

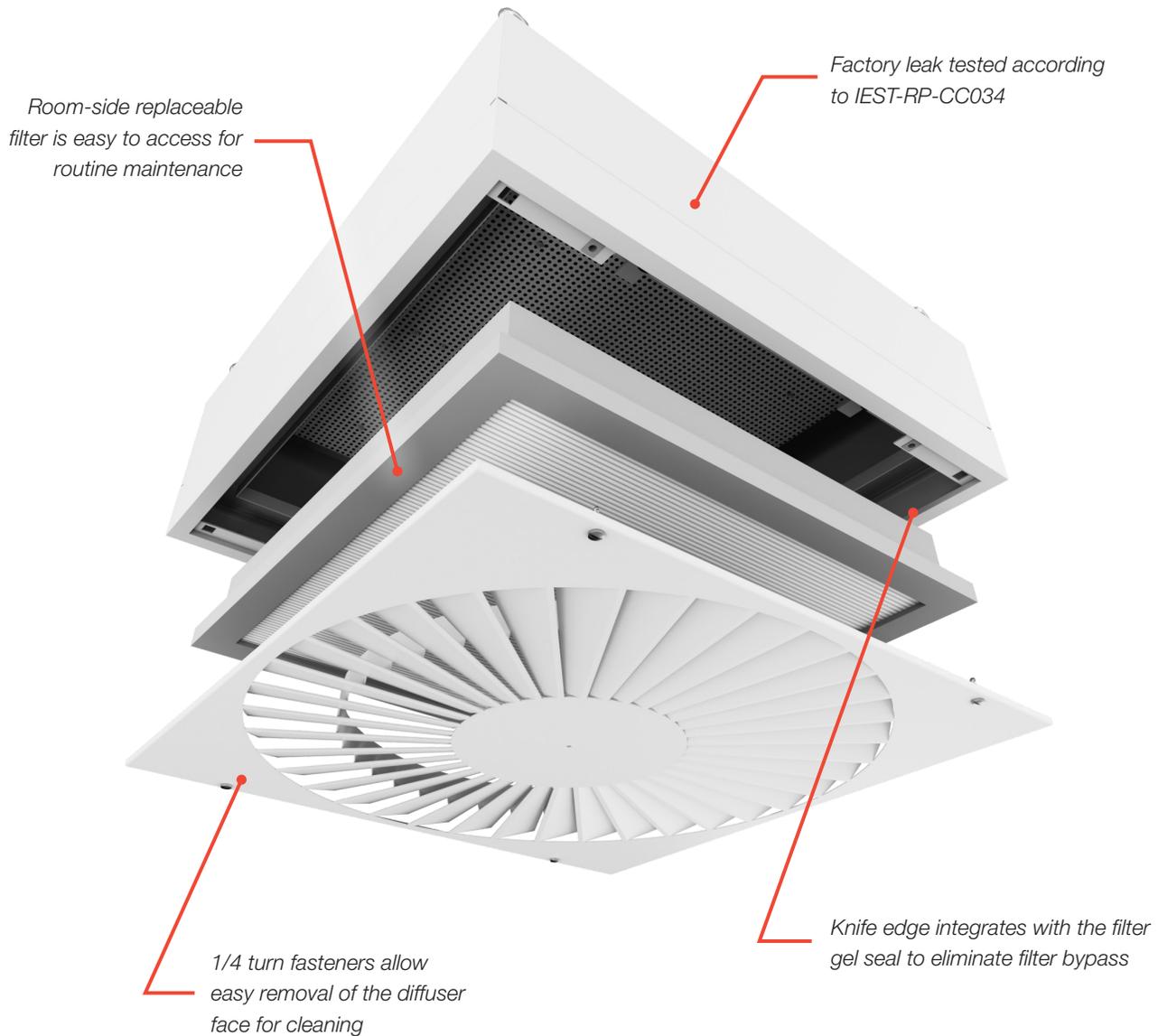
# RVDC

## RADIAL VANE DIFFUSER WITH HEPA FILTER



# **RVDC** Radial Vane Diffuser with HEPA Filter

The Radial Vane Diffuser with HEPA Filter (RVDC) features radial slots that provide a high induction vortex airflow that projects horizontally from the face of the diffuser. The resulting airflow provides rapid mixing of supply air with the room air and short throws, allowing large quantities of air to be introduced while maintaining thermal comfort. The rapid mixing of filtered supply air with the room air reduces particle concentration and is ideal for cleanrooms.



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### ROOM-SIDE REPLACEABLE FILTER

- + Convenient access from the room-side for periodic filter replacement.
- + Gel seal filter frame and diffuser "knife edge" flange form a reliable seal to prevent filter bypass.
- + Optional factory supplied HEPA filter removes 99.99% of particulate.

### FACTORY LEAK TESTING AND CERTIFICATION

- + Every RVDC is factory tested and certified leak-free in accordance with IEST-RP-CC034.

### CLEANING AND MAINTENANCE

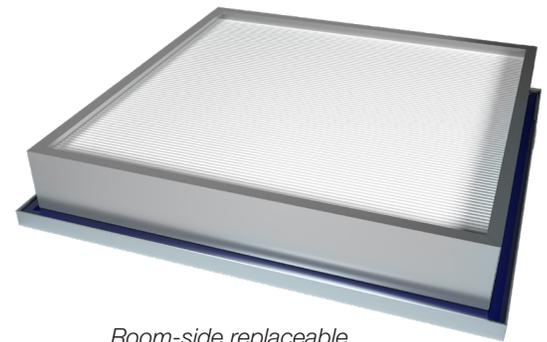
- + RVDC units satisfy all ASHRAE 170 requirements for diffuser cleaning and maintenance.
- + Powder coat paint finish is formulated for routine exposure to hospital grade cleaning solutions and disinfectants.
- + Stainless steel 1/4 turn fasteners and retainer cables provide straightforward and convenient access to the filter and knife-edge frame.

### TYPICAL APPLICATIONS

The air pattern produced by the RVDC promotes a high rate of induction and rapid mixing of clean supply air with the room air, thereby reducing particle concentration and making this product ideal for cleanrooms.

### CONSTRUCTION

- + Options
  - External insulation
  - LED Filter status indicator
  - Aerosol test system
  - Room-side adjustable damper



*Room-side replaceable filter with integral gel seal*



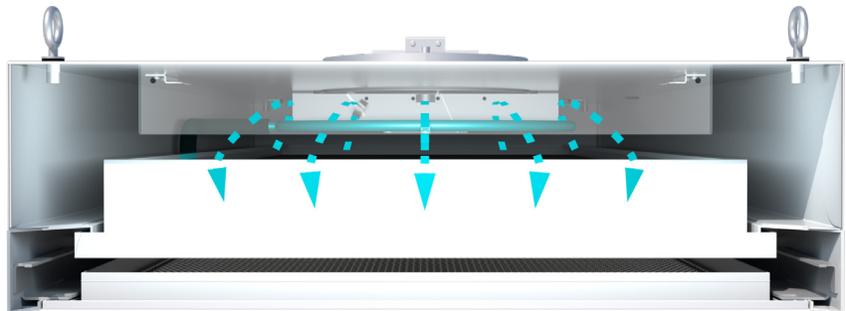
### LED FILTER STATUS INDICATOR

- + An optional LED filter status light, visible from the room-side, changes from green to yellow when the filter is loaded and due for replacement.
- + The LED light is factory calibrated to trigger once the filter pressure drop has increased by 50% above that of an unloaded filter and can be adjusted in the field to suit facility preferences.



### AEROSOL TEST SYSTEM

- + Unique and convenient option when upstream aerosol injection during field commissioning is impractical.
- + The barbed aerosol injection port for 1/2 in. ID tubing and aerosol sample and static pressure port facilitate the complete room-side aerosol challenge of the diffuser.
- + Stainless steel aerosol dispersion ring for equalized aerosol challenge across the entire active filter area.



### AEROSOL SAMPLE & STATIC PRESSURE PORT

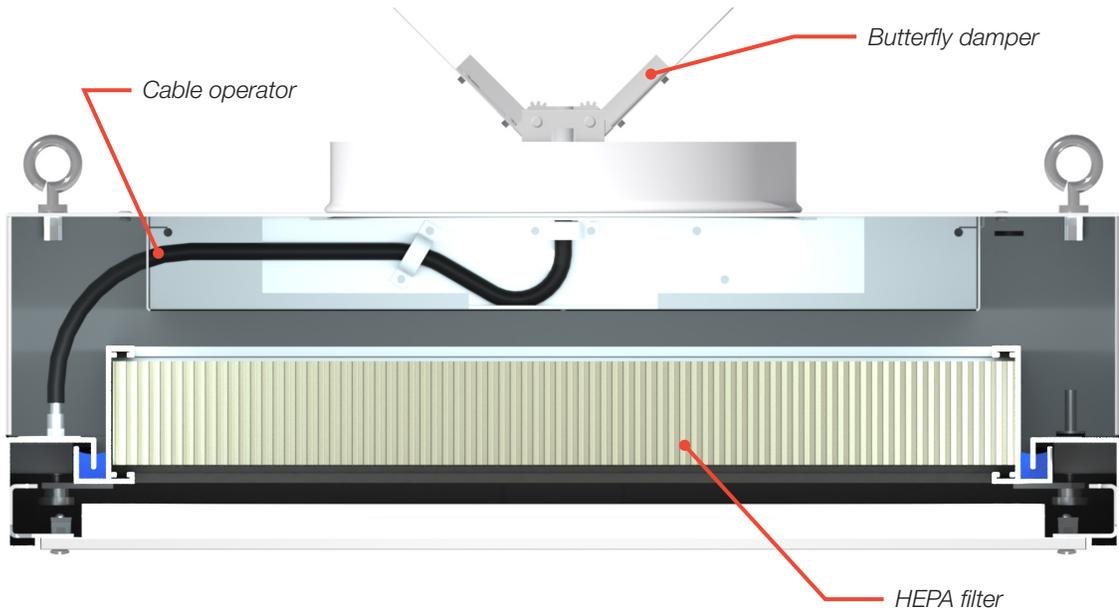
- + Used for room-side field measurement of static pressure and challenge aerosol concentrations upstream of the filter during the commissioning process.

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### ROOM-SIDE ADJUSTABLE DAMPER

- + An optional remote cable operated damper allows adjustment of the damper with the filter in place using a standard screwdriver.
- + Locating the damper operator outside of the filter maximizes filter area, leading to a larger airflow capacity and less pressure drop.

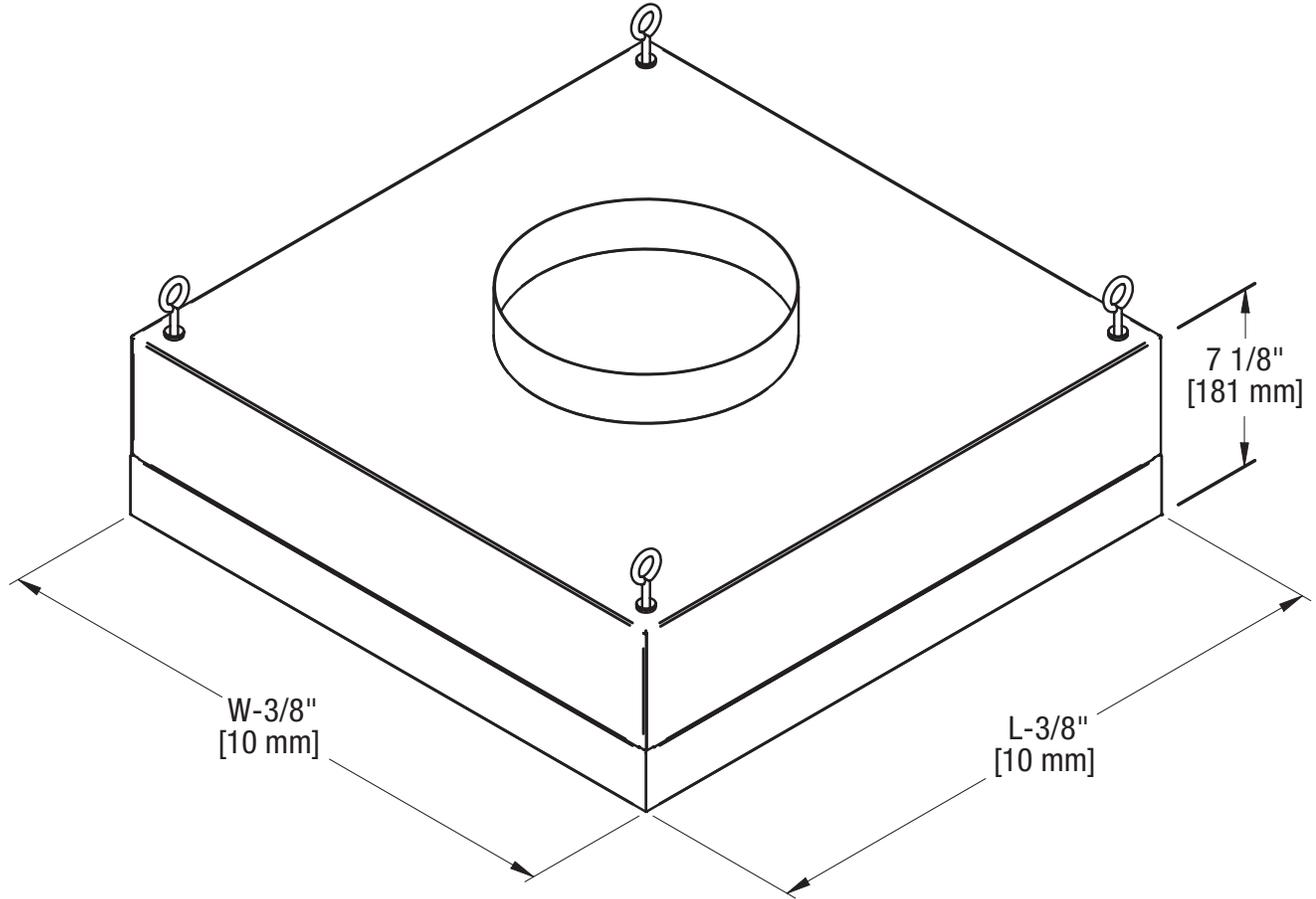


Room-side adjustable damper side view

### EXTERNAL INSULATION

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



**DIMENSIONAL DATA**

Nominal Unit Size (W x L)	Actual Width	Actual Length	Inlet Sizes
24 in. x 24 in. [610 mm x 610 mm]	23.63 in. [600 mm]	23.63 in. [600 mm]	8 in., 10 in., 12 in. [203 mm, 254 mm, 305 mm]

**Notes:**

1. All Metric dimensions are soft conversion.
2. Imperial dimensions are converted to Metric and rounded to the nearest millimeter.

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# PERFORMANCE DATA

## Imperial

Nominal Unit Size (in.)	Air Flow (cfm)	Filter	Static Pressure (in. w.g.)	Sound (NC)	Horizontal Throw (ft.) 150-100-50
24 x 24	150	HE 95% 3 µm	0.14	-	1-2-4
	200		0.21	-	2-3-6
	250		0.28	-	2-4-7
	150	HEPA 99.99% 3 µm	0.36	-	1-2-4
	200		0.50	-	2-3-6
	250		0.62	-	2-4-7
	150	ULPA 99.9995% 3 µm	0.50	-	1-2-4
	200		0.70	-	2-3-6
	250		0.88	-	2-4-7

### Performance Notes:

- sp = Static Pressure, in. w.g., required at inlet for the listed cfm.
- cfm = Air flow in cubic feet per minute [cfm].
- NC = Noise Criteria. NC values are based on room absorption of 10dB, re 10<sup>-12</sup> watts.
- Blanks "-" indicate an NC level below 15.
- Throw are given in feet to terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw values are based on isothermal conditions.
- sp and NC at full open damper position.
- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."

## Metric

Nominal Unit Size (mm)	Air Flow (L/s)	Filter	Static Pressure (Pa)	Sound (NC)	Horizontal Throw (m) 0.75-0.50-0.25
610 x 610	71	HE 95% 3 µm	35	-	0.3-0.6-1.2
	94		52	-	0.6-0.9-1.8
	118		70	-	0.6-1.2-2.1
	71	HEPA 99.99% 3 µm	90	-	0.3-0.6-1.2
	94		124	-	0.6-0.9-1.8
	118		154	-	0.6-1.2-2.1
	71	ULPA 99.9995% 3 µm	124	-	0.3-0.6-1.2
	94		174	-	0.6-0.9-1.8
	118		219	-	0.6-1.2-2.1

### Performance Notes:

- sp = Static Pressure in Pascals, Pa., required at inlet for the listed L/s.
- L/s = Air flow in liters per second [L/s].
- NC = Noise Criteria. NC values are based on room absorption of 10dB, re 10<sup>-12</sup> watts.
- Blanks "-" indicate an NC level below 15.
- Throw are given in feet to terminal velocities of 0.75 m/s (minimum), 0.5 m/s (middle) and 0.25 m/s (maximum).
- Throw values are based on isothermal conditions.
- sp and NC at full open damper position.
- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."



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