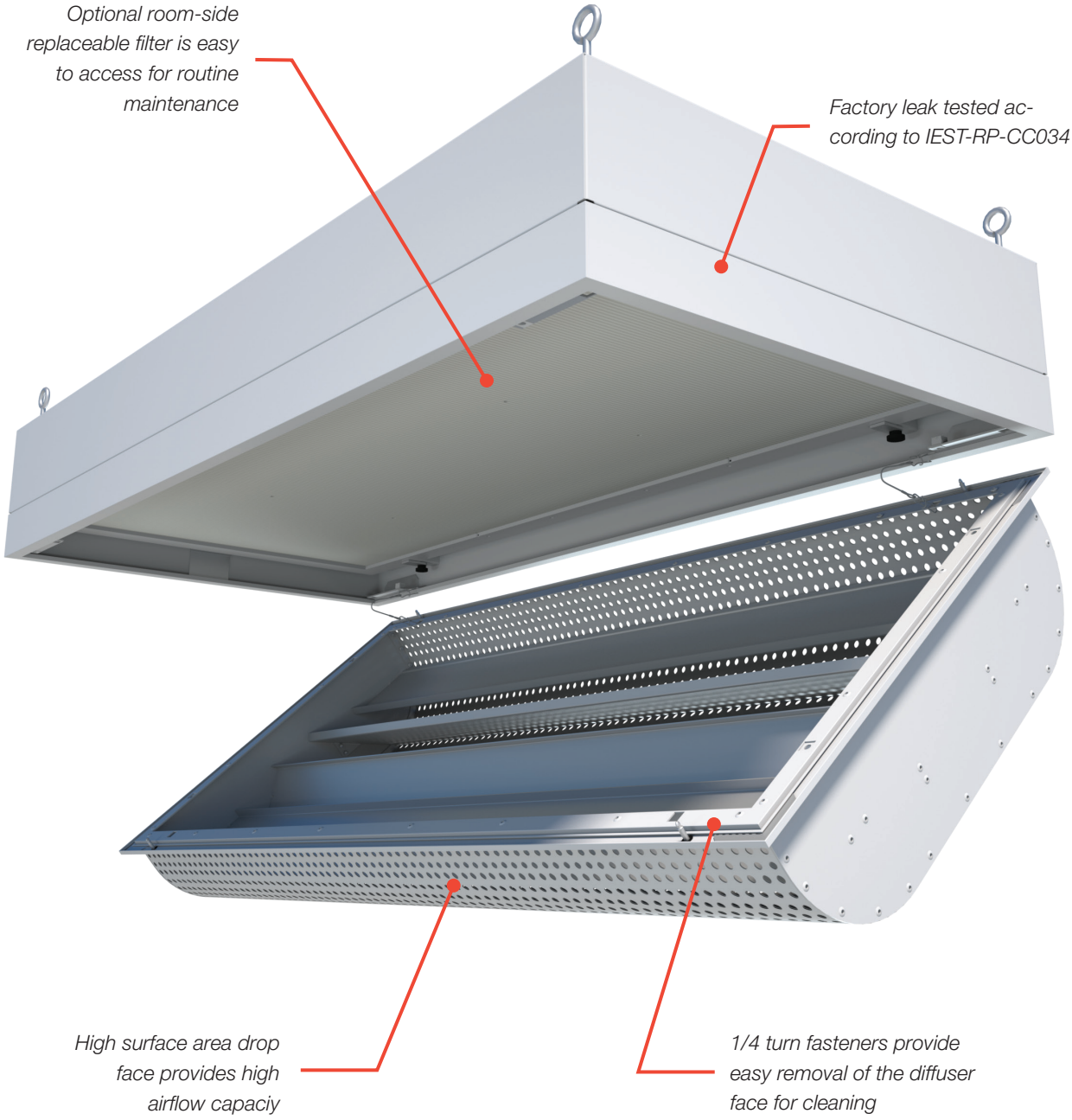
RFDC

RADIAL FLOW DIFFUSER WITH HEPA FILTER

price | CRITICAL ENVIRONMENTS

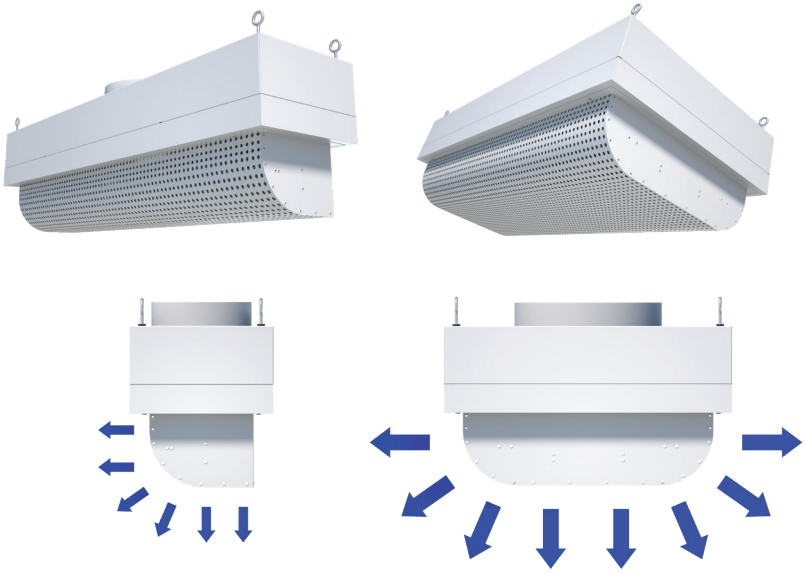
RFDC
Radial Flow Diffuser with HEPA Filter

The Radial Flow Diffuser with HEPA Filter (RFDC) is designed to deliver large volumes of filtered air with extremely short throws to minimize velocity in the occupied zone for critical applications. Ideal for use in laboratories, the RFDC is able to provide large volumes of make-up air without adversely impacting containment at fume hoods.



INDUSTRY LEADING PERFORMANCE

+ The RFDC'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.



1-way radial airflow *2-way radial airflow*

CLEANING & MAINTENANCE

+ RFDC 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

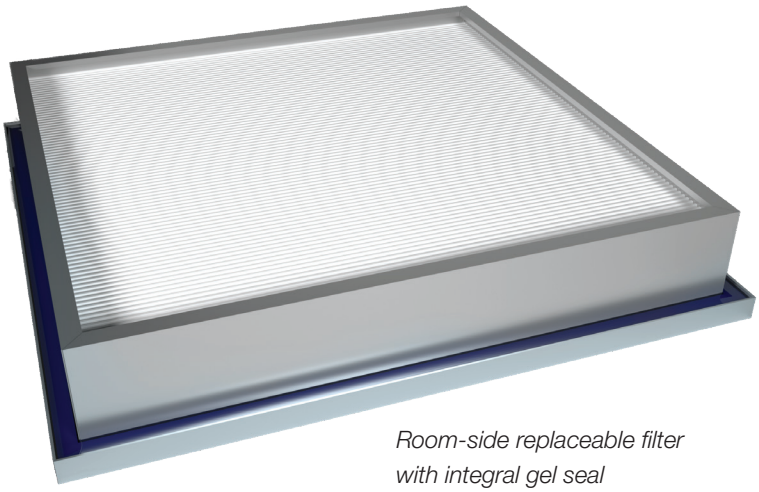
The RFDC is commonly used in laboratories and airborne infectious isolation rooms where short throw and high capacity, filtered airflow are required. These diffusers are able to provide a high level of dilution while maintaining occupant comfort with a minimal number of diffusers. The RFDC is a combination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

CONSTRUCTION

+ Material
  - Aluminum
  - Stainless steel
  - Hybrid
+ Options
  - LED filter status indicator
  - Room-side adjustable damper
  - Aerosol test system (INJ)
  - Equalization basket
  - Casing insulation

ROOM-SIDE REPLACEABLE FILTER

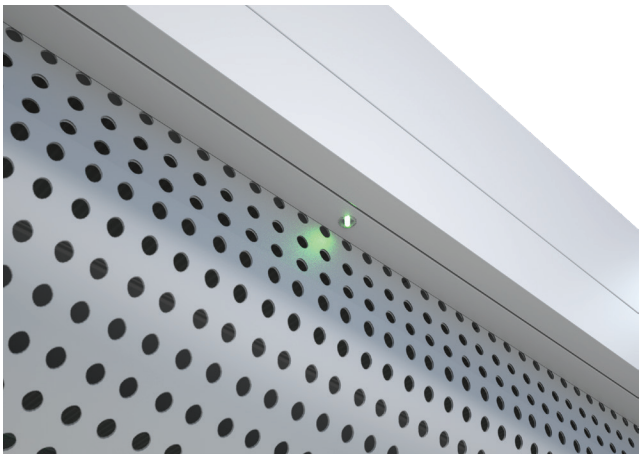
+ Convenient access from the room-side for periodic filter replacement.
+ Gel seal filter frame and diffuser “knife edge” flange create a reliable seal to prevent filer bypass.
+ Compatible with factory supplied HEPA filter for removal of 99.99% of particulate or filter replacement baffle.



Room-side replaceable filter with integral gel seal

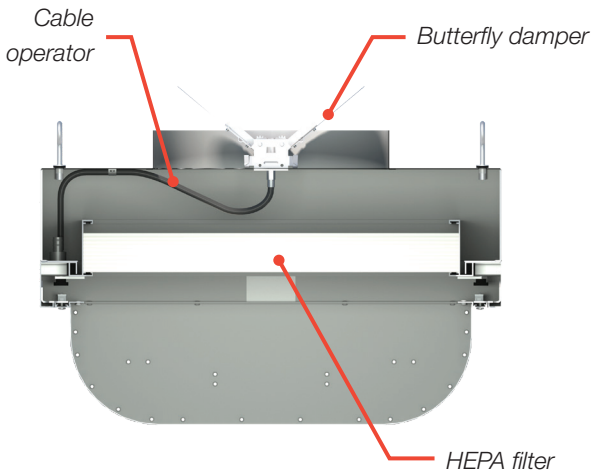
LED FILTER STATUS INDICATOR

+ 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.



ROOM-SIDE ADJUSTABLE INLET DAMPER

+ An optional remote cable operator 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 cross sectional view

EQUALIZATION BASKET

+ The optional equalization basket, located beneath the inlet, equalizes airflow and ensures even loading across the filter.

FACTORY LEAK TESTING AND CERTIFICATION

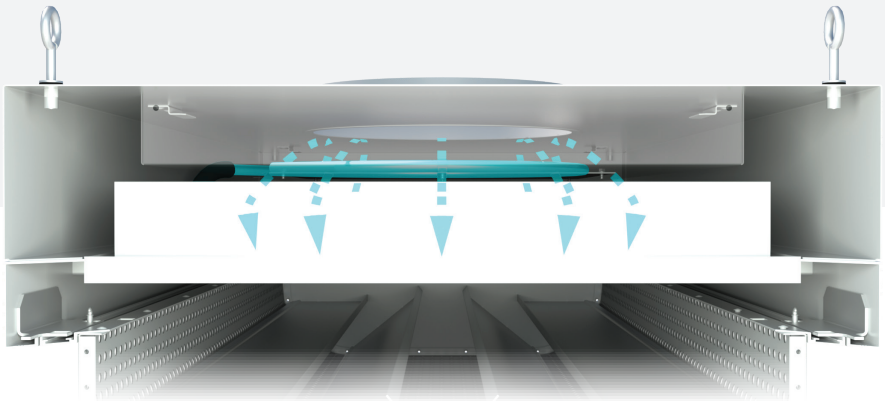
+ Every RFDC is factory tested and certified leak-free in accordance with IEST-RP-CC034.

AEROSOL SAMPLING & STATIC PRESSURE PORT

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

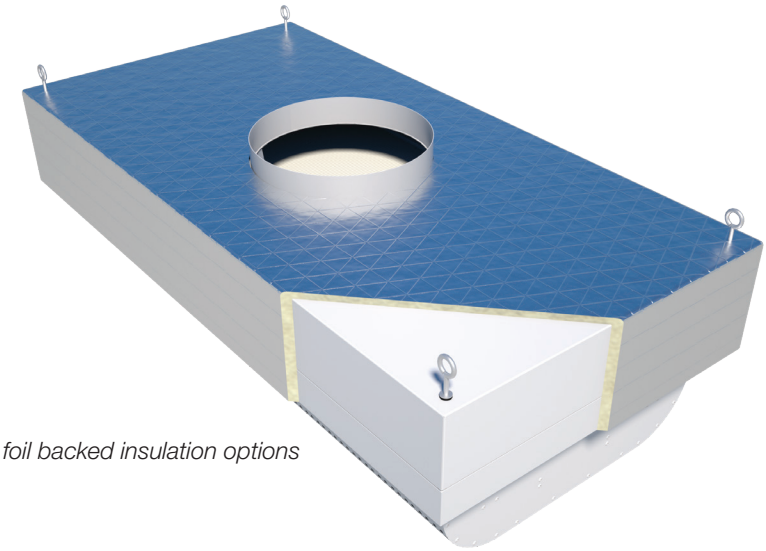
AEROSOL TEST SYSTEM

+ Unique and convenient option when upstream aerosol injection during field commissioning is impractical.
+ The aerosol injection port (3/8 in. female NPT) 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.



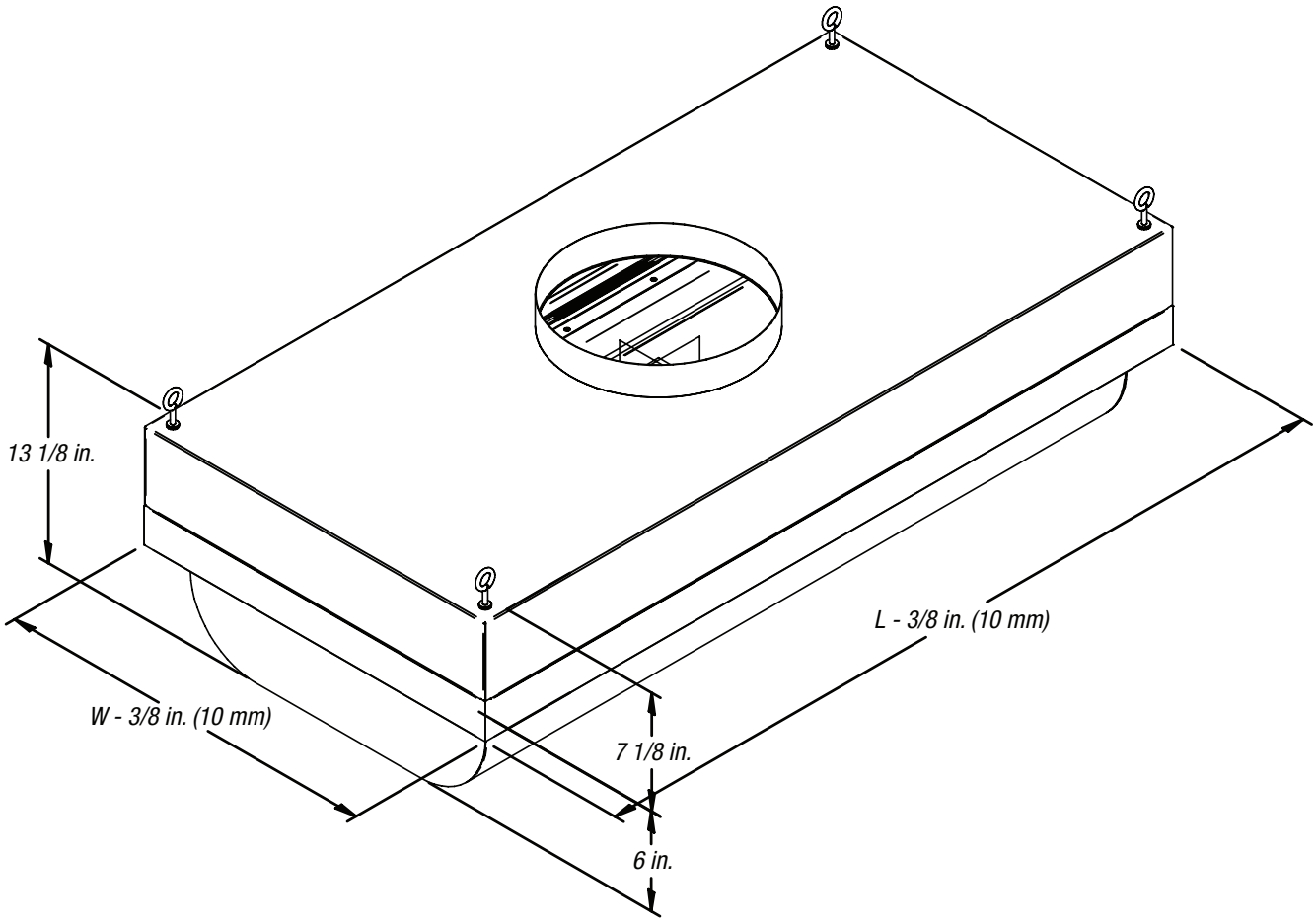
EXTERIOR INSULATION

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



0.5" and 1.5" foil backed insulation options

DIMENSIONAL DATA



Nominal Sizes		
Airflow Pattern	**W x L**	**Inlet Sizes**
1-way	12 in. x 48 in.	6, 8
2-way	24 in. x 24 in.	6, 8, 10, 12
2-way	24 in. x 48 in.	6, 8, 10, 12
2-way	600 mm x 600 mm	6, 8, 10, 12
2-way	600 mm x 1200 mm	6, 8, 10, 12

PERFORMANCE DATA

Imperial

Unit Size (in.)	Inlet Size (in.)	Air Flow (CFM)	Filter	Static Pressure (in. w.g.)	Sound (NC)	Vertical Throw (ft.) 100-50 FPM	Horizontal Throw (ft.) 100-50 FPM
24 x 24	8	150	HEPA	0.3	-	2.0-7.5	0.5-2.0
		200		0.4	-	2.0-7.5	0.5-3.0
		250		0.51	-	3.5-7.5	1.5-4.0
		150	ULPA	0.38	-	0.0-7.5	0.0-2.0
		200		0.52	-	3.0-7.5	0.0-3.0
		250		0.64	-	3.0-7.5	1.0-4.0
	10	150	HEPA	0.29	-	0.0-7.5	0.0-1.5
		200		0.39	-	2.5-7.5	0.5-3.0
		250		0.49	-	3.0-7.5	1.5-3.0
		150	ULPA	0.38	-	0.0-7.5	0.0-2.0
		200		0.51	-	2.0-7.5	0.0-3.0
		250		0.64	-	2.5-7.5	2.0-4.0
	12	150	HEPA	0.28	-	0.0-7.5	0.0-1.5
		200		0.38	-	3.0-8.0	0.5-3.0
		250		0.48	-	3.0-8.0	2.0-3.0
		150	ULPA	0.28	-	2.0-7.5	0.0-1.5
		200		0.5	-	3.0-8.0	1.0-3.0
		250		0.63	-	4.0-8.0	1.0-3.5
24 x 48	10	300	HEPA	0.24	-	5.0-7.0	0.5-2.0
		400		0.33	19	3.0-7.0	2.0-3.5
		500		0.43	26	0.5-7.0	1.0-6.0
		600		0.54	32	2.0-7.0	1.0-6.5
		300	ULPA	0.23	-	6.0-8.0	1.0-2.5
		400		0.32	18	4.0-8.0	2.0-3.5
		500		0.41	25	1.0-7.0	1.0-5.5
		600		0.52	31	3.0-8.0	3.0-7.0
	12	300	HEPA	0.23	-	5.0-8.0	0.0-1.0
		400		0.32	-	5.0-8.0	1.5-2.5
		500		0.41	16	1.0-8.0	1.0-3.0
		600		0.52	21	1.0-7.0	1.0-5.0
		300	ULPA	0.29	-	5.5-8.0	0.5-1.5
		400		0.4	-	4.0-8.0	0.0-2.0
		500		0.51	15	0.0-8.0	0.5-4.0
		600		0.63	21	0.0-7.0	2.0-5.5

Performance Notes:

1. sp = Static Pressure, in. w.g., required at inlet for the listed cfm.
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 10.
5. Throw values are given in feet to terminal velocities of 100 fpm (minimum) and 50 fpm (maximum).
6. Throw values are based on vertical pattern at 10 °F cooling.
7. sp and NC at full open damper position.
8. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."

PERFORMANCE DATA

Metric

Unit Size (mm)	Inlet Size (mm)	Air Flow (L/s)	Filter	Static Pressure (Pa)	Sound (NC)	Vertical Throw (m) 0.51 - 0.25 m/s	Horizontal Throw (m) 0.51 - 0.25 m/s
600 x 600	203	71	HEPA 99.99% .3µm	75	-	0.6 - 2.3	0.2 - 0.6
		94		100	-	0.6 - 2.3	0.2 - 0.9
		118		127	-	1.1- 2.3	0.5- 1.2
		71	ULPA 99.999% 0.12 µm	95	-	0.0 - 2.3	0.0 - 0.6
		94		130	-	0.9 - 2.3	0.0 - 0.9
		118		159	-	0.9 - 2.3	0.3 - 1.2
	254	71	HEPA 99.99% .3µm	72	-	0.0 - 2.3	0.0 - 0.5
		94		97	-	0.8-2.3	0.2 - 0.9
		118		122	-	0.9 - 2.3	0.5- 0.9
		71	ULPA 99.999% 0.12 µm	95	-	0.0 - 2.3	0.0 - 0.6
		94		127	-	0.6 - 2.3	0.0 - 0.9
		118		159	-	0.8-2.3	0.6 - 1.2
	300	71	HEPA 99.99% .3µm	70	-	0.0 - 2.3	0.0 - 0.5
		94		95	-	0.9 - 2.4	0.2 - 0.9
		118		120	-	0.9 - 2.4	0.6 - 0.9
		71	ULPA 99.999% 0.12 µm	70	-	0.6 - 2.3	0.0 - 0.5
		94		125	-	0.9 - 2.4	0.3- 0.9
		118		157	-	1.2 - 2.4	0.3- 0.9
600 x 1200	254	142	HEPA 99.99% .3µm	60	-	1.5- 2.1	0.2 - 0.6
		189		82	19	0.9 - 2.1	0.6 - 0.8
		236		107	26	0.2 - 2.1	0.3- 1.8
		283		135	32	0.6 - 2.1	0.3- 2.0
		142	ULPA 99.999% 0.12 µm	57	-	1.8- 2.4	0.3- 0.8
		189		80	18	1.2 - 2.4	0.6 - 1.1
		236		102	25	0.3- 2.1	0.3 - 1.7
		283		130	31	0.9 - 2.4	0.9 - 2.1
	300	142	HEPA 99.99% .3µm	57	-	1.5- 2.4	0.0 - 0.3
		189		80	-	1.5- 2.4	0.5 - 0.8
		236		102	16	0.3- 2.4	0.3- 0.9
		283		130	21	0.3- 2.1	0.3- 1.5
		142	ULPA 99.999% 0.12 µm	72	-	1.7- 2.4	0.2 - 0.5
		189		100	-	1.2 - 2.4	0.0 - 0.6
		236		127	15	0.0 - 2.4	0.2 - 1.2
		283		157	21	0.0 - 2.1	0.6 - 1.7

Performance Notes:

1. SP = Static Pressure, Pa, required at the inlet for the listed L/s.
2. L/s = Air flow in Liters per second, L/s.
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 values are given in meters to terminal velocities of 0.51 m/s (minimum) 0.25 m/s (maximum).
6. Throw values are based of a vertical pattern at 6 °C cooling.
7. SP and NC at full open damped position.
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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