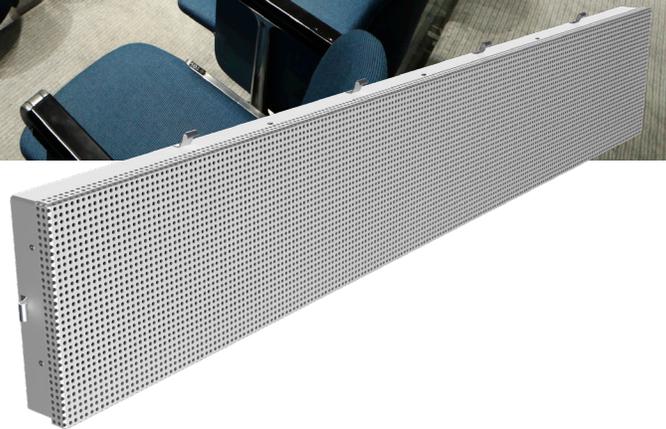


DFR

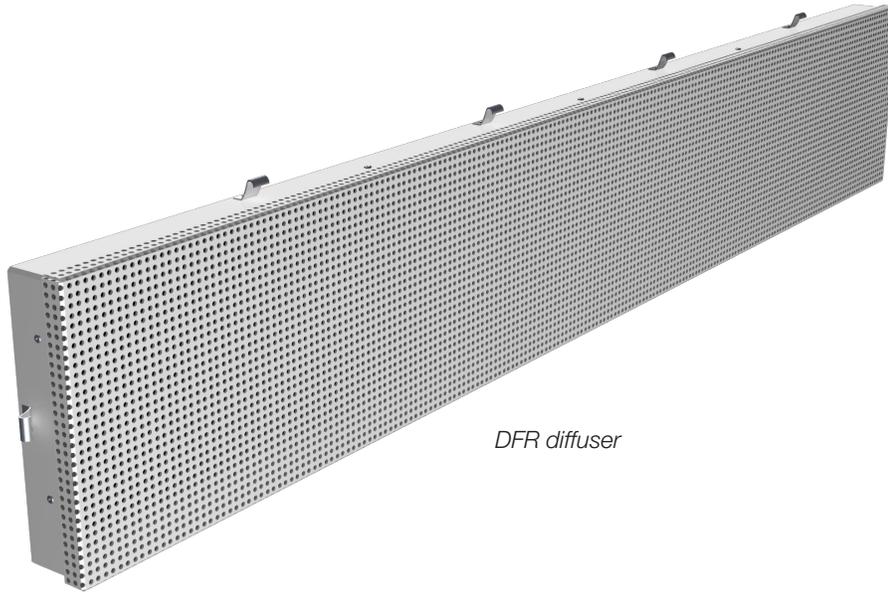
RECESSED DISPLACEMENT DIFFUSER



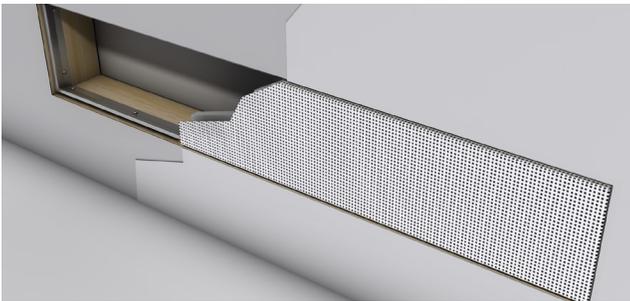
DFR

Recessed Displacement Diffuser

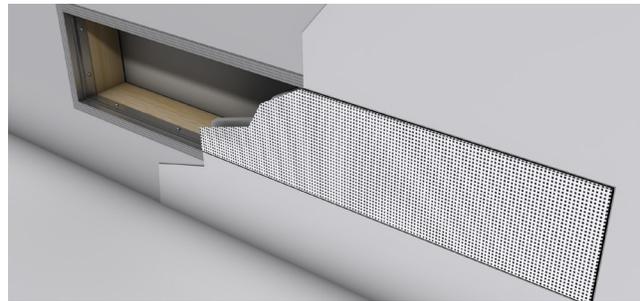
The Recessed Displacement Diffuser (DFR) is a unique diffuser that supplies low velocity discharge air in a 1-way pattern into an occupied zone from relatively hidden locations. The DFR has an easy to install perforated face that is securely retained with mounting clips in a contractor supplied plenum. A mud frame is available for drywall applications. With no visible fasteners the DFR can be discreetly installed in stair risers, in a wall at floor level or in a toe kick, making it ideal for classrooms, theaters and lobbies.



DFR diffuser



Standard frame installation



Mud frame installation

CONSTRUCTION & FINISHES

+ Material

- Equalization baffle – Aluminum
- Frame and perforated face panel – Steel

+ Options

- Ships with protective film on face
- Mud frame option for plaster applications
- Discrete or continuous applications

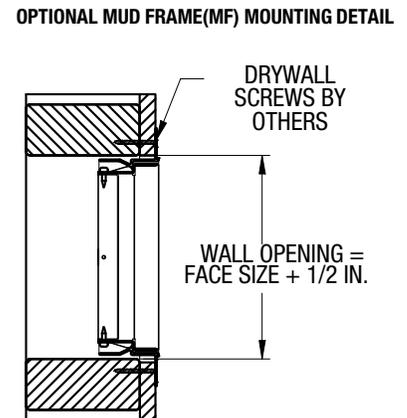
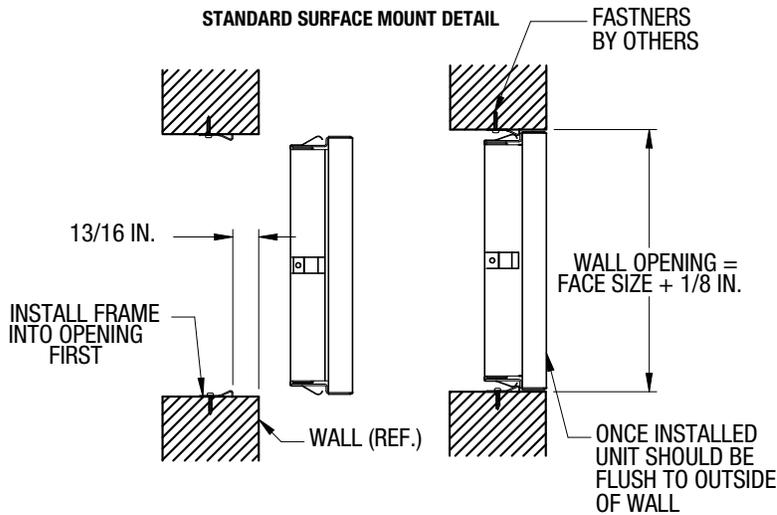
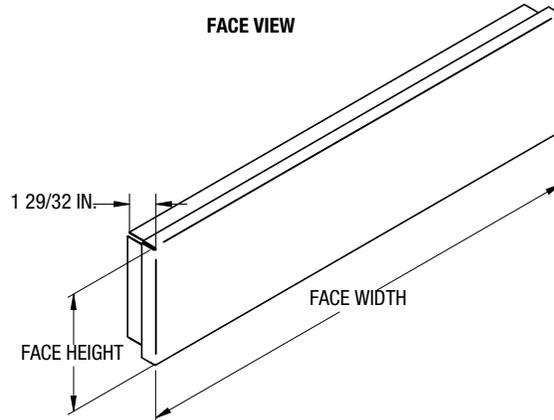
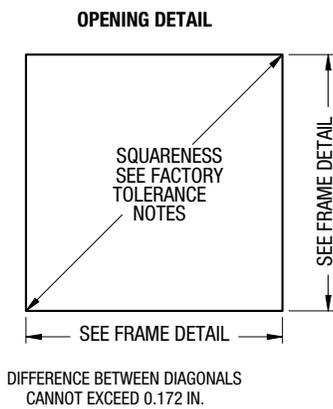
- Curved face options

- Standard finishes: White (B12), Grey (B15), Black (B17), baked enamel to match sample (B25)
- Custom color to match

DIMENSIONAL DATA

Sizes

- + Minimum 6 x 4 in.
- + Maximum 60 x 42 in.
- + Diffusers of larger sizes supplied in multiple sections



PERFORMANCE DATA

Riser Applications

Unit Size W x H [in]	Nominal Face Velocity [fpm]	Nominal Air Flow [cfm]	Total Pressure [in. w.g.]	Static Pressure [in. w.g.]	Noise Criteria [NC]	Proximity to Outlet [ft]			
						DR 20%		Adjacent Zone	
						ΔT = 5 °F	ΔT = 10 °F	ΔT = 5°F	ΔT = 10°F
24 x 4	20	13	-	-	-	-	-	-	-
	30	20	-	-	-	-	-	-	-
	40	27	-	-	-	1	1	-	-
	50	33	-	-	-	2	3	3	3
24 x 6	20	20	-	-	-	-	-	-	-
	30	30	-	-	-	-	-	-	-
	40	40	-	-	-	2	3	2	2
	50	50	0.01	0.01	-	4	5	5	5
24 x 8	20	27	-	-	-	-	-	-	-
	30	40	-	-	-	-	1	-	-
	40	53	-	-	-	3	4	3	3
	50	67	0.01	0.01	-	5	6	7	7
30 x 4	20	17	-	-	-	-	-	-	-
	30	25	-	-	-	-	-	-	-
	40	33	-	-	-	2	2	2	2
	50	42	-	-	-	4	5	5	5
30 x 6	20	25	-	-	-	-	-	-	-
	30	38	-	-	-	-	1	-	-
	40	50	-	-	-	3	4	4	4
	50	63	0.01	0.01	-	6	7	7	7
30 x 8	20	33	-	-	-	-	-	-	-
	30	50	-	-	-	1	2	2	2
	40	67	-	-	-	4	5	6	6
	50	83	0.01	0.01	-	7	8	9	9
36 x 4	20	20	-	-	-	-	-	-	-
	30	30	-	-	-	-	1	-	-
	40	40	-	-	-	3	4	3	3
	50	50	0.01	0.01	-	5	6	6	7
36 x 6	20	30	-	-	-	-	-	-	-
	30	45	-	-	-	1	2	2	2
	40	60	-	-	-	4	5	5	6
	50	75	0.01	0.01	-	7	8	9	9
48 x 12	20	80	-	-	-	2	3	2	2
	30	120	-	-	-	6	7	8	8
	40	160	0.01	0.01	-	10	11	12	12
	50	200	0.02	0.02	-	12	14	15	15

Performance Notes:

1. Sound and pressure drop tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cubic feet per minute, cfm.
3. Pressure is in inches of water, in. w.g.
4. The NC values, sound pressure level, are based on a room absorption of 10 dB, re 10⁻¹² watts and one diffuser.
5. ΔT is the difference between the room air temperature 3 ½ ft above the floor and the temperature of the supply air.
6. Proximity to outlet is the minimum distance from an outlet to the occupant in order to achieve the listed DR value.
7. Distances closer to the diffuser have a higher DR than the cataloged value.
8. DR is the predicted percentage of people dissatisfied (PPD) due to draft. A value of less than 20 meets the requirements of ASHRAE Standard 55-2004, Thermal Environmental Conditions for Human Occupancy.
9. Blanks "-" indicate that the DR is below the specified value at all distances from the diffuser face.
10. DR catalog data is presented for an occupant density of 25 people/1000ft², which is the default occupancy density for classrooms (ages 5-8) given by ASHRAE 62.1-2004. For other occupant densities, please refer to the DV Room Designer Software.
11. The Adjacent zone describes the distance from the face of the diffuser and measured 1 in. from the floor, at which the supply air velocity is 50 fpm.

PERFORMANCE DATA

In-Wall Applications

Unit Size W x H [in]	Nominal Face Velocity [fpm]	Nominal Air Flow [cfm]	Total Pressure [in. w.g.]	Static Pressure [in. w.g.]	Noise Criteria [NC]	Proximity to Outlet [ft]			
						DR 20%		Adjacent Zone	
						$\Delta T = 5\text{ }^\circ\text{F}$	$\Delta T = 10\text{ }^\circ\text{F}$	$\Delta T = 5\text{ }^\circ\text{F}$	$\Delta T = 10\text{ }^\circ\text{F}$
24 x 24	20	80	-	-	-	-	1	-	-
	30	120	-	-	-	4	5	5	6
	40	160	0.01	0.01	-	7	8	9	10
	50	200	0.02	0.02	-	10	11	13	13
24 x 30	20	100	-	-	-	1	2	1	1
	30	150	-	-	-	5	6	7	7
	40	200	0.01	0.01	-	8	9	11	11
	50	250	0.02	0.02	-	11	12	14	14
24 x 36	20	120	-	-	-	2	2	1	2
	30	180	-	-	-	6	7	8	8
	40	240	0.01	0.01	-	9	10	12	12
	50	300	0.02	0.02	-	12	13	15	15
24 x 48	20	160	-	-	-	2	3	3	4
	30	240	-	-	-	7	8	9	9
	40	320	0.01	0.01	-	10	12	13	13
	50	400	0.02	0.02	-	13	15	16	17
30 x 24	20	100	-	-	-	1	2	2	2
	30	150	-	-	-	6	7	7	8
	40	200	0.01	0.01	-	9	10	11	12
	50	250	0.02	0.02	-	12	13	15	15
36 x 24	20	120	-	-	-	3	4	3	3
	30	180	-	-	-	7	8	9	9
	40	240	0.01	0.01	-	11	12	13	13
	50	300	0.02	0.02	-	13	15	16	16
48 x 24	20	160	-	-	-	5	6	6	6
	30	240	-	-	-	9	10	11	12
	40	320	0.01	0.01	-	13	14	16	16
	50	400	0.02	0.02	-	16	17	19	19

Performance Notes:

1. Sound and pressure drop tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cubic feet per minute, cfm.
3. Pressure is in inches of water, in. w.g.
4. The NC values, sound pressure level, are based on a room absorption of 10 dB, re 10⁻¹² watts and one diffuser.
5. ΔT is the difference between the room air temperature 3 ½ ft above the floor and the temperature of the supply air.
6. Proximity to outlet is the minimum distance from an outlet to the occupant in order to achieve the listed DR value.
7. Distances closer to the diffuser have a higher DR than the cataloged value.
8. DR is the predicted percentage of people dissatisfied (PPD) due to draft. A value of less than 20 meets the requirements of ASHRAE Standard 55-2004, Thermal Environmental Conditions for Human Occupancy.
9. Blanks "-" indicate that the DR is below the specified value at all distances from the diffuser face.
10. DR catalog data is presented for an occupant density of 25 people/1000ft², which is the default occupancy density for classrooms (ages 5-8) given by ASHRAE 62.1-2004. For other occupant densities, please refer to the DV Room Designer Software.
11. The Adjacent zone describes the distance from the face of the diffuser and measured 1 in. from the floor, at which the supply air velocity is 50 fpm.



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