# RFD

## RADIAL FLOW DIFFUSER

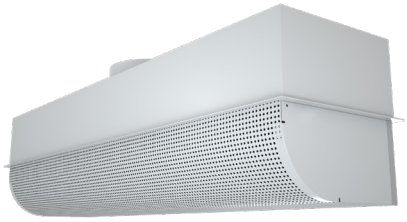
price | CRITICAL ENVIRONMENTS

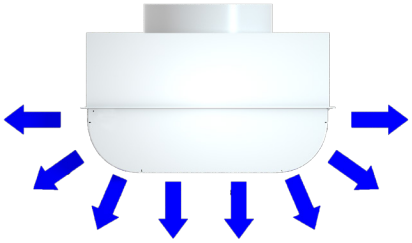
# RFD
## Radial Flow Diffuser

The Radial Flow Diffuser (RFD)'s patented construction is designed to handle large volumes of air with extremely short throws to minimize velocity in the occupied zone. Ideal for use in laboratories, the RFD is able to provide large volumes of make-up air, at low velocity, without adversely impacting containment at fume hoods.

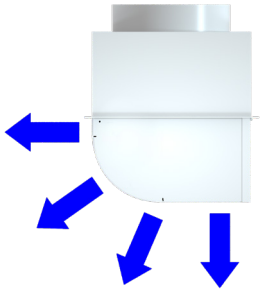
# INDUSTRY LEADING PERFORMANCE

+ The RFD's semi-cylindrical construction provides exceptional performance through the increased surface area of the face, producing low initial face velocity and minimizing entrainment of room air.
+ Available with fixed 1-way half radial or 2-way full radial airflow pattern.





*2-way full radial airflow*



*1-way half radial airflow*

# CLEANING & MAINTENANCE

+ RFD 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.

# TYPICAL APPLICATIONS

The RFD is commonly used in laboratories and airborne infectious isolation rooms where short throw and high airflow capacity are required. This diffuser is able to provide a high level of dilution while maintaining occupant comfort with a minimal number of diffusers. The RFD is a combination of ASHRAE group A and group E diffuser and meets ASHRAE 170 requirements for the ventilation of healthcare facilities.

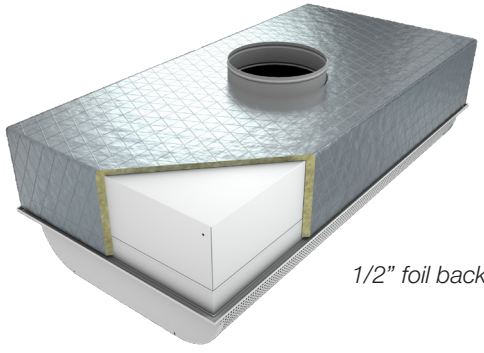
## CONSTRUCTION

+ Material
  - Aluminum (RFD)
  - Stainless steel (RFDSS)
+ Airflow pattern
  - 1-way half radial
  - 2-way full radial
+ Options
  - Exterior insulation

## 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*

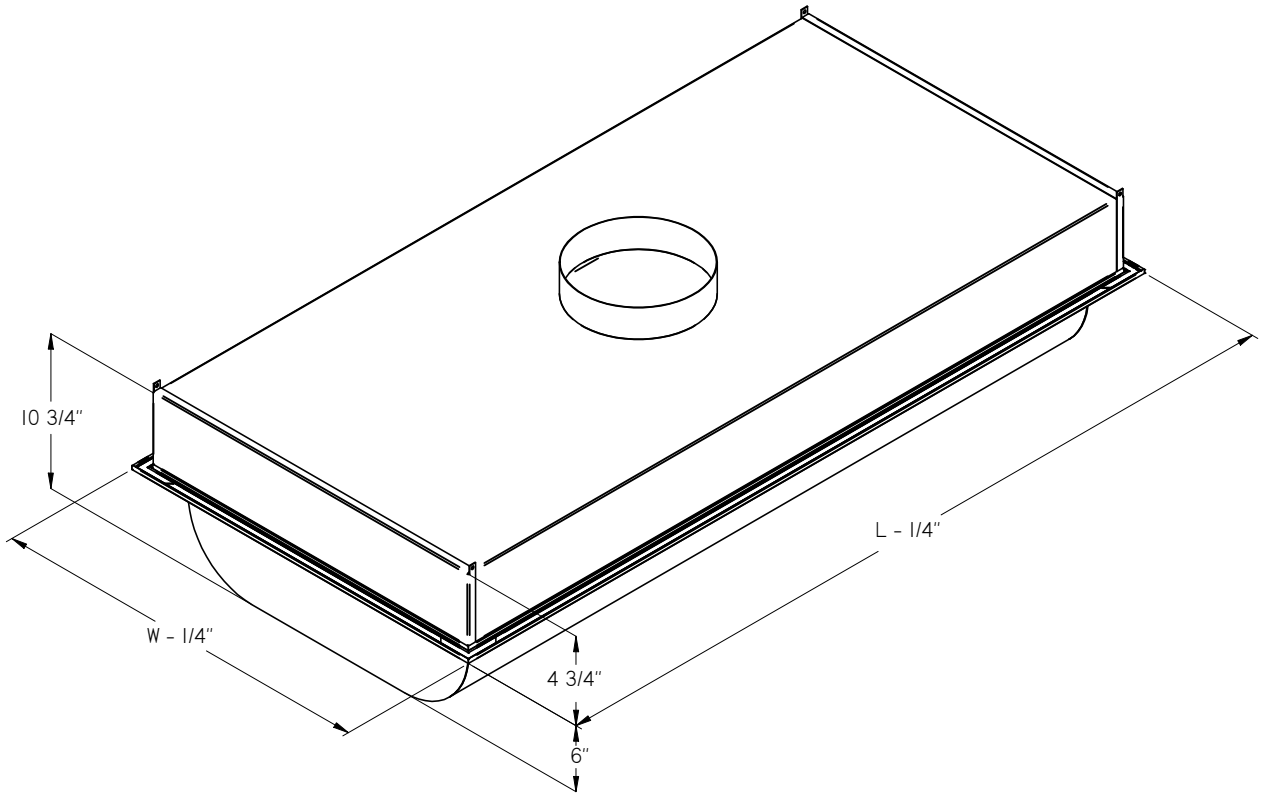


*1/2" foil backed insulation*

## 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 for improved energy savings
+ Meets ASTM E84 and UL723 requirements

# DIMENSIONAL DATA




| Airflow | Nominal Sizes | |
|---|---|---|
| | W x L | Inlet Sizes |
| 1-way | 12 in. x 24 in. | 8 |
| | 12 in. x 48 in. | 8 |
| | 24 in. x 24 in. | 8 |
| | 24 in. x 48 in. | 12 |
| 2-way | 24 in. x 24 in. | 8 |
| | 24 in. x 48 in. | 12 |

# PERFORMANCE DATA

| Air Pattern | Unit 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 |
| 1-Way Blow | 12 x 24 | 50 | 0.003 | 0.004 | - | 1-1-1 | 1-1-1 |
| | | 100 | 0.011 | 0.016 | - | 1-2-2 | 1-1-2 |
| | | 150 | 0.025 | 0.036 | - | 2-2-3 | 1-2-3 |
| | | 200 | 0.045 | 0.064 | 15 | 2-3-3 | 2-2-5 |
| | | 250 | 0.07 | 0.1 | 23 | 3-3-4 | 2-3-6 |
| | | 300 | 0.1 | 0.144 | 29 | 3-3-4 | 3-5-7 |
| | | 350 | 0.136 | 0.196 | 34 | 3-4-4 | 4-6-8 |
| | | 400 | 0.178 | 0.256 | 39 | 3-4-4 | 5-6-8 |
| | | 450 | 0.225 | 0.324 | 43 | 3-4-5 | 5-7-9 |
| | 12 x 48 | 100 | 0.00 | 0.01 | - | 0.5-0.5-1 | 0.5-0.5-1 |
| | | 150 | 0.01 | 0.02 | - | 0.5-1-1.5 | 1-1.5-1.5 |
| | | 200 | 0.02 | 0.04 | - | 1-1-2 | 1-1.5-2 |
| | | 250 | 0.03 | 0.06 | 18 | 1-1.5-2 | 1.5-2-3 |
| | | 300 | 0.04 | 0.09 | 23 | 1.5-2-2.5 | 1.5-2.5-3.5 |
| | | 350 | 0.06 | 0.12 | 28 | 1.5-2-3 | 2-2.5-4 |
| | | 400 | 0.07 | 0.15 | 32 | 2-2.5-3.5 | 2.5-3-4.5 |
| | | 450 | 0.09 | 0.19 | 35 | 2-2.5-4 | 2.5-3.5-5 |
| | | 500 | 0.11 | 0.24 | 38 | 2.5-3-4.5 | 3-4-5.5 |
| | 24 x 24 | 100 | 0.00 | 0.01 | - | 1-1.5-2.5 | 0.5-1-1.5 |
| | | 150 | 0.01 | 0.02 | - | 2-2.5-3.5 | 1.5-1.5-2 |
| | | 200 | 0.02 | 0.04 | - | 2.5-3.5-4 | 2-2-2.5 |
| | | 250 | 0.04 | 0.07 | 18 | 3-3.5-4.5 | 2-2.5-3 |
| | | 300 | 0.05 | 0.10 | 23 | 3.5-4-5 | 2-2.5-3 |
| | | 350 | 0.07 | 0.13 | 27 | 4-4.5-5.5 | 2.5-2.5-3 |
| | | 400 | 0.09 | 0.17 | 31 | 4-4.5-6 | 2.5-3-3.5 |
| | | 450 | 0.12 | 0.22 | 34 | 4.5-5-6 | 3-3-3.5 |
| | | 500 | 0.14 | 0.27 | 37 | 4.5-5.5-6.5 | 3-3.5-4 |
| | 24 x 48 | 300 | 0.01 | 0.02 | - | 1.5-2-2.5 | 0.5-1-1.5 |
| | | 350 | 0.02 | 0.03 | - | 1.5-2-3 | 1-1.5-2 |
| | | 400 | 0.02 | 0.04 | - | 2-2.5-3.5 | 1-1.5-2 |
| | | 450 | 0.03 | 0.05 | - | 2-2.5-4 | 1-1.5-2 |
| | | 500 | 0.03 | 0.06 | - | 2.5-3-4.5 | 1-2-2.5 |
| | | 600 | 0.04 | 0.08 | 21 | 2.5-3.5-5.5 | 1.5-2-3 |
| | | 700 | 0.06 | 0.11 | 26 | 3-4-6 | 1.5-2.5-3 |
| | | 800 | 0.09 | 0.15 | 31 | 3.5-5-7 | 2-2.5-3.5 |
| | | 900 | 0.11 | 0.19 | 36 | 4-5.5-8 | 2-3-4 |
| | | 1000 | 0.13 | 0.23 | 40 | 4.5-6-9 | 2.5-3-4.5 |
| 2-Way Blow | 24 x 24 | 200 | 0.02 | 0.04 | - | 1-1.5-2.5 | 0.5-1-1.5 |
| | | 250 | 0.03 | 0.06 | - | 1.5-2-3 | 1-1.5-2 |
| | | 300 | 0.04 | 0.09 | 22 | 2-2.5-3.5 | 1.5-1.5-2 |
| | | 350 | 0.06 | 0.12 | 27 | 2-3-4 | 1.5-2-2.5 |
| | | 400 | 0.08 | 0.16 | 33 | 2.5-3.5-4 | 2-2-2.5 |
| | | 450 | 0.10 | 0.20 | 38 | 3-3.5-4.5 | 2-2-2.5 |
| | | 500 | 0.13 | 0.26 | 40 | 3-3.5-4.5 | 2-2.5-3 |
| | 24 x 48 | 400 | 0.01 | 0.03 | - | 1-1-2 | 0.5-1-1.5 |
| | | 500 | 0.02 | 0.05 | - | 1-1.5-2 | 1-1-2 |
| | | 600 | 0.03 | 0.07 | 21 | 1.5-2-2.5 | 1-1.5-2 |
| | | 700 | 0.05 | 0.10 | 27 | 1.5-2-3 | 1.5-1.5-2.5 |
| | | 800 | 0.06 | 0.12 | 33 | 2-2.5-3.5 | 1.5-2-3 |
| | | 900 | 0.08 | 0.16 | 37 | 2-2.5-4 | 1.5-2-3 |
| | | 1000 | 0.09 | 0.19 | 42 | 2.5-3-4.5 | 2-2.5-3.5 |

**Performance Notes:**

1. 1. All pressures are in inches water gauge (in. w.g.)
2. cfm = Air flow in cubic feet per minute, cfm.
3. NC = Noise Criteria. NC values are based on room absorption of 10dB, re $10^{-12}$ watts.
4. Blanks "-" indicate an NC level below 15.
5. Throw is vertical and horizontal to terminal velocities of 100, 75 and 50 fpm based on 10 °F cooling.
6. Throw values are measured from the face of the diffuser.
7. Total pressure, static pressure and NC performance assumes no damper.
8. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."

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