

Airvector® Catalog - Data Sheets and Submittals

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SQUARE DIFFUSERS

MODELS DF3, DA3 & DF3I 3 CONE

MODEL DF3 - Fixed horizontal pattern

MODEL DA3 - Adjustable horizontal pattern

MODEL DF3I - Fixed horizontal pattern, Insulated

Airvector's 3 Cone Supply Diffusers are recommended for heating, ventilating, and cooling. The DF3's and DA3's integrated round-neck-to-square-face construction can provide a 360° horizontal air diffusion pattern similar to a full round diffuser. The DA3 diffuser allows for independent adjustable horizontal deflection. The DF3I is supplied with R6 insulation and does not include an integrated collar. R4 and R6 are optional for DF3 and DA3.

High diffusion induction rates result in rapid temperature and velocity equalization of the mixed air mass well above the zone of occupancy. Horizontal performance assures confident use of a cooling temperature differential of 30° and greater at a predicted low air motion of 35 fpm in the zone of occupancy. DF3(I) and DA3 Supply Diffusers perform efficiently with air loadings of 6 to 30 air changes per hour (based on a 10 ft. ceiling height), and a sound level range of NC 25 to 35.

Highlights

- Full face 24" x 24" for all neck sizes.
- Full face 12" x 12" for 6" & 8" neck sizes
- Heavy-gauge all-steel construction
- DF3 avail. with 2" collar or 3" telescopic collar (1" standard for DF3 and DA3)
- Powder paint coating - White (Custom Finishes Avail.)
- Matching N4 and N5 OBDs available
- OBD accessible through diffuser face

Listed Size	Neck Dia	Nominal Face Size	Overall Face Size "B"	Drywall Ceiling Opening
1206	6	12 x 12	11 ³ / ₄ x 11 ³ / ₄	10 ¹ / ₂ x 10 ¹ / ₂
1208	8	12 x 12	23 ³ / ₄ x 23 ³ / ₄	10 ¹ / ₂ x 10 ¹ / ₂
2406	6	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2408	8	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2410	10	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2412	12	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2414	14	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂

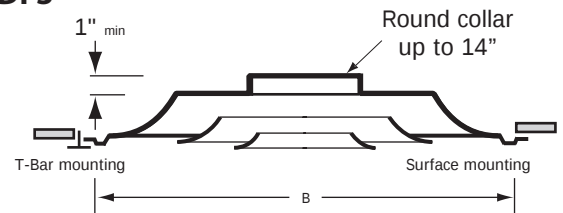


DF3

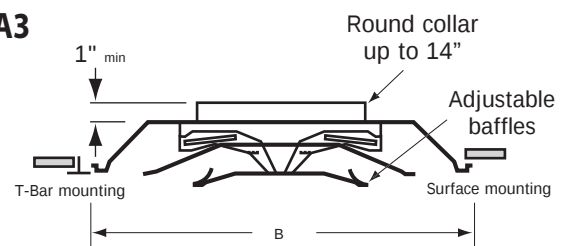
HANDY FEATURES

- One standard model suits both T-Bar and Drywall installations using rigid ducting
- Compatible with Airvector's exclusive Easy Install PF frame
- Core is easily removable without tools to facilitate access to duct.

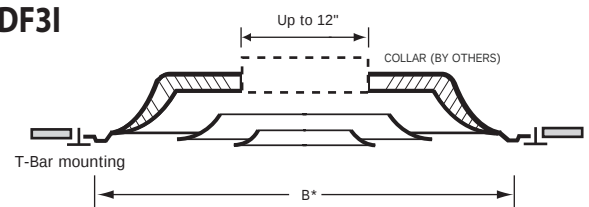
DF3



DA3



DF3I



* available only in 23³/₄ x 23³/₄ face size with 6" to 12" necks

ENGINEERING PERFORMANCE DATA

MODELS DF3, DA3, DF3I

3 CONE



12" x 12" face

SIZE (inches)	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400	1600
	Velocity Pressure (in H ₂ O)	.010	.016	.022	.031	.041	.062	.090	.122	.160
6	CFM	78	98	118	137	157	196	235	274	313
	Total Pressure	.02	.03	.04	.06	.07	.10	.16	.22	.29
	NC	< 20	< 20	< 20	< 20	<20	25	29	34	40
	Throw (ft)	2-3-6	3-4-7	4-5-9	4-5-10	5-6-11	6-8-12	7-9-13	8-10-15	9-11-16
8	CFM	140	175	209	244	279	349	419	489	559
	Total Pressure	.03	.04	.06	.07	.09	.14	.20	.28	.38
	NC	< 20	< 20	< 20	<20	<20	29	35	41	45
	Throw (ft)	2-4-7	3-5-9	4-7-10	5-8-11	6-9-12	7-10-14	8-12-17	10-12-18	11-14-20

24" x 24" face

SIZE (inches)	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400	1600
	Velocity Pressure (in H ₂ O)	.010	.016	.022	.031	.041	.062	.090	.122	.160
6	CFM	78	98	118	137	157	196	235	274	313
	Total Pressure	.02	.03	.04	.05	.07	.10	.14	.19	.24
	NC	< 20	< 20	< 20	< 20	<20	22	28	32	36
	Throw (ft)	1-2-4	1-3-4	2-3-5	2-3-6	3-4-7	4-6-8	5-7-10	6-9-11	7-9-12
8	CFM	140	175	209	244	279	349	419	489	559
	Total Pressure	.02	.03	.04	.05	.08	.10	.15	.20	.25
	NC	< 20	< 20	< 20	<20	<20	26	31	36	41
	Throw (ft)	2-3-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-11	6-9-13	7-10-14	8-11-17
10	CFM	218	273	327	382	436	545	654	763	872
	Total Pressure	.02	.03	.04	.05	.08	.12	.17	.24	.30
	NC	< 20	< 20	< 20	<20	22	29	34	38	43
	Throw (ft)	3-4-6	4-5-8	4-6-10	5-7-12	6-8-14	7-9-15	8-11-16	9-12-17	10-13-19
12	CFM	314	393	471	550	628	785	941	1099	1246
	Total Pressure	.02	.04	.05	.07	.09	.14	.20	.27	.36
	NC	< 20	< 20	<20	20	23	39	36	41	46
	Throw (ft)	4-5-9	5-6-10	6-7-11	6-8-13	7-9-15	8-11-18	10-13-21	12-16-22	13-18-21
14	CFM	492>	615	738	861	984	1230	1476	1722	1968
	Total Pressure	.03	.04	.06	.08	.10	.18	.23	.30	.40
	NC	< 20	< 20	<20	21	25	33	38	43	48
	Throw (ft)	4-6-10	5-6-11	6-8-14	7-10-16	8-11-18	10-14-20	12-16-22	14-19-24	15-20-26

NC Value based on 10 db room attenuation.

Throw Values are based on isothermal air and terminal velocities of 150 fpm, 100 fpm & 75 fpm respectively.
Total Pressure the sum of static pressure plus velocity pressure and is given in inches w.g.

HOW TO ORDER

DF3-R4-2-S-W3 2408 /W

MODEL SERIES

3 Cone Fixed **DF3**
3 Cone Adjustable **DA3**
3 Cone Insulated **DF3I**

INSULATION (OPTIONAL)

Standard is uninsulated
R4.2 Taped Insulation **-R4**
R6 Taped Insulation **-R6**
Not applicable for DF3I

COLLAR HEIGHT (OPTIONAL DF3

ONLY) Standard is 1" for all
models, no need to specify
2" Fixed Collar **-2**
3" Telescopic Collar **-3**

PACKAGING (OPTIONAL)

Standard is 2 per box
Single Box **-S**

FINISH (OPTIONAL)
Standard is White (**/W**)
See chart for more

NECK DIAMETER

DF3(A) 06-08-10-12-14"
DF3I 06-08-10-12"

FACE DIMENSIONS

12" x 12" **12**
24" x 24" **24**
DF4I **24** only

DIRECTION (OPTIONAL)

Standard is 4 Way
1 Way **-W1**
2 Way Corner **-WC**
2 Way Opposed **-WO**
3 Way **-W3**

Ordering Notes:

- Air flow direction provided using NBD pie shape baffle for DF diffusers.
- N4 and N5 OBDs are not compatible with NBD baffles

SQUARE DIFFUSERS

MODELS DF4, DA4 & DF4I 4 CONE



MODEL DF4 - Fixed horizontal pattern

MODEL DA4 - Adjustable horizontal pattern

MODEL DF4I - Fixed horizontal pattern, Insulated

Airvector's 4 Cone Supply Diffusers are recommended for heating, ventilating, and cooling. The DF4's and DA3's integrated round-neck-to-square-face construction can provide a 360° horizontal air diffusion pattern similar to a full round diffuser. The DA4 diffuser allows for independent adjustable horizontal deflection. The DF4I is supplied with R6 insulation and does not include an integrated collar. R4 and R6 are optional for DF4 and DA4.

High diffusion induction rates result in rapid temperature and velocity equalization of the mixed air mass well above the zone of occupancy. Horizontal performances assure confident use of cooling temperature of 30°F and greater at predicted low air motion of 35 fpm in the zone of occupancy. DF4 Supply Diffusers perform efficiently with air loadings of 6 to 30 air changes per hour (based on 10ft. ceiling height), and sound level range of NC 25 to 35.

FEATURES

- Full face 24" x 24" for all neck sizes.
(12" x 12" face available in 3 cone only)
- Heavy-gauge all-steel construction
- DF4 Avail. with 2" collar or 3" telescopic collar
(1" STANDARD FOR DF4 and DA4)
- Powder paint coating - White (Custom Finishes Avail.)
- Matching N4 and N5 OBDs available
- Screw driver adjustment of OBD through diffuser face.

Listed Size	Neck Dia	Nominal Face Size	Overall Face Size "B"	Drywall Ceiling Opening
2406	6	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2408	8	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2410	10	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2412	12	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2414	14	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂

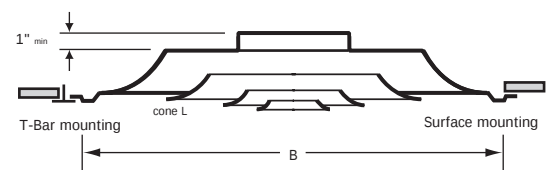


DF4

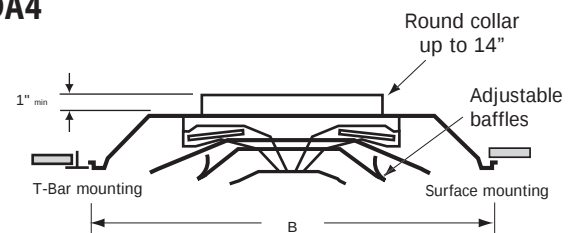
HANDY FEATURES:

- Compatible with Airvector's exclusive Easy Install PF frame
- Core is easily removable without tools to facilitate access to duct
- One standard model suits both T-Bar and Drywall installations using rigid ducts

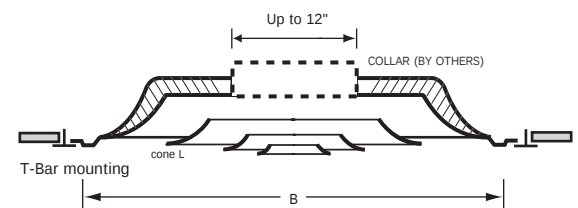
DF4



DA4



DF4I



ENGINEERING PERFORMANCE DATA

MODEL DF4, DA4, DF4I

4 CONE



24" x 24" face (For 12"x12" face use 3 Cone)

SIZE (inches)	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400	1600
	Velocity Pressure (in H ₂ O)	.010	.016	.022	.031	.041	.062	.090	.122	.160
6	CFM	78	98	118	137	157	196	235	274	313
	Total Pressure	.02	.03	.04	.05	.07	.10	.14	.19	.24
	NC	< 20	< 20	< 20	< 20	<20	22	28	32	36
	Throw (ft)	1-2-4	1-3-4	2-3-5	2-3-6	3-4-7	4-6-8	5-7-10	6-9-11	7-9-12
8	CFM	140	175	209	244	279	349	419	489	559
	Total Pressure	.02	.03	.04	.05	.08	.10	.15	.20	.25
	NC	< 20	< 20	< 20	<20	<20	26	31	36	41
	Throw (ft)	2-3-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-11	6-9-13	7-10-14	8-11-17
10	CFM	218	273	327	382	436	545	654	763	872
	Total Pressure	.02	.03	.04	.05	.08	.12	.17	.24	.30
	NC	< 20	< 20	< 20	<20	22	29	34	38	43
	Throw (ft)	3-4-6	4-5-8	4-6-10	5-7-12	6-8-14	7-9-15	8-11-16	9-12-17	10-13-19
12	CFM	314	393	471	550	628	785	941	1099	1246
	Total Pressure	.02	.04	.05	.07	.09	.14	.20	.27	.36
	NC	< 20	< 20	<20	20	23	39	36	41	46
	Throw (ft)	4-5-9	5-6-10	6-7-11	6-8-13	7-9-15	8-11-18	10-13-21	12-16-22	13-18-21
14	CFM	492>	615	738	861	984	1230	1476	1722	1968
	Total Pressure	.03	.04	.06	.08	.10	.18	.23	.30	.40
	NC	< 20	< 20	<20	21	25	33	38	43	48
	Throw (ft)	4-6-10	5-6-11	6-8-14	7-10-16	8-11-18	10-14-20	12-16-22	14-19-24	15-20-26

NC Value based on 10 db room attenuation.

Throw Values are based on isothermal air and terminal velocities of 150 fpm, 100 fpm & 75 fpm respectively.

Total Pressure the sum of static pressure plus velocity pressure and is given in inches w.g.

HOW TO ORDER

DF4-R4-2-S-W3 2408 /W

MODEL SERIES

4 Cone Fixed **DF4**
4 Cone Adjustable **DA4**
4 Cone Fixed, Insul. **DF4I**

FINISH (OPTIONAL)
Standard is White (**/W**)
See chart for more

INSULATION (OPTIONAL) Standard is uninsulated

R4.2 Taped Insulation **-R4**
R6 Taped Insulation **-R6**
Not applicable for DF4I

NECK DIAMETER In Inches

DF4(A) 06-08-10-12-14"
DF4I 06-08-10-12"

FACE DIMENSIONS

24" x 24" **24**

COLLAR HEIGHT (OPTIONAL)

DF4 ONLY, Standard is 1" all models

2" Fixed Collar **-2**
3" Telescopic Collar **-3**

PACKAGING (OPTIONAL)

Standard is 2 per box
Single Box **-S**

DIRECTION (Standard is 4 Way, do not specify)

1 Way **-W1**
2 Way Corner **-WC**
2 Way Opposed **-W0**
3 Way **-W3**

Ordering Notes:

- Air flow direction provided using NBD pie shape baffle for DF diffusers.
- N4 and N5 OBDs are not compatible with NBD baffles

SERIES DLA, DLAM & DLAI



MODEL SERIES DLA, DLAM & DLAI

Aluminum Louvered Face Diffusers Fixed Directional Pattern, High Capacity

DLA aluminum supply diffusers are recommended for heating, ventilating and cooling.

Designed for high capacity, Airvector®'s Model Series DLA can supply large volumes of air at low sound levels and pressure drops. DLA directional diffusers are offered in all standard square dimensions with a variety of cores to provide any required air pattern.

DLA Series feature a square neck, **DLAM** Series feature a round neck and **DLAI** Series feature an R6 insulated back, pre-scored for 6"-14" round collars.

Core is removable to facilitate access to duct.

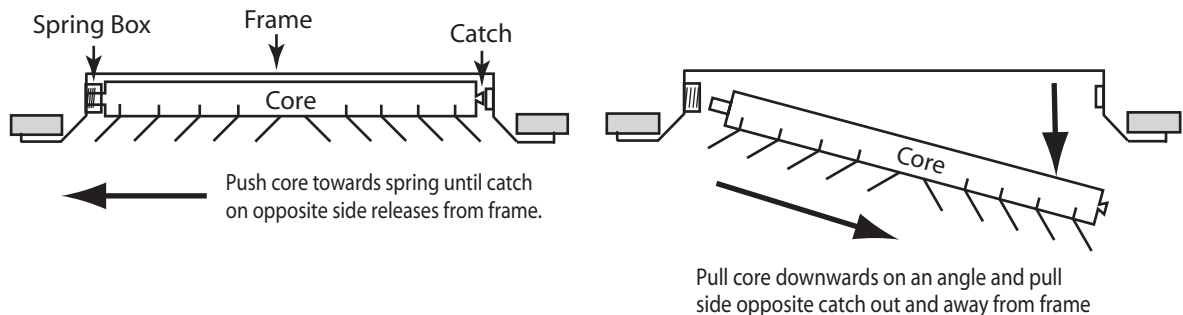


DLA

FEATURES

- Full Face 12"x12", 15"x15", 18"x18", 21"x21" and 24"x24"
- 1 Way, 2 Way Opposed, 2 Way Corner, 3 Way or 4 Way
- Commercial-grade aluminum construction
- Core can be easily removed without tools
- Ideal for VAV systems
- Powder paint coating - White

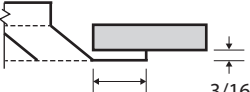
Handy Feature: Boxed-in spring with pressure plate for extra-smooth removal of core.



Directional Patterns									
W1	1 Way	WC	2 Way Corner	WO	2 Way Opposed	W3	3 Way	W4	4 Way

SERIES DLA, DLAM & DLAI

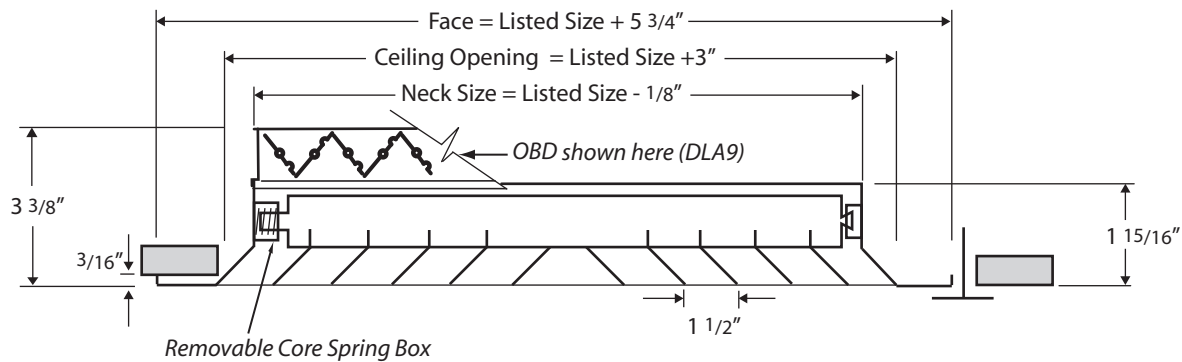


Border Types		Mounting			
F	Flat Frame	B	Beveled Frame		
					
		N/A for DLAI			
0	Lay-In	1	Screw Holes	4	Concealed
					
		N/A for DLAI or Beveled Frame		N/A for DLAI	

MODEL SERIES DLA

MODEL **DLA** Square Neck

MODEL **DLA9** Square Neck With Aluminum Opposed Blade Damper (N9)



HANDY FEATURE: One standard model suits both T-Bar and Drywall installations using rigid ducting.

HOW TO ORDER

DLA-F-0-W4 1818 /W

MODEL SERIES

Square Neck **DLA**
Square Neck w/ OBD **DLA9**

FINISH (OPTIONAL)
Standard is White (**/W**)
See chart for more

BORDER TYPE (OPTIONAL)

Standard is flat frame
Flat Frame **-F**
Beveled Frame **-B**

DUCT DIMENSIONS

6" x 6" **0606**
9" x 9" **0909**
12" x 12" **1212**
15" x 15" **1515**
18" x 18" **1818**

MOUNTING (OPTIONAL)

Standard is Lay-In
Lay-In **-0**
Screw Holes **-1**
Concealed **-4**

DIRECTION (OPTIONAL)

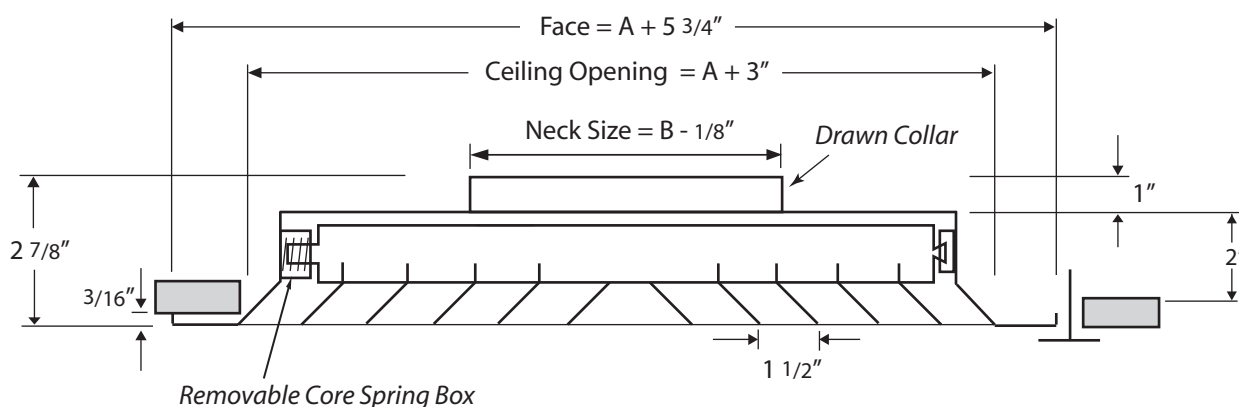
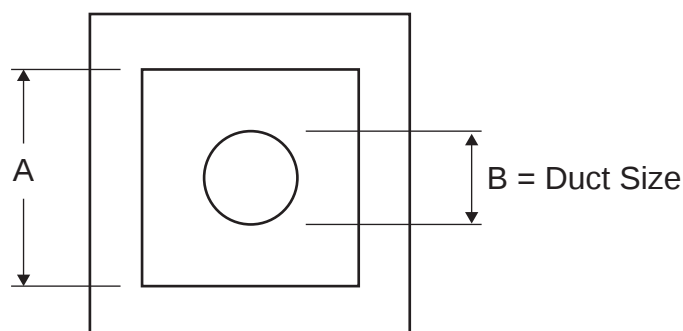
Standard is 4 Way
1 Way **-W1**
2 Way Corner **-WC**
2 Way Opposed **-W0**
3 Way **-W3**
4 Way **-W4**

MODEL SERIES DLAM

MODEL **DLAM** Round Neck

MODEL **DLAM4** Round Neck With Radial Opposed Blade Damper (N4)

MODEL **DLAM5** Round Neck With Radial Sliding Blade Damper (N5)



HANDY FEATURE: One standard model suits both T-Bar and Drywall installations using rigid ducting.

HOW TO ORDER	
DLAM-F-0-W4 1818 08 /W	
MODEL SERIES Round Neck, No Damper DLAM With N4 OBD DLAM4 With N5 Radial Damper DLAM5	FINISH (OPTIONAL) Standard is White (/W) See chart for more
BORDER TYPE (OPTIONAL) Standard is flat frame Flat Frame -F Beveled Frame -B	SQUARE TO ROUND NECK DIAMETER 6" 06 8" 08 10" 10 12" 12 14" 14 16" 16
MOUNTING (OPTIONAL) Standard is Lay-In Lay-In -0 Screw Holes -1 Concealed -4	SQUARE NECK DIMENSIONS 6" x 6" 0606 9" x 9" 0909 12" x 12" 1212 15" x 15" 1515 18" x 18" 1818
DIRECTION (OPTIONAL) Standard is 4 Way 1 Way -W1 2 Way Corner -WC 2 Way Opposed -W0 3 Way -W3	

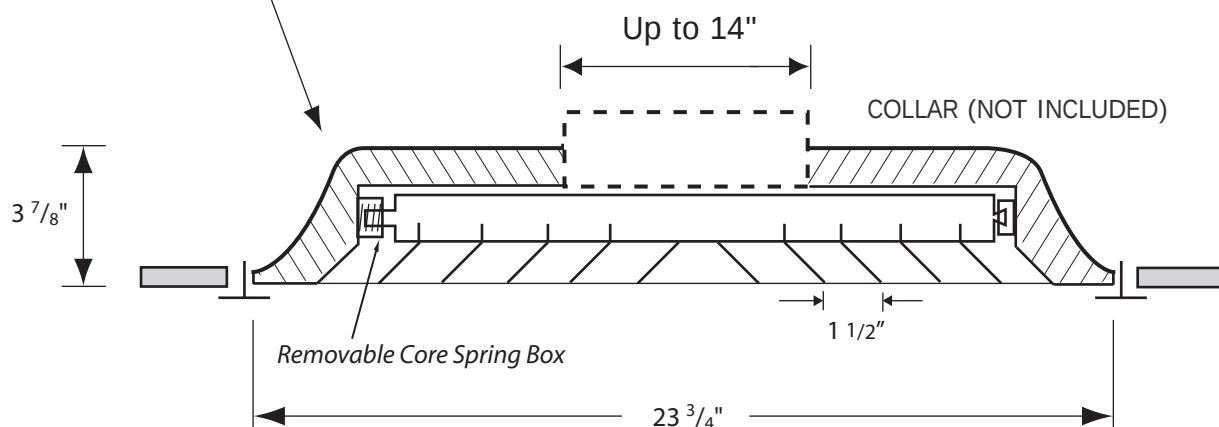
Dampers Available	
DLAM4 	With Radial Opposed Blade Damper
DLAM5 	With Radial Sliding Blade Damper

MODEL SERIES DLAI

MODEL DLAI R6 Molded Fiberglass Insulated Back, Pre-Scored for Collars 6"-14"

R6 fiberglass back complies with A.S.T.M. E84 flame and smoke test.

Scored for collar sizes up to 14" D.
Contractor to install job-specific collar in field.



HOW TO ORDER

DLAI-W4 /W

MODEL SERIES
24"x24", R6 Insulated **DLAI**

FINISH (OPTIONAL)
Standard is White (/W)
See chart for more

DIRECTION (OPTIONAL)
Standard is 4 Way

1 Way	-W1
2 Way Corner	-WC
2 Way Opposed	-W0
3 Way	-W3
4 Way	-W4

TABLE 1 - PERFORMANCE DATA - SQUARE NECK

Duct Size Blow Pattern	Neck Velocity Velocity Press. Total Press.	300 .006 .030	400 .010 .051	500 .016 .080	600 .022 .118	700 .031 .160	800 .040 .210	900 .050 .260
6" .25 SQ. FT.	Total CFM NC	75 -	100 -	125 17	150 22	175 26	200 31	225 34
 A	CFM/Side Throw (ft)	19 4-5-8	25 5-6-9	31 6-8-10	37 6-8-11	44 8-9-12	50 8-9-12	56 9-10-13
 B	CFM/Side Throw (ft)	19 4-5-8	28 5-8-11	31 6-8-10	47 8-10-14	56 8-11-15	66 9-12-16	75 9-12-17
 C	CFM/Side Throw (ft)	38 8-9-12	50 9-10-14	62 10-11-16	75 11-12-17	88 12-13-18	100 12-14-19	113 13-15-22
 D	CFM/Side Throw (ft)	75 9-11-15	100 10-12-17	125 11-14-19	150 12-15-22	175 13-16-22	200 14-17-24	225 15-18-25
9" .56 SQ. FT.	Total CFM NC	170 -	225 -	280 20	340 26	395 31	450 35	505 38
 A	CFM/Side Throw (ft)	42 5-6-10	56 6-8-11	70 8-9-12	84 8-10-13	98 9-10-14	113 9-11-15	126 10-12-16
 B	CFM/Side Throw (ft)	42 5-6-10	63 8-10-13	56 6-8-11	85 9-11-15	70 8-9-12	106 10-12-17	84 8-10-13
 C	CFM/Side Throw (ft)	84 9-10-15	112 11-13-18	141 12-15-20	169 13-16-22	197 14-17-23	225 15-18-25	253 16-19-28
 D	CFM/Side Throw (ft)	169 12-15-20	225 14-17-23	282 16-19-26	338 17-22-29	394 18-22-31	450 19-24-33	507 22-25-35
12" 1.0 SQ. FT.	Total CFM NC	300 -	400 17	500 23	600 28	700 32	800 35	900 38
 A	CFM/Side Throw (ft)	75 6-9-11	100 8-10-13	125 9-11-15	150 10-12-16	175 10-13-17	200 11-14-18	225 12-15-19
 B	CFM/Side Throw (ft)	75 6-9-11	113 9-11-15	100 8-10-13	150 10-12-16	187 11-14-19	225 12-15-19	338 15-18-25
 C	CFM/Side Throw (ft)	150 11-13-18	200 13-15-22	250 15-17-24	300 16-18-26	350 17-19-28	400 18-22-30	450 19-22-32
 D	CFM/Side Throw (ft)	300 14-17-24	400 16-19-28	500 18-22-32	600 19-23-34	700 22-25-36	800 23-27-38	900 24-29-41
15" 1.56 SQ. FT.	Total CFM NC	465 -	625 19	780 25	935 29	1090 33	1250 37	1400 41
 A	CFM/Side Throw (ft)	117 8-10-13	156 9-11-15	195 10-12-17	234 11-13-18	273 12-14-19	313 12-15-22	351 13-16-24
 B	CFM/Side Throw (ft)	117 8-10-13	176 11-13-18	156 9-11-15	234 10-12-17	292 15-17-24	351 13-16-24	527 19-22-32
 C	CFM/Side Throw (ft)	234 13-16-22	313 15-18-25	390 17-20-29	468 18-22-32	546 19-23-34	625 22-25-36	701 22-28-38
 D	CFM/Side Throw (ft)	468 16-19-28	625 18-22-32	780 20-25-36	936 22-28-39	1092 23-30-42	1250 25-32-44	1405 28-34-47
18" 2.25 SQ. FT.	Total CFM NC	675 12	900 20	1125 27	1350 31	1575 35	1800 39	2025 42
 A	CFM/Side Throw (ft)	168 9-11-15	225 10-12-17	281 11-14-19	337 12-15-21	394 13-16-22	450 14-17-24	506 15-18-25
 B	CFM/Side Throw (ft)	168 9-11-15	253 12-15-20	225 10-12-17	338 11-14-19	506 17-22-29	675 19-24-33	758 22-25-35
 C	CFM/Side Throw (ft)	337 14-17-24	450 16-19-28	562 18-22-32	675 19-23-34	787 22-25-36	900 22-26-39	1013 24-29-41
 D	CFM/Side Throw (ft)	675 17-22-30	900 20-24-34	1125 23-28-39	1350 24-30-41	1575 26-32-44	1800 29-35-47	2025 31-37-50

Throw values for terminal velocities of
150 fpm, 100 fpm and 50 fpm

Neck Velocity (fpm)
Velocity Pressure (inches of water)
Total Pressure (inches of water)
NC Values based on 10 db room attenuation

TABLE 2 - PERFORMANCE CORRECTIONS SQUARE-TO-ROUND NECK

Square Inlet	Round Inlet	NC (add)	TP (multiply)	Throw (Multiply)		
				150	100	50
9" x 9"	6"	17	3.50	1.15	1.15	1.20
9" x 9"	8"	4	1.40	1.10	1.10	1.10
12" x 12"	8"	17	3.50	1.15	1.15	1.20
12" x 12"	10"	7	1.65	1.10	1.10	1.15
15" x 15"	10"	17	3.50	1.15	1.15	1.20
15" x 15"	12"	9	1.90	1.10	1.10	1.15
15" x 15"	14"	3	1.25	1.05	1.05	1.10
18" x 18"	12"	17	3.50	1.15	1.15	1.20
18" x 18"	14"	10	2.00	1.10	1.10	1.15
18" x 18"	16"	5	1.45	1.10	1.10	1.10

PERFORMANCE CORRECTIONS FOR RETURN AIR APPLICATIONS

Negative Static Pressure Add 10% to Total Pressure listed for supply.

Noise Criteria Add 1 to NC.

SQUARE DIFFUSERS



MODELS ISO, ISOI ARCHITECTURAL LINE Square Panel Diffuser

MODEL **ISO** - Round neck

MODEL **ISOI** - R6 Insulated - Pre-scored for collars

ISO Series supply diffusers are recommended for heating, ventilating and cooling.

The ISO series provide a 360° air diffusion pattern similar to a full round diffuser. High diffusion induction rates result in rapid temperature and velocity equalization of the mixed air mass well above the zone of occupancy. Horizontal performance assures confident use of cooling temperature differential of 30°F and greater, at predicted low air motion 35 fpm in the zone of occupancy. ISO Series supply diffusers perform efficiently with air loadings of 6 to 30 air changes per hour (based on 10 ft. ceiling height), and sound level range of NC 25 to 35.

Features:

- Full face 24" x 24" for all neck sizes. ISO only
- Full face 12" x 12" for 6" & 8" neck sizes. ISO only
- Heavy-gauge all-steel construction.
- Ideal for VAV systems.
- Powder paint coating - White (default) Custom colours avail.
- Matching OBD dampers, NBI baffle, and PF plaster frame available.

Highlights:

- **ISO** model suits both T-Bar and Drywall installation using rigid ducts
- Removable core for access to optional damper

Insulation:

ISO - Optional R4 or R6 insulation. R6 fiberglass insulation complies with A.S.T.M. E84 flame and smoke test. Only available on models with 24" x 24" face.

ISOI - R6 fiberglass insulation.



ISO

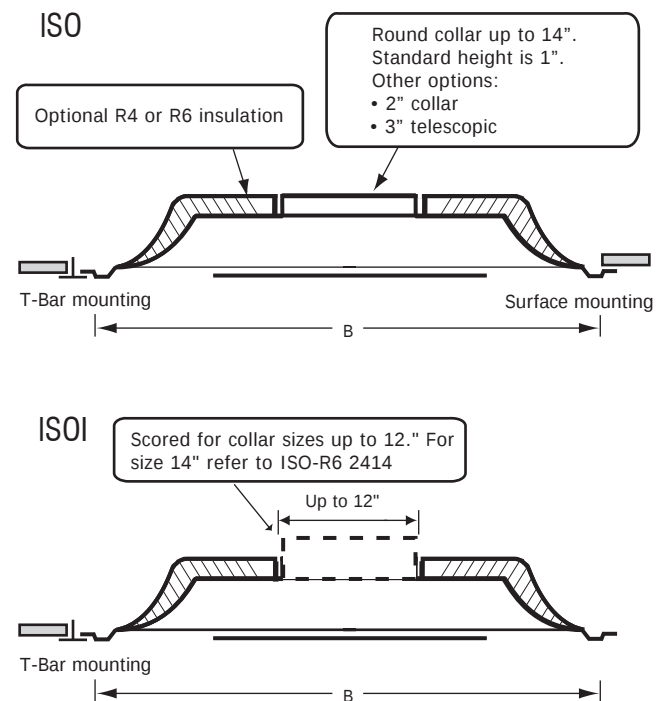
ISO Model Size	Neck Dia	Nominal Face Size	Overall Face Size B x B	Drywall Ceiling Opening
1206	6	12 x 12	11 ³ / ₄ x 11 ³ / ₄	10 ¹ / ₂ x 10 ¹ / ₂
1208	8	12 x 12	11 ³ / ₄ x 11 ³ / ₄	10 ¹ / ₂ x 10 ¹ / ₂
2406	6	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2408	8	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2410	10	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2412	12	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2414	14	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂

Model	Nominal Face Size	Overall Face Size B x B
ISOI	24 x 24	23 ³ / ₄ x 23 ³ / ₄

All dimensions in inches



ISOI fiberglass back.



Rev.3

ENGINEERING PERFORMANCE DATA

MODEL ISO

SQUARE PANEL



12" x 12" face

SIZE (inches)	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400	1600
	Velocity Pressure (in H ₂ O)	.010	.016	.022	.031	.041	.062	.090	.122	.160
6	CFM	78	98	118	137	157	196	235	274	313
	Total Pressure	.05	.07	.10	.14	.18	.29	.41	.58	.72
	NC	< 20	< 20	< 20	< 20	<20	21	24	29	37
	Throw (ft)	2-3-6	3-4-7	4-5-9	4-5-10	5-6-11	6-8-12	7-9-13	8-10-15	9-11-16
8	CFM	140	175	209	244	279	349	419	489	559
	Total Pressure	.07	.10	.15	.21	.29	.42	.62	.84	1.00
	NC	< 20	< 20	< 20	<20	<20	25	30	38	45
	Throw (ft)	2-4-7	3-5-9	4-7-10	5-8-11	6-9-12	7-10-14	8-12-17	10-12-18	11-14-20

24" x 24" face

SIZE (inches)	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400	1600
	Velocity Pressure (in H ₂ O)	.010	.016	.022	.031	.041	.062	.090	.122	.160
6	CFM	78	98	118	137	157	196	235	274	313
	Total Pressure	.02	.03	.04	.05	.08	.1	.14	.19	.24
	NC	< 20	< 20	< 20	< 20	<20	23	27	32	37
	Throw (ft)	1-2-4	2-3-4	2-3-5	2-3-6	3-4-7	4-5-8	4-6-9	4-7-10	6-8-14
8	CFM	140	175	209	244	279	349	419	489	559
	Total Pressure	.02	.03	.04	.06	.08	.11	.17	.23	.29
	NC	< 20	< 20	< 20	<20	<20	28	32	36	41
	Throw (ft)	2-3-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-11	6-8-14	7-9-14	7-10-14
10	CFM	218	273	327	382	436	545	654	763	872
	Total Pressure	.03	.04	.06	.08	.11	.18	.24	.35	.48
	NC	< 20	< 20	< 20	<20	23	29	36	40	44
	Throw (ft)	3-4-6	4-5-8	4-6-10	5-7-12	6-8-14	7-9-15	8-11-16	9-12-17	10-13-19
12	CFM	314	393	471	550	628	785	941	1099	1246
	Total Pressure	.04	.06	.08	.13	.16	.25	.35	.50	.67
	NC	< 20	< 20	<20	21	24	31	38	43	47
	Throw (ft)	4-5-9	5-6-10	6-7-10	6-8-13	7-9-15	8-11-18	10-13-20	11-15-21	12-16-22
14	CFM	492>	615	738	861	984	1230	1476	1722	1968
	Total Pressure	.05	.08	.13	.16	.22	.32	.43	.59	.80
	NC	< 20	< 20	<20	22	27	34	40	43	47
	Throw (ft)	4-6-10	5-6-11	6-8-14	7-10-16	8-11-18	10-14-20	12-15-22	12-17-23	14-19-24

NC Value based on 10 db room attenuation.

Throw Values are based on isothermal air and terminal velocities of 150 fpm, 100 fpm & 75 fpm respectively.

Total Pressure the sum of static pressure plus velocity pressure and is given in inches w.g.

HOW TO ORDER

ISO-R4-2-S-W3 2408 /W

MODEL SERIES

Standard **ISO**
Insulated **ISOI**

INSULATION (OPTIONAL)

Standard is uninsulated

R4.2 Taped Insulation **-R4**

R6 Taped Insulation **-R6**

ISOI - Do not specify **-**

COLLAR HEIGHT (OPTIONAL)

Standard is 1", no need to specify

2" Fixed Collar **-2**

3" Telescopic Collar **-3**

ISOI - Do not specify **-**

PACKAGING (OPTIONAL)

Standard is 2 per box

Single Box **-S**

FINISH (OPTIONAL)

Standard is White

Custom colours

REFER TO CHART

/C

NECK DIAMETER

ISO Only

06-08-10-12-14"

FACE DIMENSIONS

ISO Only

12" x 12" **12**

24" x 24" **24**

DIRECTION (OPTIONAL)

Standard is 4 Way **-**

1 Way **-W1**

2 Way Corner **-WC**

2 Way Opposed **-WO**

3 Way **-W3**

SQUARE DIFFUSERS



MODELS ISOH, ISOHI ARCHITECTURAL LINE Square Heavy Duty Plaque Diffuser

MODEL **ISOH** - Round Neck

MODEL **ISOHI** - Pre-scored for collars - R6 Insulated

ISO series supply diffusers are recommended for heating, ventilating, and cooling. The ISO series provide a 360° air diffusion pattern similar to a full round diffuser. High diffusion induction rates result in rapid temperature and velocity equalization of the mixed air mass well above the zone of occupancy. Horizontal performance assures confident use of cooling temperature differential of 30°F and greater, at predicted low air motion 35 fpm in the zone of occupancy. ISO series supply diffusers perform efficiently with air loadings of 6 to 30 air changes per hour (based on 10 ft. ceiling height), and sound level range of NC 25 to 35.

Features:

- Full face 24" x 24" for all neck sizes. ISO only
- Full face 12" x 12" for 6" & 8" neck sizes. ISO only
- Heavy-gauge all-steel construction
- Ideal for VAV systems
- Powder paint coating - White (default) Custom colours avail.
- Matching OBD dampers, NBI baffle, and PF plaster frame available.

ISOH Model Size	Neck Dia	Nominal Face Size	Overall Face Size B x B	Drywall Ceiling Opening
1206	6	12 x 12	11 ³ / ₄ x 11 ³ / ₄	10 ¹ / ₂ x 10 ¹ / ₂
1208	8	12 x 12	11 ³ / ₄ x 11 ³ / ₄	10 ¹ / ₂ x 10 ¹ / ₂
2406	6	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2408	8	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2410	10	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2412	12	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂
2414	14	24 x 24	23 ³ / ₄ x 23 ³ / ₄	22 ¹ / ₂ x 22 ¹ / ₂

Model	Nominal Face Size	Overall Face Size B x B
ISOHI	24 x 24	23 ³ / ₄ x 23 ³ / ₄

All dimensions in inches



ISOHI fiberglass back.



ISOH

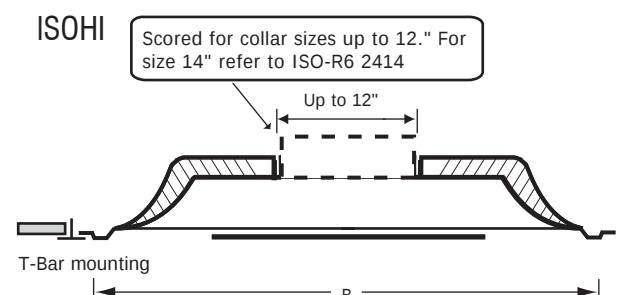
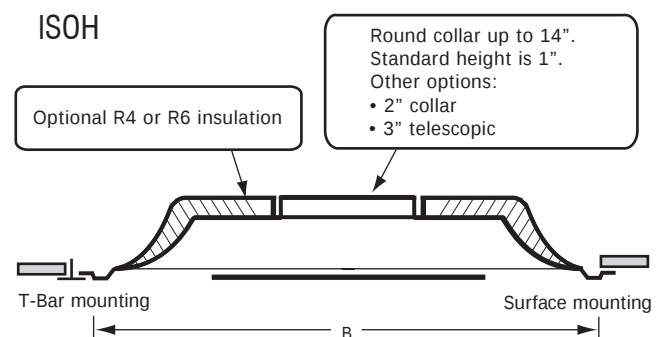
Highlights:

- **ISO** model suits both T-Bar and Drywall installation using rigid ducts
- Removable core for access to optional damper

Insulation:

ISO - Optional R4 or R6 insulation. R6 fiberglass insulation complies with A.S.T.M. E84 flame and smoke test. Only available on models with 24" x 24" face.

ISOI - R6 fibreglass insulation.



ENGINEERING PERFORMANCE DATA

MODEL ISOH

SQUARE PANEL



12" x 12" face

SIZE (inches)	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400	1600
	Velocity Pressure (in H ₂ O)	.010	.016	.022	.031	.041	.062	.090	.122	.160
6	CFM	78	98	118	137	157	196	235	274	313
	Total Pressure	.05	.07	.10	.14	.18	.29	.41	.58	.72
	NC	< 20	< 20	< 20	< 20	< 20	21	24	29	37
	Throw (ft)	2-3-6	3-4-7	4-5-9	4-5-10	5-6-11	6-8-12	7-9-13	8-10-15	9-11-16
8	CFM	140	175	209	244	279	349	419	489	559
	Total Pressure	.07	.10	.15	.21	.29	.42	.62	.84	1.00
	NC	< 20	< 20	< 20	< 20	< 20	25	30	38	45
	Throw (ft)	2-4-7	3-5-9	4-7-10	5-8-11	6-9-12	7-10-14	8-12-17	10-12-18	11-14-20

24" x 24" face

SIZE (inches)	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400	1600
	Velocity Pressure (in H ₂ O)	.010	.016	.022	.031	.041	.062	.090	.122	.160
6	CFM	78	98	118	137	157	196	235	274	313
	Total Pressure	.02	.03	.04	.05	.08	.1	.14	.19	.24
	NC	< 20	< 20	< 20	< 20	< 20	23	27	32	37
	Throw (ft)	1-2-4	2-3-4	2-3-5	2-3-6	3-4-7	4-5-8	4-6-9	4-7-10	6-8-14
8	CFM	140	175	209	244	279	349	419	489	559
	Total Pressure	.02	.03	.04	.06	.08	.11	.17	.23	.29
	NC	< 20	< 20	< 20	< 20	< 20	28	32	36	41
	Throw (ft)	2-3-5	2-3-7	3-4-8	3-5-8	4-6-9	5-7-11	6-8-14	7-9-14	7-10-14
10	CFM	218	273	327	382	436	545	654	763	872
	Total Pressure	.03	.04	.06	.08	.11	.18	.24	.35	.48
	NC	< 20	< 20	< 20	< 20	23	29	36	40	44
	Throw (ft)	3-4-6	4-5-8	4-6-10	5-7-12	6-8-14	7-9-15	8-11-16	9-12-17	10-13-19
12	CFM	314	393	471	550	628	785	941	1099	1246
	Total Pressure	.04	.06	.08	.13	.16	.25	.35	.50	.67
	NC	< 20	< 20	< 20	21	24	31	38	43	47
	Throw (ft)	4-5-9	5-6-10	6-7-10	6-8-13	7-9-15	8-11-18	10-13-20	11-15-21	12-16-22
14	CFM	492>	615	738	861	984	1230	1476	1722	1968
	Total Pressure	.05	.08	.13	.16	.22	.32	.43	.59	.80
	NC	< 20	< 20	< 20	22	27	34	40	43	47
	Throw (ft)	4-6-10	5-6-11	6-8-14	7-10-16	8-11-18	10-14-20	12-15-22	12-17-23	14-19-24

NC Value based on 10 db room attenuation.

Throw Values are based on isothermal air and terminal velocities of 150 fpm, 100 fpm & 75 fpm respectively.

Total Pressure the sum of static pressure plus velocity pressure and is given in inches w.g.

HOW TO ORDER

ISOH-R4-2-S-W3 2408 /W

MODEL SERIES

Standard Plaque **ISOH**
Insulated Plaque **ISOHI**

FINISH (OPTIONAL)

Standard is White
See custom chart

/C

INSULATION (OPTIONAL)

Standard is uninsulated

R4.2 Taped Insulation **-R4**

R6 Taped Insulation **-R6**

ISOHI - Do not specify **-**

COLLAR HEIGHT (OPTIONAL)

Standard is 1", no need to specify

2" Fixed Collar **-2**

3" Telescopic Collar **-3**

ISOHI - Do not specify **-**

PACKAGING (OPTIONAL)

Standard is 2 per box

Single Box **-S**

NECK DIAMETER

ISOH Only

06-08-10-12-14"

FACE DIMENSIONS

ISOH Only

12" x 12" **12**

24" x 24" **24**

DIRECTION (OPTIONAL)

Standard is 4 Way **-**

1 Way **-W1**

2 Way Corner **-WC**

2 Way Opposed **-WO**

3 Way **-W3**

PERFORATED DIFFUSERS



MODELS PSI, PSIL & PRI with R6 Plenum

MODELS PSI & PSIL - Supply Diffusers

PSI Supply Diffusers have high diffusion induction rates resulting in rapid temperature and velocity equalization of the mixed air mass well above the zone of occupancy.

The horizontal performance of their air pattern baffle or optional directional louvers ensure confident use of cooling differentials of 25° F and greater, at predicted low air motion 35 fpm in the zone of occupancy.

PSI Supply Diffusers perform efficiently with air loadings of 1 to 3 cfm per square feet of floor area, or 6 to 20 air changes per hour (based on 10 ft. ceiling height) and sound level range of NC 25 to 35.



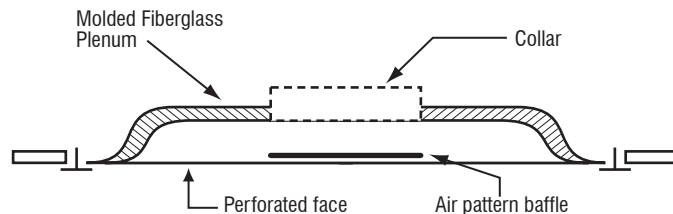
**PSI
PSIL
PRI**

MODEL PRI - Return Diffusers

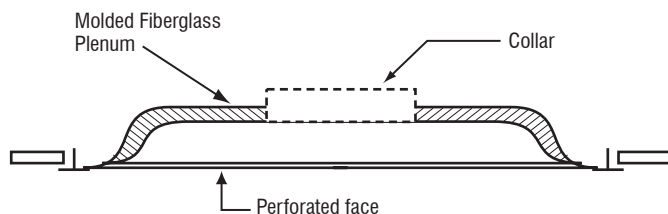
PRI Return Diffusers are similar to PSI but with the air pattern baffle removed. They are matched in appearance.

FEATURES

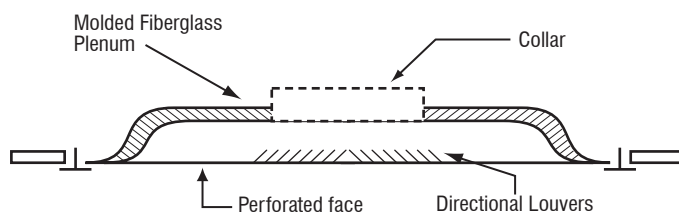
- Heavy gauge all steel construction.
- 24" X 24" face for neck sizes 6"-8"-10"-12"-14" D.
- Compatible with VAV Systems.
- Powder paint coating - White.
- Holes are $\frac{3}{16}$ " D. staggered $\frac{1}{4}$ " affording 53% free area.



Model PSI Standard - with Air Pattern Baffle



Model PRI - No Baffle



Model PSIL - with Directional Louvers

HOW TO ORDER

MODEL SERIES		PSI /W
Supply - Round Baffle	PSI	FINISH (OPTIONAL) Standard is White (/W) See chart for more
Supply - Directional Baffles	PSIL	
Return	PRI	

ENGINEERING PERFORMANCE DATA

PERFORATED



MODEL PSI & PSIL - Supply Diffusers

24" x 24" face

NECK SIZE	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400
	Velocity Pressure (in H ₂ O)	.010	.016	.022	.031	.041	.062	.090	.122
6"	CFM	78	98	118	137	157	196	235	274
	Total Pressure	.017	.027	.038	.053	.069	.109	.159	.215
	NC	< 20	< 20	< 20	21	27	32	37	41
	Throw (ft)	1-2-3	1-2-4	2-3-5	2-3-6	2-4-7	3-5-8	4-6-9	5-7-10
8"	CFM	140	175	209	244	279	349	419	489
	Total Pressure	.018	.028	.040	.054	.071	.109	.160	.216
	NC	< 20	< 20	< 20	24	27	33	37	42
	Throw (ft)	1-3-5	2-3-6	2-4-7	3-5-8	4-6-10	5-8-12	6-9-14	7-10-15
10"	CFM	218	273	327	382	436	545	654	763
	Total Pressure	.018	.026	.039	.054	.071	.109	.160	.216
	NC	< 20	< 20	< 20	23	28	36	41	47
	Throw (ft)	2-4-6	3-4-7	3-5-8	4-7-10	5-8-12	5-9-14	6-11-16	7-13-18
12"	CFM	314	393	471	550	628	785	941	1099
	Total Pressure	.019	.029	.041	.057	.072	.111	.163	.218
	NC	< 20	< 20	20	25	30	39	43	49
	Throw (ft)	2-5-7	3-5-8	3-7-10	4-8-12	5-9-14	7-11-16	8-12-18	10-14-21
14"	CFM	492	615	738	861	984	1230	1476	1722
	Total Pressure	.021	.032	.043	.075	.092	.141	.193	.261
	NC	< 20	< 20	21	26	34	40	45	50
	Throw (ft)	3-6-9	4-7-10	4-8-12	5-9-13	6-10-15	8-12-18	10-14-21	12-17-24

NC Value based on 10 db room attenuation.

Throw Values are based on isothermal air and thermal velocities of 150 fpm, 100 fpm & 75 fpm respectively.

Total Pressure the sum of static pressure plus velocity pressure and is given in inches w.g.

MODEL PRI - Return Diffusers

24" x 24" face

NECK SIZE	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400
	Velocity Pressure (in H ₂ O)	0.010	0.015	0.022	0.031	0.040	0.062	0.090	0.122
	Static Pressure (in H ₂ O)	-0.026	-0.042	-0.060	-0.078	-0.104	-0.160	-0.212	-0.290
6"	CFM	78	98	118	13	15	196	235	27
	NC	< 20	< 20	< 20	< 20	< 20	20	23	26
8"	CFM	140	175	209	244	279	349	419	489
	NC	< 20	< 20	< 20	21	22	24	27	29
10"	CFM	218	273	327	382	436	545	654	763
	NC	< 20	< 20	21	23	25	28	30	32
12"	CFM	314	393	471	550	628	785	941	1099
	NC	< 20	20	24	26	28	31	34	36
14"	CFM	430	534	642	748	858	1072	1286	1500
	NC	22	25	28	30	32	35	37	39
16"	CFM	558	698	836	978	1110	1390	1666	1950
	NC	26	28	30	34	37	40	43	46

PERFORATED DIFFUSERS



MODELS PSM, PSML, PRM with Metal Plenum

MODELS PSM & PSML - Supply Diffusers

PSM Supply Diffusers have high diffusion induction rates resulting in rapid temperature and velocity equalization of the mixed air mass well above the zone of occupancy.

The horizontal performance of their standard air pattern baffle or optional directional louvers ensure confident use of cooling differentials of 25°F and greater at predicted low air motion 35 fpm in the zone of occupancy.

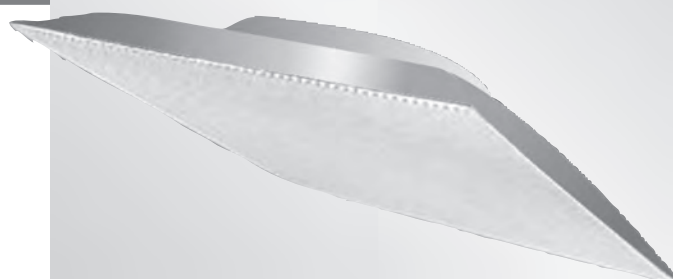
PSM Supply diffusers perform efficiently with air loadings of 1 to 3 cfm per square feet of floor area, or 6 to 20 air changes per hour (based on 10 ft. ceiling height) and sound level range of NC 25 to 35.

MODEL PRM - Return Diffusers

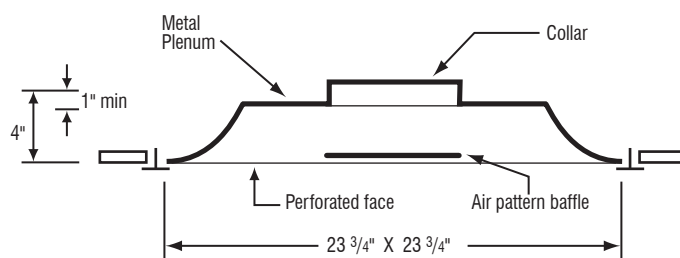
PRM Return Diffusers are similar to PSM but with the air pattern baffle removed. They are matched in appearance.

FEATURES

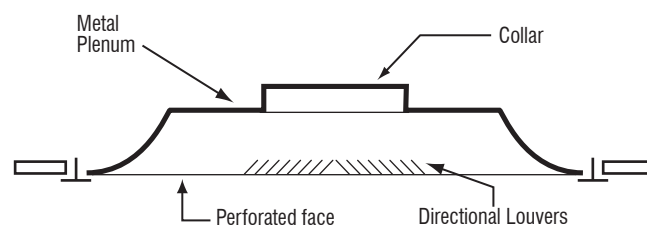
- Heavy gauge all steel construction.
- 24" X 24" face for neck sizes 6"-8"-10"-12"-14" D.
- Compatible with VAV Systems.
- Powder paint coating - White.
- Holes are $\frac{3}{16}$ " D. staggered $\frac{1}{4}$ " affording 53% free area.



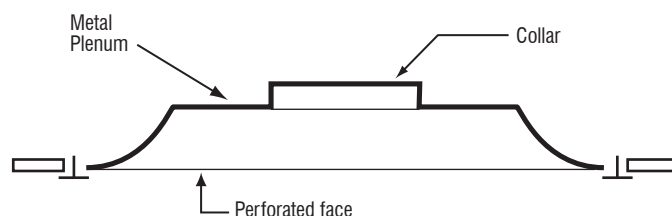
**PSM
PSML
PRM**



Model PSM - with Air Pattern Baffle



Model PSML - with Directional Louvers



Model PRM - No Baffles

HOW TO ORDER

PSM-R4-2-S		2408 /W	
MODEL SERIES		FINISH (OPTIONAL)	
Supply - Round Baffle	PSM	Standard is White (/W)	
Supply - Directional Baffles	PSML	See chart for more	
Return	PRM		
INSULATION (OPTIONAL)		NECK DIAMETER	
Standard is uninsulated		In Inches	
R4.2 Taped Insulation	-R4	06-08-10-12-14"	
R6 Taped Insulation	-R6		
COLLAR HEIGHT (OPTIONAL)		FACE DIMENSIONS	
Standard is 1", no need to specify		24" x 24" 24	
2" Fixed Collar	-2	PACKAGING (OPTIONAL)	
3" Telescopic Collar	-3	Standard is 2 per box	
		Single Box -S	

ENGINEERING PERFORMANCE DATA

PERFORATED



AIRVECTOR®

MODEL PSM - Supply Diffusers

24" x 24" face

NECK SIZE	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400
	Velocity Pressure (in H ₂ O)	.010	.016	.022	.031	.041	.062	.090	.122
6"	CFM	78	98	118	137	157	196	235	274
	Total Pressure	.017	.027	.038	.053	.069	.109	.159	.215
	NC	< 20	< 20	< 20	21	27	32	37	41
	Throw (ft)	1-2-3	1-2-4	2-3-5	2-3-6	2-4-7	3-5-8	4-6-9	5-7-10
8"	CFM	140	175	209	244	279	349	419	489
	Total Pressure	.018	.028	.040	.054	.071	.109	.160	.216
	NC	< 20	< 20	< 20	24	27	33	37	42
	Throw (ft)	1-3-5	2-3-6	2-4-7	3-5-8	4-6-10	5-8-12	6-9-14	7-10-15
10"	CFM	218	273	327	382	436	545	654	763
	Total Pressure	.018	.026	.039	.054	.071	.109	.160	.216
	NC	< 20	< 20	< 20	23	28	36	41	47
	Throw (ft)	2-4-6	3-4-7	3-5-8	4-7-10	5-8-12	5-9-14	6-11-16	7-13-18
12"	CFM	314	393	471	550	628	785	941	1099
	Total Pressure	.019	.029	.041	.057	.072	.111	.163	.218
	NC	< 20	< 20	20	25	30	39	43	49
	Throw (ft)	2-5-7	3-5-8	3-7-10	4-8-12	5-9-14	7-11-16	8-12-18	10-14-21
14"	CFM	492	615	738	861	984	1230	1476	1722
	Total Pressure	.021	.032	.043	.075	.092	.141	.193	.261
	NC	< 20	< 20	21	26	34	40	45	50
	Throw (ft)	3-6-9	4-7-10	4-8-12	5-9-13	6-10-15	8-12-18	10-14-21	12-17-24

NC Value based on 10 db room attenuation.

Throw Values are based on isothermal air and terminal velocities of 150 fpm, 100 fpm & 75 fpm respectively.

Total Pressure the sum of static pressure plus velocity pressure and is given in inches w.g.

MODEL PRM - Return Diffusers

24" x 24" face

NECK SIZE	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400
	Velocity Pressure (in H ₂ O)	0.010	0.015	0.022	0.031	0.040	0.062	0.090	0.122
	Static Pressure (in H ₂ O)	-0.026	-0.042	-0.060	-0.078	-0.104	-0.160	-0.212	-0.290
6"	CFM	78	98	118	13	15	196	235	27
	NC	< 20	< 20	< 20	< 20	< 20	20	23	26
8"	CFM	140	175	209	244	279	349	419	489
	NC	< 20	< 20	< 20	21	22	24	27	29
10"	CFM	218	273	327	382	436	545	654	763
	NC	< 20	< 20	21	23	25	28	30	32
12"	CFM	314	393	471	550	628	785	941	1099
	NC	< 20	20	24	26	28	31	34	36
14"	CFM	430	534	642	748	858	1072	1286	1500
	NC	22	25	28	30	32	35	37	39
16"	CFM	558	698	836	978	1110	1390	1666	1950
	NC	26	28	30	34	37	40	43	46

CEILING RETURNS



EGGCRATE-ER SERIES

Series **ER** grilles and registers have grid cores capable of transferring or returning high air volumes with minimum air pressure loss. They match in appearance grid louvers on luminaires. Models **ERT** - **ERU** - **ERN** fit lay-in tee bar openings in suspended grid ceilings. Model **ERI** comes with fiberglass back panel and Model **ERM** comes with a steel back panel. Both **ERI** and **ERM** fit lay-in tee bar openings. Model **ERE** is the matching return grille. It fits overlap openings in solid ceilings and walls.

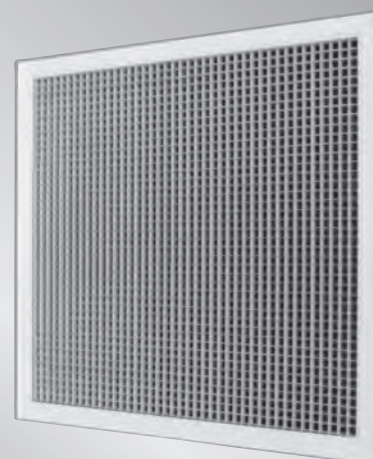
FEATURES

All Aluminium grilles

- Grid is $\frac{1}{2}" \times \frac{1}{2}" \times \frac{1}{2}"$.
- Frame is of extruded aluminium.
- Suitable for T-bar installations (Overall size = Listed size - $\frac{1}{4}"$).
Model **ERT** (fig. 1) with $1\frac{1}{4}"$ wide "L" frame.
Model **ERU** (fig. 2) with "U" frame.
Model **ERN** (fig. 3) $\frac{1}{2}" \times \frac{1}{2}" \times \frac{1}{2}"$. Aluminium core only.
Custom Sizing Available.
Model **ERN1** (fig. 3) $\frac{1}{2}" \times \frac{1}{2}" \times 1"$. Model **ERN111** (fig. 3) $1" \times 1" \times 1"$. Aluminium core only. Fixed Sizes Only.
Model **ERI** (fig. 4) aluminium core with molded fiberglass back and aluminium foil vapor barrier scored for 6" to 14" D.
Model **ERM** (fig. 5) aluminium core with steel back panel.
- Suitable also for overlap installations, including drywall.
(Collar size = Listed duct size - $\frac{1}{4}"$).
Model **ERE** return grille (fig. 6) with $1\frac{1}{4}"$ wide margin has countersunk mounting screw holes as standard feature. (Screws are provided).
Model **ERE** return grille is available with plaster frame (**ERE-F**) for use as plaster stop or as separate frame to facilitate grille removal.

Plastic grilles

- Model **ERN-P** (fig. 3) with plastic core.
- Grid is $\frac{1}{2}" \times \frac{1}{2}" \times \frac{3}{8}"$.
- Standard grille and panel sizes:
 $24" \times 12"$ / $24" \times 24"$ / $24" \times 48"$.
Other sizes are available in one piece up to $48" \times 24"$.



ERT



ERM

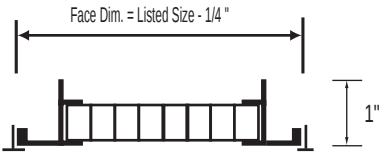
Available Dimensions:
ERT, ERU, ERN, ERE

MIN. W X H	MAX. W X H
6" x 4"	Any even dimension up to 48" x 24"
2" increments of width and height.	
Multiple sections furnished for sizes greater than maximum width and height.	

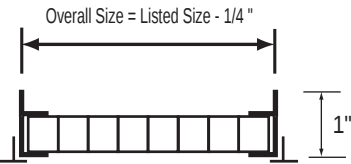
Installation Options

T-BAR INSTALLATIONS

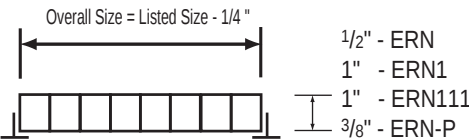
Model ERT
(With "L" frame)
Fig.1



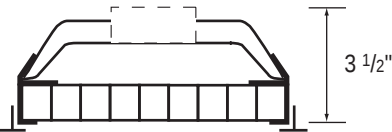
Model ERU
(with "U" frame)
Fig. 2



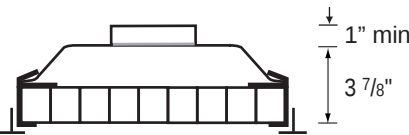
Model ERN, ERN1,
& ERN111 Aluminium
Model ERN-P Plastic
(Core only)
Fig. 3



Model ERI
(w/ fibreglass back panel)
Fig. 4

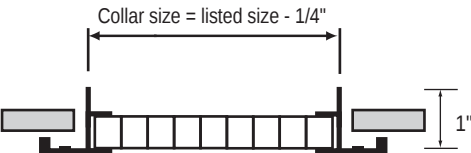


Model ERM
(w/ steel back panel)
Fig. 5



DRY WALL AND SURFACE MOUNT INSTALLATIONS

Model ERE (Return
Grille)
(Overlap frame)
Fig. 6



ENGINEERING PERFORMANCE DATA

ER SERIES



		NC 20-25 Application Non-Ducted		NC 25-30 Application Ducted		NC 30-40 Application Ducted	
		Ps		Ps		Ps	
Listed Size W x H (inches)	Ak	-0.02"	-0.03"	-0.08"	-0.10"	-0.15"	-0.20"
		CFM	CFM	CFM	CFM	CFM	CFM
10 x 6 12 x 6 10 x 8 12 x 8	.42 .50 .53 .63	140 170 195 235	170 210 240 290	280 340 390 475	315 380 440 530	385 465 535 645	445 535 615 745
10 x 10 18 x 6 12 x 12 18 x 12	.64 .75 .89 1.3	245 260 370 575	305 320 455 710	500 525 745 1155	560 590 835 1295	685 720 1020 1580	790 830 1170 1820
22 x 10 24 x 12 18 x 18 30 x 12	1.4 1.7 1.9 2.2	630 770 890 985	775 945 1095 1210	1260 1540 1785 1950	1410 1725 2000 2180	1720 2100 2440 2660	1980 2420 2780 3060
24 x 18 36 x 12 22 x 22 30 x 18	2.5 2.7 2.8 3.2	1200 1290 1340 1535	1470 1590 1650 1890	2400 2600 2700 3090	2690 2910 3020 3450 3280	3550 3680 4210	3770 4100 4240 4850
24 x 24 36 x 18 30 x 24 34 x 22	3.3 3.8 4.1 4.3	1620 1830 2040 2170	1990 2250 2510 2670	3250 3670 4100 4360	3640 4110 4590 4875	4440 5020 5600 5950	5125 5775 6450 6860
36 x 24 36 x 30 34 x 34 48 x 24	4.9 6.1 6.3 6.6	2470 3120 3190 3340	3040 3840 3930 4100	4960 6275 6425 6700	5550 7040 7200 7500	7650 8575 8775 9150	7775 9900 10100 10500
48 x 30 48 x 36 46 x 46	8.1 9.7 11.6	4190 5060 6100	5150 6240 7475	8400 10200 12200	9400 11400 13700	11425 13925 16700	13150 16100 19300

HOW TO ORDER

EXAMPLE :

T for T-bar with "L" frame
 U for T-bar with "U" frame
 N, N1, N111 for
 Aluminium core only
 N-P for Plastic core only
 M for steel back panel
 E for Drywall
 E-F with plaster frame
 I for R6 Insulated back

ERT

2412

Listed
size

EGG CRATE FILTER GRILLES



MODELS ERMF-ERIF-ERTF

FOR T-BAR LAY-IN INSTALLATION

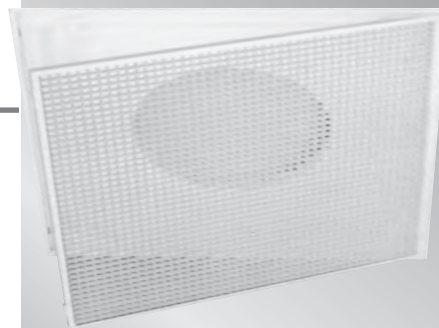
Series **ER** filter grilles have grid cores capable of transferring or returning high air volumes with minimum air pressure loss. They match in appearance grid louvers on luminaries.

The core consists of a 1/2" x 1/2" x 1/2" aluminum grid in a sturdy extruded aluminum U frame which swings in or out of the fixed back pan for easy access to the 1" standard filter or filter media (supplied by others). Two locking arms opposite to the two concealed hinges provide secure locking of the core in an unobtrusive manner.

Model **ERMF** has steel back pan with heavy gauge steel reinforcing corners equivalent to 18 ga. so as to minimize damage due to handling.

Model **ERIF** has an insulated back pan consisting of a fixed extruded aluminum frame and a molded fiberglass pan suitable for round duct connections up to 14" D. and scored for easy cutting of collar opening. This model has all aluminum metal components with sturdy corners so as to minimize damage due to handling.

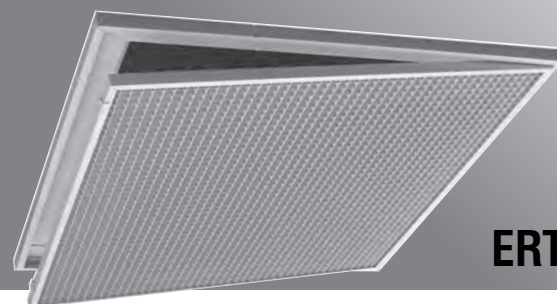
Model **ERTF** has a square filter frame to accommodate 20" x 20" filters and ducts of the same listed size. This model has sturdy corners so as to minimize damage due to handling.



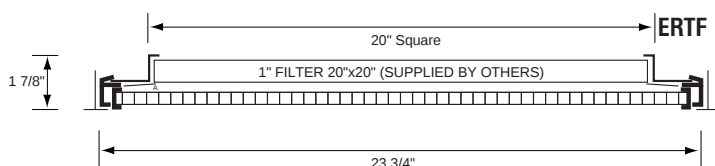
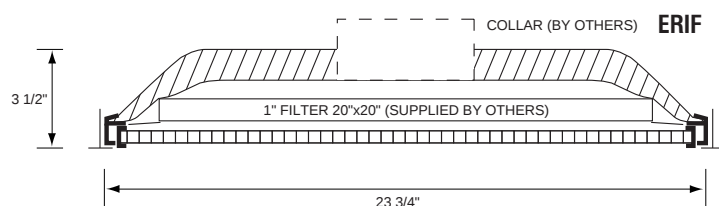
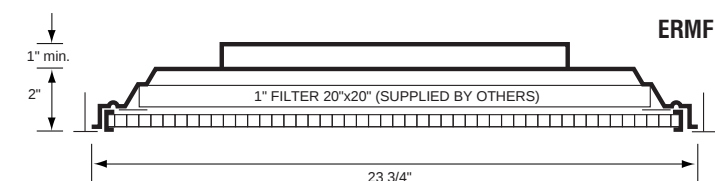
ERMF



ERIF



ERTF



PLASTIC EGG CRATES

All grilles are available with plastic core. Please specify by adding suffix "P". Example: ERMF-P, ERIF-P, ERTF-P etc. Plastic grid is 1/2" x 1/2" x 3/8".

HOW TO ORDER

- M** For metal back pan
- I** For molded f. glass back pan
- T** For rectangular duct connection

ERMF-P 24 08
 Collar Size
 24" x 24"
 Face Size
 For plastic core add suffix "P"

MODELS LRMF-LRIF-LRTF

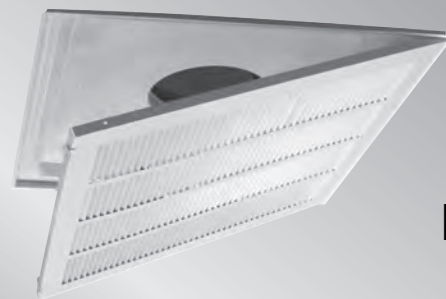
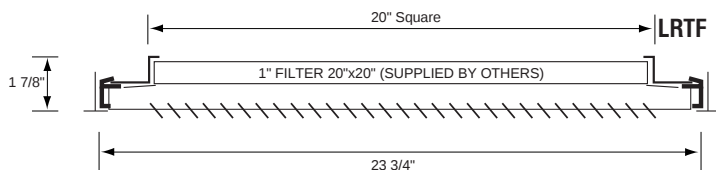
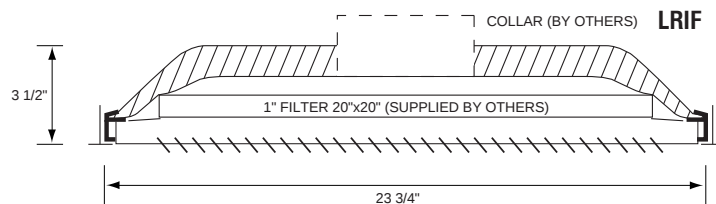
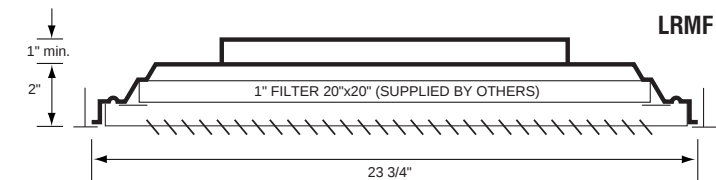
FOR TEE BAR LAY-IN INSTALLATIONS

Series **LR** filter grilles have their face lanced with rows of fins capable of transferring or returning high air volumes with minimum air pressure loss. The fins are set at 40° and spaced 1/2" apart. The face swings in or out of the fixed back pan for easy access to the 1" standard filter or filter media (supplied by others). Two locking arms opposite to the two concealed hinges provide secure locking of the face in an unobtrusive manner.

Model **LRMF** has steel back pan with heavy gauge steel reinforcing corners equivalent to 18 ga. so as to minimize damage due to handling.

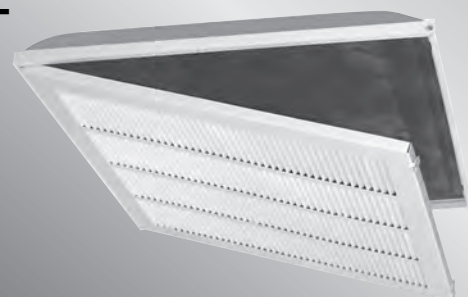
Model **LRIF** has an insulated back pan consisting of a fixed extruded aluminum frame and a molded fiberglass pan suitable for round duct connections up to 14" D. and scored for easy cutting of collar opening. This model has sturdy corners so as to minimize damage due to handling.

Model **LRTF** has a square filter frame to accommodate 20" x 20" filters and ducts of the same listed size. This model has sturdy corners so as to minimize damage due to handling.

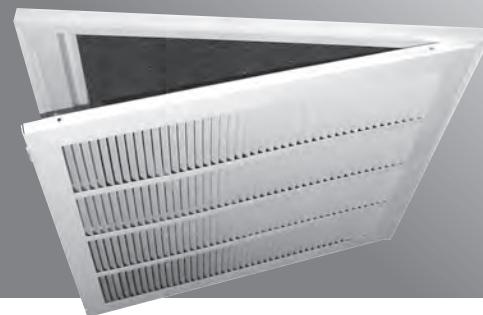


LRMF

LRIF



LRTF



HOW TO ORDER

M	For metal back pan	LRMF	24 08
I	For molded f. glass back pan		
T	For rectangular duct connection		
			Collar Size
			24" x 24" Face Size

MODELS PRMF-PRIF-PRTF

FOR TEE BAR LAY-IN INSTALLATIONS

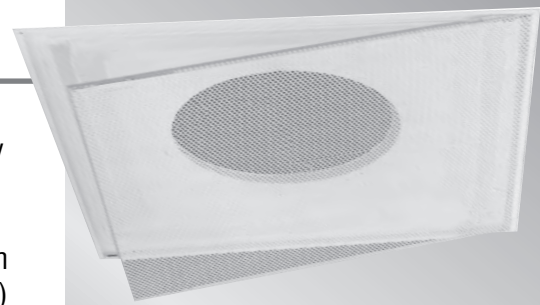
Series **PR** filter grilles match in appearance perforated face supply diffusers series PS.

The grille consists of a heavy gauge steel perforated face with 3/16" D. round holes on 1/4" staggered centers (53% free area) which swings in or out of the fixed back pan for easy access to the 1" filter 20" x 20" (supplied by others). Two locking arms opposite to the two concealed hinges provide secure locking of the grille in an unobtrusive manner.

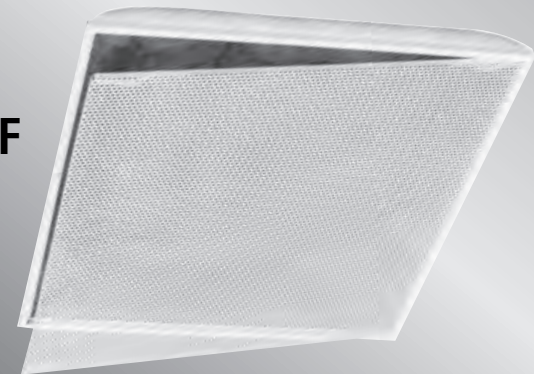
Model **PRMF** has steel back pan with 20" x 20" square filter frame, heavy gauge steel reinforcing corners equivalent to 18 ga. so as to minimize damage due to handling. Extruded round collars will accommodate ducts 6", 8", 10", 12" & 14" D.

Model **PRIF** has an insulated back pan consisting of a fixed extruded aluminum frame and a molded fiberglass pan suitable for round ducts connections up to 14" D. and scored for easy cutting of collar opening. The extruded aluminum frame has sturdy corners so as to minimize damage due to handling.

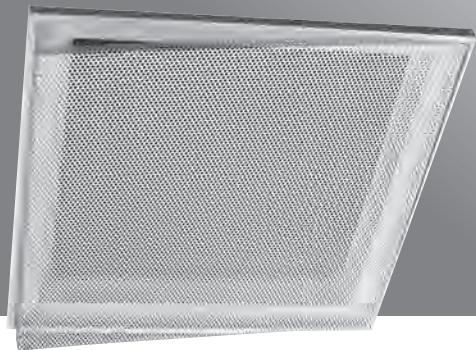
Model **PRTF** has a square filter frame to accommodate 1" filters 20" x 20" and ducts of same listed size. The extruded aluminum frame has sturdy corners so as to minimize damage due to handling.



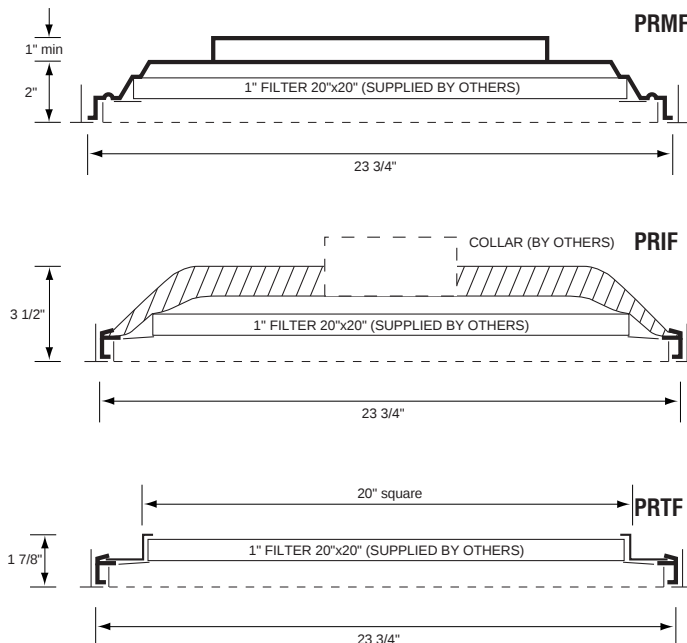
PRMF



PRIF



PRTF



HOW TO ORDER

M	For metal back pan	PR M F	24 08
I	For molded f. glass back pan		
T	For rectangular duct connection		
			Collar Size
			24" x 24" Face Size

GRILLES & REGISTERS



	ALUMINUM	STEEL	
MODELS	GAA1	GSA1	supply, single deflection
	GAA2	GSA2	supply, double deflection
	GAA4	GSA4	return, single row fixed 45 degree

FRONT ROW BLADES DIRECTION:

Parallel to width, (default) or add suffix H
Parallel to height, add suffix V

DAMPERS: Grilles (no damper)

Register (with damper):
For registers with steel opposed blade damper: add suffix 7

Single deflection supply grilles and registers are recommended for applications requiring pattern adjustability in a single horizontal or vertical plane, sill or sidewall location at ceiling line, or heating application only.

Double-deflection supply grilles and registers are recommended for application in systems requiring optimum flexibility of pattern change to accommodate changing job conditions.

The combination of streamlined foil shaped bars and 17 mm (2/3-inch) bar spacing maintains a high effective area capacity of greater than 80% which minimizes outlet velocity, reduces pressure drop and assures quiet operation. Individually adjustable bars are capable of shortening throw up to one-half with a wide spread deflection requiring only a 20% increase in outlet velocity at a fixed volume.

GAA Series (aluminum) have extruded aluminum frame with roll formed aluminum bars.

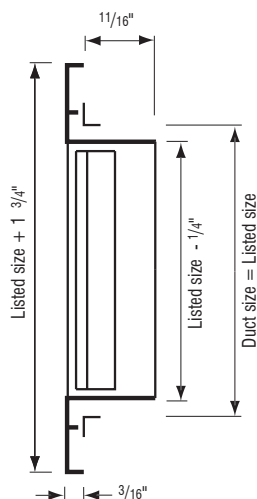
GSA Series (steel) have extruded aluminium frame with steel bars. This unique feature combines the beauty and rust resistance of the aluminium frame with the rigidity of steel bars.



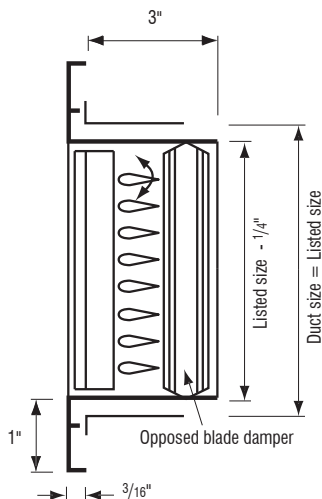
HOW TO ORDER

EXAMPLE: **GSA 2 7 -V 24" X 8"**
 Steel ————
 Double deflection ————
 O.B. damper ————
 Front blade parallel to height ————
 Listed height
 Listed width

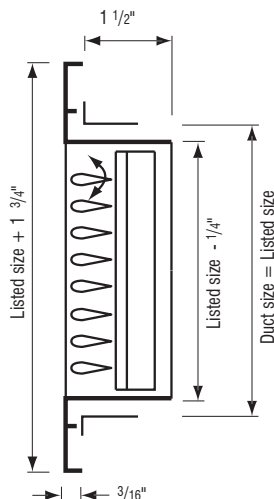
MAX. LISTED SIZE: 36"x36" (multiple sections furnished for larger sizes)
FINISH: Powder baked enamel paint for durability. White is standard.
 (Other finishes available)



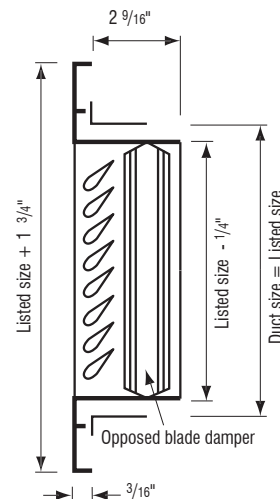
GSA10-V
Supply
Single Deflection



GSA27-V
Supply Double Deflection
with Damper



GSA20-H
Supply Double Deflection



GSA47-H
Return, fixed 45 degree
with Damper

ENGINEERING PERFORMANCE DATA

SUPPLY AIR GRILLES AND REGISTERS

Single and Double Deflection adjustable Type - Series GSA & GAA



AIR PATTERN SETTINGS

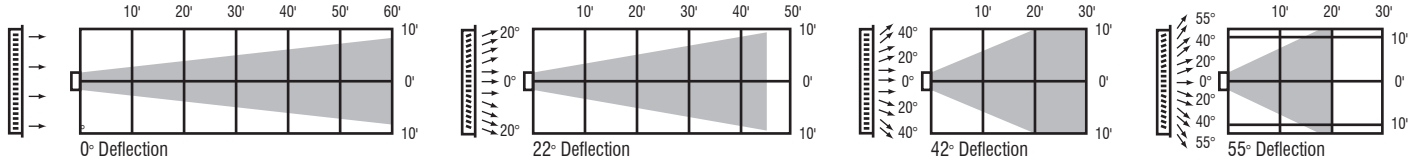


TABLE 1 (Cont'd)

LISTED HEIGHT											Outlet Velocity 900-1200 FPM					Outlet Velocity 1100-1450 FPM					Outlet Velocity 1250-1700 FPM					Outlet Velocity 1450-1900 FPM														
											CFM	Deflection				CFM	Deflection				CFM	Deflection				CFM	Deflection													
												0°	20°	40°	55°		0°	20°	40°	55°		0°	20°	40°	55°		0°	20°	40°	55°										
												V _k					V _k					V _k					V _k													
												900	1000	1100	1200		1100	1200	1300	1450		1250	1400	1550	1700		1450	1600	1750	1900										
												P _T					P _T					P _T					P _T													
.05 .06 .08 .09				.08 .09 .10 .13				.09 .12 .15 .18				.13 .16 .19 .3																												
Throw (T) V _r 75											Throw (T) V _r 75											Throw (T) V _r 75																		
4	5	6	8	10	12	14	16	18	20	24	80	13	11	9	7	100	15	13	11	8	125	18	15	13	10	175	20	17	14	11	125	19	16	13	10	150	22	19	15	12
6	5										100	15	13	11	8	125	18	15	13	10	175	20	17	14	11	125	19	16	13	10	150	21	18	14	11	175	25	21	17	13
10	8	6									150	17	14	12	9	175	20	17	14	11	200	24	20	17	13	200	24	20	17	13	225	27	23	19	15	225	27	23	19	15
12	10	8									200	18	15	13	10	250	22	19	15	12	275	25	21	18	14	275	25	21	18	14	325	29	25	21	17	325	29	25	21	17
14	12	10	8								250	21	18	15	11	300	15	21	18	14	350	28	25	20	15	350	28	25	20	15	400	33	28	24	18	400	33	28	24	18
18	14	12									300	24	20	16	13	350	27	24	20	15	425	31	27	22	17	425	31	27	22	17	475	36	32	26	20	475	36	32	26	20
20	16	14	10								350	25	21	18	14	425	30	25	21	17	500	34	30	25	19	500	34	30	25	19	550	39	32	27	21	550	39	32	27	21
24	20	16	12	10							450	27	23	19	15	550	32	28	24	18	625	37	32	27	22	625	37	32	27	22	725	42	36	31	24	725	42	36	31	24
30	24	20	14	12							600	29	25	21	16	725	35	30	26	20	850	41	35	30	23	850	41	35	30	23	950	45	40	34	26	950	45	40	34	26
38	30	24	18	14	12						700	32	28	24	18	850	39	33	28	21	975	45	39	33	25	975	45	39	33	25	1125	49	43	38	28	1125	49	43	38	28
40	32	26	20	16	14						800	34	30	25	19	950	41	35	30	22	1125	48	41	35	27	1125	48	41	35	27	1275	52	46	40	31	1275	52	46	40	31
44	36	30	24	18	16	14					900	36	31	26	20	1075	43	37	32	24	1250	51	43	37	28	1250	51	43	37	28	1450	55	49	42	32	1450	55	49	42	32
44	36	26	22	18	16						1000	39	33	28	22	1200	45	40	34	26	1400	53	45	39	30	1400	53	45	39	30	1600	58	51	44	34	1600	58	51	44	34
48	40	30	24	20	18	16					1200	42	36	31	24	1450	48	42	36	28	1675	57	48	42	32	1675	57	48	42	32	1925	61	54	46	36	1925	61	54	46	36
48		38	30	24	22	18					1400	45	39	34	26	1675	52	45	40	31	1950	60	51	45	35	1950	60	51	45	35	2250		58	49	40	2250		58	49	40
	40	32	28	24	20	18					1600	47	43	37	28	1925	56	48	43	34	2250		54	47	39	2250		54	47	39	2500		62	53	43	2500		62	53	43
	42	36	30	26	24	22	20				1800	49	44	40	31	2150	59	51	46	35	2500		57	50	41	2500		57	50	41	2750			56	46	2750			56	46
	46	42	36	30	26	24	22				2000	52	47	42	32	2400		54	49	38	2800		61	53	43	2800		61	53	43	3200			59	48	3200			59	48
		44	38	34	30	28	24				2500	56	50	45	34	3000		59	53	41	3500			58	47	3500			58	47	4000				54	4800			54	
		48	42	36	34	28	24				3000	60	54	48	36	3600			58	44	4200				52	4200				4800					4800				59	
			44	40	36	30	30				3500		59	53	40	4200				49	4900				56															
				48	42	36	42	36			4000			57	43	4800				54	5600			60																
				48	40		48	40			4500			60	45	5400				58																				
				42							5000				49																									
				48							6000				54																									

ENGINEERING PERFORMANCE DATA

SUPPLY AIR GRILLES AND REGISTERS

Single and Double Deflection adjustable Type - Series GSA & GAA



THROW FACTORS

Throw values (T) in Table 1 are based on a Terminal Velocity (V_T) of 75 fpm. Throw values at other terminal velocities (V_T 50 to V_T 150 fpm) are established by multiplying throw (T) in table 1 by Throw Factor in table below.

Multiply Throw (T) in Table 1 by Factor				
VT (fpm)	50	75	100	150
Throw factor	x 1.5	x 1.0	x .76	x .5

Grille sound ratings will be increased by integral or localized air volume dampering, by non-uniform air flow in the grille collar and by the addition of inherent system noise.

REGISTER THROTTLING CORRECTION

Damper throttling effect (excess pressure drop due to part closing of damper)	Press. Drop In. H ₂ O		
	.05"	.05"	.05"
Approximate damper opening	3/4	2/3	1/2
NC addition to single outlet sound rating	5	10	15

Damper throttling effect = excess pressure drop created by partially closing the register damper.

NC addition to be added to NC values of table 1.

Performance of any size not shown in the tables will be the same as for the size shown with the same listed size area.

EXAMPLE:

A 36 x 16 size (not shown) has a listed area of 576 sq. in. Its performance will be identical to a 24 x 24 size (shown) which has the same listed size area of 576 sq. in.

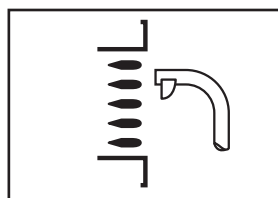
A_K OUTLET AREA IN SQ. FEET

	LISTED HEIGHT										DEFLECTION				
	4	5	6	8	10	12	14	16	18	20	24	0°	22°	42°	55°
LISTED WIDTH	6	5										.09	.08	.07	.06
	8	6										.11	.10	.09	.08
	10	8	6									.17	.15	.13	.12
	12	10	8									.22	.20	.18	.17
	14	12	10	8								.28	.25	.23	.21
	18	14	12									.33	.30	.27	.25
	20	16	14	10								.39	.35	.32	.29
	24	20	16	12	10							.50	.45	.41	.38
	30	24	20	14	12							.67	.60	.55	.50
	38	30	24	18	14	12						.78	.70	.64	.58
	40	32	26	20	16	14						.89	.80	.73	.67
	44	36	30	24	18	16	14					1.0	.90	.82	.75
	44	36		26	22	18	16					1.1	1.0	.91	.83
	48	40		30	24	20	18	16				1.3	1.2	1.1	1.0
	48			38	30	24	22	18				1.6	1.4	1.3	1.2
				40	32	28	24	20	18			1.8	1.6	1.5	1.3
				42	36	30	26	24	22	20		2.0	1.8	1.6	1.5
				46	42	36	30	26	24	22		2.2	2.0	1.8	1.7
					44		38	34	30	28	24	2.8	2.5	2.3	2.1
							48	42	36	34	28	3.3	3.0	2.7	2.5
							44	40		36	30	3.9	3.5	3.2	2.9
								48		42	36	4.5	4.0	3.6	3.3
										48	40	5.0	4.5	4.1	3.8
											42	5.6	5.0	4.5	4.2
											48	6.7	6.0	5.4	5.0

Example;

Listed size 24 x 10 GAA27 deflection setting 42° A_K area = 1.1 sq. feet.

AIR MEASUREMENT



2220A Velometer Jet for V_K velocity measurement CFM = $A_K \times V_K$

ENGINEERING PERFORMANCE DATA

SUPPLY AIR GRILLES AND REGISTERS

Single and Double Deflection adjustable Type - Series GSA & GAA



Total air drop from sidewall outlet

The drop of an air stream varies directly with cooling temperature differential, throw and inversely with outlet velocity (V_k). The total drop of a cooled air stream is tabulated for two typical conditions of cooling temperature differentials and a range of throws and outlet velocities.

V_k in fpm	Sidewall Throw In Feet													
	10		15		20		25		30		40		50	
	- 18F	- 25F	- 18F	- 25F	- 18F	- 25F	- 18F	- 25F	- 18F	- 25F	- 18F	- 25F	- 18F	- 25F
500	3.5	4.0	5.5	6.0	7.5	8.5	9.0	10.0	10.5	13.5	15.5	18.0	18.5	23.0
750	2.5	3.5	4.0	5.5	6.0	6.5	7.0	8.0	8.5	10.5	11.5	14.5	15.0	18.5
1000	2.0	3.0	3.5	4.0	5.0	5.5	6.0	6.5	7.0	8.5	10.0	12.0	12.5	16.0
1250	2.0	2.5	3.0	3.5	4.5	5.0	5.5	6.0	6.5	7.5	9.0	11.0	11.5	13.5
1500	1.5	2.0	3.0	3.0	4.0	4.5	5.0	5.5	6.0	7.0	8.5	9.5	10.5	12.5
1750	1.0	2.0	2.5	2.5	3.5	4.0	4.5	5.0	5.5	6.5	8.0	9.0	10.0	11.5
2000	1.0	1.5	2.5	2.5	3.5	4.0	4.0	4.5	5.0	6.0	7.5	8.5	9.5	10.5

TOTAL AIR DROP

DROP DUE TO SPREAD + DROP DUE TO COOLING TEMPERATURE DIFFERENTIAL

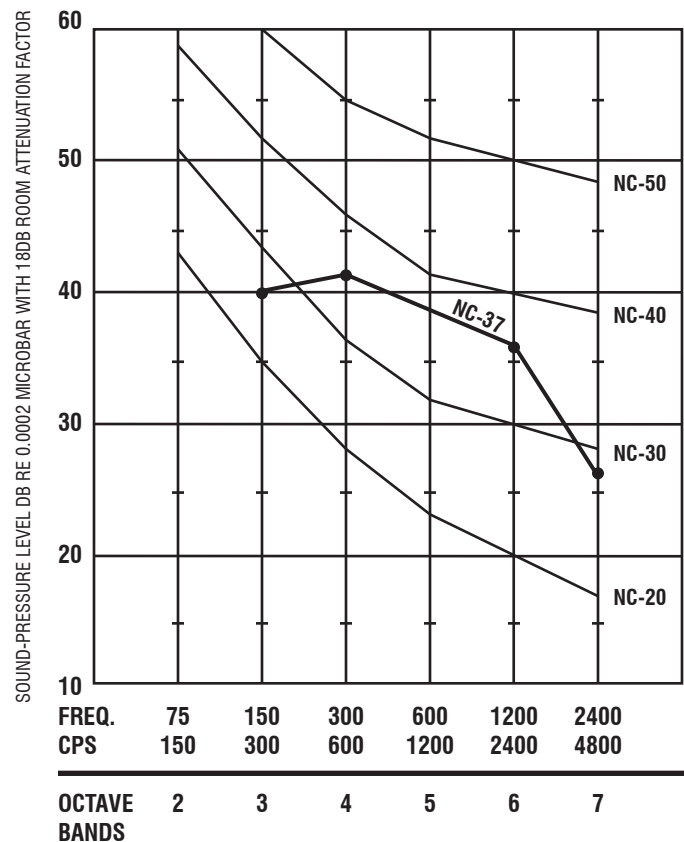
RECOMMENDED NC CRITERIA

NC Curve	Communication Environment	Typical Occupancy
Below NC 25	Extremely quiet environment, suppressed speech is quite audible, suitable for acute pickup of all sounds.	Broadcasting studios, concert halls, music rooms.
NC 30	Very quiet office, suitable for large conferences; telephone use satisfactory.	Resistances, theatres, libraries, executive offices, directors' rooms.
NC 35	Quiet office; satisfactory for conference at a 15 ft. table; normal voice 10-30 ft.; telephone use satisfactory.	Private offices, schools, hotel rooms, courtrooms, churches, hospital rooms.
NC 40	Satisfactory for conferences at a 6-8 ft. table; normal voice 6-12 ft.; telephone use satisfactory.	General offices, labs, dining rooms.
NC 45	Satisfactory for conferences at a 4-5 ft. table; normal voice 3-6 ft.; raised voice 6-12 ft.; telephone use occasionally difficult.	Retail store cafeterias, lobby areas, large drafting & engineering offices, reception areas.
Above NC 50	Unsatisfactory for conferences of more than two or three persons; normal voice 1-2 ft.; raised voice 3-6 ft.; telephone use slightly difficult.	IBM rooms, stenographic pools, print machine rooms, process areas.

TYPICAL NC SPECTRUM T64

24" x 6" 22° DEFLECTION

(975 CFM) V_k (1400 FPM)



ENGINEERING PERFORMANCE DATA

RETURN AIR GRILLES AND REGISTERS

Fixed Bar Type 45° Deflected Bars



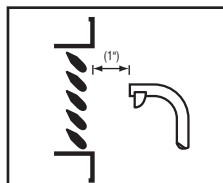
Listed Size W x H	A _K	NC 20-25 Application Non-Ducted		NC 25-30 Application Ducted		NC 30-40 Application Ducted	
		P _s		P _s		P _s	
		- .02"	- .03"	- .08"	- .10"	- .15"	- .20"
		CFM	CFM	CFM	CFM	CFM	CFM
8 x 4	.26	55	65	105	115	140	160
8 x 6	.34	75	90	145	160	195	225
10 x 6	.42	90	110	180	200	245	280
12 x 6	.50	110	135	220	245	300	345
10 x 8	.53	125	150	245	275	335	385
12 x 8	.63	155	190	310	345	420	485
10 x 10	.64	160	195	315	350	425	490
18 x 6	.75	170	205	335	375	455	525
12 x 12	.89	240	290	470	525	640	735
18 x 12	1.3	370	450	735	825	1005	1155
22 x 10	1.4	380	465	755	845	1030	1185
24 x 12	1.7	505	615	1000	1120	1365	1570
18 x 18	1.9	575	700	1140	1275	1555	1790
34 x 10	2.1	600	732	1195	1340	1635	1880
30 x 12	2.2	630	770	1255	1405	1715	1970
24 x 18	2.5	770	940	1530	1715	2090	2405
22 x 22	2.8	880	1075	1750	1960	2390	2750
30 x 18	3.2	970	1185	1930	2160	2635	3030
24 x 24	3.3	1040	1270	2070	2320	2830	3255
36 x 18	3.8	1170	1425	2320	2600	3170	3645
30 x 24	4.1	1320	1610	2625	2940	3585	4120
34 x 22	4.3	1355	1655	2695	3020	3685	4235
36 x 24	4.9	1580	1925	3135	3510	4280	4920
46 x 22	5.9	1940	2365	3855	4315	5265	6055
36 x 30	6.1	2010	2450	3995	4475	5460	6280
48 x 24	6.6	2130	2600	4240	4750	5795	6665
48 x 30	8.1	2700	3295	5370	6015	7340	8440
48 x 36	9.7	3220	3930	6405	7175	8755	10065

Performance of any size not shown in the tables will be the same as for the size shown with the same listed size area.

EXAMPLE:

A 36 x 16 size (not shown) has a listed area of 576 sq. in. Its performance will be identical to a 24 x 24 size (shown) which has the same listed size area of 576 sq. in.

AIR MEASUREMENT



SYMBOLS P_s Static Pressure Inches H₂O
A_K Outlet Area, 1" Out from Face
NC Re 10 db Room attenuation

2220A Velometer Jet for V_K velocity measurement.
CFM = A_K x V_K

SLOT DIFFUSERS



ALS SERIES SLOT DIFFUSER

For Ceiling, Sidewall and Sill Installation

Series **ALS** Architectural Linear Slot Diffusers are designed for installation in the ceiling, sidewall or sill and are recommended for supplying heated, ventilated or cooled air and for returning or exhausting room air. Air pattern directional changes through 180° are effected by the integral "Uniflex" combination pattern and volume controller, permitting pattern adjustment to meet changing requirements. Their reliable performance assures confident use of cooling temperature differentials up to 25°F at predicted low air motion 35 FPM in the zone of occupancy. Series ALS Supply Diffusers perform efficiently with air loadings of 1 to 3 CFM per square feet of floor area or 6 to 18 air changes per hour (based on 10ft. ceiling height) at a sound level range of NC 25 to 35.

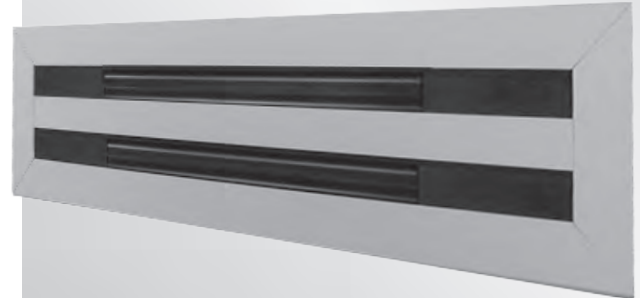
When installed in the ceiling, Series ALS Diffusers provide a horizontal air path that is adjustable through 180° in each slot opening. One to ten slot ALS Diffusers can be adjusted to provide one-way or two-way air patterns by directing the controller as required to either side.

Vertical downward air pattern can be adjusted from all slots. A combination horizontal pattern and vertical down pattern can be effected from a two (or more) slot diffuser.

Series ALS diffusers are fabricated of high-quality aluminum extrusions. The pattern controller is coated dull black to accent the slot opening. Components are mechanically interlocked together for a blemish-free appearance. Keyways and splice plates facilitate sections over 72" to form continuous lengths. Ninety degree mitered corner sections are furnished in one piece.

Concealed mounting brackets fit in a hemmed duct collar to positively hold the diffuser in ceiling and sidewall installations. Series ALS diffusers used for return or exhaust air are identical to supply sections except the pattern controller is removed to increase air capacity.

**The Airvector® exclusive UNIFLEX
pattern and volume controller**



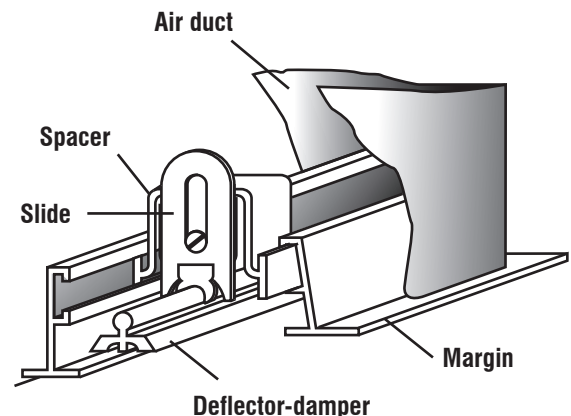
ALS37

FEATURES

- THREE SLOT SIZES, 1/2", 3/4" and 1".
- ONE TO TEN slots wide for air volume of 10-350 CFM per foot.
- EXTRUDED ALUMINUM construction: mechanical assembly.
- White powder paint finish-standard.
- OVERLAPPING OR T-BAR MARGINS.

ACCESSORIES

- Mitered Corner Sections
- AVAILABLE BUTTS in continuous lengths with key-way splices. Factory cut or field cut lengths for precise installation.
- 180° "UNIFLEX" ADJUSTABLE PATTERN AND VOLUME CONTROLLER provides positive positioning, constant static pressure, constant outlet area.



ARCHITECTURAL STYLES

ALS SERIES SLOT DIFFUSER



LISTED SIZES AVAILABLE
Any fractional inch increment of length 12" to 72"
One to ten slots
Lengths longer than 72" will be furnished in multiple sections for field butting.
Custom Paint - Lengths over 60" will be furnished in multiple sections

STYLE DETAILS
 MARGIN ONLY
 MARGIN, DAMPER AND PATTERN CONTROLLER

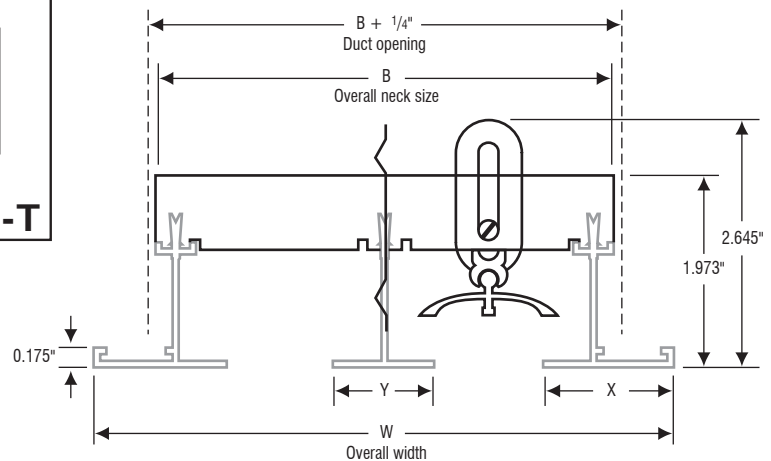
HOW TO SPECIFY
ALS 37 - E - 4 48 2 /W Margin Style -E Surface -T T-bar
1" Slot 10 - Return 17 - Supply 1/2" Slot 20 - Return 27 - Supply 3/4" Slot 30 - Return 37 - Supply
Fastening -1 No fastening -3 Screw fastening -4 Concealed fastening
Nb. of Slots 1 to 10
Finish (/W) White

Series ALS products include a $\frac{1}{32}$ " tolerance for thermal expansion based on +40 degree F temperature differential. For every +20 degree F differential above +40 degree F, reduce required listed length by $\frac{1}{64}$ " per 5 feet of length.

DIMENSIONAL DATA - LENGTH
Surface mounting Nominal + $\frac{7}{8}$ " Nominal - $\frac{1}{4}$ " T-bar mounting (N/A with -3)

FASTENING METHOD
No Fastening -1
Screw -3 N/A with -T
Concealed -4

1/2" SLOT	3/4" SLOT	1" SLOT
X Y	X Y	X Y
1 1/8" 1 1/16"	1 1/8" 1 1/16"	1 1/4" 1"



1/2" SLOT
SLOTS B W
1 1 9/16" 2 23/32"
2 2 3/4" 3 29/32"
3 3 15/16" 5 3/32"
4 5 1/8" 6 9/32"
5 6 5/16" 7 15/32"
6 7 1/2" 8 21/32"
7 8 11/16" 9 27/32"
8 9 7/8" 11 1/32"
9 11 1/16" 12 7/32"
10 12 1/4" 13 13/32"

3/4" SLOT
SLOTS B W
1 1 13/16" 2 31/32"
2 3 1/4" 4 13/32"
3 4 11/16" 5 27/32"
4 6 1/8" 7 9/32"
5 7 9/16" 8 23/32"
6 9" 10 5/32"
7 10 7/16" 11 19/32"
8 11 7/8" 13 1/32"
9 13 5/16" 14 15/32"
10 14 7/8" 15 29/32"

1" SLOT
SLOTS B W
1 2 3/8" 3 17/32"
2 4 3/8" 5 17/32"
3 6 3/8" 7 17/32"
4 8 3/8" 9 17/32"
5 10 3/8" 11 17/32"
6 12 3/8" 13 17/32"
7 14 3/8" 15 17/32"
8 16 3/8" 17 17/32"
9 18 3/8" 19 17/32"
10 20 3/8" 21 17/32"

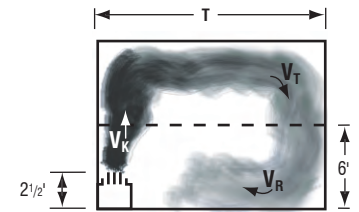
ENGINEERING PERFORMANCE DATA

ALS17 1" SLOT SUPPLY DIFFUSER

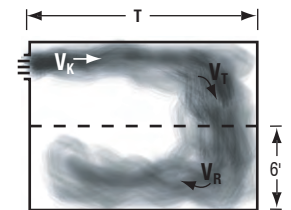


TABLE 1 SUPPLY AIR

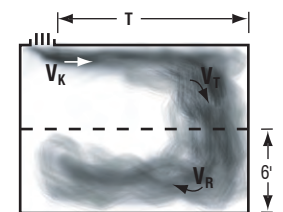
CFM per Foot in Direction of T	No. of Slots	Min. P _s In. H ₂ O	Outlet Velocity (V _k) FPM	Throw (T) in Feet			Minimum Ceiling Height in Feet		NC
				Ceiling	Sidewall	Sill			
				Min.-Max.	Min.-Max.	Min.-Max.	@ -18F ΔT	@ -25F ΔT	
20	1	.02	500	6-8	4-7	1-2	8	9	20
30	1	.03	750	9-13	7-10	2-3	9	10	20
	2	.02	500	7-9	5-7	1-2			
40	1	.06	1000	10-14	9-14	4-6	9	11	25
	2	.03	670	8-10	6-9	2-3			
50	2	.09	1250	12-15	10-14	3-5	9½	11	31
	3	.04	835	10-14	8-12	3-4			
	4	.02	555	9-11	7-10	2-3			
60	2	.06	1000	15-18	9-13	4-6	9½	12	30
	3	.03	665	10-13	7-11	2-4			
	4	.02	500	8-11	6-9	2-3			
70	2	.09	1165	13-17	11-15	5-8	10	12	30
	3	.04	780	11-16	9-14	4-6			
	4	.02	585	10-14	7-11	3-4			
80	2	.11	1335	15-19	14-17	6-10	10½	12½	35
	3	.05	890	12-17	10-14	4-7			
	4	.03	665	10-14	8-12	3-5			
	5	.02	533	9-13	7-11	2-4			
90	3	.06	1000	14-19	11-17	5-10	11	13	30
	4	.04	750	13-18	11-15	4-8			
	5	.02	600	12-16	10-14	3-7			
	6	.02	500	11-15	9-13	3-6			
100	3	.08	1110	16-21	14-20	7-12	11	13	30
	4	.04	835	15-20	13-18	6-11			
	5	.03	665	14-18	12-16	5-9			
	6	.02	555	13-17	11-15	4-8			
120	3	.11	1335	18-25	16-22	8-13	11½	13	35
	4	.06	1000	17-24	15-20	7-13			
	5	.04	800	16-23	14-21	6-12			
	6	.03	665	15-21	13-19	5-11			
	7	.02	570	14-20	12-17	4-10			
140	4	.09	1165	18-25	16-21	8-15	11½	14	30
	5	.05	935	18-26	16-22	8-14			
	6	.04	780	17-25	15-22	7-14			
	7	.03	665	16-23	14-20	6-12			
	8	.02	585	15-20	13-20	5-10			
160	4	.11	1335	19-27	17-24	10-16	12	15	35
	5	.07	1065	18-26	16-23	8-15			
	6	.05	890	17-25	15-22	7-14			
	7	.04	760	16-23	14-20	6-12			
	8	.03	665	15-20	13-18	5-10			
9	.02	590	14-19	12-17	4-9				
180	5	.09	1200	20-30	18-27	10-19	12	15	35
	6	.06	1000	19-28	17-25	9-17			
	7	.05	850	18-26	16-23	8-15			
	8	.04	750	16-24	14-21	6-13			
	9	.03	665	15-21	13-19	5-11			
10	.02	600	14-19	12-18	4-10				
200	5	.11	1335	23-33	20-30	12-21	12	5	35
	6	.08	1110	21-32	19-29	10-20			
	7	.06	950	20-31	18-27	9-18			
	8	.04	835	18-27	16-24	8-16			
	9	.03	740	17-26	15-23	6-14			
	10	.03	665	16-25	14-22	5-10			
250	6	.12	1390	24-35	21-31	-	13	15	35
	7	.09	1190	23-34	20-30	-			
	8	.07	1040	21-32	19-28	-			
	9	.05	925	20-31	18-27	-			
	10	.04	833	19-30	17-26	-			
300	7	.13	1430	25-40	23-35	-	13	16	35
	8	.10	1250	24-36	22-32	-			
	9	.08	1110	23-34	20-30	-			
	10	.06	1000	22-32	19-28	-			
350	8	.13	1460	27-47	24-43	-	14	16	40
	9	.11	1300	26-45	23-41	-			
	10	.09	1165	25-42	22-39	-			



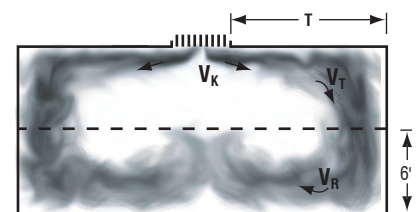
SILL



SIDEWALL



CEILING ONE WAY



CEILING TWO WAY

ENGINEERING PERFORMANCE DATA

ALS17 1" SLOT SUPPLY DIFFUSER



NOTES:

- Table 1 based on 4 ft. diffuser length. For longer lengths, correct throw and NC per Table 2.
- For 2-way ceiling throw, proportion (CFM) and number of slots in each direction of T and select from 1-way data, Table 1.
- When using continuous diffuser lengths with alternating active and inactive sections, a reduction in throw can be obtained by omitting the factors contained in Table 2.
- P_s constant for horizontal 1-way, 2-way and vertical pattern adjustment.
- Supply air temperature effect on horizontal throw is shown in Table 3. Vertical throw at varying supply air temperatures is shown in Table 4.
- Terminal velocities (V_T) at the minimum and maximum Throw (T) positions are rated at 150 FPM and 100 FPM respectively with corresponding room velocities (V_R) of 50 FPM and 35 FPM.

TABLE 2 CONTINUOUS DIFFUSER LENGTH FACTORS

Modify Table 1 by factors for diffuser lengths above 4ft.			
Diffuser Length	Throw (T)		
	Ceiling Min.-Max.	Sidewall Min.-Max.	Sill Min.-Max.
4' - 6'	No Change		
7' - 20'	T x 1.10		
21' - 100'	T x 1.15		

TABLE 4 VERTICAL DOWN-THROW and Supply Temperature Factors

Multiply Throw-Sidewall in Table 1 (or factor in Table 2 if used) by listed value.			
	@ - 11°C ΔT	@ 0°C ΔT	@ + 14°C ΔT
	@ - 20F ΔT	@ 0F ΔT	@ + 25F ΔT
	Cooling	Ventilating	Heating
Case 1	T x 1.0	T x .90	T x .60
Case 2	T x .70	T x .60	T x .40

TABLE 5 SUPPLY DIFFUSERS AREAS Per Ft. of Length

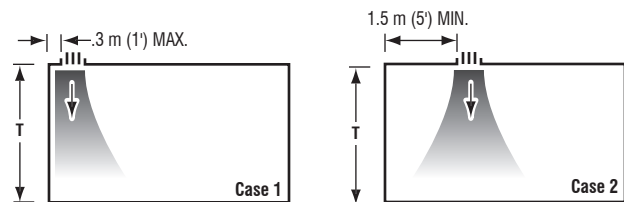
No. of Slots										
	1	2	3	4	5	6	7	8	9	10
A_N Area	.04	.06	.09	.12	.15	.18	.21	.24	.27	.30
	.17	.33	.50	.67	.83	1.00	1.17	1.33	1.50	1.67

A_K constant for horizontal 1-way, 2-way and vertical pattern.

$$CFM = A_K \times \text{length in feet} \times V_K$$

TABLE 3 SUPPLY AIR TEMPERATURE FACTORS

Multiply Throw in Table 1 (or factor in Table 2 if used) by listed value.			
Ceiling Sidewall Sill	@ - 11°C ΔT	@ 0°C ΔT	@ + 14°C ΔT
	@ - 20F ΔT	@ 0F ΔT	@ + 25F ΔT
	T x 1.0	T x 1.1	T x 1.2



AIR MEASUREMENT		
Supply Horizontal	Supply Vertical	Return Air
6070 VELOMETER JET FOR V_K VELOCITY		

ENGINEERING PERFORMANCE DATA

ALS10 1" SLOT RETURN



TABLE 1 RETURN AIR CFM PER FOOT OF LENGTH

No. of Slots	A _K Area	NC 20-25 Application Non-Ducted		NC 30 Application Ducted		NC 35-40 Application Ducted	
		- .02" P _s	- .03" P _s	- .08" P _s	- .10" P _s	- .15" P _s	- .20" P _s
		CFM	CFM	CFM	CFM	CFM	CFM
1	.06	35	43	70	80	95	110
2	.11	70	85	140	155	190	220
3	.17	105	130	210	235	285	330
4	.23	140	170	280	310	380	440
5	.28	175	215	350	390	475	550
6	.33	210	255	420	465	570	660
7	.39	245	300	490	545	665	770
8	.44	280	340	560	620	760	880
9	.50	315	385	630	700	855	990
10	.55	350	425	700	775	950	1100

Capacity based on diffuser without pattern controller. When pattern controller is used CFM capacities are reduced by 65% at listed P_s, NC and A_K.

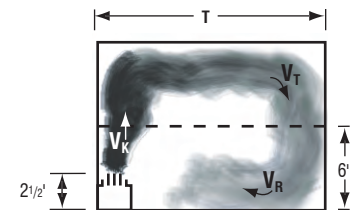
ENGINEERING PERFORMANCE DATA

ALS27 1/2" SUPPLY SLOT DIFFUSER

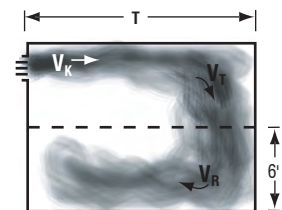


TABLE 1 SUPPLY AIR

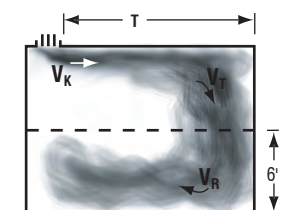
CFM per Foot in Direction of T	No. of Slots	Min. P _s In. H ₂ O	Outlet Velocity (V _k) FPM	Throw (T) in Feet			Minimum Ceiling Height in Feet		NC
				Ceiling	Sidewall	Sill			
				Min.-Max.	Min.-Max.	Min.-Max.	@ -18F ΔT	@ -25F ΔT	
10	1	.02	500	5-7	3-5	1-2	7 1/2	9	<20
	2	<.01	335	4-6	2-4	1-2			<20
20	1	.08	1000	10-13	8-11	1-3	8	9	20
	2	.02	670	8-11	6-9	2-3			<20
	3	.01	400	6-9	4-7	1-2			<20
30	1	.18	1500	11-16	10-14	4-6	9	10	25
	2	.05	1000	10-14	8-12	3-4			20
	3	.02	600	8-11	6-9	2-3			<20
	4	.01	430	7-9	5-7	1-2			<20
40	2	.08	1330	13-17	11-15	4-6	9	11	25
	3	.04	800	10-14	8-12	3-5			20
	4	.02	570	9-12	7-10	2-3			20
	5	.01	445	8-11	6-9	2-3			<20
50	3	.06	1000	11-15	9-13	4-6	9 1/2	11	25
	4	.03	710	10-14	8-12	3-4			20
	5	.02	560	9-13	7-11	2-4			20
	6	.01	500	8-12	7-10	1-3			<20
60	3	.08	1200	13-17	11-15	5-8	9 1/2	12	25
	4	.05	855	12-16	10-14	4-7			25
	5	.03	670	11-15	9-13	3-6			20
	6	.02	600	10-14	8-12	3-5			<20
70	7	.01	500	9-13	7-11	2-4	10	12	<20
	3	.12	1400	15-20	13-18	6-11			25
	4	.06	1000	13-18	11-16	5-9			25
	5	.04	780	12-16	10-14	4-7			20
80	6	.03	700	11-15	9-13	3-6	10 1/2	12 1/2	20
	7	.02	580	10-15	8-13	2-5			20
	4	.08	1140	14-20	12-18	6-11			25
	5	.05	890	13-19	11-17	5-10			25
90	6	.04	800	13-18	11-16	5-9	11	13	25
	7	.03	670	13-17	11-15	4-8			20
	8	.02	570	12-16	10-14	3-7			20
	4	.10	1280	17-24	15-21	8-14			30
100	5	.07	1000	16-22	14-20	7-13	11	13	25
	6	.05	900	16-21	14-19	7-12			25
	7	.04	750	15-20	13-18	6-11			25
	8	.03	640	14-18	12-16	5-9			20
120	9	.02	600	13-17	11-15	4-8	11 1/2	13	20
	5	.09	1120	18-25	16-22	9-15			25
	6	.06	1000	17-24	15-21	8-14			25
	7	.05	830	16-23	14-20	7-13			20
140	8	.03	710	14-20	12-18	6-11	11 1/2	14	20
	9	.03	670	13-19	11-17	5-10			20
	10	.02	590	12-18	10-16	5-10			<20
	6	.09	1200	19-27	17-24	10-16			30
160	7	.07	1000	18-26	16-23	8-15	12	15	25
	8	.05	860	17-25	15-22	7-14			25
	9	.04	800	16-24	14-21	6-13			20
	10	.03	705	15-22	13-19	5-11			20
180	7	.10	1170	20-30	18-27	10-19	12	15	25
	8	.06	1000	19-28	17-25	9-17			25
	9	.05	930	18-27	16-24	8-16			20
	10	.04	825	17-25	15-22	7-14			20
200	8	.08	1140	21-32	19-29	10-20	12	15	25
	9	.07	1070	20-30	18-27	9-18			25
	10	.05	940	19-28	17-25	8-17			20
250	8	.08	1280	24-35	21-31	12-22	12	15	30
	9	.07	1200	23-34	20-30	11-21			25
	10	.05	1060	22-32	19-29	10-20			25
300	9	.10	1335	25-39	22-35	-	12	15	30
	10	.08	1175	24-37	21-33	-			25



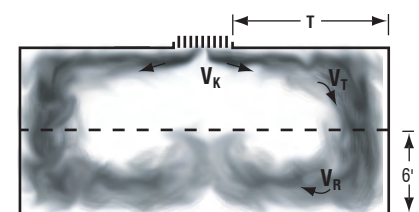
SILL



SIDEWALL



CEILING ONE WAY



CEILING TWO WAY

Outlet Velocity (V _k) FPM										
500	600	700	800	900	1000	1200	1400	1600	1800	2000
Total Pressure (P _t) Inches H ₂ O										
.02	.02	.03	.04	.05	.06	.09	.12	.16	.20	.25

SYMBOLS

- V_T Terminal Velocity in FPM
- V_R Room Velocity in FPM
- V_K Outlet Velocity in FPM
- A_K Outlet area in Sq. Feet
- A_N Neck Area in Sq. Ft.
- P_s Static Pressure H₂O
- NC Re 8db Room attenuation
- T Throw in feet at X and Y
- ΔT Temperature Differential

ALS27 1/2" SLOT SUPPLY DIFFUSER



NOTES:

- Table 1 based on 4 ft. diffuser length. For longer lengths, correct throw and NC per Table 2.
- For 2-way ceiling throw, proportion (CFM) and number of slots in each direction of T and select from 1-way data, Table 1.
- When using continuous diffuser lengths with alternating active and inactive sections, a reduction in throw can be obtained by omitting the factors contained in Table 2.
- P_s constant for horizontal 1-way, 2-way and vertical pattern adjustment.
- Supply air temperature effect on horizontal throw is shown in Table 3. Vertical throw at varying supply air temperatures is shown in Table 4.
- Terminal velocities (V_T) at the minimum and maximum Throw (T) positions are rated at 150 FPM and 100 FPM respectively with corresponding room velocities (V_R) of 50 fpm and 35 FPM.

TABLE 2 CONTINUOUS DIFFUSER LENGTH FACTORS

Modify Table 1 by factors for diffuser lengths above 4ft.				
Diffuser Length	Throw (T)			NC
	Ceiling Min.-Max.	Sidewall Min.-Max.	Sill Min.-Max.	
4' - 6'	No Change			+ 0
7' - 20'	T x 1.10			+ 5
21' - 100'	T x 1.15			+ 10

TABLE 4 VERTICAL DOWN-THROW and Supply Temperature Factors

Multiply Throw-Sidewall in Table 1 (or factor in Table 2 if used) by listed value.				
	@ - 11°C ΔT	@ 0°C ΔT	@ +14°C ΔT	
	@ - 20F ΔT	@ 0F ΔT	@ +25F ΔT	
	Cooling	Ventilating	Heating	
Case 1	T x 1.0	T x .90	T x .60	
Case 2	T x .70	T x .60	T x .40	

TABLE 5 SUPPLY DIFFUSERS AREAS Per Ft. of Length

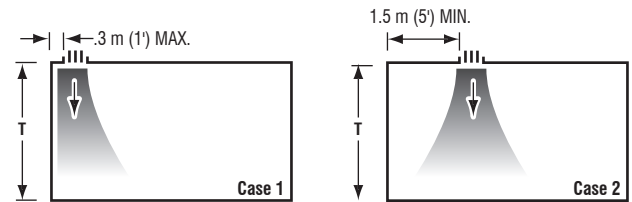
No. of Slots										
	1	2	3	4	5	6	7	8	9	10
A_H Area	.02	.03	.05	.07	.09	.10	.12	.14	.15	.17
A_K Area	.08	.17	.25	.33	.42	.50	.58	.67	.75	.84

A_K constant for horizontal 1-way, 2-way and vertical pattern.

$$CFM = A_K \times \text{length in feet} \times V_K$$

TABLE 3 SUPPLY AIR TEMPERATURE FACTORS

Multiply Throw in Table 1 (or factor in Table 2 if used) by listed value.			
Ceiling Sidewall Sill	@ - 11°C ΔT	@ 0°C ΔT	@ +14°C ΔT
	@ - 20F ΔT	@ 0F ΔT	@ +25F ΔT
	T x 1.0	T x 1.1	T x 1.2



AIR MEASUREMENT			
Supply Horizontal		Supply Vertical	Return Air
6070 VELOMETER JET FOR V_K VELOCITY			

ENGINEERING PERFORMANCE DATA

ALS20 1/2" SLOT RETURN



TABLE 1 RETURN AIR CFM Per Foot of Length

No. of Slots	A _K Area	NC 20-25 Application Non-Ducted		NC 30 Application Ducted		NC 35-40 Application Ducted	
		- .02" P _s CFM	- .03" P _s CFM	- .08" P _s CFM	- .10" P _s CFM	- .15" P _s CFM	- .20" P _s CFM
1	.03	15	20	30	35	40	45
2	.06	35	45	70	80	95	110
3	.08	55	70	110	125	150	175
4	.11	70	85	140	155	190	220
5	.14	90	110	180	200	245	285
6	.16	110	135	220	245	300	345
7	.20	130	160	260	290	355	410
8	.22	140	170	280	310	385	440
9	.26	165	200	330	370	450	520
10	.28	180	225	370	415	505	585

Capacity based on diffuser without pattern controller. When pattern controller is used CFM capacities are reduced by 65% at listed P_s, NC and A_K.

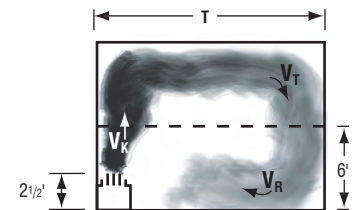
ENGINEERING PERFORMANCE DATA

ALS37 3/4" SUPPLY SLOT DIFFUSER

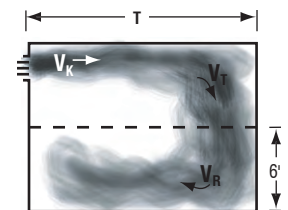


TABLE 1 SUPPLY AIR

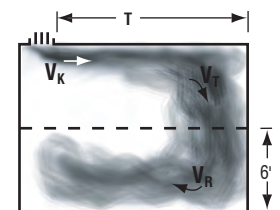
CFM per Foot in Direction of T	No. of Slots	Min. P _s In. H ₂ O	Outlet Velocity (V _k) FPM	Throw (T) in Feet			Minimum Ceiling Height in Feet		NC
				Ceiling	Sidewall	Sill			
				Min.-Max.	Min.-Max.	Min.-Max.	@ -18F ΔT	@ -25F ΔT	
10	1	.01	335	4-6	2-4	1-2	7 1/2	9	<20
20	1	.04	670	8-11	6-9	2-3	8	9	20
	2	<.01	400	6-9	4-7	1-2			<20
30	1	.09	1000	10-14	8-12	3-4	9	10	25
	2	.02	600	8-11	6-9	2-3			20
	3	<.01	430	7-9	5-7	1-2			<20
40	1	.16	1340	13-7	11-15	4-6			30
	2	.04	800	10-14	8-12	3-4	9	11	25
	3	.02	575	9-12	7-10	2-3			20
	4	.01	445	8-11	6-9	2-3			<20
50	2	.06	1000	11-15	9-13	4-6	9 1/2	11	25
	3	.03	715	10-14	8-12	3-4			20
	4	.02	555	9-13	7-11	2-3			<20
	5	<.01	415	7-12	6-10	2-3			<20
60	2	.09	1200	13-17	11-15	5-8	9 1/2	12	30
	3	.04	860	12-16	10-14	4-7			25
	4	.02	665	11-15	9-13	3-6			20
	5	.01	500	9-13	7-11	3-4			<20
70	2	.13	1400	15-20	13-18	6-11			30
	3	.06	1000	13-18	11-16	5-9	10	12	25
	4	.03	775	12-16	10-14	4-7			20
	5	.02	585	10-15	8-13	3-5			<20
	6	.01	500	9-14	7-12	2-5			<20
80	3	.07	1140	14-20	12-18	6-11	10 1/2	12 1/2	30
	4	.04	885	13-19	11-17	5-10			25
	5	.03	665	13-17	11-15	4-8			20
	6	.02	575	12-16	10-14	3-7			<20
	7	<.01	500	11-15	9-13	3-6			<20
90	3	.09	1290	17-24	15-21	8-14	11	13	30
	4	.05	1000	16-22	14-20	7-13			25
	5	.03	750	15-20	13-18	6-11			20
	6	.02	645	14-18	12-16	5-9			<20
	7	.01	560	13-17	11-15	4-8			<20
100	3	.13	1430	19-26	17-23	10-16	11	13	30
	4	.06	1110	18-25	16-22	9-15			25
	5	.04	830	16-23	14-20	7-13			20
	6	.03	715	14-20	12-18	6-11			20
	7	.02	630	13-19	11-17	5-10			<20
120	4	.09	1330	19-27	17-24	10-16	11 1/2	13	35
	5	.06	1000	18-26	16-23	8-15			30
	6	.04	860	17-25	15-22	7-14			25
	7	.03	750	16-23	14-20	6-12			20
	8	.02	630	15-20	13-18	5-10			<20
140	5	.08	1170	20-30	18-27	10-19	11 1/2	14	30
	6	.06	1000	19-28	17-25	9-17			25
	7	.04	875	18-26	16-23	8-15			20
	8	.03	740	16-24	14-21	6-13			20
	9	.02	665	15-21	13-19	5-11			<20
160	6	.07	1150	21-32	19-29	10-20	12	15	25
	7	.05	1000	20-30	18-27	9-18			25
	8	.04	840	18-27	16-24	8-16			20
	9	.03	760	17-26	15-23	6-14			<20
	10	.02	695	16-25	14-22	5-13			<20
180	6	.09	1290	24-35	21-31	12-22			30
	7	.07	1130	23-34	20-30	11-21	12	15	30
	8	.05	950	20-31	18-28	9-19			25
	9	.04	860	19-30	17-27	8-18			20
	10	.03	780	18-29	16-26	7-17			<20
200	6	.11	1440	26-40	23-36				30
	7	.08	1250	25-38	22-34		12	15	30
	8	.06	1110	24-36	21-32	-			25
	9	.05	955	22-33	20-30				25
	10	.04	870	21-31	19-28				20
250	8	.10	1315	26-46	23-41				35
	9	.07	1190	25-42	22-38	-	13	15	30
	10	.06	1085	24-39	21-35				25



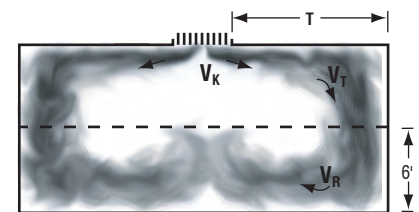
SILL



SIDEWALL



CEILING ONE WAY



CEILING TWO WAY

Outlet Velocity (V _k) FPM												
500	600	700	800	900	1000	1200	1400	1600	1800	2000		
Total Pressure (P _t) Inches H ₂ O												
.02	.02	.03	.04	.05	.06	.09	.12	.16	.20	.25		

SYMBOLS
 V_T Terminal Velocity in FPM
 V_R Room Velocity in FPM
 V_K Outlet Velocity in FPM
 A_K Outlet area in Sq. Feet
 A_N Neck Area in Sq. Ft.
 P_s Static Pressure H₂O
 NC Re 8db Room attenuation
 T Throw in feet at X and Y
 ΔT Temperature Differential

ENGINEERING PERFORMANCE DATA

ALS37 3/4" SLOT SUPPLY DIFFUSER



NOTES:

- Table 1 based on 4 ft. diffuser length. For longer lengths, correct throw and NC per Table 2.
- For 2-way ceiling throw, proportion (CFM) and number of slots in each direction of T and select from 1-way data, Table 1.
- When using continuous diffuser lengths with alternating active and inactive sections, a reduction in throw can be obtained by omitting the factors contained in Table 2.
- P_s constant for horizontal 1-way, 2-way and vertical pattern adjustment.
- Supply air temperature effect on horizontal throw is shown in Table 3. Vertical throw at varying supply air temperatures is shown in Table 4.
- Terminal velocities (V_T) at the minimum and maximum Throw (T) positions are rated at 150 FPM and 100 FPM respectively with corresponding room velocities (V_R) of 50 fpm and 35 FPM.

TABLE 2 CONTINUOUS DIFFUSER LENGTH FACTORS

Modify Table 1 by factors for diffuser lengths above 4ft.				
Diffuser Length	Throw (T)			NC
	Ceiling Min.-Max.	Sidewall Min.-Max.	Sill Min.-Max.	
4' - 6'	No Change			+ 0
7' - 20'	T x 1.10			+ 5
21' - 100'	T x 1.15			+ 10

TABLE 4 VERTICAL DOWN-THROW and Supply Temperature Factors

Multiply Throw-Sidewall in Table 1 (or factor in Table 2 if used) by listed value.			
	@ - 11°C ΔT	@ 0°C ΔT	@ +14°C ΔT
	@ - 20F ΔT	@ 0F ΔT	@ +25F ΔT
	Cooling	Ventilating	Heating
Case 1	T x 1.0	T x .90	T x .60
Case 2	T x .70	T x .60	T x .40

TABLE 5 SUPPLY DIFFUSERS AREAS Per Ft. of Length

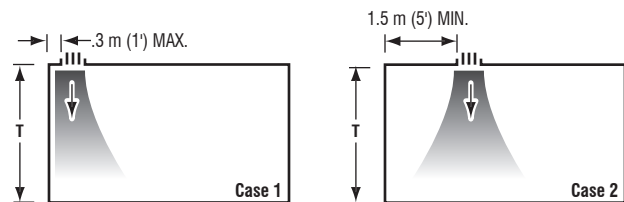
No. of Slots										
	1	2	3	4	5	6	7	8	9	10
A_H Area	.03	.05	.07	.09	.12	.14	.16	.19	.21	.23
A_K Area	.12	.24	.36	.48	.60	.72	.84	.96	1.1	1.2

A_K constant for horizontal 1-way, 2-way and vertical pattern.

$$CFM = A_K \times \text{length in feet} \times V_K$$

TABLE 3 SUPPLY AIR TEMPERATURE FACTORS

Multiply Throw in Table 1 (or factor in Table 2 if used) by listed value.			
Ceiling Sidewall Sill	@ - 11°C ΔT	@ 0°C ΔT	@ +14°C ΔT
	@ - 20F ΔT	@ 0F ΔT	@ +25F ΔT
	T x 1.0	T x 1.1	T x 1.2



AIR MEASUREMENT		
Supply Horizontal	Supply Vertical	Return Air
6070 VELOMETER JET FOR V_K VELOCITY		

ALS30 3/4" SLOT RETURN



TABLE 1 RETURN AIR CFM Per Foot of Length

No. of Slots	A _K Area	NC 20-25 Application Non-Ducted		NC 30 Application Ducted		NC 35-40 Application Ducted	
		- .02" P _S CFM	- .03" P _S CFM	- .08" P _S CFM	- .10" P _S CFM	- .15" P _S CFM	- .20" P _S CFM
1	.04	25	35	50	65	75	90
2	.08	50	60	100	110	135	160
3	.12	80	100	160	180	220	250
4	.16	100	120	200	225	275	320
5	.20	130	160	260	295	360	420
6	.24	160	195	320	360	440	510
7	.28	175	215	350	390	475	550
8	.32	200	245	400	445	545	630
9	.36	235	290	470	525	640	740
10	.40	260	320	520	580	710	820

Capacity based on diffuser without pattern controller. When pattern controller is used CFM capacities are reduced by 65% at listed P_S, NC and A_K.

SUBMITTAL SHEET



Nº DF3

Rev. 6

Ceiling Square Diffuser - 3 Cone Fixed air pattern

Material: Stamped heavy gauge steel.
Finish: Powder paint coating - white.
Air Pattern: Fixed horizontal 360° diffusion.
Mounting: Surface or Lay-in T-bar ceiling.
Core Removal: Unlock hanger brackets by swiveling lever down. Holding cone L at opposite sides, push upwards, then turn clockwise and drop core free from back plenum.



DF3

Optional fiberglass insulation on back panel, complies with A.S.T.M. E84 flame and smoke test. (Available only on models with 24" x 24" face)

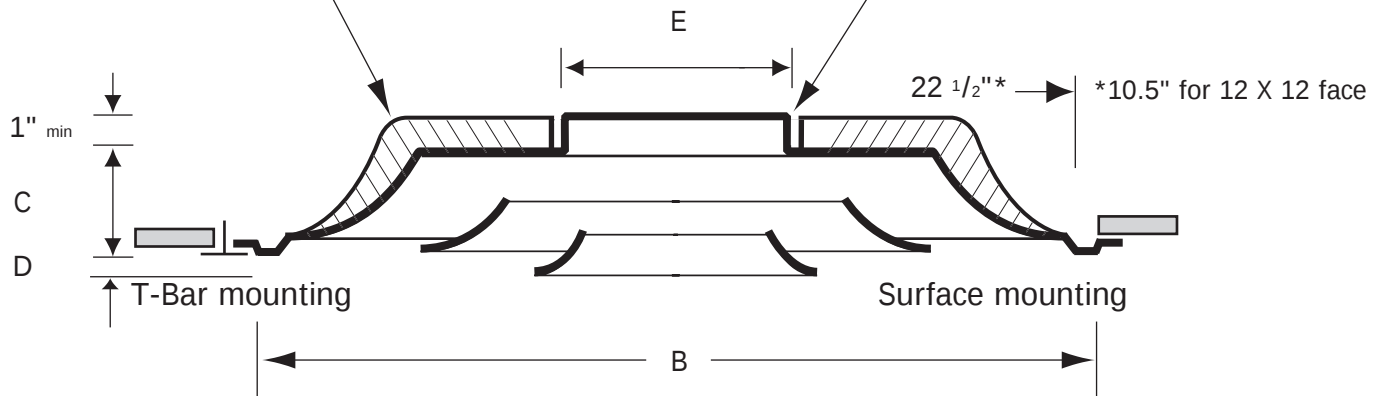
☐ R4

☐ R6

Round collar up to 14".
Standard height is 1", other options available.

☐ 2" collar

☐ 3" telescopic



✓	Model #	Duct Size	E	Face Dim B x B	C	D
	DF3 1206	6	5 7/8"	11 3/4" x 11 3/4"	1 3/4"	7/16"
	DF3 1208	8	7 7/8"	11 3/4" x 11 3/4"	1 3/4"	7/16"
	DF3 2406	6	5 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	DF3 2408	8	7 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	DF3 2410	10	9 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	DF3 2412	12	11 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	DF3 2414	14	13 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"

All dimensions in inches

Finish

☐ White

☐ Custom
(please specify)



Project: _____
 Architect: _____
 Engineer: _____
 Contractor: _____

SUBMITTAL SHEET



N° DF3I

Rev. 3

Ceiling Square Diffuser - 3 Cone Fixed air pattern

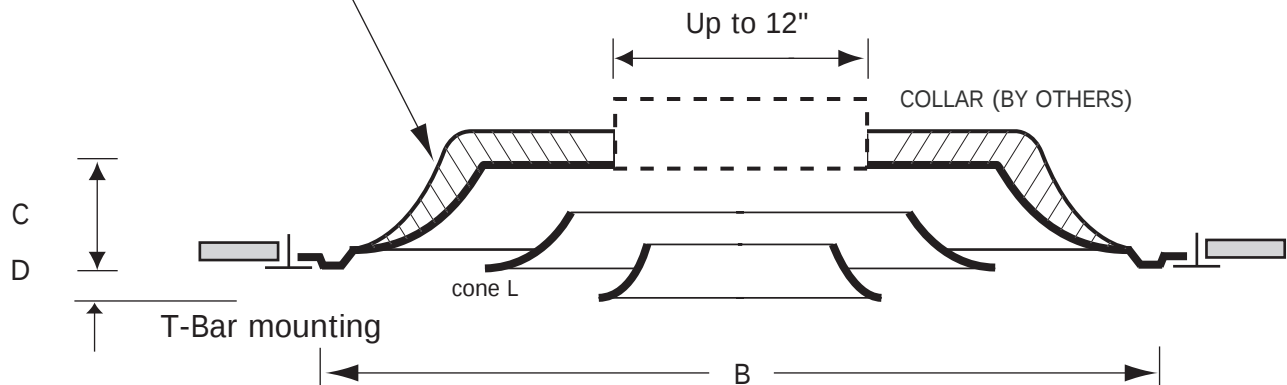
Material: Stamped heavy gauge steel.
Finish: Powder paint coating - white.
Air Pattern: Fixed horizontal 360° diffusion.
Mounting: Lay-in T-bar ceiling.
Core Removal: Unlock hanger brackets by swiveling lever down. Holding cone L at opposite sides, push upwards, then turn clockwise and drop core free from back plenum.



DF3I

R6 fiberglass back complies with A.S.T.M. E84 flame and smoke test.

Scored for collar sizes up to 12" D.
 Contractor to install job-specific collar in field. For size 14", please refer to model DF3-R6 2414.



Finish	
☐ White	☐ Custom (please specify)



Model #	Face Dim B x B	C	D
DF3I	23 3/4" x 23 3/4"	2 7/8"	7/8"

All dimensions in inches

Project:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

SUBMITTAL SHEET



N° DF4

Rev. 6

Ceiling Square Diffuser - 4 Cone Fixed air pattern

Material: Stamped heavy gauge steel.
Finish: Powder paint coating - white.
Air Pattern: Fixed horizontal 360° diffusion.
Mounting: Surface or Lay-in T-bar ceiling.
Core Removal: Unlock hanger brackets by swiveling lever down. Holding cone L at opposite sides, push upwards, then turn clockwise and drop core free from back plenum.



DF4

Optional fiberglass insulation on back panel, complies with A.S.T.M. E84 flame and smoke test. (Available only on models with 24" x 24" face)

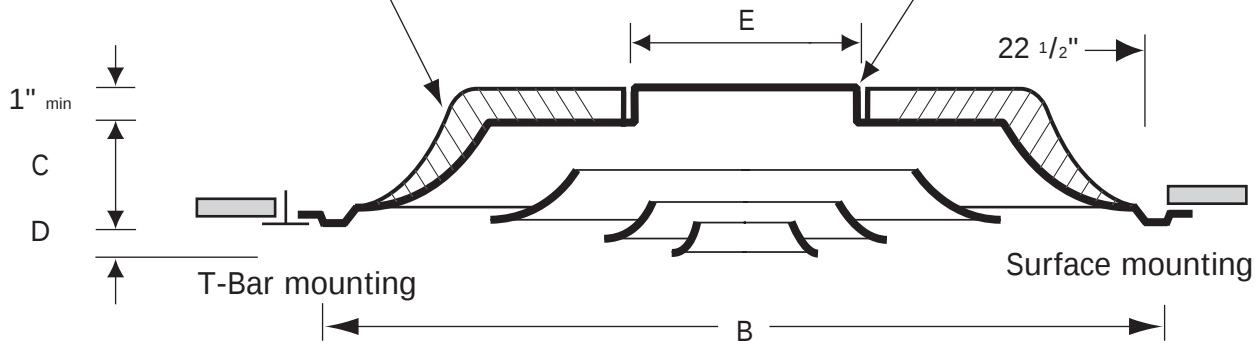
☐ R4

☐ R6

Round collar up to 14".
Standard height is 1", other options available.

☐ 2" collar

☐ 3" telescopic



✓	Model #	Duct Size	E	Face Dim B x B	C	D
	DF4 2406	6	5 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	DF4 2408	8	7 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	DF4 2410	10	9 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	DF4 2412	12	11 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	DF4 2414	14	13 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"

All dimensions in inches

Finish

☐ White

☐ Custom
(please specify)



Project: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



Nº DF4I

Rev. 3

Ceiling Square Diffuser - 4 Cone Fixed air pattern

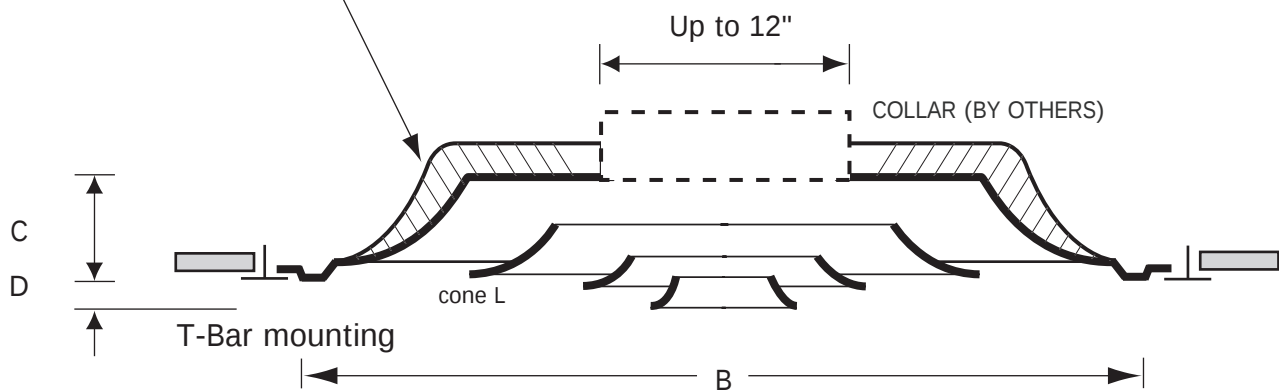
Material: Stamped heavy gauge steel.
Finish: Powder paint coating - white.
Air Pattern: Fixed horizontal 360° diffusion.
Mounting: Lay-in T-bar ceiling.
Core Removal: Unlock hanger brackets by swiveling lever down. Holding cone L at opposite sides, push upwards, then turn clockwise and drop core free from back plenum.



DF4I

R6 fiberglass back complies with A.S.T.M. E84 flame and smoke test.

Scored for collar sizes up to 12" D. Contractor to install job-specific collar in field. For size 14", please refer to model DF4-R6 2414.



Finish	
☐ White	☐ Custom (please specify)



Model #	Face Dim B x B	C	D
DF4I	23 3/4" x 23 3/4"	2 7/8"	7/8"

All dimensions in inches

Project:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

SUBMITTAL SHEET



Nº DA3

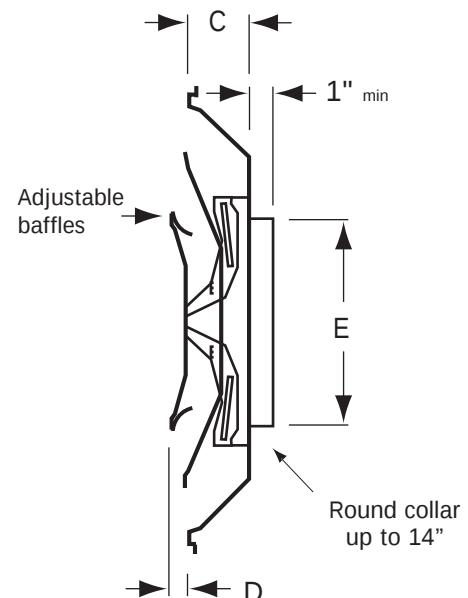
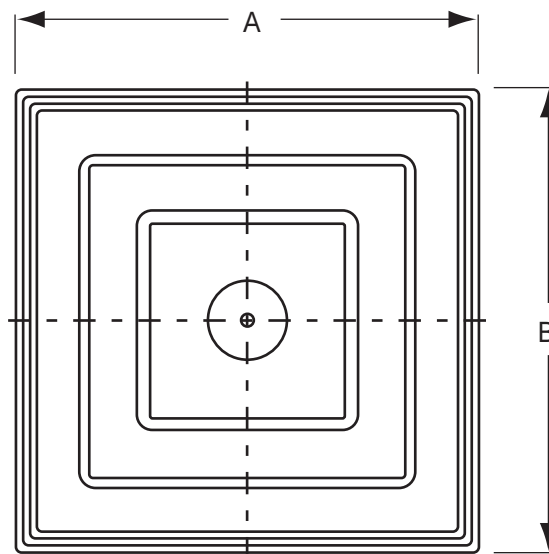
Rev. 2

Ceiling Supply Air Diffuser 3 Cone Adjustable

Material: Stamped heavy gauge steel.
Finish: Powder paint coating - white.
Air Pattern: Adjustable horizontal air pattern, full face.
Mounting: Surface or lay-in T-bar ceiling.
Core Removal: Unlock hanger brackets by swiveling lever down. Holding cone L at opposite sides, push upwards, then turn clockwise and drop core free from back plenum.



DA3



Optional fiberglass insulation on back panel, complies with A.S.T.M. E84 flame and smoke test. (Available only on models with 24" x 24" face)

☐ R4

☐ R6

Round collar up to 14". Standard height is 1", other options available.

☐ 2" collar

☐ 3" telescopic



✓	Model #	Duct Size	Overall Face Dimension "A" x "B"	Depth Of Unit Dimension "C"	Exposed Depth Dimension "D"	Collar Diameter "E"
	DA3 1206	6	11 3/4" x 11 3/4"	1 3/4"	7/16"	5 7/8"
	DA3 1208	8	11 3/4" x 11 3/4"	1 3/4"	7/16"	7 7/8"
	DA3 2406	6	23 3/4" x 23 3/4"	2 7/8"	7/8"	5 7/8"
	DA3 2408	8	23 3/4" x 23 3/4"	2 7/8"	7/8"	7 7/8"
	DA3 2410	10	23 3/4" x 23 3/4"	2 7/8"	7/8"	9 7/8"
	DA3 2412	12	23 3/4" x 23 3/4"	2 7/8"	7/8"	11 7/8"
	DA3 2414	14	23 3/4" x 23 3/4"	2 7/8"	7/8"	13 7/8"

All dimensions in inches

Finish

☐ White	☐ Custom (please specify)
--------------------------------	--

Project: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



Nº DA4

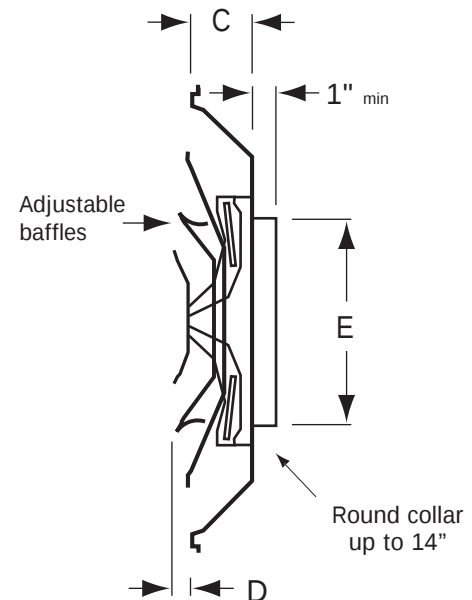
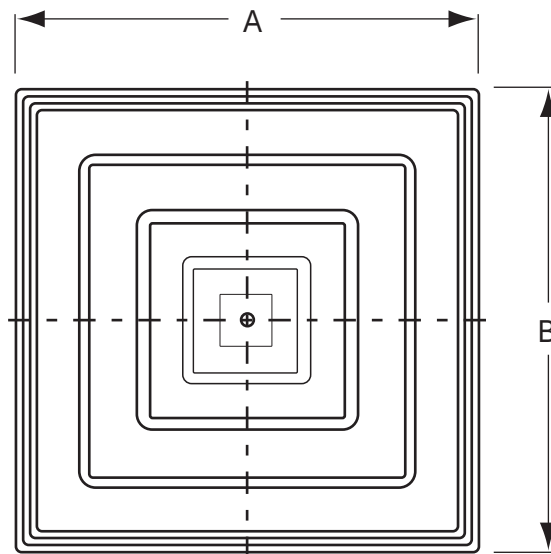
Rev. 2

Ceiling Supply Air Diffuser 4 Cone Adjustable

Material: Stamped heavy gauge steel.
Finish: Powder paint coating - white.
Air Pattern: Adjustable horizontal air pattern, full face.
Mounting: Surface or lay-in T-bar ceiling.
Core Removal: Unlock hanger brackets by swiveling lever down. Holding cone L at opposite sides, push upwards, then turn clockwise and drop core free from back plenum.



DA4



Optional fiberglass insulation on back panel, complies with A.S.T.M. E84 flame and smoke test. (Available only on models with 24" x 24" face)

☐ R4

☐ R6

Round collar up to 14". Standard height is 1", other options available.

☐ 2" collar

☐ 3" telescopic



✓	Model #	Duct Size	Overall Face Dimension "A" x "B"	Depth Of Unit Dimension "C"	Exposed Depth Dimension "D"	Collar Diameter "E"
	DA4 2406	6	23 3/4" x 23 3/4"	2 7/8"	7/8"	5 7/8"
	DA4 2408	8	23 3/4" x 23 3/4"	2 7/8"	7/8"	7 7/8"
	DA4 2410	10	23 3/4" x 23 3/4"	2 7/8"	7/8"	9 7/8"
	DA4 2412	12	23 3/4" x 23 3/4"	2 7/8"	7/8"	11 7/8"
	DA4 2414	14	23 3/4" x 23 3/4"	2 7/8"	7/8"	13 7/8"

All dimensions in inches

Finish

☐ White

☐ Custom
(please specify)

Project: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



Nº DLA

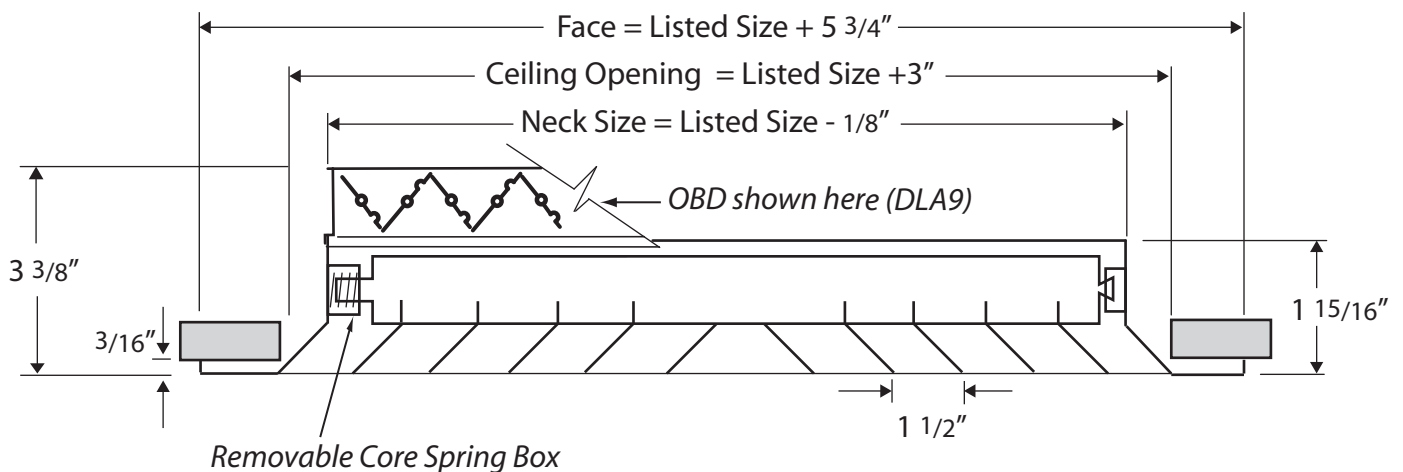
Rev. 2, p.1/2

Ceiling Diffuser - Aluminum Louvered Face Directional Fixed Air Pattern, Square Neck

Material: Heavy gauge aluminum.
Finish: Powder paint coating - white.
Mounting: Surface or Lay-in T-bar ceiling.
Volume Control: Available with pre-installed aluminum OBD (Model# DLA9).



DLA



Core Selection				
☐ W1 1 Way	☐ WC 2 Way Corner	☐ WO 2 Way Opposed	☐ W3 3 Way	☐ W4 4 Way

SUBMITTAL SHEET

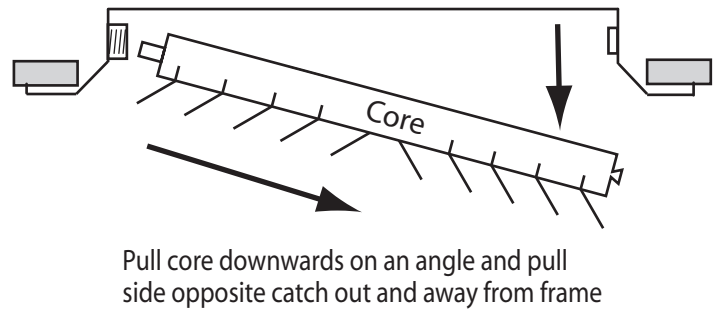
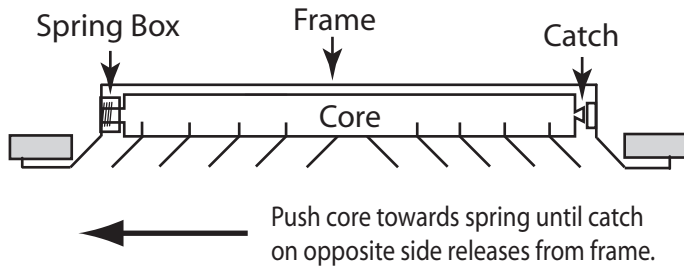


Nº DLA

Rev. 2, p.2/2

Handy Feature

Boxed-in spring with pressure plate for extra-smooth removal of core.



Border Type	
☐ F Flat Frame	☐ B Beveled Frame

Mounting		
☐ 0 Lay-In	☐ 1 Screw Holes	☐ 4 Concealed

✓	Model #	Listed or Duct Size	Neck Size	Face Size
	DLA 0606	6" x 6"	5 7/8" x 5 7/8"	11 3/4" x 11 3/4"
	DLA 0909	9" x 9"	8 7/8" x 8 7/8"	14 3/4" x 14 3/4"
	DLA 1212	12" x 12"	11 7/8" x 11 7/8"	17 3/4" x 17 3/4"
	DLA 1515	15" x 15"	14 7/8" x 14 7/8"	20 3/4" x 20 3/4"
	DLA 1818	18" x 18"	17 7/8" x 17 7/8"	23 3/4" x 23 3/4"
	DLA9 0606	6" x 6"	5 7/8" x 5 7/8"	11 3/4" x 11 3/4"
	DLA9 0909	9" x 9"	8 7/8" x 8 7/8"	14 3/4" x 14 3/4"
	DLA9 1212	12" x 12"	11 7/8" x 11 7/8"	17 3/4" x 17 3/4"
	DLA9 1515	15" x 15"	14 7/8" x 14 7/8"	20 3/4" x 20 3/4"
	DLA9 1818	18" x 18"	17 7/8" x 17 7/8"	23 3/4" x 23 3/4"

Finish	
☐ White	☐ Custom (please specify)



Project: _____

Architect: _____

Engineer: _____

Contractor: _____

All dimensions in inches

SUBMITTAL SHEET



Nº DLAM

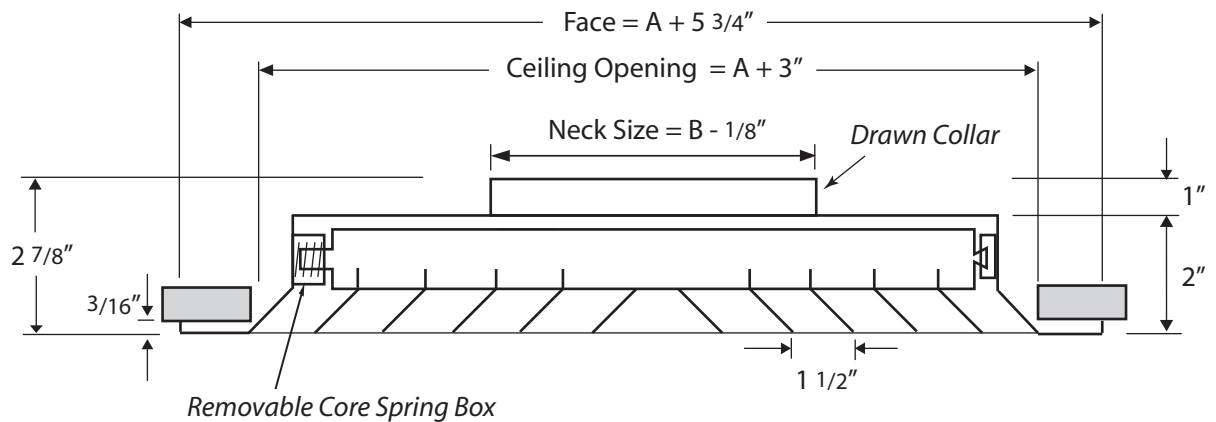
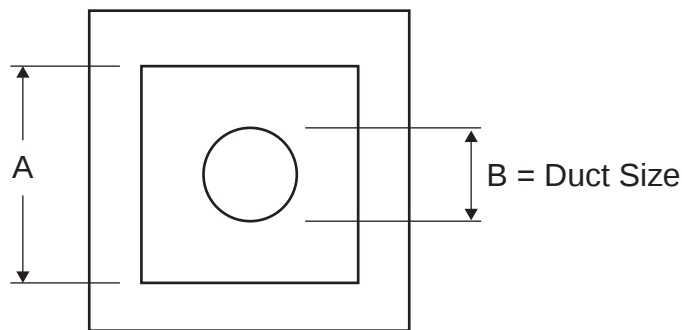
Rev. 1, p.1/2

Ceiling Diffuser - Aluminum Louvered Face Directional Fixed Air Pattern, Round Neck

Material: Heavy gauge aluminum.
Finish: Powder paint coating - white.
Mounting: Surface or Lay-in T-bar ceiling.
Volume Control: Available with pre-installed opposed blade damper (Model# DLAM4) or radial sliding blade damper (Model# DLAM5).



DLAM



Core Selection				
☐ W1 1 Way	☐ WC 2 Way Corner	☐ WO 2 Way Opposed	☐ W3 3 Way	☐ W4 4 Way

SUBMITTAL SHEET

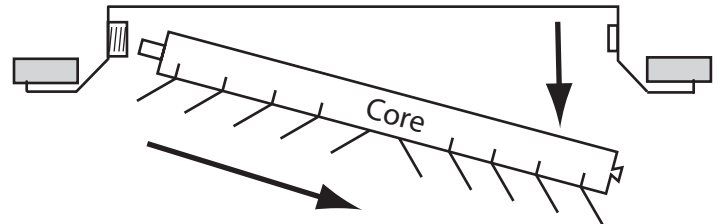
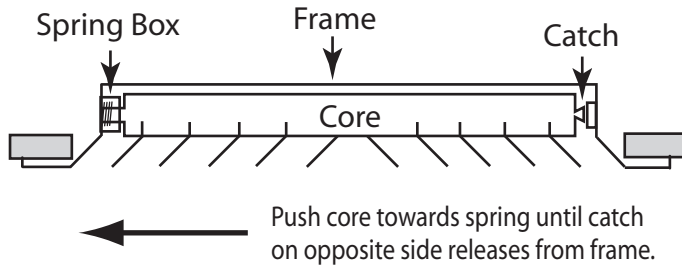


Nº DLAM

Rev. 1, p.2/2

Handy Feature

Boxed-in spring with pressure plate for extra-smooth removal of core.



Pull core downwards on an angle and pull side opposite catch out and away from frame

Border Type	
☐ F Flat Frame	☐ B Beveled Frame

Mounting		
☐ 0 Lay-In	☐ 1 Screw Holes	☐ 4 Concealed

✓	Model #	A	B	Neck Size	Face Size
	DLAM 0606 06	6 x 6	6	5 7/8	11 3/4 x 11 3/4
	DLAM 0909 06	9 x 9	6	5 7/8	14 3/4 x 14 3/4
	DLAM 0909 08	9 x 9	8	7 7/8	14 3/4 x 14 3/4
	DLAM 1212 06	12 x 12	6	5 7/8	17 3/4 x 17 3/4
	DLAM 1212 08	12 x 12	8	7 7/8	17 3/4 x 17 3/4
	DLAM 1212 10	12 x 12	10	9 7/8	17 3/4 x 17 3/4
	DLAM 1212 12	12 x 12	12	11 7/8	17 3/4 x 17 3/4
	DLAM 1515 06	15 x 15	6	5 7/8	20 3/4 x 20 3/4
	DLAM 1515 08	15 x 15	8	7 7/8	20 3/4 x 20 3/4
	DLAM 1515 10	15 x 15	10	9 7/8	20 3/4 x 20 3/4
	DLAM 1515 12	15 x 15	12	11 7/8	20 3/4 x 20 3/4
	DLAM 1515 14	15 x 15	14	13 7/8	20 3/4 x 20 3/4
	DLAM 1818 06	18 x 18	6	5 7/8	23 3/4 x 23 3/4
	DLAM 1818 08	18 x 18	8	7 7/8	23 3/4 x 23 3/4
	DLAM 1818 10	18 x 18	10	9 7/8	23 3/4 x 23 3/4
	DLAM 1818 12	18 x 18	12	11 7/8	23 3/4 x 23 3/4
	DLAM 1818 14	18 x 18	14	13 7/8	23 3/4 x 23 3/4
	DLAM 1818 16	18 x 18	16	15 7/8	23 3/4 x 23 3/4

Damper	
☐ DLAM4 Radial Opposed Blade Damper	☐ DLAM5 Radial Sliding Blade Damper

Finish	
☐ White	☐ Custom (please specify)



Project:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

All dimensions in inches

SUBMITTAL SHEET



Nº DLAI

Rev. 2

Ceiling Diffuser - Aluminum Louvered Face Directional Fixed Air Pattern, Insulated Back

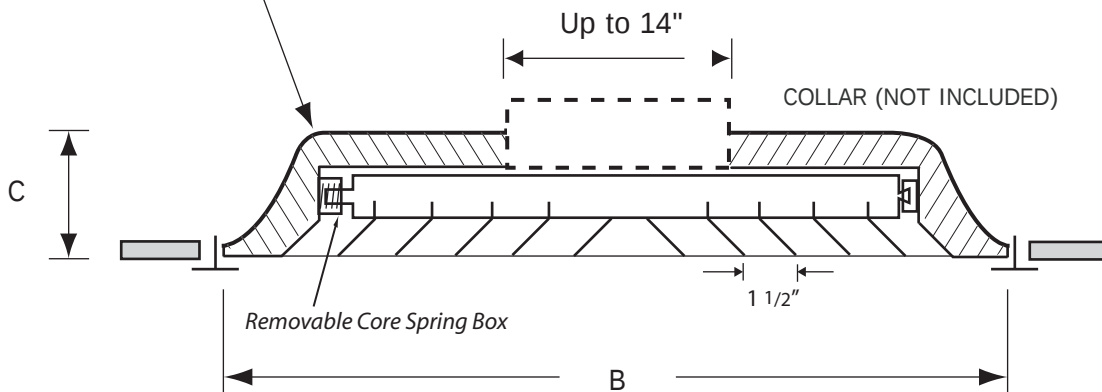
Material: Heavy gauge aluminum and molded fiberglass.
Finish: Powder paint coating - white.
Mounting: Lay-in T-bar ceiling.



DLAI

R6 fiberglass back complies with A.S.T.M. E84 flame and smoke test.

Scored for collar sizes up to 14" D.
 Contractor to install job-specific collar in field.



Core Selection

W1	1 Way	WC	2 Way Corner	WO	2 Way Opposed	W3	3 Way	W4	4 Way

Finish

☐ White	☐ Custom (please specify)
--------------------------------	--



Model #	Face Dim B x B	C
DLAI	23 3/4" x 23 3/4"	3 7/8"

All dimensions in inches

Project: _____
 Architect: _____
 Engineer: _____
 Contractor: _____

SUBMITTAL SHEET



Nº ISO

Rev. 6

Square Plaque Diffuser - Architectural Line Standard Plaque

Material: Stamped heavy gauge steel.
Finish: Powder paint coating - white.
Mounting: Surface or Lay-in T-bar ceiling.
Air Pattern: Fixed horizontal 360° diffusion.
Core Removal: Unlock hanger brackets by swiveling lever down. Holding core panel at opposite sides, push upwards, then turn clockwise and drop core free from back plenum.



Optional R6 fiberglass insulation on back panel complies with A.S.T.M. E84 flame and smoke test. (Available only on models with 24" x 24" face)

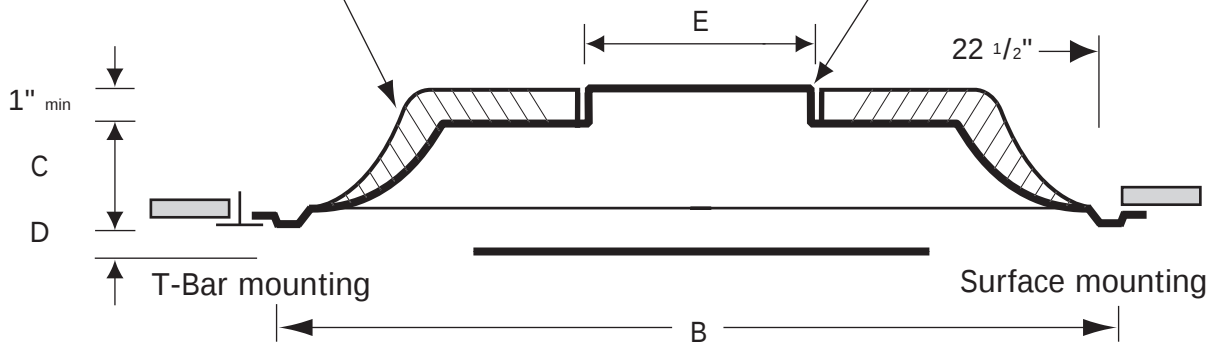
☐ R4

☐ R6

Round collar up to 14".
 Standard height is 1", other options available.

☐ 2" collar

☐ 3" telescopic



✓	Model #	Duct Size	E	Face Dim B x B	C	D
	ISO 1206	6	5 7/8"	11 3/4" x 11 3/4"	1 3/4"	7/16"
	ISO 1208	8	7 7/8"	11 3/4" x 11 3/4"	1 3/4"	7/16"
	ISO 2406	6	5 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	ISO 2408	8	7 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	ISO 2410	10	9 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	ISO 2412	12	11 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	ISO 2414	14	13 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"

Finish	
☐ White	☐ Custom (please specify)



Project: _____

Architect: _____

Engineer: _____

Contractor: _____

All dimensions in inches

SUBMITTAL SHEET



Nº ISOI

Rev. 3

Square Plaque Diffuser - Architectural Line Standard Plaque, Insulated

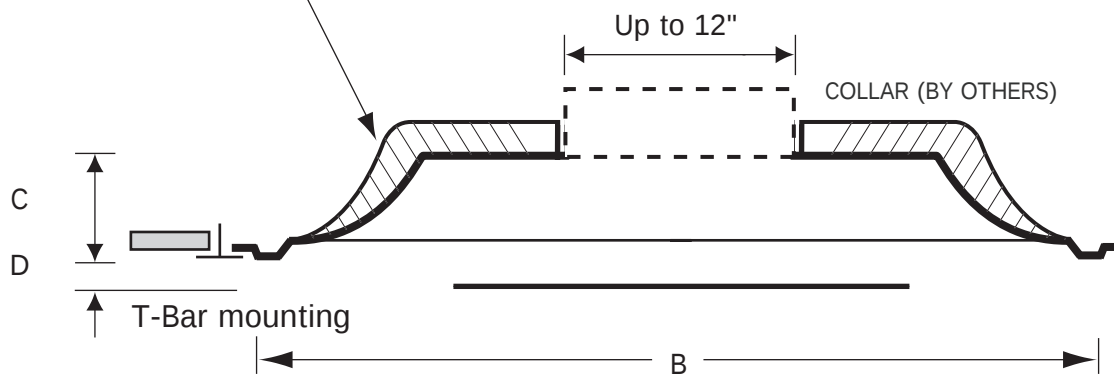
Material: Stamped heavy gauge steel.
Finish: Powder paint coating - white.
Mounting: Lay-in T-bar ceiling.
Air Pattern: Fixed horizontal 360° diffusion.
Core Removal: Unlock hanger brackets by swiveling lever down. Holding core panel at opposite sides, push upwards, then turn clockwise and drop core free from back plenum.



ISOI

R6 fiberglass back complies with A.S.T.M. E84 flame and smoke test.

Scored for collar sizes up to 12" D. Contractor to install job-specific collar in field. For size 14", please refer to model ISO-R6 2414.



Finish	
☐ White	☐ Custom (please specify)



Model #	Face Dim B x B	C	D
ISOI	23 3/4" x 23 3/4"	2 7/8"	7/8"

All dimensions in inches

Project:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

SUBMITTAL SHEET



Nº ISOH

Rev. 2

Square Plaque Diffuser - Architectural Line Heavy Duty Plaque

Material: Stamped heavy gauge steel.
Finish: Powder paint coating - white.
Mounting: Surface or Lay-in T-bar ceiling.
Air Pattern: Fixed horizontal 360° diffusion.
Core Removal: Unlock hanger brackets by swiveling lever down. Holding core panel at opposite sides, push upwards, then turn clockwise and drop core free from back plenum.



Optional R6 fiberglass insulation on back panel complies with A.S.T.M. E84 flame and smoke test. (Available only on models with 24" x 24" face)

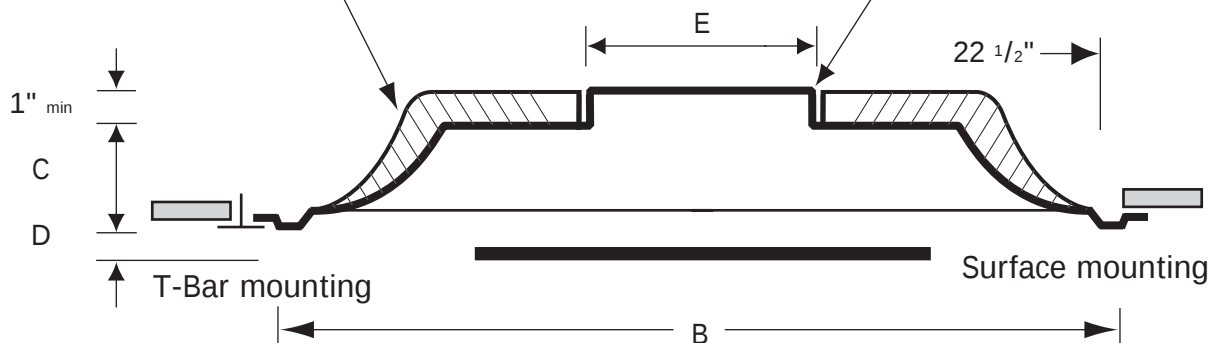
☐ R4

☐ R6

Round collar up to 14". Standard height is 1", other options available.

☐ 2" collar

☐ 3" telescopic



✓	Model #	Duct Size	E	Face Dim B x B	C	D
	ISO 1206	6	5 7/8"	11 3/4" x 11 3/4"	1 3/4"	7/16"
	ISO 1208	8	7 7/8"	11 3/4" x 11 3/4"	1 3/4"	7/16"
	ISO 2406	6	5 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	ISO 2408	8	7 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	ISO 2410	10	9 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	ISO 2412	12	11 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"
	ISO 2414	14	13 7/8"	23 3/4" x 23 3/4"	2 7/8"	7/8"

All dimensions in inches

Finish	
☐ White	☐ Custom (please specify)



Project: _____
 Architect: _____
 Engineer: _____
 Contractor: _____

SUBMITTAL SHEET



Nº ISOHI

Rev. 3

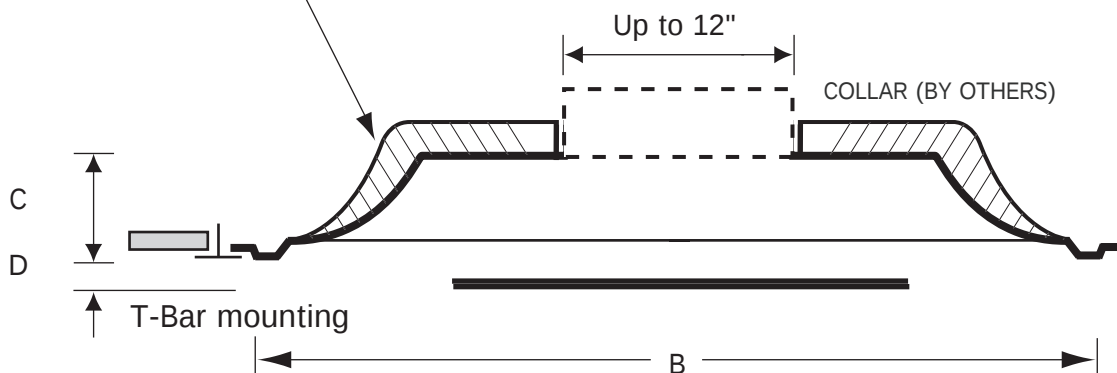
Square Plaque Diffuser - Architectural Line Heavy Duty Plaque, Insulated

Material: Stamped heavy gauge steel.
Finish: Powder paint coating - white.
Mounting: Lay-in T-bar ceiling.
Air Pattern: Fixed horizontal 360° diffusion.
Core Removal: Unlock hanger brackets by swiveling lever down. Holding core panel at opposite sides, push upwards, then turn clockwise and drop core free from back plenum.



R6 fiberglass back complies with A.S.T.M. E84 flame and smoke test.

Scored for collar sizes up to 12" D. Contractor to install job-specific collar in field. For size 14", please refer to model ISO-R6 2414.



Finish	
☐ White	☐ Custom (please specify)



Model #	Face Dim B x B	C	D
ISOHI	23 ³ / ₄ " x 23 ³ / ₄ "	2 ⁷ / ₈ "	⁷ / ₈ "

All dimensions in inches

Project: _____
 Architect: _____
 Engineer: _____
 Contractor: _____

Perforated Face Supply Diffuser with Molded Fiberglass Back Panel Fixed face - baffle deflector

Material: Molded fiberglass back with aluminum foil vapor barrier scored for 6" to 14" D. Steel perforated face with 3/16" diam. holes on 1/4" staggered centers, affords 53% free area.

Finish: Powder paint coating - white.

Air pattern: Fixed horizontal 360° diffusion.

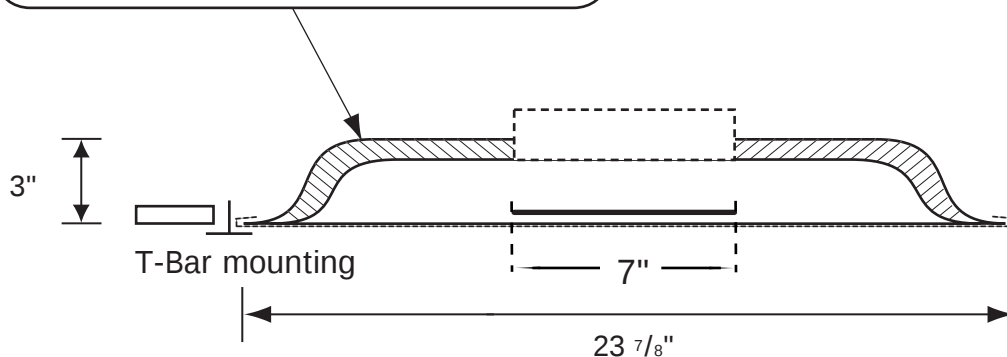
Mounting: Lay-in T-bar ceiling.

Insulation: R6 Molded Fiberglass.



PSI

Fiberglass back complies with A.S.T.M. E84 flame and smoke test. Scored for collar sizes up to 14" D.



Finish

☐ White

☐ Custom
(please specify)



Project: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



Nº PSIL

Rev. 6

Perforated Face Supply Diffuser with Molded Fiberglass Back Panel Fixed face - directional louvers deflector



PSIL

Material: Molded fiberglass back with aluminum foil vapor barrier scored for 6" to 14" D. Steel perforated face with 3/16" diam. holes on 1/4" staggered centers, affords 53% free area.

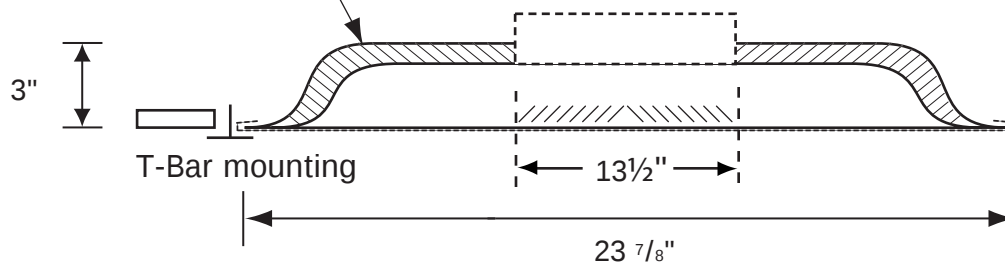
Finish: Powder paint coating - white.

Air pattern: Fixed horizontal 360° diffusion.

Mounting: Lay-in T-bar ceiling.

Insulation: R6 Molded Fiberglass.

Fiberglass back complies with A.S.T.M. E84 flame and smoke test. Scored for collar sizes up to 14" D.



Finish

☐ White

☐ Custom
(please specify)



Project: _____

Architect: _____

Engineer: _____

Contractor: _____

All dimensions in inches

SUBMITTAL SHEET



N° PRI

Rev. 6

Perforated Face Return Diffuser with Molded Fiberglass Back Panel Fixed face

Material: Molded fiberglass back with aluminum foil vapor barrier scored for 6" to 14" D. Steel perforated face with 3/16" diam. holes on 1/4" staggered centers, affords 53% free area.

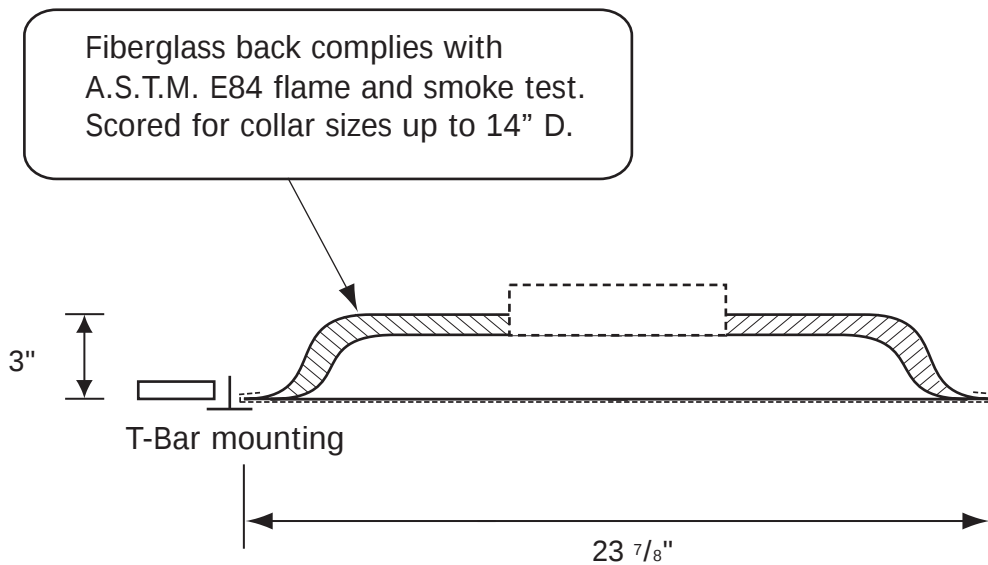
Finish: Powder paint coating - white.

Mounting: Lay-in T-bar ceiling.

Insulation: R6 Molded Fiberglass.



PRI



Finish	
☐ White	☐ Custom (please specify)



Project:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

SUBMITTAL SHEET



N° PSM

Rev. 6

Perforated Face Supply Diffuser Fixed face - baffle deflector

Material: Stamped heavy gauge steel back panel.
Coated steel perforated face with 3/16" diam. round holes on 1/4" staggered centers, affords 53% free area.

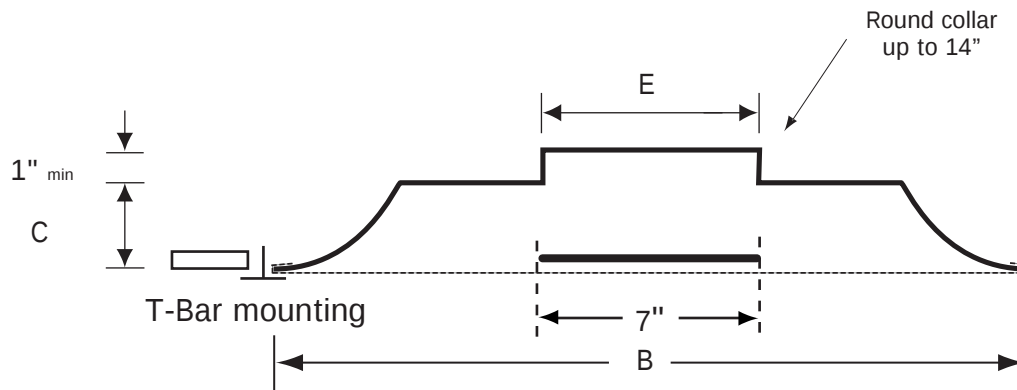
Finish: Powder paint coating - white.

Air pattern: Fixed horizontal 360° diffusion.

Mounting: Lay-in T-bar ceiling.



PSM



Optional fiberglass insulation on back panel, complies with A.S.T.M. E84 flame and smoke test. (Available only on models with 24" x 24" face)

☐ R4

☐ R6

Finish

☐ White

☐ Custom
(please specify)



✓	Model #	Duct Size	E	Face Dim B x B	C
	PSM 2406	6	5 7/8"	23 7/8" x 23 7/8"	2 7/8"
	PSM 2408	8	7 7/8"	23 7/8" x 23 7/8"	2 7/8"
	PSM 2410	10	9 7/8"	23 7/8" x 23 7/8"	2 7/8"
	PSM 2412	12	11 7/8"	23 7/8" x 23 7/8"	2 7/8"
	PSM 2414	14	13 7/8"	23 7/8" x 23 7/8"	2 7/8"

All dimensions in inches

Project: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



N° PSML

Rev. 5

Perforated Face Supply Diffuser Fixed face - directional louvers deflectors

Material: Stamped heavy gauge steel back panel.
Coated steel perforated face with 3/16" diam. round holes on 1/4" staggered centers, affords 53% free area.

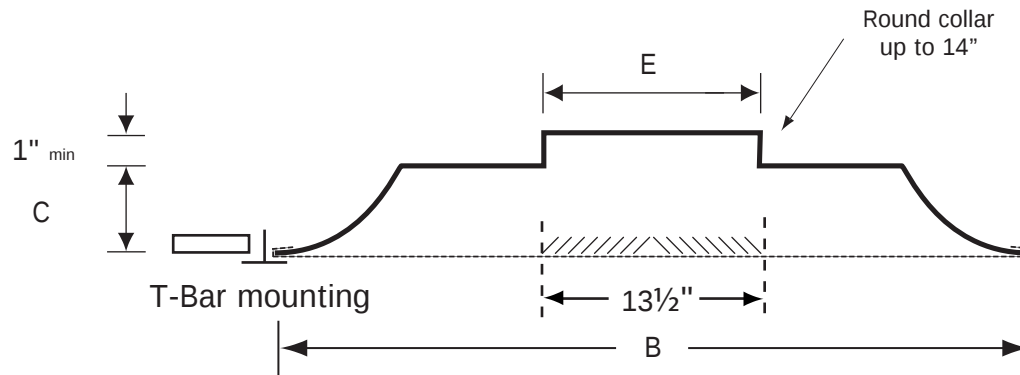
Finish: Powder paint coating - white.

Air pattern: Fixed horizontal 360° diffusion.

Mounting: Lay-in T-bar ceiling.



PSML



Optional fiberglass insulation on back panel, complies with A.S.T.M. E84 flame and smoke test. (Available only on models with 24" x 24" face)

☐ R4

☐ R6

Finish



White



Custom
(please specify)



✓	Model #	Duct Size	E	Face Dim B x B	C
	PSML 2406	6	5 7/8"	23 7/8" x 23 7/8"	2 7/8"
	PSML 2408	8	7 7/8"	23 7/8" x 23 7/8"	2 7/8"
	PSML 2410	10	9 7/8"	23 7/8" x 23 7/8"	2 7/8"
	PSML 2412	12	11 7/8"	23 7/8" x 23 7/8"	2 7/8"
	PSML 2414	14	13 7/8"	23 7/8" x 23 7/8"	2 7/8"

All dimensions in inches

Project: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



N° PRM

Rev. 6

Perforated Face Return Diffuser Fixed face

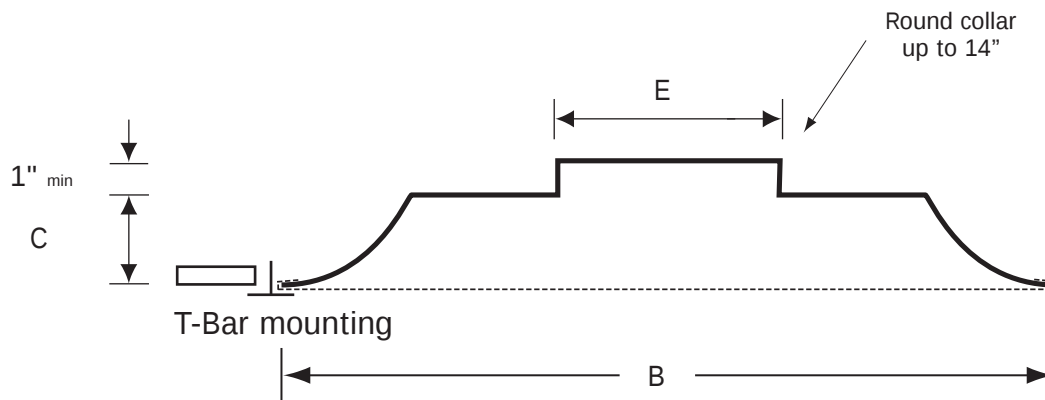
Material: Stamped heavy gauge steel back panel.
Coated steel perforated face with 3/16" diam. round holes on 1/4" staggered centers, affords 53% free area.

Finish: Powder paint coating - white.

Mounting: Lay-in T-bar ceiling.



PRM



Optional fiberglass insulation on back panel, complies with A.S.T.M. E84 flame and smoke test. (Available only on models with 24" x 24" face)

☐ R4

☐ R6

Finish

☐ White

☐ Custom
(please specify)



✓	Model #	Duct Size	E	Face Dim B x B	C
	PRM 2406	6	5 7/8"	23 7/8" x 23 7/8"	2 7/8"
	PRM 2408	8	7 7/8"	23 7/8" x 23 7/8"	2 7/8"
	PRM 2410	10	9 7/8"	23 7/8" x 23 7/8"	2 7/8"
	PRM 2412	12	11 7/8"	23 7/8" x 23 7/8"	2 7/8"
	PRM 2414	14	13 7/8"	23 7/8" x 23 7/8"	2 7/8"

All dimensions in inches

Project: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET

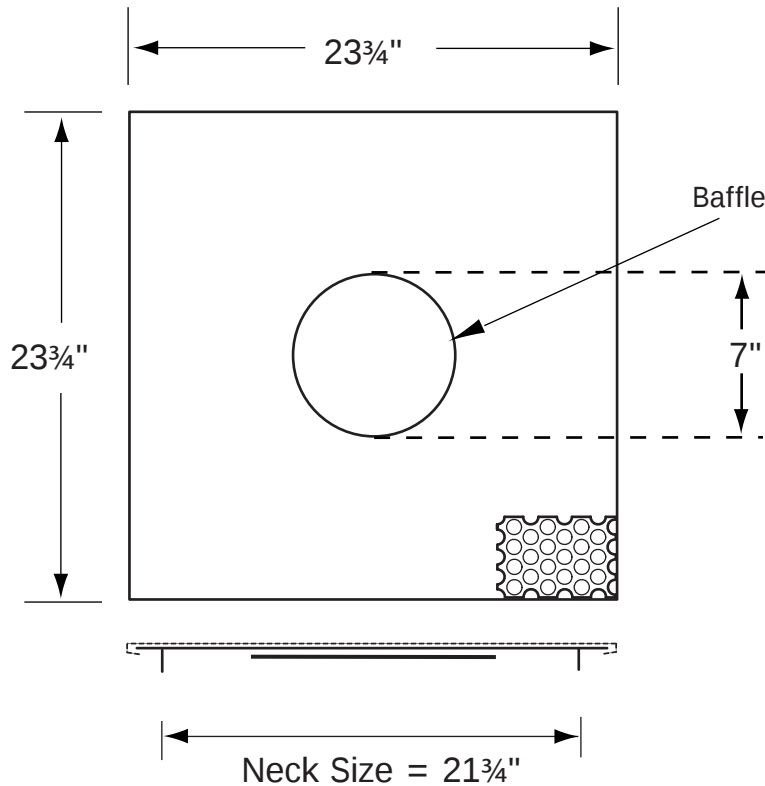


Nº PST

Rev. 0

Perforated Ceiling Supply Diffuser with Square Neck Fixed Face - Round Baffle deflector

- Description:** Full face perforated panel with 3/16" holes on 1/4" staggered centers, affords 53% open area. Round baffle.
- Material:** All steel construction.
- Air Pattern:** Fixed horizontal 360° diffusion.
- Finish:** Powder paint white finish.
- Mounting:** For surface mounting or T-bar lay-in ceiling grids.



Model #	Neck Size	Face Dim.
PST 2424	21 $\frac{3}{4}$ "	23 $\frac{3}{4}$ " x 23 $\frac{3}{4}$ "

Finish	
☐ White	☐ Custom (please specify)



Job: _____

Architect: _____

Engineer: _____

Contractor: _____

All dimensions in inches

SUBMITTAL SHEET



Nº PSTL

Rev. 0

Perforated Ceiling Supply Diffuser with Square Neck Fixed Face - Louver deflectors

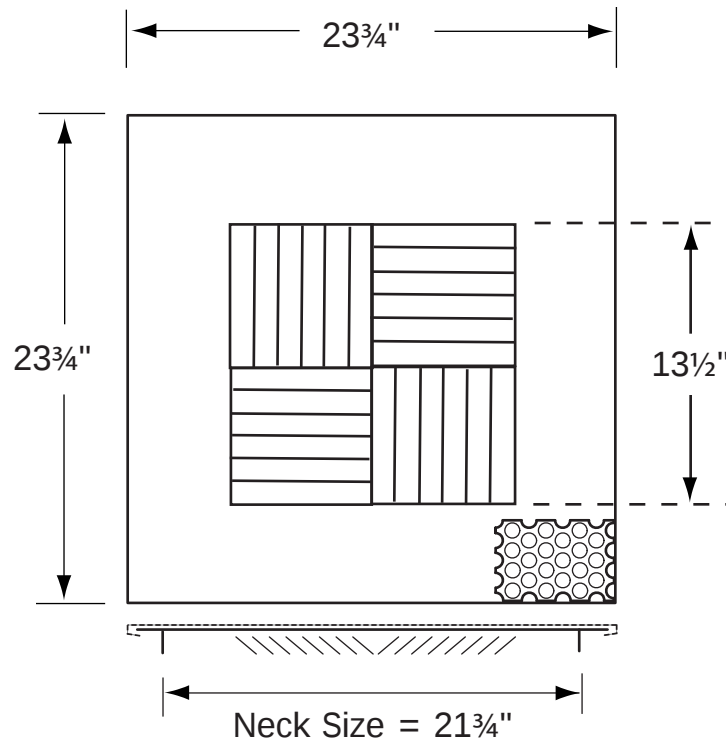
Description: Full face perforated panel with 3/16" holes on 1/4" staggered centers, affords 53% open area. 4 Directional Louvers.

Material: All steel construction.

Air Pattern: Fixed horizontal 360° diffusion.

Finish: Powder paint coating - white.

Mounting: For surface mounting or T-bar lay-in ceiling grids.



Model #	Neck Size	Face Dim.
PSTL 2424	21 3/4	23 3/4" x 23 3/4"

All dimensions in inches

Finish	
☐ White	☐ Custom (please specify)



Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



Nº PRN

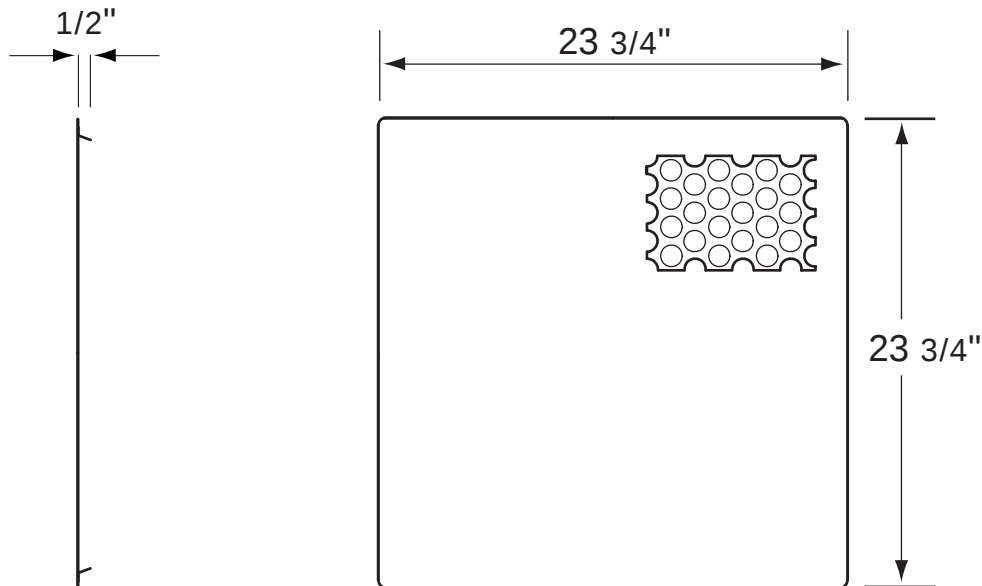
Rev. 1

Ceiling Return Air Diffuser

Material: Metal face construction
Full face perforated panel with 3/16" holes
on 1/4" staggered and 51% open area.

Finish: Bake white paint finish.

Mounting: Lay-in T-bar ceiling.



Finish	
☐ White	☐ Custom (please specify)



Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



Nº PRT

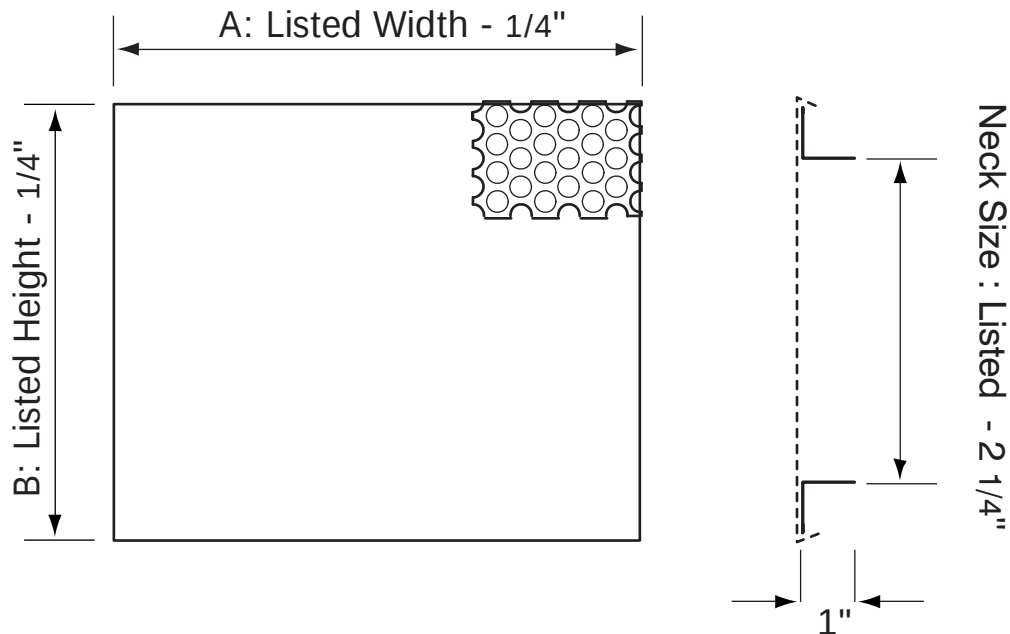
Rev. 3

Ceiling Return Air Diffuser

Material: High capacity all steel construction.
Full face perforated panel with 3/16" holes
on 1/4" staggered centres and 51% open area.

Finish: Powder paint white finish.

Mounting: For surface mounting or T-bar lay-in ceiling grids.



✓	Model #	Face Dim. A x B
	PRT 1212	11 3/4" x 11 3/4"
	PRT 2412	23 3/4" x 11 3/4"
	PRT 2424	23 3/4" x 23 3/4"

All dimensions in inches

Finish	
☐ White	☐ Custom (please specify)



Job:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

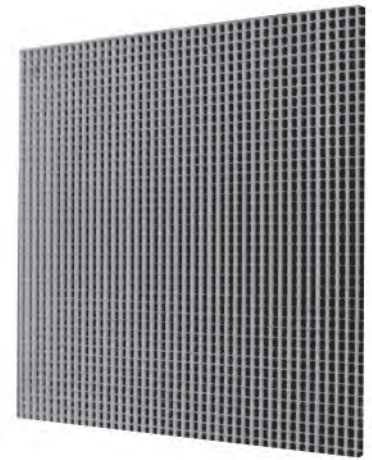
SUBMITTAL SHEET



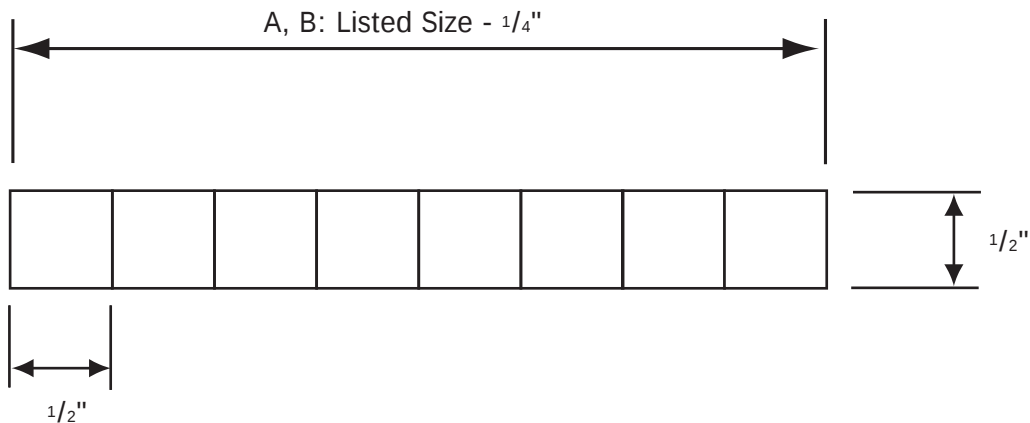
Nº ERN

Eggcrate Return Grille - Core Only

Material: All aluminum
Mounting: Lay-in T-bar ceiling
Grid core: Aluminum $\frac{1}{2}$ " X $\frac{1}{2}$ " X $\frac{1}{2}$ "
 Custom Face Dimensions Available
 up to 48" x 24"



ERN
Aluminum Grid Core



Finish		
White ☐	Mill ☐	Custom (please specify) ☐



✓	Model Listed Size	Face Dim. A x B
	ERN 1212	11 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ "
	ERN 2412	23 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ "
	ERN 2424	23 $\frac{3}{4}$ " x 23 $\frac{3}{4}$ "
	ERN 4824	47 $\frac{3}{4}$ " x 23 $\frac{3}{4}$ "
	ERN _____ A (Length) B (Width) Max Size 48" x 24"	A - $\frac{1}{4}$ " " B - $\frac{1}{4}$ "

All dimensions in inches

Job: _____
Architect: _____
Engineer: _____
Contractor: _____

Rev. 4

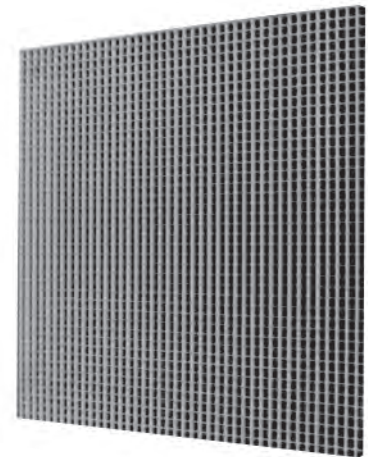
SUBMITTAL SHEET



Nº ERN1 / ERN111

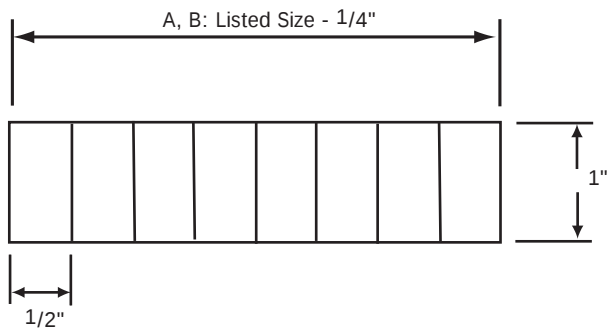
Eggcrate Return Grille - Core Only

Material: All aluminum.
Mounting: Lay-in T-bar ceiling.
Grid cores: ERN1: 1/2" X 1/2" X 1"
 ERN111: 1" X 1" X 1"

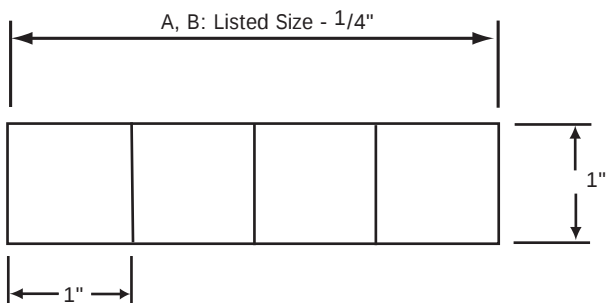


ERN1
Aluminum Grid Core

ERN1



ERN111



✓	Model Listed Size	Face Dim. A x B
	ERN1 2424	23 3/4" x 23 3/4"
	ERN1 4824	47 3/4" x 23 3/4"
	ERN111 2424	23 3/4" x 23 3/4"
	ERN111 4824	47 3/4" x 23 3/4"

All dimensions in inches

Finish		
☐ White	☐ Mill	☐ Custom (please specify)



Job: _____

Architect: _____
Engineer: _____
Contractor: _____

Rev. 1

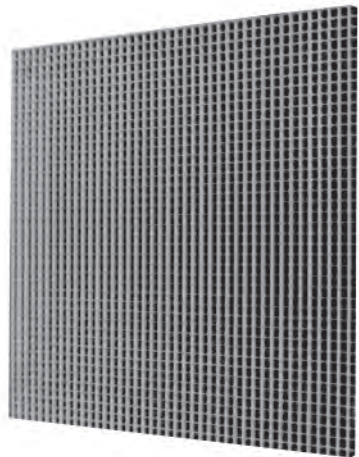
SUBMITTAL SHEET



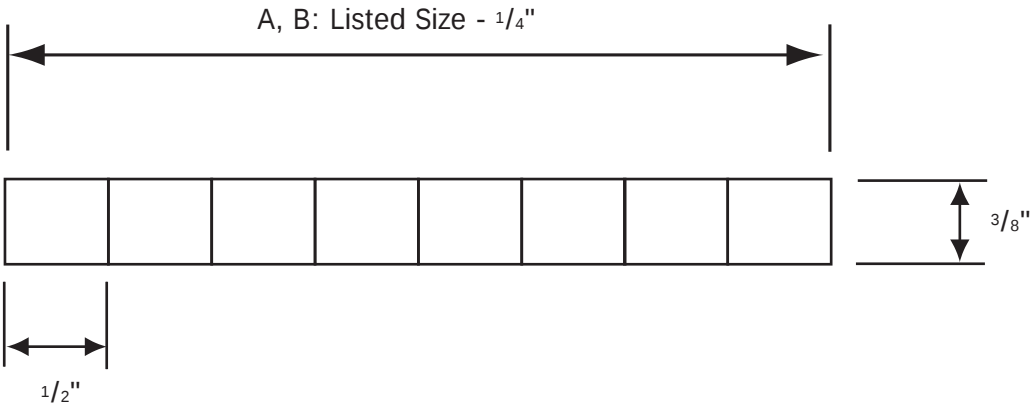
Nº ERN-P

Eggcrate Return Grille - Core Only

Material: Polystyrene-based material.
Finish: White color.
Mounting: Lay-in T-bar ceiling.
Grid core: Plastic $\frac{1}{2}$ " X $\frac{1}{2}$ " X $\frac{3}{8}$ ".



ERN-P
Plastic Grid Core



✓	Model #	Face Dim. A x B
	ERN-P 1212	11 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ "
	ERN-P 1224	11 $\frac{3}{4}$ " x 23 $\frac{3}{4}$ "
	ERN-P 2424	23 $\frac{3}{4}$ " x 23 $\frac{3}{4}$ "
	ERN-P 2448	23 $\frac{3}{4}$ " x 47 $\frac{3}{4}$ "

Job:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

All dimensions in inches

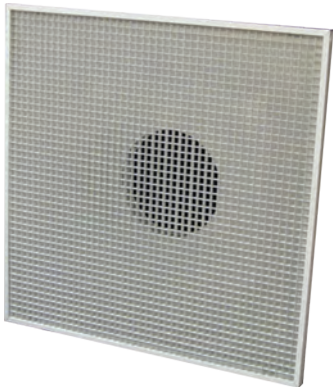
SUBMITTAL SHEET



Nº ERM

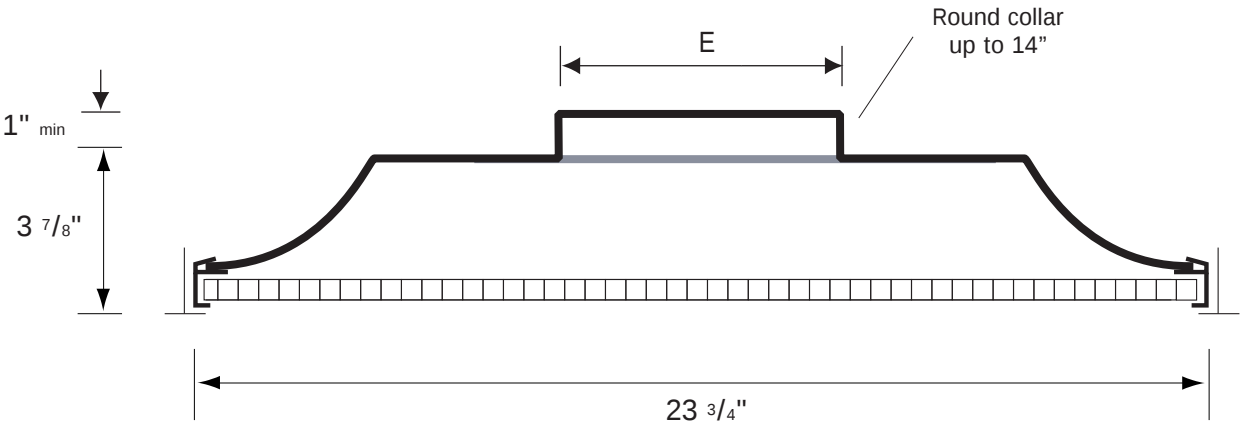
Rev. 3

Aluminum Egg Crate Return with Steel Back Panel



ERM

- Material:** Stamped heavy gauge steel in an extruded aluminum fixed frame.
- Grid core:** Aluminum $\frac{1}{2}$ " X $\frac{1}{2}$ " X $\frac{1}{2}$ ".
- Finish:** Powder paint coating - white.
- Mounting:** T-bar Lay-in ceiling.



Finish	
☐ White	☐ Custom (please specify)



✓	Model #	Duct Size	E	Face Dim
	ERM 1206	6	5 7/8"	11 3/4" x 11 3/4"
	ERM 1208	8	7 7/8"	11 3/4" x 11 3/4"
	ERM 2406	6	5 7/8"	23 3/4" x 23 3/4"
	ERM 2408	8	7 7/8"	23 3/4" x 23 3/4"
	ERM 2410	10	9 7/8"	23 3/4" x 23 3/4"
	ERM 2412	12	11 7/8"	23 3/4" x 23 3/4"
	ERM 2414	14	13 7/8"	23 3/4" x 23 3/4"

Job:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

All dimensions in inches

SUBMITTAL SHEET



Nº ERI

Aluminum Egg Crate Return with Molded Fiberglass Back Panel

Material: Molded fiberglass back with aluminum foil vapor barrier scored for 6" to 14" D. in an extruded aluminum fixed frame.

Grid core: Aluminum 1/2" X 1/2" X 1/2".

Finish: Powder paint coating - white.

Mounting: T-bar Lay-in ceiling.

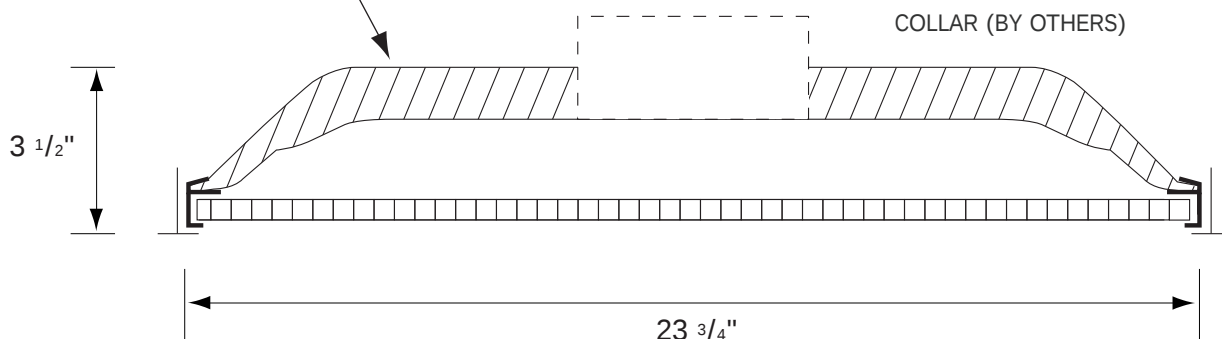


ERI

Fiberglass back complies with A.S.T.M. E84 flame and smoke test. Scored for collar sizes up to 14" D.

☐ R4

☐ R6



Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



N° ERE / ERE7

Eggcrate Return Grille for Surface Mount

- Material:** All aluminium construction.
- Mounting:** Drywall or any surface mounting.
Countersunk mounting holes on frame.
- Grid core:** Aluminum $\frac{1}{2}" \times \frac{1}{2}" \times \frac{1}{2}"$.

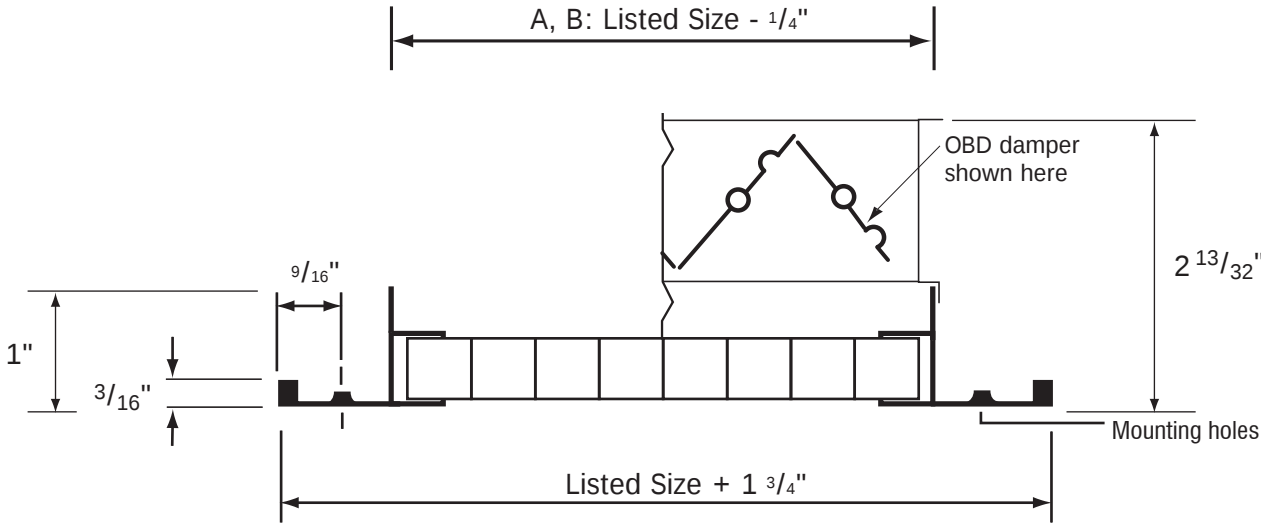


Finish	
White ☐	Custom (please specify) ☐

ERE / ERE7
(ERE 2424 shown here)

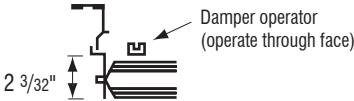
☐ **ERE** (without OBD damper)

☐ **ERE7** (with OBD damper)

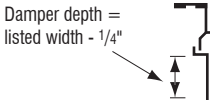


Size limits	Width A		Height B	
	in	mm	in	mm
Minimum	4	102	4	102
Maximum	48	1219	48	1219

#7 STEEL DAMPER FURNISHED ON LISTED WIDTHS OF 4" AND OVER (for 1" increments only)



#9 STEEL DAMPER FURNISHED ON LISTED WIDTHS UNDER 4"



All dimensions in inches

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

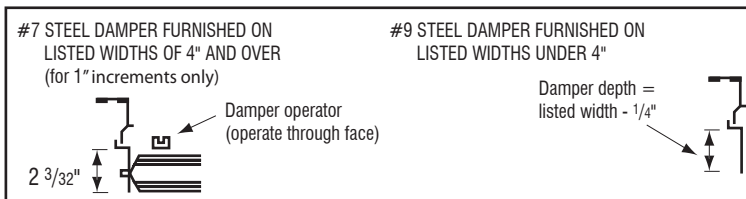
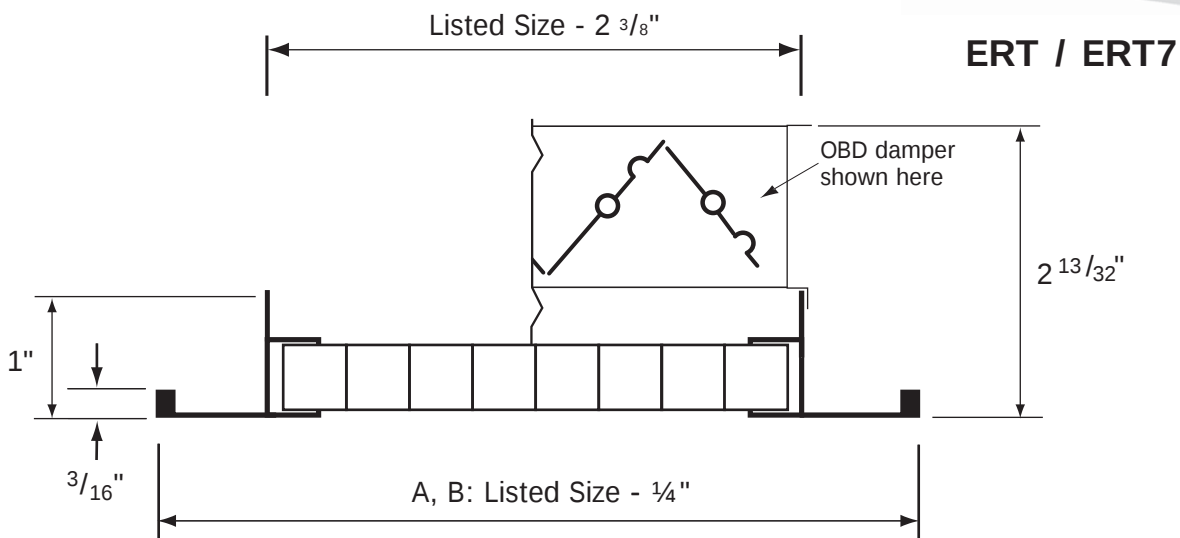
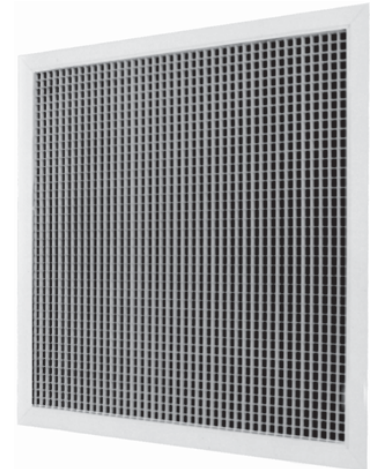
SUBMITTAL SHEET



N° ERT / ERT7

Eggcrate Return Grille, T-Bar Mount

Material: All aluminium construction.
Mounting: Lay-in T-bar ceiling.
 No mounting holes. 1 1/4" Frame
Grid core: Aluminium 1/2" X 1/2" X 1/2".



✓	Model #	Face Dim. A x B	Neck
	ERT 1212	11 3/4" x 11 3/4"	9 5/8" x 9 5/8"
	ERT 2412	23 3/4" x 11 3/4"	21 5/8" x 9 5/8"
	ERT 2424	23 3/4" x 23 3/4"	21 5/8" x 21 5/8"
	ERT 4812	47 3/4" x 11 3/4"	45 5/8" x 9 5/8"
	ERT 4824	47 3/4" x 23 3/4"	45 5/8" x 21 5/8"
	ERT7 1212	11 3/4" x 11 3/4"	9 5/8" x 9 5/8"
	ERT7 2412	23 3/4" x 11 3/4"	21 5/8" x 9 5/8"
	ERT7 2424	23 3/4" x 23 3/4"	21 5/8" x 21 5/8"
	ERT7 4812	47 3/4" x 11 3/4"	45 5/8" x 9 5/8"
	ERT7 4824	47 3/4" x 23 3/4"	45 5/8" x 21 5/8"

Custom dimensions available upon request.
 All dimensions in inches.

Finish	
☐ White	☐ Custom (please specify) _____

Job: _____
Architect: _____
Engineer: _____
Contractor: _____

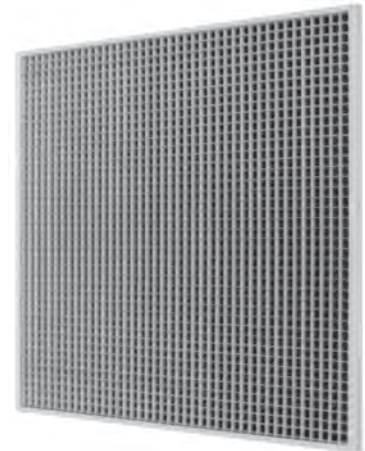
SUBMITTAL SHEET



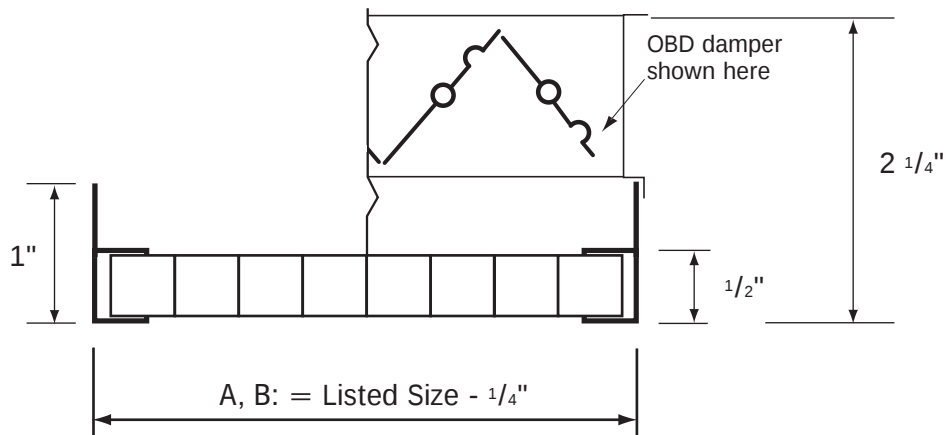
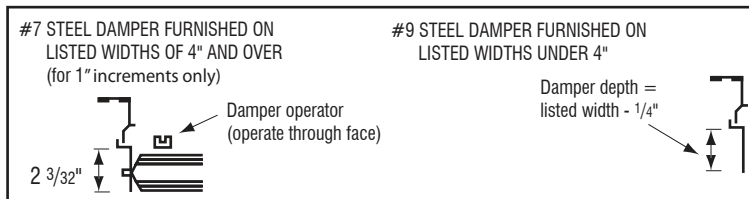
N° ERU / ERU7

Eggcrate Return Grille with "U" Frame

Material: All aluminium construction.
Mounting: T-bar lay-in.
Grid core: Aluminum $\frac{1}{2}$ " x $\frac{1}{2}$ " x $\frac{1}{2}$ ".



ERU / ERU7
 (ERU 2424 shown here)



✓	Model #	Face Dim. A x B	Neck
	ERU 1212	11 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ "	12" x 12"
	ERU 2412	23 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ "	24" x 12"
	ERU 2424	23 $\frac{3}{4}$ " x 23 $\frac{3}{4}$ "	24" x 24"
	ERU 4812	47 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ "	48" x 12"
	ERU 4824	47 $\frac{3}{4}$ " x 23 $\frac{3}{4}$ "	48" x 24"
	ERU7 1212	11 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ "	12" x 12"
	ERU7 2412	23 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ "	24" x 12"
	ERU7 2424	23 $\frac{3}{4}$ " x 23 $\frac{3}{4}$ "	24" x 24"
	ERU7 4812	47 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ "	48" x 12"
	ERU7 4824	47 $\frac{3}{4}$ " x 23 $\frac{3}{4}$ "	48" x 24"

Custom dimensions available upon request.

All dimensions in inches.

Finish	
☐ White	☐ Custom _____ (please specify)

Job: _____
Architect: _____
Engineer: _____
Contractor: _____

SUBMITTAL SHEET

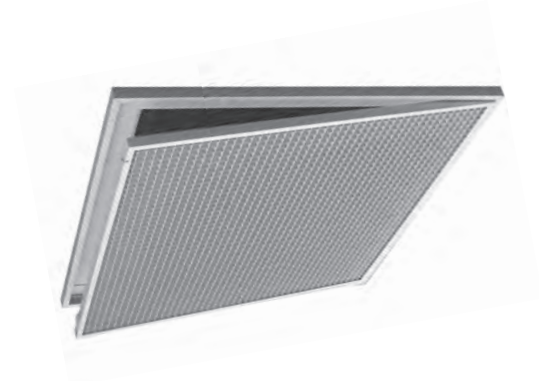


Nº ERTF

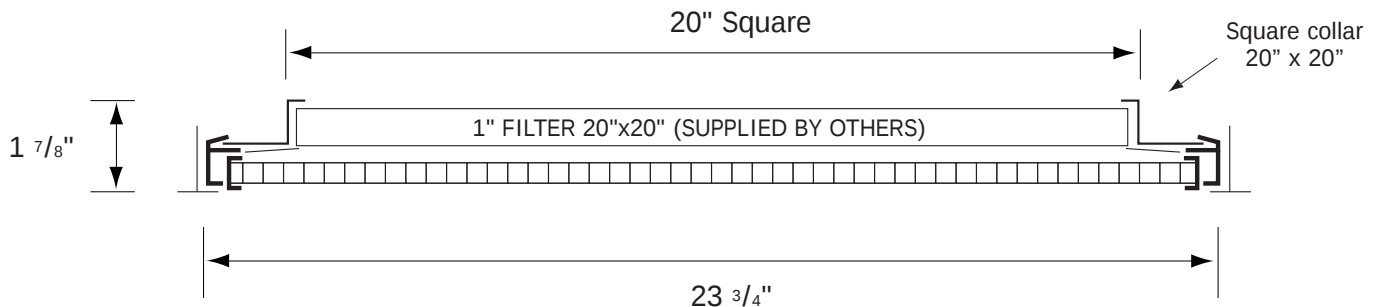
Aluminum Egg Crate Filter Return with 20" x 20" Filter Frame Hinged face - Steel Back

Material: Steel filter frame will accept 20"x20" standard 1" filter. Aluminum egg crate grid 1/2"x1/2"x1/2" in hinged extruded aluminum U frame, swings in and out of fixed frame for access to 20" x 20" filter, by others.

Finish: Powder paint coating - white.
Mounting: T-bar Lay-in ceiling.



ERTF



Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



N° ERMF

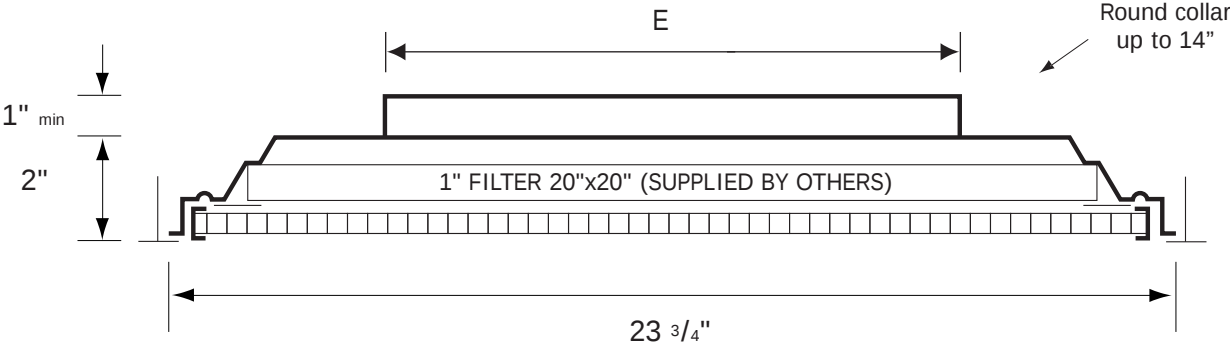
Aluminum Egg Crate Filter Return with Steel Back Panel Hinged face



ERMF

Material: Stamped heavy gauge steel back panels with reinforcing corners. Aluminum grid 1/2"x 1/2"x 1/2" in hinged extruded aluminum U frame swings in and out of fixed frame for access to 20" x 20" filter, by others.

Finish: Powder paint coating - white.
Mounting: T-bar Lay-in ceiling.



✓	Model #	Duct Size	E	Face Dim
	ERMF 2406	6	5 7/8"	23 3/4" x 23 3/4"
	ERMF 2408	8	7 7/8"	23 3/4" x 23 3/4"
	ERMF 2410	10	9 7/8"	23 3/4" x 23 3/4"
	ERMF 2412	12	11 7/8"	23 3/4" x 23 3/4"
	ERMF 2414	14	13 7/8"	23 3/4" x 23 3/4"

Job:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

SUBMITTAL SHEET



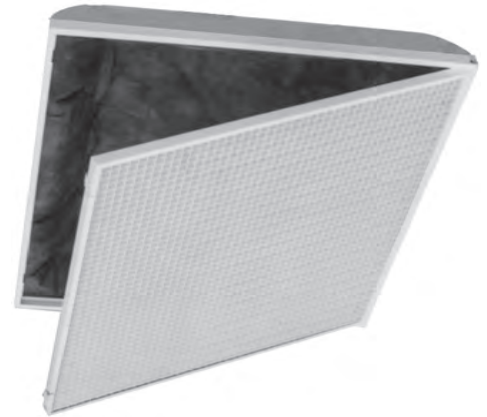
Nº ERIF

Aluminum Egg Crate Filter Return with Molded Fiberglass Back Panel Hinged face

Material: Molded fiberglass back with aluminum foil vapor barrier scored for 6" to 14" D. in an extruded aluminum fixed frame. Aluminum grid 1/2"x1/2"x1/2" in hinged extruded aluminum U frame, swing in and out of fixed frame for access to 20"x20" filter, by others.

Finish: Powder paint coating - white.

Mounting: T-bar Lay-in ceiling.

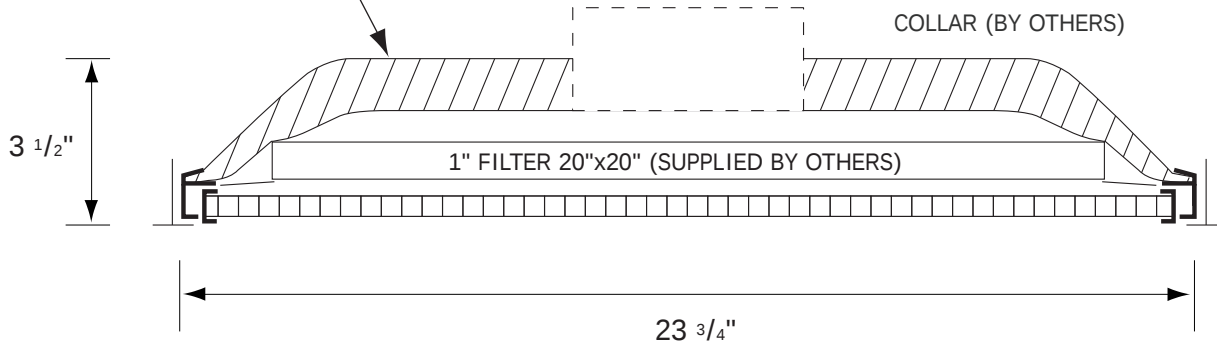


ERIF

Fiberglass back complies with
A.S.T.M. E84 flame and smoke test.
Scored for collar sizes up to 14" D.

☐ R4

☐ R6



Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



Nº LRTF

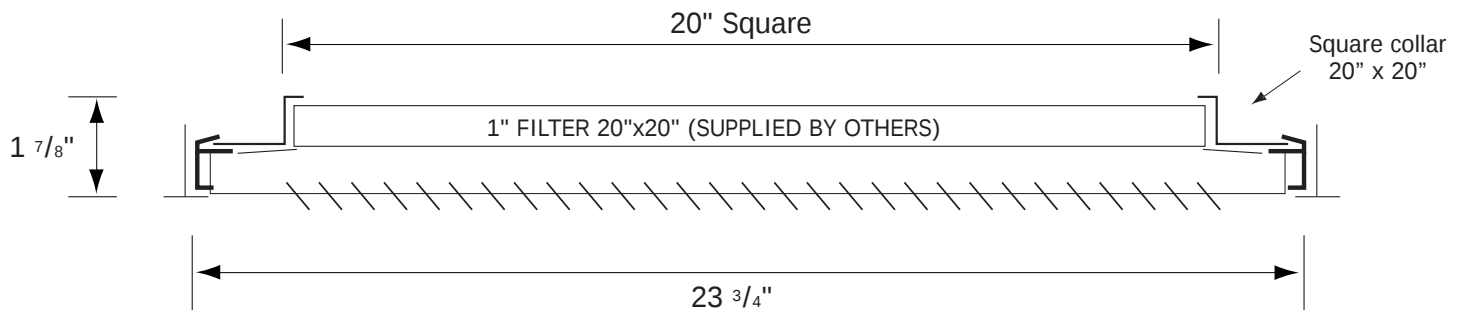
Lanced Face Filter Return with 20" x 20" filter frame Hinged face

Material: Steel filter frame will accept standard 1" filter. Steel lanced face with 1/2" spaced fins at 40° swings in and out of fixed frame, for access to 20"x20" filter, by others.

Finish: Powder paint coating - white.
Mounting: T-bar Lay-in ceiling.



LRTF



Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



N° LRMF

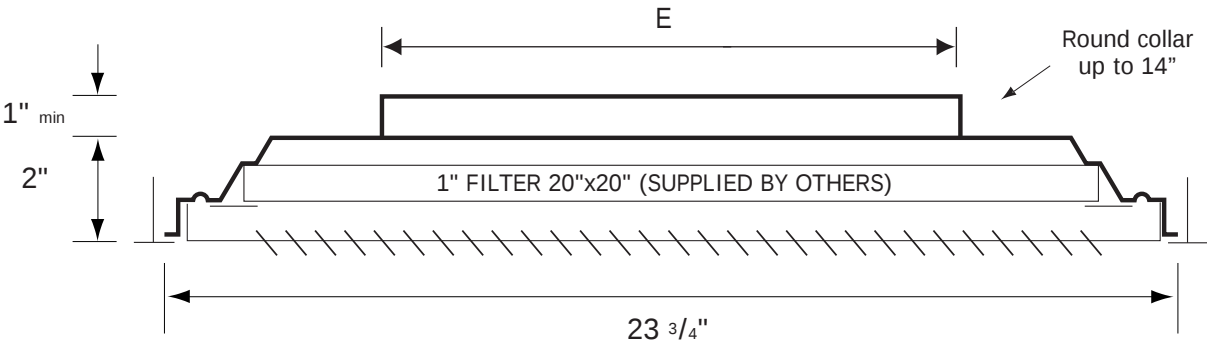
Lanced Face Filter Return with Steel Back Panel, Hinged Face

Material: Stamped heavy gauge steel backpanel with reinforcing corners. Steel lanced face with 1/2" spaced fins at 40° swings in and out of fixed frame, for access to 20"x20" filter, by others.



Finish: Powder paint coating - white.
Mounting: T-bar Lay-in ceiling.

LRMF



✓	Model #	Duct Size	E	Face Dim
	LRMF 2406	6	5 7/8"	23 3/4" x 23 3/4"
	LRMF 2408	8	7 7/8"	23 3/4" x 23 3/4"
	LRMF 2410	10	9 7/8"	23 3/4" x 23 3/4"
	LRMF 2412	12	11 7/8"	23 3/4" x 23 3/4"
	LRMF 2414	14	13 7/8"	23 3/4" x 23 3/4"

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



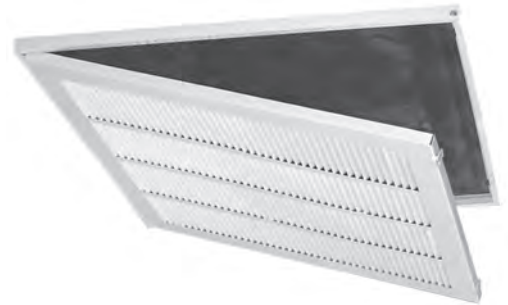
Nº LRIF

Lanced Face Filter Return with Molded Fiberglass Back Panel Hinged face

Material: Molded fiberglass back with aluminum foil vapor barrier scored for 6" to 14" D. in an extruded aluminum fixed frame. Steel lanced face with 1/2" spaced fins set at 40° swings in and out of fixed frame, for access to 20"x20" filter, by others.

Finish: Powder paint coating - white.

Mounting: T-bar Lay-in ceiling.

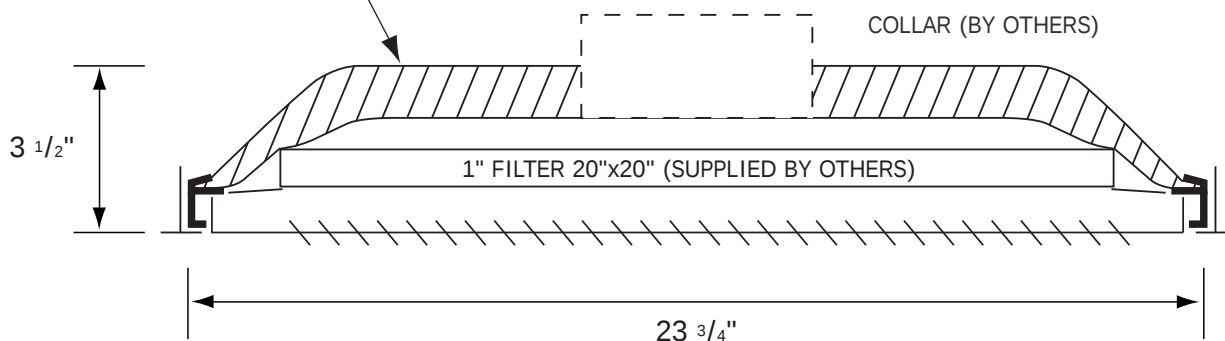


LRIF

Fiberglass back complies with
A.S.T.M. E84 flame and smoke test.
Scored for collar sizes up to 14" D.

☐ R4

☐ R6



Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET

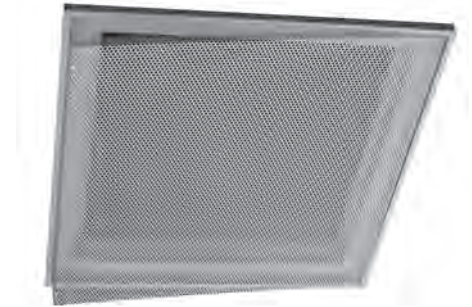


Nº PRTF

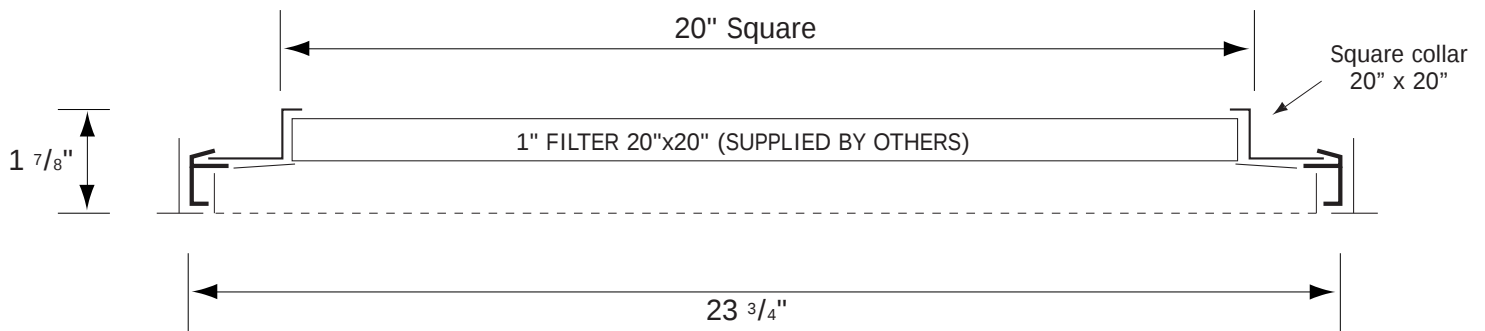
Perforated Face Filter Return with 20" X 20" Filter frame Hinged face

Material: Steel filter frame will accept standard 1" filter. Steel perforated face with 3/16" diam. holes on 1/4" staggered centers, affords 53% free area and swings in and out of fixed frame for access to 20"x20" filter by others.

Finish: Powder paint coating - white.
Mounting: T-bar Lay-in ceiling.



PRTF



Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



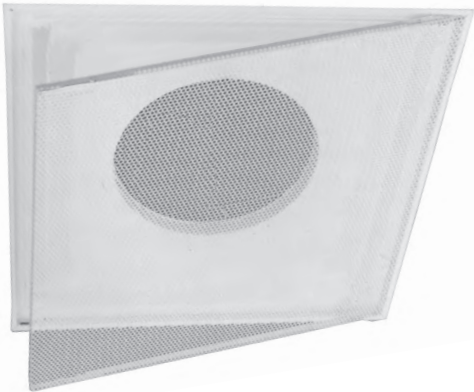
N° PRMF

Perforated Face Filter Return with Steel Back Panel Hinged face

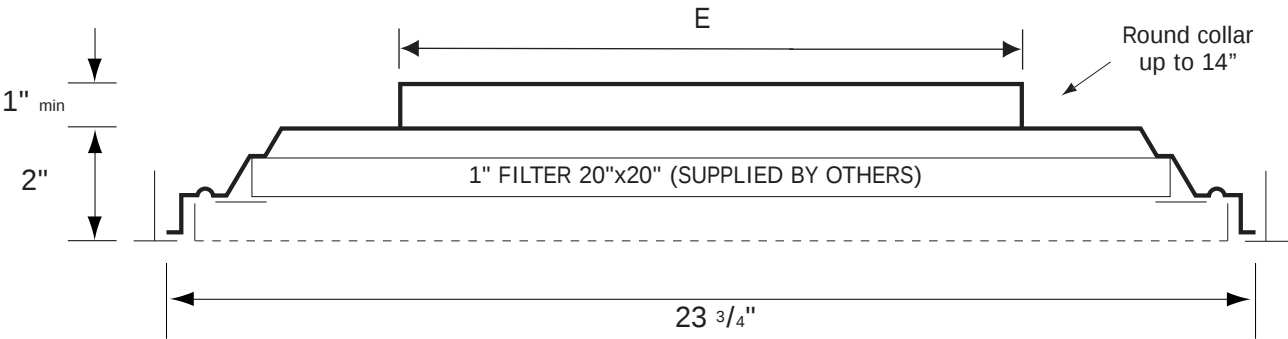
Material: Stamped heavy gauge steal back panel with reinforcing corners. Steel perforated face with 3/16" diam. holes on 1/4" staggered centers, affords 53% free area and swings in and out of fixed frame for access to 20"x20" filter by others.

Finish: Powder paint coating - white.

Mounting: T-bar Lay-in ceiling.



PRMF



✓	Model #	Duct Size	E	Face Dim
	PRMF 2406	6	5 7/8"	23 3/4" x 23 3/4"
	PRMF 2408	8	7 7/8"	23 3/4" x 23 3/4"
	PRMF 2410	10	9 7/8"	23 3/4" x 23 3/4"
	PRMF 2412	12	11 7/8"	23 3/4" x 23 3/4"
	PRMF 2414	14	13 7/8"	23 3/4" x 23 3/4"

Job:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

SUBMITTAL SHEET



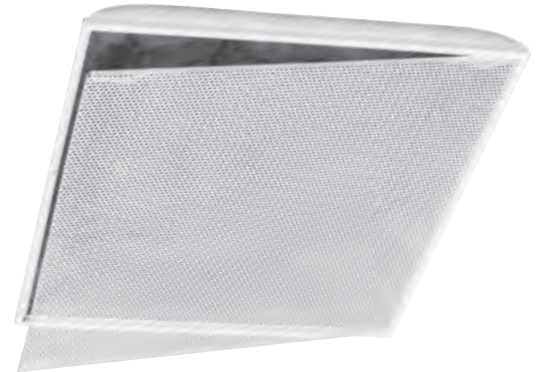
Nº PRIF

Perforated Face Filter Return with Molded Fiberglass Back Panel Hinged face

Material: Molded fiberglass back with aluminum foil vapor barrier scored for 6" to 14" D. in an extruded aluminum fixed frame. Steel perforated face with 3/16" diam. holes on 1/4" staggered centers, affords 53% free area and swings in and out of fixed frame.

Finish: Powder paint coating - white.

Mounting: T-bar Lay-in ceiling.

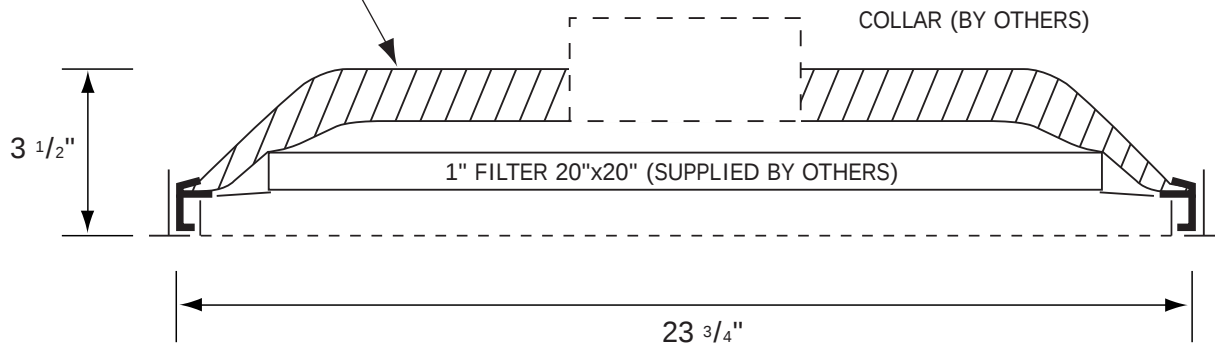


PRIF

Fiberglass back complies with A.S.T.M. E84 flame and smoke test. Scored for collar sizes up to 14" D.

☐ R4

☐ R6



Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



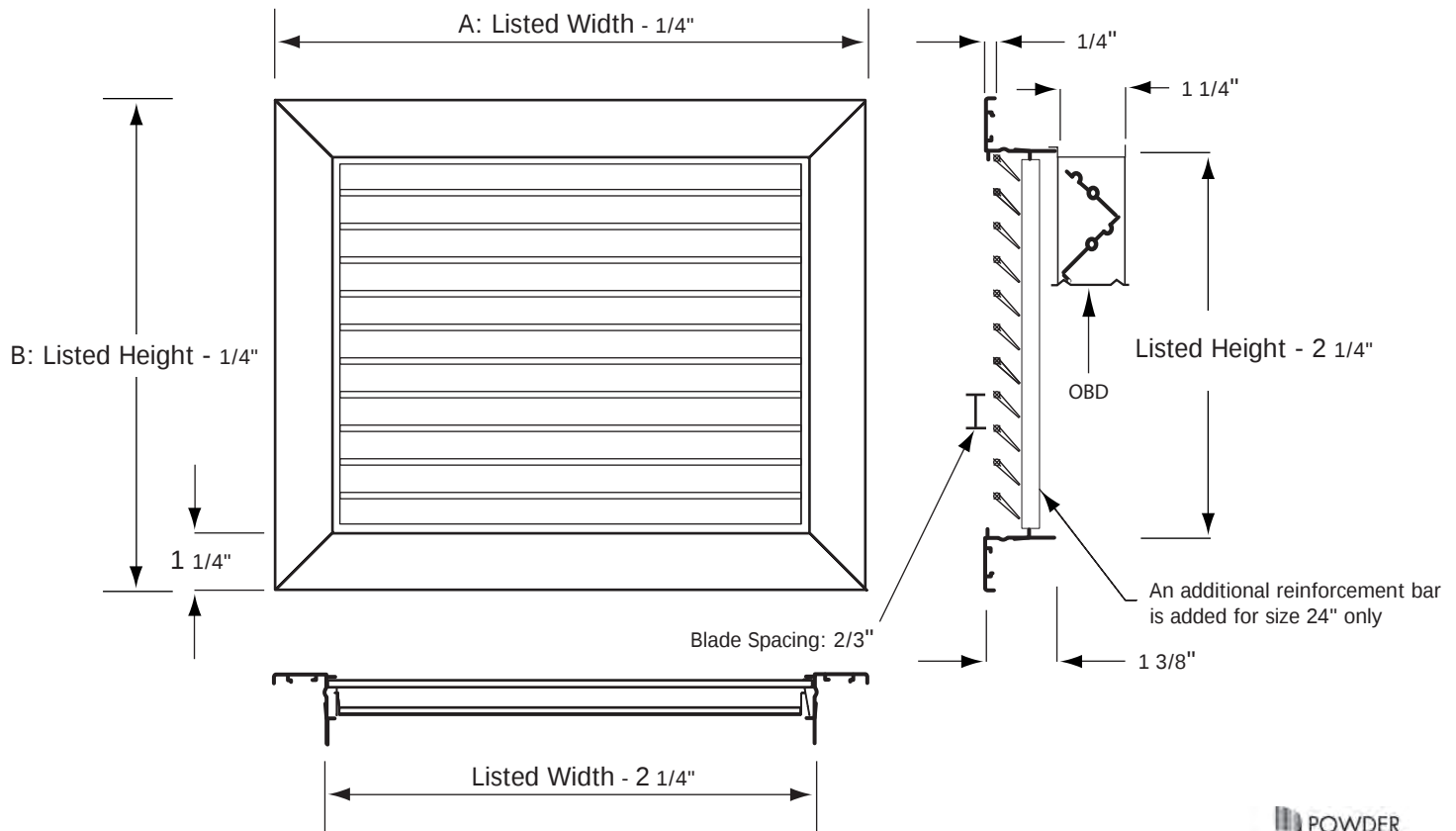
Nº GRT/GRT7

Ceiling Return Grille / Diffuser

Material: Aluminum construction.
Fixed blades.

Finish: Powder paint white finish.

Mounting: For T-bar lay-in ceiling grids.



- ☐ **GRT** without OBD (Default)
- ☐ **GRT7** with OBD

Finish		
☐ White	☐ Mill	☐ Custom (please specify)

✓	Model #	Face Dim. A x B	Neck Size.
	GRT/7 1212	11 3/4" x 11 3/4"	10" x 10"
	GRT/7 2412	23 3/4" x 11 3/4"	22" x 10"
	GRT/7 2424	23 3/4" x 23 3/4"	22" x 22"
	GRT/7 4812	47 3/4" x 11 3/4"	46" x 10"
	GRT/7 4824	47 3/4" x 23 3/4"	46" x 22"

Job:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

SUBMITTAL SHEET



N° GSA1

Single Deflection Supply Grille Adjustable Air Pattern

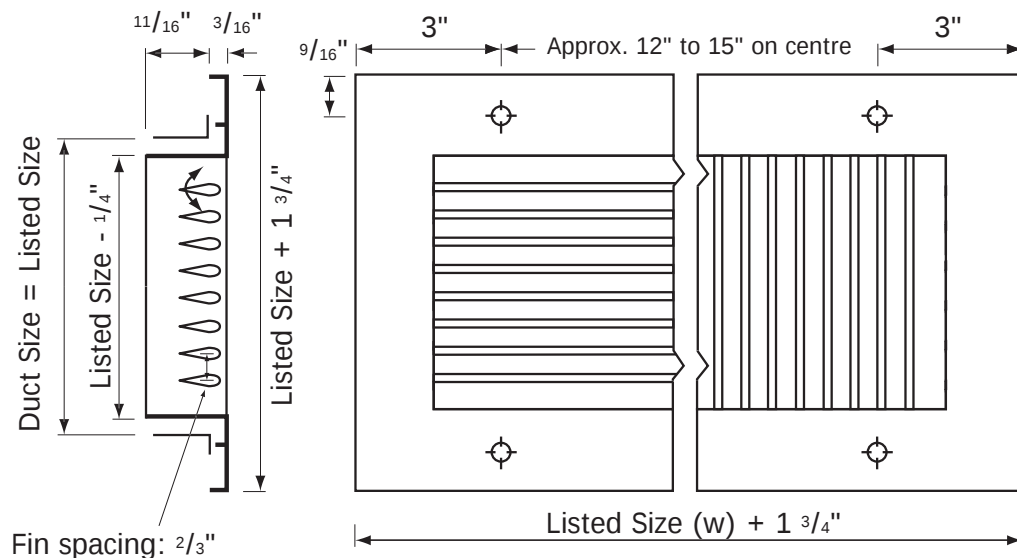
- ☐ **GSA10** Steel
- ☐ **GSA17** Steel + OBD
- ☐ **GAA10** Aluminum
- ☐ **GAA17** Aluminum + OBD



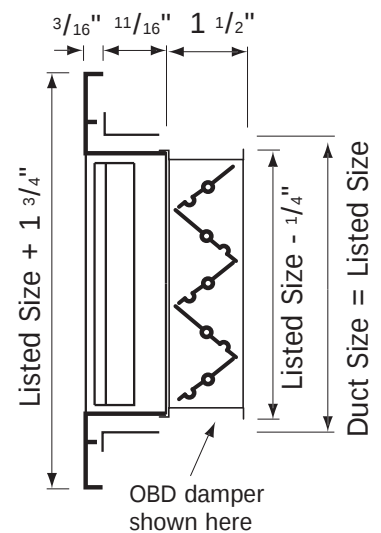
- ☐ **GSA10-V** Steel
- ☐ **GSA17-V** Steel + OBD
- ☐ **GAA10-V** Aluminum
- ☐ **GAA17-V** Aluminum + OBD



Horizontal Face Bars - Default (Mullion required for w>18")



Vertical Face Bars

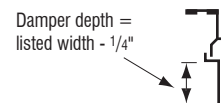


Options		
☐ -SF Supplied w/ sub frame	☐ -DS Debris (Bird) Screen	☐ -IS Insect Screen

#7 STEEL DAMPER FURNISHED ON
LISTED WIDTHS OF 4" AND OVER
(for 1" increments only)



#9 STEEL DAMPER FURNISHED ON
LISTED WIDTHS UNDER 4"



Fastening Method	
☐ -1 No Fastening	☐ Screw holes Default

Finish				
☐ /W Powder Coat White	☐ /B Brushed Aluminum	☐ /M Mill Finish	☐ /L Brushed and Lacquered	☐ /Custom Please Specify



Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



Nº GSA2

Double Deflection Supply Grille

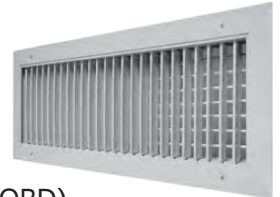
Adjustable Air Pattern

Extruded Aluminum Frame

- ☐ **GSA20** (Steel fins)
- ☐ **GSA27** (Steel fins + OBD)
- ☐ **GAA20** (Aluminum fins)
- ☐ **GAA27** (Aluminum fins + OBD)

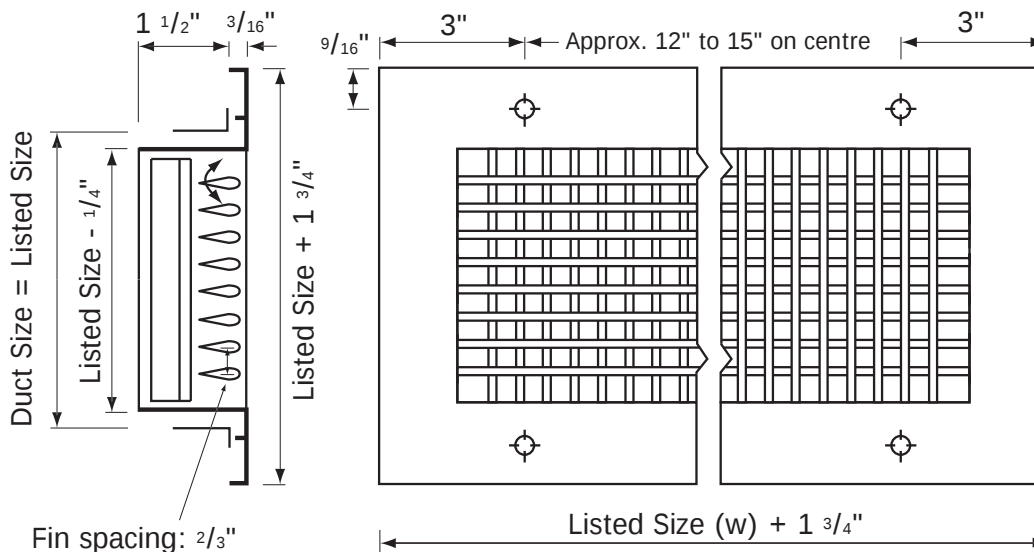


- ☐ **GSA20-V** (Steel fins)
- ☐ **GSA27-V** (Steel fins + OBD)
- ☐ **GAA20-V** (Aluminum fins)
- ☐ **GAA27-V** (Aluminum fins + OBD)

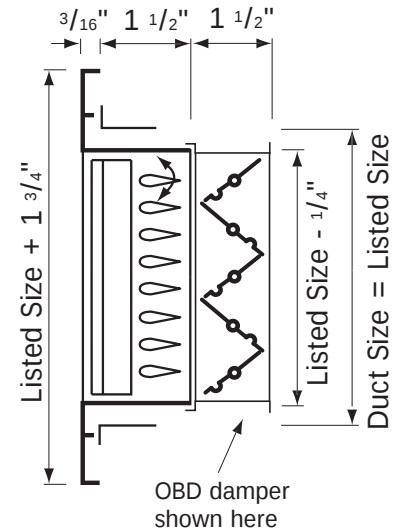


Horizontal Face Bars - Default

(Mullion required for w>18")



Vertical Face Bars

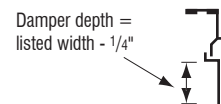


Options		
☐ -SF	☐ -DS	☐ -IS
Supplied w/ sub frame	Debris (Bird) Screen	Insect Screen

#7 STEEL DAMPER FURNISHED ON LISTED WIDTHS OF 4" AND OVER (for 1" increments only)



#9 STEEL DAMPER FURNISHED ON LISTED WIDTHS UNDER 4"



Fastening Method	
☐ -1 No Fastening	☐ Screw holes Default



Finish				
☐ /W	☐ /B	☐ /M	☐ /L	☐ /Custom Please Specify
Powder Coat White	Brushed Aluminum	Mill Finish	Brushed and Lacquered	

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



Nº GSA4

Fixed 45 degree Deflection Return Grille

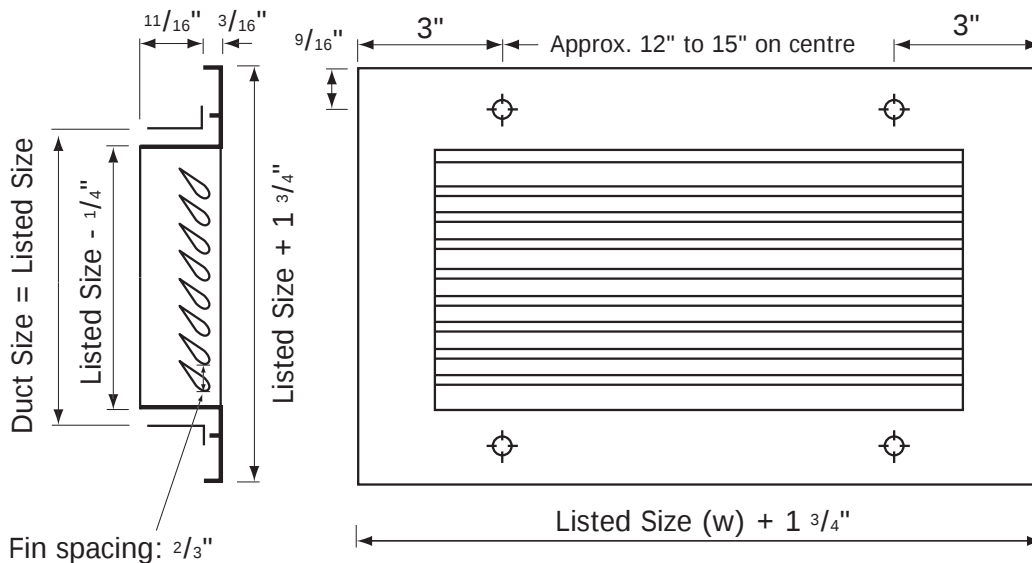
- ☐ **GSA40** (Steel)
- ☐ **GSA47** (Steel + OBD)
- ☐ **GAA40** (Aluminum)
- ☐ **GAA47** (Aluminum + OBD)



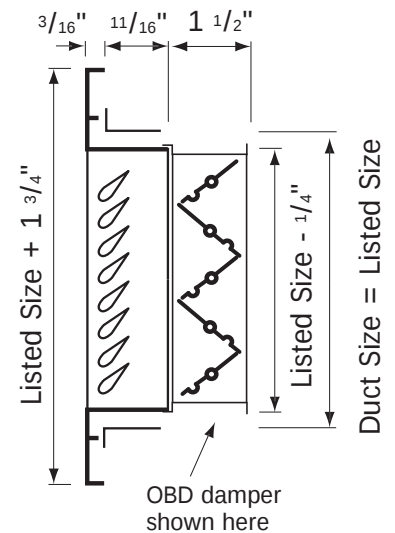
- ☐ **GSA40-V** (Steel)
- ☐ **GSA47-V** (Steel + OBD)
- ☐ **GAA40-V** (Aluminum)
- ☐ **GAA47-V** (Aluminum + OBD)



Horizontal Face Bars - Default (Mullion required for w>18")



Vertical Face Bars

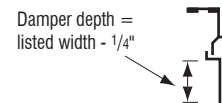


Options		
☐ -SF Supplied w/ sub frame	☐ -DS Debris (Bird) Screen	☐ -IS Insect Screen

#7 STEEL DAMPER FURNISHED ON LISTED WIDTHS OF 4" AND OVER (for 1" increments only)



#9 STEEL DAMPER FURNISHED ON LISTED WIDTHS UNDER 4"



Fastening Method	
☐ -1 No Fastening	☐ Screw holes Default



Finish				
☐ /W Powder Coat White	☐ /B Brushed Aluminum	☐ /M Mill Finish	☐ /L Brushed and Lacquered	☐ /Custom Please Specify

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



Nº GCA1

Curved Adjustable Blade Supply Grille (1 Way)

Material: Extruded aluminum with mechanically fastened corners.

Mounting: Drywall or any surface mounting. Countersunk mounting holes on frame.

Air Pattern: 90° Diffusion
Adjustable blades spaced $\frac{2}{3}$ " apart



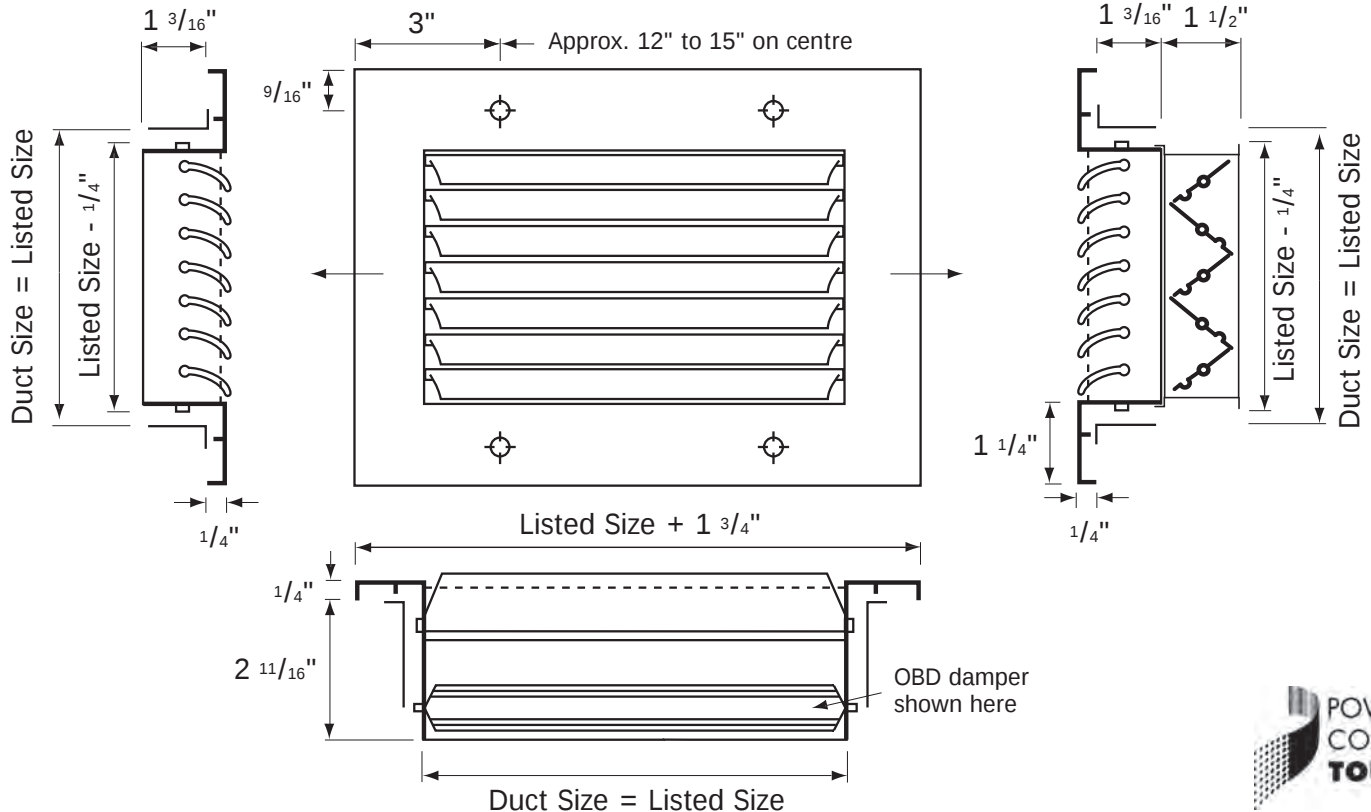
GCA1

Horizontal face blades (Default)

- ☐ **GCA10** Without OBD damper
- ☐ **GCA17** With OBD damper

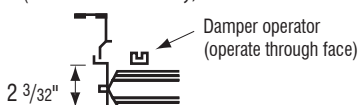
Vertical face blades

- ☐ **GCA10-V** Without OBD damper
- ☐ **GCA17-V** With OBD damper

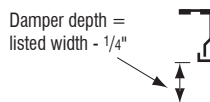


Finish	
White	Custom (please specify)

#7 STEEL DAMPER FURNISHED ON LISTED WIDTHS OF 4" AND OVER (for 1" increments only)



#9 STEEL DAMPER FURNISHED ON LISTED WIDTHS UNDER 4"



All dimensions in inches

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

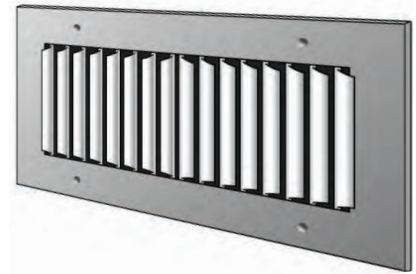
SUBMITTAL SHEET



Nº GCA2

Curved Adjustable Blade Supply Grille (2 Way)

- Material:** Extruded aluminum with mechanically fastened corners.
- Mounting:** Drywall or any surface mounting. Countersunk mounting holes on frame.
- Air Pattern:** 180° Diffusion
Adjustable blades spaced $\frac{2}{3}$ " apart



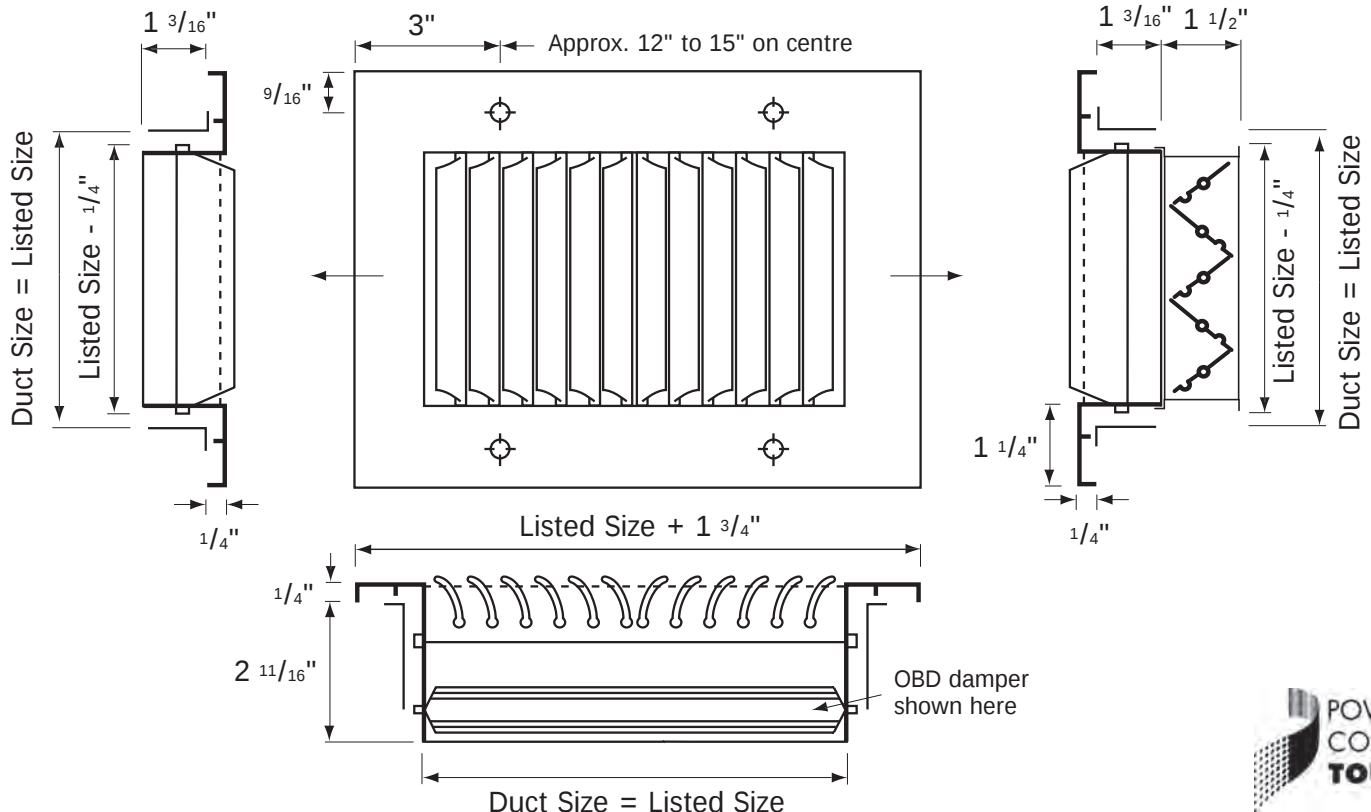
GCA2

Vertical face blades (Default)

- ☐ **GCA20** Without OBD damper
- ☐ **GCA27** With OBD damper

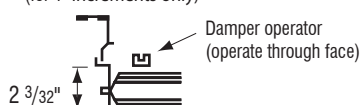
Horizontal face blades

- ☐ **GCA20-H** Without OBD damper
- ☐ **GCA27-H** With OBD damper

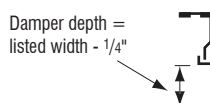


Finish	
White	Custom (please specify)

#7 STEEL DAMPER FURNISHED ON LISTED WIDTHS OF 4" AND OVER (for 1" increments only)



#9 STEEL DAMPER FURNISHED ON LISTED WIDTHS UNDER 4"



All dimensions in inches

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



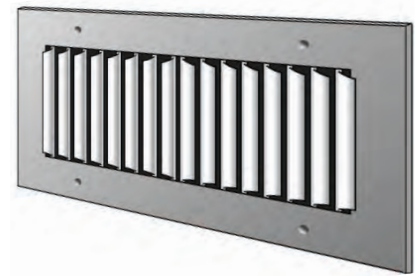
Nº GCA5

Curved Fixed Blade Supply Grille (2 Way)

Material: Extruded aluminum with mechanically fastened corners.

Mounting: Drywall or any surface mounting. Countersunk mounting holes on frame.

Air Pattern: 180° Diffusion
Fixed blades spaced $\frac{2}{3}$ " apart



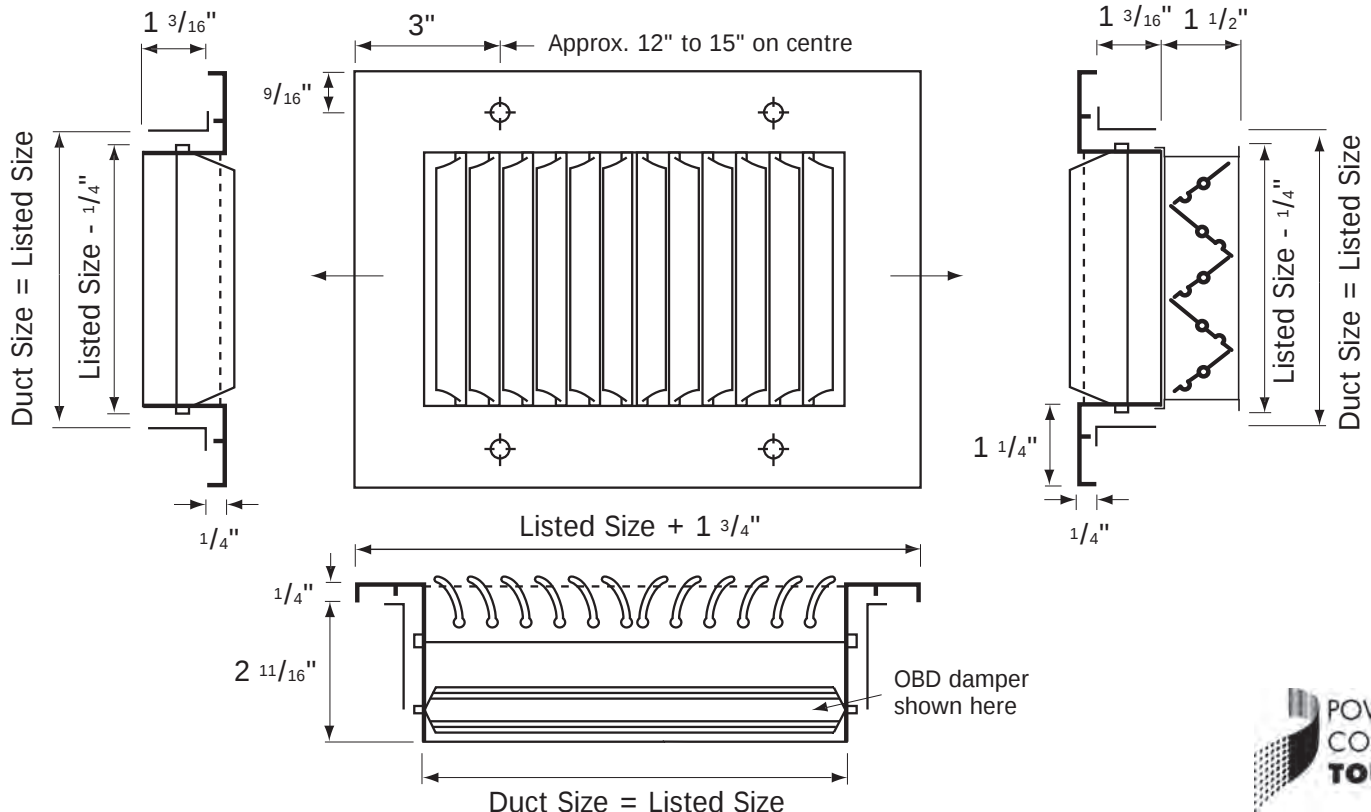
GCA5

Vertical face blades (Default)

- ☐ **GCA50** Without OBD damper
- ☐ **GCA57** With OBD damper

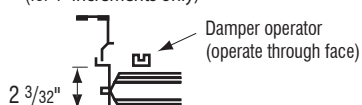
Horizontal face blades

- ☐ **GCA50-H** Without OBD damper
- ☐ **GCA57-H** With OBD damper

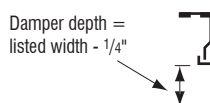


Finish	
White	Custom (please specify)

#7 STEEL DAMPER FURNISHED ON LISTED WIDTHS OF 4" AND OVER (for 1" increments only)



#9 STEEL DAMPER FURNISHED ON LISTED WIDTHS UNDER 4"



All dimensions in inches

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



ALS10 / ALS17

Linear 1" Slot Diffuser

Material: Extruded aluminum construction

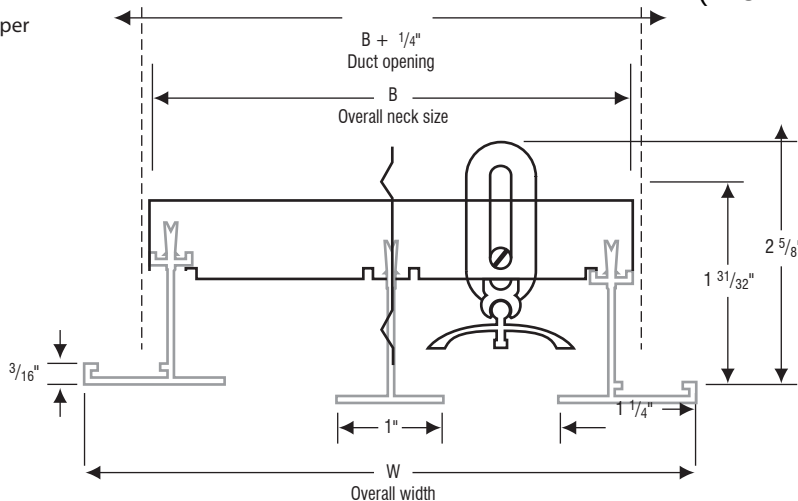
Mounting: Surface or Lay-in T-bar ceiling.



ALS10 / ALS17
(ALS17 two slots shown here)

☐ **ALS10**
without pattern-control damper

☐ **ALS17**
with pattern-control damper



Style	
Surface mounting Overall Length = List Length + 7/8" Duct Opening = List Length Neck Size = List Length - 1/4"	-E ☐
T-bar mounting (N/A with -3) Neck Size = List Length - 13/8" Duct Opening = List Length - 11/8" Overall Length = List Length - 1/4"	-T ☐

✓	NO. OF SLOTS	B	W
	01	2 3/8"	3 17/32"
	02	4 3/8"	5 17/32"
	03	6 3/8"	7 17/32"
	04	8 3/8"	9 17/32"
	05	10 3/8"	11 17/32"
	06	12 3/8"	13 17/32"
	07	14 3/8"	15 17/32"
	08	16 3/8"	17 17/32"
	09	18 3/8"	19 17/32"
	10	20 3/8"	21 17/32"

Fastening Method		
No Fastening -1 ☐	Screw -3 ☐ N/A with -T	Concealed -4 ☐

Finish	
White ☐	Custom (please specify) ☐

Job:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

SUBMITTAL SHEET



ALS20 / ALS27

Linear 1/2" Slot Diffuser

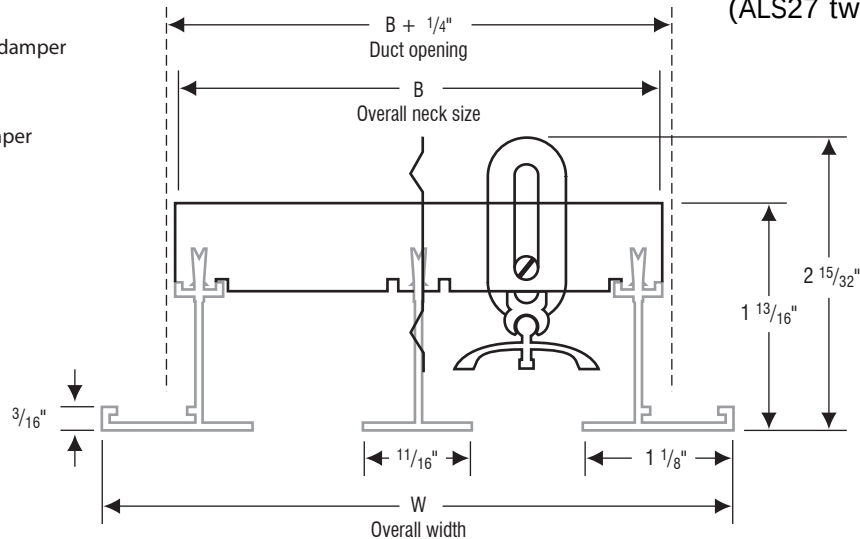
Material: Extruded aluminum construction
Mounting: Surface or Lay-in T-bar ceiling



ALS20 / ALS27
 (ALS27 two slots shown here)

☐ **ALS20**
 without pattern-control damper

☐ **ALS27**
 with pattern-control damper



Style	
Surface mounting Overall Length = List Length + 7/8" Duct Opening = List Length Neck Size = List Length - 1/4"	-E ☐
Neck Size = List Length - 13/8" Duct Opening = List Length - 11/8" Overall Length = List Length - 1/4" T-bar mounting (N/A with -3)	-T ☐

✓	NO. OF SLOTS	B	W
	01	1 9/16"	2 23/32"
	02	2 3/4"	3 29/32"
	03	3 15/16"	5 3/32"
	04	5 1/8"	6 9/32"
	05	6 5/16"	7 15/32"
	06	7 1/2"	8 21/32"
	07	8 11/16"	9 27/32"
	08	9 7/8"	11 1/32"
	09	11 1/16"	12 7/32"
	10	12 1/4"	13 13/32"



Fastening Method		
No Fastening -1 ☐	Screw -3 ☐ N/A with -T	Concealed -4 ☐

Finish	
White ☐	Custom (please specify) ☐

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



ALS30 / ALS37

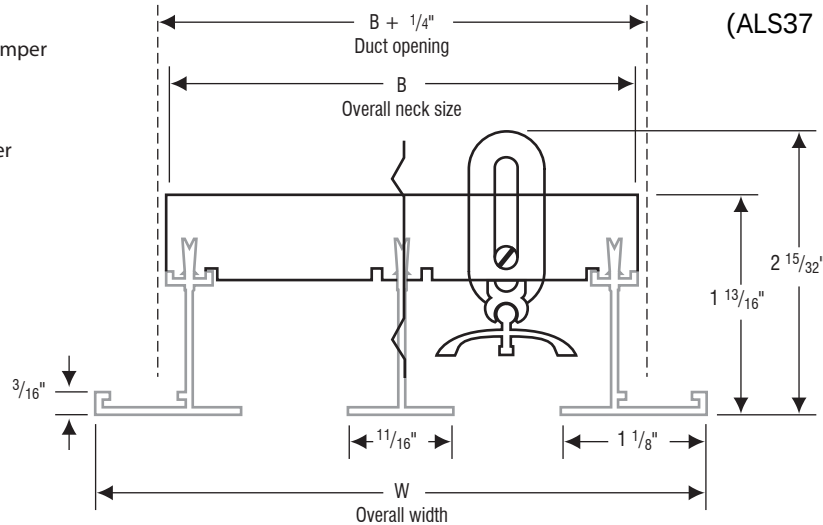
Linear $3/4$ " Slot Diffuser

Material: Extruded aluminum construction
Mounting: Surface or Lay-in T-bar ceiling.



☐ **ALS30**
without pattern-control damper

☐ **ALS37**
with pattern-control damper



ALS30 / ALS37
(ALS37 two slots shown here)

Style	
Surface mounting Overall Length = List Length + $7/8$" Duct Opening = List Length Neck Size = List Length - $1/4$"	-E ☐
Neck Size = List Length - $13/8$" Duct Opening = List Length - $11/8$" Overall Length = List Length - $1/4$" T-bar mounting (N/A with -3)	-T ☐

✓	NO. OF SLOTS	B	W
	01	$1 \frac{13}{16}$ "	$2 \frac{31}{32}$ "
	02	$3 \frac{1}{4}$ "	$4 \frac{13}{32}$ "
	03	$4 \frac{11}{16}$ "	$5 \frac{27}{32}$ "
	04	$6 \frac{1}{8}$ "	$7 \frac{9}{32}$ "
	05	$7 \frac{9}{16}$ "	$8 \frac{23}{32}$ "
	06	9"	$10 \frac{5}{32}$ "
	07	$10 \frac{7}{16}$ "	$11 \frac{19}{32}$ "
	08	$11 \frac{7}{8}$ "	$13 \frac{1}{32}$ "
	09	$13 \frac{5}{16}$ "	$14 \frac{15}{32}$ "
	10	$14 \frac{7}{8}$ "	$15 \frac{29}{32}$ "



Fastening Method		
No Fastening -1 ☐	Screw -3 ☐ N/A with -T	Concealed -4 ☐

Finish	
White ☐	Custom (please specify) ☐

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET

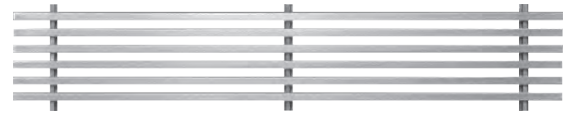


Nº ALBCO

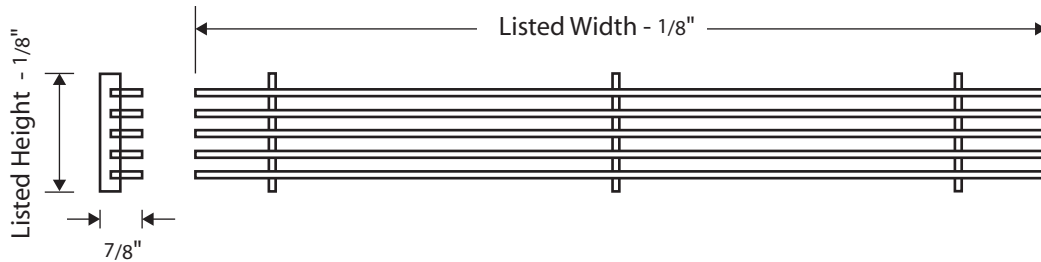
Rev. 0

ALBCO Linear Bar Grille - Core Only

Material: Extruded aluminum
Length over 72 inches supplied as 2 or more sections



ALBCO6



☐ **Reinforced For Floor Application -RF**
(Up to 6" wide)

Bar Style					
☐ ALBCO1	☐ ALBCO2	☐ ALBCO3	☐ ALBCO4	☐ ALBCO5	☐ ALBCO6
Narrow			15°	30°	Pencil Proof

Finish					
☐ /M Mill	☐ /W White	☐ /A Anodized	☐ /B Brushed Only	☐ /L Brushed & Lacquered	☐ Other (please specify)



All dimensions in inches
Dimensions shown contain expansion tolerances based on temperature rise of 40°F above the ambient temperature at which the material is fabricated.

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



N° ALB10 / ALB17

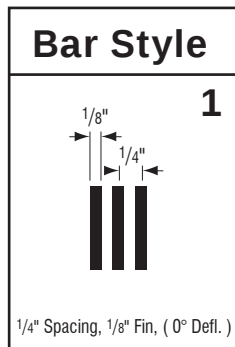
ALB Architectural Linear Bar Grille

Material: Extruded aluminum
Lengths over 72 inches supplied as multiple sections

Opposed Blade Damper (optional):
Galvanized steel construction
Key-operated through grille face

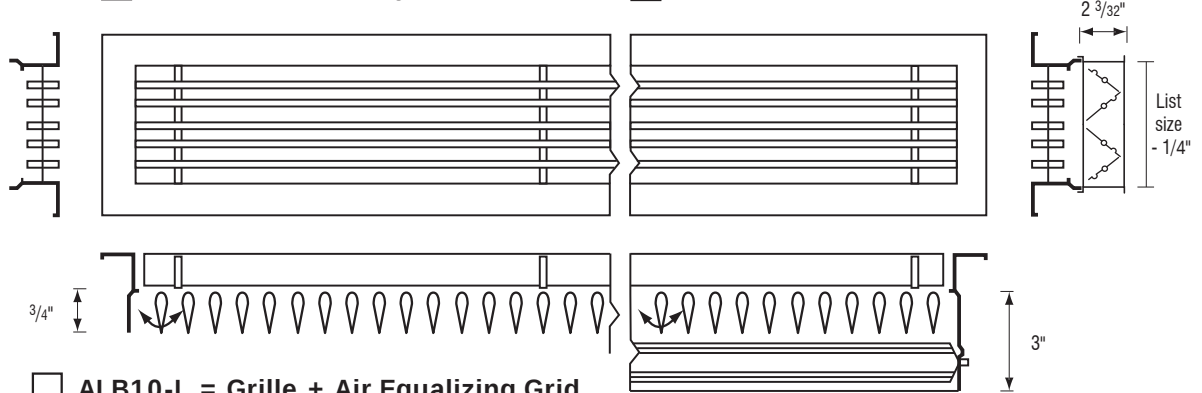


ALB10 / ALB17



☐ ALB10 = Grille Only

☐ ALB17 = Grille + OBD



☐ ALB10-L = Grille + Air Equalizing Grid

☐ ALB17-L = Grille + OBD + Air Equalizing Grid

☐ -V = Vertical bars (default Horizontal)

Margin Style			
-A Listed + 1 13/32" 1/2" 1 9/32" N/A with -3, -RM	-B Listed + 3 1/32" 13/16" 1 9/32" N/A with -3, -RM	-E Listed + 1 11/32" 1" 1 9/32" N/A with -RM	-F Listed + 1 3/8" 1" 2" Only with -RM, N/A with -2, -4
-G Listed - 1/4" 3/16" 2" Only with -1, -RM	-R Listed + 1 3/8" 1 1/8" 1 9/32" N/A with -RM	-T Listed 1" 1 9/32" N/A with -2, -3, -4, -RM	



Fastening Method	
No Fastening -1 N/A with -F, -G	Spring clip -2 N/A with -F, -G
Screw -3 N/A with -A, -B, -G	

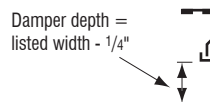
Finish					
☐ /W Powder Coated White	☐ /M Mill Finish	☐ /A Anodized	☐ /B Brushed Aluminum N/A w/ -F, -G, -R	☐ /L Brushed and Lacquered N/A w/ -F, -G, -R	☐ /Custom Specify here

- ☐ Reinforced Floor Application -RF
(Up to 6" wide)
- ☐ Removable Core Application -RM
Only w/ -F, -G

#7 DAMPER FURNISHED ON LISTED WIDTHS OF 4" AND OVER (for 1" increments only)



#9 DAMPER FURNISHED ON LISTED WIDTHS UNDER 4"



All dimensions in inches.
Dimensions shown contain expansion tolerances based on temperature rise of 40°F above the ambient temperature at which the material is fabricated.

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



N° ALB20 / ALB27

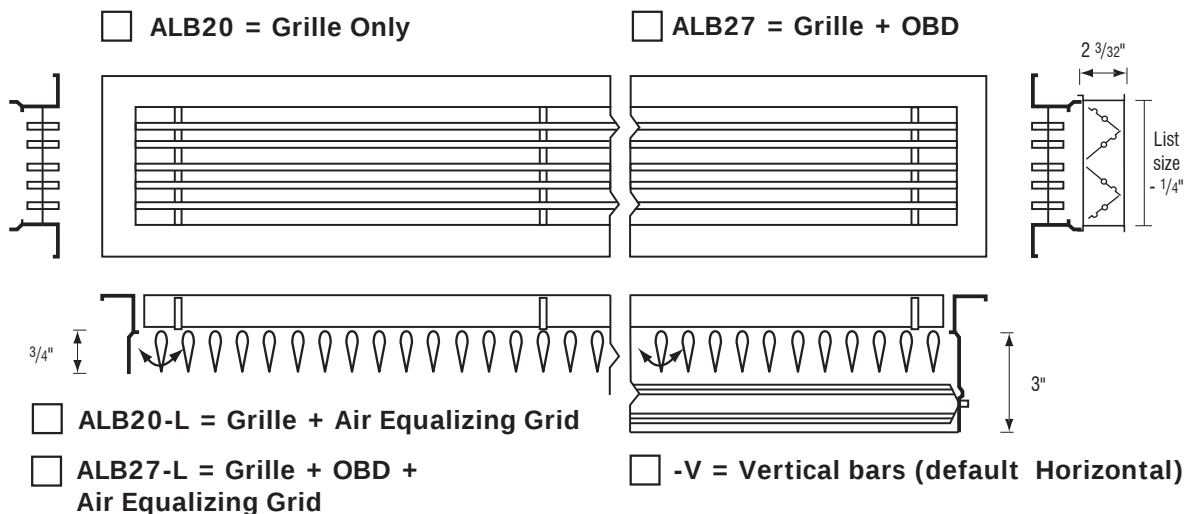
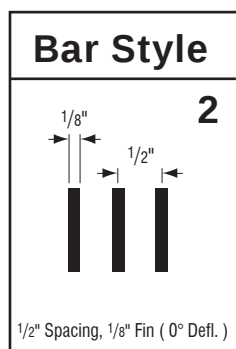
ALB Architectural Linear Bar Grille

Material: Extruded aluminum
Lengths over 72 inches supplied as multiple sections

Opposed Blade Damper (optional):
Galvanized steel construction
Key-operated through grille face



ALB20 / ALB27



Margin Style			
-A Listed + 1 3/32" 1/2" 1 9/32" N/A with -3, -RM	-B Listed + 3 1/32" 13/16" 1 9/32" N/A with -3, -RM	-E Listed + 1 11/32" 1" 1 9/32" N/A with -RM	-F Listed + 1 3/8" 1" 2" Only with -RM, N/A with -2, -4
-G Listed - 1/4" 3/16" 2" Only with -1, -RM	-R Listed + 1 3/8" 1 1/8" 1 9/32" N/A with -RM	-T Listed 1" 1 9/32" N/A with -2, -3, -4, -RM	

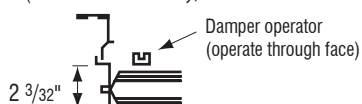


Fastening Method	
No Fastening -1 N/A with -F, -G	Spring clip -2 N/A with -F, -G
Screw -3 N/A with -A, -B, -G	Concealed -4 N/A with -F, -G

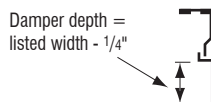
Finish					
/W Powder Coated White	/M Mill Finish	/A Anodized	/B Brushed Aluminum N/A w/ -F, -G, -R	/L Brushed and Lacquered N/A w/ -F, -G, -R	/Custom Specify here

- ☐ Reinforced Floor Application -RF
(Up to 6" wide)
- ☐ Removable Core Application -RM
Only w/ -F, -G

#7 DAMPER FURNISHED ON LISTED WIDTHS OF 4" AND OVER (for 1" increments only)



#9 DAMPER FURNISHED ON LISTED WIDTHS UNDER 4"



All dimensions in inches.
Dimensions shown contain expansion tolerances based on temperature rise of 40°F above the ambient temperature at which the material is fabricated.

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



N° ALB30 / ALB37

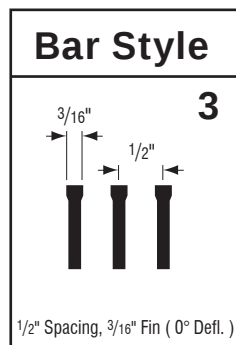
ALB Architectural Linear Bar Grille

Material: Extruded aluminum
Lengths over 72 inches supplied as multiple sections

Opposed Blade Damper (optional):
Galvanized steel construction
Key-operated through grille face

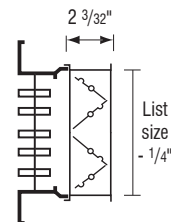
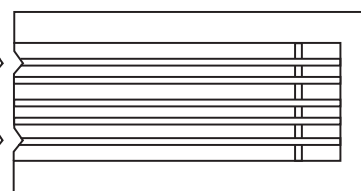
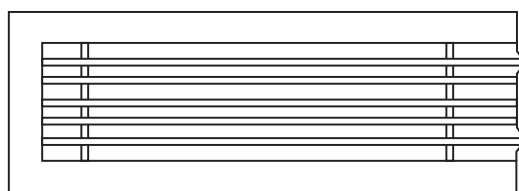
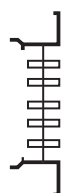


ALB30 / ALB37



☐ ALB30 = Grille Only

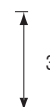
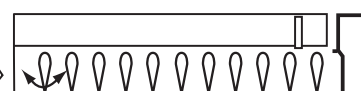
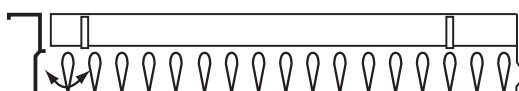
☐ ALB37 = Grille + OBD



☐ ALB30-L = Grille + Air Equalizing Grid

☐ ALB37-L = Grille + OBD + Air Equalizing Grid

☐ -V = Vertical bars (default Horizontal)



Margin Style			
-A 	-B 	-E 	-F
-G 	-R 	-T 	



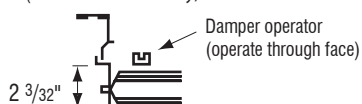
Fastening Method	
No Fastening -1 	Spring clip -2
Screw -3 	Concealed -4
N/A with -A, -B, -G	N/A with -F, -G

Finish					
☐ /W Powder Coated White	☐ /M Mill Finish	☐ /A Anodized	☐ /B Brushed Aluminum N/A w/ -F, -G, -R	☐ /L Brushed and Lacquered N/A w/ -F, -G, -R	☐ /Custom Specify here

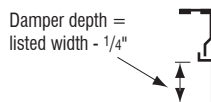
☐ Reinforced Floor Application -RF
(Up to 6" wide)

☐ Removable Core Application -RM
Only w/ -F, -G

#7 DAMPER FURNISHED ON LISTED WIDTHS OF 4" AND OVER (for 1" increments only)



#9 DAMPER FURNISHED ON LISTED WIDTHS UNDER 4"



All dimensions in inches.
Dimensions shown contain expansion tolerances based on temperature rise of 40°F above the ambient temperature at which the material is fabricated.

Job: _____
Architect: _____
Engineer: _____
Contractor: _____

SUBMITTAL SHEET



N° ALB40 / ALB47

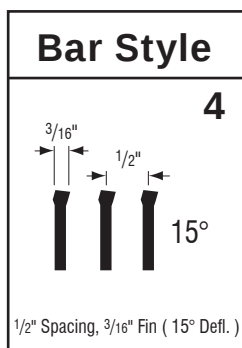
ALB Architectural Linear Bar Grille

Material: Extruded aluminum
Lengths over 72 inches supplied as multiple sections

Opposed Blade Damper (optional):
Galvanized steel construction
Key-operated through grille face

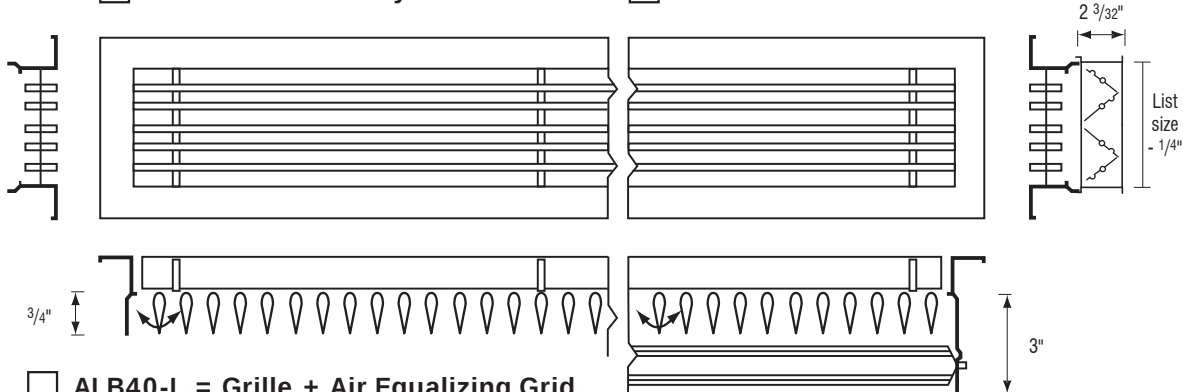


ALB40 / ALB47



☐ ALB40 = Grille Only

☐ ALB47 = Grille + OBD



☐ ALB40-L = Grille + Air Equalizing Grid

☐ ALB47-L = Grille + OBD +
Air Equalizing Grid

☐ -V = Vertical bars (default Horizontal)

Margin Style			
-A Listed + 13/32" → 1/2" → 1 9/32" N/A with -3, -RM	-B Listed + 31/32" → 13/16" → 1 9/32" N/A with -3, -RM	-E Listed + 1 11/32" → 1" → 1 9/32" N/A with -RM	-F Listed + 1 3/8" → 1" → 2" Only with -RM, N/A with -2, -4
-G Listed - 1/4" → 3/16" → 2" Only with -1, -RM	-R Listed + 1 3/8" → 1 1/8" → 1 9/32" N/A with -RM	-T Listed → 1" → 1 9/32" N/A with -2, -3, -4, -RM	



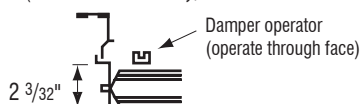
Fastening Method	
No Fastening -1 N/A with -F, -G	Spring clip -2 N/A with -F, -G
Screw -3 N/A with -A, -B, -G	Concealed -4 N/A with -F, -G

Finish					
☐ /W Powder Coated White	☐ /M Mill Finish	☐ /A Anodized	☐ /B Brushed Aluminum N/A w/ -F, -G, -R	☐ /L Brushed and Lacquered N/A w/ -F, -G, -R	☐ /Custom Specify here

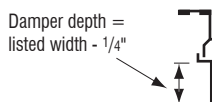
☐ Reinforced Floor Application -RF
(Up to 6" wide)

☐ Removable Core Application -RM
Only w/ -F, -G

#7 DAMPER FURNISHED ON LISTED WIDTHS OF 4" AND OVER (for 1" increments only)



#9 DAMPER FURNISHED ON LISTED WIDTHS UNDER 4"



All dimensions in inches.

Dimensions shown contain expansion tolerances based on temperature rise of 40°F above the ambient temperature at which the material is fabricated.

Job: _____
Architect: _____
Engineer: _____
Contractor: _____

SUBMITTAL SHEET



Nº ALB50 / ALB57

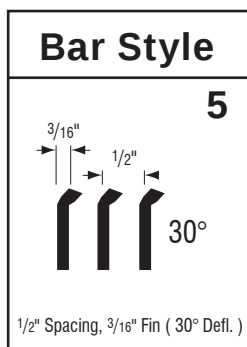
ALB Architectural Linear Bar Grille

Material: Extruded aluminum
Lengths over 72 inches supplied as multiple sections

Opposed Blade Damper (optional):
Galvanized steel construction
Key-operated through grille face

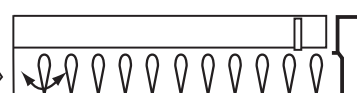
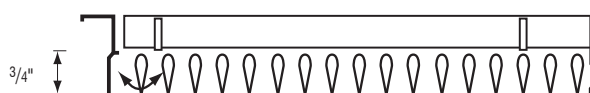
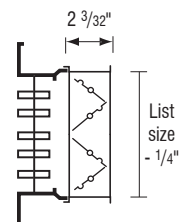
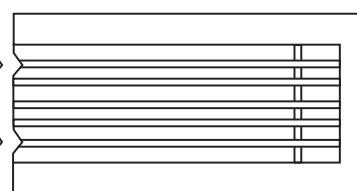
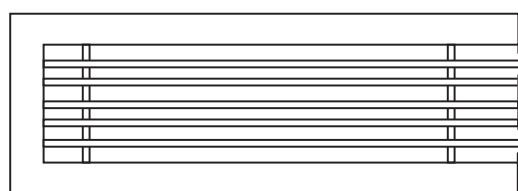
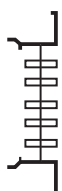


ALB50 / ALB57



☐ ALB50 = Grille Only

☐ ALB57 = Grille + OBD



☐ ALB50-L = Grille + Air Equalizing Grid

☐ ALB57-L = Grille + OBD + Air Equalizing Grid

☐ -V = Vertical bars (default Horizontal)

Margin Style			
-A Listed + 13/32" 1/2" 1 9/32" N/A with -3, -RM	-B Listed + 31/32" 13/16" 1 9/32" N/A with -3, -RM	-E Listed + 1 11/32" 1" 1 9/32" N/A with -RM	-F Listed + 1 3/8" 1" 2" Only with -RM, N/A with -2, -4
-G Listed + 1/4" 3/16" 2" Only with -1, -RM	-R Listed + 1 3/8" 1 1/8" 1 9/32" N/A with -RM	-T Listed 1" 1 9/32" N/A with -2, -3, -4, -RM	



Fastening Method	
No Fastening -1 N/A with -F, -G	Spring clip -2 N/A with -F, -G
Screw -3 N/A with -A, -B, -G	Concealed -4 N/A with -F, -G

Finish					
☐ /W Powder Coated White	☐ /M Mill Finish	☐ /A Anodized	☐ /B Brushed Aluminum N/A w/ -F, -G, -R	☐ /L Brushed and Lacquered N/A w/ -F, -G, -R	☐ /Custom Specify here

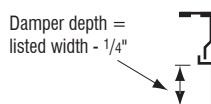
☐ Reinforced Floor Application -RF
(Up to 6" wide)

☐ Removable Core Application -RM
Only w/ -F, -G

#7 DAMPER FURNISHED ON LISTED WIDTHS OF 4" AND OVER (for 1" increments only)



#9 DAMPER FURNISHED ON LISTED WIDTHS UNDER 4"



Job: _____

Architect: _____

Engineer: _____

Contractor: _____

All dimensions in inches.
Dimensions shown contain expansion tolerances based on temperature rise of 40°F above the ambient temperature at which the material is fabricated.

SUBMITTAL SHEET



Nº ALB60 / ALB67

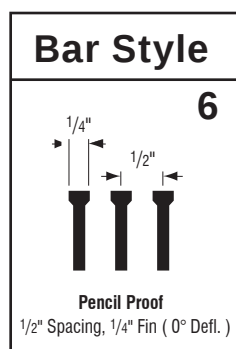
ALB Architectural Linear Bar Grille

Material: Extruded aluminum
Lengths over 72 inches supplied as multiple sections

Opposed Blade Damper (optional):
Galvanized steel construction
Key-operated through grille face

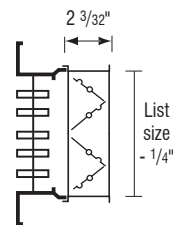
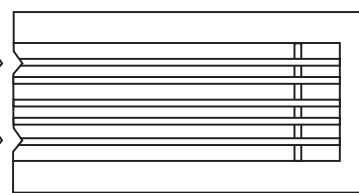
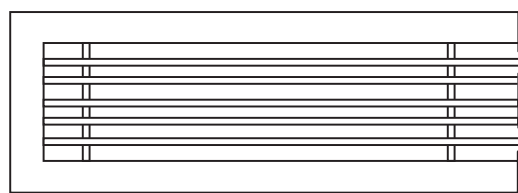


ALB60 / ALB67



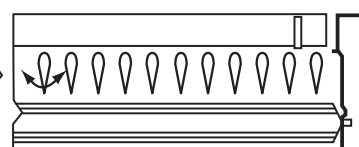
☐ ALB60 = Grille Only

☐ ALB67 = Grille + OBD



☐ ALB60-L = Grille + Air Equalizing Grid

☐ ALB67-L = Grille + OBD + Air Equalizing Grid



☐ -V = Vertical bars (default Horizontal)

Margin Style			
-A Listed + 13/32" 1/2" spacing 1 9/32" height N/A with -3, -RM	-B Listed + 31/32" 13/16" spacing 1 9/32" height N/A with -3, -RM	-E Listed + 1 11/32" 1" spacing 1 9/32" height N/A with -RM	-F Listed + 1 3/8" 1" spacing 2" height Only with -RM, N/A with -2, -4
-G Listed + 1/4" 3/16" spacing 2" height Only with -1, -RM	-R Listed + 1 3/8" 1 1/8" spacing 1 9/32" height N/A with -RM	-T Listed 1" spacing 1 9/32" height N/A with -2, -3, -4, -RM	



Fastening Method	
No Fastening -1 N/A with -F, -G	Spring clip -2 N/A with -F, -G
Screw -3 N/A with -A, -B, -G	Concealed -4 N/A with -F, -G

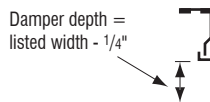
Finish					
☐ /W Powder Coated White	☐ /M Mill Finish	☐ /A Anodized	☐ /B Brushed Aluminum N/A w/ -F, -G, -R	☐ /L Brushed and Lacquered N/A w/ -F, -G, -R	☐ /Custom Specify here

- ☐ Reinforced Floor Application -RF (Up to 6" wide)
- ☐ Removable Core Application -RM Only w/ -F, -G

#7 DAMPER FURNISHED ON LISTED WIDTHS OF 4" AND OVER (for 1" increments only)



#9 DAMPER FURNISHED ON LISTED WIDTHS UNDER 4"



All dimensions in inches.
Dimensions shown contain expansion tolerances based on temperature rise of 40°F above the ambient temperature at which the material is fabricated.

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET



Nº REAL/REAL7

REAL SERIES - High-End Residential Floor Grilles

Material: Aluminum

Finish: Various finishes available - See Finish Chart
Anodized finish is standard

Air Pattern: 5 way pattern (-30°, -15°, 0, 15°, 30°)

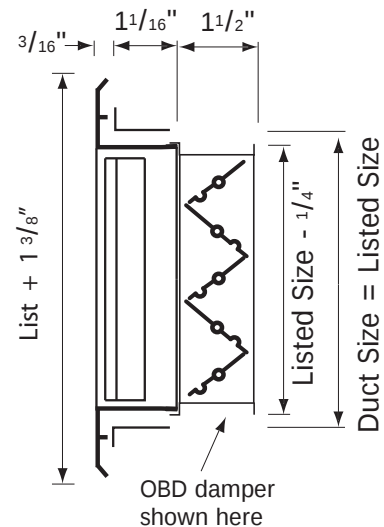
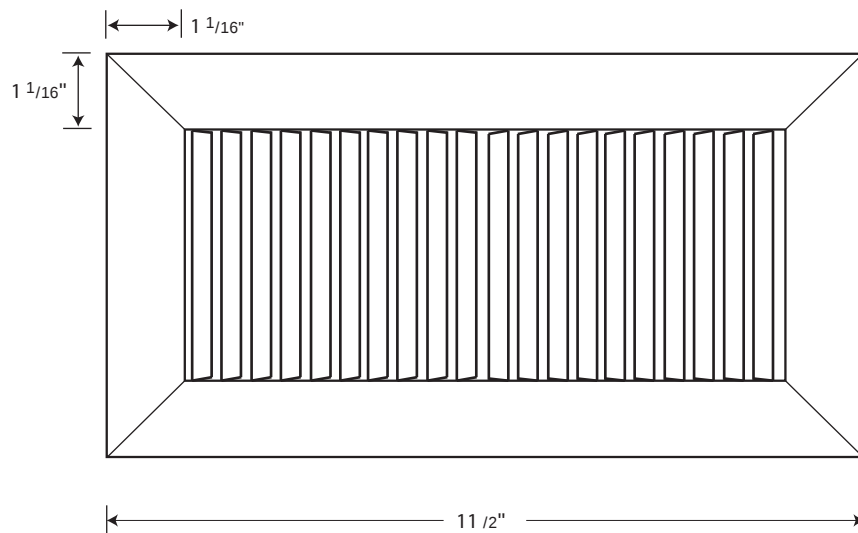
REAL Residential Floor Bar Grille

REAL7 Residential Floor Bar
Register with opposed blade damper

	Model #	Neck Size "
	REAL 0310	3 x 10
	REAL 0408	4 x 8
	REAL 0410	4 x 10
	REAL 0412	4 x 12
	REAL 0414	4 x 14
	REAL 0612	6 x 12
	REAL 0614	6 x 14

	Model #	Neck Size "
	REAL7 0310	3 x 10
	REAL7 0408	4 x 8
	REAL7 0410	4 x 10
	REAL7 0412	4 x 12
	REAL7 0414	4 x 14
	REAL7 0612	6 x 12
	REAL7 0614	6 x 14

REAL
Residential Floor Grille



Finish		
☐ /A	☐ /M	☐ /Custom
Anodized (Standard)	Mill Finish	Specify here



All dimensions in inches

Job: _____

 Architect: _____
 Engineer: _____
 Contractor: _____

Rev. 2

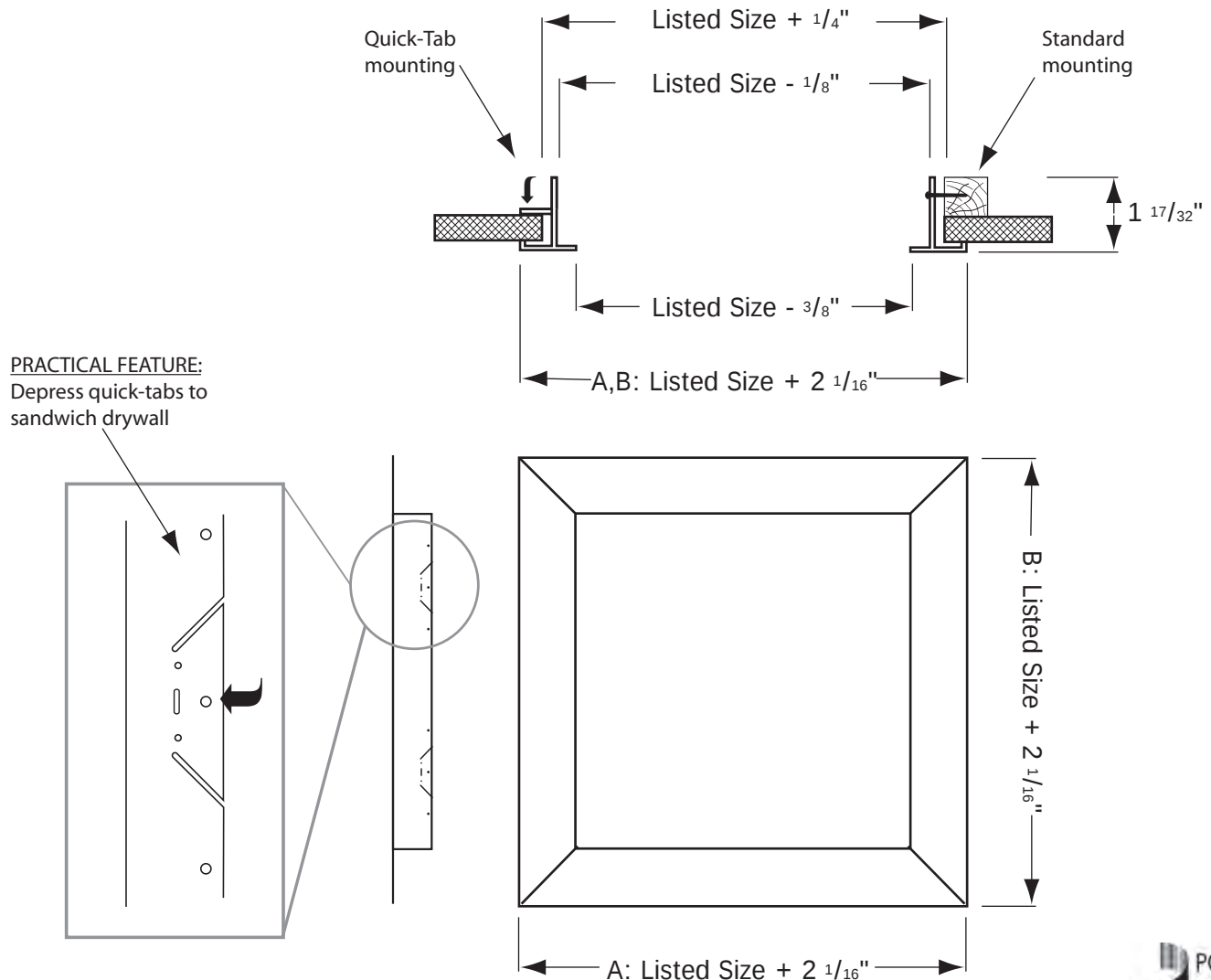
SUBMITTAL SHEET



Nº PF

Plaster And Drywall Frame

Material: All aluminium construction.



✓	Model #	Face Dim. A x B
	PF 1212	14 $\frac{1}{16}$ " x 14 $\frac{1}{16}$ "
	PF 1224	14 $\frac{1}{16}$ " x 26 $\frac{1}{16}$ "
	PF 2424	26 $\frac{1}{16}$ " x 26 $\frac{1}{16}$ "

Finish	
White ☐	Custom (please specify) ☐

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

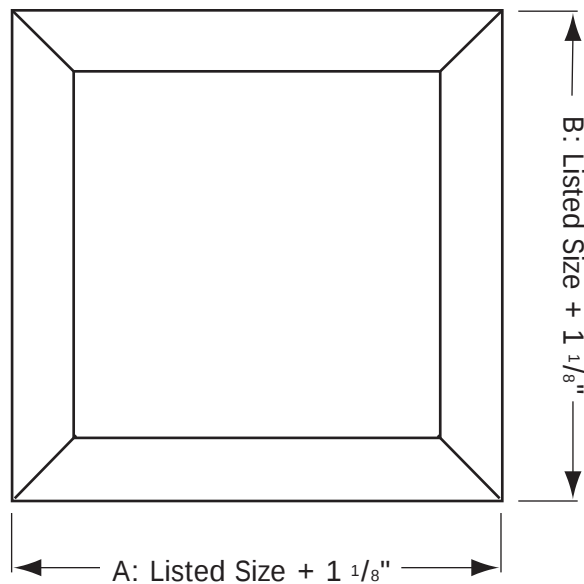
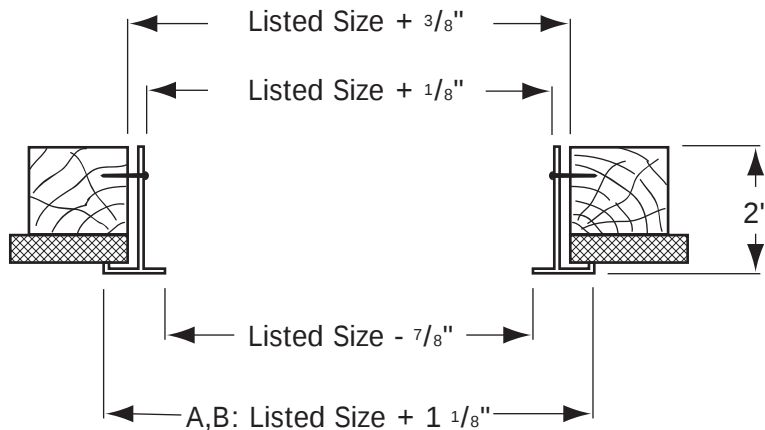
SUBMITTAL SHEET



Nº PF-S

Plaster And Drywall Frame

Material: All steel construction.
Finish: Powder paint coating - white.



✓	Model #	Face Dim. A x B
	PF-S 1212	13 1/8" x 13 1/8"
	PF-S 1224	13 1/8" x 25 1/8"
	PF-S 2424	25 1/8" x 25 1/8"

Finish	
White ☐	Custom (please specify) ☐

Job: _____

Architect: _____

Engineer: _____

Contractor: _____

SUBMITTAL SHEET

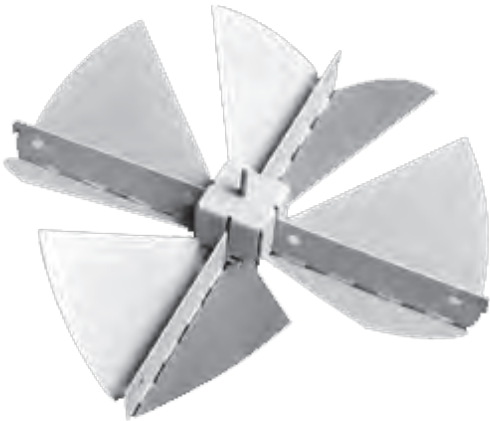


N^o N4

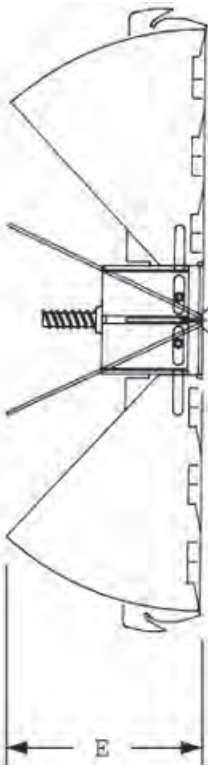
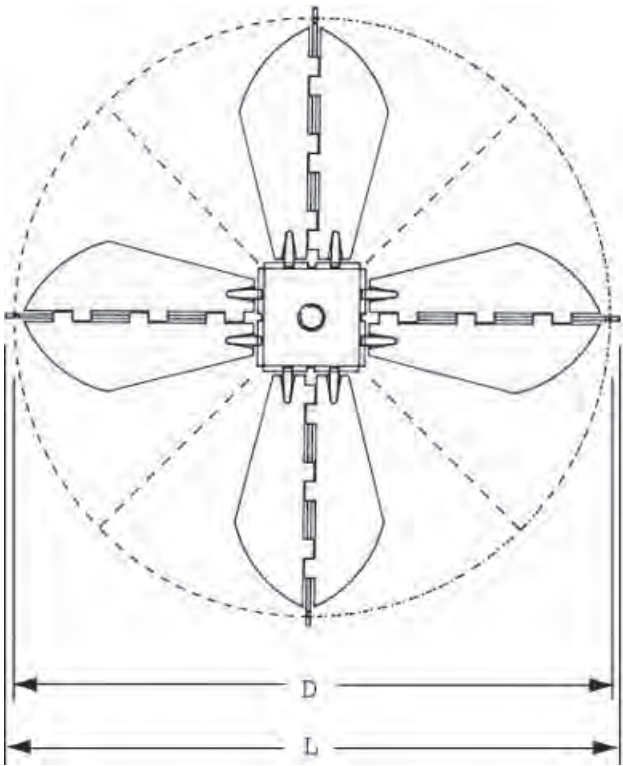
Round Opposed Blade Damper

Material: All galvanized steel.
Mounting: Round collar of diffuser.

Finish	
Mill	Black

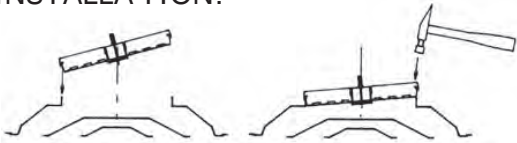


N4
(N4 08 shown here)



VERTICAL OPERATOR ACCEPTS STANDARD
SCREWDRIVER FOR SLOTTED OR HEX HEAD
THRU DIFFUSER FACE

INSTALLATION:



✓	Model #	Nom. Size	Overall Dimensions		
			Blade (D)	Brace (L)	Depth (E)
	N4 06	6"	5 3/4"	6"	2 3/8"
	N4 08	8"	7 3/4"	8"	3 1/8"
	N4 10	10"	9 3/4"	10"	3 3/4"
	N4 12	12"	11 3/4"	12"	4 1/2"
	N4 14	14"	13 3/4"	14"	5 1/4"

Job:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

All dimensions in inches

Rev. 5

SUBMITTAL SHEET



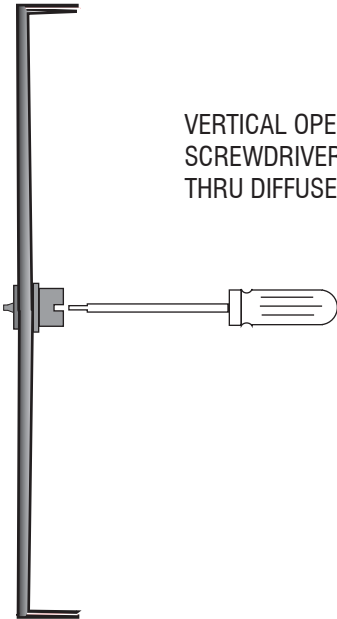
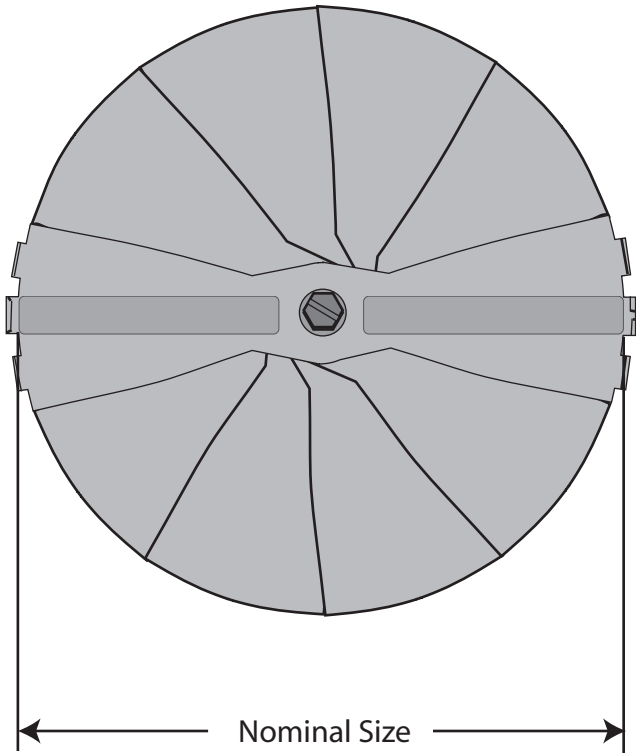
N^o N5

Round Sliding Blade Damper

Material: All galvanized steel.
Mounting: Round collar of diffuser.



N5



VERTICAL OPERATOR ACCEPTS STANDARD
SCREWDRIVER FOR SLOTTED OR SOCKET HEAD
THRU DIFFUSER FACE

✓	Model #	Nom. Size
	N5 06	6"
	N5 08	8"
	N5 10	10"
	N5 12	12"

All dimensions in inches

Job:	_____
Architect:	_____
Engineer:	_____
Contractor:	_____

Rev. 0