



**HART** **COOLEY**<sup>®</sup>  
*install confidence.*

**Commercial**  
Grilles, Registers & Diffusers  
Edition 13



## LIGHT COMMERCIAL

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LIGHT COMMERCIAL

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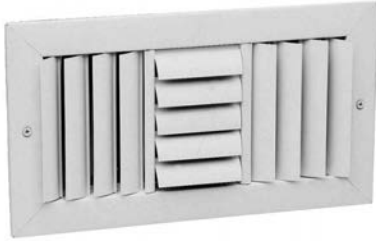
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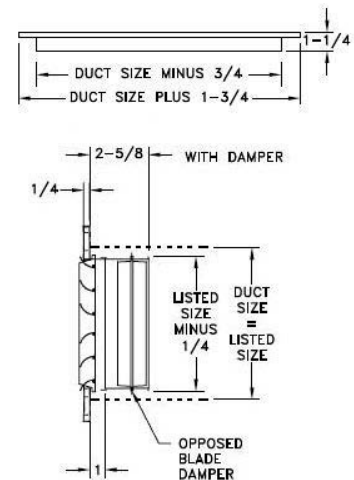
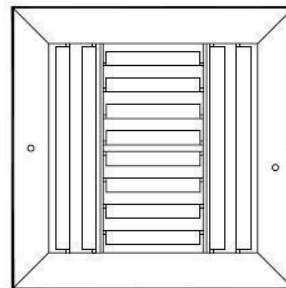


## 800 Series

- Steel construction
- Curved Blade design
- 1 - 4-way or 2-way corner air diffusion
- Available with or without damper
- Damper options: Multi-Shutter or Opposed Blade
- Individually adjustable bars for easy positive setting
- Opposed Blade damper is screwdriver operated
- Bright White finish

800 Series Available Sizes (in.)																
HT	WIDTH															
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

x Available in



- 811 one-way no damper
- 811MS one-way with multi-shutter damper
- 811OB one-way with opposed blade damper
- 812 two-way no damper
- 812MS two-way with multi-shutter damper
- 812OB two-way with opposed blade damper
- 812C two-way corner no damper
- 812CMS two-way corner with multi-shutter damper
- 812COB two-way corner with opposed blade damper
- 813 three-way no damper
- 813MS three-way with multi-shutter damper
- 813OB three-way with opposed blade damper
- 814 four-way no damper
- 814MS four-way with multi-shutter damper
- 814OB four-way with opposed blade damper

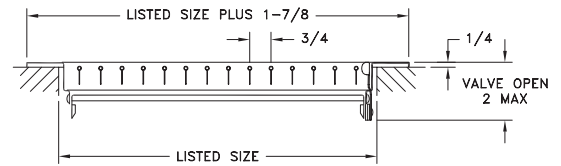
# Registers & Grilles - Steel



### 821

- All-steel construction
- Vertical adjustable face bars
- Horizontal multi-shutter valve
- Bright White finish

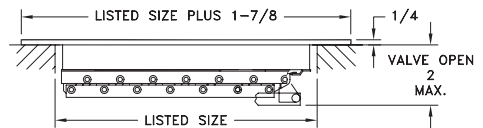
821 Available Sizes (in.)											
HT	WIDTH										
	6	8	10	12	14	16	18	20	24	30	36
4	X	X	X	X	X	X	X	X	X	X	
5			X	X	X						
6	X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X	X	X
14					X	X	X	X	X	X	X
16						X	X	X	X	X	
18							X	X	X	X	
20								X			
24									X		



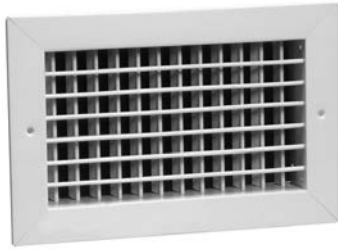
### 831

- All-steel construction
- Horizontal adjustable face bars
- Vertical valve
- Adjustable multi-shutter valve
- Bright White finish
- 3/4" fin spacing

831 Available Sizes (in.)											
HT	WIDTH										
	8	10	12	14	16	20	24	30	32	36	
4	X	X	X	X							
6	X	X	X	X	X	X	X	X			
8		X	X	X	X	X	X	X			
10			X			X	X				
12							X			X	
14						X			X		

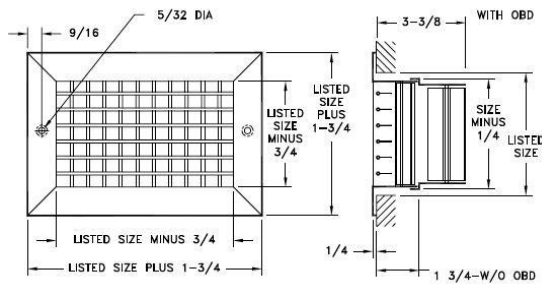






## 92HVO Register

- All-steel construction
- Adjustable face bars may be set to any desired deflection
- Horizontal front bars
- Vertical second bars
- Larger sizes available in multiple-piece construction
- Bright White finish

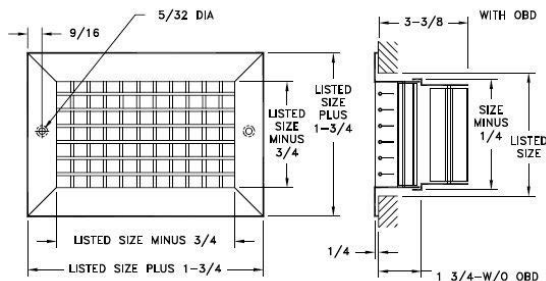


92HVO Available Sizes (in.)																
HT	WIDTH															
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X	X	X	X	X	X	X	X
14					X	X	X	X	X	X	X	X	X	X	X	X
16						X	X	X	X	X	X	X	X	X	X	X
18							X	X	X	X	X	X	X	X	X	X
20								X	X	X	X	X	X	X	X	X
22									X	X	X	X	X	X	X	X
24										X	X	X	X	X	X	X
26											X	X	X	X	X	X
28												X	X	X	X	X
30													X	X	X	X
32														X	X	X
34															X	X
36																X



## 92HVV Register

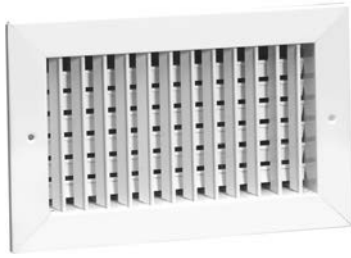
- All-steel construction
- Horizontal front bars
- Vertical second bars
- Opposed-blade damper
- Adjustable face bars may be set to any desired deflection
- Larger sizes available in multiple-piece construction
- Bright White finish



92HVV Available Sizes (in.)																
HT	WIDTH															
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X	X	X	X	X	X	X	X
14					X	X	X	X	X	X	X	X	X	X	X	X
16						X	X	X	X	X	X	X	X	X	X	X
18							X	X	X	X	X	X	X	X	X	X
20								X	X	X	X	X	X	X	X	X
22									X	X	X	X	X	X	X	X
24										X	X	X	X	X	X	X
26											X	X	X	X	X	X
28												X	X	X	X	X
30													X	X	X	X
32														X	X	X
34															X	X
36																X

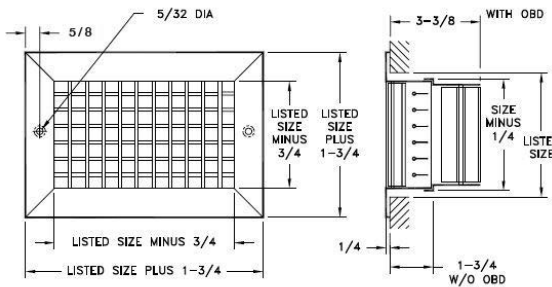
Note: Screw hole location found in engineering data catalog

# Registers & Grilles - Steel

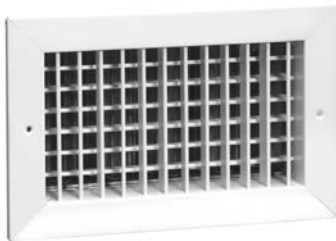


## 92VHO Register

- All-steel construction
- Vertical front bars
- Horizontal second bars
- Adjustable face bars may be set to any desired deflection
- Larger sizes available in multiple-piece construction
- Bright White finish

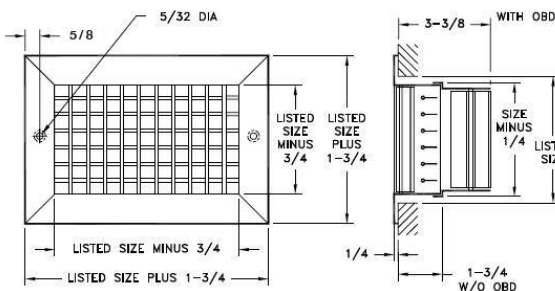


		92VHO Available Sizes (in.)															
HT	WIDTH																
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12				X	X	X	X	X	X	X	X	X	X	X	X	X	
14					X	X	X	X	X	X	X	X	X	X	X	X	
16						X	X	X	X	X	X	X	X	X	X	X	
18							X	X	X	X	X	X	X	X	X	X	
20								X	X	X	X	X	X	X	X	X	
22									X	X	X	X	X	X	X	X	
24										X	X	X	X	X	X	X	
26											X	X	X	X	X	X	
28												X	X	X	X	X	
30													X	X	X	X	
32														X	X	X	
34															X	X	
36																X	

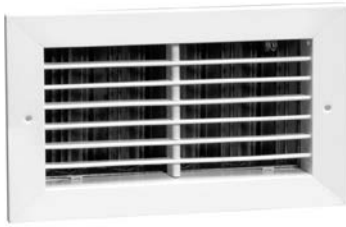


## 92VHV Register

- All-steel construction
- Vertical front bars
- Horizontal second bars
- Adjustable face bars may be set to any desired deflection
- Opposed-blade damper
- Larger sizes available in multiple-piece construction
- Bright White finish

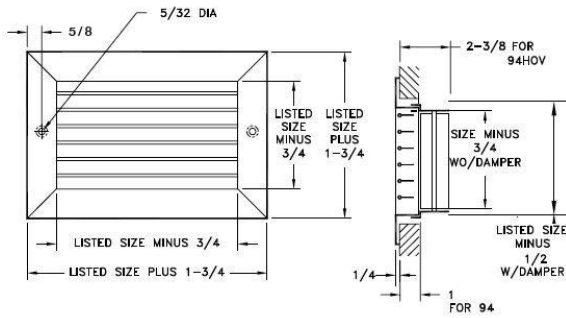


		92VHV Available Sizes (in.)															
HT	WIDTH																
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12				X	X	X	X	X	X	X	X	X	X	X	X	X	
14					X	X	X	X	X	X	X	X	X	X	X	X	
16						X	X	X	X	X	X	X	X	X	X	X	
18							X	X	X	X	X	X	X	X	X	X	
20								X	X	X	X	X	X	X	X	X	
22									X	X	X	X	X	X	X	X	
24										X	X	X	X	X	X	X	
26											X	X	X	X	X	X	
28												X	X	X	X	X	
30													X	X	X	X	
32														X	X	X	
34															X	X	
36																X	



## 94HOV Register

- All-steel construction
- Horizontal face bars set straight
- Face bars permanently fixed into a heavy steel frame at 90-degree angle from face
- Opposed-blade damper
- Larger sizes available in multiple-piece construction
- Bright White finish

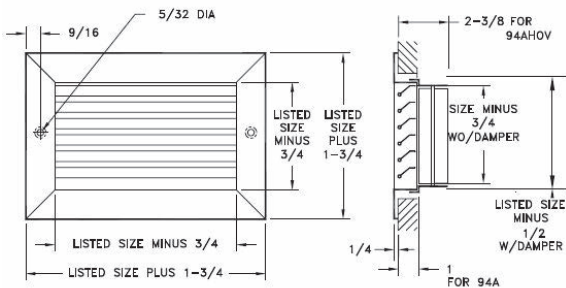


		94HOV Available Sizes (in.)															
		WIDTH															
HT	WIDTH																
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12				X	X	X	X	X	X	X	X	X	X	X	X	X	
14					X	X	X	X	X	X	X	X	X	X	X	X	
16						X	X	X	X	X	X	X	X	X	X	X	
18							X	X	X	X	X	X	X	X	X	X	
20								X	X	X	X	X	X	X	X	X	
22									X	X	X	X	X	X	X	X	
24										X	X	X	X	X	X	X	
26											X	X	X	X	X	X	
28												X	X	X	X	X	
30													X	X	X	X	
32														X	X	X	
34															X	X	
36																X	



## 94A Grille (No Damper)

- All-steel construction
- 3/4" spaced fins set at 35°, horizontal face bars set at 35°
- Larger sizes available in multiple-piece construction
- Also available as 94AT T-Bar Return Grille (see page 57)
- Bright White finish



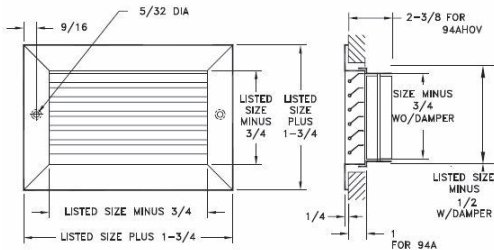
		94A Available Sizes (in.)															
		WIDTH															
HT	WIDTH																
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12				X	X	X	X	X	X	X	X	X	X	X	X	X	
14					X	X	X	X	X	X	X	X	X	X	X	X	
16						X	X	X	X	X	X	X	X	X	X	X	
18							X	X	X	X	X	X	X	X	X	X	
20								X	X	X	X	X	X	X	X	X	
22									X	X	X	X	X	X	X	X	
24										X	X	X	X	X	X	X	
26											X	X	X	X	X	X	
28												X	X	X	X	X	
30													X	X	X	X	
32														X	X	X	
34															X	X	
36																X	

# Registers & Grilles - Steel



## 94AHOV Register

- All-steel construction
- 3/4" spaced fins set at 35°, horizontal face bars set at 35°
- Opposed-blade damper
- Larger sizes available in multiple-piece construction
- Bright White finish

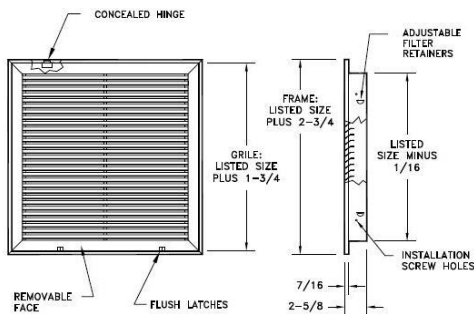


94AHOV Available Sizes (in.)																
HT	WIDTH															
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X	X	X	X	X	X	X	X
14					X	X	X	X	X	X	X	X	X	X	X	X
16						X	X	X	X	X	X	X	X	X	X	X
18							X	X	X	X	X	X	X	X	X	X
20								X	X	X	X	X	X	X	X	X
22									X	X	X	X	X	X	X	X
24										X	X	X	X	X	X	X
26											X	X	X	X	X	X
28												X	X	X	X	X
30													X	X	X	X
32														X	X	X
34															X	X
36																X

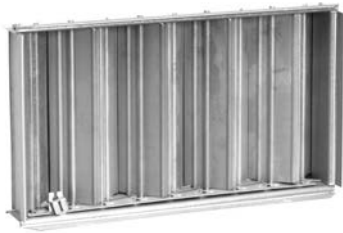


## 96AFB Fixed-Bar Filter Grille

- Steel construction
- Simplifies contractor installation
- Flush, removable face with concealed hinges
- Uses nominal 1" thick disposable filters (not included)
- 96AFB2 uses 2" thick disposable filters and is available by special order
- Equipped with adjustable filter retainers
- 3/4" spaced fins set at 35°
- Also available as 96AFBT T-Bar Fixed Bar Filter Grille (see page 54)
- Bright White finish



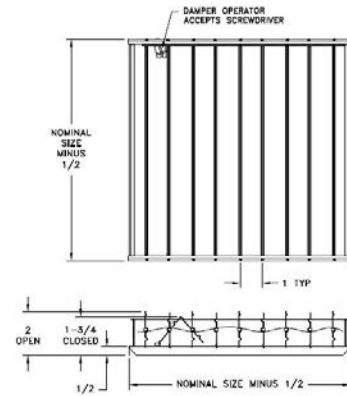
96AFB Standard Sizes (in.)										
HT	WIDTH									
	10	12	14	16	18	20	24	25	30	36
10						X	X		X	
12		X			X	X	X		X	
14			X			X	X	X	X	
16				X		X	X	X		
18					X	X	X		X	
20	X	X	X	X		X	X	X	X	
24		X	X		X		X		X	X
25			X	X		X		X		
30			X			X	X		X	X
36										X



## 9200V Damper

- Steel construction
- Opposed-blade damper
- Controls the air volume from full flow to shut-off
- Mill finish
- For use with:
  - 92
  - 94
  - RE5
  - PFG

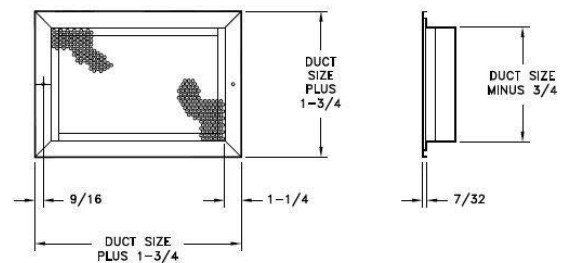
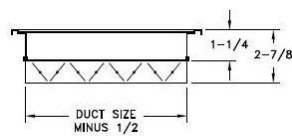
9200V Available Sizes (in.)
Minimum: 6" x 4"
Maximum: 24" x 24" One Piece



## PFG Perforated Face Grille

- All steel construction
- Perforated face
- Optional opposed blade damper
- Optional T-Bar lay-in frames
- Bright white finish

PFG Available Sizes (in.)
Minimum: 6" x 4"
Maximum: 48" x 48" One Piece



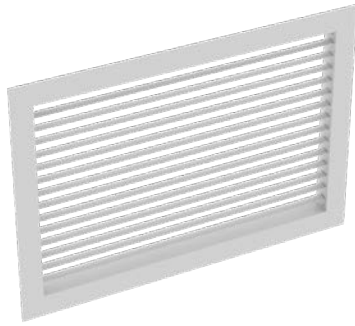
# Registers & Grilles - Aluminum



Flat Frame  
(Standard)

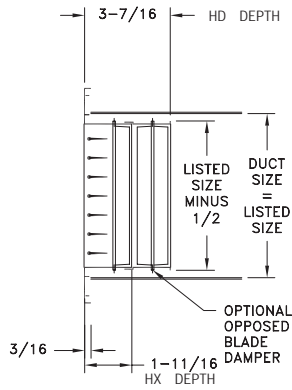


Z-Border  
(Special order)  
Add Z to the  
front of SKU

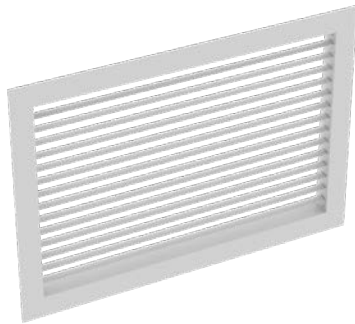


## HX Grille HD Register with Opposed-Blade Damper

- Extruded aluminum construction
- Horizontal front bars
- Single row of individually adjustable horizontal face bars
- Pivoted bars for easy positive setting
- Bright White or Satin Anodized finish

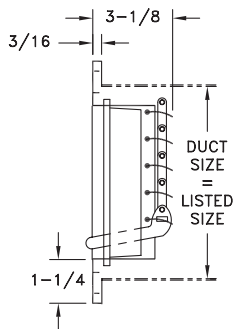


		HX/HD Available Sizes (in.)																				
		WIDTH																				
HT	WIDTH																					
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22									X	X	X	X	X	X	X	X	X	X	X	X	X	X
24										X	X	X	X	X	X	X	X	X	X	X	X	X
26											X	X	X	X	X	X	X	X	X	X	X	X
28												X	X	X	X	X	X	X	X	X	X	X
30													X	X	X	X	X	X	X	X	X	X
32														X	X	X	X	X	X	X	X	X
34															X	X	X	X	X	X	X	X
36																X	X	X	X	X	X	X
38																	X	X	X	X	X	X
40																		X	X	X	X	X
42																			X	X	X	X
44																				X	X	X
46																					X	X
48																						X



## HM Register with Multi-Shutter Valve

- Horizontal valve blades



		HM Available Sizes (in.)														
		WIDTH														
HT	WIDTH															
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X	X	X	X	X	X	X	X
14					X	X	X	X	X	X	X	X	X	X	X	X
16						X	X	X	X	X	X	X	X	X	X	X
18							X	X	X	X	X	X	X	X	X	X
20								X	X	X	X	X	X	X	X	X
22									X	X	X	X	X	X	X	X
24										X	X	X	X	X	X	X
26											X	X	X	X	X	X
28												X	X	X	X	X
30													X	X	X	X
32														X	X	X
34															X	X
36																X

# Registers & Grilles - Aluminum



Flat Frame  
(Standard)

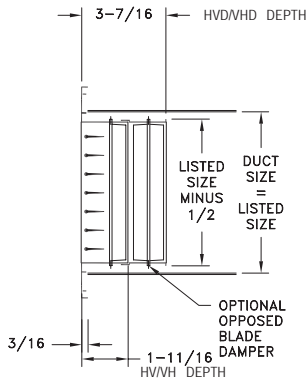
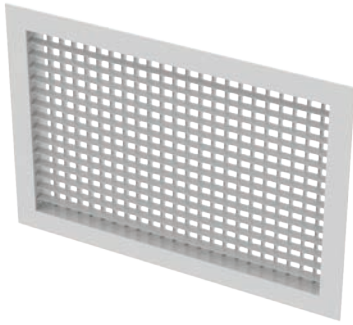


Z-Border  
(Special order)  
Add Z to the  
front of SKU



## HV Register HVD Register with Opposed-Blade Damper

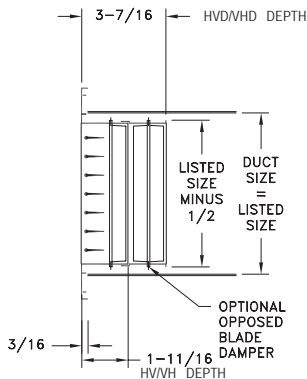
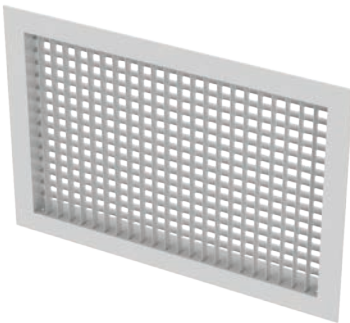
- Extruded aluminum construction
- Horizontal front bars
- Vertical second bars
- Two rows of individually adjustable face bars for horizontal and vertical deflection
- Pivoted bars for easy positive setting
- Bright White or Satin Anodized finish



HT		HV/HVD Available Sizes (in.)																					
		WIDTH																					
		6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24										X	X	X	X	X	X	X	X	X	X	X	X	X	X
26											X	X	X	X	X	X	X	X	X	X	X	X	X
28												X	X	X	X	X	X	X	X	X	X	X	X
30													X	X	X	X	X	X	X	X	X	X	X
32														X	X	X	X	X	X	X	X	X	X
34															X	X	X	X	X	X	X	X	X
36																X	X	X	X	X	X	X	X
38																	X	X	X	X	X	X	X
40																		X	X	X	X	X	X
42																			X	X	X	X	X
44																				X	X	X	X
46																					X	X	X
48																						X	X

## VH Register VHD Register with Opposed-Blade Damper

- Extruded aluminum construction
- Vertical front bars
- Horizontal second bars
- Two rows of individually adjustable face bars for horizontal and vertical deflection
- Pivoted bars for easy positive setting
- Bright White or Satin Anodized finish



HT		VH/VHD Available Sizes (in.)																					
		WIDTH																					
		6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24										X	X	X	X	X	X	X	X	X	X	X	X	X	X
26											X	X	X	X	X	X	X	X	X	X	X	X	X
28												X	X	X	X	X	X	X	X	X	X	X	X
30													X	X	X	X	X	X	X	X	X	X	X
32														X	X	X	X	X	X	X	X	X	X
34															X	X	X	X	X	X	X	X	X
36																X	X	X	X	X	X	X	X
38																	X	X	X	X	X	X	X
40																		X	X	X	X	X	X
42																			X	X	X	X	X
44																				X	X	X	X
46																					X	X	X
48																						X	X

Note: Screw hole location found in engineering data catalog



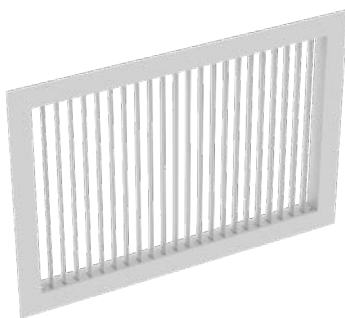
# Registers & Grilles - Aluminum



Flat Frame  
(Standard)

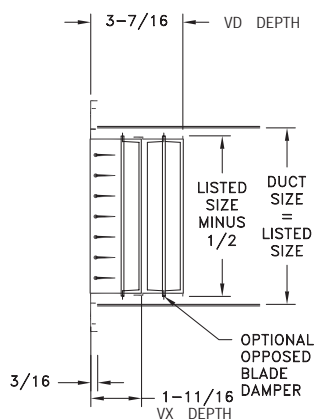


Z-Border  
(Special order)  
Add Z to the  
front of SKU

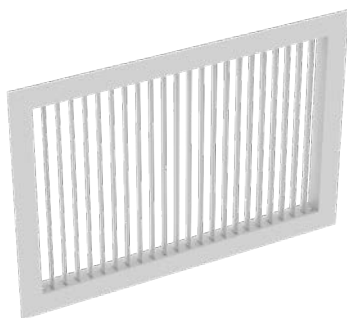


## VX Grille VD Register with Opposed-Blade Damper

- Extruded aluminum construction
- Vertical front bars
- Single row of individually adjustable face bars
- Pivoted bars for easy positive setting
- Bright White or Satin Anodized finish

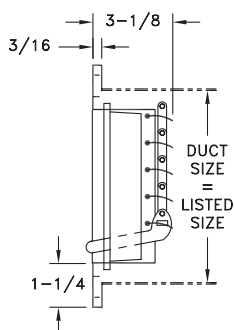


		VX/VD Available Sizes (in.)																					
		WIDTH																					
HT	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	
	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24										X	X	X	X	X	X	X	X	X	X	X	X	X	X
26											X	X	X	X	X	X	X	X	X	X	X	X	X
28												X	X	X	X	X	X	X	X	X	X	X	X
30													X	X	X	X	X	X	X	X	X	X	X
32														X	X	X	X	X	X	X	X	X	X
34															X	X	X	X	X	X	X	X	X
36																X	X	X	X	X	X	X	X
38																	X	X	X	X	X	X	X
40																		X	X	X	X	X	X
42																			X	X	X	X	X
44																				X	X	X	X
46																					X	X	X
48																						X	X



## VM Register with Multi-Shutter Valve

- Lever-operated, multi-shutter valve



		VM Available Sizes (in.)														
		WIDTH														
HT	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X	X	X	X	X	X	X	X
14					X	X	X	X	X	X	X	X	X	X	X	X
16						X	X	X	X	X	X	X	X	X	X	X
18							X	X	X	X	X	X	X	X	X	X
20								X	X	X	X	X	X	X	X	X
22									X	X	X	X	X	X	X	X
24										X	X	X	X	X	X	X
26											X	X	X	X	X	X
28												X	X	X	X	X
30													X	X	X	X
32														X	X	X
34															X	X
36																X

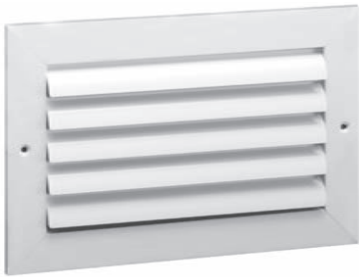




Flat Frame  
(Standard)

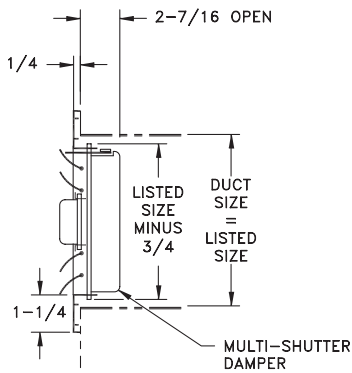
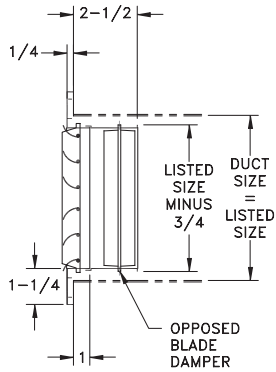


Z-Border  
(Special order) Add Z to the front of SKU



## CH1 Grille CHD1 Register with Opposed-Blade Damper CHM1 Register with Multi-Shutter Valve

- Extruded aluminum construction
- One-way deflection
- Individually adjustable curved-face bars
- Pivoted bars for easy positive setting
- Bright White or Satin Anodized finish



		CH1, CHD1, CHM1 Available Sizes (in.)																	
HT	WIDTH																		
	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12						X	X	X	X	X	X	X	X	X	X	X	X	X	X
14							X	X	X	X	X	X	X	X	X	X	X	X	X
16								X	X	X	X	X	X	X	X	X	X	X	X
18									X	X	X	X	X	X	X	X	X	X	X
20										X	X	X	X	X	X	X	X	X	X
22											X	X	X	X	X	X	X	X	X
24												X	X	X	X	X	X	X	X
26													X	X	X	X	X	X	X
28														X	X	X	X	X	X
30															X	X	X	X	X
32																X	X	X	X
34																	X	X	X
36																		X	X

# Registers & Grilles - Aluminum



Flat Frame  
(Standard)

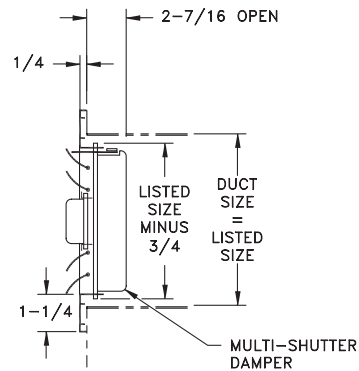
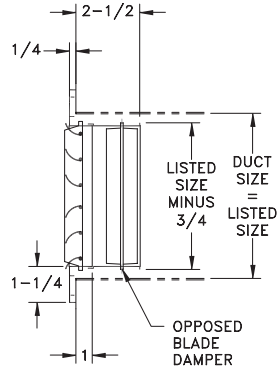


Z-Border  
(Special order) Add Z to the front of SKU



## CH2 Grille CHD2 Register with Opposed-Blade Damper CHM2 Register with Multi-Shutter Valve

- Extruded aluminum construction
- Two-way deflection
- Individually adjustable curved-face bars
- Pivoted bars for easy positive setting
- Bright White or Satin Anodized finish



		CH2, CHD2, CHM2 Available Sizes (in.)																
HT	WIDTH																	
	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12					X	X	X	X	X	X	X	X	X	X	X	X	X	X
14						X	X	X	X	X	X	X	X	X	X	X	X	X
16							X	X	X	X	X	X	X	X	X	X	X	X
18								X	X	X	X	X	X	X	X	X	X	X
20									X	X	X	X	X	X	X	X	X	X
22										X	X	X	X	X	X	X	X	X
24											X	X	X	X	X	X	X	X
26												X	X	X	X	X	X	X
28													X	X	X	X	X	X
30														X	X	X	X	X
32															X	X	X	X
34																X	X	X
36																	X	X



Flat Frame  
(Standard)



Z-Border  
(Special order) Add Z to the front of SKU

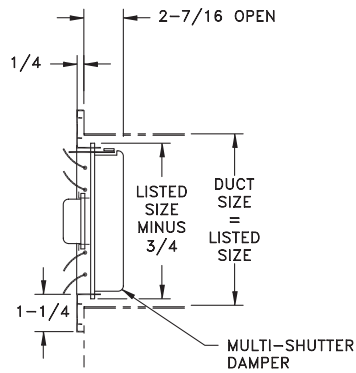
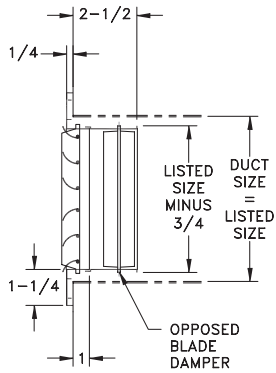


## C3 Grille

### CD3 Register with Opposed-Blade Damper

### CM3 Register with Multi-Shutter Valve

- Extruded aluminum construction
- Three-way deflection
- Individually adjustable curved-face bars
- Pivoted bars for easy positive setting
- Bright White or Satin Anodized finish



C3, CD3, CM3 Available Sizes (in.)																
HT	WIDTH															
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X	X	X	X	X	X	X	X
14					X	X	X	X	X	X	X	X	X	X	X	X
16						X	X	X	X	X	X	X	X	X	X	X
18							X	X	X	X	X	X	X	X	X	X
20								X	X	X	X	X	X	X	X	X
22									X	X	X	X	X	X	X	X
24										X	X	X	X	X	X	X
26											X	X	X	X	X	X
28												X	X	X	X	X
30													X	X	X	X
32														X	X	X
34															X	X
36																X

# Registers & Grilles - Aluminum



Flat Frame  
(Standard)

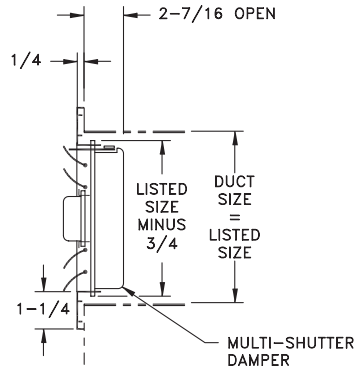
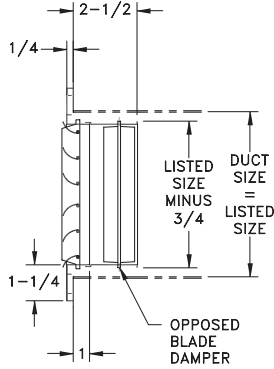


Z-Border  
(Special order) Add Z to the front of SKU

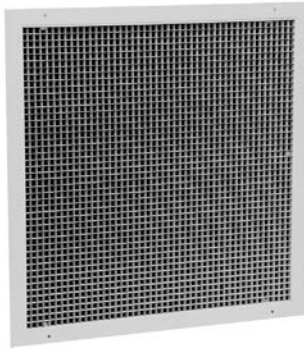


## C4 Grille CD4 Register with Opposed-Blade Damper CM4 Register with Multi-Shutter Valve

- Extruded aluminum construction
- Four-way deflection
- Individually adjustable curved-face bars
- Pivoted bars for easy positive setting
- Bright White or Satin Anodized finish

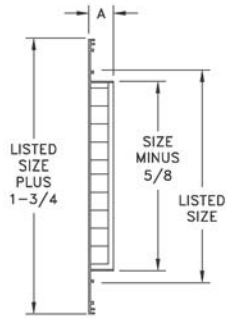


		CH2, CHD2, CHM2 Available Sizes (in.)																
		WIDTH																
HT																		
	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10					X	X	X	X	X	X	X	X	X	X	X	X	X	X
12						X	X	X	X	X	X	X	X	X	X	X	X	X
14							X	X	X	X	X	X	X	X	X	X	X	X
16								X	X	X	X	X	X	X	X	X	X	X
18									X	X	X	X	X	X	X	X	X	X
20										X	X	X	X	X	X	X	X	X
22											X	X	X	X	X	X	X	X
24												X	X	X	X	X	X	X
26													X	X	X	X	X	X
28														X	X	X	X	X
30															X	X	X	X
32																X	X	X
34																	X	X
36																		X



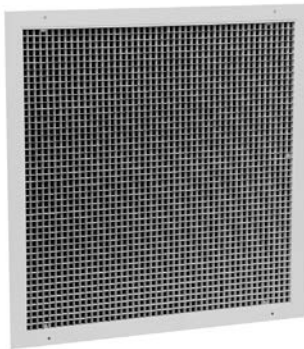
### RE5 Grille

- All-aluminum construction
- Grid core  $\frac{1}{2}$ " x  $\frac{1}{2}$ " x  $\frac{1}{2}$ "
- Square core design with extruded aluminum frame
- Bright White or Mill finish



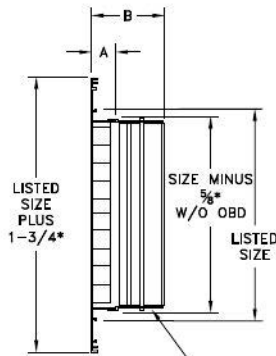
MODEL	GRID CORE DIMENSIONS	A
RE5	$\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	1-1/16
RE510	$\frac{1}{2}$ x $\frac{1}{2}$ x 1	1-9/16
RE1	1 x 1 x 1	1-9/16

		RE5 Available Sizes (in.)																					
		WIDTH																					
HT	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	
	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24										X	X	X	X	X	X	X	X	X	X	X	X	X	X
26											X	X	X	X	X	X	X	X	X	X	X	X	X
28												X	X	X	X	X	X	X	X	X	X	X	X
30													X	X	X	X	X	X	X	X	X	X	X
32														X	X	X	X	X	X	X	X	X	X
34															X	X	X	X	X	X	X	X	X
36																X	X	X	X	X	X	X	X
38																	X	X	X	X	X	X	X
40																		X	X	X	X	X	X
42																			X	X	X	X	X
44																				X	X	X	X
46																					X	X	X
48																						X	X



### RED5 Register

- Aluminum construction
- Opposed-blade, galvanized damper
- Square core design with extruded aluminum construction
- Bright White or Mill finish



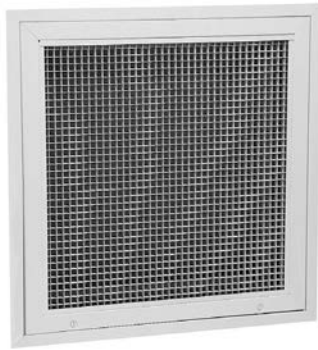
RED5 REGISTER

		RED5 Available Sizes (in.)																					
		WIDTH																					
HT	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	
	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
26										X	X	X	X	X	X	X	X	X	X	X	X	X	X
28											X	X	X	X	X	X	X	X	X	X	X	X	X
30												X	X	X	X	X	X	X	X	X	X	X	X
32													X	X	X	X	X	X	X	X	X	X	X
34														X	X	X	X	X	X	X	X	X	X
36															X	X	X	X	X	X	X	X	X
38																X	X	X	X	X	X	X	X
40																	X	X	X	X	X	X	X
42																		X	X	X	X	X	X
44																			X	X	X	X	X
46																				X	X	X	X
48																					X	X	X

MODEL	GRID CORE DIMENSIONS	A	B
RE5	1/2x1/2x1/2	1-1/4	2-1/2
RE510	1/2x1/2x1	1-1/4	2-15/16
RE1	1x1x1	1-1/4	2-15/16

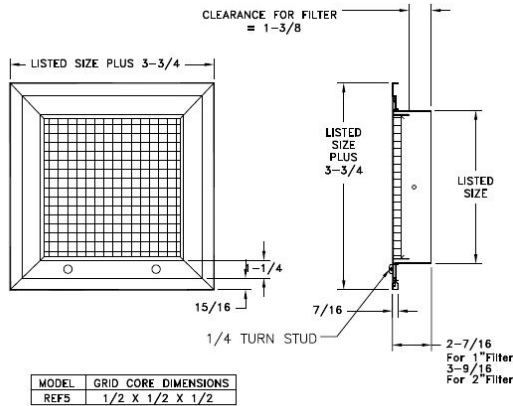
Note: Screw hole location found in engineering data catalog

# Registers & Grilles - Aluminum



## REF5 Filter Grille, Grid Core

- All-aluminum construction
- 1/2 x 1/2 x 1/2 square core design
- Accommodates standard 1" thick disposable filter (not included)
- Filter grilles equipped with quarter turn fasteners
- Bright White or Mill finish
- Specify REF52 for 2" filter

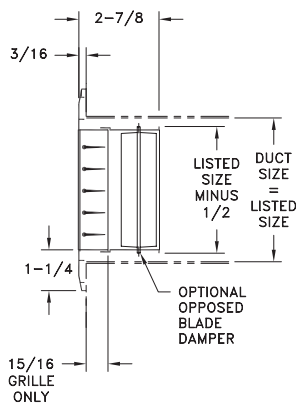


REF5 Available Sizes (in.)		WIDTH																		
		6	8	10	12	14	16	18	20	22	24	25	26	28	30	32	34	36		
HT	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	



## RH90 Grille

- Extruded aluminum construction
- Face bars permanently fixed into heavy aluminum frames at a 90-degree angle from face
- Bright White or Painted Aluminum finish



RH90 Available Sizes (in.)		WIDTH																					
		6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
HT	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X



## RH45 Grille, 45-degree Fixed Blade

- Fixed 45-degree blades
- 1-1/2" beveled frame
- Extruded Aluminum Construction
- Available in White (W) or Painted Aluminum (AL)



Flat Frame  
(Standard)



Z-Border

(Special order) Add Z to the front of SKU

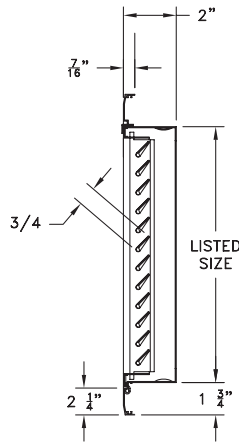


## RH45LF Grille

### RHD45LF Register with Opposed-Blade Damper

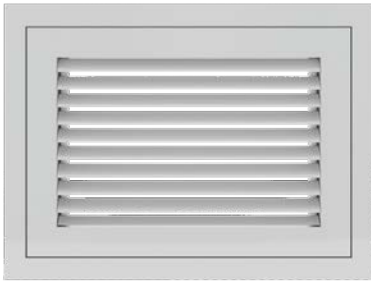
- Extruded aluminum construction
- Horizontal bars at 45 degrees
- Face bars permanently fixed into heavy aluminum frames at a 45-degree angle
- Bright White or Satin Anodized finish

RH45  
RHD45



		RH45, RHD45 Available Sizes (in.)																				
		WIDTH																				
HT	WIDTH																					
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24									X	X	X	X	X	X	X	X	X	X	X	X	X	X
26										X	X	X	X	X	X	X	X	X	X	X	X	X
28											X	X	X	X	X	X	X	X	X	X	X	X
30												X	X	X	X	X	X	X	X	X	X	X
32													X	X	X	X	X	X	X	X	X	X
34														X	X	X	X	X	X	X	X	X
36															X	X	X	X	X	X	X	X
38																X	X	X	X	X	X	X
40																	X	X	X	X	X	X
42																		X	X	X	X	X
44																			X	X	X	X
46																				X	X	X
48																					X	X

# Registers & Grilles - Aluminum



## RHF45LF Filter Grille – 1" Filter RHF452LF Filter Grille – 2" Filter

- Extruded aluminum construction
- Horizontal bars at 45 degrees
- Hinged on the bottom edge, face is removable
- Accommodates standard 1" thick disposable filter (not included)
- Filter grilles equipped with plastic slide latch
- Bright White or Satin Anodized finish
- Slide latch comes standard
- Add WTS to end of description RHF45/RHF452 for thumb screw
- No Z-Boarder available

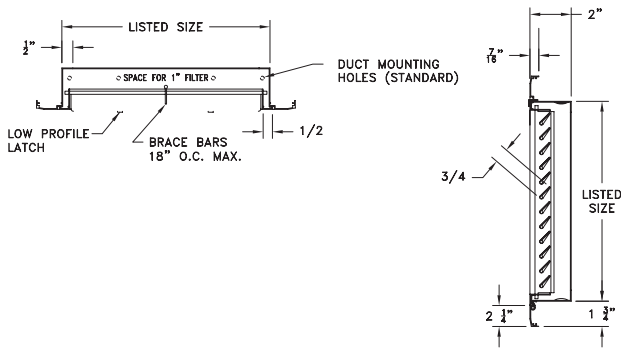


Thumb Screw (WTS)



Slide Latch

**Note:** CFM capacity is equal to the filter capacity rating of two CFM per square inch of gross filter area.



		RHF45/RHF452 Available Sizes (in.)																					
		WIDTH																					
HT	6	8	10	12	14	16	18	20	22	24	25	26	28	30	32	34	36	38	40	42	44	46	48
	6	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X
10			X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X
12				X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X
14					X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X
16						X	X	X	X				X	X	X	X	X	X	X	X	X	X	X
18							X	X	X				X	X	X	X	X	X	X	X	X	X	X
20								X	X				X	X	X	X	X	X	X	X	X	X	X
22									X				X	X	X	X	X	X	X	X	X	X	X
24										X			X	X	X	X	X	X	X	X	X	X	X
25										X			X										
26													X	X	X	X	X	X	X	X	X	X	X
28														X	X	X	X	X	X	X	X	X	X
30															X	X	X	X	X	X	X	X	X
32																X	X	X	X	X	X	X	X
34																	X	X	X	X	X	X	X
36																		X	X	X	X	X	X





### TG Transfer Grille

- Extruded aluminum construction
- Vision proof
- Inverted "Y" type grille bar for best vision proof quality and airflow
- Excellent for installation in doors or partitions
- Bright White or Satin Anodized finish

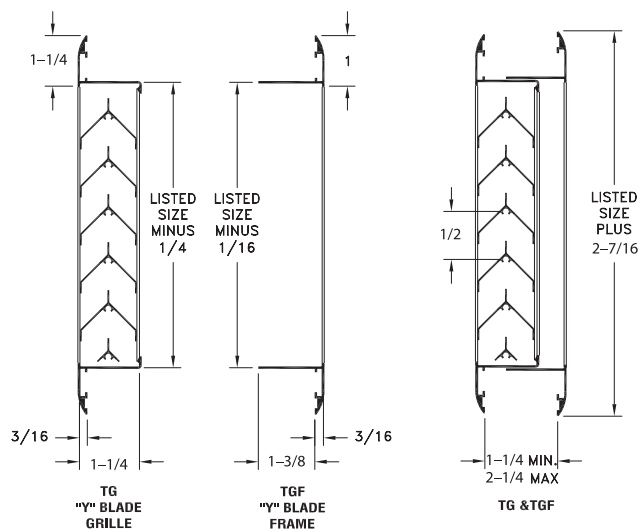


### TGF Transfer Grille Frame

- Extruded aluminum construction

**Note:** When framing both sides of the door or partition opening, use the TGF frame with the TG Grille. Adjustable from 1 1/4" to 2 1/4" door thickness.

## TG/TGF Transfer Grille with Transfer Grille Frame



		TG/TGF Available Sizes (in.)												
		WIDTH												
HT	6	8	10	12	14	16	18	20	22	24	26	28	30	
	6	X	X	X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X	X	X	X	X	
10			X	X	X	X	X	X	X	X	X	X	X	
12				X	X	X	X	X	X	X	X	X	X	
14					X	X	X	X	X	X	X	X	X	
16						X	X	X	X	X	X	X	X	
18							X	X	X	X	X	X	X	
20								X	X	X	X	X	X	
22									X	X	X	X	X	
24										X	X	X	X	
26											X	X	X	
28												X	X	
30													X	

*Note: Screw hole location found in engineering data catalog*

# Ceiling Diffusers - Steel

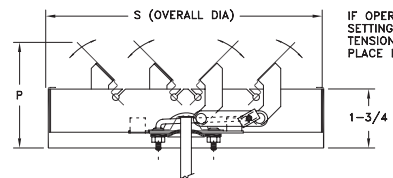


## 19 Damper

- Steel construction
- Opposed-blade damper
- Bright White finish
- Duct-mount only

19 Damper Listed Sizes (in.)								
Damper	6	8	10	12	14	15	16	18
S	5 <sup>15</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>	9 <sup>15</sup> / <sub>16</sub>	11 <sup>15</sup> / <sub>16</sub>	13 <sup>15</sup> / <sub>16</sub>	14 <sup>15</sup> / <sub>16</sub>	15 <sup>15</sup> / <sub>16</sub>	17 <sup>15</sup> / <sub>16</sub>
P	3	3 <sup>1</sup> / <sub>2</sub>	4 <sup>9</sup> / <sub>16</sub>	4 <sup>9</sup> / <sub>16</sub>	4 <sup>9</sup> / <sub>16</sub>	4 <sup>9</sup> / <sub>16</sub>	4 <sup>9</sup> / <sub>16</sub>	4 <sup>9</sup> / <sub>16</sub>

**Note:** 3/16" Hex Damper handle (by others) will lock into position if inserted too far into damper



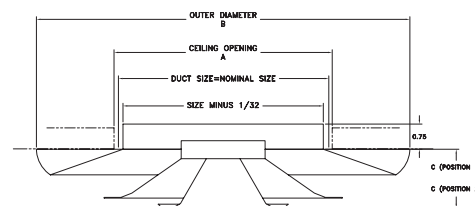
CROSS SECTION WITH VALVES PARTLY OPEN SHOWING OPPOSED-BLADE OPERATION



## 20 Round Diffuser

- Steel construction
- For ceiling or exposed duct installation
- Five-step positioning of air pattern adjustment
- 360-degree pattern, horizontal to vertical pattern change
- Removable center core
- Diffuser outer shell fastens directly to duct; margins fit tight to ceiling for optimum ceiling appearance
- Optional #19 damper; duct-mount only
- Bright White finish

Listed Size	A	B	C Pos. 1	C Pos. 2
6	6-1/2	11-1/8	1-1/8	1-3/4
8	8-1/2	14-3/4	1-1/2	2-1/8
10	10-1/2	18-1/4	2-1/8	2-7/8
12	12-1/2	22	2-3/8	3-1/8
14	14-1/2	26	2-5/8	3-3/8
16	16-1/2	29	3-1/4	4
18	18-1/2	33-1/2	3-7/8	4-3/4





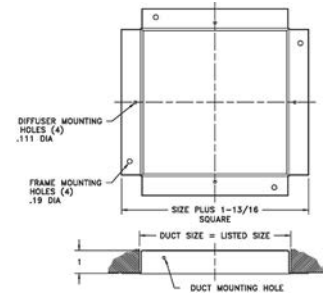
## 21 Installation Frame

- All-steel construction
- Golden Sand enamel finish
- Used but not furnished with #24 ceiling diffusers.

Not required when using 22 Butterfly Damper or 23 Opposed Blade Damper.

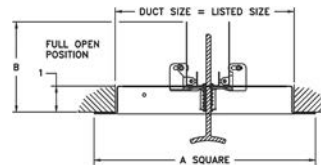
Cannot be used with SD or SDD.

21 Available Sizes (in.)	
6, 8, 10, 12, 14, 16, 18, 20, 22, 24	



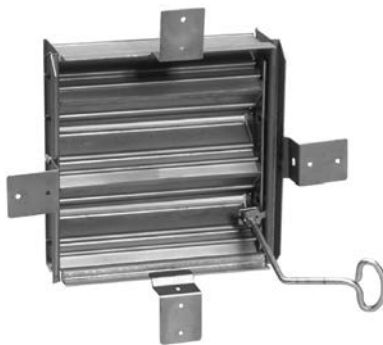
## 22 Butterfly Damper

- All-steel construction
- Used with #24 Ceiling Diffuser
- Knob control for quick adjustment (removable)
- Installation flange included
- Golden Sand enamel finish



22 Available Sizes (in.)		
Size	A	B
6	6 <sup>3</sup> / <sub>16</sub>	3 <sup>11</sup> / <sub>16</sub>
8	8 <sup>3</sup> / <sub>16</sub>	4 <sup>11</sup> / <sub>16</sub>
10	10 <sup>3</sup> / <sub>16</sub>	5 <sup>11</sup> / <sub>16</sub>
12	12 <sup>3</sup> / <sub>16</sub>	6 <sup>11</sup> / <sub>16</sub>
14	14 <sup>3</sup> / <sub>16</sub>	7 <sup>11</sup> / <sub>16</sub>

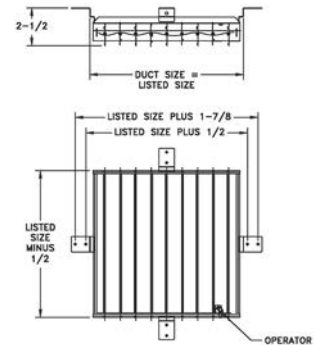
Only available in sizes shown.



## 23 Opposed-Blade Damper

- All-steel construction
- Used with #24 Ceiling Diffuser
- Controls air volume over entire diffuser
- Key operated
- Mill finish

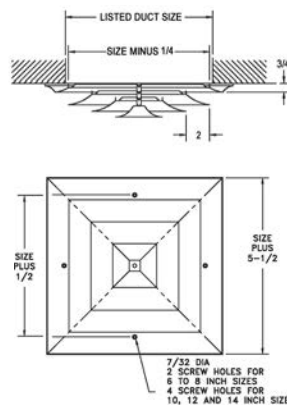
23 Available Sizes (in.)	
6, 8, 10, 12, 14, 16, 18, 20, 22, 24	



## 24 Square Ceiling Diffuser

- All-steel construction
- Step-down face deflects air stream 360 degrees
- Bright White finish

Only available in sizes shown.



24 Ceiling Diffuser (in.)		
Size	Free Area Sq. Inches	No. of Cones
6	41	3
8	65	3
10	84	3
12	123	4
14	152	4
16	199	5
18	236	5
20	293	6
22	338	6
24	404	7

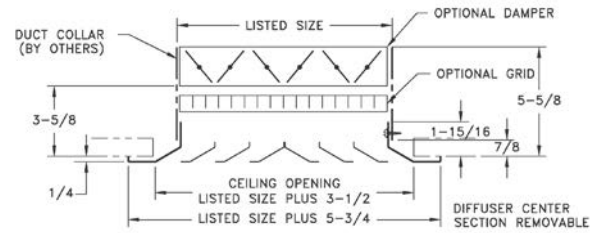
# Ceiling Diffusers - Steel



## SRE Diffuser

- Steel construction
- Removable core
- Flat margin style
- Optional opposed blade damper available for field installation (see SR7 damper)
- Bright White enamel finish

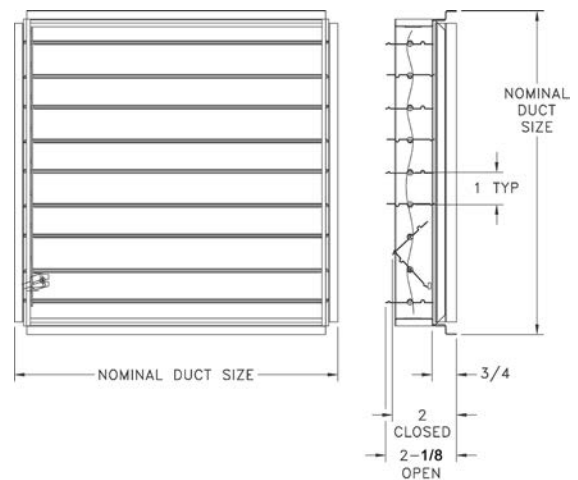
SRE Available Sizes (in.)							
HT	WIDTH						
	6	9	12	15	18	21	24
6	X	X	X	X	X	X	X
9		X	X	X	X	X	X
12			X	X	X	X	X
15				X	X	X	X
18					X	X	X
21						X	X
24							X



## SR7 Volume Damper

- Steel construction
- Used to control airflow at the diffuser
- Mill finish
- Field installed for use with SRE, SRS or SRT diffusers

SR7 Available Sizes (in.)
Minimum 6" x 6"
Maximum 36" x 36" (multiple sections)





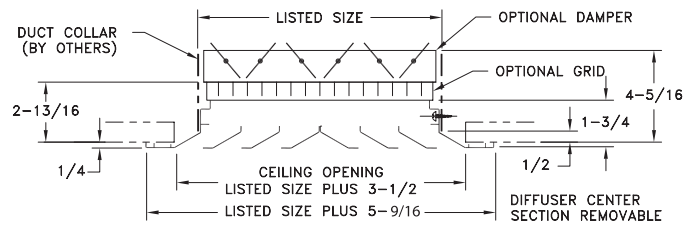
## ARE Diffuser

- Extruded aluminum construction
- Removable core
- Flat margin style
- Optional factory-mounted aluminum opposed-blade damper available as ARED
- Bright White or Satin Anodized finish

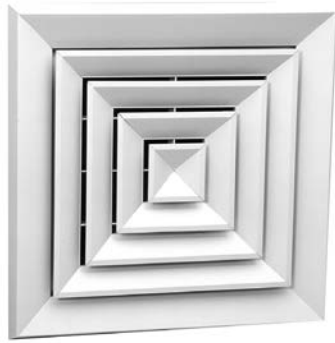
See page 33 for available air patterns.

ARE Available Sizes (in.)											
HT	WIDTH										
	6	9	12	15	18	21	24	27	30	33	36
6	X	X	X	X	X	X	X	X	X	X	X
9		X	X	X	X	X	X	X	X	X	X
12			X	X	X	X	X	X	X	X	X
15				X	X	X	X	X	X	X	X
18					X	X	X	X	X	X	X
21						X	X	X	X	X	X
24							X	X	X	X	X
27								X	X	X	X
30									X	X	X
33										X	X
36											X

**Note:** Number of cones varies by size of diffuser



# Ceiling Diffusers - Aluminum



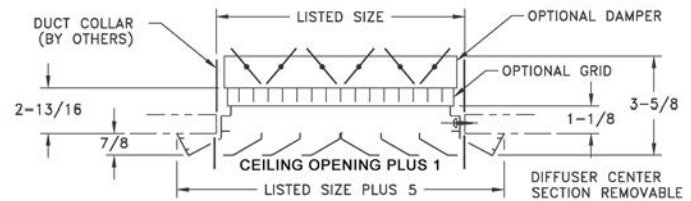
## ARS Diffuser

- Extruded aluminum construction
- Removable core
- Beveled (step-down) margin style
- Optional factory-mounted, aluminum, opposed-blade damper available as ARSD
- Bright White or Satin Anodized finish

ARS Available Sizes (in.)											
HT	WIDTH										
	6	9	12	15	18	21	24	27	30	33	36
6	X	X	X	X	X	X	X	X	X	X	X
9		X	X	X	X	X	X	X	X	X	X
12			X	X	X	X	X	X	X	X	X
15				X	X	X	X	X	X	X	X
18					X	X	X	X	X	X	X
21						X	X	X	X	X	X
24							X	X	X	X	X
27								X	X	X	X
30									X	X	X
33										X	X
36											X

See page 33 for available air patterns.

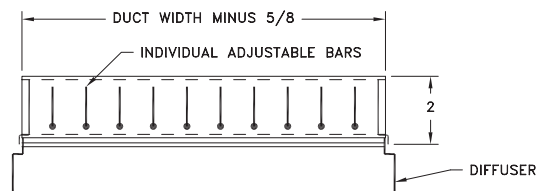
**Note:** Number of cones varies by size of diffuser



## AR6 Control Grid

- Extruded aluminum construction
- Mounts on diffuser hanger bracket
- Provides uniform airflow in diffuser collar
- Mill finish

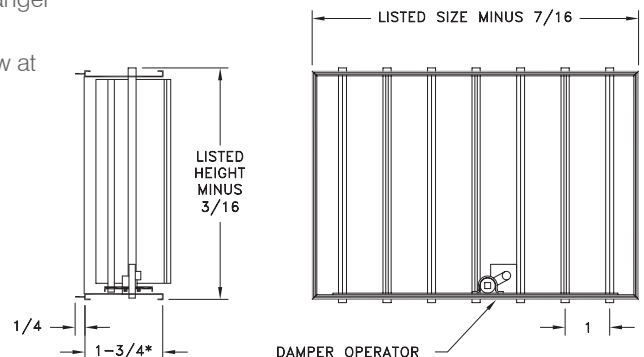
AR6 Available Sizes (in.)
Minimum: 6" x 6"
Maximum: 36" x 36" (in multiple sections)



## AR7 Damper

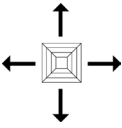
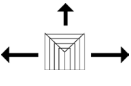
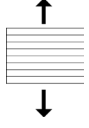
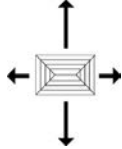
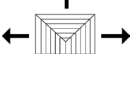

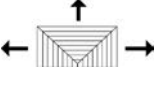
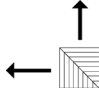

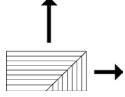
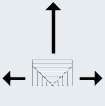
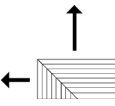
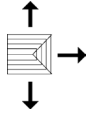


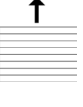

- Extruded aluminum construction
- Mounts on diffuser hanger bracket
- Used to control airflow at the diffuser
- Mill finish

AR7 Available Sizes (in.)
Minimum: 6" x 6"
Maximum: 36" x 36" (in multiple sections)



**Note:** Screw hole location found in engineering data catalog

### Neck View Type SR & AR Air Patterns

Style	Listed Sizes	Style	Listed Sizes	Style	Listed Sizes
 STYLE 4	6x6      24x24 9x9      27x27 12x12    30x30 15x15    33x33 18x18    36x36 21x21  <b>24 x 24 Max. in Steel</b>	 STYLE 3	6x6      24x24 9x9      27x27 12x12    30x30 15x15    33x33 18x18    36x36 21x21  <b>24 x 24 Max. in Steel</b>	 STYLE 2L	9x6 to 36x6    24x21 to 36x21 12x9 to 36x9    27x24 to 36x24 15x12 to 36x12    30x27 to 36x27 18x15 to 36x15    33x30 to 36x30 21x18 to 36x18    36x33  <b>24 x 21 Max. in Steel</b>
 STYLE 4	9x6 to 45x6    24x21 to 45x21 12x9 to 45x9    27x24 to 45x24 15x12 to 45x12    30x27 to 45x27 18x15 to 45x15    33x30 to 45x30 21x18 to 45x18    36x33 to 45x33  <b>24 x 21 Max. in Steel</b>	 STYLE 3S	9x6      24x21 to 36x21 12x9    27x24 to 42x24 15x9    30x27 to 42x27 15x12 to 21x12    33x30 to 42x30 18x15 to 27x15    36x33 21x18 to 33x18	 STYLE 2S	9x6 to 36x6    24x21 to 36x21 12x9 to 36x9    27x24 to 36x24 15x12 to 36x12    30x27 to 36x27 18x15 to 36x15    33x30 to 36x30 21x18 to 36x18    36x33  <b>24 x 21 Max. in Steel</b>
		 STYLE 3S	12x6 18x9 24x12 30x15 36x18	 STYLE 2C	6x6      24x24 9x9      27x27 12x12    30x30 15x15    33x33 18x18    36x36 21x21
		 STYLE 3S	15x6 to 36x6 21x9 to 36x9 27x12 to 36x12 33x15 36x15	 STYLE 2CR	9x6 to 36x6    24x21 to 36x21 12x9 to 36x9    27x24 to 36x24 15x12 to 36x12    30x27 to 36x27 18x15 to 36x15    33x30 to 36x30 21x18 to 36x18    36x33  <b>24 x 21 Max. in Steel</b>
		 STYLE 31S	6x6 to 9x6    24x24 to 36x24 9x9 to 15x9    27x27 to 36x27 12x12 to 21x12    30x30 to 36x30 15x15 to 27x15    33x33 to 36x33 18x18 to 33x18    36x36 21x21 to 36x21	 STYLE 2CL	9x6 to 36x6    24x21 to 36x21 12x9 to 36x9    27x24 to 36x24 15x12 to 36x12    30x27 to 36x27 18x15 to 36x15    33x30 to 36x30 21x18 to 36x18    36x33  <b>24 x 21 Max. in Steel</b>
		 STYLE 3L	9x6 to 36x6    24x21 to 36x21 12x9 to 36x9    27x24 to 36x24 15x12 to 36x12    30x27 to 36x27 18x15 to 36x15    33x30 to 36x30 21x18 to 36x18    36x33  <b>24 x 21 Max. in Steel</b>	 STYLE 1	6x6      27x27 9x9      30x30 12x12    33x33 15x15    36x36 18x18    39x39 21x21    42x42 24x24  <b>24 x 24 Max. in Steel</b>
		 STYLE 2	6x6      24x24 9x9      27x27 12x12    30x30 15x15    33x33 18x18    36x36 21x21  <b>24 x 24 Max. in Steel</b>	 STYLE 1L	9x6 to 36x6    24x21 to 36x21 12x9 to 36x9    27x24 to 36x24 15x12 to 36x12    30x27 to 36x27 18x15 to 36x15    33x30 to 36x30 21x18 to 36x18    36x33  <b>24 x 21 Max. in Steel</b>
				 STYLE 1S	9x6 to 36x6    24x21 to 36x21 12x9 to 36x9    27x24 to 36x24 15x12 to 36x12    30x27 to 36x27 18x15 to 36x15    33x30 to 36x30 21x18 to 36x18    36x33  <b>24 x 21 Max. in Steel</b>

 Aluminum Only

#### SR Sizes:

6 x 6 to 24 x 24 in 3" Increments (see page 30)

#### AR Sizes:

6 x 6 to 36 x 36 in 3" Increments (see page 32)

Note: Screw hole location found in engineering data catalog

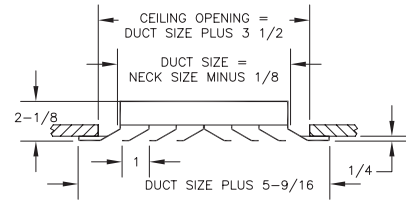
# Ceiling Diffusers - Aluminum



## MCD Adjustable Modular Diffuser

- Extruded aluminum construction
- Four modular cores provide variable pattern adjustments of four-way, three-way, two-way, or one-way horizontal air patterns
- Flat margin
- Fixed fins
- Bright White finish

MCD Available Sizes (in.)
6" x 6", 8" x 8", 10" x 10", 12" x 12", 14" x 14", 16" x 16", 18" x 18", 20" x 20", 22" x 22", 24" x 24"



Add SR7 or AR7 for damper control



## MCDS Adjustable Modular Diffuser

- Extruded aluminum construction
- Step-down (beveled) margin
- Four modular cores provide variable pattern adjustments of four-way, three-way, two-way, or one-way horizontal air patterns
- Fixed fins
- Bright White finish

MCDS Available Sizes (in.)
6" x 6", 8" x 8", 10" x 10", 12" x 12", 14" x 14", 16" x 16", 18" x 18", 20" x 20", 22" x 22", 24" x 24"



Add SR7 or AR7 for damper control



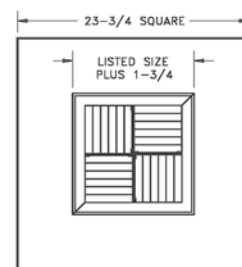
## Modular T-Bar Panel

- Steel construction (aluminum optional)
- Adapts MCD for T-Bar installation
- Bright White finish

Modular T-Bar Panel Available Sizes
Opening 6" - 18"
Overall 23-3/4" x 23-3/4"

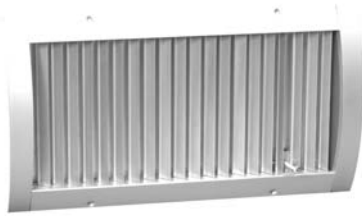


Note: Aluminum panel for factory-mounted, step-down margin. Available as Models MCDST.



Add SR7 or AR7 for damper control



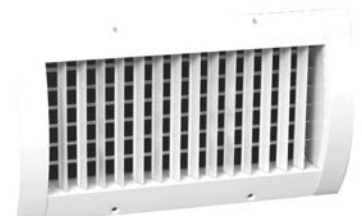
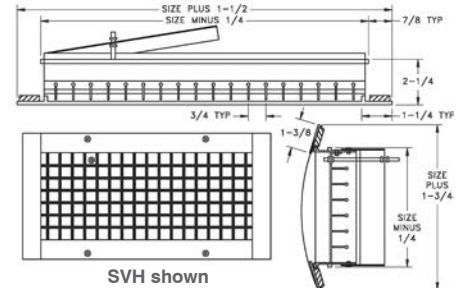


(Shown with scoop)  
Size restrictions apply.  
See price list for sizes and ordering information.

## SV Single-Deflection Diffuser

- Extruded aluminum construction
- Single row of individually adjustable vertical blades for horizontal air-deflection control
- Available as diffuser only or diffuser with air scoop (SV3)
- Optional face adjustable scoop to direct airflow
- Counter-sunk screw holes
- Available sizes: 10x3 to 36x12 for 6" to 50" ducts
- Bright White and Satin Anodized finishes

**SV Available Sizes (in.)**  
10" x 3" to 36" x 12"

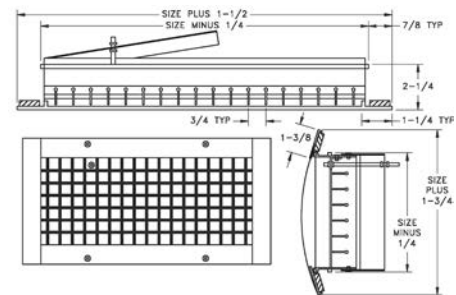


Size restrictions apply.  
See price list for sizes and ordering information.

## SVH Double-Deflection Diffuser

- Extruded aluminum construction
- Two rows of individually adjustable blades for horizontal and vertical deflection control
- Optional face adjustable scoop to direct airflow
- Counter-sunk screw holes
- Available sizes: 10x3 to 36x12 for 6" to 50" ducts
- Bright White and Satin Anodized finishes

**SVH Available Sizes (in.)**  
10" x 3" to 36" x 12"



**For Models SV and SVH**  
Minimum Duct Diameter per listed size

		Width								
		10	12	14	16	18	20	24	30	36
Height	3	5	5	5	5	5	5	5	5	5
	4	6	6	6	6	6	6	6	6	6
	6	8	8	8	8	8	8	8	8	8
	8	10	10	10	10	10	10	10	10	10
	10	12	12	12	12	12	12	12	12	12
12			14	14	14	14	14	14	14	14

Maximum duct diameter for all sizes is 50".

# Spiral Diffusers

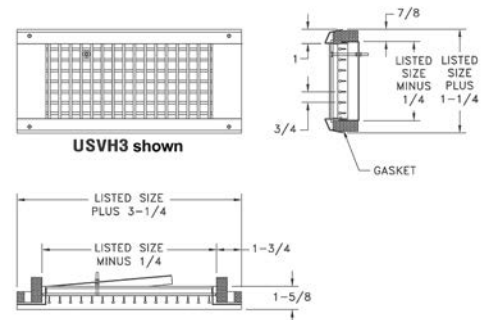


## USV Single-Deflection Universal Diffuser

- Extruded aluminum construction
- Single row of individually adjustable vertical blades for horizontal air deflection control
- Optional face adjustable scoop to direct airflow
- Counter-sunk screw holes
- Available sizes: 10x3 to 36x12
- Fits duct sizes 6" on up, based on diffuser height
- Bright White and Satin Anodized finishes

Size restrictions apply.  
See price list for sizes and ordering information.

**USV Available Sizes (in.)**  
10" x 3" to 36" x 12"

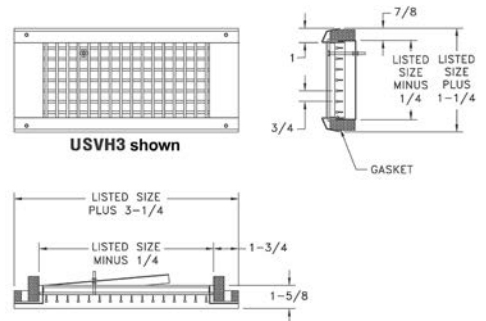


## USVH Double-Deflection Universal Diffuser

- Extruded aluminum construction
- Two rows of individually adjustable blades for horizontal and vertical deflection control
- Optional face adjustable scoop to direct airflow
- Counter-sunk screw holes
- Available sizes: 10x3 to 36x12
- Fits duct sizes 6" on up, based on diffuser height
- Bright White and Satin Anodized finishes

Size restrictions apply.  
See price list for sizes and ordering information.

**USVH Available Sizes (in.)**  
10" x 3" to 36" x 12"



**For Models USV and USVH**  
**Minimum Duct Diameter**

		<i>Width</i>								
		10	12	14	16	18	20	24	30	36
Height	3	6	6	6	6	6	6	6	6	6
	4	10	10	10	10	10	10	10	10	10
	6	12	12	12	12	12	12	12	12	12
	8	20	20	20	20	20	20	20	20	20
	10			24	24	24	24	24	24	24
12					30	30	30	30	30	

# Linear Bar Diffusers



## LS/LF Series Diffuser

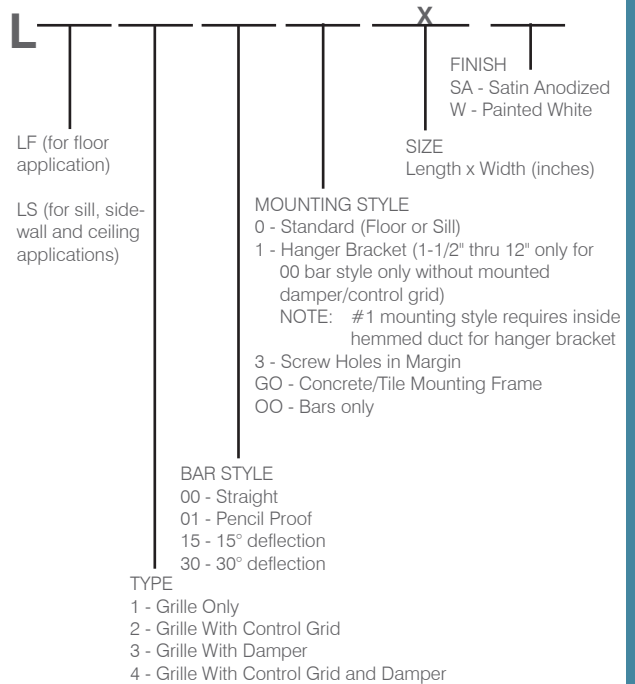
- Extruded aluminum construction
- Ceiling, sidewall, sill or floor applications
- Available in 0, 15, or 30 degrees and pencil proof bar deflections
- Four mounting styles—standard, hanger bracket, and screw holes in margin
- Maximum one-piece length 72", width 24" (1/2" width increments)
- Lengths over 72" made in multiple units with keyway splices to form even continuous lengths
- Bright White or Satin Anodized finish

**Minimum width 1-1/2"**  
**Sizes under 4" not available**

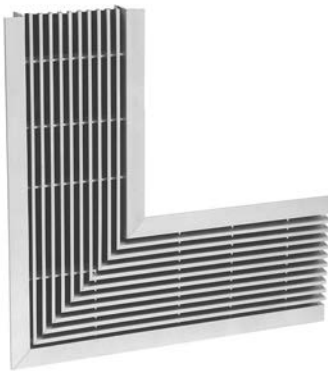
**Note:** Floor application must be ordered as "LF." Eight-inch maximum width for constant traffic; 12" maximum width for occasional traffic; maximum length 72".

\* Control grids start at 4" and above

### HOW TO ORDER



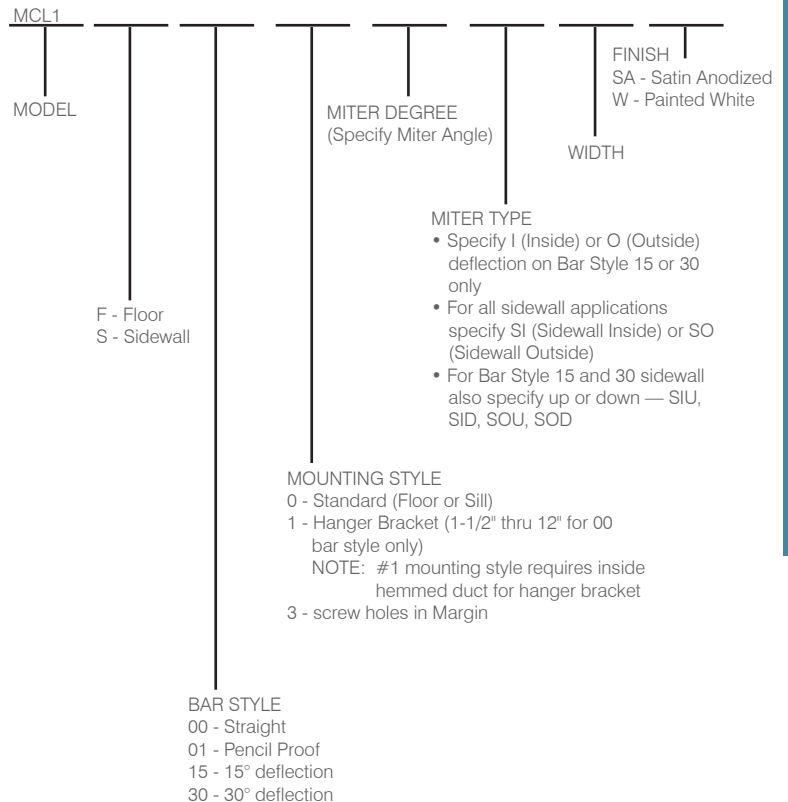
See following page for dimensional data.



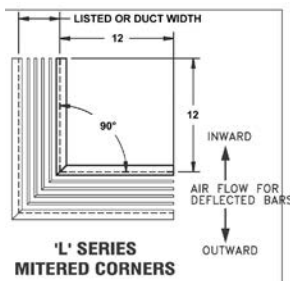
## L Series Mitered Corners

Mitered corner sections furnished as shown.

### HOW TO ORDER



Mitered Corner Sections furnished as shown.  
Blank off baffles available upon request.

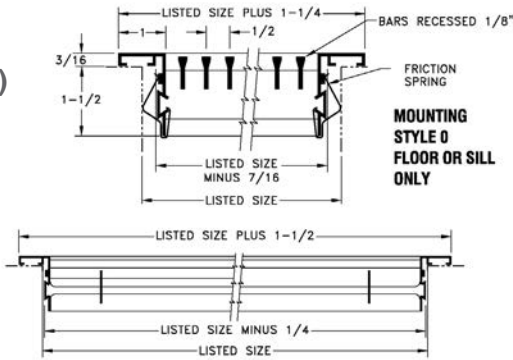


See page 42 for distribution plenums.

*Note: Screw hole location found in engineering data catalog*

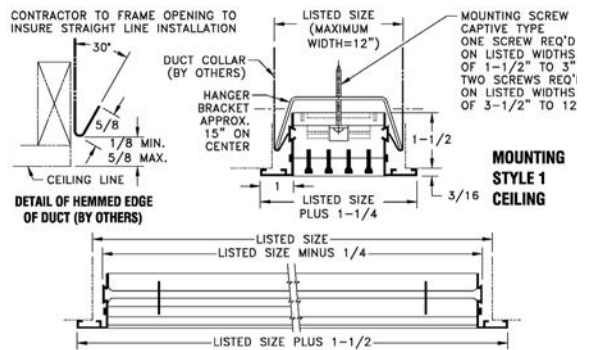
## L Series - Dimensional Data

### Mounting Style 0 (Floor/Sill) LF

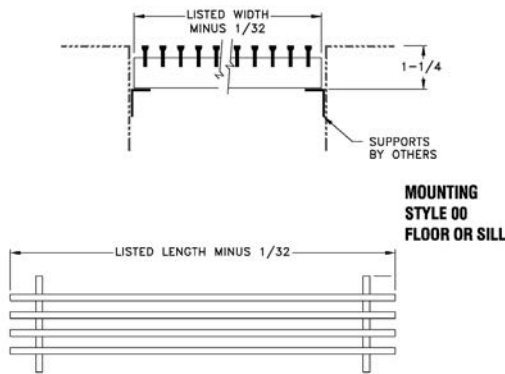


### Mounting Style 1 (Ceiling) LS

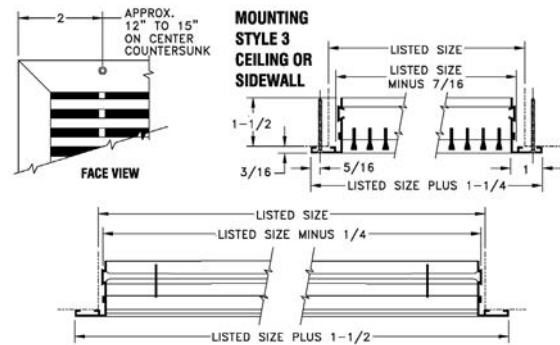
### 00 Bar Style Only w/o Mounted Damper or Control Grid



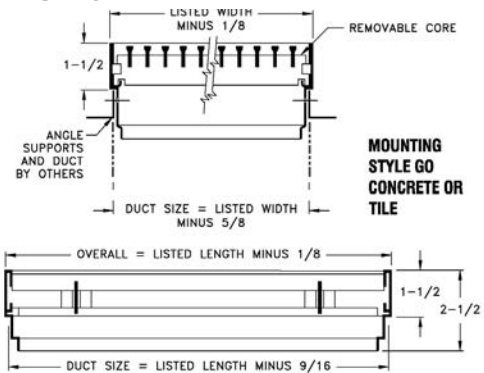
### Mounting Style 00 (Bars Only)



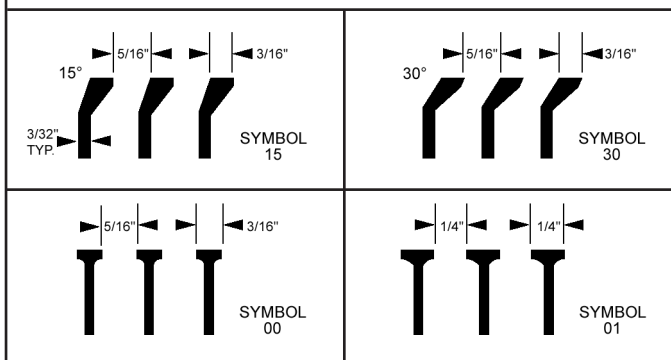
### Mounting Style 3 (Ceiling/Sidewall) LS



### Mounting Style GO (Concrete/Tile) LF



### BAR STYLES



Bars on 1/2" Centers

**Note:** Quantity of bars = 2 x listed width minus 2.

**Example:** 4" listed width = 4" x 2 = 8 minus 2 = 6 bars.



### L Series Single-Leaf Damper Option

- Aluminum construction
- Leaf type for sizes 1½" to 3"

Note: Order with desired diffuser for attachment at factory.

Cannot be used with hanger brackets.



### L Series G Grid Option

- Aluminum construction
- Individual adjustable blades
- Cannot be used with hanger brackets

Note: G Grid blades are assembled parallel to short dimension. Order with desired diffuser for factory fitting.

Control grids start at 4" and above.

Sizes under 4" not available



### L Series D Damper Option

- Extruded aluminum construction
- Controls the air volume from full flow to shut-off
- Fits widths of 3½" and wider

Note: Order with desired diffuser for attachment at factory.

Must be ordered separately and duct-mounted if mounting style #1 is used.

<b>D Available Sizes (in.)</b>
3½" and wider

# Linear Bar Diffusers



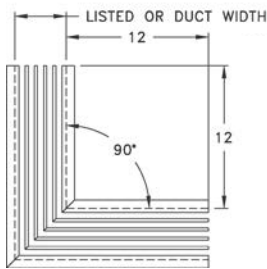
## S Series Miter Corners

90-degree mitered corners are available as factory-fabricated section. Precise factory cutting and assembly reduces field fabrication time and assures proper fit. Corner sections are furnished and blanked off. Corner sections butt to adjacent straight sections, which are spliced together with aligning pins.

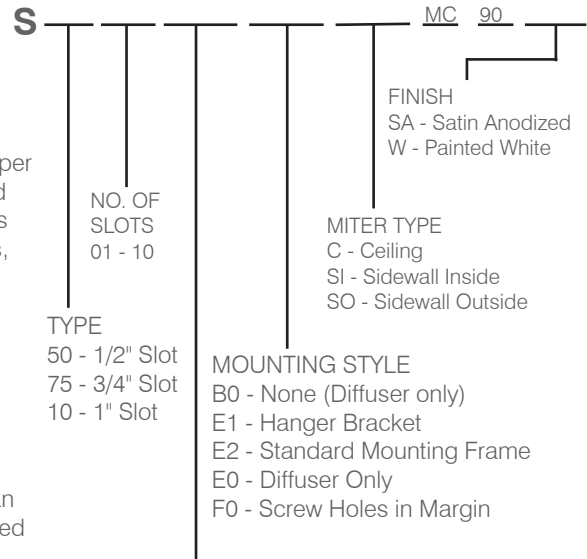
Mitered corners are furnished in style E2. When viewed from the room side, the mitered corner section appears identical to the butting straight sections.

Plaster frame mitered corners can be specified with the outlet mitered corner.

### S SERIES MITERED CORNERS



Mitered Corner Sections Order as:



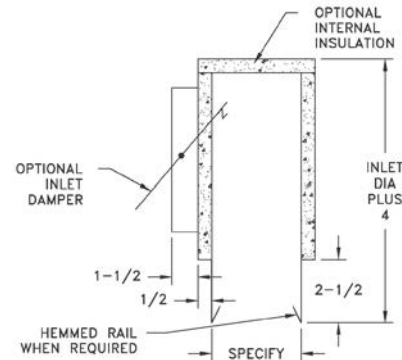
**Note:** Margins ordered without mounting frame may require hanger brackets and inside hemmed duct for installation.



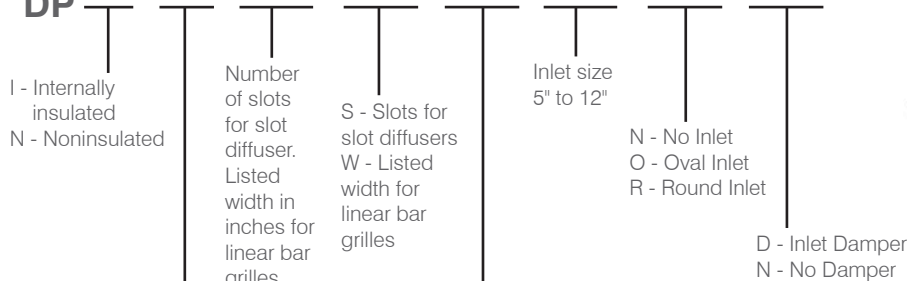
## DP Distribution Plenum

- Galvanneated steel construction
- For L and S Series Linears and Slots
- Available in insulated or noninsulated designs

DP Available Sizes
12", 24", 36", 48", 60", 72" lengths



## DP


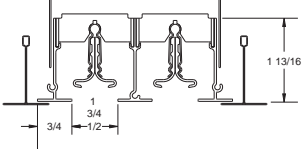

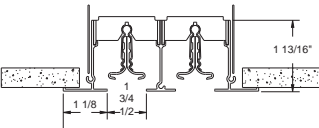
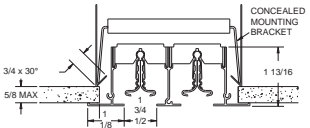
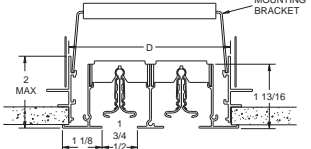
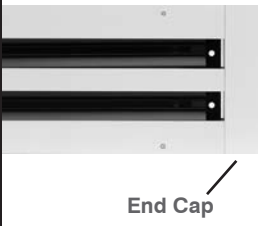
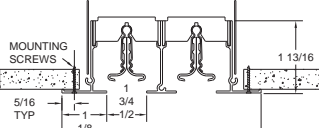


H - Hemmed rail for E1 mounting style hanger brackets - Do not use with mounting frames  
 S - Straight sides - Use with all mounting frames, except E1

Nominal Length - 12" to 72"

Order plenums actual size

## S Series Slot Diffusers

MARGIN STYLE	SLOT	DIFFUSER ONLY Mounting Style 0	with Hanger Bracket Mounting Style 1	with No. 2 Standard Mounting Plaster Frame
 End Cap	1" / 3/4" / 1/2"			
 End Cap	1" / 3/4" / 1/2"			
 End Cap	1" / 3/4" / 1/2"		<p><b>HOW TO ORDER</b></p> <p><b>S</b> TYPE      STYLE      NO OF** SLOTS      MOUNTING STYLES      END CAPS      LENGTH      FINISH</p> <p>01 to 08      (SA, W)</p> <p>12" min 999" max</p> <p>E1 - One End E2 - Both Ends 00 - None</p> <p>B0 - T-Bar Layin - Diffuser only E1 - Hanger Bracket* E2 - Standard Mounting Frame E0 - Diffuser Only F0 - Screw Holes in Margin</p> <p>50 - 1/2" Slot 75 - 3/4" Slot 10 - 1" Slot</p> <p><b>*Note:</b> E1 requires inside hemmed duct for installation.</p> <p><b>**Note:</b> The width dimension is determined by the slot width and the number of slots.</p>	

- Extruded aluminum construction
- Three slot sizes: 1/2" slot, 3/4" slot, 1" slot
- One to eight slots wide for air volume of 10-350 cfm per foot
- Adjustable pattern controller
- Maximum one-piece length 72", lengths over 72" made in multiple units with pin splices for even continuous lengths.

See page 36 for distribution plenums.

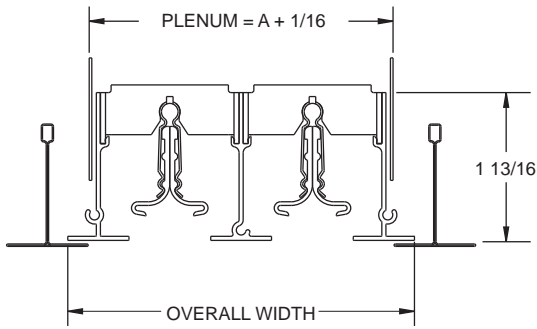


# Linear Slot Diffusers

## STYLE B0

Also for T-Bar applications

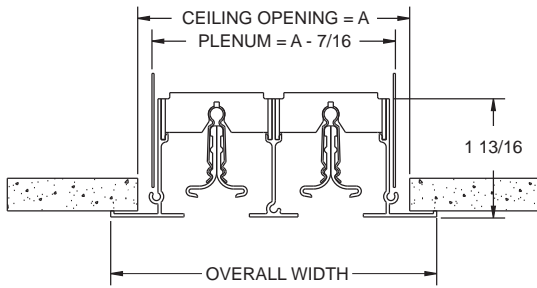
Order 22<sup>3</sup>/<sub>4</sub>" or 46<sup>3</sup>/<sub>4</sub>" lengths with End Caps.



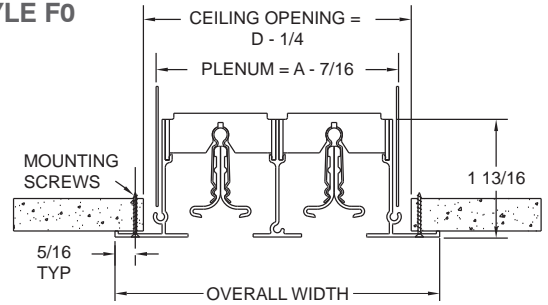
## STYLE E0

Also for T-Bar applications

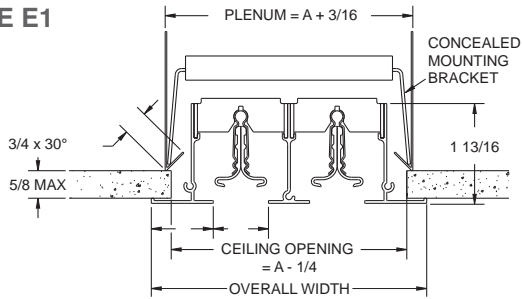
For E0, order 22" and 46" lengths with End Caps.



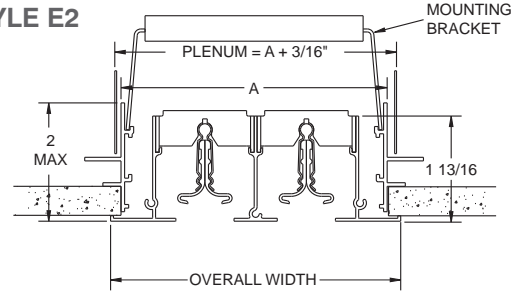
## STYLE F0



## STYLE E1



## STYLE E2



Style B0

Dimension	Type	Number of Slots								Duct Width	Overall Width
		1	2	3	4	5	6	7	8		
A	50	1 3/8	2 5/8	3 7/8	5 1/8	6 3/8	7 5/8	8 7/8	10 1/8	A + 1/16	A + 5/8
	75	1 5/8	3 1/8	4 5/8	6 1/8	7 5/8	9 1/8	10 5/8	12 1/8	A + 1/16	A + 5/8
	10	1 7/8	3 5/8	5 3/8	7 1/8	8 7/8	10 5/8	12 3/8	14 1/8	A + 1/16	A + 5/8

Style E0/F0

Dimension	Type	Number of Slots								Duct Width	Overall Width
		1	2	3	4	5	6	7	8		
A	50	1 7/8	3 1/8	4 3/8	5 5/8	6 7/8	8 1/8	9 3/8	10 5/8	A - 7/16	A + 7/8
	75	2 1/8	3 5/8	5 1/8	6 5/8	8 1/8	9 5/8	11 1/8	12 5/8	A - 7/16	A + 7/8
	10	2 3/8	4 1/8	5 7/8	7 5/8	9 3/8	11 1/8	12 7/8	14 5/8	A - 7/16	A + 7/8

Style E1/E2

Dimension	Type	Number of Slots								Overall Width
		1	2	3	4	5	6	7	8	
A	50	2	3 1/4	4 1/2	5 3/4	7	8 1/8	9 1/2	10 3/4	A + 3/4
	75	2 1/4	3 3/4	5 1/4	6 3/4	8 1/4	9 3/4	11 1/4	12 3/4	A + 3/4
	10	2 1/2	4 1/4	6	7 3/4	9 1/2	11 1/4	13	14 3/4	A + 3/4



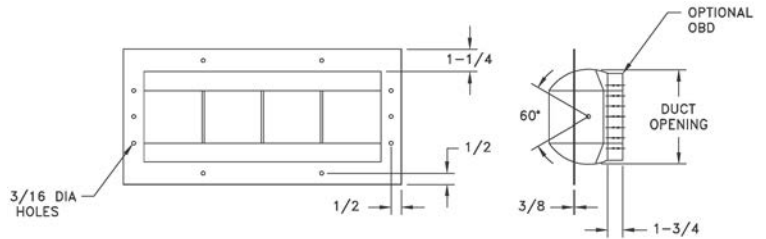


## DL Drum Louver

- All-aluminum construction
- Horizontal and vertical air stream control
- Galvanized, opposed-blade damper (optional)
- Adjustable drum and vane design
- White or Mill finish

Drum Louver Available Sizes
6" x 12", 6" x 18", 6" x 24", 6" x 30", 6" x 36", 6" x 48", 6" x 60"
10" x 20", 10" x 25", 10" x 30", 10" x 35", 10" x 40", 10" x 50"
12" x 30", 12" x 40", 12" x 50", 12" x 70"
15" x 30", 15" x 50", 15" x 60", 15" x 70"

Order H x W



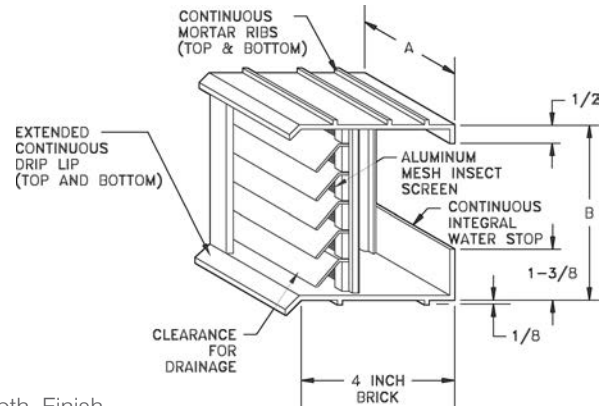
Duct Opening Sizing		
Listed Height Size	Duct Opening Height	Duct Opening Width
6	Listed Size Plus 5/8	Listed Size Plus 1 1/8
10	Listed Size Plus 3/8	Listed Size Plus 1 1/8
12	Listed Size Plus 3/8	Listed Size Plus 1 1/8
15	Listed Size Plus 3/8	Listed Size Plus 1 1/8

Other sizes not available.



**BV Brick/Block Vent**
















- Extruded aluminum construction
- Standard masonry size
- Maximum water protection
- 6063-T5 extruded aluminum alloy
- 18 x 16 mesh aluminum insect screen standard
- 4" standard depth
- Satin Anodized finish



**Note:** To order specify Model, Depth, Finish

**Example:** BV168 4 SA

**DIMENSIONS/FREE AREA**

	BV Model	Masonry Opening Size	A Width Inches	B Height Inches	Free Area Sq. Ft.
STANDARD BRICK	802	ONE BRICK 	8	2 1/2	.01
	805	TWO BRICK 	8	4 3/4	.06
	162	TWO BRICK 	16 3/8	2 1/2	.02
	808	THREE BRICK 	8	7 1/2	.13
	242	THREE BRICK 	24 3/4	2 1/2	.04
	165	FOUR BRICK 	16 3/8	4 3/4	.14
	168	SIX BRICK 	16 3/8	7 1/2	.30
	245	SIX BRICK 	24 3/4	4 3/4	.23
	248	NINE BRICK 	24 3/4	7 1/2	.50
JUMBO BRICK	122	ONE JUMBO 	11 5/8	2 1/2	.02
	125	TWO JUMBO 	11 5/8	4 3/4	.10
	128	THREE JUMBO 	11 5/8	7 1/2	.21
MODULAR BLOCK	158	STANDARD BLOCK 	15 1/2	7 1/2	.30
	318	TWO STANDARD BLOCK 	31 3/8	7 1/2	.66
	168	JUMBO BLOCK 	16 3/8	7 1/2	.30

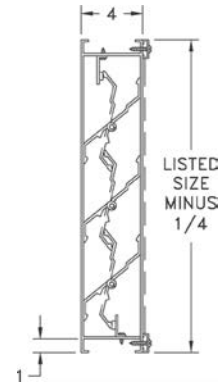
**Notes:**

1. Brick/Block vent depths are identical with or without the optional opposed-blade damper.
2. Contact factory regarding applications requiring custom size widths and/or heights.
3. Masonry opening sizes listed are representative of the blocks or bricks shown. Field dimensions must be verified to guarantee fit.



### 4ABC Adjustable Louver

- Extruded aluminum construction
- Adjustable baffle blades on 4" centers
- 4" louver depth
- Channel frame
- Max. one-piece size 60" W x 72" H
- Mill finish standard
- Lever activated, manually
- Blades open to 45°; closes fully



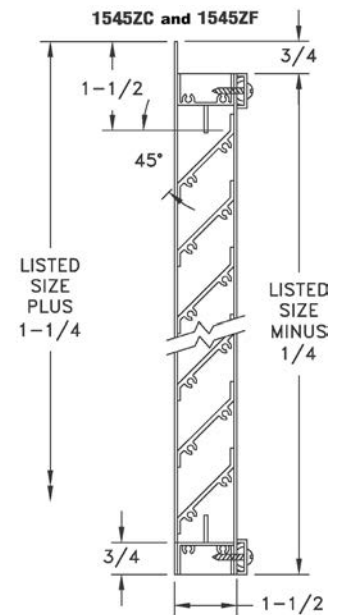
1545ZF Shown

### 1545ZC Stationary Louver

- Extruded aluminum construction
- Fixed Z blade louver
- Blades at 45-degree angle
- 1½" louver depth
- Channel frame
- Available with bird screen or insect screen
- Mill finish standard

### 1545ZF Stationary Louver

- Extruded aluminum construction
- Fixed Z blade louver
- Blades at 45-degree angle
- 1½" louver depth
- Flange frame
- Available with bird screen or insect screen
- Mill finish standard



## Louvers



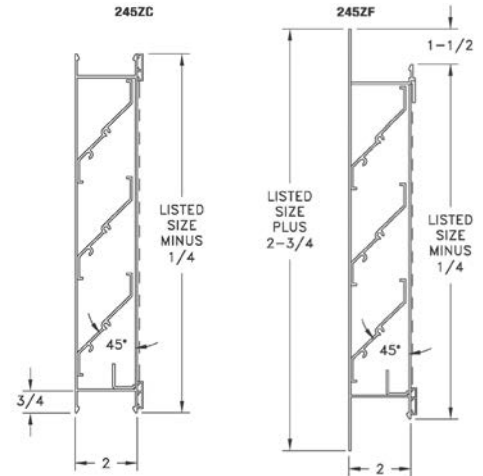
245ZF Shown

### 245ZC Stationary Louver

- Extruded aluminum construction
- Fixed-blade louver
- Blades at 45-degree angle
- 2" louver depth
- Channel frame
- Available with bird screen or insect screen
- Mill finish standard

### 245ZF Stationary Louver

- Extruded aluminum construction
- Fixed-blade louver
- Blades at 45-degree angle
- 2" louver depth
- Flange frame
- Available with bird screen or insect screen
- Mill finish standard



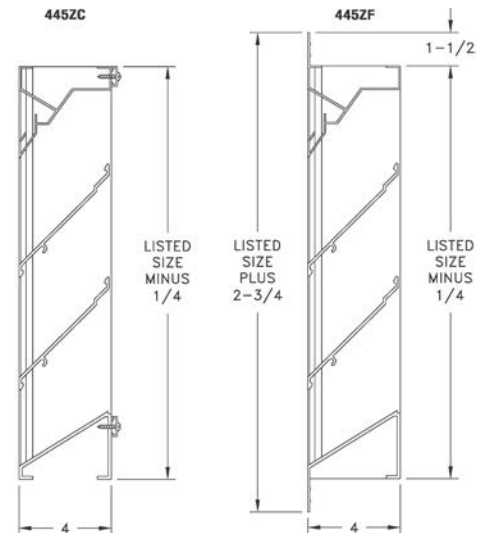
445ZF Shown

### 445ZC Stationary Louver

- Extruded aluminum construction
- Fixed-blade louver
- Blades at 45-degree angle
- 4" louver depth
- Channel frame
- Available with bird screen or insect screen
- Mill finish standard

### 445ZF Stationary Louver

- Extruded aluminum construction
- Fixed-blade louver
- Blades at 45-degree angle
- 4" louver depth
- Flange frame
- Available with bird screen or insect screen
- Mill finish standard



645ZC Shown

### 645ZC Fixed Louver

- Extruded aluminum construction
- Fixed-blade louver
- Blades at 45-degree angle
- 6" louver depth
- Channel frame
- Available with bird screen or insect screen
- Mill finish standard

### 645ZF Fixed Louver

- Extruded aluminum construction
- Fixed-blade louver
- Blades at 45-degree angle
- 6" louver depth
- Flange frame
- Available with bird screen or insect screen
- Mill finish standard

# T-Bar Construction Features



Our popular supply and return products for T-Bar ceilings are an innovative response to the challenge of creating a better indoor environment. T-Bar products combine clean appearance with installation ease, and include critical design details to ensure consistent performance. Glass fiber insulation minimizes condensation, and the aluminum foil vapor barrier protects the insulation from moisture, if condensation occurs.

Patented adjustable deflectors permit a variety of directional patterns and minimizes static pressure loss.

A unique modular collar system provides a standard collar and damper unit, which can be shared between a number of different T-Bar products. In addition, Hart & Cooley offers specialty T-Bar products to meet specific design demands. Surfaire® diffusers feature deflector apertures that enhance mixing of conditioned air.

T-Bar products are offered in lanced, perforated, louvered and fixed-bar face styles, with steel or molded fiberglass backs. They include a choice of easy mounting systems and adjustable damper designs.

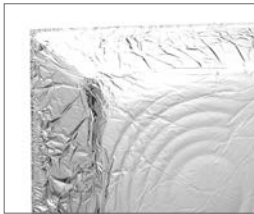
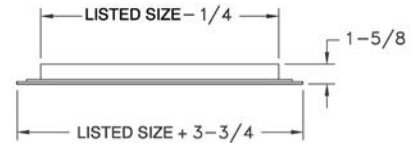
# T-Bar Return-Air Filter Grilles



**659T**  
**Steel**  
**Lanced Filter Grille**

- Steel construction
- Lanced-face design with 1/3" blade spacing
- Flush, removable face with concealed latches and hinges can be installed in any direction
- Uses standard 1" disposable filters (not furnished)
- Bright White finish

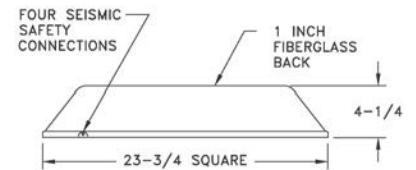
659T / 659TI Available Sizes
20" x 20" with extended frame (overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> ") for 24" x 24" openings
44" x 20" with extended frame (overall 47 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> ") for 48" x 24" opening (659T only)



**659TI With Insulated Back**

**Includes these features**

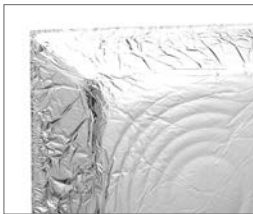
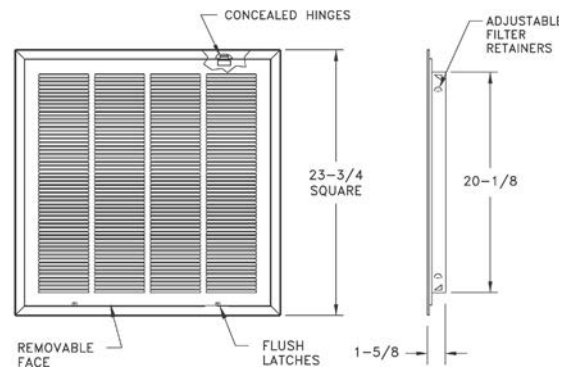
- Molded fiberglass back R4.2, R6
- Accepts 6" to 14" unique tab collar (6400 series) or 6" to 16" unique snap-in collar (5400 and 5400PP series); also accepts standard spin-in collar
- Frame includes four seismic safety connections



**673T**  
**Steel**  
**Filter Grille**

- Steel construction
- Lanced-face design with 1/2" blade spacing
- Flush, removable face with concealed latches and hinges can be installed in any direction
- Uses standard 1" disposable filters (not furnished)
- Bright White finish

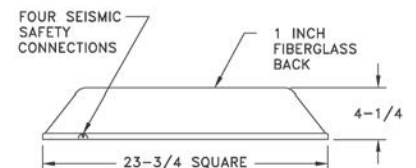
673T/673TI Available Size
20" x 20", overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "



**673TI With Insulated Back**

**Includes these features**

- Molded fiberglass back R4.2, R6
- Accepts 6" to 14" unique tab collar (6400 series) or 6" to 16" unique snap-in collar (5400 and 5400PP series); also accepts standard spin-in collar
- Frame includes four seismic safety connections



# T-Bar Return-Air Filter Grilles

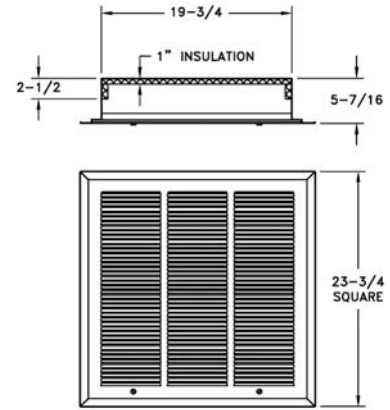


## 673TPI R6

### Steel Filter Grille

- Steel construction
- Lanced-face design with 1/2" blade spacing
- Flush, face with screwdriver latches and piano hinges can be installed in any direction
- Plenum box with R6 insulated ductboard
- Uses standard 1" disposable filters (not furnished)
- Bright White finish

673TPI R6 Available Size
20" x 20", overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "



## Molded Fiberglass Back R4.2, R6 & R8

- These fiberglass backs are sold separately for field installation. (Glue or double sided tape recommended)
- Available in 4.2, 6.0 and 8.0 "R" values
- Recommended for T-bar diffusers without steel back panel
- Accepts 6"-14" tab collars (6400 series) or 6"-18" snap in collar (5400 & 5400PP Series)
- Accepts standard spin-in collar

- Bonded foil vapor barrier minimizes condensation
- Fiberglass back meets or exceeds the following tests and ratings:  
Meets 25/50 tested in accordance with A.S.T.M. E84 (UL723)  
UL181 Erosion and Impact Test, and will not support microbial growth

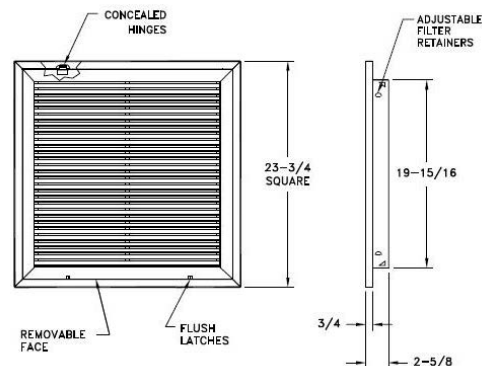
**Note:** Attachment of molded fiberglass back and 5400 collar requires 5400PP (push pins).



## 96AFBT Steel Fixed-Bar Filter Grille

- All-steel construction
- Bar-style face design
- Flush, removable face with concealed latches and hinges, can be installed in any direction
- Uses standard 1" disposable filters (not furnished)
- Bright White finish
- Specify 96AFBT2 for 2" filters

96AFBT Available Sizes
20" x 20", overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "
44" x 20", overall 47 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "



*Note: Screw hole location found in engineering data catalog*



# T-Bar Return-Air Filter Grilles

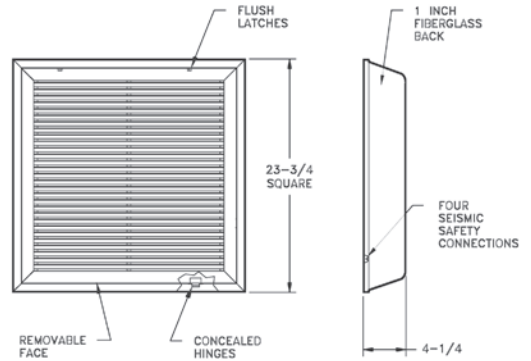


See page 47 for fiberglass specifications.

## 96AFBTI Steel Fixed-Bar Filter Grille with Fiberglass Back

96AFBTI Available Size
20" x 20", overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "

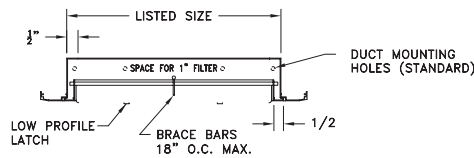
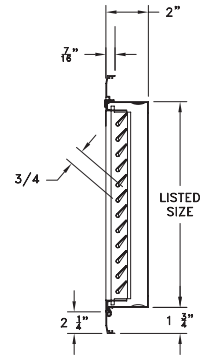
- Steel construction
- Bar-style face design
- Flush, removable face with concealed latches and hinges, can be installed in any direction
- R4.2 molded fiberglass back
- Accepts 6" to 14" unique tab collar (6400 series) or 6" to 16" unique snap-in collar (5400 and 5400PP series); also accepts standard spin-in collar
- Frame includes four seismic safety connections
- Uses standard 1" disposable filters (not furnished)
- Bright White finish



## RHF45T Aluminum Bar-Style Filter Grille

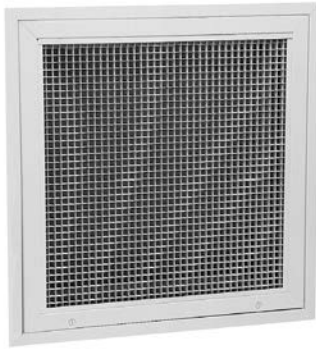
RHF45T Available Sizes
20" x 20" with extended frame (overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> " for 24" x 24" openings)
44" x 20" with extended frame (overall 47 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> " for 48" x 24" openings)

- Extruded aluminum construction
- Bar-style face
- Hinged to filter frame, removable face
- Mounts flush with T-Bar ceilings
- Filter grilles equipped with plastic slide latch
- Uses standard 1" disposable filter (not furnished)
- Bright White or Satin Anodized finish
- Specify RHF45T2 for 2" filters





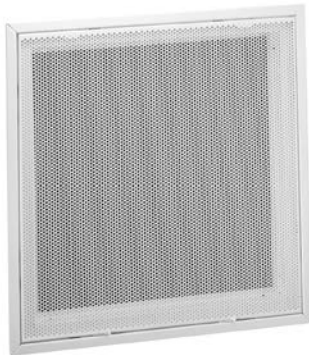
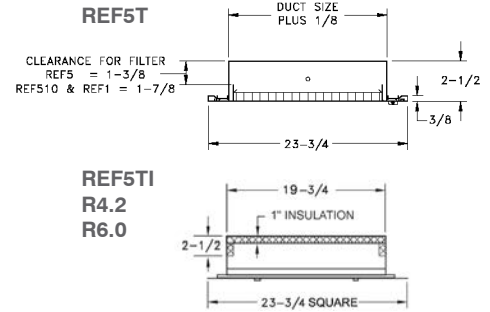
# T-Bar Return-Air Filter Grilles



## REF5T/REF5TI Aluminum Egg Crate Filter Grille

- Aluminum and steel construction
- Egg crate style face
- Non-removable face, hinged to filter frame
- Mount flush with T-Bar ceilings
- REF5T with thumb screw fasteners, REF5TI with cam lock
- Uses standard 1" disposable filter (not furnished)
- Bright White or Mill Aluminum finish
- Specify REF5T2 for 2" filters

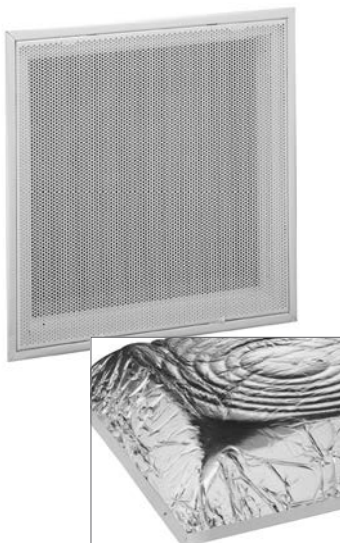
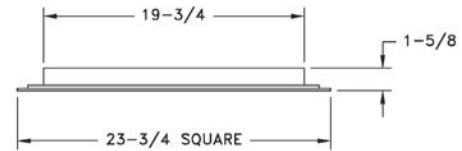
	Available Sizes
REF5T/ REF5TI	20" x 20" with extended frame (overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> " for 24" x 24" openings)
REF5T only	44" x 20" with extended frame (overall 47 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> " for 48" x 24" openings)



## PFT Steel/ Perforated Filter Grille

- Steel construction
- Perforated face design
- Flush, removable face with concealed latches and hinges, can be installed in any direction
- Uses standard 1" disposable filters (not furnished)
- Bright White finish

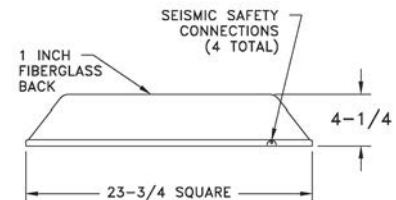
PFT Available Size
20" x 20", overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "



## PFTI Steel/ Perforated Filter Grille with Insulated Back

- Steel construction
- Perforated face design
- Flush, removable face with concealed latches and hinges, can be installed in any direction
- Molded fiberglass back, available in R4.2 or R6
- Accepts 6" to 14" unique tab collar (6400 series) or 6" to 16" unique snap-in collar (5400 and 5400PP series); also accepts standard spin-in collar
- Frame includes four seismic safety connections
- Uses standard 1" disposable filters (not furnished)
- Bright White finish

PFTI Available Size
20" x 20", overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "



See page 47 for fiberglass specifications.

Note: Screw hole location found in engineering data catalog

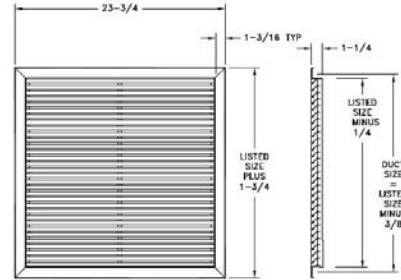
# T-Bar Return-Air Grilles



**94AT**  
**Steel**  
**Bar-Style**  
**Return Grille**

- Steel construction
- Mount flush with T-Bar ceilings
- Bright White finish

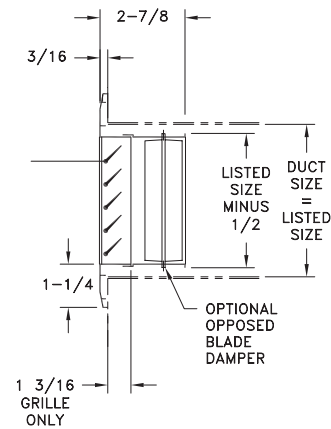
94AT Available Sizes
22" x 22" (overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> " for 24" x 24" openings)
46" x 22" (overall 47 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> " for 48" x 24" openings)

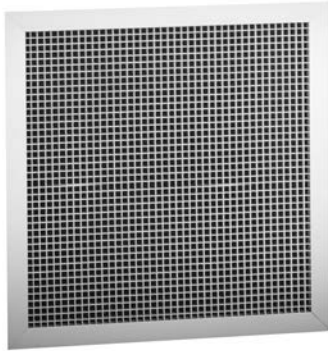


**RH45T**  
**Aluminum**  
**Bar-Style**  
**Return Grille**

- Extruded aluminum construction
- Horizontal bars at 45 degrees
- Mount flush with T-Bar ceilings
- Bright White or Satin Anodized finish

RH45T Available Sizes
22" x 22" (overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> " for 24" x 24" openings)
46" x 22" (overall 47 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> " for 48" x 24" openings)

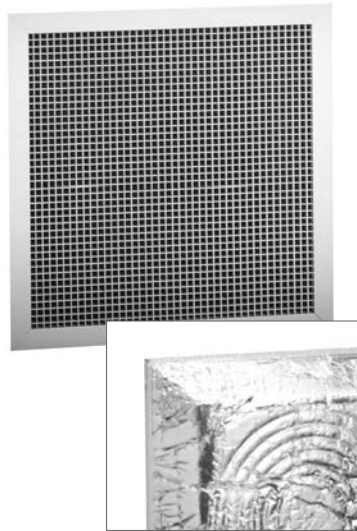
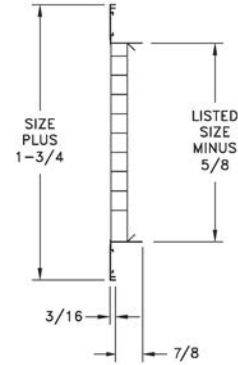




**RE5T**  
**Aluminum**  
**Egg Crate**  
**Return Grille**

- All aluminum construction
- Egg crate style face
- Mount flush with T-Bar ceilings
- Bright White or Mill Aluminum finish

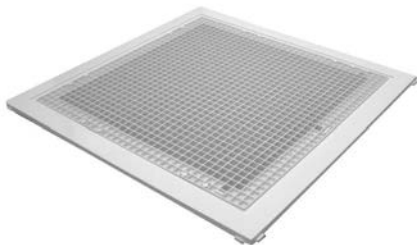
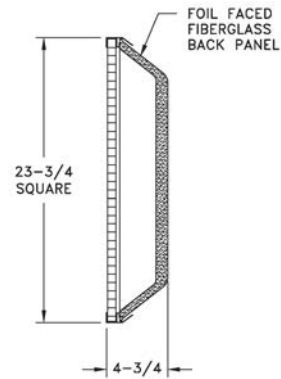
RE5T Available Sizes
22" x 22" (overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> " ) for 24" x 24" openings
22" x 46" (overall 47 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> " ) for 48" x 24" openings



**RE5TI**  
**Aluminum**  
**Egg Crate**  
**Return Grille with**  
**Insulated Back**

- All aluminum construction
- Egg crate style face
- R4.2 molded fiberglass back
- Accepts 6" to 14" unique tab collar (6400 series) or 6" to 16" unique snap-in collar (5400 and 5400PP series); also accepts standard spin-in collar
- Bright White finish
- No steel, great for MRI rooms

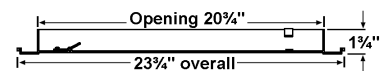
RE5TI Available Size
grid core face 1/2" x 1/2" x 1/2"



**Rezzin Plastic T-Bar**  
**Egg-Crate Filter Grille**

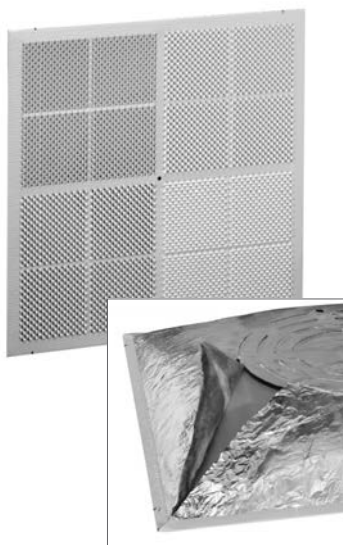
- Egg crate style face, 1/2" x 1/2" x 1/2" grid pattern
- Face is hinged to filter frame
- Mounts flush with T-bar ceilings
- Uses Rezzin back panel or standard fiberglass back
- Uses standard 1" disposable filters
- Bright white finish
- Contains metal screws

Available Size
20" x 20", overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "



Note: Screw hole location found in engineering data catalog

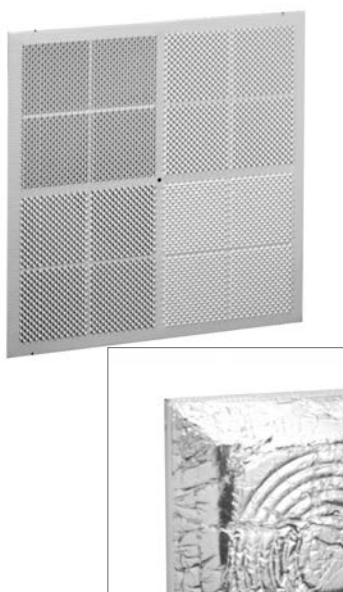
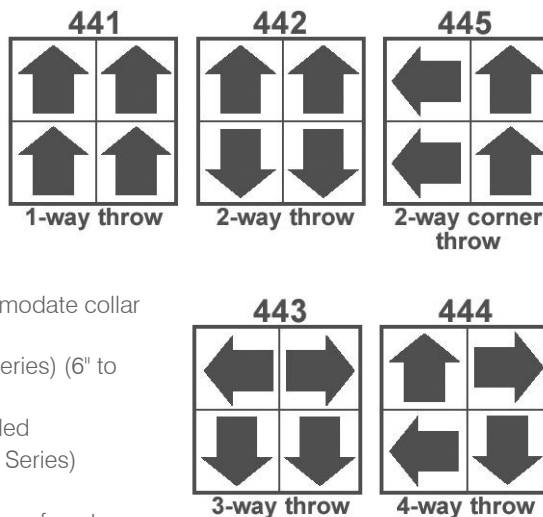
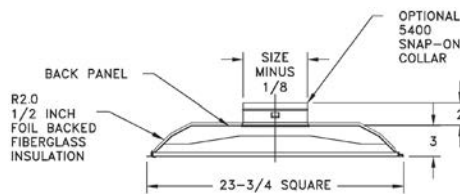
# T-Bar Surfaire/Renovator Diffusers



## 444 SurfAire® Aluminum Face Renovator Series Diffuser

- Aluminum face
- Unique deflector apertures
- Air distributed in thin layers along ceiling surface allowing optimum mixing of conditioned air
- Formed galvanized steel back panel
- Frame includes four seismic safety connections
- Back plate covered with glass fiber insulation to reduce condensation
- Aluminum foil vapor barrier protects insulation from harmful effects of condensation
- Insulation prescored to accommodate collar size desired
- Accepts snap-in collar (5400 Series) (6" to 12")
- 444 - 14" collar is factory-installed
- Utilizes butterfly damper (3800 Series) inserted in collar
- Damper adjusted through diffuser face to allow proper air balancing
- Bright White finish

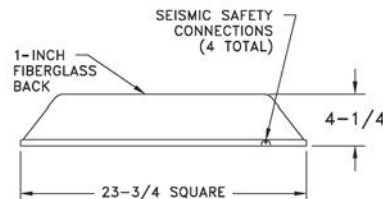
**444 Available Size**  
overall size 23<sup>3</sup>/<sub>4</sub>" x 23<sup>3</sup>/<sub>4</sub>"



## REN4 Aluminum Face Renovator Series Diffuser with Insulated Back

- Aluminum face
- Unique deflector apertures
- Molded fiberglass back panel, available in R4.2 or R6
- Accepts 6" to 14" unique tab collar (6400 series) or 6" to 16" unique snap-in collar (5400 and 5400PP series); also accepts standard spin-in collar
- Frame includes four seismic safety connections
- Bright White finish

**REN4 Available Size**  
20" x 20", overall 23<sup>3</sup>/<sub>4</sub>" x 23<sup>3</sup>/<sub>4</sub>"

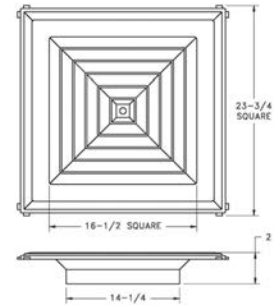




### 4-Way Rezzin T-Bar Diffuser

- Engineered polymer construction
- Four-way deflection
- Available with Rezzin square-to-round, ordered separately
- Bright White finish
- Contains metal screws

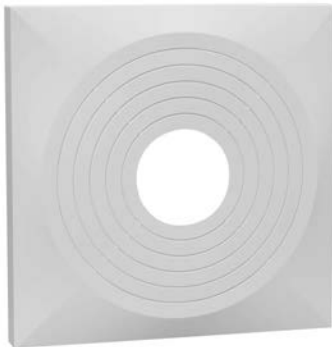
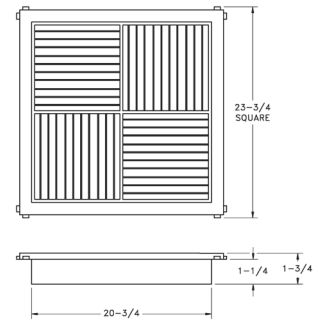
**4-Way Diffuser Available Size (in)**  
24" x 24"



### Rezzin T-Bar Modular Core Diffuser

- Engineered polymer construction
- Modular cores provide one, two, three, or four-way horizontal air patterns
- Removable modules provide easy access to accessories
- Available with Rezzin back panel, ordered separately
- Bright White finish

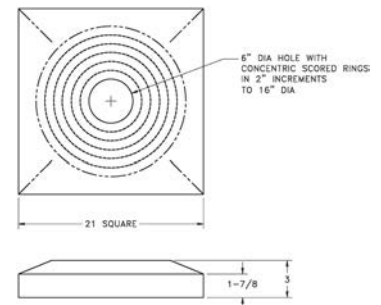
**Modular Core Available Size (in)**  
24" x 24"



### Rezzin Back Panel

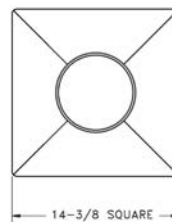
- Engineered polymer construction
- Use 6400 Series Tab Collar
- Bright White finish
- Use with Rezzin Modular Core and Rezzin Egg Crate diffuser

**Back Panel Available Size (in)**  
24" x 24"

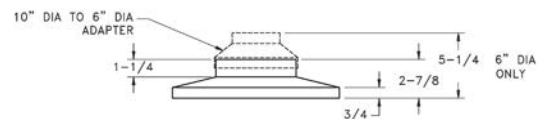


### Rezzin Square-to-Round Transition

- Engineered polymer construction
- Allows flex duct installation for 4-Way Rezzin Diffuser
- Black finish
- Contains metal screws/clips
- Can use RD damper



Sq to Rd Available Size (in)	
Square Size	Round Neck
14" x 14"	6"
14" x 14"	8"
14" x 14"	10"
14" x 14"	12"
14" x 14"	14"



Note: Screw hole location found in engineering data catalog



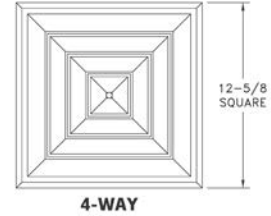
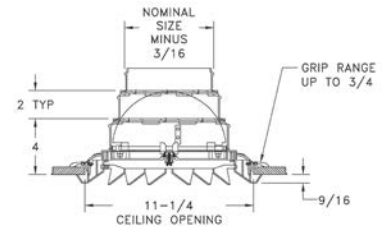
# T-Bar Rezzin Diffusers



## Rezzin Square Ceiling Diffuser

- Engineered polymer construction
- 12" x 12" face
- 6", 7" and 8" collars included
- Ratcheting cam lock—install without screws
- Removable core and integral damper
- Available in 4-way, 3-way and 2-way corner
- Bright White finish
- Contains metal parts

Square Available Size (in)
12" x 12"



T-Bar Backer Plate or Rafter Rough-In Plate Available



3-Way



4-Way



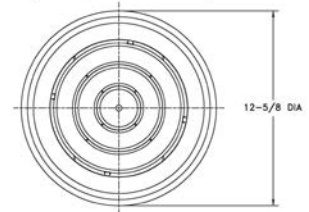
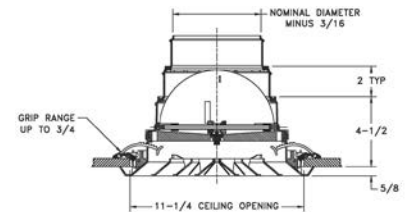
2-Way Corner



## Rezzin Plastic Round Ceiling Diffuser

- Engineered polymer construction
- 12" round face
- 6", 7" and 8" collars included
- Ratcheting cam lock—install without screws
- Removable core and integral damper
- Bright White finish
- Contains metal parts

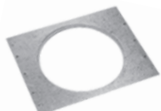
Round Available Size (in)
12"



T-Bar Backer Plate or Rafter Rough-In Plate Available



## Rezzin Rough-In Plates



16" O.C.



24" O.C.



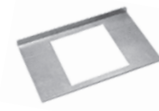
T-Bar



16" O.C.

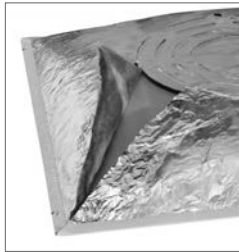


24" O.C.



T-Bar

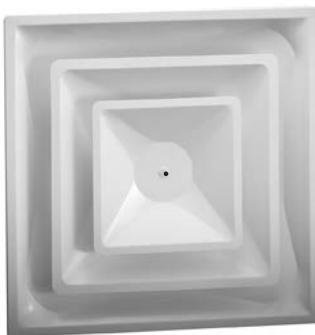
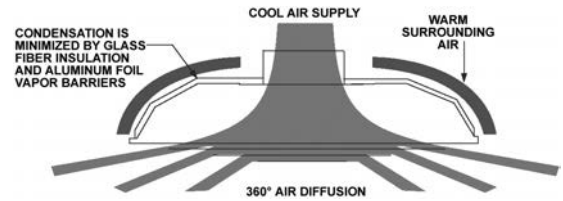
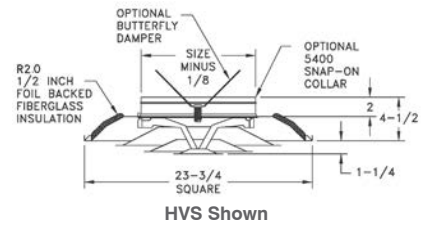
# T-Bar Fixed-Pattern Diffusers



## HVS/HVS R6 Steel High-Volume Supply

- Steel construction
- Provides high air volume delivery
- 360-degree air diffusion
- Formed back panel
- Fixed core
- Fiberglass insulation blanket with foil vapor barrier to minimize condensation on HVS
- Insulation prescored to accommodate collar size desired
- R6 molded fiberglass back on HVS R6; use 5400 with 5400PP
- Accepts unique 2" high snap-in collar (5400 series) (6" to 12")
- Utilizes butterfly damper (3800 Series) inserted in collar
- Bright White finish
- HVS14-14" collar factory-installed

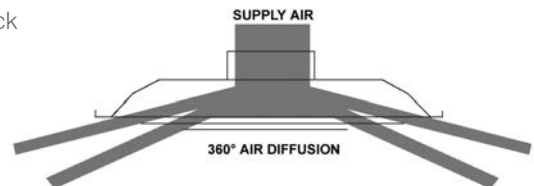
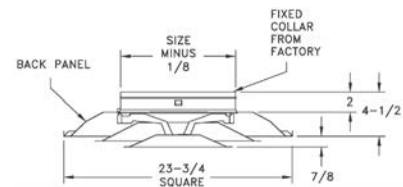
**HVS Available Size**  
Overall Size 23<sup>3</sup>/<sub>4</sub>" x 23<sup>3</sup>/<sub>4</sub>"



## FPD/FPD R6 AFPD Steel/Aluminum Fixed-Pattern Diffuser

- Steel construction - FPD
- Aluminum construction - AFPD
- Provides high air volume delivery
- 360-degree air diffusion
- Two-cone fixed core
- Fixed collar 6" to 14"
- Unique 2" high collar permits easy flex connections
- Utilizes butterfly damper (3800 Series) inserted in collar; order separately
- Damper adjustable through face
- Formed back panel
- Bright White finish
- FPD R6 features insulated back

**FPD T-Bar Available Size**  
Overall Size 23<sup>3</sup>/<sub>4</sub>" x 23<sup>3</sup>/<sub>4</sub>"



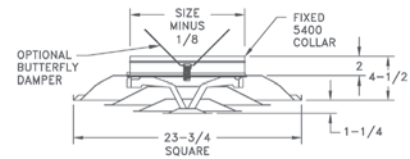
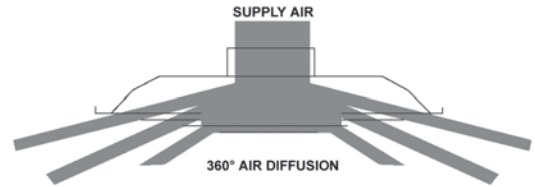
## T-Bar Fixed-Pattern Diffusers



### FPD3/FPD3 R6 Steel Fixed-Pattern Diffuser

- Steel construction
- Provides high air volume delivery
- 360-degree air diffusion
- Three cone fixed core
- Fixed collar 6" to 14"
- Unique 2" high collar permits easy flex connections
- Utilizes butterfly damper (3800 Series) inserted in collar—order separately
- Damper adjustable thru face
- Formed steel back panel
- Bright White finish
- FPD3 R6 features insulated back

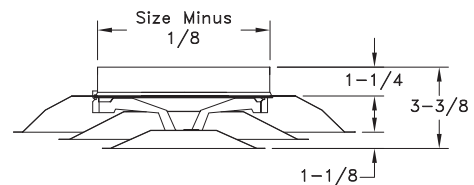
<b>FPD3 T-Bar Available Size</b>
Overall Size 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "



### FPD12 Steel Fixed Pattern Diffuser

- Steel construction
- 360-degree air diffusion
- Two-cone fixed core
- Fixed collar
- Removable plug for damper
- Used with SMF (page 74) for surface-mount applications
- Bright White finish
- Accepts Model RD Radial Damper

<b>FPD12 Available Size</b>
Overall Size 11-3/4" x 11-3/4"





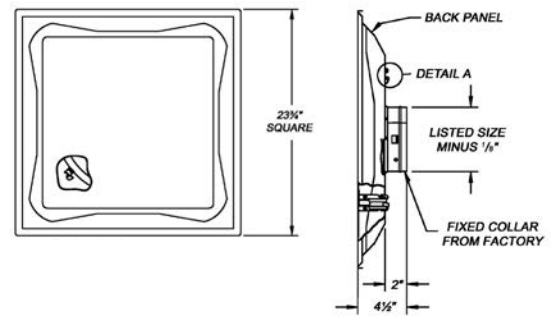


## DPD/DPD R6 Steel

### T-Bar Plate Diffuser

- Aesthetically appealing, single-face plate design
- 360° air diffusion pattern
- Detachable face plate
- 2" fixed collar
- Optional R6 insulated back (DPD R6)
- White finish

DPD/DPD R6 Available Sizes				
6"	8"	10"	12"	14"



#### Removing Face Plate

1. Remove black push pins from hook.
2. Push the face plate towards the back panel. This will disengage the hooks from the backside panel slots (*Detail A*).
3. Rotate the face plate counterclockwise, and pull plate away from back panel and hooks through the slots.

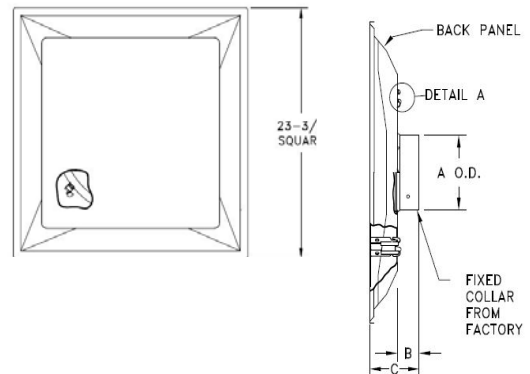


## ADPD Aluminum

### T-Bar Plate Diffuser

- Aesthetically appealing, single-face plate design
- 360° air diffusion pattern
- Detachable face plate
- 2" fixed collar
- Constructed of 100% aluminum allowing for MRI applications
- Can be used with SMF 24 x 24 W surface mount frames for drywall applications
- White finish

Tbar grid	round duct size	B	C
12 x 12	6, 7	1-1/8"	2-1/4"
	8	1-1/4"	2-3/8"
24 x 24	6,8	1-1/4"	3-3/4"
	10,12,14	1-3/8"	3-7/8"

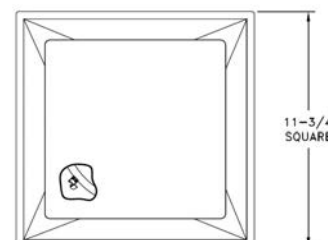


## DPD12 Steel

### T-Bar Plate Diffuser

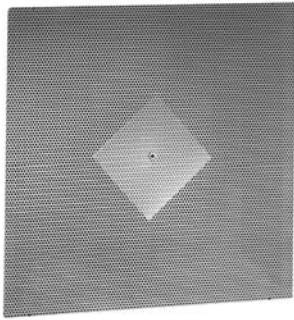
- Aesthetically appealing, single-face plate design
- 360° air diffusion pattern
- Detachable face plate
- Constructed of heavy gauge steel for 1' x 1' Tbar grids
- Can be used with SMF 12 x 12 W surface mount frames for drywall applications
- White finish

Tbar grid	round duct size	B	C
12 x 12	6, 7	1-1/8"	2-1/4"
	8	1-1/4"	2-3/8"
24 x 24	6,8	1-1/4"	3-3/4"
	10,12,14	1-3/8"	3-7/8"



Note: Screw hole location found in engineering data catalog

# T-Bar Fixed-Pattern Perforated Supply Diffusers

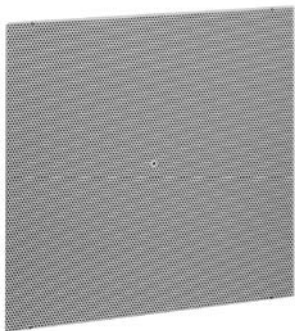
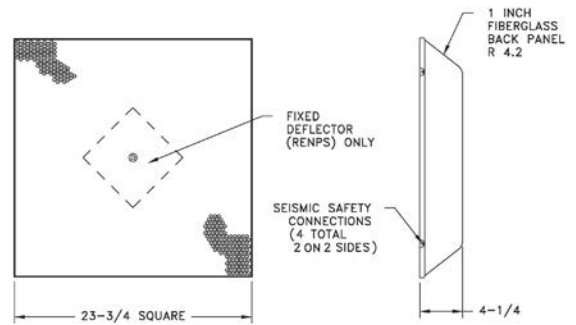
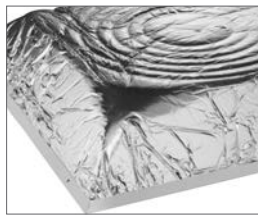


## RENPS/ARENPS RENPS R6 Steel/Aluminum

<b>RENPS Available Size</b>
Overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "

### Perforated Supply Diffuser with Insulated Back

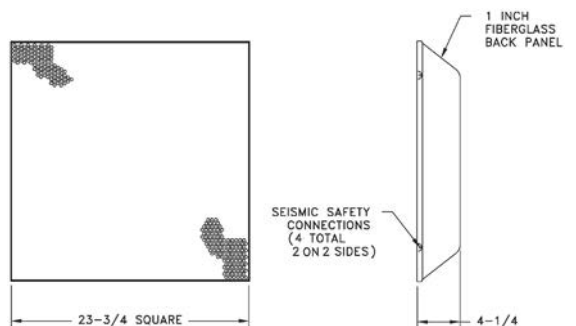
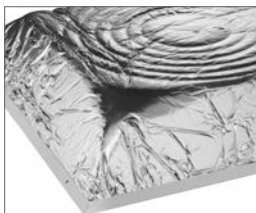
- Perforated steel face with deflector
- Molded fiberglass back panel, available in R4.2 or R6
- Accepts 6" to 14" unique tab collar (6400 series) or 6" to 16" unique snap-in collar (5400 and 5400PP series); also accepts standard spin-in collar
- ARENPS constructed with aluminum face
- Bright White finish



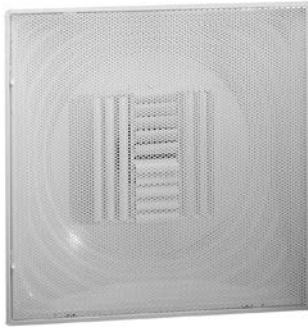
## RENP Steel Perforated Return with Insulated Back

<b>RENP Available Size</b>
Overall 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "

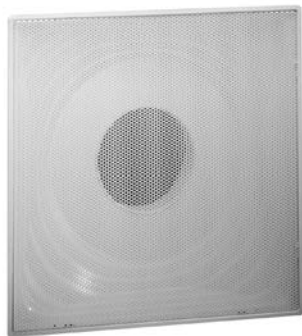
- Perforated steel face
- R4.2 molded fiberglass back panel
- Accepts 6" to 14" unique tab collar (6400 series) or 6"-16" unique snap-in collar (5400 and 5400PP series); also accepts standard spin-in collar
- Bright White finish



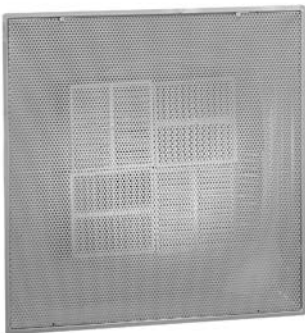
# T-Bar Perforated Supply/Return



**CBPS Curved-Blade Perforated Supply**



**CBPR Curved-Blade Perforated Return**



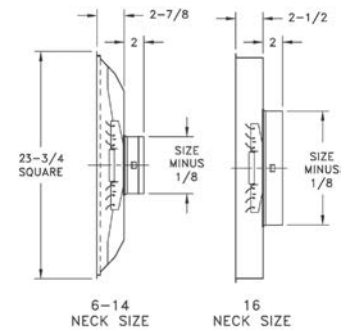
## CBPS/CBPR

Steel

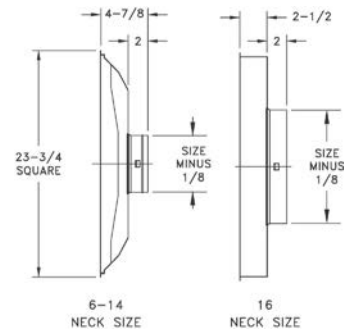
### Curved-Blade Perforated Supply/Return

- Steel construction
- Removable, hinged face allows for easy access to air pattern control core
- Individually adjustable pattern deflectors factory-set at 4-way deflection; can be field-adjusted for 1, 2, 3-way air patterns
- Available in 6", 8", 10", 12", 14" and 16" diameter necks
- Unique 2" high collar permits easy flex connections
- Accepts 3800 Series butterfly damper (order separately)
- For 16", use T19
- Bright White finish

<b>CBPS/CBPR Available Size</b>
Overall Size 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "



**CBPS**



**CBPR**

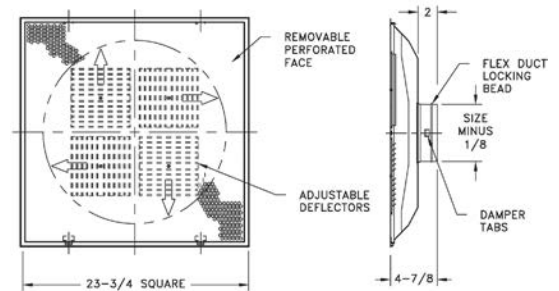
## SBP

Steel

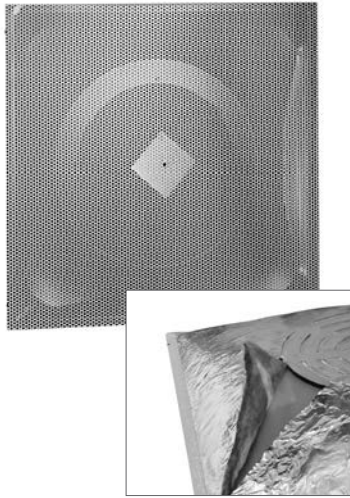
### Shallow Back Perforated Supply

- Steel construction
- Available in 6" to 14" collar sizes
- Face-mounted, adjustable deflectors
- Removable perforated face
- Hinged/latched face for easy access to deflector and damper
- Bright White finish

<b>SBP Available Size</b>
Overall Size 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "



# T-Bar Perforated Supply/Return

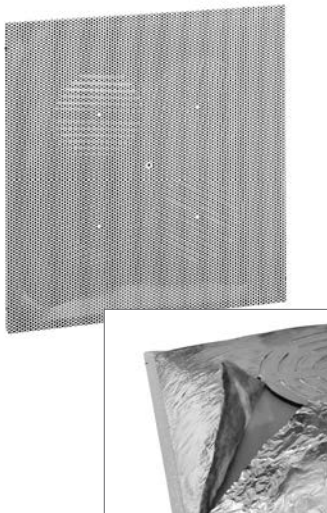
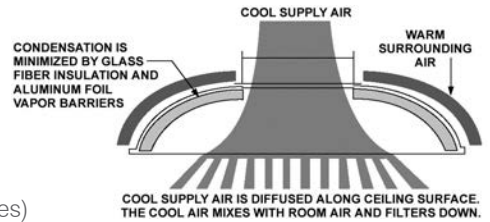
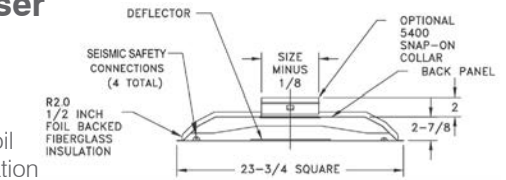


## PDS Steel

### Perforated Supply Diffuser (with fixed deflector)

- Perforated steel face
- Formed steel, black back panel
- Fiberglass insulation blanket with foil vapor barrier to minimize condensation
- Insulation prescored to accommodate collar size desired
- Accepts unique snap-in collar (5400 Series) 6" to 12" – order separately
- Available in 14" fixed collar (PDS14)
- Utilizes butterfly damper (3800 Series) inserted in collar
- Damper adjusted through diffuser face to allow proper air balancing
- Bright White finish

PDS Available Size
Overall Size 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "

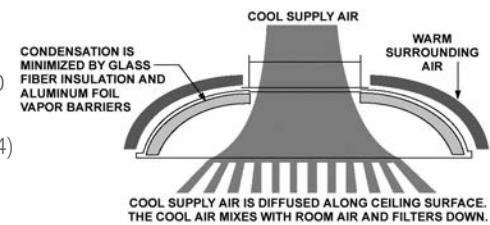
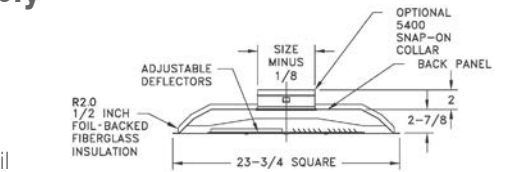


## PDS D Steel

### Perforated Diffuser Supply (with adjustable deflector)

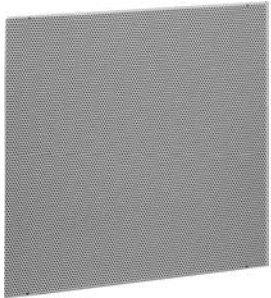
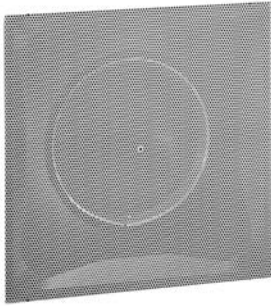
- Perforated steel face
- Face adjustable deflectors
- Formed steel, black back panel
- Fiberglass insulation blanket with foil vapor barrier to minimize condensation
- Insulation prescored to accommodate collar size desired
- Accepts unique snap-in collar (5400 Series) 6" to 12" – order separately
- Available in 14" fixed collar (PDS D14)
- Utilizes butterfly damper (3800 Series) inserted in collar
- Damper adjusted through diffuser face to allow proper air balancing
- Bright White finish

PDS D Available Size
Overall Size 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "



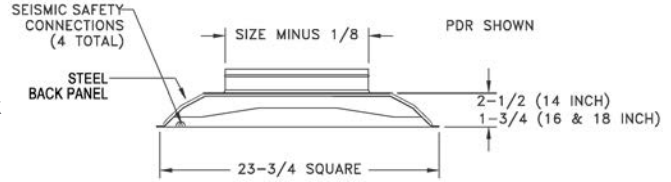


# T-Bar Perforated Supply/Return



## **PDR** *Steel* **Perforated Return Grille**

- 51% net free area
- Available with 14", 16", or 18" fixed collars
- Formed steel, black back panel
- White finish

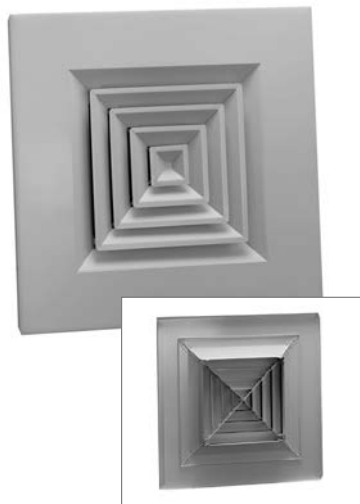


PDR Available Size
Overall Size 23 <sup>3</sup> / <sub>4</sub> " x 23 <sup>3</sup> / <sub>4</sub> "

## **PD** *Steel* **Perforated Return Face Only—No Back**

- Face only return for plenum ceilings
- Available in 24" x 12", 24" x 24" and 48" x 24" sizes
- White finish

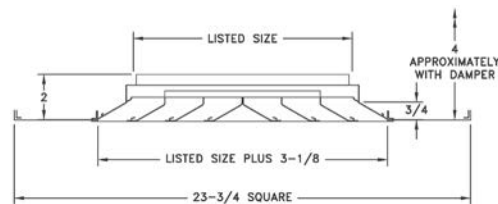
# T-Bar Directional/Modular Diffuser



## ART Aluminum Square and Rectangular T-Bar Diffusers

- Aluminum construction
- Available in one, two, three and four-way deflections
- Removable core
- Bright White or Satin Anodized finish

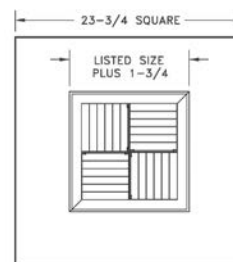
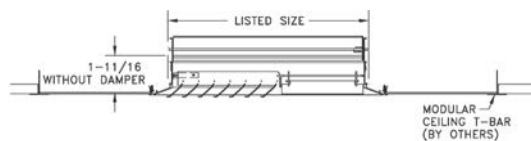
ART Available Sizes
6" x 6", 9" x 9", 12" x 12", 15" x 15", 21" x 21"
<b>Note:</b> For 18" x 18" neck, order ARE 18" x 18".



## MCDST Aluminum Modular Core Diffuser

- Extruded aluminum diffuser in aluminum panel
- Modular cores provide one, two, three, and four-way air patterns
- Removable modules provide easy access to duct-mounted damper
- Available in 6" to 20"
- Available as MCDSTSR with square-to-round transition attached
- Bright White finish

MCDST/MCDSTSR Available Sizes
6" x 6", 8" x 8", 10" x 10", 12" x 12", 14" x 14", 16" x 16", 18" x 18", 20" x 20"



MCDSTSR

Add SR7 or AR7 for damper control



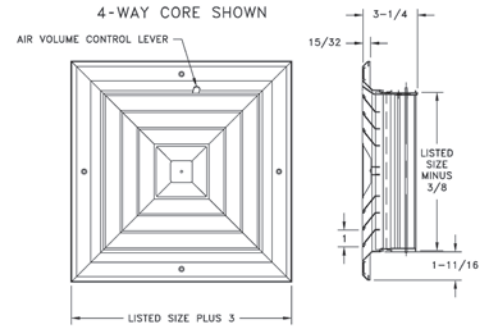
**A501MS/A501OB**  
One-way deflection

## A500 Series Diffusers

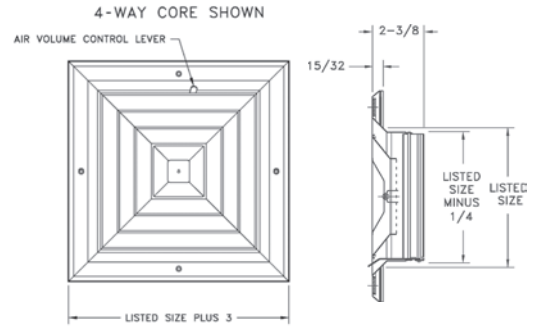
- Extruded aluminum construction
- Cores flush with margin
- One-way air diffusion
- Face mount for easy installation
- For sidewall or ceiling application
- Multi-shutter or opposed-blade dampers - aluminum
- Inconspicuous fingertip lever for air volume control
- Bright white finish

A500 Series Available Sizes				
6" x 6"	8" x 8"	10" x 10"	12" x 12"	14" x 14"

### OB Damper



### MS Damper



**A502MS/A502OB**  
Two-way deflection



**A503MS/A503OB**  
Three-way deflection



**A504MS/A504OB**  
Four-way deflection



**A505MS/A505OB**  
Two-way corner deflection

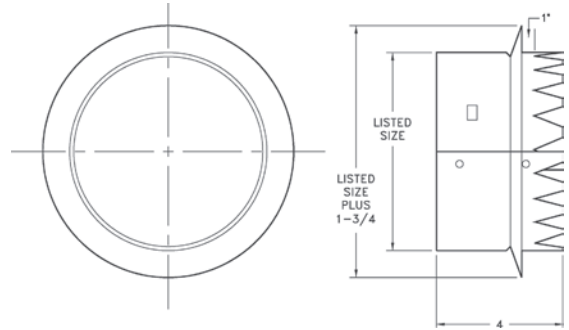
# T-Bar Accessories



## 6400 Tab Collar

- Galvanized steel construction
- For use with fiberglass-backed ceiling diffusers
- Tabbed for easy installation
- Accepts 3800 Series damper

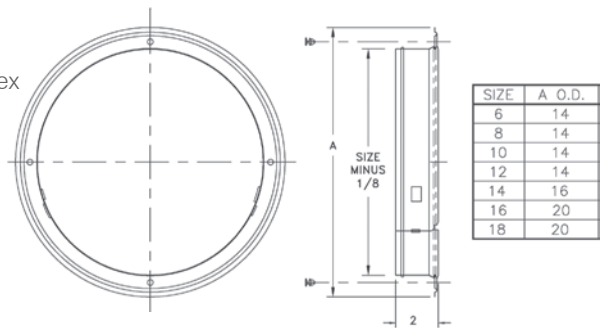
6400 Series Available Sizes				
6"	8"	10"	12"	14"



## 5400 Series Collar Ring\*

- Unique snap-in design for easy installation
- 2" high collar permits easy flex connections
- Bead on collar improves the strength and provides retention for flexible duct connections

5400 Series Available Sizes								
6"	7"	8"	9"	10"	12"	14"*	16"	18"



\*14" collar is mounted to diffuser at factory for steel back panels only.

**Note:** Uses 5400PP (black push pins) with insulated back panels (non-steel).



## 5400PP Push Pins

- Attaches 5400 collar to molded fiberglass back for the following products:

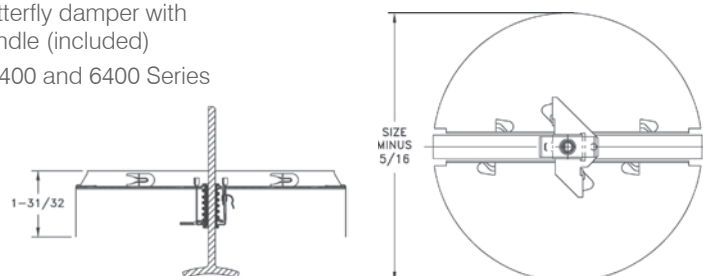
- 659TI            1 1/4" long
- PFTI            1 1/4" diameter head
- REN P
- RENPS/RENPS R6
- RE5TI
- 96AFBTI
- REN4
- HVS R6
- SRET/SRET R6



## 3800 Series Damper

- Adjustable butterfly damper with removable handle (included)
- For use with 5400 and 6400 Series collars
- Golden Sand finish

3800 Series Available Sizes						
6"	7"	8"	9"	10"	12"	14"



*Note: Screw hole location found in engineering data catalog*



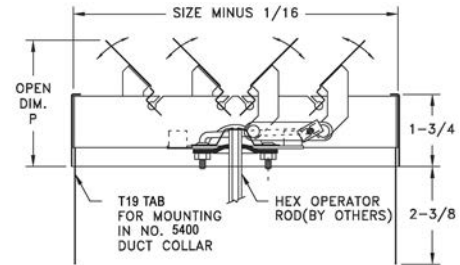


## T19 Series Damper

- Multi-blade damper
- Tabs for easy installation
- For use with 5400 Series collar
- Bright White finish

Note: 3/16 hex operator by others

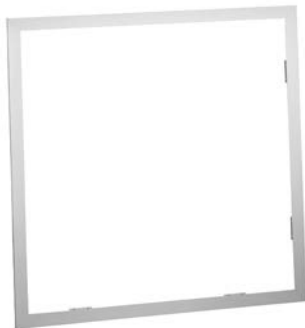
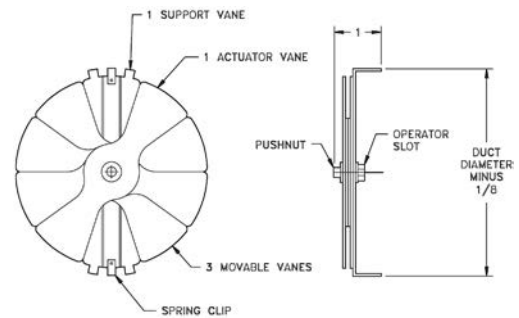
19 Series Available Sizes					
6"	8"	10"	12"	14"	16"



## RD Radial Damper

- Galvanized steel construction
- Face-adjustable
- For use with round neck diffusers
- Mill finish

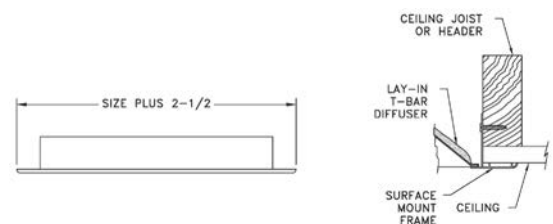
RD Available Sizes				
6"	8"	10"	12"	14"



## SMF Aluminum Surface Mount Frame

- Aluminum construction
- Permits installation of standard T-Bar diffusers in a plaster ceiling
- Accepts standard T-Bar diffusers
- Bright White finish

SMF Available Sizes
12" x 12", 24" x 12", 24" x 24", 24" x 48"



Miscellaneous

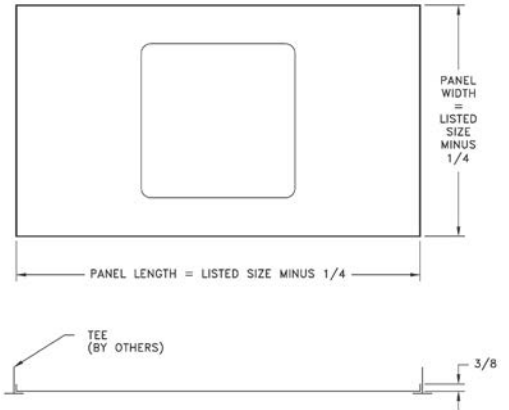


**P Filler Panel**

- Steel or aluminum construction
- Available in 9 sizes from 12" x 12" to 36" x 36" in 12" increments
- Bright White finish

**Diffusers are factory-installed (must order with diffuser).**

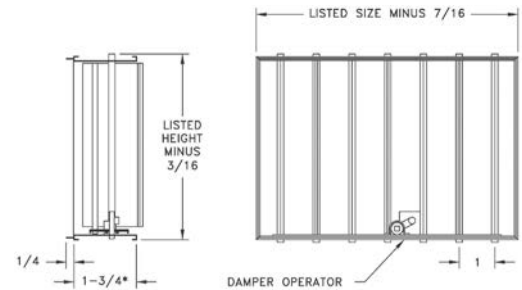
P Filler Panel Available Sizes
12" x 12", 24" x 12", 36" x 12", 48" x 12", 24" x 24", 36" x 24", 48" x 24", 36" x 36"



**AD  
Aluminum  
Opposed-Blade  
Damper**

- Extruded aluminum construction
- Opposed-blade damper
- Controls the air volume from full flow to shut-off

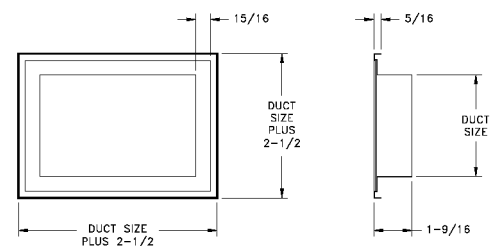
AD Available Sizes
Minimum: 6" x 4", 1 3/4" x 4"
Maximum: 24" x 24" One-Piece



**APF  
Aluminum  
Plaster Frame**

- Aluminum construction
- Provides attractive appearance for registers and grilles around plaster
- Bright White finish

APF Available Sizes
Minimum: 6" x 4"
Maximum: 48" x 48"



## **Surfaire® T-Bar Diffusers**

Furnish and install Hart & Cooley SurfAire® insulated ceiling diffusers as shown on the plans. The diffuser shall be a 2'x2' T-Bar lay-in. Face shall be stucco embossed aluminum with off-white baked enamel finish for ceiling aesthetics, corrosion protection and ease of cleaning. Face will have formed deflector apertures which distribute air in thin layers along the ceiling surface and which provide for optimum dispersion in one, two, three, four-way or two-way corner patterns.

Back panel shall be formed galvanized steel covered with glass fiber insulation and an aluminum foil vapor barrier. Insulation is held securely in place by face margin edge fold over. Insulation will be prescored to accept specified collar sizes.

5400 Series collars will be supplied providing efficient, tight attachment with bayonet fasteners to mating prepunched holes in back panel. Collars will provide flex duct locking tabs and damper mounting slots. Collar damper slots provide for damper attachment or removal at any time.

3800 Series, fully adjustable, butterfly dampers shall be supplied (if specified). Damper adjustment handle is inserted before or after damper is mounted and is removable at any time.

## **Perforated Insulated T-Bar Diffusers and Return Grilles**

Contractor shall furnish and install Hart & Cooley PDS perforated diffuser or PDS perforated diffuser with deflectors as indicated on the plans. Perforated diffusers shall be 2'x2' T-Bar lay-in. Exposed face will have a minimum 51% free area and be coated with off-white baked enamel finish. Deflectors (if specified) shall be fully adjustable, externally providing one, two, three, four-way or two-way corner air diffusion capability.

Back panel shall be black pre-coated formed steel covered with glass fiber insulation and an aluminum foil vapor barrier. Insulation is held securely in place by face margin edge fold over. Insulation is prescored to accept specified collar sizes.

5400 Series collars will be supplied providing efficient, tight attachment with bayonet fasteners to mating pre-punched holes in back panel. Collars will provide flex duct locking tabs and damper mounting slots. Collar damper slots provide for damper attachment or removal at any time.

3800 Series fully adjustable butterfly dampers shall be supplied (if specified). Damper adjustment handle is inserted before or after damper is mounted and is removable at any time.

Matching Hart & Cooley PDR perforated return air grilles shall be furnished according to the plans.

## **Removable Face Perforated T-Bar Diffusers and Return Grilles**

Contractor shall furnish and install Hart & Cooley RFPS series perforated diffusers as indicated on the plans. Exposed face will be of a removable hinged style with a minimum 51% free area and be coated with white baked enamel finish. Deflectors are to be the patented,

directable deflector to ensure proper adjustable air deflection. Back panel shall be black, pre-coated, formed steel to minimize sight into diffuser.

5400 Series collars will be supplied providing efficient, tight attachment with bayonet fasteners to mating pre-punched holes in back panel. Collars will provide flex duct locking tabs and damper mounting slots. Collar damper slots provide for damper attachment or removal at any time.

3800 Series fully adjustable butterfly dampers shall be supplied (if specified). Damper adjustment handle is inserted before or after damper is mounted and is removable at any time.

Matching Hart & Cooley RFPR perforated return air grilles shall be furnished according to the plans.

## **High Volume Supply T-Bar Diffuser**

Contractor shall furnish and install Hart & Cooley HVS high volume supply 2'x2' T-Bar lay-in diffuser as shown on the plans. This diffuser will consist of a formed back panel and three stepdown formed elements, all made of heavy gauge steel. Finish shall be an off-white baked enamel. Interior air diffusion elements are easily removable at any time without tools for access to damper control rod. The air diffusion pattern shall be a full 360°.

The back panel shall be fully insulated with fiberglass having an aluminum foil vapor barrier. Insulation is held rigidly in place with adhesive and will be prescored to accept specified collar sizes.

5400 Series collars will be supplied providing efficient, tight attachment with bayonet fasteners to mating pre-punched holes in back panel. Collars will provide flex duct locking tabs and damper mounting slots. Collar damper slots provide for damper attachment or removal at any time.

3800 Series fully adjustable butterfly dampers shall be supplied (if specified). Damper adjustment handle is inserted before or after damper is mounted and is removable at any time.

## **Fixed Pattern T-Bar Diffuser**

Contractor shall furnish and install Hart & Cooley FPD fixed pattern diffuser 2'x2' T-Bar lay-in as shown on the plans. This diffuser will consist of a formed back panel and two stepdown formed elements, all made of heavy gauge steel. Finish shall be an off-white baked enamel. Interior air diffusion elements are easily removable at any time without tools for access to damper or neck. The air diffusion pattern shall be a full 360°.

3800 Series fully adjustable butterfly dampers shall be supplied (if specified) and can be adjustable through the face.

## Glossary of Terms

### **Ceiling or Wall Effect**

The tendency of an air stream moving along a wall or ceiling surface to remain in contact with that surface.

### **Core Area**

The total plane area of that portion of a grille, face, or register bounded by a line tangent to the outer opening through which air can pass. The core area is less than the register size. Example, a 14-in. x 8-in. register may have a core that is 1 in. less than the listed size; so, the core area is 13in. x 7in. – 91 sq. in.

### **Diffuser**

An outlet discharging supply air in a spreading pattern.

### **Diffusion**

Distribution of air within a space by an outlet discharging supply air in a spreading pattern.

### **Drop**

The vertical distance between the base of the outlet and the bottom of the air stream at the end of the horizontal throw.

### **Effective Area, Ak (Sq. Ft.)**

The calculated area of an outlet based on the average measured velocity between the fins.

### **Envelope**

The outer boundary of an air stream moving at a specific velocity (for example, a 50 fpm envelope).

### **Free Area**

The total minimum area of the openings in the air outlet or inlet through which air can pass.

### **Grille**

A louvered covering for an opening through which air passes.

### **Induction**

The process of drawing room air into the projected air stream due to the velocity of the projected air stream (sometimes called aspiration).

### **Jet Velocity, Fpm (Face Velocity)**

The average measured velocity of air passing between the fins.

### **Natural Convection Currents**

Air currents created by a buoyancy effect caused by the difference in temperature between the room air and the air in contact with a warm or cold surface.

### **Outlet**

Any opening through which air is delivered to condition a space.

### **Outlet Velocity, Fpm**

The average velocity of the supply air, measured as it passes through the plane of the opening in the supply outlet.

### **Pressure Loss, WG**

Indicates how much total pressure is required to move air through a register.

### **Primary Air**

The mixture of supply air from the outlet and room air within the 1 50 fpm envelope.

### **Radius of Diffusion, Ft.**

The horizontal distance (throw) from a ceiling diffuser to the point of terminal velocity.

### **Register**

A grille which is equipped with a damper or control valve, and which directs air in a nonspreading jet.

### **Return**

Any opening through which air is removed from a conditioned space.

### **Spread, Ft.**

The maximum width of the total air stream at the point of terminal velocity.

### **Static Pressure, PS**

The outward force of air within a duct measured in inches of water.

### **Stratification Boundary**

The boundary between room air currents moving faster than 1 5 fpm and the stratification zone.

### **Stratified Zone**

A region in which room air velocity is less than 1 5 fpm.

### **Temperature Differential**

The temperature difference between the primary and the room air.

### **Temperature Variation ( $\Delta T$ )**

The temperature difference between points within the same space.

### **Terminal Velocity, Fpm**

When the velocity of total air drops to 50 or 75 fpm, depending on the particular application, it reaches terminal velocity. Terminal velocity is not sharply defined for all applications.

### **Throw (Blow), Ft.**

The horizontal distance an air stream travels after leaving a horizontal sidewall outlet before maximum velocity is reduced to terminal velocity. For a perimeter outlet, throw is the vertical distance the air stream travels before maximum velocity is reduced to terminal velocity.

### **Total Air**

The mixture of projected air and room air set in motion by the supply air.

### **Total Pressure, Pt**

The sum of the velocity and static pressures measured in inches of water.

### **Vane Ratio**

The ratio showing depth of vane to minimum width between two adjacent vanes.

### **Velocity Pressure, Pv**

The forward-moving force of air within a duct measured in inches of water.

### **NC Noise Criteria**

A single number noise rating system that indicates what Broad Band, continuous sounds are reasonably acceptable.









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