# Purair® LF Series

## General Purpose Laminar Flow Cabinets, Horizontal and Vertical

24 • 36 • 48 • 60 • 72 • 96

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


—VLF-48

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

Air Science®

SEFA GSA Schedule

Purair LF Series

## 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 2', 3', 4', 5', 6' and 8' widths for general applications.*
- *Purair HLF cabinets provide horizontal airflow and are available in 2', 3', 4', 5', 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

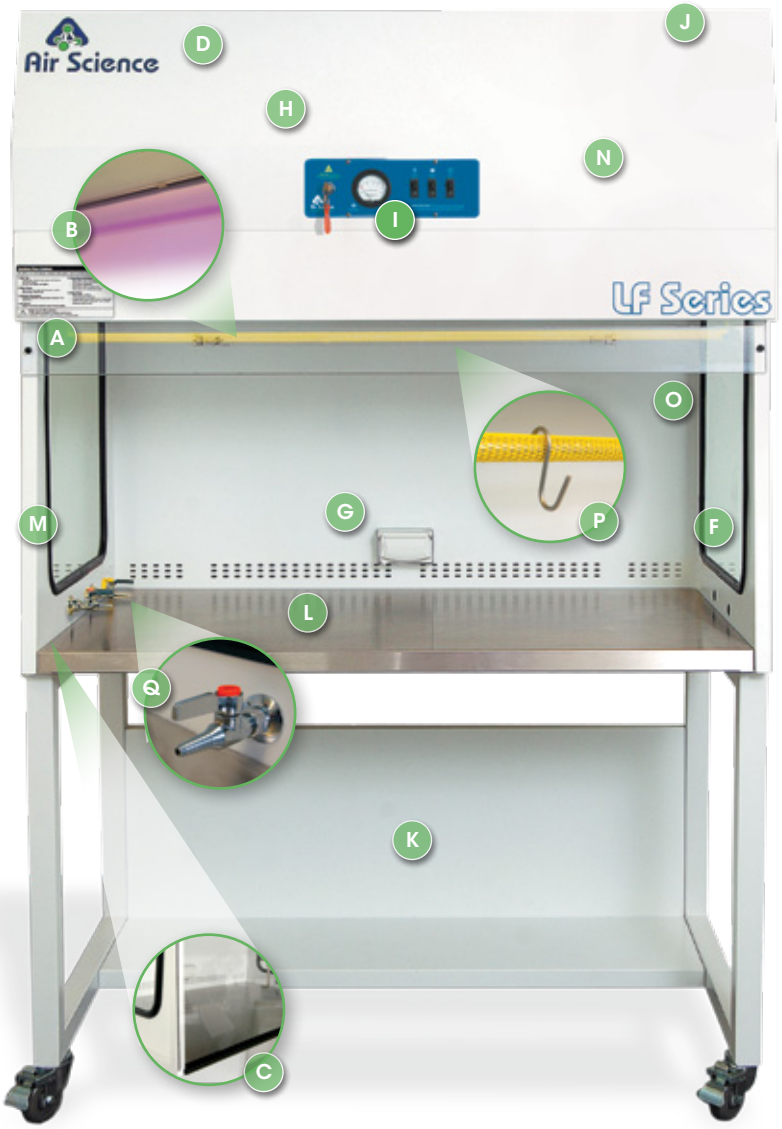
Air Science Purair Laminar Flow Cabinets are a series of high efficiency products designed to protect equipment and other contents of the work zone from particulates, for applications sensitive to such contamination. It is ideally suited for use with non-hazardous contaminants and when flexible access 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.

Made in the U.S.A.




## 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. GFCI outlet to power equipment in cabinet.

H. ebmpapst™ external rotor blower.

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

J. Fan speed control.

K. Base Stand: Optional mobile cart with locking casters, includes a convienent lower shelf.

L. Stainless steel Work Surface with ULPA filter spill-retention lip on HLF units.

M. Ergonomically angled front improves reach and comfort.

N. MICROgone™ antimicrobial coating on all painted metal surfaces minimizes contamination – white color.

O. Protected work zone environment created for optimum product performance.

P. Optional IV Bar with "S" hooks.

Q. 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.

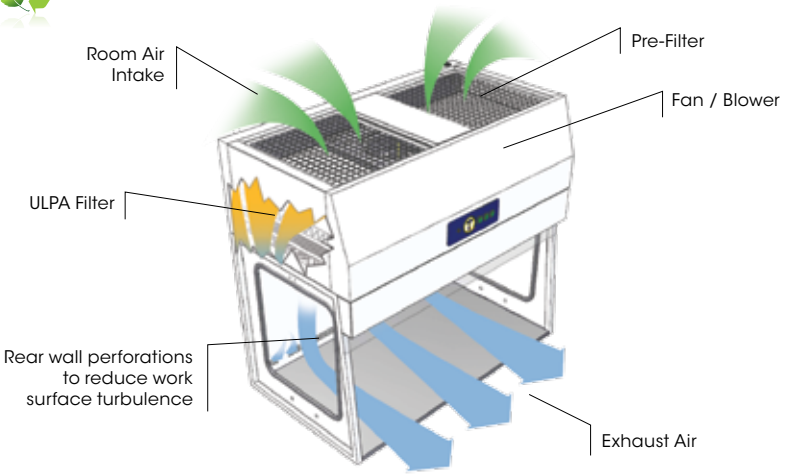
*The main filter gasket evenly seals the filter face to prevent bypass air leakage. Our pour-in-place silicone gasket out performs traditional style stick-on "dove-tail" gasketing.*

## FEATURES AND BENEFITS

- Purair Laminar Flow Cabinets are available in 2 model types with various sizes and options for a total of 18 standard models.
- Purair Laminar Flow Cabinets are shipped fully assembled. No installation is required; just plug them in and use them.
- Products are designed for desktop use, or may be installed on an optional mobile base stand.
- The rear wall of vertical flow cabinets is perforated to reduce work surface turbulence by removing some of the airflow to the rear.
- Horizontal flow cabinets are designed with a lip on the rear of the work surface to protect the ULPA filter from spills.
- High capacity air handling system delivers flow velocity of 0.45 m/s or 90 fpm.
- Purair VLF and HLF cabinets have an ULPA filter pressure gauge to measure filter performance.
- The Air Science filters are easy to access, easy to change.
- Purair Laminar Flow products are constructed of steel with Air Science's exclusive MICROgone™ anti-microbial powder finish coating.

Accessories include an IV bar, service fixtures, base stand, UV lamp, and front door/cover.

## PURAIR VERTICAL AIRFLOW PATTERN



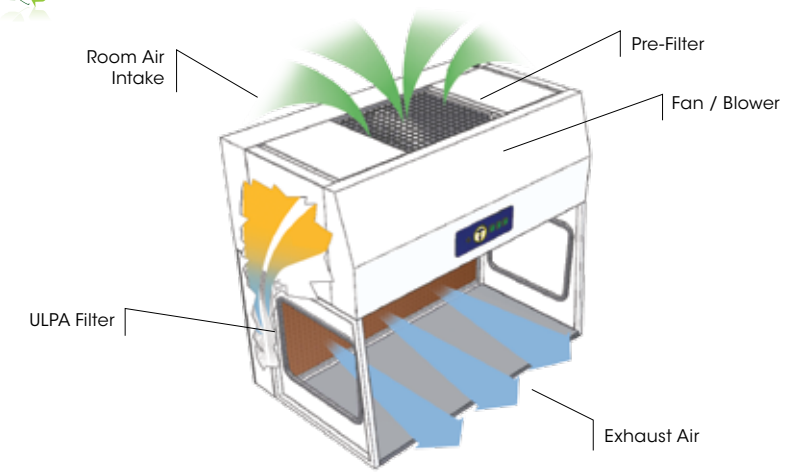

*Room air enters from the top of the cabinet through a disposable pre-filter; this traps larger particles and increases filter life.*

*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 PATTERN



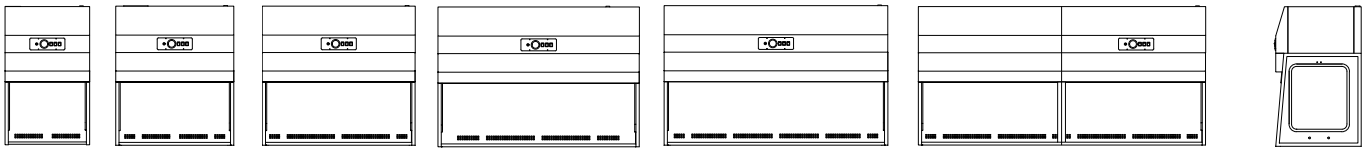

*Purair Laminar Flow Cabinets maintain a 0.45 m/s or 90 fpm airflow velocity, measured 6"/150mm from the filter with a uniformity of +/- 20% across the filter face. This face velocity is in compliance with USA and international standards for safety and performance. The ULPA filters are easy to replace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

*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.*

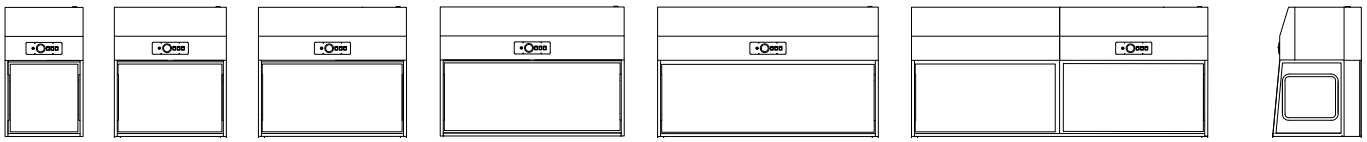
*The purified air travels across the work zone in a horizontal, unidirectional stream and exits the work zone across the entire open cabinet front.*



VLF-24 VLF-36 VLF-48 VLF-60 VLF-72 VLF-96 VLF (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-24** | 24"<br>610 mm | 24.00"<br>610 mm | 28.25"<br>718 mm | 28.4" x 29.25" x 47.25"<br>721 x 743 x 1200 mm | 40" x 44" x 54"<br>1016 x 1118 x 1372 mm | 181 / 82 | 288 / 131 |
| **VLF-36** | 36"<br>914 mm | 28.25"<br>718 mm | 28.25"<br>718 mm | 40.4" x 29.25" x 47.25"<br>1026 x 743 x 1200 mm | 45" x 44" x 54"<br>1143 x 1118 x 1372 mm | 268/122 | 371/168 |
| **VLF-48** | 48"<br>1219 mm | 28.25"<br>718 mm | 28.25"<br>718 mm | 52.4" x 29.25" x 47.25"<br>1331 x 743 x 1200 mm | 60" x 44" x 54"<br>1524 x 1118 x 1372 mm | 322/146 | 478/217 |
| **VLF-60** | 60"<br>1524 mm | 28.25"<br>718 mm | 28.25"<br>718 mm | 64.4" x 29.25" x 47.25"<br>1636 x 743 x 1200 mm | 70" x 44" x 54"<br>1778 x 1118 x 1372 mm | 401/182 | 525/238 |
| **VLF-72** | 72"<br>1829 mm | 28.25"<br>71 8mm | 28.25"<br>71 8mm | 76.4" x 29.25" x 47.25"<br>1941 x 743 x 1200 mm | 91" x 44" x 54"<br>2311 x 1118 x 1372 mm | 478/217 | 595/270 |
| **VLF-96** | 96"<br>2438 mm | 28.25"<br>718 mm | 28.25"<br>718 mm | 100.4" x 29.25" x 47.25"<br>2550 x 743 x 1200 mm | 110" x 44" x 54"<br>2794 x 1118 x 1372 mm | 620/281 | 745/338 |

*Specifications are subject to change without notice.*



HLF-24 HLF-36 HLF-48 HLF-60 HLF-72 HLF-96 HLF (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 |
| **Horizontal Laminar Flow Cabinets** | | | | | | | |
| **HLF-24** | 24"<br>610 mm | 23.75"<br>603 mm | 23.75"<br>603 mm | 25.25" x 29.5" x 42.75"<br>641 x 749 x 1086 mm | 40" x 44" x 54"<br>1016 x 1118 x 1372 mm | 170 / 77 | 280 / 127 |
| **HLF-36** | 36"<br>914 mm | 23.75"<br>60 3mm | 23.75"<br>60 3mm | 37.25" x 29.5" x 42.75"<br>946 x 749 x 1086 mm | 45" x 44" x 54"<br>1143 x 1118 x 1372 mm | 246/112 | 371/168 |
| **HLF-48** | 48"<br>1219 mm | 23.75"<br>603 mm | 23.75"<br>603mm | 49.25" x 29.5" x 42.75"<br>1251 x 749 x 1086 mm | 60" x 44" x 54"<br>1524 x 1118 x 1372 mm | 289/131 | 478/217 |
| **HLF-60** | 60"<br>1524 mm | 23.75"<br>603 mm | 23.75"<br>603 mm | 61.25" x 29.5" x 42.75"<br>1556 x 749 x 1086 mm | 70" x 44" x 54"<br>1778 x 1118 x 1372 mm | 344/156 | 494/224 |
| **HLF-72** | 72"<br>1829 mm | 23.75"<br>603 mm | 23.75"<br>603 mm | 73.25" x 29.5" x 42.75"<br>1861 x 749 x 1086 mm | 91" x 44" x 54"<br>2311 x 1118 x 1372 mm | 439/199 | 595/270 |
| **HLF-96** | 96"<br>2438 mm | 23.75"<br>603 mm | 23.75"<br>603 mm | 98.5" x 29.5" x 42.75"<br>2502 x 749 x 1086mm | 110" x 44" x 54"<br>2794 x 1118 x 1372 mm | 878/398 | 725/329 |

*Specifications are subject to change without notice.*

HLF-24XT HLF-36XT HLF-48XT HLF-60XT 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 |
| **Horizontal Laminar Flow Cabinets with Extra Tall Option** | | | | | | | |
| **HLF-24XT** | 24"<br>610 mm | 29.5"<br>749 mm | 23.75"<br>603mm | 25.25" x 29.5" x 48.75"<br>641 x 749 x 1238 mm | 40" x 44" x 60"<br>1016 x 1118 x 1524 mm | 191/87 | 000/000 |
| **HLF-36XT** | 36"<br>914 mm | 29.5"<br>749 mm | 23.75"<br>603mm | 37.25" x 29.5" x 48.75"<br>946 x 749 x 1238 mm | 45" x 44" x 60"<br>1143 x 1118 x 1524 mm | 266/121 | 391/177 |
| **HLF-48XT** | 48"<br>1219 mm | 29.5"<br>749 mm | 23.75"<br>603mm | 49.25" x 29.5" x 48.75"<br>1251 x 749 x 1238 mm | 60" x 44" x 60"<br>1524 x 1118 x 1524 mm | 319/145 | 508/230 |
| **HLF-60XT** | 60"<br>1524 mm | 29.5"<br>749 mm | 23.75"<br>603mm | 61.25" x 29.5" x 48.75"<br>1556 x 749 x 1238 mm | 70" x 44" x 60"<br>1778 x 1118 x 1524 mm | 375/170 | 525/238 |
| **HLF-72XT** | 72"<br>1829 mm | 29.5"<br>749 mm | 23.75"<br>603mm | 73.25" x 29.5" x 48.75"<br>1861 x 749 x 1238 mm | 91" x 44" x 60"<br>2311 x 1118 x 1524 mm | 479/217 | 635/288 |
| **HLF-96XT** | 96"<br>2438 mm | 29.5"<br>749 mm | 23.75"<br>603mm | 98.5" x 29.5" x 48.75"<br>2502 x 749 x 1238 mm | 110" x 44" x 60"<br>2794 x 1118 x 1524 mm | 585/265 | 746/338 |

*Specifications are subject to change without notice.*

## OPTIONS & ACCESSORIES

| | | Vertical | Horizontal | Horizontal, Tall |
|---|---|---|---|---|
| **Air Science Model** | | **VLF-24 \| VLF-36<br>VLF-48 \| VLF-60<br>VLF-72 \| VLF-96** | **HLF-24 \| HLF-36<br>HLF-48 \| HLF-60<br>HLF-72 \| HLF-96** | **HLF-24XT \| HLF-36XT<br>HLF-48XT \| HLF-60XT<br>HLF-72XT \| HLF-96XT** |
| Mobile Base Stand-Wheels | Floor-standing base for cabinet with locking castors 860mm (34") height. | VLF-BW-24 \| VLF-BW-36<br>VLF-BW-48 \| VLF-BW-60<br>VLF-BW-72 \| VLF-BW-96 | HLF-BW-24 \| HLF-BW-36<br>HLF-BW-48 \| HLF-BW-60<br>HLF-BW-72 \| HLF-BW-96 | HLF-BW-24XT \| HLF-BW-36XT<br>HLF-BW-48XT \| HLF-BW-60XT<br>HLF-BW-72XT \| HLF-BW-96XT |
| Mobile Base Stand-Leveling Feet | Floor-standing base for cabinet with leveling feet 860mm (34") height. | VLF-BL-24 \| VLF-BL-36<br>VLF-BL-48 \| VLF-BL-60<br>VLF-BL-72 \| VLF-BL-96 | HLF-BL-24 \| HLF-BL-36<br>HLF-BL-48 \| HLF-BL-60<br>HLF-BL-72 \| HLF-BL-96 | HLF-BL-24XT \| HLF-BL-36XT<br>HLF-BL-48XT \| HLF-BL-60XT<br>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-24 \| VLF-BM-36<br>VLF-BM-48 \| VLF-BM-60<br>VLF-BM-72 \| VLF-BM-96 | HLF-BM-24 \| HLF-BM-36<br>HLF-BM-48 \| HLF-BM-60<br>HLF-BM-72 \| HLF-BM-96 | HLF-BM-24XT \| HLF-BM-36XT<br>HLF-BM-48XT \| HLF-BM-60XT<br>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-24 \| IV-VLF-36<br>IV-VLF-48 \| IV-VLF-60<br>IV-VLF-72 \| IV-VLF-96 | IV-HLF-24 \| IV-HLF-36<br>IV-HLF-48 \| IV-HLF-60<br>IV-HLF-72 \| IV-HLF-96 | IV-HLF-24XT \| IV-HLF-36XT<br>IV-HLF-48XT \| IV-HLF-60XT<br>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.Includes door/cover of UV absorbing polycarbonate plastic. Includes electrical interlock for blower, if present. | UV-24 \| UV-36<br>UV-48 \| UV-60<br>UV-72 \| UV-96 | UV-24 \| UV-36<br>UV-48 \| UV-60<br>UV-72 \| UV-96 | UV-24XT \| UV-36XT<br>UV-48XT \| UV-60XT<br>UV-72XT \| UV-96XT |
| Ionization Bar | Generates a continuous flow of positive and negative ions balanced to neutralize surface static charges and to protect sensitive work product. | ION-24 \| ION-36<br>ION-48 \| ION-60<br>ION-72 \| ION-96 | ION-24 \| ION-36<br>ION-48 \| ION-60<br>ION-72 \| ION-96 | ION-24XT \| ION-36XT<br>ION-48XT \| ION-60XT<br>ION-72XT \| ION-96XT |
| Static Dissipative Work Surface | Work surface composite resists and dissipates static charges to protect sensitive work product. | SDW-24 \| SDW-36<br>SDW-48 \| SDW-60<br>SDW-72 \| SDW-96 | SDW-24 \| SDW-36<br>SDW-48 \| SDW-60<br>SDW-72 \| SDW-96 | SDW-24XT \| SDW-36XT<br>SDW-48XT \| SDW-60XT<br>SDW-72XT \| SDW-96XT |

**Sold together; safety precautions must be followed.*

## PRODUCT SPECIFICATIONS

| Airflow Pattern | Vertical | Horizontal | |
|---|---|---|---|
| **Air Science Model** | **VLF-24 \| VLF-36<br>VLF-48 \| VLF-60<br>VLF-72 \| VLF-96** | **HLF-24 \| HLF-36<br>HLF-48 \| HLF-60<br>HLF-72 \| HLF-96** | **HLF-24XT \| HLF-36XT<br>HLF-48XT \| HLF-60XT<br>HLF-72XT \| HLF-96XT** |
| Airflow (1) | 0.45m/s-90fpm | 0.45m/s-90fpm | |

### Filter Specifications

| | |
|---|---|
| Pre-Filter | <··· Disposable polyester fibers with 85% arrestance ···> |
| Main Filter (2) | <··· ULPA, 99.999% 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 |
| 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*

*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.*

*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.*

## STANDARDS AND COMPLIANCE

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

Air Science®

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