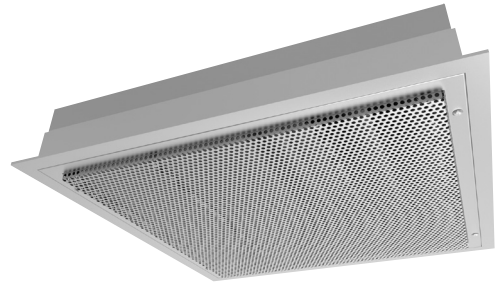


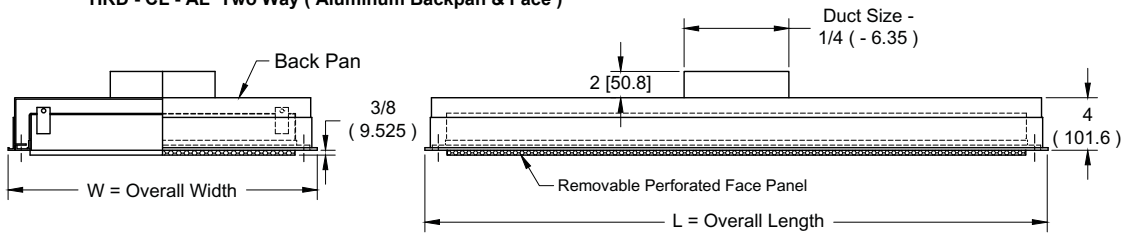
SERIES HRD-CL

HRD-CL radial discharge pattern diffusers are engineered for supply air distribution in critical environments such as chemistry labs and clean rooms. The diffusers are engineered to supply a low velocity of conditioned air in a radial pattern from the ceiling.



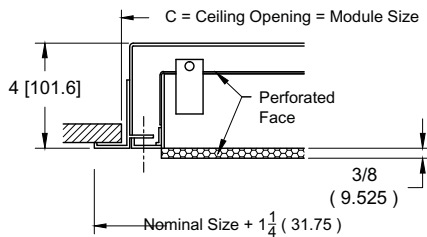
- Low velocity radial air pattern
- Available in 90° or 180° throw
- Easily removable face to allow ease of cleaning and sterilization
- Choice of all aluminum, stainless steel face and aluminum backpan, or all stainless steel construction
- Available in Surface Mount or T-bar frame styles
- Optional inlet damper

Models: HRD - CL - AL One Way (Aluminum Backpan & Face)
 HRD - CL - AL Two Way (Aluminum Backpan & Face)

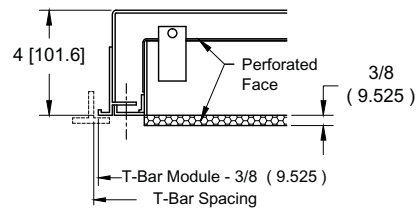


Note: Damper Adjustment Thru $\frac{1}{2}$ " Hole In Face Plate Without Removing Face.

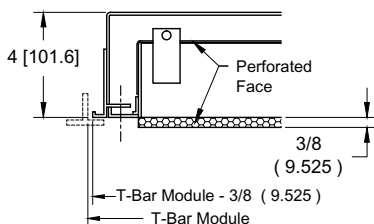
Model: HRD-CL-AL Border 1 (Surface Mount)



Model: HRD-CL-AL Border 6 (Standard Lay-In T-Bar)

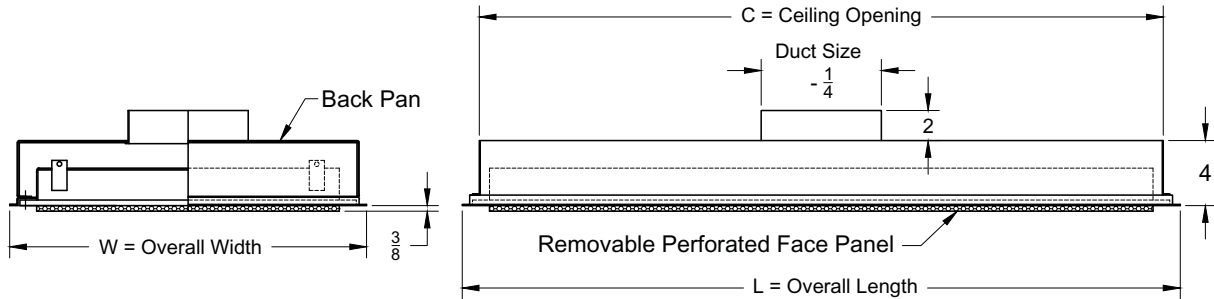


Model: HRD-CL-AL Border 6M (1 1/2 Inch Lay-In T-Bar)

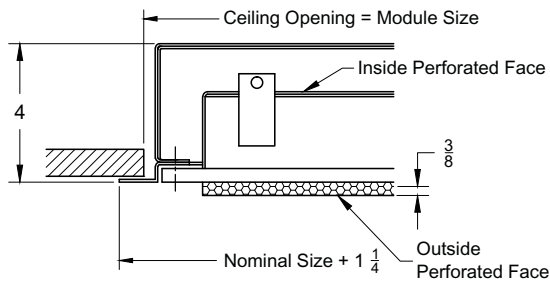


Nominal Size	Frame 1			Frame 6		Frame 6M			
	C	L	W	L	W	L		W	
						in	mm	in	mm
24 x 24	24 x 24	25 1/4	25 1/4	23 3/4	23 3/4	23 5/8	600.075	23.63	600.075
48 x 24	48 x 24	49 1/4	25 1/4	47 3/4	23 3/4	47 5/8	1209.675	23.63	600.075
48 x 12	48 x 12	49 1/4	12 1/4	47 3/4	11 3/4	47 5/8	1209.675	11.63	295.275

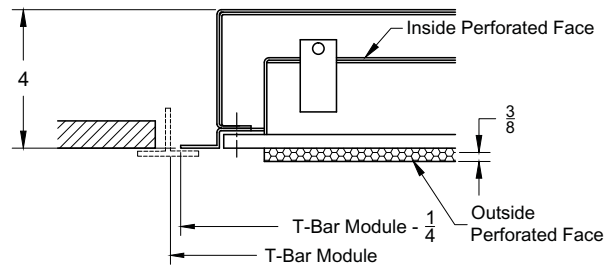
Models: HRD-CL-SA One Way (Stainless Steel Face & Aluminum Backpan)
 HRD-CL-SA Two Way (Stainless Steel Face & Aluminum Backpan)



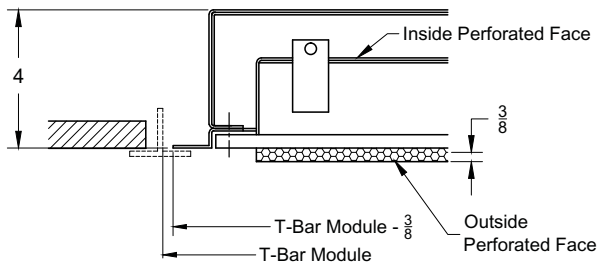
Model: HRD-CL-SA Border 1 (Surface Mount)



Model: HRD-CL-SA Border 6 (Standard Lay-In T-Bar)

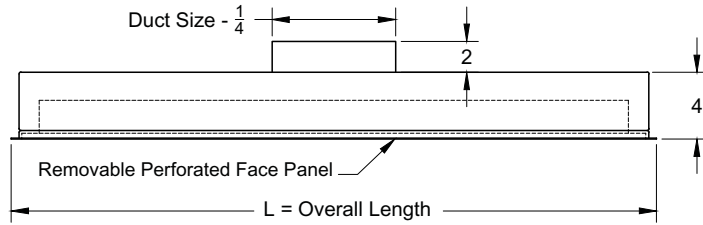
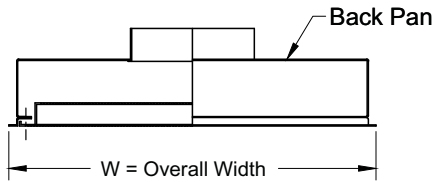


Model: HRD-CL-SA Border 6M
 (1 1/2 Inch Lay-In T-Bar) metric Sizing

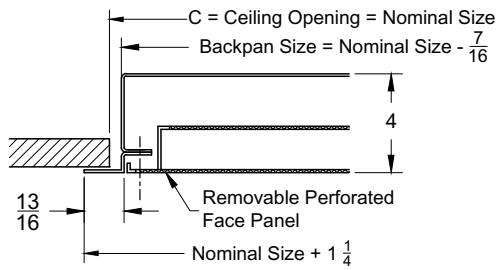


Nominal Size	Frame 1			Frame 6		Frame 6M	
	C	L	W	L	W	L	W
24 x 24	24 x 24	25 1/4	25 1/4	23 3/4	23 3/4	23 5/8	23 5/8
48 x 24	48 x 24	49 1/4	25 1/4	47 3/4	23 3/4	47 5/8	23 5/8

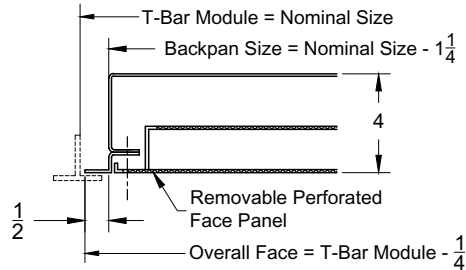
Models: HPL-CL-SS (Stainless Steel Backpan & Face)



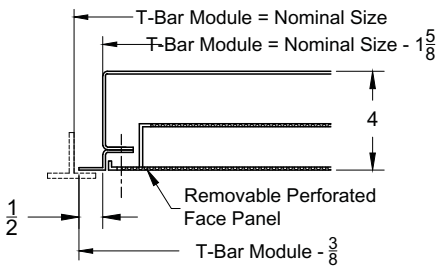
Model: HPL-CL-SS Border 1 (Surface Mount)



Model: HPL-CL-SS Border 6 (Standard Lay-In T-Bar)



Model: HPL-CL-SS Border 6M (1 1/2 Inch Lay-In T-Bar) Metric Sizing



Nominal Size	Frame 1			Frame 6		Frame 6M	
	C	L	W	L	W	L	W
24 x 24	24 x 24	25 1/4	25 1/4	23 3/4	23 3/4	23 5/8	23 5/8
48 x 24	48 x 24	49 1/4	25 1/4	47 3/4	23 3/4	47 5/8	23 5/8
48 x 12	48 x 12	49 1/4	13 1/4	47 3/4	11 3/4	47 5/8	11 5/8
24 x 12	24 x 12	25 1/4	13 1/4	23 3/4	11 3/4	23 5/8	11 5/8

SERIES HRD-CL SPECIFICATIONS

RADIAL FLOW DIFFUSER — ALUMINUM/ STAINLESS STEEL — MODEL HRD-CL-AL / HRD-CL-SA / HRD-CL-SS

- Air outlets shall be model HRD-CL-AL (aluminum), HRD-CL-SA (stainless steel face/aluminum backpan) or HRD-CL-SS (stainless steel) manufactured by METALAIRE. Diffuser shall include an upper and lower pressure chamber and shall generate a 180° (two-way) or 90° (one-way) low velocity discharge pattern.
- Diffuser shall be constructed of a one-piece perforated face and core assembly that is removable from the backpan with 1/4" turn fasteners accessible from the face. Face and core assembly mounted with internal spring clips or other mechanical fastening devices are not acceptable. Units shall include stainless steel safety chains attaching the face assembly to the backpan.
- Core and face assembly shall be removable to allow sanitizing and allow access to the backpan for cleaning. The face shall be flush with the ceiling surface.
- The perforated face shall have a 51% free area.
- Units shall have round inlets. Units shall be designed to integrate into the specified ceiling system. The units shall be the size and quantity as outlined in the plans and specifications.

Performance Specification

The manufacturer shall provide published performance data. Data has been tested in accordance to ANSI/ASHRAE Standard 70-2006.

Paint Specification

METALAIRE 01 paint finish is an anodic electro-deposition Melamine cross linking thermo set acrylic enamel finish, conforming to no less than 9 specific ASTM testing requirements covering a full range of physical properties. The 01 finish has been tested to exceed ASTM D4752 Double MFK minimum 100 rubs. This test demonstrates METALAIRE products' ability to withstand continuous cleaning with harsh cleaners and disinfectants. Following are the ASTM specifications for physical properties.

ASTM D523-89	Gloss 60 Degree	70-80
ASTM D3363-92A	Pencil Hardness	HB-H
ASTM D3395-95	Crosshatch	4B-5B
ASTM D2794-93	Direct Impact	100 in.lb.min.
ASTM D2794-93	Reverse Impact	60 in.lb.min

SERIES HRD-CL MODEL NUMBER SPECIFICATION RADIAL FLOW DIFFUSER

Model		Neck Size	Module	Available Finishes	
HRD-CL-AL-1	Aluminum Surface Mount	6	24 x 12	Standard	
HRD-CL-SA-1	Stainless Steel Face/Aluminum Backpan Surface Mount		36 x 12	01	White
HRD-CL-SS-1	Stainless Steel Surface Mount	7	48 x 12	Stainless Steel Units Only	
HRD-CL-AL-6	Aluminum T-bar	8		23	Satin Polish
HRD-CL-SA-6	Stainless Steel Face/Aluminum Backpan T-bar				
HRD-CL-SS-6	Stainless Steel T-bar	6	24 x 24	Available Accessories	
HRD-CL-AL-6M	Aluminum T-bar Metric	7	36 x 24	D3	Aluminum Radial Opposed Blade Damper
HRD-CL-SA-6M	Stainless Steel Face/Aluminum Backpan T-bar Metric	8	48 x 24	BDSS	Stainless Steel Butterfly Damper
HRD-CL-SS-6M	Stainless Steel T-bar Metric	9		EI	External Insulation
		10			
		12			
		14			

SERIES HRD-CL PERFORMANCE

HRD-CL — 1-WAY PATTERN

Module Size and Inlet Size	2-Way Pattern				Horizontal Spread (feet)			Vertical Throw (feet)								
	CFM	Ps	Pt	NC	10 Deg dT			10 Deg dT			15 Deg dT			20 Deg dT		
					100	75	50	100	75	50	100	75	50	100	75	50
24 x 24 8	150	.019	.030	<15	0	1	3	0	1	2	0	1	2	0	1	4
	200	.033	.054	<15	1	1	2	0	1	2	0	1	2	0	1	3
	250	.052	.084	18	1	2	5	1	2	4	1	2	5	1	3	6
	300	.075	.121	23	1	3	5	1	2	4	1	2	5	2	4	6
	400	.132	.214	32	2	4	6	2	3	5	2	4	6	3	5	7
	500	.207	.335	39	3	5	7	2	4	5	3	5	7	4	6	8
24 x 24 10	250	.019	.034	<15	1	2	5	0	0	1	1	1	3	1	1	3
	325	.033	.057	<15	1	3	6	0	1	2	1	2	4	1	1	4
	400	.052	.087	21	2	4	7	0	1	4	2	2	5	1	2	5
	475	.075	.122	27	3	5	8	1	1	4	2	3	5	1	3	5
	550	.132	.164	33	3	5	8	1	2	5	2	3	6	2	3	6
	625	.207	.212	37	4	6	9	1	2	5	2	4	7	2	4	7
48 x 24 10	300	.019	.049	<15	1	2	6	0	0	2	1	2	3	0	1	3
	400	.033	.087	19	2	4	7	0	1	3	1	2	5	1	1	5
	500	.052	.135	28	3	5	7	1	1	4	2	3	6	1	2	6
	600	.075	.196	34	4	6	8	1	2	5	2	3	7	1	3	7
	800	.132	.347	40	5	7	9	1	3	6	3	5	8	2	5	10
	900	.207	.439	41	6	7	10	2	3	7	3	5	9	3	6	10
48 x 24 12	500	.019	.074	19	1	2	5	1	1	4	1	1	6	1	3	6
	600	.033	.106	25	1	3	6	1	2	5	1	2	7	2	4	7
	700	.052	.145	30	2	3	7	1	3	6	1	3	8	2	4	9
	800	.075	.189	33	2	4	8	2	3	6	2	4	9	3	5	10
	900	.132	.239	39	3	4	8	2	4	7	2	5	10	4	5	11
	1000	.207	.295	42	3	5	9	3	4	8	3	6	10	4	6	11

SERIES HRD-CL PERFORMANCE

HRD-CL — 2-WAY PATTERN

Module Size and Inlet Size	2-Way Pattern				Horizontal Spread (feet)			Vertical Throw (feet)								
	CFM	Ps	Pt	NC	10 Deg dT			10 Deg dT			15 Deg dT			20 Deg dT		
					100	75	50	100	75	50	100	75	50	100	75	50
24 x 24 8	150	.019	.030	<15	0	1	3	0	1	2	0	1	2	0	1	4
	200	.033	.054	15	1	1	4	0	1	3	0	1	4	1	2	5
	250	.052	.084	19	1	2	5	1	2	4	1	2	5	1	3	6
	300	.075	.121	23	1	3	5	1	2	4	1	2	5	2	4	6
	400	.132	.214	31	2	4	6	2	3	6	2	4	6	3	5	7
	500	.207	.335	39	3	5	7	2	4	6	3	5	7	4	6	8
24 x 24 10	250	.023	.036	<15	1	2	5	0	0	1	1	1	3	0	1	3
	325	.039	.061	<15	1	3	6	0	1	2	1	2	4	1	1	4
	400	.092	.145	29	3	5	10	1	1	4	2	3	6	1	3	6
	475	.133	.208	36	4	6	11	1	2	5	2	3	7	2	3	7
	550	.181	.284	41	5	7	12	1	3	6	3	4	7	2	4	8
	625	.299	.469	45	6	9	14	2	4	8	3	5	8	3	5	9
48 x 24 10	300	.017	.030	<15	1	2	5	0	0	1	0	1	2	0	1	2
	400	.028	.050	<15	1	3	6	0	0	2	1	2	3	0	1	3
	500	.067	.119	26	3	5	10	1	1	4	2	2	5	1	2	5
	600	.096	.172	33	4	6	11	1	2	4	2	3	6	1	3	6
	800	.131	.234	38	5	7	12	1	2	5	2	3	6	2	3	7
	900	.217	.387	42	6	9	14	2	3	6	3	4	7	3	4	8
48 x 24 12	500	.067	.092	19	3	5	10	1	1	4	1	1	5	1	3	6
	600	.096	.133	25	4	6	11	1	2	4	1	2	6	2	3	7
	700	.131	.181	30	5	7	12	1	3	5	1	3	7	2	4	8
	800	.171	.236	33	5	8	13	2	3	7	2	4	7	3	5	9
	900	.217	.299	39	6	9	14	2	3	7	2	4	8	3	5	9
	1000	.268	.369	42	3	5	10	2	4	7	3	5	8	4	6	10

PERFORMANCE NOTES FOR SERIES HRD-CL

All data is tested in accordance with ANSI/ASHRAE 70-2006.

DEFINITION OF UNITS

CFM Cubic Feet per Minute (air)

Pv Velocity pressure (inches of water column)

Pt Total pressure (inches of water column)

Ps Static pressure = Pt - Pv (inches of water column)

Throw Non-isothermal horizontal throw (supply air temperature 15°F colder than average room temperature); values are for 150, 100 and 50 fpm velocities

NC Noise criterion, sound pressure level NC ratings are based on sound power level (Lw) re: 10⁻¹² watts minus a 10dB room attenuation in all octave bands