

PRODUCT OVERVIEW

- Critical Environment Diffuser Fan Filter Unit for traditional 90-100 FPM applications with multiple speed control options
- Forward curved fan blades for superior pressure
- HEPA 99.99% 0.3µm or ULPA 99.9995% 0.12µm efficiency 2.0" thru 4.0" 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



FLOWSTAR FFU VS100

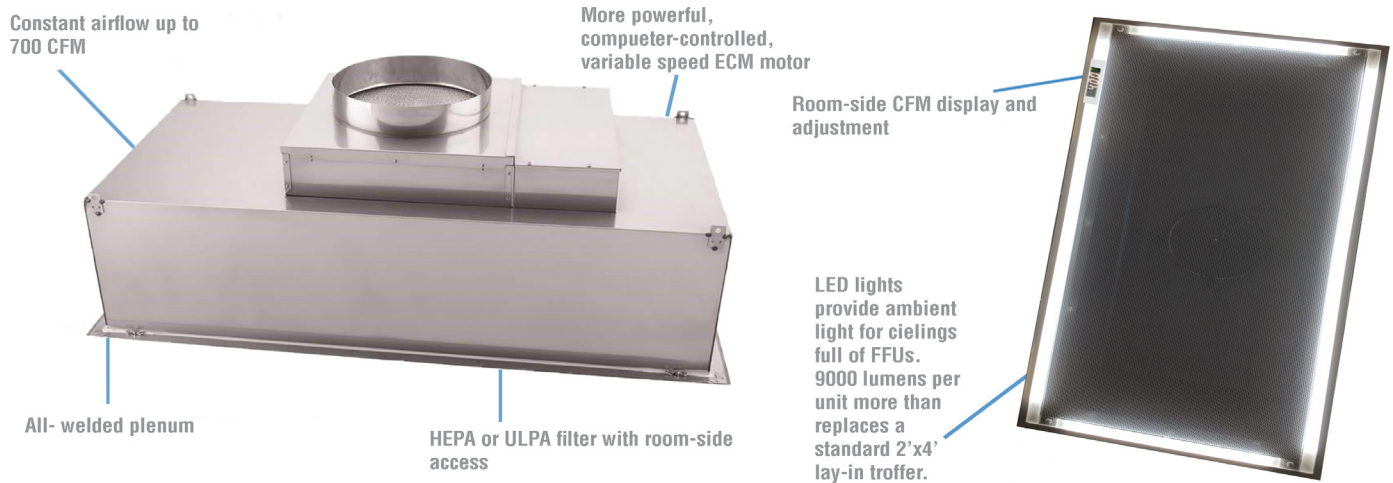
WHY THE FFU VS100?

- 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.
- Visual control unit that provides a constant air volume of 250- 700 CFM over a wide range of static pressure.
- 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.
- Accommodates HEPA (99.99% on 0.3 µm) or ULPA (99.999% at 0.12 µm) filters, both of which feature a separator-less 2" 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 clean room airflow velocities that meet Institute of Environmental Sciences and Technology (IEST) recommended practices and greatly reduce the need for future balancing.
- Room-side digital CFM or 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.



FFU VS100

FFU VS100 KEY FEATURES



The Filtration Group Flowstar® FFU VS100 may be used individually for clean room applications such as animal research, 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 CFM 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)
- Ambient LED Lighting – white and green available
- BACnet IP/BACnet MS/TP controls
- Constant torque motor for use with VAV applications
- #4 satin polished finish on Stainless Steel face

Special Models Available-

- Reverse flow units
- Re-circulating units
- Heating and/or cooling units



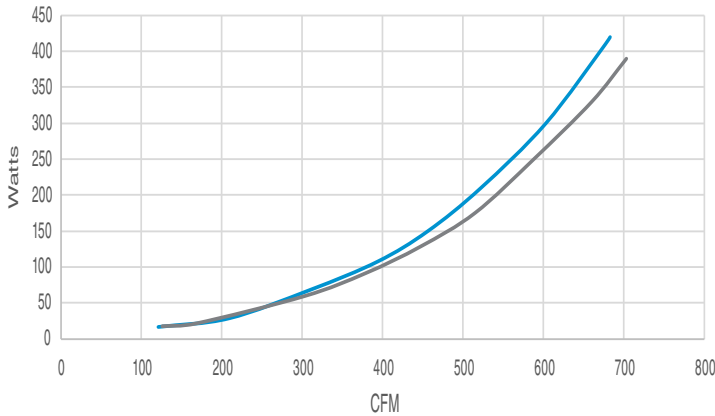
FFU VS100

PERFORMANCE DATA (48"x 24" UNIT)

SETPOINT	With 2" HEPA Filter @ 118 VAC			With 2" HEPA Filter @ 200-280 VAC		
	CFM	FPM	WATTS	CFM	FPM	WATTS
100	683*	143	420	703*	147	390
90	677*	142	410	660*	138	330
80	603*	127	300	588*	123	250
70	522	110	210	515	108	175
60	456	96	150	447	94	128
50	394	83	108	379	79	91
40	311	65	69	303	63	59
30	209	44	29	169	35	21
20	121	25	17	126	26	17

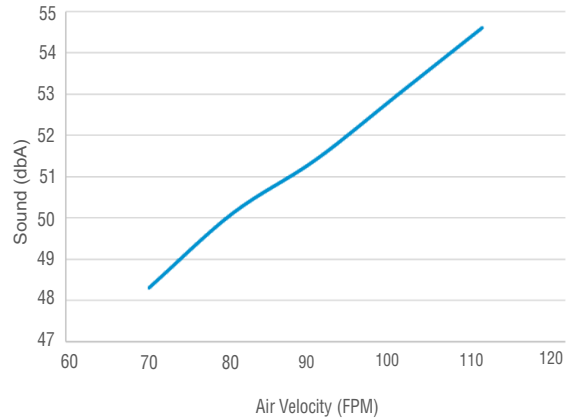
*2" HEPA rated at 580 CFM

POWER CONSUMPTION @ INSTALLATION

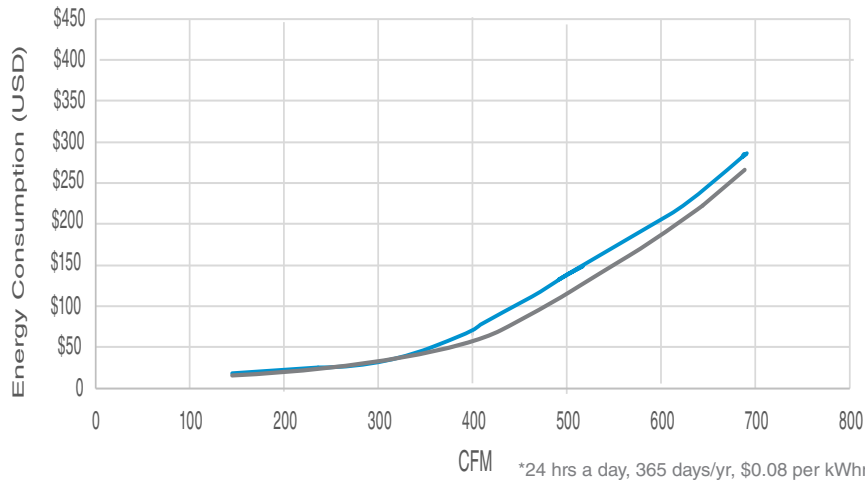


— 2" HEPA, 120 VAC — 2" HEPA, 200-280 VAC

SOUND LEVEL (DBA)



ANNUAL ENERGY COST



— 2" HEPA, 120 VAC — 2" HEPA, 220-280 VAC

*24 hrs a day, 365 days/yr, \$0.08 per kWh



FFU VS100

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 VS100 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 removable downstream screen of 22 gauge perforated T304 stainless steel with 51% open area. The downstream 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 hood body shall have an integral baffle assembly below the blower wheel for even air distribution. The baffle and interior top portion of the hood shall include acoustical foam for sound dampening.
- 2.5 The unit shall contain an electrically commutated motor with forward curved aluminum impeller. The motor shall be 1/3 HP (120VAC, 208VAC, 240VAC, or 277VAC) with a current draw of (5.63 A, or 2.1A) at full load.
- 2.6 The unit shall have both an On/Off switch and a potentiometer located on top of the unit indicating the percent of motor torque and the air flow rate.
- 2.7 There shall be a room side accessible aerosol sample port to validate the upstream challenge concentration.
- 2.8 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.
- 2.9 The filter shall be kept securely in place inside the hood with filter retainers.
- 2.10 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.
- 2.11 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.
- 2.12 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" 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 or 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 in² (13cm²).
- 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

