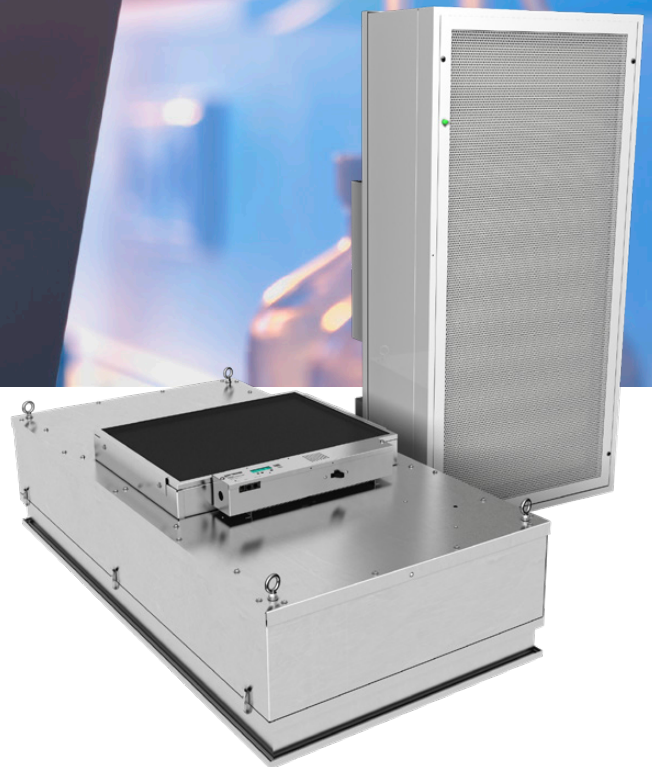


FFU

FAN FILTER UNIT

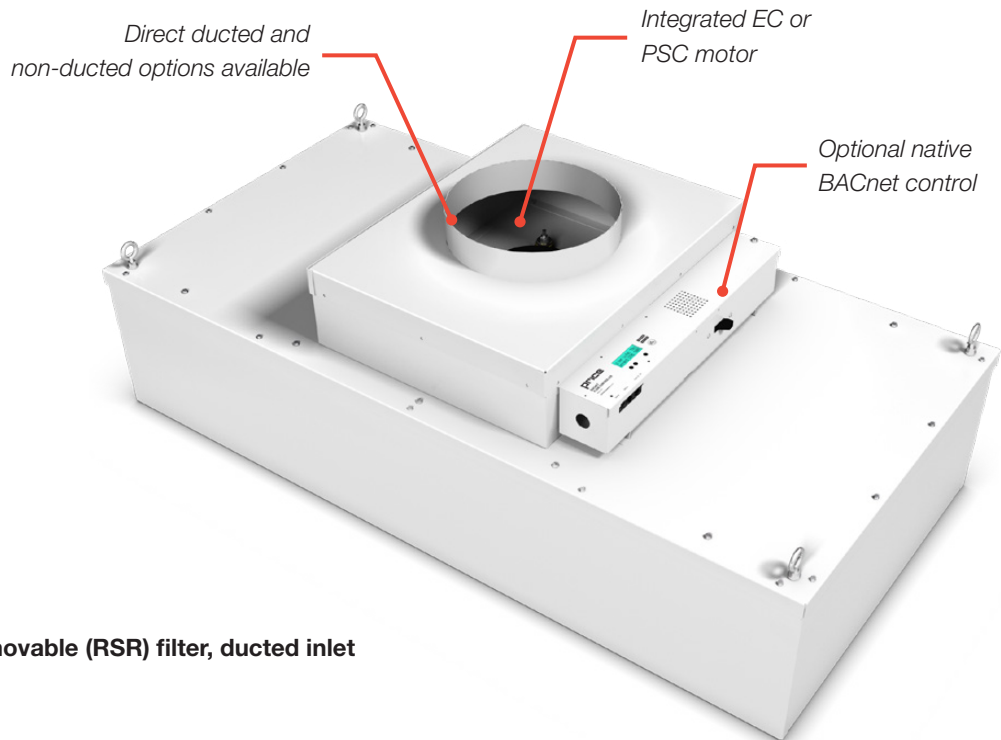


price | **CRITICAL**
ENVIRONMENTS

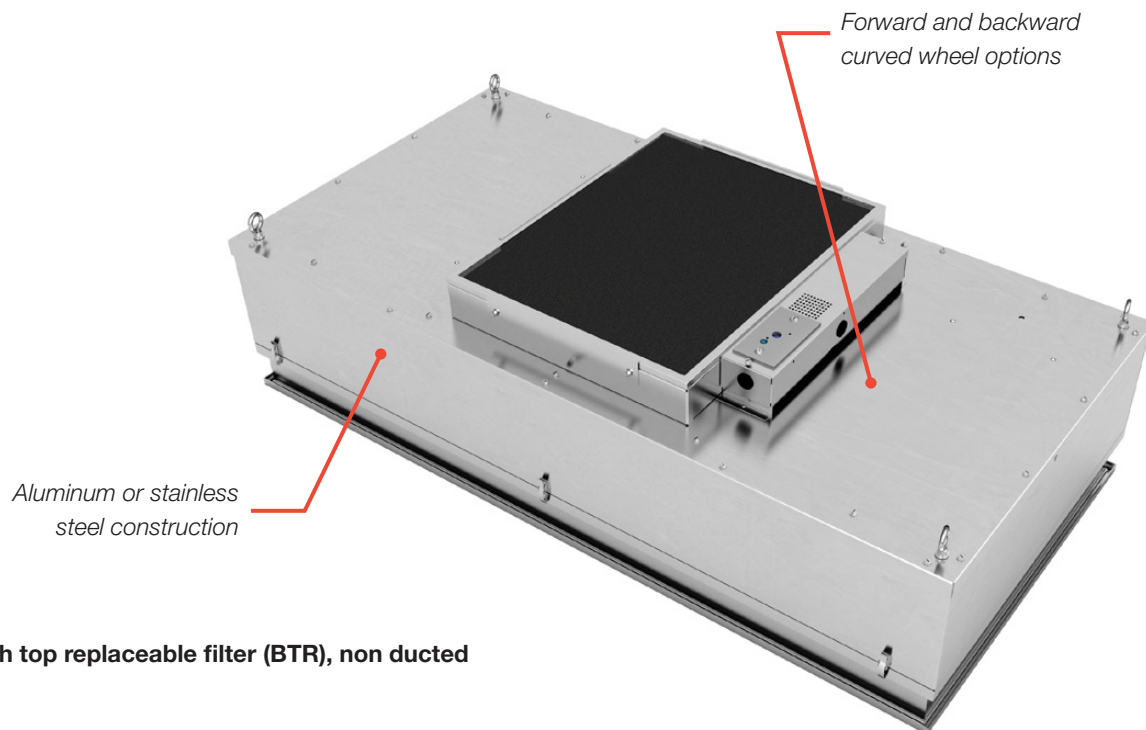
FFU

Fan Filter Unit

Price Fan Filter Units (FFU) are the most energy efficient line of fan filter units (fan filter modules) on the market today. Designed specifically for use in cleanrooms, pharmacies, pharmaceutical manufacturing facilities and laboratories, the FFU delivers high volumes of HEPA (or ULPA) filtered air at low sound levels while reducing energy consumption by 15 to 50% versus comparable products.



Room-side Removable (RSR) filter, ducted inlet



Bench top replaceable filter (BTR), non ducted

HIGH ENERGY EFFICIENCY

- + Industry leading energy efficiency means lower operating costs, potentially saving thousands of dollars in electricity each year.
- + Energy consumption as low as 55 Watts at 90 fpm for a 24 in. x 48 in. module.

HIGH AIRFLOW CAPACITY

- + High airflow capacity per unit means fewer units and lower first cost.
- + Active filter area is maximized with the Bench Top Replaceable (BTR) filter, with 24 in. x 48 in. units able to achieve up to 960 CFM.

VERSATILE MOTOR PROGRAMS

- + Factory programmed EC motors means no-hassle startup and commissioning.
- + **Constant Torque Program** – The motor operates at a constant torque, and is unaffected by change in upstream static pressure. This option should be used with an upstream, pressure-independent terminal unit.
- + **Constant Flow Program** – The motor adjusts to maintain airflow rate as the filter loads over time. This option is ideal for non-ducted applications.

SEISMIC CERTIFICATION PREAPPROVAL

- + OSHPD special seismic certification preapproval as per OSP-0302-10.

EXHAUST AND REVERSE FLOW APPLICATIONS

- + Optional exhaust construction draws contaminated room air through the filter and exhausts the air to the outside or returns it to the space.

TYPICAL APPLICATIONS

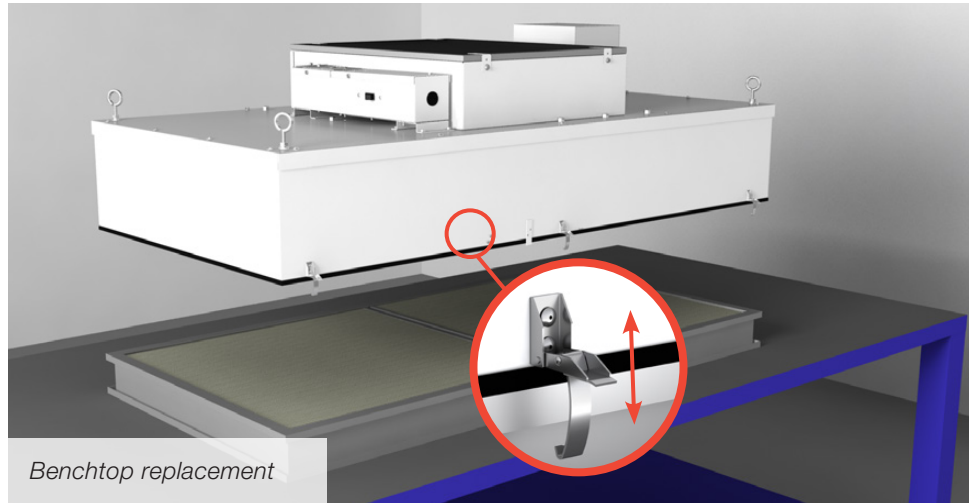
Fan Filter Units are used in critical applications such as healthcare, pharmaceutical compounding or microelectronics manufacturing. The high efficiency motor is designed to overcome the static pressure of the integrated filter, making FFUs ideal for retrofit applications where the air handler is not able to provide the required static pressure.

CONSTRUCTION

- + Application
 - Supply
 - Exhaust
- + Size
 - 24 in. x 24 in.
 - 24 in. x 36 in.
 - 24 in. x 48 in.
- + Material
 - Aluminum
 - Stainless steel
- + Filter
 - Room-side removable (RSR)
 - Bench top replaceable (BTR)
- + Options
 - Aerosol injection port (INJ)
 - Face-mounted LED indicator
 - Room-side removable motor/blower assembly

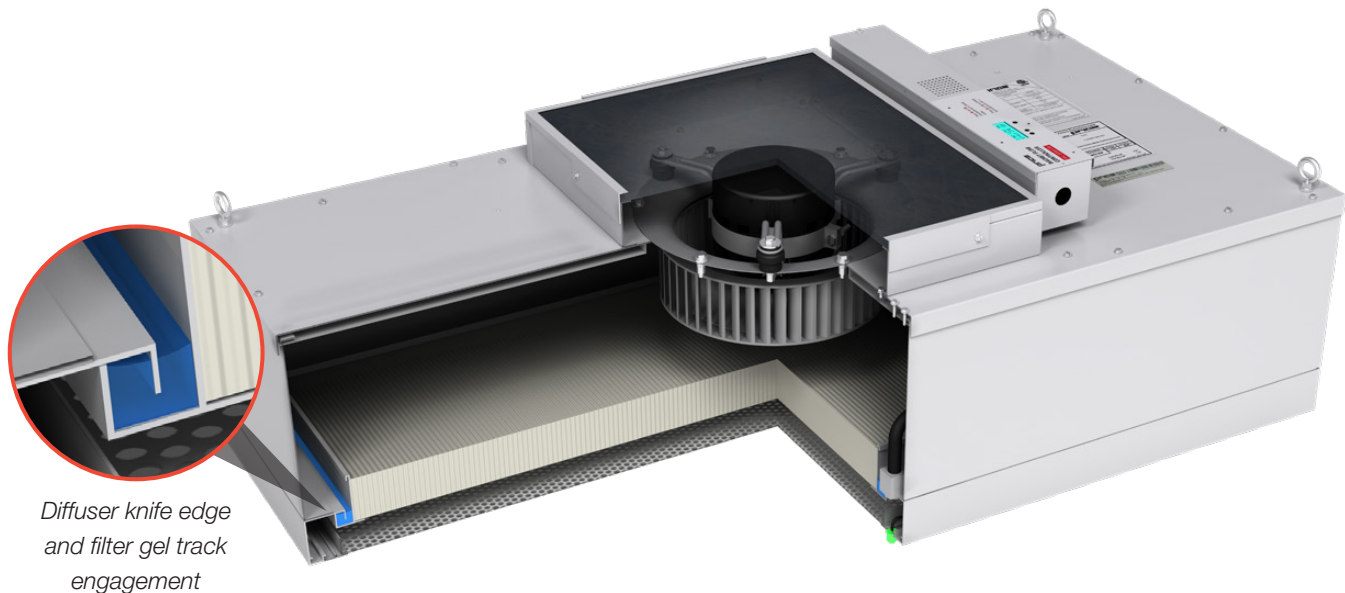
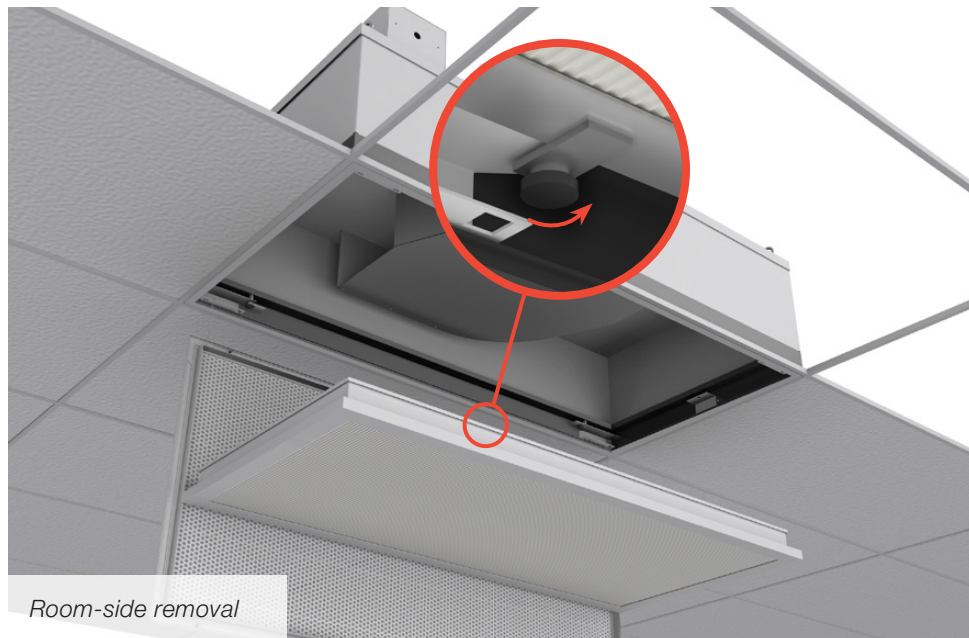
BENCH TOP REPLACEABLE (BTR) FILTER

- + Maximizes active filter face area to allow for the highest airflow capacity.
- + Less pressure drop and energy consumption compared to RSR filter.
- + Filter replacement requires removal of the unit from the ceiling.



ROOM-SIDE REMOVABLE (RSR) FILTER

- + Quickly and easily remove the filter from the Room-side with the RSR option.
- + Integrated knife edge and gel track filters allow for tool free installation and replacement.



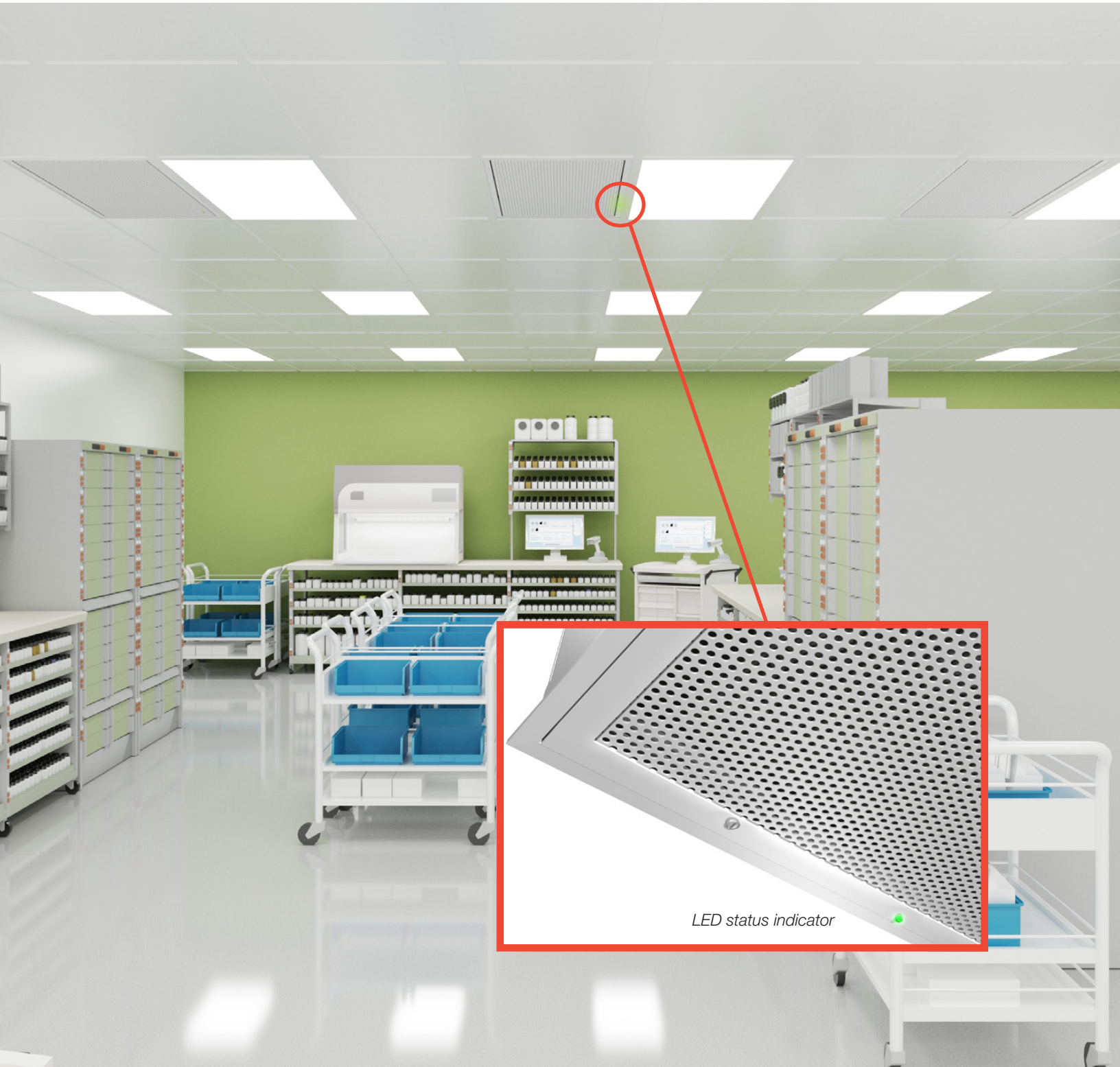


QUICK AND EASY COMMISSIONING VIA AEROSOL CHALLENGE

- + Ensure proper HEPA filter and unit operation with the room-side Aerosol Injection Port (INJ).
- + INJ permits easy injection of aerosol challenge through the 3/8 in. female NPT test port. By dispersing aerosol above the HEPA filter, the filter can then be scanned for leaks during commissioning or after filter replacement.
- + A static pressure port is provided to measure pressure drop across the filter and to sample upstream aerosol concentrations during commissioning.

ROOM-SIDE FILTER AND MOTOR STATUS INDICATION

An optional face-mounted color LED alerts the user when the filter is loaded and due for replacement, or if the motor is not operating properly. A green LED indicates normal operation, a yellow LED indicates a loaded filter and a red LED indicates an issue with the motor. The loaded filter setpoint can be field adjusted to suit individual needs.



SPEED CONTROLLERS

Speed controllers are a necessary component of fan filter units, providing precise control over the speed of the motor and the resultant airflow. Multiple speed controller options allow the user to select the best fit for each project.

PSC Speed Controller (PSCSC)

- + Provides variable speed control of permanent split capacitor (PSC) motors.
- + Airflow adjustments are made with the on-board dial that is fully adjustable from minimum to maximum speed, providing increased functionality over a three-speed switch.



Standard ECM Speed Controller (ECMSC)

- + This low voltage speed controller offers either full manual control using the on-board dial or building automation system (BAS) control of a high-efficiency EC motor.
- + Easily change from manual to BAS control by applying the BAS 0-10 VDC signal to the speed controller.





BACNET FLOW CONTROLLER

The BACnet Flow Controller (BFC) offers seamless integration with BACnet building networks for unmatched control and visibility of fan filter unit performance. Used in conjunction with EC motor technology, these native BACnet controllers facilitate adjustment and/or monitoring of parameters including CFM output and filter status.

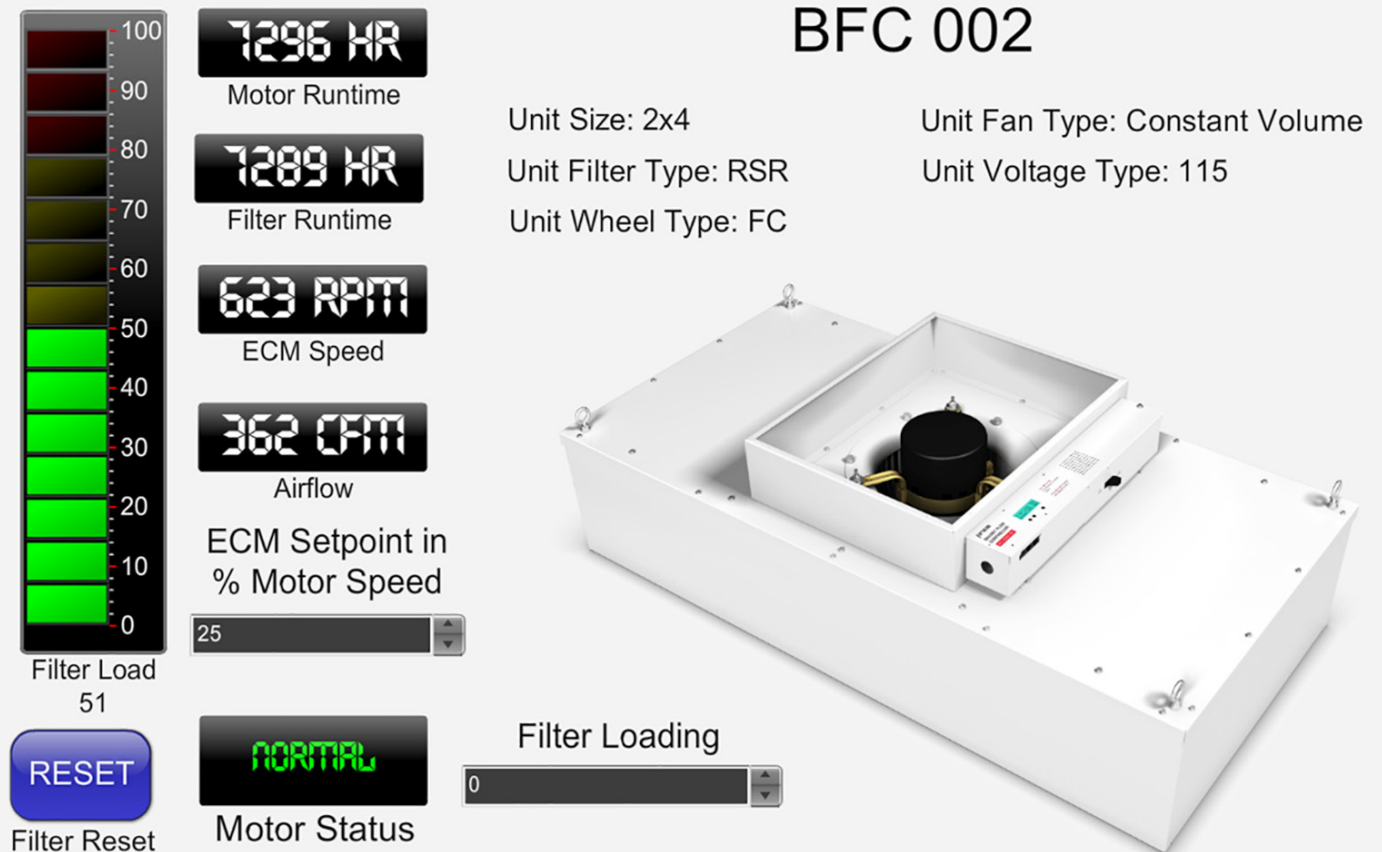
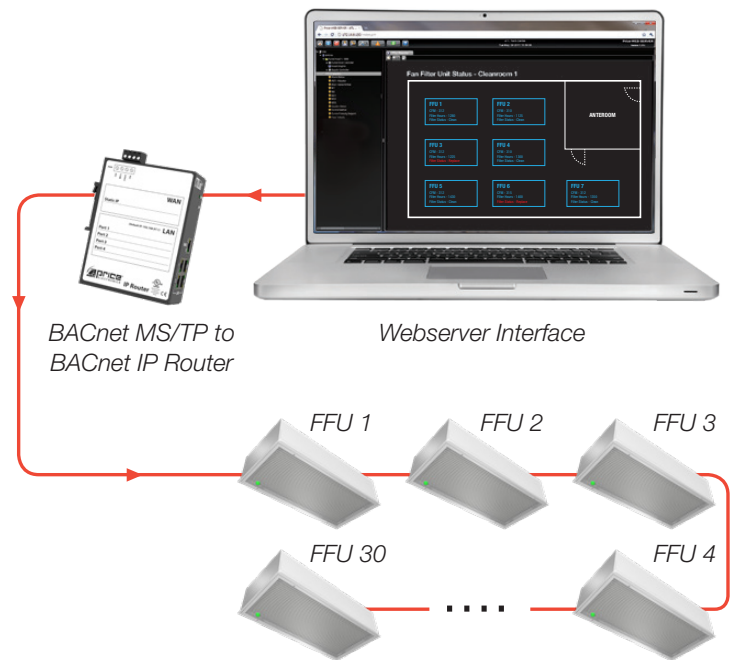
Key Features

- + Native BACnet MS/TP
- + Backlit LCD display
- + Several network points for control, monitoring or trending:
 - CFM output
 - Motor RPM and status
 - Motor hours
 - Filter status and pressure drop
 - Filter hours

WEBSERVER INTEGRATION

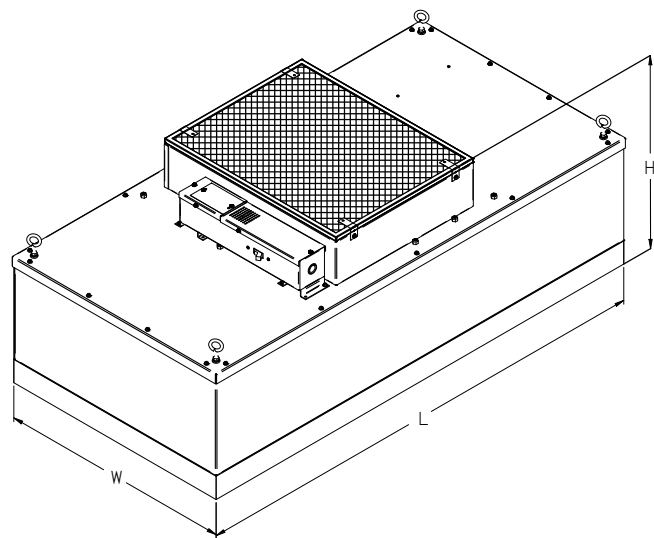
Accessing your system via the internet allows worldwide access to the building for fast and easy monitoring and troubleshooting. The Webserver allows the user to view all status variables such as filter status, CFM, etc. for every fan filter unit on the network, as well as change any setpoints directly from a PC.

The Webserver comes with a pre-loaded graphic showing the status of each fan filter unit. Custom graphics and interfaces are available to show room layouts or airflow readouts for all units on one screen.

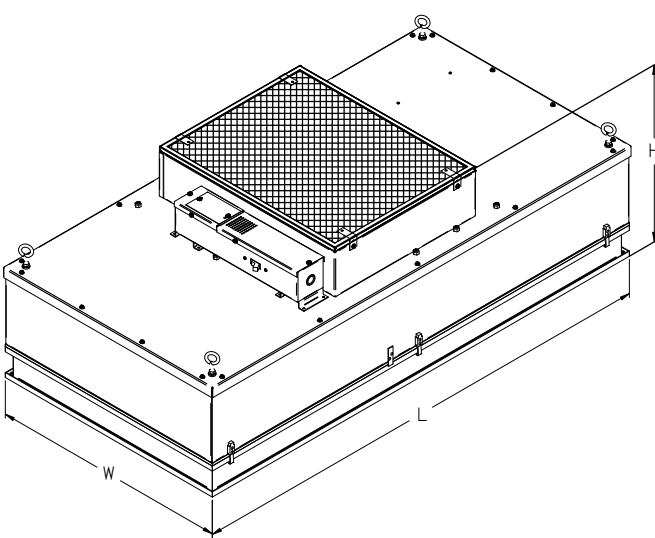


Webserver graphical user interface

DIMENSIONAL DATA



FFU with RSR Filter			
Unit Size	L (in.)	W (in.)	All Motors
			H (in.)
24 in. x 48 in.	47.625	23.625	18.125
24 in. x 36 in.	35.625	23.625	18.125
24 in. x 24 in.	23.625	23.625	18.125



FFU with BTR Filter				
Unit Size	L (in.)	W (in.)	ECM Motor	PSC Motor
			H (in.)	H (in.)
24 in. x 48 in.	47.625	23.625	16.625	15.750
24 in. x 36 in.	35.625	23.625	16.625	15.750
24 in. x 24 in.	23.625	23.625	16.625	15.750

PERFORMANCE DATA

Unit Size	Filter	Motor - Fan	Active Filter Area (sq. ft.)	Max cfm	Watts at Max cfm	cfm at 90 fpm	Watts at 90 fpm	Sound (dBA) at 90 fpm	Weight (lbs.)
24 in. x 48 in.	BTR	ECM - BC	6.9	960	220	625	80	56	68
		ECM - FC	6.9	820	210	625	110	53	66
		PSC - BC	6.9	770	210	625	150	55	68
		PSC - FC	6.9	750	350	625	280	53	66
	RSR	ECM - BC	5.3	750	130	480	55	51	76
		ECM - FC	5.3	750	220	480	80	50	74
		PSC - BC	5.3	750	210	480	150	49	76
		PSC - FC	5.3	750	350	480	235	49	74
24 in. x 36 in.	BTR	ECM - BC	5.1	690	150	460	60	54	56
		ECM - FC	5.1	690	190	460	75	49	54
		PSC - BC	5.1	690	210	460	150	54	56
		PSC - FC	5.1	690	340	460	230	51	54
	RSR	ECM - BC	3.8	540	120	345	55	49	64
		ECM - FC	3.8	540	190	345	70	50	62
		PSC - BC	3.8	540	210	345	145	48	64
		PSC - FC	3.8	540	300	345	180	50	62
24 in. x 24 in.	BTR	ECM - FC	3.3	440	150	300	65	48	45
		PSC - FC	3.3	440	240	300	155	48	45
	RSR	ECM - FC	2.3	330	140	210	60	46	53
		PSC - FC	2.3	330	200	210	120	46	53

Performance Notes:

1. Units are tested in accordance with IEST RP-CC002.2, Recommended Practice for Unidirectional Flow Clean-Air Devices.
2. Sound levels were measured with unit installed in a T-Bar ceiling, with gasket, in a standard room. Sound levels in dBA were measured at a distance of 30 inches from the filter face, with the unit set to produce 90 fpm average face velocity. (Note that data is for a clean filter only. If fan speed is increased to compensate for filter loading the noise level will increase.)
3. All data is based on a unit with a clean filter.
4. 90 fpm values are based on active filter area.
5. Heat Gain: BTUh = Watts x 3.413



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