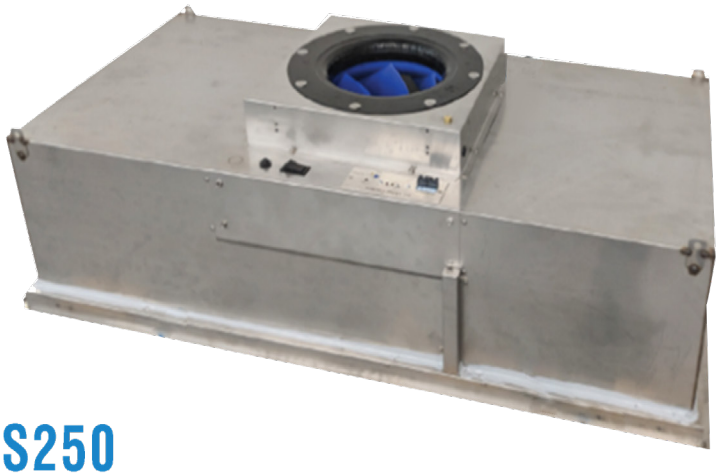
FG™
Indoor Air Quality



VS250

PRODUCT OVERVIEW

- Critical Environment Diffuser Fan Filter Unit with 248 FPM max HEPA- rated air velocity
- Backward curved fan blades for higher flowrate capability
- HEPA 99.99% 0.3µm or ULPA 99.9995% 0.12µm efficiency 2.0” thru 6.0” mini-pleat media
- Sizes: 48”x24”, 36”x24” and 24”x24”
- Voltages: 120, 208, 240 and 277
- Ideal for use in
  - — Hospital
  - — Pharmaceutical
  - — Biotechnology
  - — Microelectronics
  - — Applications requiring higher air changes with limited ceiling space

FLOWSTAR

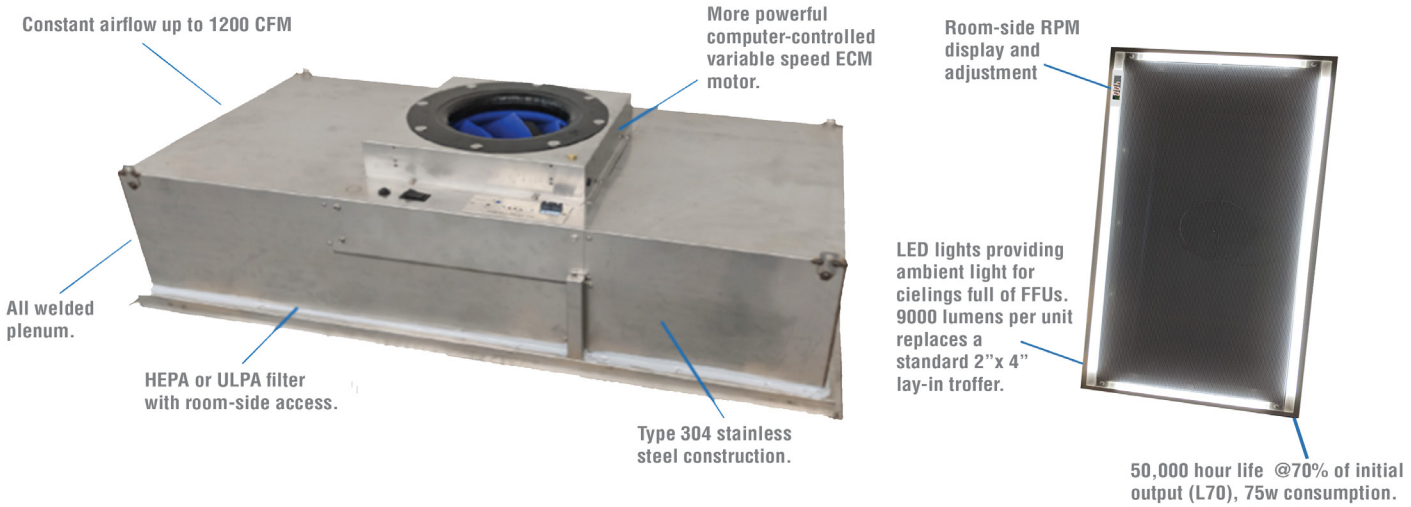
FFU VS250

WHY THE FFU VS250?

- Higher CFM output than competitive models, providing 50-1200 CFM over a wide range of static pressures.
- Accommodates HEPA (99.99% on 0.3 µm) or ULPA (99.999% at 0.12 µm) filters, both of which feature a separator-less 3.5” deep media, integral test port and anodized aluminum gel seal frame.
- Constant air flow, compensating for changes in static pressure, filter loading and more, with cleanroom airflow velocities that meet Institute of Environmental Sciences and Technology (IEST) recommended practices and greatly reduce the need for future balancing.
- Computer controlled, variable speed EC motor with internal microcomputer that provides low energy consumption, high performance and long motor life. Able to work with Variable Air Volume (VAV) HVAC systems.
- Type 304 stainless steel construction with all welded plenum, built to meet the latest pressure testing standards. Available in 48” x 24”, 36” x 24”, and 24” x 24” models.
- Room-side digital RPM display and control offers instant visual verification, and can be set or adjusted in seconds.
- Room-side access to HEPA or ULPA filter and optional access to motor and electronics.

FLOWSTAR FFU VS250

VS250 KEY FEATURES



The Filtration Group Flowstar® FFU VS250 may be used individually for clean room applications such as research, animal or pharmaceutical laboratories, as well as food processing plants, protective environment rooms and more. They may also be linked together, as is the case in many hospital operating rooms, to produce one large combined laminar mass.

Standard features include:

- Room-side replaceable filter
- Room-side RPM display and adjustment
- Removable faceplate for cleaning, secured by 1/4 turn fasteners
- Safety cables that help prevent accidental dropping of removable face
- Perforated face with 3/16" (4.8mm) diameter holes on 60° 1/4" (6mm) staggered centers
- 51% free area
- Integral hanger tabs
- Designed for both lay-in T-bar ceiling systems and surface mount applications
- Clear anodized extruded aluminum filter frame. Integral test port in unit to measure filter pressure drop leakage (scan) tests.
- Filters shipped separately from diffuser for final installation in field
- Tool-less filter installation
- Native MODbus interface
- Aluminum antimicrobial white face

Optional Features -

- Room-side access to EC motor/electronics
- Washable expanded aluminum MERV 4 pre-filter
- Mobile device compatible control panel with remote operation app
- PAO injection port and dispersion manifold
- Round duct inlets for simple duct connection (rectangular and oval duct connections also available)
- Antimicrobial baked powder coat finish
- Ambient LED Lighting – white and green available
- BACnet IP/BACnet MS/TP controls
- #4 satin polished finish on Stainless Steel face

Special VS250 Models Available -

- Reverse flow units
- Recirculating units
- Heating and/or cooling units

United-States • Phone: +1 800 739.4600 • cc-inquiry@filt ationgroup.com | Canada • Phone: +1 888 628.3458 • inquirycanada@filt ationgroup.com
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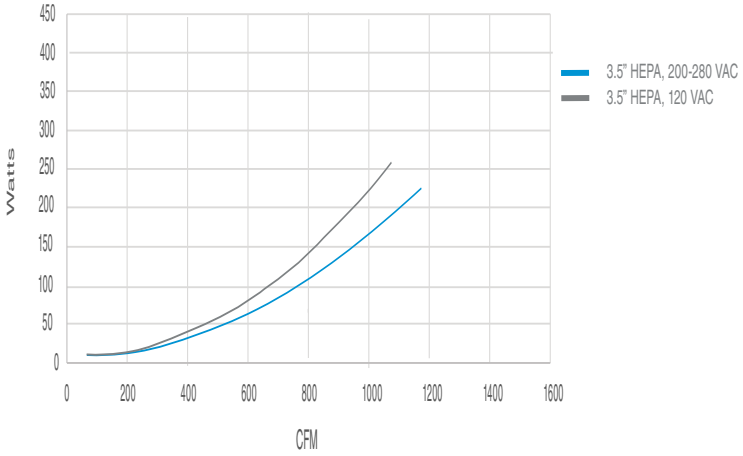
FLOWSTAR FFU VS250

VS250 PERFORMANCE DATA (48”x 24” UNIT)

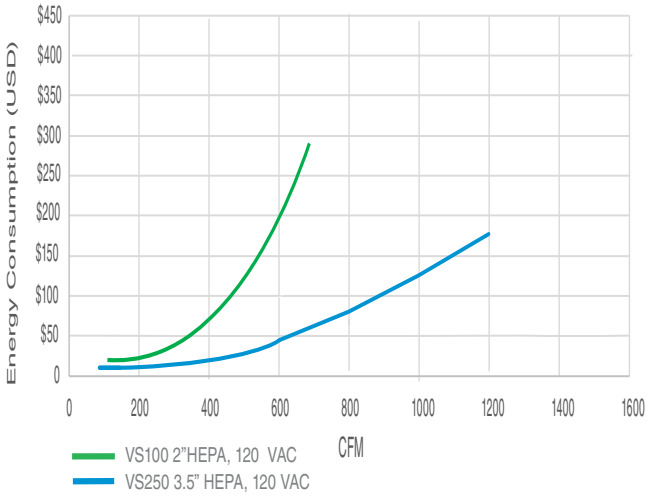
SETPOINT	WITH HIGH FLOW 3.5” HEPA FILTER @ 100-130 VAC			WITH HIGH FLOW 3.5” HEPA FILTER @ 200-280 VAC		
	CFM	FPM	WATTS	CFM	FPM	WATTS
100	1074	222	257	1284*	265	423
90	917	1189	185	1133	234	310
80	760	157	134	959	198	216
70	608	126	86	774	160	143
60	450	93	55	577	119	90
50	312	64	33	400	83	54
40	200	41	20	248	51	29
30	114	24	13	134	28	17
20	51	11	9	51	11	10

*3.5 inch HEPA rated at 1200 CFM

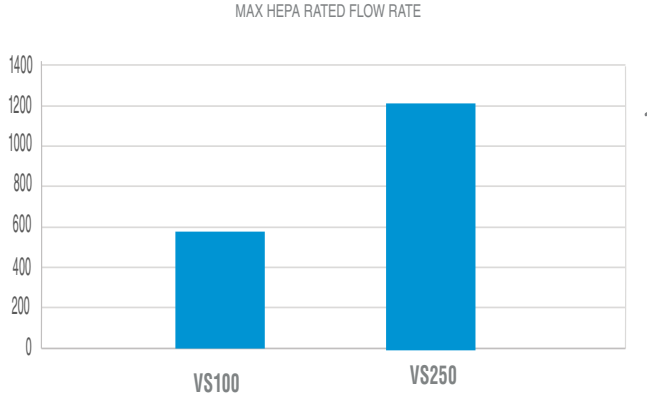
POWER CONSUMPTION @ INSTALLATION

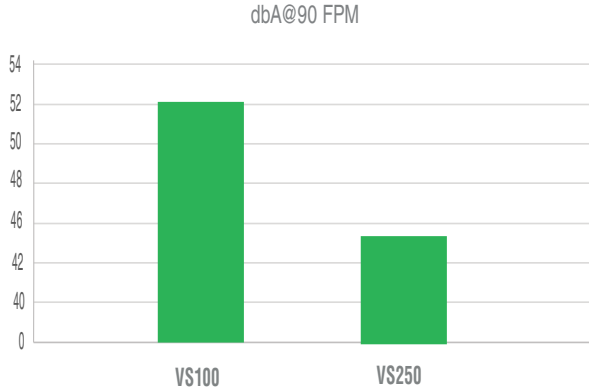


ANNUAL ENERGY COST



KEY PERFORMANCE STATISTICS





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FLOWSTAR FFU VS250

ENGINEERING SPECIFICATIONS

1.0 Scope

1.1 This specification covers fan powered ceiling modules with room side replaceable HEPA filters for use in cleanroom or clean space applications. Units shall be FlowStar FFU VS250 manufactured by Filtration Group. The size of the units shall be nominal as scheduled.

2.0 Physical Characteristics

2.1 The hood body shall be manufactured from 20GA 304 S/S and all straight seams of the plenum shall be continuously welded. The hood body shall be reinforced so that it is walkable, 250 lbs without deflection.

2.2 The hood body shall have a flush mounted remov able downstream screen of 22 gauge perforated T304 stainless steel with 51% open area. The down stream screen is attached to the hood with ¼ turn fasteners.

2.3 The hood body shall be equipped with hanging tabs for attachment of seismic restraints or wire hangers at each corner.

2.4 The unit shall contain an electrically commutated motor with backward curved composite impeller. The motor shall be (120 VAC, 208 VAC, 240 VAC, or 277 VAC) with a current draw of (2.77 A, or 1.85 A) at full load.

2.5 The unit shall have both an On/Off switch and a potentiometer located on top of the unit and room side. There shall be a digital display on the room side of the unit indicating the percent of motor torque and the RPM of the motor.

2.6 There shall be a room side accessible aerosol sample port to validate the upstream challenge concentration.

2.7 Units shall have 5/8” wide flange for installation into lay-in T-Bar ceiling grid or 1-1/2” trim ring for plaster ceilings.

2.8 The filter shall be kept securely in place inside the hood with filter retainers.

2.9 The gel seal filter frame shall be manufactured from anodized extruded aluminum and the sides of the frame shall be joined together so that any contamination of the filter by metal shavings is prevented. Sharp edges and riveted corners where the edges are joined together will not be accepted.

2.10 The filter shall have a downstream gel trough filled with a two component polyurethane gel. Filter bypass is prevented from the housing knife edge to gel seal.

2.11 Filter media shall be micro glass fiber type mini-pleated into closely spaced pleats with thermo-plastic resin separators. The media pack shall be 2” contained within a 2-7/8” or 3-1/2” deep frame.

3.0 Filter Performance

3.1 Each filter shall be tested and certified to have an efficiency of not less than 99.99% per the Institute of Environmental Sciences and Technologies Recommend Practice for HEPA and ULPA filters (IEST-RP-CC001)

3.2 Each filter shall be factory scan tested to a maximum allowable leak rate of 0.01% for HEPA filters and 0.005% for ULPA filters per IEST-RP-CC0034 Section 9. Factory repairs shall not exceed 1% of the filter face area and no individual repair may exceed 2 in^2 (13cm^2).

3.3 The clean filter static pressure drop shall be no greater than —

Tested Face Filter Velocity		
	HEPA- 100fpm	ULPA-100fpm
2"	0.52" w.g.	0.68" w.g.
4"	0.36" w.g.	0.45" w.g.

3.4 The filters shall be approved and listed by Underwriters Laboratories Inc, UL Standard 900

3.5 Filter labels shall have the following information:

- Tested efficiency
- Tested air flow
- Serial number
- Initial resistance at tested air flow
- Part number
- Filter type according to IES-RP-CC-001

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