

FRFD

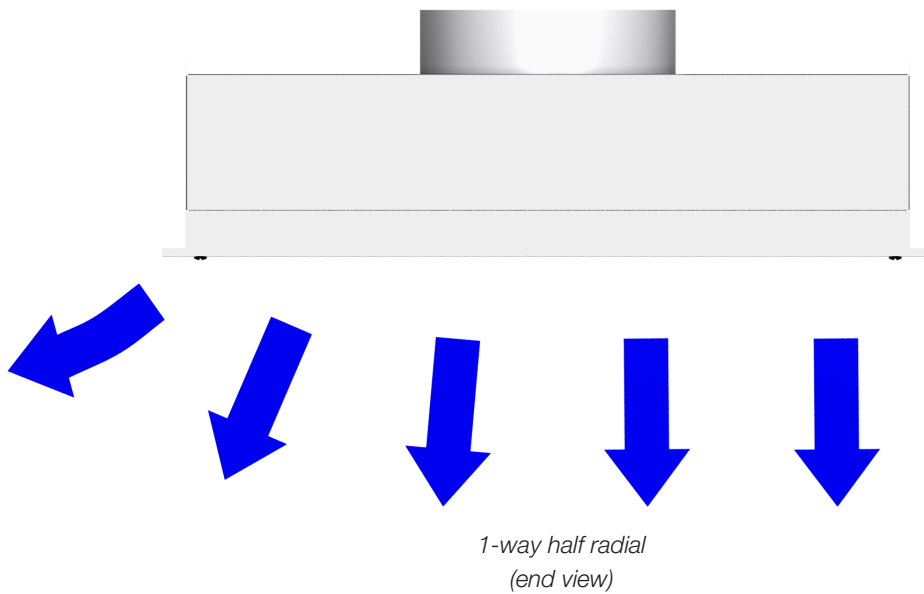
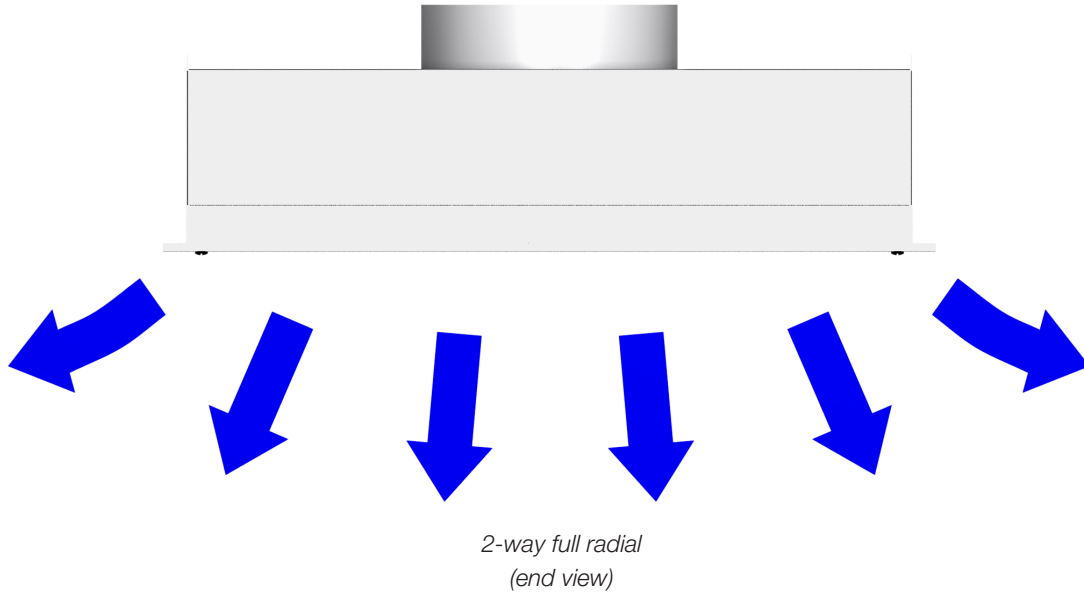
FLUSH FACE RADIAL FLOW DIFFUSER



FRFD

Flush Face Radial Flow Diffuser

The Flush Face Radial Flow Diffuser (FRFD) is designed to maximize comfort while handling large volumes of air in confined spaces with low room air velocities. Typically mounted in the ceiling with a full radial air pattern, FRFDs produce a low initial face velocity and minimizes entrainment of room air.



AIRFLOW PATTERN

- + Available with fixed airflow pattern:
 - Fixed pattern is available as 1-way half radial or 2-way full radial airflow.

VERSATILE FACE OPTIONS

- + The flush face design prevents interference with sprinkler heads or other ceiling equipment, while maintaining a superior architectural appeal.
- + Further architectural flexibility is available with the choice between a perforated face and angled deflector vanes.



TYPICAL APPLICATIONS

FRFD flush face radial flow diffusers are commonly used in laboratories and airborne infectious isolation rooms where short throw and high airflow capacity are required. These diffusers provide a high level of dilution while maintaining occupant comfort with a minimal number of diffusers. The FRFD is a combination of ASHRAE group A and group E diffusers and meets ASHRAE 170 requirements for ventilation of healthcare facilities.

CONSTRUCTION

- + Material
 - Face Options
 - Aluminum
 - Stainless Steel
 - Plenum Options
 - Aluminum
 - Stainless Steel
 - Steel
- + Style
 - 1-Way / 2-Way Face with Flush Angled Deflector Vanes
 - 1-Way / 2-Way Perforated Face
- + Options
 - External insulation
 - Adjustable inlet damper
 - Hybrid construction
 - One-Piece welded plenum
 - Protective film

FRFD

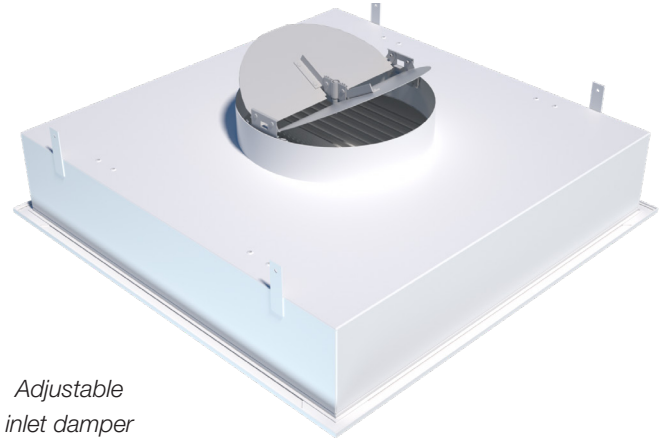
Flush Face Radial Flow Diffuser

CLEANING & MAINTENANCE

- + FRFD units satisfy all ASHRAE 170 requirements for diffuser cleaning and maintenance.
- + Powder coat paint finish formulated for routine exposure to hospital grade cleaning solutions and disinfectants.
- + Stainless steel 1/4 turn fasteners and retainer cables provide straightforward and convenient access to the plenum for cleaning or damper adjustment.

ADJUSTABLE INLET DAMPER

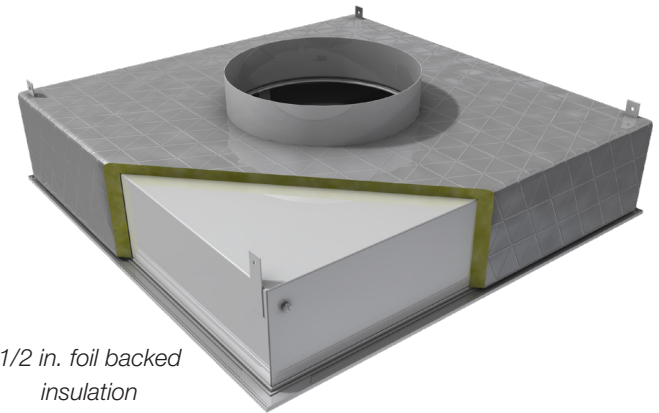
- + The optional butterfly-style inlet air damper allows for air balancing and fine tuning, ensuring delivery of the desired quantity of air.
- + The optimized blade design minimizes sound and pressure drop.
- + Aluminum or stainless steel construction.



Adjustable inlet damper

FACTORY INSTALLED INSULATION

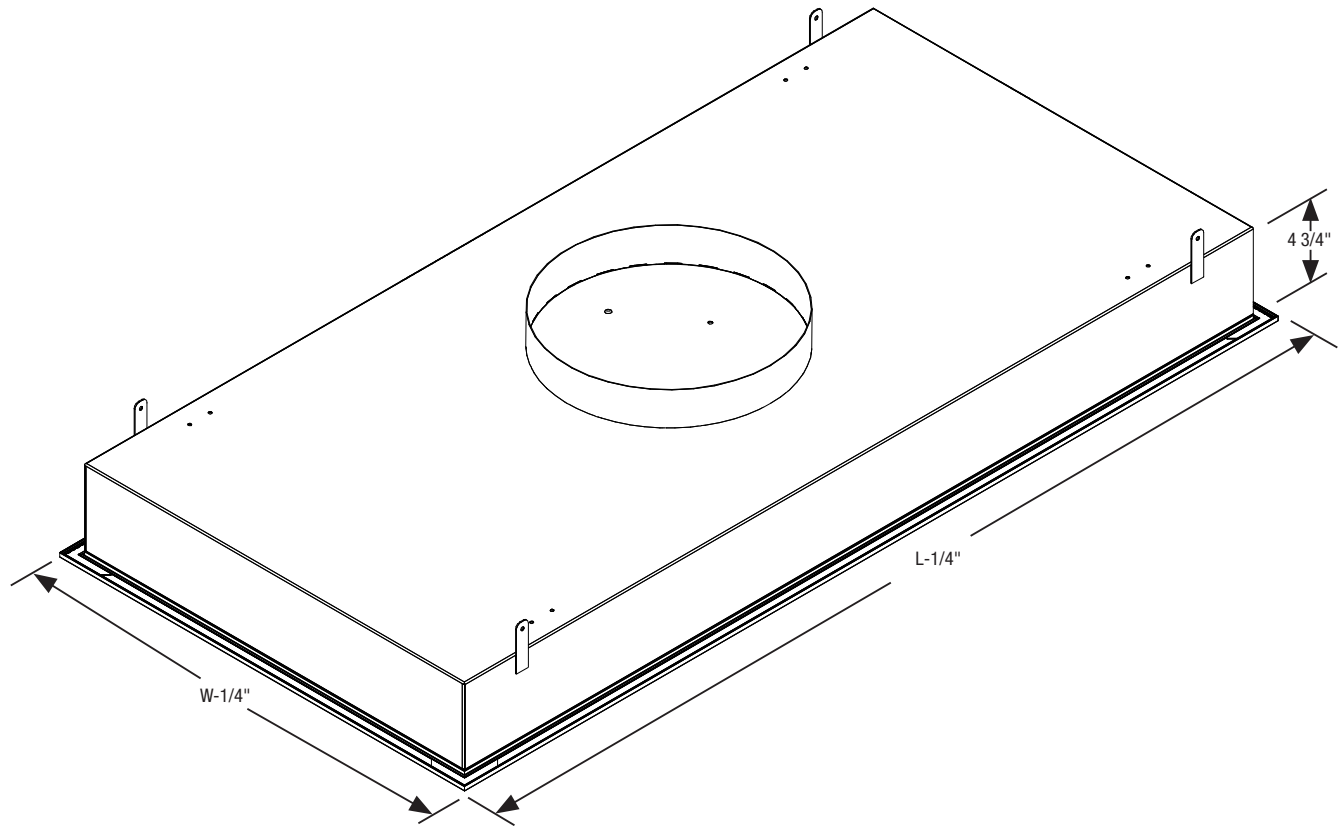
- + Ensures quality application and minimizes field labor with factory installed insulation.
- + Eliminates condensation risk associated with unconditioned plenum air exposure to cold diffuser surfaces.
- + Reduced thermal gain improves energy savings.
- + Insulation meets ASTM E84 and UL723 requirements.



1/2 in. foil backed insulation



DIMENSIONAL DATA



Nominal Sizes	
W x L	Inlet Sizes
24 in. x 24 in.	8
24 in. x 24 in.	10
24 in. x 48 in.	10
24 in. x 48 in.	12

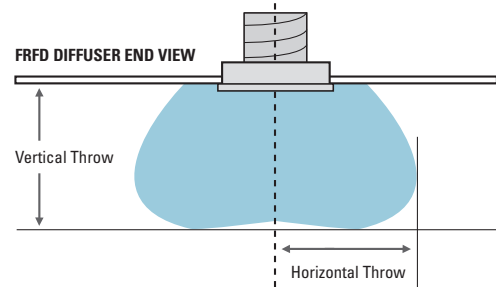
PERFORMANCE DATA

FRFD with 1-Way / 2-Way Face

Air Pattern	Unit Size (in.)	Inlet Size (in.)	Air Flow (cfm)	Static Pressure (in. w.g.)	Total Pressure (in. w.g.)	Sound (NC)	Throw (ft.) 100 - 75 - 50 fpm					
							Vertical			Horizontal		
							5 °F	10 °F	15 °F	5 °F	10 °F	15 °F
1- Way Radial Pattern	24 x 24	8	200	0.028	0.049	-	1-2-4	1-3-5	1-3-5	1-3-4	1-4-5	1-4-5
			300	0.064	0.110	23	1-2-4	1-3-5	2-4-6	2-4-5	2-4-6	2-4-6
			400	0.114	0.196	32	1-3-5	2-4-5	2-4-6	3-4-6	3-5-7	3-5-7
		10	300	0.049	0.068	-	1-2-4	1-3-5	2-4-6	2-4-5	2-4-6	2-4-6
			400	0.088	0.121	26	1-3-5	2-4-5	2-4-6	3-4-6	3-5-7	3-5-7
			600	0.198	0.273	38	2-4-7	3-5-8	3-6-9	4-6-8	5-7-9	5-7-9
	24 x 48	10	400	0.034	0.067	20	1-3-4	3-4-5	3-5-6	3-3-4	4-4-5	4-5-5
			600	0.075	0.151	32	2-4-5	5-5-6	5-6-8	4-4-5	5-5-6	5-6-6
			800	0.134	0.268	41	4-5-6	6-7-8	7-8-9	4-5-6	5-6-6	6-7-7
		12	600	0.052	0.088	25	3-4-5	3-4-6	3-5-6	3-4-6	3-5-7	3-5-7
			800	0.092	0.157	35	4-5-6	4-5-6	4-6-7	5-6-8	5-6-8	5-7-9
			1000	0.144	0.246	42	4-5-6	4-6-7	4-6-8	5-7-9	6-8-9	7-9-10
2- Way Radial Pattern	24 x 24	8	200	0.024	0.044	-	1-3-3	1-3-5	2-4-6	1-2-3	1-2-3	1-3-3
			300	0.053	0.099	23	1-3-4	1-4-6	4-5-7	2-3-4	2-3-4	3-4-5
			400	0.095	0.177	32	3-4-6	3-5-7	4-6-8	3-4-6	3-5-6	4-6-7
		10	300	0.036	0.055	-	1-2-4	1-4-6	3-5-8	1-2-4	2-3-5	2-4-5
			400	0.065	0.098	23	3-4-6	4-5-7	5-6-8	3-4-6	4-5-6	4-5-6
			600	0.150	0.221	38	4-5-6	5-6-8	6-7-8	5-5-6	5-8-9	6-8-10
	24 x 48	10	400	0.036	0.069	23	1-1-2	1-2-2	3-4-5	2-2-3	2-2-3	3-3-4
			600	0.081	0.156	35	2-2-3	4-5-6	5-6-7	3-4-4	4-5-6	5-6-6
			800	0.144	0.278	44	4-4-5	6-7-7	8-8-9	5-5-6	6-6-7	6-7-8
		12	600	0.054	0.091	28	1-2-3	4-5-6	4-5-6	1-2-3	2-3-3	3-4-4
			800	0.096	0.161	37	2-3-4	4-5-6	5-6-7	2-3-5	4-4-5	5-6-6
			1000	0.150	0.252	43	3-4-4	5-5-6	6-6-7	4-5-6	5-6-7	6-7-7

Performance Notes:

1. Units are tested in accordance with ASHRAE Standard 70-2006.
2. Air flow is in cubic feet per minute, cfm.
3. All pressures are 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. Blanks "-" indicate an NC level below 20.



PERFORMANCE DATA

FRFD with 1-Way / 2-Way Perforated Face

Air Pattern	Unit Size (in.)	Inlet Size (in.)	Air Flow (cfm)	Static Pressure (in. w.g.)	Total Pressure (in. w.g.)	Sound (NC)	Throw (ft.) 100 - 75 - 50 fpm					
							Vertical			Horizontal		
							5 °F	10 °F	15 °F	5 °F	10 °F	15 °F
1- Way Radial Pattern	24 x 24	8	200	0.016	0.036	-	1-1-2	1-2-4	1-3-6	1-2-3	1-2-3	1-2-3
			300	0.036	0.082	22	2-2-3	2-3-5	2-4-7	2-3-4	2-3-4	2-3-5
			400	0.064	0.146	33	2-2-4	2-4-6	2-4-7	2-3-4	2-3-5	2-3-5
		10	300	0.026	0.045	-	1-1-2	1-2-5	1-3-5	1-2-3	1-2-5	1-3-5
			400	0.046	0.080	23	1-2-3	1-3-5	2-4-7	1-2-4	2-3-5	2-3-5
			600	0.103	0.168	36	1-3-6	1-4-7	3-5-7	1-3-5	2-4-5	2-3-5
	24 x 48	10	400	0.038	0.072	-	2-3-4	2-3-5	2-5-8	1-2-3	1-2-3	1-1-2
			600	0.086	0.162	29	2-3-6	3-4-6	5-6-8	1-2-3	2-2-3	2-3-4
			800	0.153	0.289	37	4-4-7	2-5-7	5-6-8	3-3-4	3-3-4	3-3-4
		12	600	0.070	0.106	23	3-4-5	4-5-6	5-6-7	2-2-3	3-3-4	3-3-4
			800	0.125	0.190	34	5-6-7	5-5-6	5-6-7	3-4-5	3-3-4	3-3-4
			1000	0.195	0.296	39	5-6-7	5-6-7	7-7-8	3-3-3	4-4-5	4-4-5
2- Way Radial Pattern	24 x 24	8	200	0.014	0.034	-	1-1-2	1-2-3	1-2-3	1-2-3	1-1-2	0-1-1
			300	0.032	0.078	22	1-3-5	1-3-5	1-3-5	1-2-4	1-2-3	1-1-2
			400	0.057	0.139	30	1-3-6	1-3-6	1-3-6	1-3-4	2-3-4	1-2-3
		10	300	0.023	0.042	-	1-3-5	1-3-6	1-3-6	1-2-3	1-1-2	1-1-2
			400	0.041	0.075	23	2-3-6	2-5-7	2-5-7	2-3-4	2-3-3	2-2-2
			600	0.093	0.169	36	3-5-7	3-5-7	3-5-8	2-3-4	2-3-4	2-3-4
	24 x 48	10	400	0.039	0.074	-	1-2-3	1-3-4	2-3-4	1-2-3	1-2-2	1-2-2
			600	0.089	0.165	33	2-3-5	2-4-6	2-4-7	1-2-3	2-2-3	2-2-2
			800	0.158	0.292	40	3-5-7	3-5-6	4-6-8	2-3-4	2-3-4	2-3-4
		12	600	0.066	0.102	26	1-3-5	1-4-7	2-4-7	1-1-2	1-1-2	1-1-2
			800	0.118	0.183	36	2-3-5	3-5-7	3-5-7	1-1-2	2-2-3	2-2-3
			1000	0.185	0.286	42	2-4-7	3-5-7	3-5-7	1-1-2	2-2-3	2-2-3

Performance Notes:

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