

CAESA-LAB INC.
Tel: (450) 441-5408
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Purair[®] FLOW

Laminar Flow Cabinets

24 • 36 • 48

"The World's Most Practical Selection of Benchtop Laminar Flow Cabinets."



— Purair[®] FLOW-36

Simple, Effective Protection for
Samples and Work Processes, Uncompromised
Performance, Economical Price

Meets or Exceeds OSHA, ANSI and
other International Standards





Laminar Flow Cabinets

- Vertical laminar flow with HEPA/ULPA filtration protects materials inside the cabinet from particulates.
- High airflow capacity.
- Configurable with a broad range of options customized to your specific application.
- Easy-to-change filters.
- Available in 2', 3' and 4' widths.
- Purair® FLOW-24, shown.



CONVENIENCE AND CONSTRUCTION BENEFITS

Purair® FLOW™ series cabinets offer a proven level of ISO Class 4 product performance at an economical cost. These cabinets are intended for use in non-hazardous applications where biological or biohazard byproducts are not generated and user protection is not required. A range of Air Science® innovations are integrated into the clean, simple, low-maintenance design offering flexible access to the interior work area.

- Purair® FLOW™ cabinets are available in three model sizes with various options.
- Cabinets are shipped fully assembled with standard power cords; no installation required.
- Products are designed for desktop use, or may be installed on an optional base stand or mobile cart.
- Purair® FLOW™ cabinets maintain a 0.45 m/s (90 fpm) airflow velocity, measured 6" (150 mm) from the filter face, with a uniformity of +/- 20% across the filter face.
- This face velocity is in compliance with U.S.A. and international standards for safety and performance. The HEPA filters are easy to replace; no tools required.
- Purair® FLOW™ cabinets are constructed of steel with a microbial powder finish coating.





PRODUCT FEATURES:

- A. Task Lighting:** Fluorescent cabinet lamp located away from laminar flow area.
- B. Filter:** Camfil Farr main HEPA filter with 99.99% efficiency for 0.3 micron particulates (ULPA optional).
- C. Pass Through Ports:** Convenient rear-wall pass through ports for safe routing of instrument cords, cables and leads.
- D. Fan:** High-performance ebmpapst™ centrifugal fan.
- E. Disposable Pre-Filter:** Accessible from the chamber exterior top to contain the release of any particulates that it traps.
- F. Filter Door Lock:** Prevents unauthorized removal or accidental exposure to dirty filters.

OTHER FEATURES:

- 360 Degree Visibility:** Clear back and side panels allow ambient illumination into the chamber and provide users with an unobstructed view of its contents.
- Standards Compliant:** Performance specifications and construction meet or exceed OSHA, ANSI and relevant international standards to assure operator safety.
- Construction:** All models are available in either metal or polypropylene construction, specify when ordering. Available in 120V, 60Hz or 220V, 50Hz models.

Purair® FLOW-24, shown.



The control panel includes an ON/OFF switch for simple operation.



AIR SCIENCE® MULTIPLEX™ FILTRATION TECHNOLOGY

The Multiplex™ filtration consists of a pre-filter and main HEPA filter. The mechanical design enhances safety, convenience and overall value.

- The disposable pre-filter is accessible from the exterior top of the cabinet.
- A filter clamping mechanism allows for the filter to be easily installed and ensures an even seal at the filter peripheral face at all times to prevent bypass leakage.

PURAIR® VERTICAL AIRFLOW

- Room air enters from the top of the cabinet through a disposable pre-filter; this traps larger particles and increases filter life.
- Air is forced evenly across the HEPA filter in a stream of clean, uniform air within the work zone. This dilutes and flushes airborne contaminants from the interior.
- A nominal filter face velocity of 0.45 m/s (90 fpm) ensures a sufficient number of air changes to maintain cleanliness within the work zone.
- The purified air travels down to the work zone in a vertical, unidirectional downflow stream, exiting the work zone across the entire open cabinet front area after deflecting off the work surface.

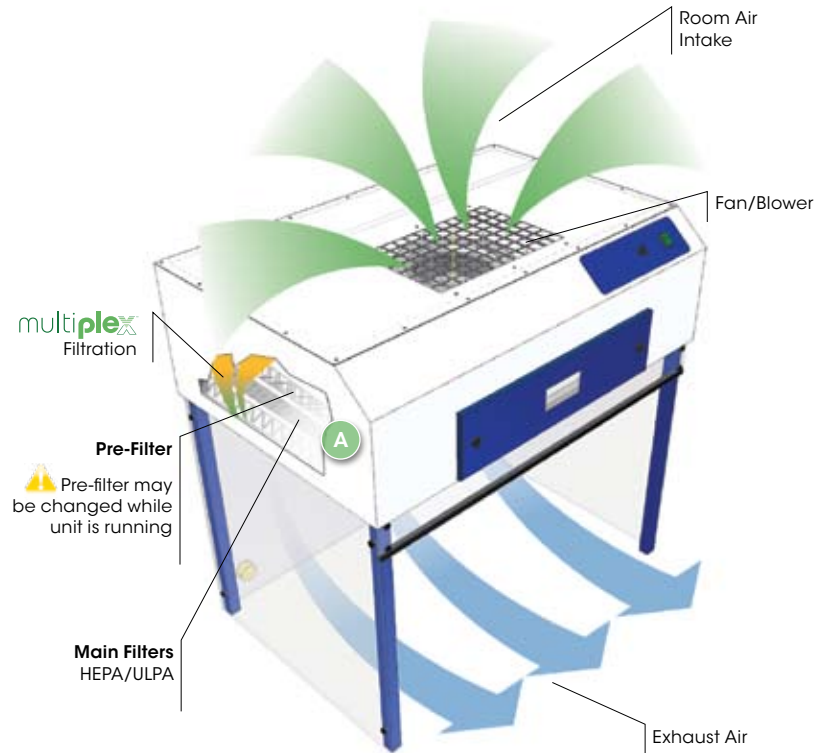
THE AIR SCIENCE® PERFORMANCE ADVANTAGE

Each Air Science® Purair® FLOW™ cabinet includes features expressed through sound design and certified quality construction. Options and accessories add functional performance to meet specific applications.

- **Professional Quality.** Air Science® cabinets comply with current technical and safety regulations.
- **Advanced Filtration.** Air Science® Multiplex™ HEPA filtration provides high performance protection.
- **Industrial Components.** The cabinet frame and work surfaces are durable and chemically resistant.
- **Reliability.** Internal systems are isolated from contamination, extending product life.



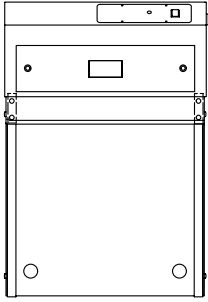
PURAIR® FLOW™ AIRFLOW PATTERN



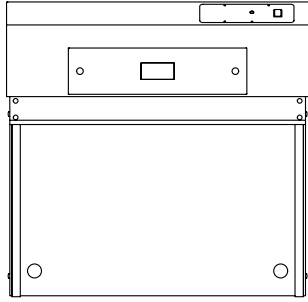
- Purair® FLOW-36 shown with Multiplex™ filtration system.
- Room air enters from the top of the cabinet through the disposable pre-filter where larger particles are trapped, increasing the service life of the main HEPA filter.
- Air is forced evenly across the HEPA filter to deliver a flow of pure, uniform air within the work zone to dilute and flush airborne contaminants from the work area.
- A nominal filter face velocity of 0.45 m/s (90 fpm) ensures that there is sufficient number of air changes within the work zone to eliminate cross contamination and to maintain optimum cleanliness.
- Purified air travels across the work zone to the work surface in a vertical, unidirectional downflow stream, and then exits the work zone across the open cabinet front.
- A. The main filter is easy to replace; no tools required. The filter clamps tightly against the filter gasket to prevent filter bypass and to maintain filter integrity.

MULTIPLEX™ FILTRATION SYSTEM SUMMARY

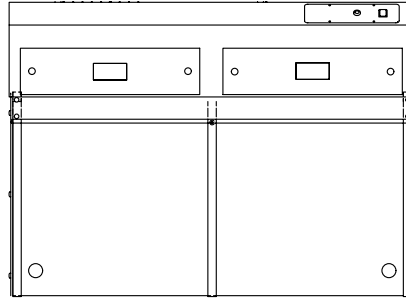
Pre-Filter	Disposable polyester fibers with 85% arrestance.
HEPA	A self-contained filter designed to physically capture particles larger than 0.3 microns (HEPA) or 0.12 microns (ULPA).



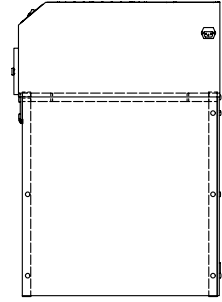
Purair® FLOW-24



Purair® FLOW-36



Purair® FLOW-48



Side View

MODEL	DIMENSIONS					WEIGHT (lbs/Kg)	
	Nominal Width	Internal Height	Internal Depth	External (W x D x H)	Shipping (W x D x H)	Net	Ship
FLOW-24	24" 610 mm	24" 610 mm	24" 610 mm	24" x 24" x 35" 610 x 610 x 889 mm	40" x 40" x 40" 1016 x 1016 x 1016 mm	72 / 33	129 / 59
FLOW-36	36" 914 mm	24" 610 mm	24" 610 mm	36" x 24" x 35" 914 x 610 x 889 mm	40" x 40" x 40" 1016 x 1016 x 1016 mm	99 / 45	157 / 71
FLOW-48	48" 1219 mm	24" 610 mm	24" 610 mm	48" x 24" x 35" 1219 x 610 x 889 mm	52" x 45" x 40" 1321 x 1143 x 1016 mm	138 / 63	195 / 88

PRODUCT SPECIFICATIONS

Purair® Model	FLOW-24	FLOW-36	FLOW-48
Airflow Pattern	<... Vertical downflow. ...>		
Airflow ¹	<... 0.45 m/s (90 fpm) ...>		

Filter Specifications

Pre-Filter	<... Disposable polyester fibers with 85% arrestance. ...>
Main Filter ²	<... HEPA efficiency, 99.99% at 0.3µm. ...>
Clamping	<... Screw compression clamp. ...>
Lighting	<... Compact fluorescent bulb, removed from air stream. ...>

Side Windows

Construction	<... Acrylic. ...>
Visible Opacity	<... Transparent. ...>
Color	<... Colorless. ...>

Construction

Color	<... White epoxy-coated steel frame with blue legs on cabinet sides. ...>
Pass Through Ports	<... Standard. ...>
Blower	<... ebmpapst™ centrifugal fan. ...>
Electrical	<... 120V, 60Hz or 220V, 50Hz voltages available. Specify when ordering. Other voltage options available. ...>
Electrical Controls	<... Main ON/OFF switch for fan and lighting. Solid-state fan speed control with RFI filter maintains blower uniformity. ...>

¹ Average airflow measured 6" (150 mm) from filter face. Uniformity is +/- 20%.

² Camfil Farr filters; HEPA efficiency, 99.99% at 0.3µm.



Air Science® uses long-life Camfil Farr HEPA filters without aluminum separators to increase filter efficiency, minimize the potential for leakage and increase filter life. Filters include a lightweight aluminum frame for structural stability and elimination of swelling common to conventional wood frames.



Purair® FLOW™ cabinets incorporate energy-efficient ebmpapst™ permanently lubricated direct drive centrifugal blowers for maximum operational savings, low noise and minimal vibration.

OPTIONS AND ACCESSORIES

Purair® Model		FLOW-24	FLOW-36	FLOW-48
Base Stand	Floor-standing base for cabinet. Available with leveling feet or locking casters. Optional motorized height adjustment.	P5-CART	P15-CART	P20-CART
Polypropylene Construction	Cabinets are available in all polypropylene construction. Contact Air Science® for information.	FLOW-24-PP	FLOW-36-PP	FLOW-48-PP
ULPA Filter	ULPA filter efficiency 99.999% at particle sizes between 0.1 to 0.3µm.	FLOW-24-ULPA	FLOW-36-ULPA	FLOW-48-ULPA
Spill Tray/Work Surface	Polypropylene work surface available in white or black. Slides out for easy cleaning.	TRAY-P5-24	TRAY-P5-36	TRAY-P5-48

STANDARDS AND COMPLIANCE

Quality Management Systems	ISO 9001:2008
Environment	ISO 14001:2004 ENERGY STAR® Partner
Cabinet Performance	IEST-RP-CC002.2 AS 1386.5
Air Quality	ISO 14644-1, Class 4
Filtration	IEST-RP-CC034.1 IEST-RP-CC001.3 IEST-RP-CC007.1 EN 1822
Electrical Safety	UL-C-61010-1 CE Mark RoHS Exempt under EEE Category 9

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Purair[®] LF Series

General Purpose Laminar Flow Cabinets, Horizontal and Vertical

Horizontal Flow 36 • 48 • 72 • 96
Vertical Flow 36 • 48 • 72

The World's Most Practical Selection of Benchtop Laminar Flow Cabinets



Provides reliable protection for samples and
work processes for a multitude of applications.





Purair General Application Laminar Flow Cabinet Group

- Excellent protection of equipment and materials inside the cabinet from particulate contamination.
- Rich set of options to customize cabinets for a multitude of applications.
- Easy to change filters.
- High airflow capacity.

Overview of Purair Laminar Flow Cabinets

- Purair VLF cabinets provide vertical airflow and are available in 3', 4' and 6' widths for general applications.
- Purair HLF cabinets provide horizontal airflow and are available in 3', 4', 6' and 8' widths in standard and extra tall heights for general applications.

HLF-72, shown with optional mobile base stand.



APPLICATIONS

- Uses include applications where there is no generation of biohazardous materials and operator protection is not required:
- Mycology and food microbiology
- Plant and mammalian cell culture
- Clinical pharmacy and hospital use
- Clean rooms
- Semiconductor assembly
- Pharmaceutical
- Aerospace
- Medical device assembly
- Research Laboratories

INTRODUCTION

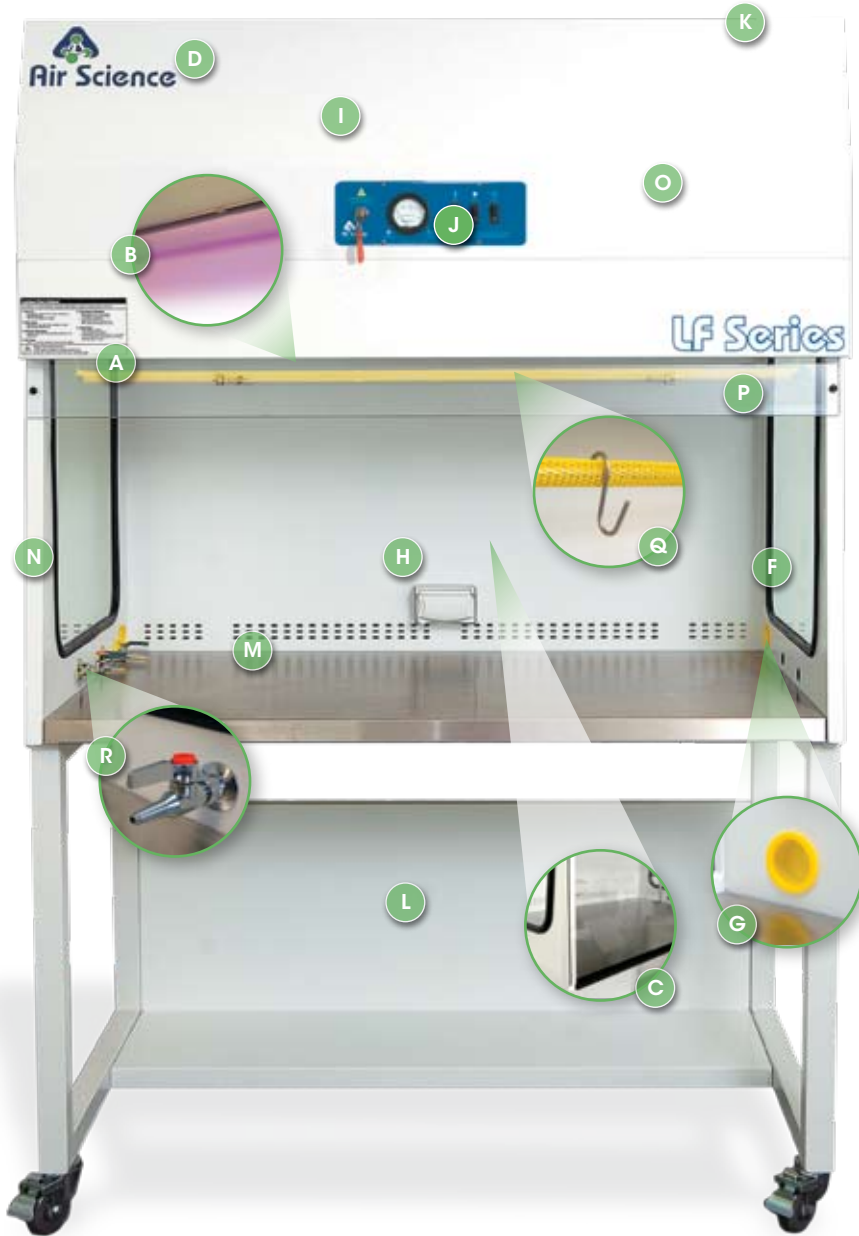
Air Science Purair Laminar Flow Cabinets are a series of high efficiency products designed to protect equipment and other contents of the work zone from particulates, for applications sensitive to such contamination. It is ideally suited for use with non-hazardous contaminants and when flexible access to the equipment in the work zone is desired. At the heart of the Purair Laminar Flow Cabinet product line is the Air Science Multiplex™ ULPA Filtration Technology that creates a clean work environment over a wide range of applications.

VERTICAL AND HORIZONTAL AIRFLOW

Performance of Purair vertical and horizontal flow cabinets is the same and the choice is largely a matter of user preference.

- Horizontal flow cabinets create less turbulence at the work surface, as the airflow does not directly impinge upon it but rather is smoothly drawn across it. The airflow on the Purair vertical flow cabinets directly strikes the work surface. However, to minimize this effect, vertical laminar flow cabinets are manufactured with rear wall perforations to reduce turbulence by removing a small amount of air at the rear of the cabinet. Turbulence is a problem only when it is excessive.
- The design of vertical flow cabinets is customized more easily (at a lower cost) as required.
- Airflow in a horizontal flow cabinet exits directly towards the user, whereas the airflow in a vertical flow cabinet strikes the work surface first and exits towards the user indirectly. It should be noted, neither style laminar flow cabinet offers any operator protection.
- Large or tall equipment in a horizontal flow cabinet will interrupt the airflow more than in a vertical flow cabinet. This may create more turbulence and "dead" spots where airflow is lower than elsewhere. Vertical flow cabinets are not so impacted by large equipment.
- In vertical flow cabinets, the ULPA filter is mounted above the work surface. This provides a larger work space, both taller and deeper, that may be appropriate for large equipment in the work zone.





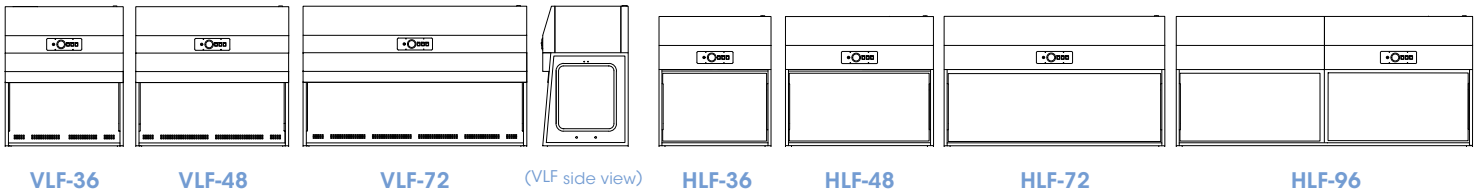
PRODUCT FEATURES:

- A.** Cabinet lighting located away from laminar flow area.
- B.** Optional Ultraviolet lamp to sterilize and decontaminate work zone and cabinet contents between operating periods.
- C.** Optional Night Door/Cover to protect cabinet interior when blowers are off. Contains UV radiation when UV activated.
- D.** Disposable polyester fiber pre filter with 85% arrestance.
- E.** Long-life Camfil-Farr ULPA main filter with efficiency of 99.999% at particle sizes between 0.1 to 0.3µm.
- F.** Side window that allows ambient illumination into the chamber and provides users with an unobstructed view of its contents from three sides.
- G.** Pass through port to safely route electrical cords and cables into the cabinet through its side wall.
- H.** GFCI outlet to power equipment in cabinet.
- I.** ebmpapst™ external rotor blower.
- J.** Control panel On/Off switch for fan, lighting, GFCI outlets, Minihelic ULPA pressure gauge to measure filter performance, UV lamp key switch.
- K.** Fan speed control.
- L.** Base Stand: Optional mobile cart with locking casters, includes a convenient lower shelf
- M.** Stainless steel Work Surface with ULPA filter spill-retention lip on HLF units.
- N.** Ergonomically angled front improves reach and comfort.
- O.** MICROgone™ antimicrobial coating on all painted metal surfaces minimizes contamination – white color.
- P.** Protected work zone environment created for optimum product performance.
- Q.** Optional IV Bar with "S" hooks.
- R.** Optional petcock service fixture (Maximum 4 per unit).

VLF-48, shown with optional mobile base stand and other selected options.



Control panel On/Off switch for fan, lighting, GFCI outlets, Minihelic ULPA pressure gauge to measure filter performance, UV lamp key switch.



THE AIR SCIENCE PERFORMANCE ADVANTAGE

Each Air Science Purair Laminar Flow Cabinet includes features expressed through sound design and certified quality construction. Options and accessories add functional performance to meet specific applications.

Professional Quality. Air Science cabinets comply with current technical and safety regulations.

Advanced Filtration. Air Science Multiplex™ ULPA Filtration provides high performance protection.

Industrial Components. The cabinet frame and work surfaces are durable and chemically resistant for long service life.

All cabinet components are clean room compatible.

Each cabinet is individually factory tested for safety and performance in accordance with international standards.

PURAIR VERTICAL AIRFLOW

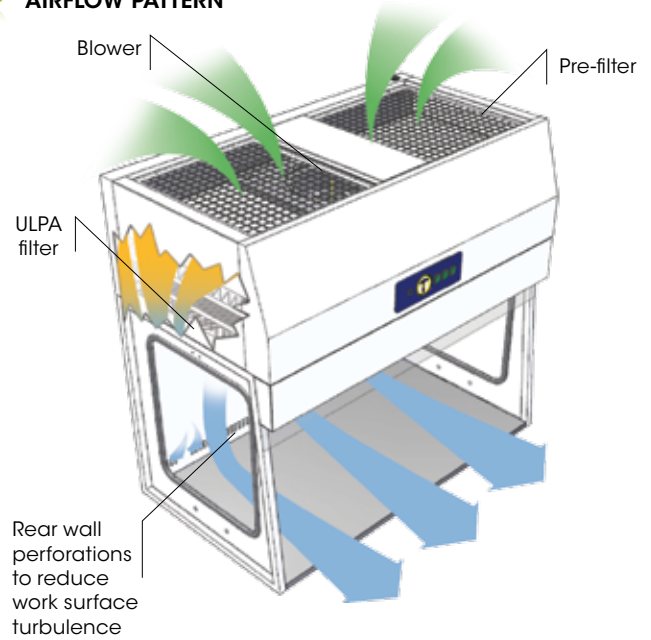
- Room air enters from the top of the cabinet through a disposable pre-filter; this traps larger particles and increases filter life.
- Air is forced evenly across the ULPA filter in a stream of clean, uniform air within the work zone. This dilutes and flushes airborne contaminants from the interior.

- A nominal filter face velocity of 0-45 m/s (90 fpm) ensures a sufficient number of air changes to maintain cleanliness within the work zone.
- The purified air travels down to the work zone in a vertical, unidirectional down flow stream, exiting the work zone across the entire open cabinet front area after deflecting off the work surface. Rear wall perforations are designed to reduce work surface turbulence and minimize the possibility of dead air corners in the work zone.

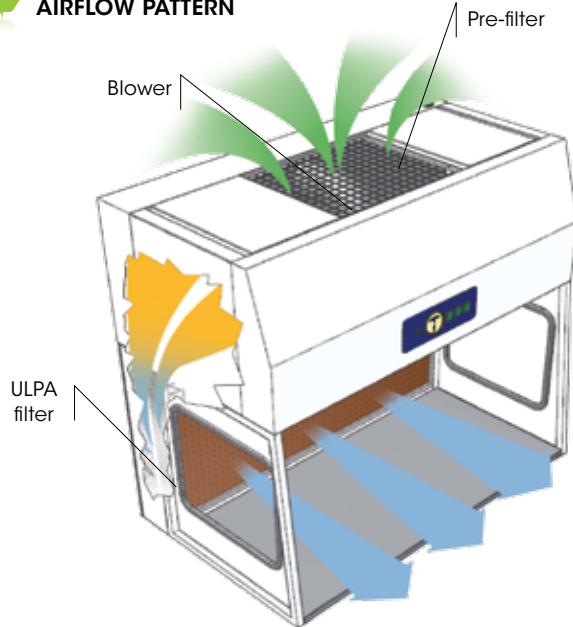
PURAIR HORIZONTAL AIRFLOW

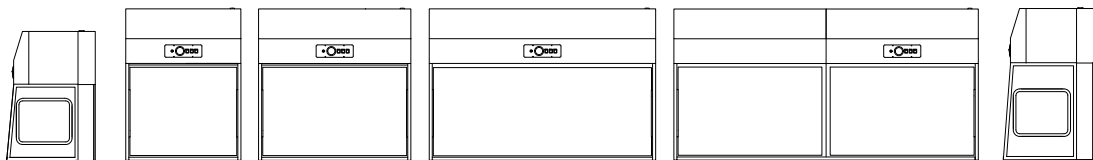
- Room air enters from the top of the cabinet through a disposable pre-filter; this traps larger particles and increases filter life.
- Air is forced evenly across the ULPA filter in a stream of clean, uniform air within the work zone. This dilutes and flushes airborne contaminants from the interior.
- A nominal filter face velocity of 0-45 m/s (90 fpm) ensures a sufficient number of air changes to maintain cleanliness within the work zone.
- The purified air travels across the work zone in a horizontal, unidirectional stream and exits the work zone across the entire open cabinet front.

PURAIR VERTICAL AIRFLOW PATTERN



PURAIR HORIZONTAL AIRFLOW PATTERN





(HLF side view) **HLF-36XT** **HLF-48XT** **HLF-72XT** **HLF-96XT** (HLF-XT side view)

MODEL			DIMENSIONS			WEIGHT (lbs/Kg)	
Model	Nominal Width	Internal Height	Internal Depth	External (W x D x H)	Shipping (W x D x H)	Net	Ship

Vertical Laminar Flow Cabinets

VLF-36	36" 914 mm	28.25" 718mm	28.25" 718mm	40.4" x 29.25" x 47.25" 1026 x 743 x 1200mm	45" x 44" x 54" 1143 x 1118 x 1372mm	268/122	371/168
VLF-48	48" 1219 mm	28.25" 718mm	28.25" 718mm	52.4" x 29.25" x 47.25" 1331 x 743 x 1200mm	60" x 44" x 54" 1524 x 1118 x 1372mm	322/146	478/217
VLF-72	72" 1829 mm	28.25" 718mm	28.25" 718mm	76.4" x 29.25" x 47.25" 1941 x 743 x 1200mm	91" x 44" x 54" 2311 x 1118 x 1372mm	478/217	595/270

Horizontal Laminar Flow Cabinets

HLF-36	36" 914 mm	23.75" 603mm	23.75" 603mm	37.25" x 29.5" x 42.75" 946 x 749 x 1086mm	45" x 44" x 54" 1143 x 1118 x 1372mm	246/112	371/168
HLF-48	48" 1219 mm	23.75" 603mm	23.75" 603mm	49.25" x 29.5" x 42.75" 1251 x 749 x 1086mm	60" x 44" x 54" 1524 x 1118 x 1372mm	289/131	478/217
HLF-72	72" 1829 mm	23.75" 603mm	23.75" 603mm	73.25" x 29.5" x 42.75" 1861 x 749 x 1086mm	91" x 44" x 54" 2311 x 1118 x 1372mm	439/199	595/270
HLF-96	96" 2438 mm	23.75" 603mm	23.75" 603mm	98.5" x 29.5" x 42.75" 2502 x 749 x 1086mm	110" x 44" x 54" 2794 x 1118 x 1372mm	878/398	978/444

Horizontal Laminar Flow Cabinets with Extra Tall Option

HLF-36XT	36" 914 mm	29.5" 749mm	23.75" 603mm	37.25" x 29.5" x 48.75" 946 x 749 x 1238mm	45" x 44" x 60" 1143 x 1118 x 1524mm	266/121	391/177
HLF-48XT	48" 1219 mm	29.5" 749mm	23.75" 603mm	49.25" x 29.5" x 48.75" 1251 x 749 x 1238mm	60" x 44" x 60" 1524 x 1118 x 1524mm	319/145	508/230
HLF-72XT	72" 1829 mm	29.5" 749mm	23.75" 603mm	73.25" x 29.5" x 48.75" 1861 x 749 x 1238mm	91" x 44" x 60" 2311 x 1118 x 1524mm	479/217	635/288
HLF-96XT	96" 2438 mm	29.5" 749mm	23.75" 603mm	98.5" x 29.5" x 48.75" 2502 x 749 x 1238mm	110" x 44" x 60" 2794 x 1118 x 1524mm	938/425	1038/471

Specifications are subject to change without notice.

Purair Laminar Flow Cabinets maintain a 0.45 m/s or 90 fpm airflow velocity, measured 6"/150mm from the filter with a uniformity of +/- 20% across the filter face. This face velocity is in compliance with USA and international standards for safety and performance. The ULPA filters are easy to replace with common tools.



STANDARDS AND COMPLIANCE

Quality Management Systems	ISO 9001:2008
Environmental Management Systems	ISO 14001:2004 EnergyStar Partner
Cabinet Performance	IEST-RP-CC002.2 AS 1386.5
Air Quality	ISO 14644-1, Class 3
Filtration	IEST-RP-CC034.1 IEST-RP-CC001.3 IEST-RP-CC007.1 EN 1822
Electrical Safety	UL-C-61010-1 CE Mark ROHS Exempt under EEE Category 9

Air Science laminar flow cabinets incorporate ebmpapst™ permanently lubricated direct drive centrifugal blowers. The energy efficient design reduces operating costs and has extremely low noise and vibration levels.



PRODUCT SPECIFICATIONS

Air Science Model	VLF-36 VLF-48 VLF-72	HLF-36 HLF-48 HLF-72 HLF-96	HLF-36XT HLF-48XT HLF-72XT HLF-96XT
Airflow Pattern	Vertical	Horizontal	
Airflow (1)	0.45m/s-90fpm		
Filter Specifications			
Pre-Filter	Disposable polyester fibers with 85% arrestance		
Main Filter (2)	ULPA, 99w.999% efficient at particle sizes between 0.1 to 0.3µm		
Size	Full size of Work Zone		
Clamping	Spring loaded, adjustable tension adjusts for gasket aging		
Cabinet Lighting	Compact Fluorescent Bulb Removed from Air Stream		
UV Lamp (3)	Optional		
Noise, dBA, 1 meter	<65		

Side Windows

Construction	Tempered Glass
Visible Opacity	Transparent
UV Opacity	UV Absorbing
Color	Colorless

Construction

Color	White epoxy coated steel frame
Work Surface	Stainless Steel
GFCI outlet	Standard
Cable Pass Thru Port	Standard
Finish	MICROgone™ Anti-microbial Powder Coat

Shelving

Night Door/Cover	Optional
Blower	ebmpapst™ external rotor motor, permanently lubricated, low noise and vibration levels
Electrical	120V, 60Hz or 230V, 50Hz voltages available. Specify when ordering. Other voltage options available.
Electrical Controls	Main On/Off Switch; Solid State Fan Speed Control with RFI filter; UV Timer and Key Switch if included
Monitoring	Minihelic ULPA pressure gauge
Warranty	3 Years

(1) Average airflow measured 6"/150mm from filter face. Uniformity is +/- 20%.

(2) Camfil-Farr filters; ULPA efficiency: 99.999% at particle sizes between 0.1 to 0.3µm

(3) UV Lamp includes Timer and Key Switch

OPTIONS & ACCESSORIES

Air Science Model	VLF-36 VLF-48 VLF-72	HLF-36 HLF-48 HLF-72 HLF-96	HLF-36XT HLF-48XT HLF-72XT HLF-96XT
Mobile Base Stand-Wheels	Floor-standing base for cabinet with locking castors 860mm (34") height. VLF-BW-36 VLF-BW-48 VLF-BW-72	HLF-BW-36 HLF-BW-48 HLF-BW-72 HLF-BW-96	HLF-BW-36XT HLF-BW-48XT HLF-BW-72XT HLF-BW-96XT
Mobile Base Stand-Leveling Feet	Floor-standing base for cabinet with leveling feet 860mm (34") height. VLF-BL-36 VLF-BL-48 VLF-BL-72	HLF-BL-36 HLF-BL-48 HLF-BL-72 HLF-BL-96	HLF-BL-36XT HLF-BL-48XT HLF-BL-72XT HLF-BL-96XT
Mobile Base Stand-Motorized	Floor-standing base for cabinet with motorized height adjustment. Specify locking castors or leveling feet. VLF-BM-36 VLF-BM-48 VLF-BM-72	HLF-BM-36 HLF-BM-48 HLF-BM-72 HLF-BM-96	HLF-BM-36XT HLF-BM-48XT HLF-BM-72XT HLF-BM-96XT
IV Bar and "S" Hooks	Interior bar spanning the width of the cabinet to hang IV bags and other equipment using "S" hooks. Retrofit Kit. IV-VLF-36 IV-VLF-48 IV-VLF-72	IV-HLF-36 IV-HLF-48 IV-HLF-72 IV-HLF-96	IV-HLF-36XT IV-HLF-48XT IV-HLF-72XT IV-HLF-96XT
Service Fixtures	Sidewall mounting for service fixture. Available for petcocks, faucets and valves. Retrofit Kit. Maximum of 4 per cabinet. SF	SF	SF
UV lamp with Night Door/Cover*	Ultraviolet lamp for econtamination of interior surfaces. Includes a timer, and key switch UV operation must comply with local codes and facility safety practices. Contact your facility safety officer for details. UV-36 UV-48 UV-72	UV-36 UV-48 UV-72 UV-96	UV-36XT UV-48XT UV-72XT UV-96XT

*Sold together; safety precautions must be followed.

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