designed to match and complement their respective base models in appearance.

SELECTION GUIDE:

ALUMINUM MODELS

- 51FB45 Fixed 45° Deflection, 3/4" (19) Spacing
- 51FB55 Fixed 45° Deflection, 1/2" (13) Spacing
- 51FBS Fixed 0° Deflection, 3/4" (19) Spacing
- 51FE Eggcrate Grid Core
- 51FE45 Eggcrate Grid Core, 45° Deflection (Contact factory for performance data).
- 51FP Perforated Face Core

STAINLESS STEEL MODELS

- 67FB45 Fixed 45° Deflection, 3/4" (19) Spacing, Surface Mount.
- 67FB55 Fixed 55° Deflection, 1/2" (13) Spacing, Surface Mount.

Contact factory for availability of other frame/core combinations.

PERFORMANCE DATA: Refer to the appropriate base model and add pressure drop for the installed filter. Fixed Blade pages F41 thru F46. Eggcrate Grid Core pages F106 and F107. Perforated Face pages F117 and F118.

STANDARD FEATURES:

- Type S Surface Mount.
Installed with sheet metal screws (or similar by others) through the neck of the outer frame. Provides an aesthetically clean visual appearance. Type A countersunk screw holes are an available option.
- Type L Lay-in T-Bar.
Available to suit both imperial and metric ceiling modules.

- Frames and sub-frames are mechanically interlocked with reinforced mitered corners.
- Inner core is hinged on one side and secured on the opposite side with convenient 1/4 turn fasteners.
- Accepts standard 1" (25) thick, throw-away type filters (by others).

CONSTRUCTION MATERIAL:

- Extruded aluminum construction, roll-formed corrosion-resistant steel or stainless steel construction.

STEEL MODELS

- 61FB45 Fixed 45° Deflection, 3/4" (19) Spacing
- 61FB55 Fixed 45° Deflection, 1/2" (13) Spacing
- 61FBS Fixed 0° Deflection, 3/4" (19) Spacing
- 61FE Eggcrate Grid Core
- 61FP Perforated Face Core

FINISH OPTIONS:

- AW Appliance White finish is standard on steel and aluminum constructed models. #4 Brushed Satin Polished finish is standard on stainless steel models. Other finishes are available.

OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs
- Optional 2" (51) filter frame is available.

For additional options and accessories, see page F191.

DIMENSIONAL DATA:

FILTER RETURN AND EXHAUST GRILLES • 51FB, 61FB, 67FB

TYPE S = LISTED SIZE + 3 3/4" (95)
TYPE L = CEILING MODULE - 1/4" (6)

A = 2" (51) for 1" (25) filter. Standard.
= 3" (76) for 2" (51) filter. Optional.

TYPE L = CEILING MODULE - 4 3/4" (121)
TYPE S = LISTED SIZE - 3/4" (19)
1 1/4" (32)
1/2" (13) OR 3/4" (19)
TYPE L = CEILING MODULE - 4" (102)
TYPE S = LISTED SIZE
TYPE L DUCT = CEILING MODULE - 3 3/4" (95)
TYPE S DUCT = LISTED SIZE + 1/4" (6)

MODELS:
51FB45, 51FB55,
61FB45, 61FB55

MODELS:
51FBS,
61FBS

Aluminum or Steel Construction • Fixed Louvered Blades
Type S (surface mount) is available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) maximum.
Type L (lay-in) is available in ceiling module sizes 12" x 12" (305 x 305) through 48" x 24" (1219 x 610) maximum.
Core is hinged and secured to outer frame with 1/4 turn fasteners.

LISTED SIZE + 2 3/4" (70)

LISTED SIZE + 2 3/4" (70)

1 7/8" (48) FACE BORDER
1/4 TURN SLOTTED QUICK RELEASE FASTENERS

With OBD: B = 3 7/8" (98) for 1" (25) filter. Standard.
= 4 7/8" (124) for 2" (51) filter. Optional.

2 7/8" (73)
1/2" (13) OR 3/4" (19)
LISTED SIZE - 1/16" (2)
DUCT = LISTED SIZE + 1/4" (6)
OPTIONAL OBD
FILTER CLIPS
1 3/4" (44)
A

MODELS:
67FB45, 67FB55

Without OBD: A = 2 1/4" (57) for 1" (25) filter. Standard.
= 3 1/4" (83) for 2" (51) filter. Optional.

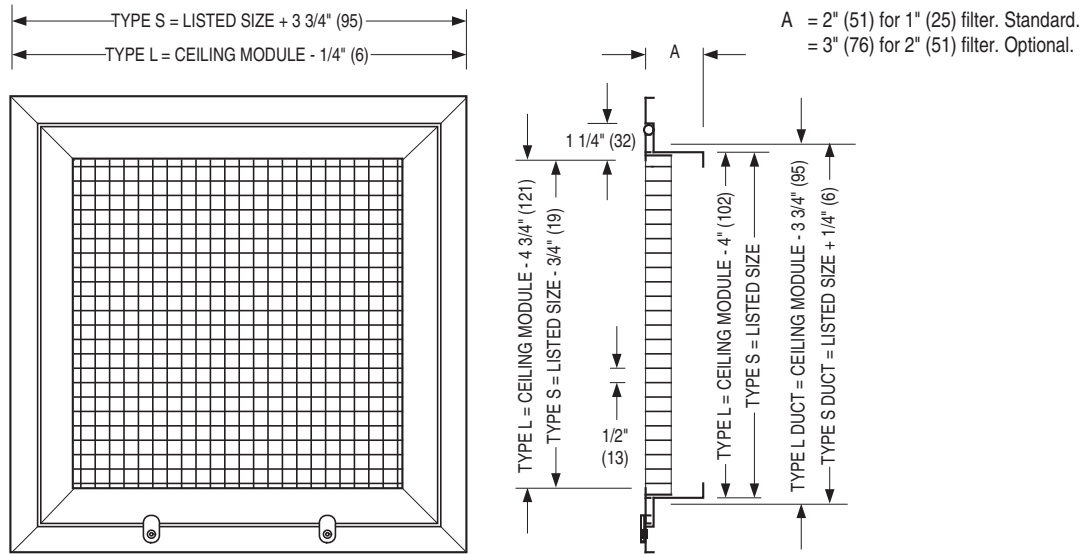
Stainless Steel Construction • Fixed Louvered Blades • Removable Face
Type S (surface mount) is available in nominal sizes 4" x 4" (102 x 102) through 60" x 48" (1524 x 1219).
Type L (lay-in) is available by ordering a listed size that is 3" (76) smaller than ceiling module size.
Core is secured to outer frame with Type QT stainless steel 1/4 turn slotted fasteners.

DIMENSIONAL DATA:

FILTER RETURN GRILLES • 51FE, 51FE45, 51FP, 61FE, 61FP

GRILLES AND REGISTERS

F



MODELS:
51FE, 61FE

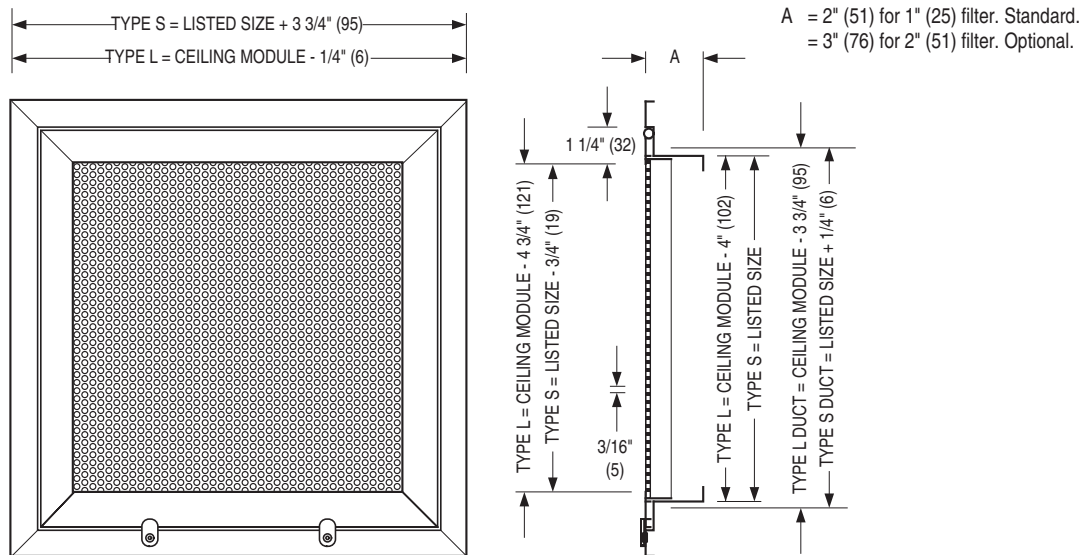
Eggcrate Core • 1/2 x 1/2 x 1/2 (13 x 13 x 13) Aluminum Core

Type S (surface mount) is available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) in 1" (25) increments. Maximum size for Model 51FE45 is 48" x 24" (1219 x 610).

Core is hinged on width dimension at top as standard (HT).

For other hinging requirements, specify HB Hinged bottom, HL Hinged left, HR Hinged right.

Type L (lay-in mount) is available in ceiling modules sizes: 12" x 12", 24" x 12", 24" x 24", 36" x 12", 20" x 20", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 610 x 610, 914 x 305, 508 x 508, 914 x 610 and 1219 x 610). Also available to suit metric ceiling modules.



MODELS:
51FP, 61FP

Perforated Face • 3/16" (5) dia. holes on 1/4" (6) staggered centers

Type S (surface mount) is available in nominal sizes 6" x 4" (152 x 102) through 48" x 36" (1219 x 914) in 1" (25) increments.

Core is hinged on width dimension at top as standard (HT).

For other hinging requirements, specify HB Hinged bottom, HL Hinged left, HR Hinged right.

Type L (lay-in mount) is available in ceiling modules sizes: 12" x 12", 24" x 12", 24" x 24", 36" x 12", 20" x 20", 36" x 24" and 48" x 24" (305 x 305, 610 x 305, 610 x 610, 914 x 305, 508 x 508, 914 x 610 and 1219 x 610). Also available to suit metric ceiling modules.

HOW TO ORDER

MODEL SERIES: 51F, 61F

FILTER RETURN GRILLES AND REGISTERS

EXAMPLE: 61FB45 - 16 x 16 - S - AW - N - HT - QTL - —

1. **Models**

Fixed Louver Blades:

- 51FB45 Aluminum, 45° Deflection, 3/4" (19) spacing
- 61FB45 Steel, 45° Deflection, 3/4" (19) spacing
- 51FB55 Aluminum, 45° Deflection, 1/2" (13) spacing
- 61FB55 Steel, 45° Deflection, 1/2" (13) spacing
- 51FBS Aluminum, 0° Deflection, 3/4" (19) spacing
- 61FBS Steel, 0° Deflection, 3/4" (19) spacing

Eggcrate:

- 51FE Aluminum, 1/2" x 1/2" x 1/2" (13 x 13 x 13) core
- 61FE Steel, 1/2" x 1/2" x 1/2" (13 x 13 x 13) core
- 51FE45 Aluminum, 1/2" x 1/2" x 1/2" (13 x 13 x 13) core, 45° Deflection, Sight Proof

Perforated Core:

- 51FP Aluminum, Perforated Face
- 61FP Steel, Perforated Face

2. **Nominal Width x Height**

inches (mm)

Surface Mount:

W x H = Duct Size

Lay-in T-Bar:

W x H = Ceiling Module Size

3. **Frame/Border Type**

- S Surface Mount
Border 1 1/4" (32) (default)
- L Lay-in T-Bar

4. **Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint
- MI Mill
- PC Prime Coat
- SP Special Custom Color

5. **Fastening**

- (only for frame/border Types S)
- N None (default)
 - A Screw Holes

6. **Hinge**

- HT Top (default)
- HB Bottom
- HL Left
- HR Right

7. **Core Fastening**

- QTL 1/4 Turn Latch (default)
- KK Knurled Knob
- QT 1/4 Turn Slotted

OPTIONS & ACCESSORIES:

8. **Filter**

- F2 Provision for 2" (51)

9. **Gaskets**

- GK Foam Gasket

10. **Earthquake Tabs**

- EQT Earthquake Tabs

Notes:

1. For Type S, duct size is ceiling size + 1/4" (6).
2. For Type L, duct size is ceiling size – 3 3/4" (95).
3. Core Fastening: Standard core is hinged and secured with 1/4 turn latches.

HOW TO ORDER

MODEL SERIES: 67F

STAINLESS STEEL FILTER RETURN GRILLES & REGISTERS • REMOVABLE FACE W/ SUBFRAME

EXAMPLE: 67FB45 - O - 24 x 12 - S - #4 - A - 304 - F1 - QT

1. Models

- 67FB45 45° Deflection, 3/4" (19) spacing,
- 67FB55 45° Deflection, 1/2" (13) spacing,

2. Damper (OBD)

- (model suffix)
- None
- O Stainless Steel

3. Nominal Width x Height

inches (mm)

4. Frame/Border Type

- S Surface Mount (default)

5. Finish

- #4 Brushed Satin Polished (default)
- AW Appliance White
- SP Special Custom Color

6. Fastening

- A Screw Holes (standard) (default)
- N None

OPTIONS & ACCESSORIES:

7. Construction

- 304 Type 304 Stainless Steel (default)
- 316 Type 316 Stainless Steel

8. Filter Clips

- F1 For 1" (25) filter (default)
- F2 For 2" (51)
- FN None

9. Core Fastening

- QT 1/4 Turn Slotted Fasteners (default)
- HTQT Hinged at Top / 1/4 Turn Slotted
- WT 1/4 Turn "Wingnut" Fasteners

Notes:

1. These grilles feature a subframe as standard for applications which may require frequent removal for cleaning.
2. Frame/Border Type S is standard. Duct size = Listed Size + 1/4" (6).
3. For Lay-in T-Bar applications, order a listed size (neck/filter size) that is 3" (76) smaller than ceiling module size.
4. Core Fastening: Standard core is secured with four 1/4 turn slotted fasteners.
5. Louvered blades are parallel to width (first dimension).

HOW TO SPECIFY

MODEL SERIES: 51F

ALUMINUM FILTER RETURN GRILLES

SUGGESTED SPECIFICATION:

51FB45, 51FB55, 51FBS Aluminum Louvered Blade

Furnish and install **Nailor Model** (select one) **51FB45, 51FB55 or 51FBS Fixed Blade Filter Return Grilles** of the sizes and capacities as shown on the plans and air distribution schedules. The grille shall have extruded aluminum fixed blades and frame. The frame is to be hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

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

51FE Aluminum Eggcrate Grid Core

Furnish and install **Nailor Model 51FE Eggcrate Grid Core Filter Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and an extruded aluminum frame, that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

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

51FE45 – Aluminum Eggcrate Grid Core - 45° Deflection

Furnish and install **Nailor Model 51FE45 Eggcrate Grid Core Filter Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core angled at 45° and an extruded aluminum frame, that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

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

51FP Aluminum Perforated Face Core

Furnish and install **Nailor Model 51FP Perforated Core Filter Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have an aluminum perforated core that has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area and an extruded aluminum frame that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate a standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

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

HOW TO SPECIFY

MODEL SERIES: 61F

STEEL FILTER RETURN GRILLES

SUGGESTED SPECIFICATION:

61FB45, 61FB55, 61FBS Steel Louvered Blade

Furnish and install **Nailor Model** (select one) **61FB45, 61FB55 or 61FBS Fixed Blade Filter Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have roll-formed corrosion-resistant steel fixed blades and frame. The frame is to be hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

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

61FE Steel Eggcrate Grid Core

Furnish and install **Nailor Model 61FE Eggcrate Grid Core Filter Return Grilles** of the types and sizes as shown on the plans and air distribution schedules. The grille shall have 1/2" x 1/2" x 1/2" (13 x 13 x 13) aluminum grid core and a corrosion-resistant steel frame, that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

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

61FP Steel Perforated Face Core

Furnish and install **Nailor Model 61FP Perforated Core Filter Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have a corrosion-resistant steel perforated core that has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area and a corrosion-resistant steel frame that is hinged and secured to an outer frame with 1/4 turn latches. The grille frame shall accommodate a standard 1" (25) filter media (provided by the installing contractor). The finish shall be AW Appliance White (optional finishes are available).

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

HOW TO SPECIFY

MODEL SERIES: 67F

STAINLESS STEEL FILTER RETURN GRILLES

SUGGESTED SPECIFICATION:

67FB45 Stainless Steel – 3/4" (19) Blade Spacing

Furnish and install **Nailor Model 67FB45 Fixed Blade Filter Return Grilles with Subframe** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have be constructed entirely from Type 304 stainless steel (Type 316 is optional). The grille core shall be secured to the subframe with stainless steel 1/4 turn fasteners to allow for complete removal and access to the interior for cleaning. All exposed surfaces shall be a #4 Brushed Satin Polished finish (optional finish is AW Appliance White).

(Optional) A stainless steel opposed blade damper that is adjustable from the face of the grille, shall be provided with all units.

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

67FB55 Stainless Steel – 1/2" (13) Blade Spacing

Furnish and install **Nailor Model 67FB55 Fixed Blade Filter Return Grilles with Subframe** of the types and sizes as shown on the plans and air distribution schedules. The grilles shall have be constructed entirely from Type 304 stainless steel (Type 316 is optional). The grille core shall be secured to the subframe with stainless steel 1/4 turn fasteners to allow for complete removal and access to the interior for cleaning. All exposed surfaces shall be a #4 Brushed Satin Polished finish (optional finish is AW Appliance White).

(Optional) A stainless steel opposed blade damper that is adjustable from the face of the grille, shall be provided with all units.

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

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

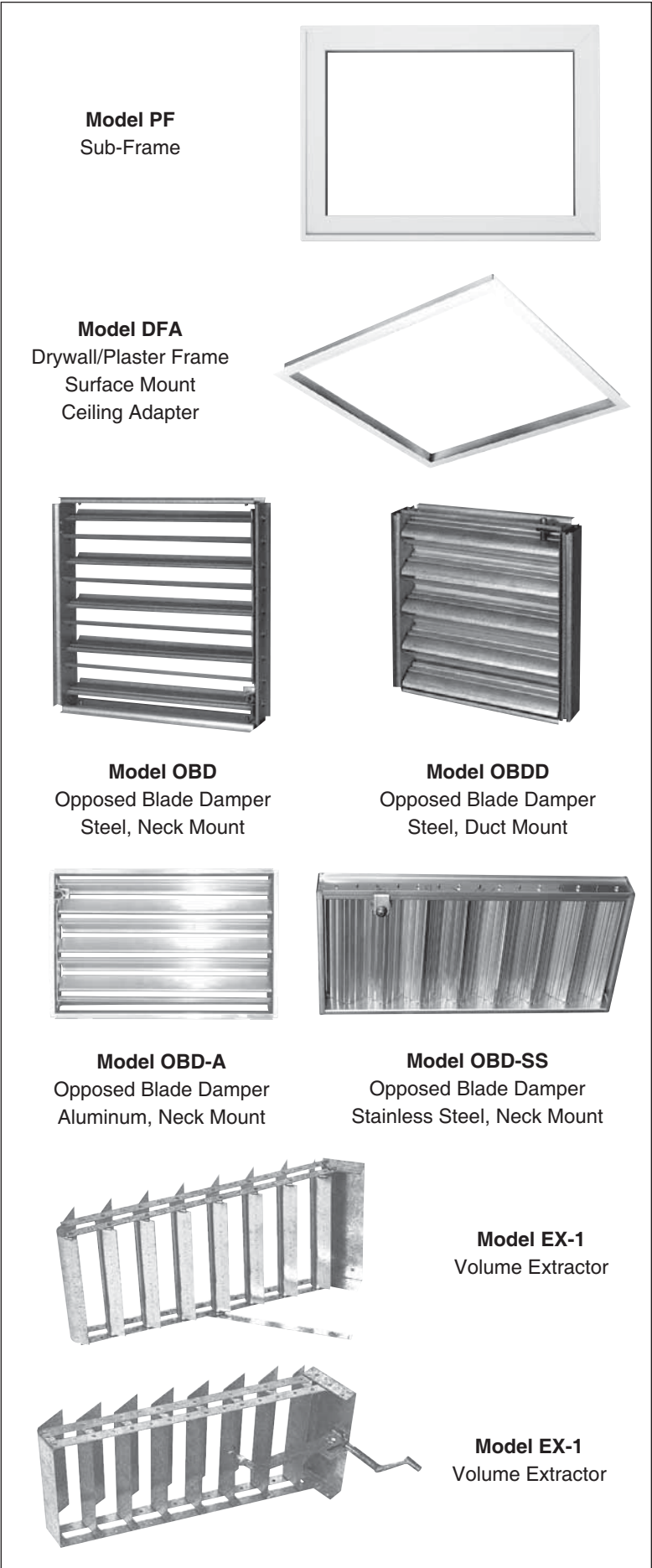
- Opposed blade dampers for every application.
- Volume extractors.

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.

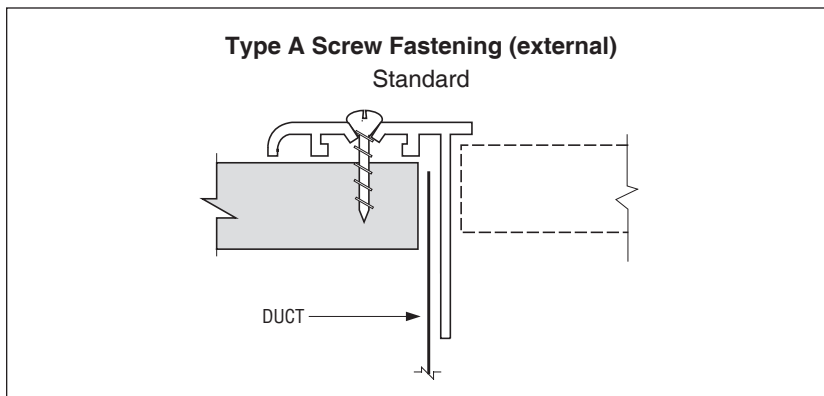


Fastening and Border Frames

Type A Screw Fastening (External)

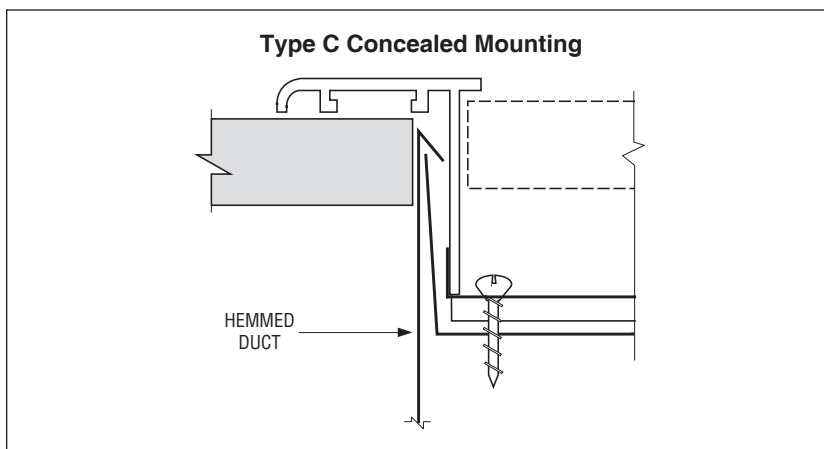
Standard method of fastening for all Nailor grilles and registers in surface mount applications. All Nailor grilles and registers are supplied this way unless specified otherwise. Universal application for all models and cost effective installation.

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.



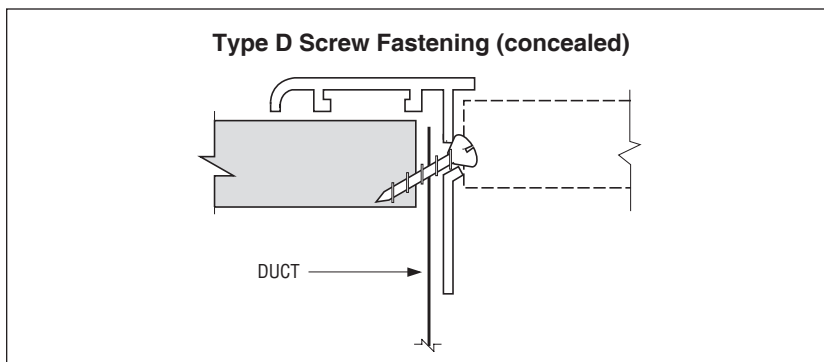
Type C Concealed Mounting

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)

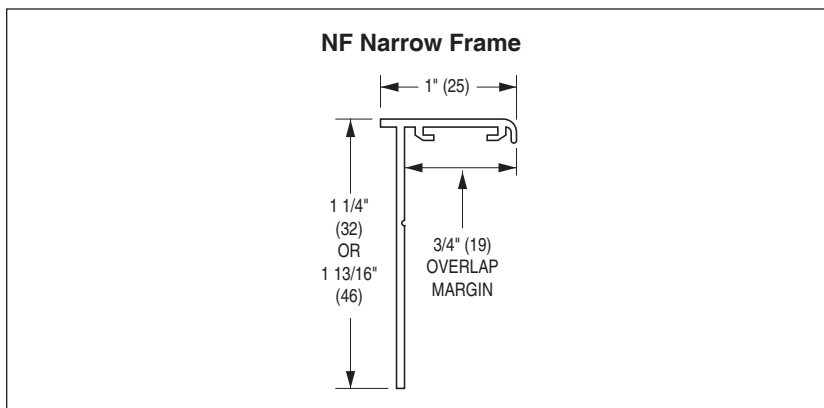
Screw holes are provided in the neck of the grille or register frame. Screws are field installed at an angle through the grille frame and into the ductwork, providing a clean frame appearance. Installation is more difficult than Type A due to the space constriction between the grille blades. Care must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

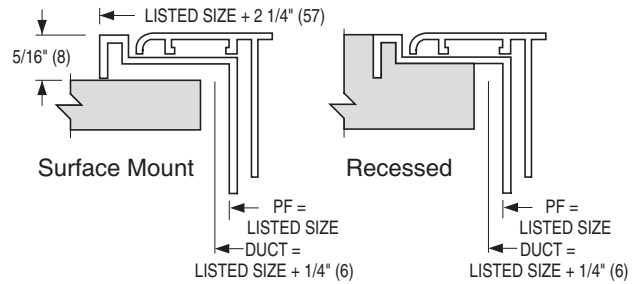
See individual models for availability.



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.

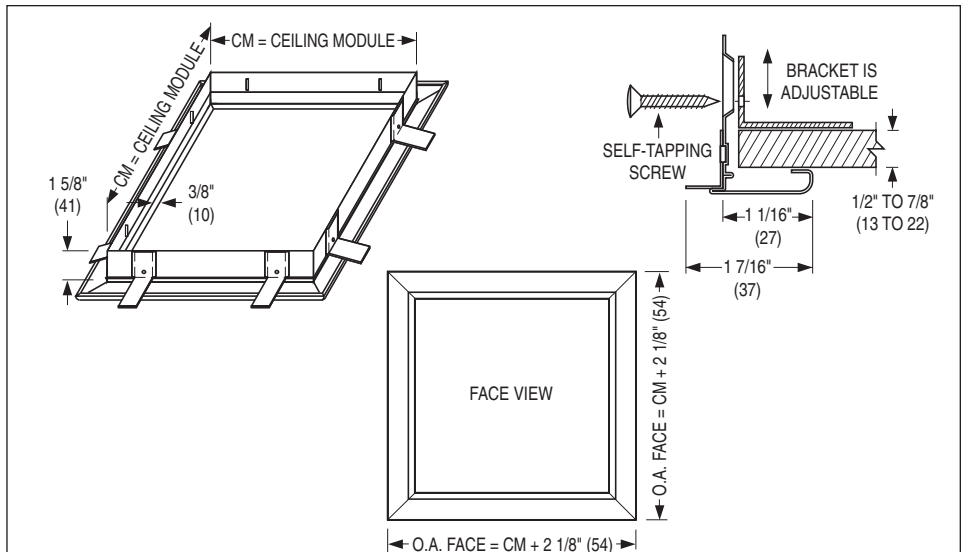
The DF Series simplifies and reduces installation time compared with surface mount type diffusers. This is especially true where flexible duct is utilized. A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access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

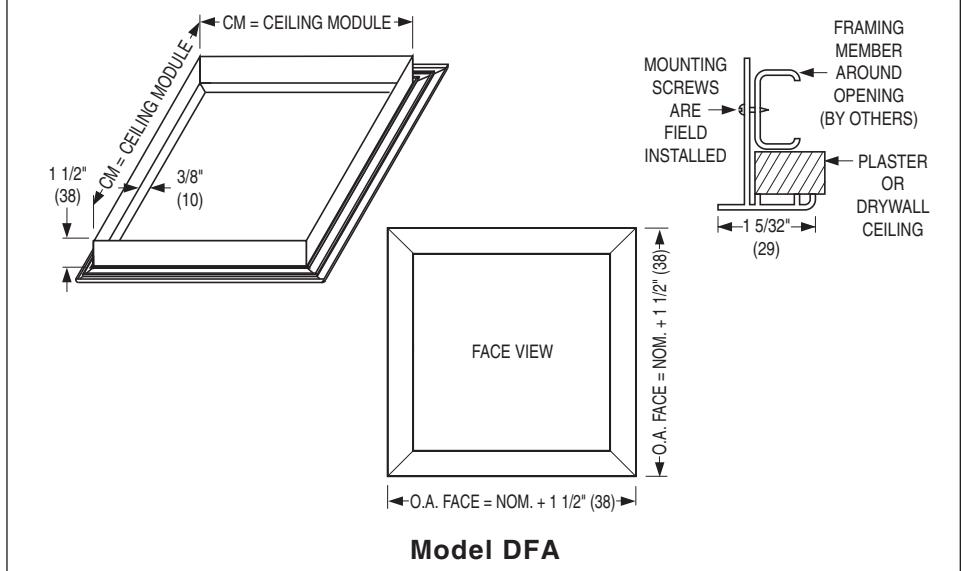


Model DFS

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.

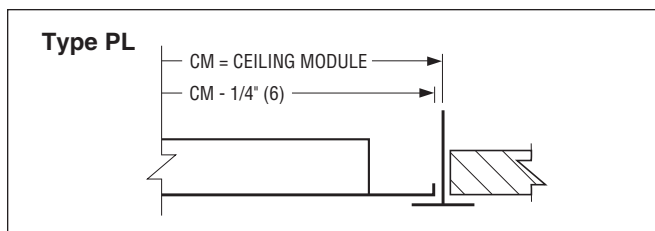
The maximum grille neck sizes available for panel mounting will be the ceiling module size selected - 3" (76).

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

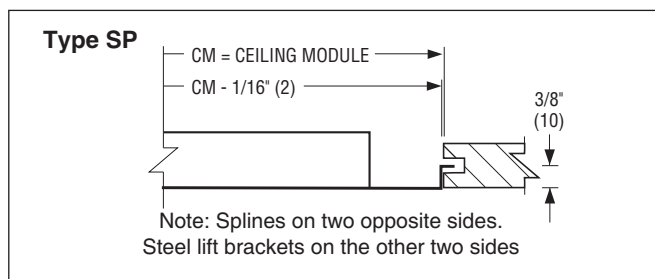
Border Type PL: Lay-in T-Bar

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



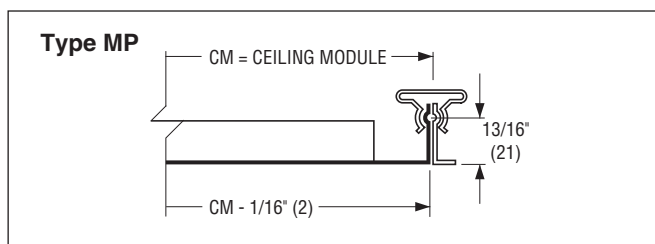
Border Type SP: Spline

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



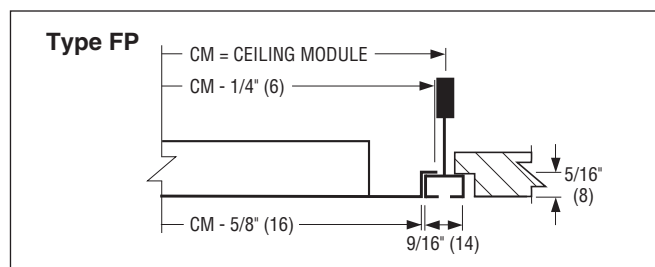
Border Type MP: Metal Pan/Snap-in

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



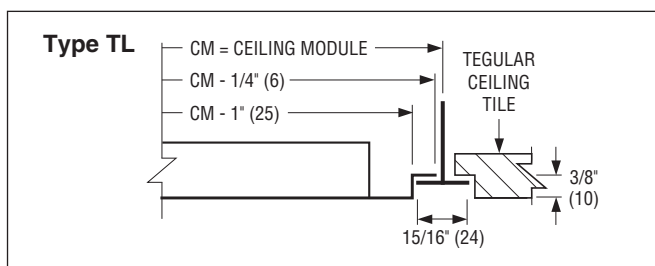
Border Type FP: Narrow Regressed T-Bar (Fineline®)

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

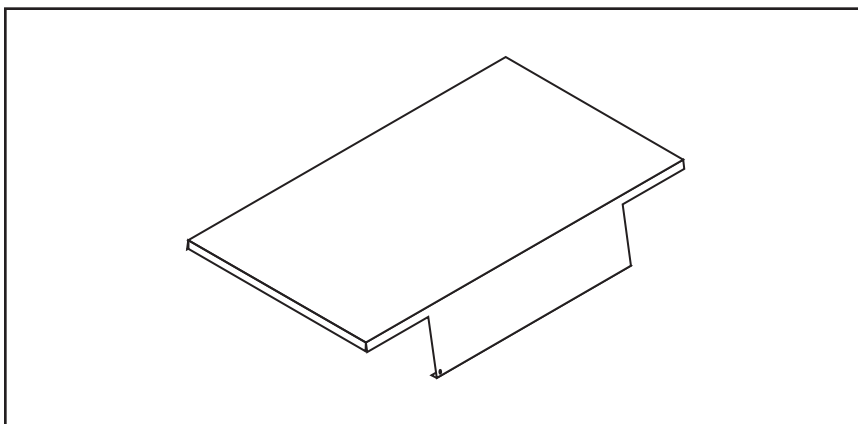
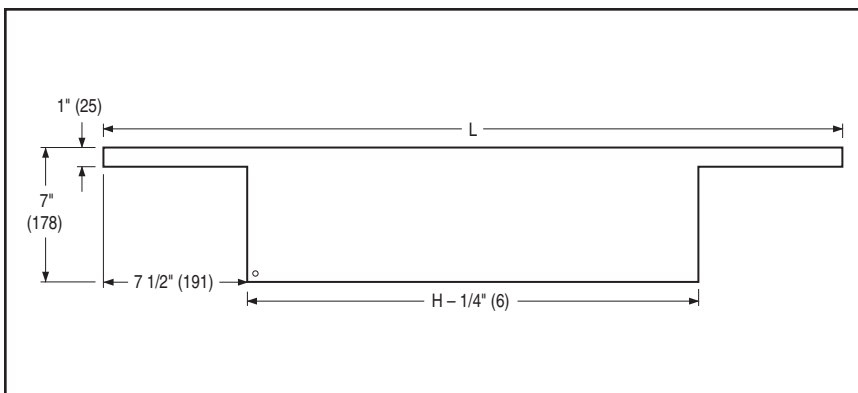
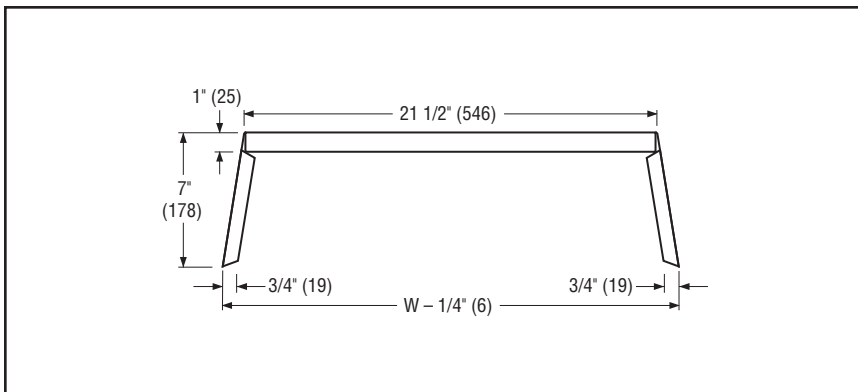
Nailor Model RACA Return Air Crosstalk Attenuator is designed to greatly reduce the amount of sound transferred from the return air plenum through open vents or return grilles, into the adjoining space. For use with non-ducted return grilles in Lay-in T-Bar applications, the RACA allows return air to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



Air Balancing Devices

OPPOSED BLADE DAMPERS — STEEL AND ALUMINUM

Nailor Opposed Blade Dampers are manufactured from heavy gauge, roll-formed, corrosion-resistant steel or extruded aluminum blades and frame with miscellaneous steel components.

The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

GRILLE MOUNT MODELS:

OBD Steel

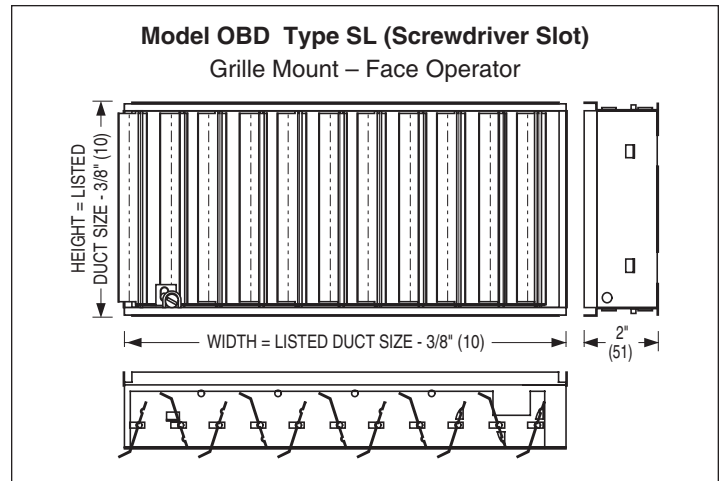
OBD-A Aluminum

This style of damper mounts directly on the neck of the grille and is sized to fit most Nailor grilles. Uses steel barbed S-clips for easy field mounting or removal when ordered separately. Supplied as standard with a screwdriver slot operator (Type SL) on supply registers and a screwdriver pivot lever operator (Type PL) on fixed, angled deflection return registers. Type SL operator is standard if damper is ordered separately from grille. A lever operator (Type GL) is available as an option on fixed, angled deflection return registers. Can be specified as an integral part of the grille (register) by adding a - O (steel) or - OA (aluminum) suffix to the grille model.

Min. Size = 4" x 2 1/2" (102 x 64) Max. Size = 24" x 24" (610 x 610).

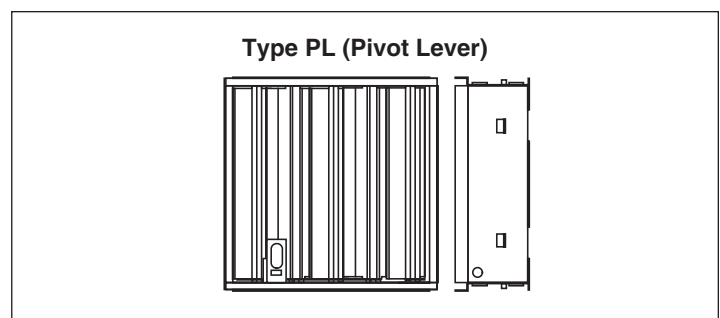
Type SL Operator

The SL Operator incorporates a screwdriver slot, which adjusts from the face of the register. This operator is the standard supplied with supply air registers such as the single and double deflection adjustable blade.



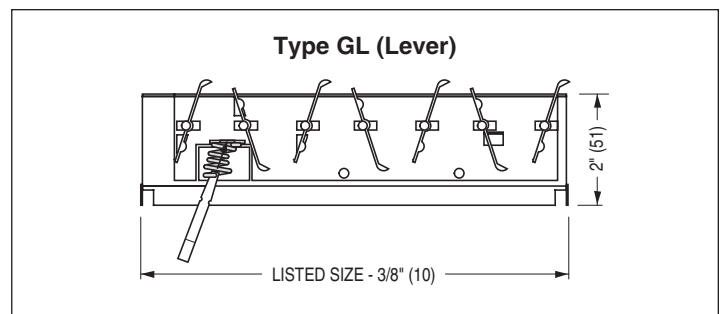
Type PL Operator

The PL Operator is a concealed pivot lever, which is adjusted from the face of the register using a screwdriver. This operator is for use only on fixed blade, angled deflection, return air grilles. When specifying, the blade orientation of the damper must be opposite of the grille.



Type GL Operator

The GL Operator incorporates a lever that adjusts without the use of tools. The lever operator extends through the grille face and is an alternative for fixed blade, angled deflection, return air grilles. When specifying, the blade orientation of the damper must be opposite of the grille being used and the grille model must be specified.



Air Balancing Devices

DUCT MOUNT MODELS:

OBDD Steel

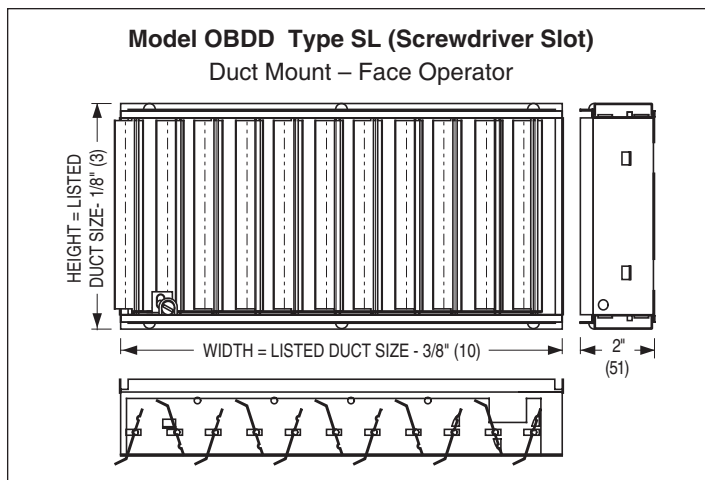
OBDD-A Aluminum

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

Min. Size = 4" x 2 1/2" (102 x 64) Max. Size = 24" x 24" (610 x 610)

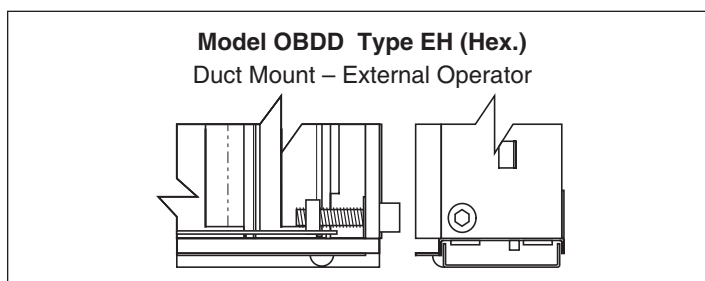
Type SL Operator

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



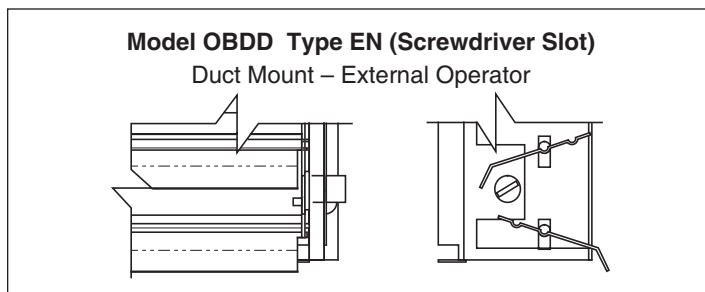
Type EH Operator

The EH Operator incorporates an external hex device that penetrates the duct wall to provide control. For use with 3/16" (5) Allen key wrench (by others).



Type EN Operator

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



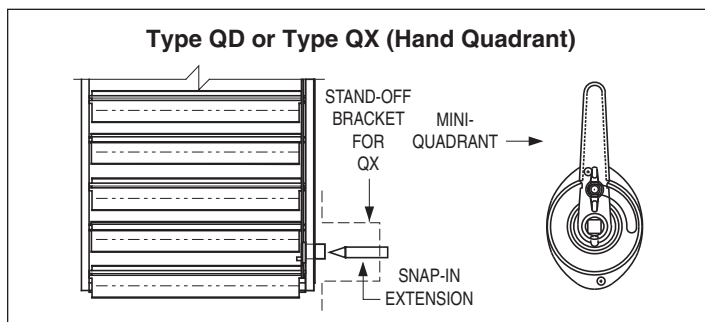
Type QD Operator *

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

Type QX Operator *

The QX Operator includes a nylon snap-in extension that fits an external (nylon) operator. This device also includes a 2" (51) stand-off bracket and hand locking quadrant for control and position indication. To ensure quadrant is located on vertical side of duct, specify damper with blades parallel to the horizontal duct dimension.

*Not available on Model OBDD-A



Air Balancing Devices

OPPOSED BLADE DAMPERS — STAINLESS STEEL

Nailor Stainless Steel Opposed Blade Dampers feature heavy gauge, roll-formed blades and a heavy duty frame in all stainless steel construction. Type 304 stainless steel is standard with Type 316 as an available option.

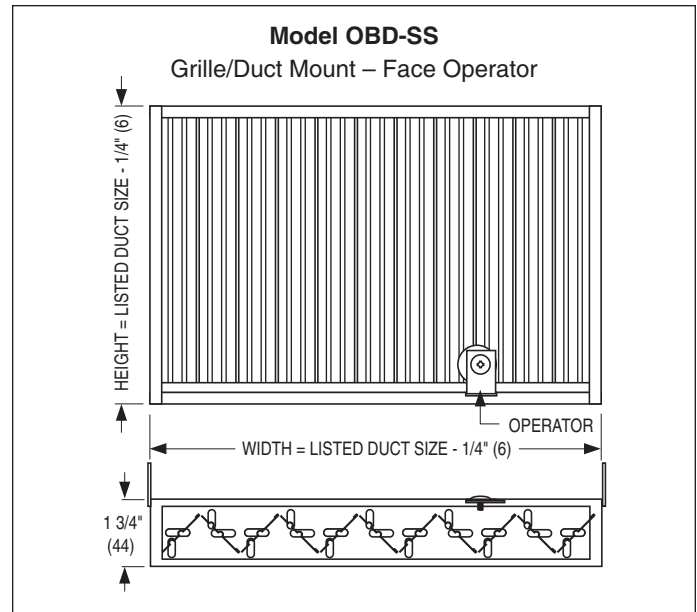
The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

GRILLE/DUCT MOUNT MODELS:

OBD-SS Stainless Steel

When ordered as part of the stainless steel grille, (using the suffix '-O' on the model number), the dampers are factory welded to the grille frame to provide a secure non-removable connection. If the dampers are ordered separately, they are supplied with mounting tabs. The tabs allow the dampers to be field installed onto a grille or to be mounted independently in the duct, separate from and behind the grille.

All Nailor stainless steel dampers feature a Philip's head screwdriver operator that is accessed through the face of the grille.



Volume Extractors

MODEL SERIES

EX Blades on 2" centers

EXD Blades on 1" centers

The **Model Series EX Volume Extractors** uniformly divert air from the main duct into the branch take-off and across the face of a grille or diffuser. Gang-operated parallel blades available on 2" (51) or 1" (25) centers pivot from full open to full closed with blades overlapping for shut-off. The curved blade design improves airflow by reducing turbulence, thereby reducing noise and pressure drop.

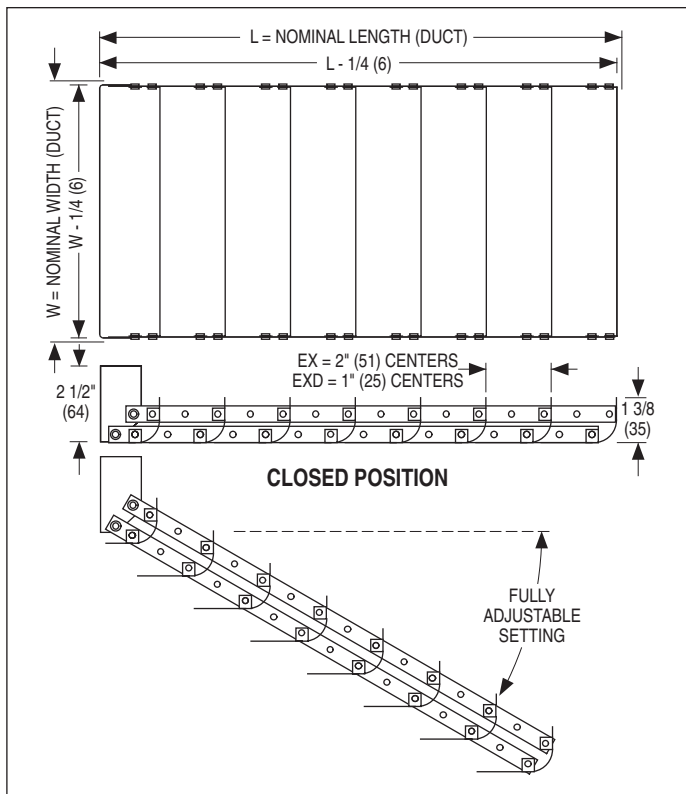
Specify or order: Length x Width. (Length is first dimension. Blades are parallel to width, second dimension).

FEATURES:

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

Operator Types

<p>EX/EXD-1 Standard unit with adjusting strap.</p>	
<p>EX/EXD-1-R Rod operator for external operation.</p>	
<p>EX/EXD-2 Linkage with 7/16" (11) square hole (2 per unit). Remote operator (eg. Young Regulator #1) by others.</p>	
<p>EX/EXD-3 Screw gear operator. Adjusts with 3/16" (48) wrench (by others).</p>	



Optional Accessories

<p>RLD Locking device for Models EX/EXD-1-R.</p>	
--	--