

LFDC

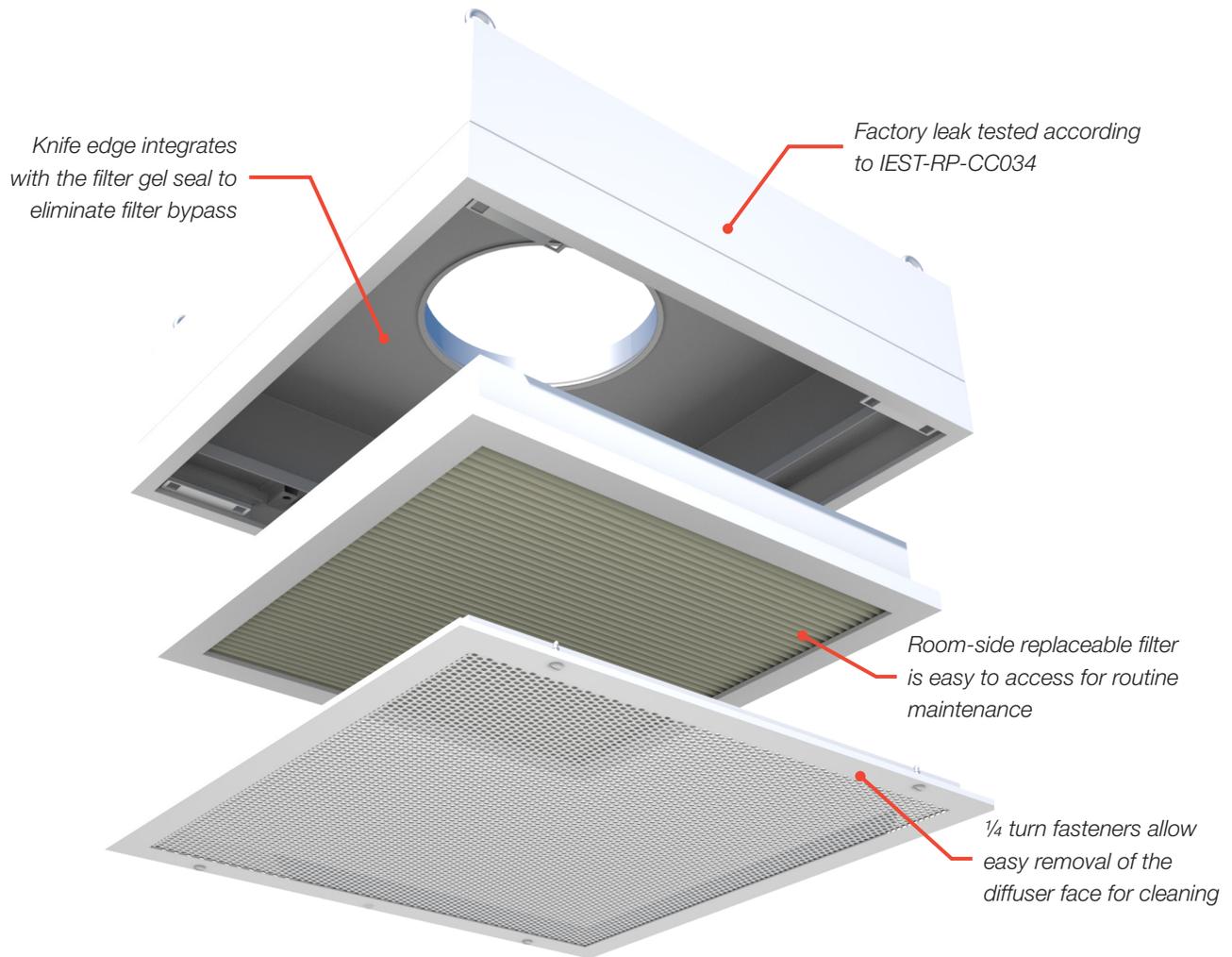
LAMINAR FLOW DIFFUSER WITH HEPA FILTER



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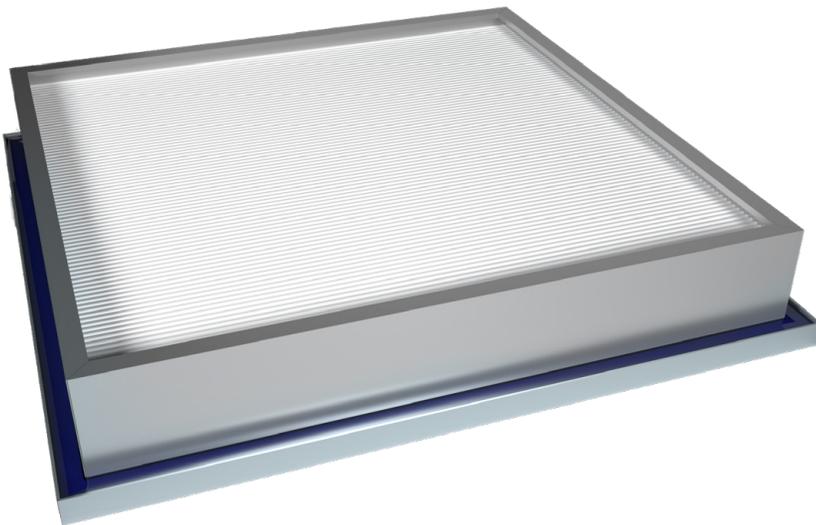
Laminar Flow Diffuser with HEPA Filter

The Laminar Flow Diffuser with HEPA Filter has been designed to suit the stringent requirements of modern operating rooms and other clean spaces. The LFDC provides a means of controlling particle concentration within a room by providing unidirectional laminar airflow with low initial face velocity, supplying clean air to the space without entrainment of contaminated air from the occupied space.



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 filter bypass.
- + Optional factory supplied HEPA filter removes 99.99% of particulate.



FACTORY LEAK TESTING AND CERTIFICATION

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

CLEANING & MAINTENANCE

- + LFDC 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.
- + ¼ turn fasteners and retainer cables provide straightforward and convenient access to the filter and knife-edge frame.

TYPICAL APPLICATIONS

The LFDC is classified as an ASHRAE group E non-aspirating diffuser and meets all ASHRAE 170 performance and construction requirements. LFDC diffusers are required by code or commonly used in Operating Rooms, Laboratories, Pharmacies, Pharmaceutical Manufacturing facilities, Cleanrooms and other critical spaces.

CONSTRUCTION

- + Material
 - Aluminum
 - Stainless steel
- + Options
 - LED filter status indicator
 - Room-side adjustable damper
 - Aerosol test system
 - Equalization basket
 - Casing Insulation

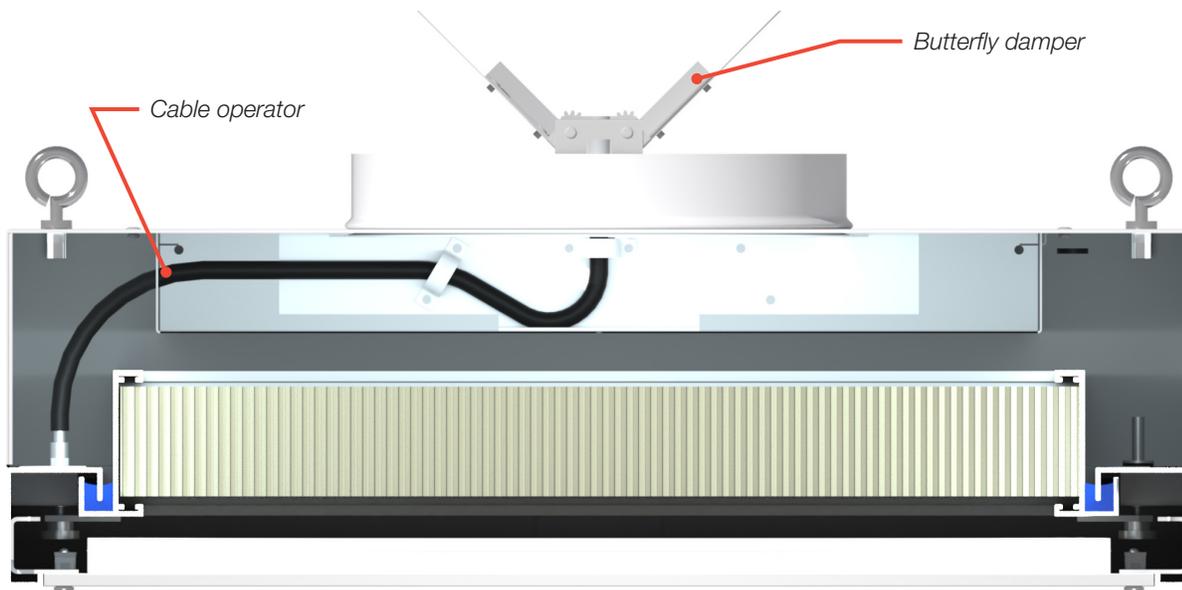
LED FILTER STATUS INDICATOR

- + 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 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

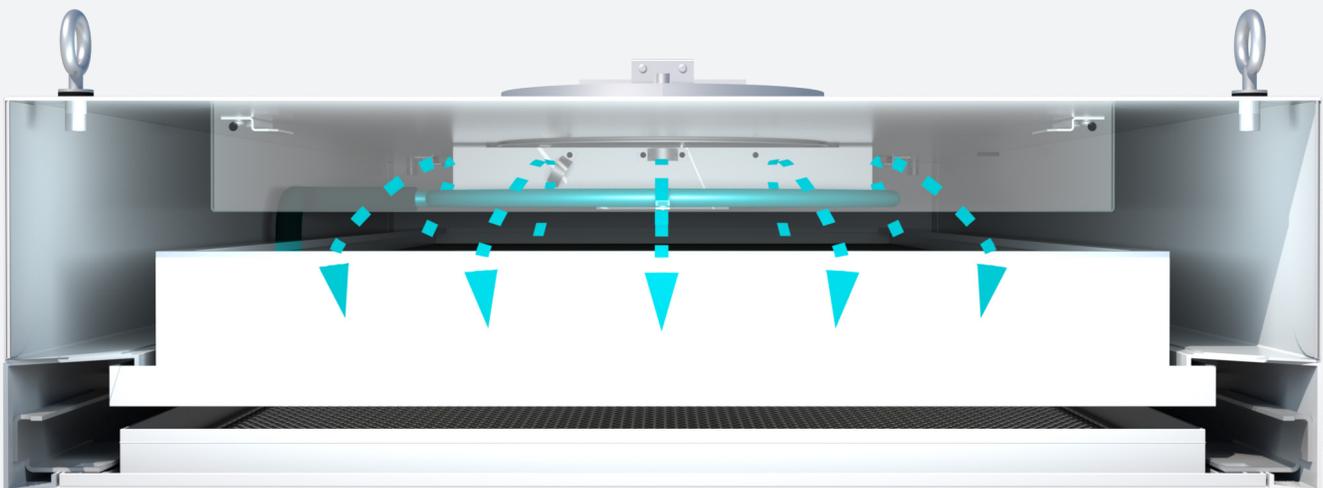
- + The optional equalization basket, located beneath the inlet, equalizes airflow and ensures even loading across the filter.

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.

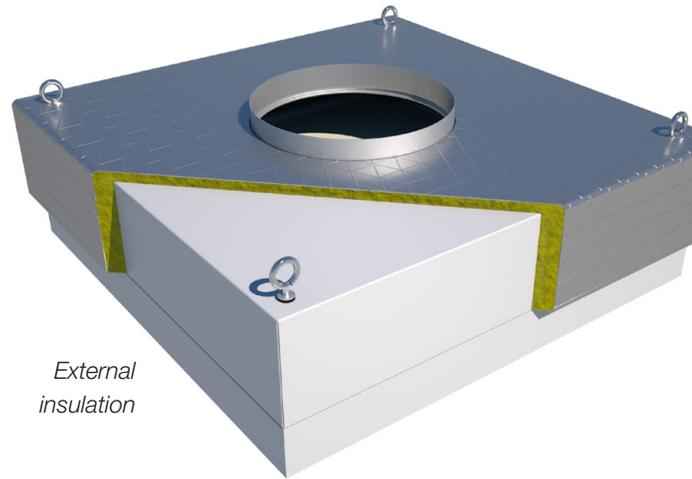
AEROSOL TEST SYSTEM

- + 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.

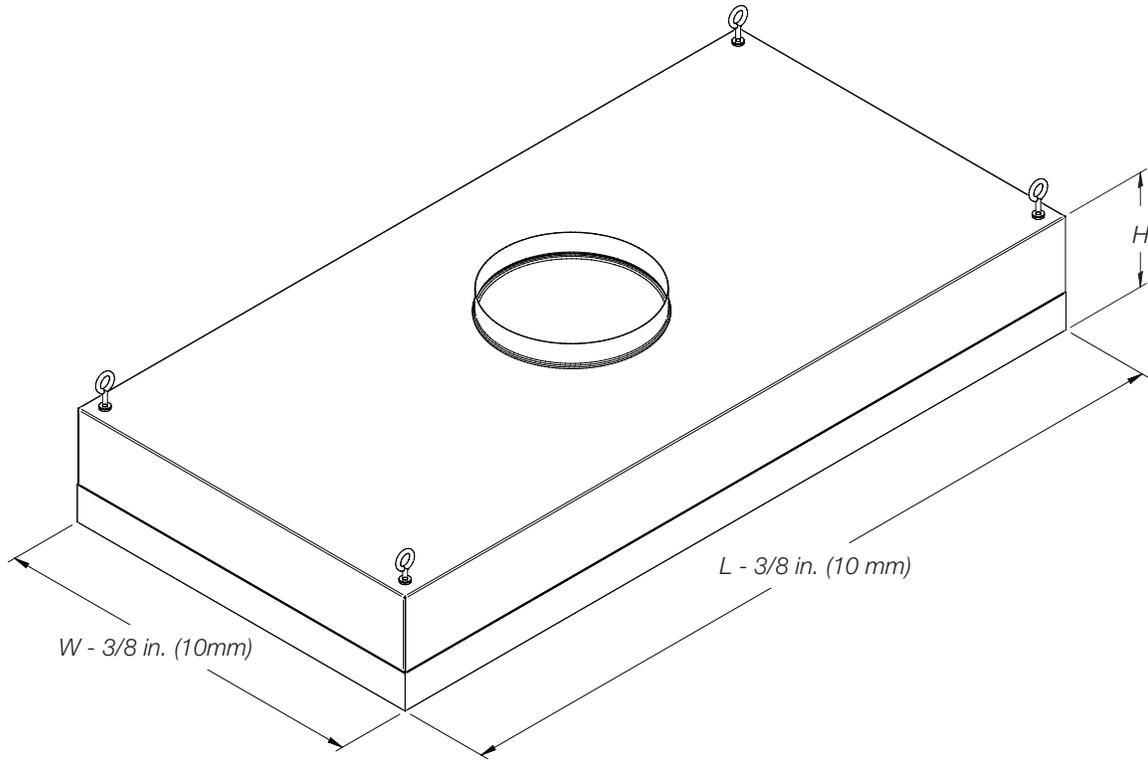


FACTORY INSTALLED INSULATION

- + Ensures quality application and minimizes field labor with factory installed insulation
- + Minimizes 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



DIMENSIONAL DATA



Nominal Unit Size (W x L)	Actual Width	Actual Length	Inlet Sizes	H	
				Standard	Integrated LED Lighting
12 in. x 48 in. *	11.63 in.	47.63 in.	(6, 8) in.	7.13 in.	13.00 in.
24 in. x 24 in.	23.63 in.	23.63 in.	(6, 8, 10, 12) in.	7.13 in.	13.00 in.
24 in. x 36 in.	23.63 in.	35.63 in.	(6, 8, 10, 12) in.	7.13 in.	13.00 in.
24 in. x 48 in.	23.63 in.	47.63 in.	(8, 10, 12) in.	7.13 in.	13.00 in.
600mm x 600mm	590mm	590mm	(152, 203, 254, 305) mm	181 mm	N/A
600mm x 900mm	590mm	890mm	(152, 203, 254, 305) mm	181 mm	N/A
600mm x 1200mm	590mm	1190mm	(203, 254, 305) mm	181 mm	N/A

*INJ option not available

Note: Please refer to the submittal for dimensions of the LFDC with optional face-mounted LED indicator (LEDK)

PERFORMANCE DATA

Unit Size (in.)	Inlet Size (in.)	Air Flow (cfm)	Filter	Static Pressure (in. w.g.)	Sound (NC)
24 x 24	10	100	HEPA	0.22	-
		150		0.31	-
		200		0.41	-
		250		0.50	-
		100	ULPA	0.30	-
		150		0.45	-
		200		0.61	-
		250		0.76	-
24 x 36	10	150	HEPA	0.19	-
		200		0.24	15
		250		0.30	19
		300		0.36	23
		350		0.42	27
		400		0.48	30
		150	ULPA	0.30	-
		200		0.38	15
		250		0.45	19
		300		0.56	23
		350		0.67	27
		400		0.75	30
24 x 48	12	200	HEPA	0.16	-
		300		0.25	-
		400		0.33	-
		500		0.41	17
		600		0.50	23
		200		ULPA	0.27
		300	0.39		-
		400	0.50		-
		500	0.63		17
		600	0.74		23

Performance Notes:

1. sp = Static Pressure, 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. sp and NC at full open damper position.
6. Tested in accordance with ASHRAE Standard 70-2006.

PERFORMANCE DATA

Unit Size (mm)	Inlet Size (mm)	Air Flow (L/s)	Filter	Static Pressure (Pa)	Sound (NC)		
600 x 600	254	47	HEPA 99.99% .3µm	55	-		
		71		77	-		
		94		102	-		
		118		125	-		
		47		75	-		
		71	112	-			
		94	152	-			
		118	189	-			
		600 x 900	254	71	HEPA 99.99% .3µm	47	-
				94		60	15
118	75			19			
142	90			23			
165	105			27			
189	120			30			
71	75			-			
94	95			15			
118	112			19			
142	139			23			
165	167	27					
189	187	30					
600 x 1200	300	94	HEPA 99.99% .3µm	40	-		
		142		62	-		
		189		82	-		
		236		102	17		
		283		125	23		
		94	67	-			
		142	97	-			
		189	125	-			
		236	157	17			
		283	184	23			

Performance Notes:

1. SP = Static Pressure in Pascals, Pa.
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. SP and NC at full open damper position.
6. Tested in accordance with ASHRAE Standard 70-2006



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