LAMINAR FLOW CABINETS

Horizontal & Vertical

Made in UK

PuriCore scientific

LABCAIRE
For Tomorrow's Environment

Leaders in Containment Technology

HORIZONTAL & VERTICAL LAMINAR FLOW CABINETS

Laminar Flow Cabinets provide sample protection utilising HEPA Filters to generate a parallel (Laminar) Flow of clean air, this can be Horizontal (HLF) or Vertical (VLF), to BSEN 14644: 1999, and clean conditions to better than EU GMP 2008 Grade B (equivalent to Federal Standard's Class 100). Achieved using EU4 grade Pre-Filters and HEPA (High Efficiency Particulate Air) Filters that are rated to 99.997% efficient @ 0.3microns.

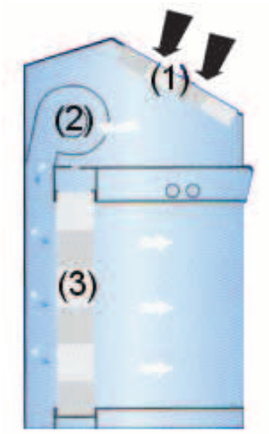
HLF12

VLF12

QUALITY ENGINEERED

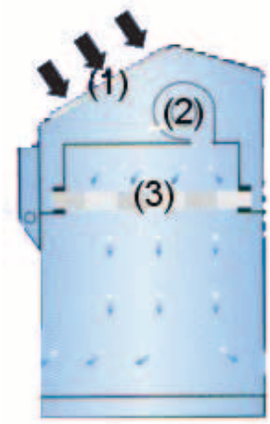
- Manufactured from Zintec Mild Steel, epoxy powder coated to prevent corrosion.
- Internal lighting and toughened glass end-panels are fitted as standard to ensure maximum visibility when working at the cabinet.
- HLF available in two sizes - 1200mm (4ft), and 1800mm (6ft)
- VLF available in three sizes – 600mm (2ft), 1200mm (4ft), and 1800mm (6ft).
- Front screen (acrylic), hinged across the whole width enables complete access to the working area.
- Low Air Flow Indicator
- 316 Stainless Steel Work Surface With Rolled Edges
- Variable Speed Large Diameter Fans
- Quiet Operation <55db (A)
- Integral Mini-Helic Gauges
- Overhead Internal Fluorescent Lighting
- Easy Change Pre-Filter
- Zintec Steel Construction With Epoxy Powder Coating
- Hours Run Indicator

Control Panel



HLF AIRFLOW CHARACTERISTICS

Air is drawn in through the top of the cabinet and immediately passed through an EU4 Pre-Filter (1) to remove larger particulates. It then passes through the fan (2) into the rear plenum chamber to ensure distribution of air over the whole HEPA Filter (3) face. Filtered air will then flow horizontally towards the operator at a velocity of 0.36 – 0.54 m/sec to ensure no air from the room can flow back into the working area.



VLF AIRFLOW CHARACTERISTICS

Air is drawn in through the EU4 Pre-Filter (1) at the top of the cabinet that will remove any particulate in the room. It will then pass through the fan (2) before entering the plenum chamber above the main filter. The plenum chamber will ensure the air is distributed evenly before passing through the main filter (3). On exiting the Main Filter it travels vertically down to the work surface where the air will spread towards the front and rear exits of the cabinet.

VLF6 – A COMPACT ALTERNATIVE

The VLF6 is an ideal alternative to a full-sized Cabinet when space is at a premium. The footprint is just 670mm wide x 560mm deep and will fit on most standard work tops.

Compliant to the same standards as the larger units, can be sited over equipment or services such as gas, electric or water, as necessary.

If a greater level of cleanliness is required, then 0.12micron filters can be used at an efficiency of 99.9998%, offering clean air levels to better than Class 10. ULPA Filter.

AREA'S OF APPLICATION

- Microbiology
- Pharmaceutical Manufacturing
- Robotic Enclosures
- Electronics Manufacturing
- Aerospace Component Assembly

CABINET SPECIFICATION	HORIZONTAL		VERTICAL		
	HLF12	HLF18	VLF6	VLF12	VLF18
External Dimensions mm (W x D x H)	1270 x 740 x 1290	1880 x 740 x 1290	670 x 560 x 940	1320 x 710 x 1340	1930 x 710 x 1340
Internal Dimensions mm (W x D x H)	1190 x 500 x 730	1800 x 500 x 730	600 x 485 x 600	1260 x 680 x 710	1870 x 680 x 710
Mini-Helic Gauge	Yes	Yes	No	Yes	Yes
Hours Run Indicator	Yes	Yes	Yes	Yes	Yes
Work Surface Stainless Steel	Yes	Yes	Optional	Yes	Yes
Sample Protection To BSEN 14644	Yes	Yes	Yes	Yes	Yes
CE Marking	Yes	Yes	Yes	Yes	Yes
Better Than EU GMP 2008 Grade B Clean Air	Yes	Yes	Yes	Yes	Yes
Better Than EU GMP 2008 Grade A Clean Air	Optional	Optional	No	Optional	Optional
Base Stand	Optional	Optional	No	Optional	Optional
Easy Change Pre-Filter	Yes	Yes	Yes	Yes	Yes
Negative Pressure Seals	Yes	Yes	Yes	Yes	Yes
Variable Speed Fans	Yes	Yes	Yes	Yes	Yes
Internal Lighting	Yes	Yes	Yes	Yes	Yes
Integral UV Light	Optional	Optional	No	Optional	Optional
Noise Level	<55db (A)	<55db (A)	<55db (A)	<55db (A)	<55db (A)
Weight (Kg)	120	170	45	120	175

OPTIONAL EXTRA'S HLF/VLF RANGE

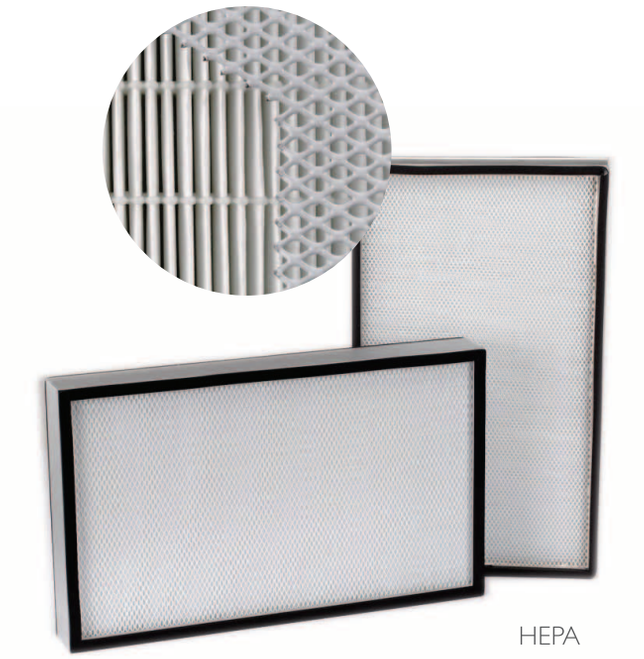
- Stainless Steel Work Surface For VLF6
- Super V (Ultra Low Particulate Air) 0.12 micron 99.9998% efficient filters providing EU GMP 2008 Grade A
- Vacuum Connection / Tap
- Gas Connection / Tap
- Optionally available in 100% 316 Stainless Steel construction
- Electrical Outlets
- Custom Work Surface Material i.e. 316-Grade Stainless Steel, Corian, Cast Epoxy Resin & Trespa
- Access Port
- Mobile Trolleys & Under Cupboards
- UV Lighting
- Bespoke design and manufacturing service where we can construct a cabinet to your exact application

HEPA/ULPA FILTERS TECHNOLOGY

HEPA FILTERS

HEPA (High Efficiency Particulate Air) Filters used within the Laminar Flow Cabinets form the very heart of the system. Each Filter is rated at 99.997% efficient @ 0.3microns and enables the cabinets to produce clean air to levels better than Class 100.

The filters themselves are manufactured from water repellent micro glass paper that has been pleated to maximise the available surface area. Constant spacing of the pleats is achieved by inserting a glass thread continually bonded to the media at a regular pitch, resulting in a strong and rigid filter.



HEPA

ULPA

ULPA FILTERS

If a greater level of cleanliness is required, then 0.12micron filters can be used at an efficiency of 99.9998%, offering clean air levels to better than Class 10. ULPA Filter .

This pleated membrane is then sealed into an extruded aluminium frame with a polyurethane bond. Protection of each face of the filter is provided with a corrosion resistant metal grid that is also sealed into place. When installed into its relevant cabinet the filters are fixed into place and all seals are held under negative pressure.

This guarantees that any potential leak through the seal will only pass onto the 'dirty' side of the filter ensuring the stream of clean air is maintained. Each HEPA Filter installed into a Laminar Flow Cabinet is protected by a Pre-Filter to stop premature blocking with dust and prolong its life. The Pre-Filter is rated 95% efficient @ 0.5microns.

REVERSE HORIZONTAL LAMINAR FLOW CABINETS

RHLF RANGE

Based upon conventional Horizontal Laminar Flow Cabinet design, the Reverse Horizontal Laminar Flow Cabinets utilise a reversed airflow pattern as depicted below. These cabinets are designed to provide operator protection and containment of airborne particulates and are therefore ideal for powder weighing applications.

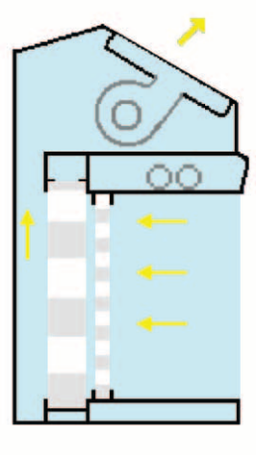
Filter & Fan Specifications are as per the standard cabinets with optional Super V configuration also available.

The RHLF Cabinets are provided with stainless steel work surfaces and overhead lighting to enhance visibility for the operator. Hours run indicators, mini helic differential pressure gauges and variable speed controllers are fitted as standard across the RHLF range to ensure filter life is maximised.

RHLF 18

OPTIONAL EXTRA'S

- Vacuum Connection / Tap
- Gas Connection / Tap
- Electrical Outlets
- Custom Work Surface Material i.e. 316-Grade Stainless Steel, Corian, Cast Epoxy Resin Trespa
- Anti-vibration Solid Granite Section for analytical balance placement
- Access Port
- Mobile Trolleys & Under Cupboards
- Carbon After Filter Box - In addition to the Particulate Containment offered as standard within our RHLF Cabinets, additional fume containment can be provided. The RHLF-RC models are fitted with extra large Carbon Filters blended to each customer's specific requirements. This allows the use of various chemicals within the cabinets.



AIRFLOW CHARACTERISTICS

Air is drawn in through the front of the cabinet and immediately passed through an EU4 Pre-Filter (1) to remove larger particulates. It then passes through the Main HEPA filter (2) into the rear plenum chamber (3) to ensure airflow distribution over the whole HEPA Filter in turn this generates laminar airflow containment away from the operator. Filtered clean air will then exhaust vertically out the top of the cabinet (4).

Containment airflow velocities of 0.36 – 0.54 m/sec ensure no particulates escape from the working area into the Laboratory.

CABINET SPECIFICATION	RHLF12	RHLF18
External Dimensions mm (W x D x H)	1270 x 740 x 1290	1880 x 740 x 1290
Internal Dimensions mm (W x D x H)	1190 x 500 x 730	1800 x 500 x 730
Mini-Helic Gauge	Yes	Yes
Hours Run Indicator	Yes	Yes
Work Surface	316 Stainless Steel	316 Stainless Steel
Sample Protection To BSEN 14644	Yes	Yes
CE Marking	Yes	Yes
Filtration Pore Efficiency	0.3microns Optional 0.12 microns	0.3microns Optional 0.12 microns
Base Stand	Optional	Optional
Easy Change Pre-Filter	Yes	Yes
Negative Pressure Seals	Yes	Yes
Variable Speed Fans	Yes	Yes
Internal Lighting	Yes	Yes
Integral UV Light	Optional	Optional
Noise Level	<55db (A)	<55db (A)
Weight (Kg)	120	170

BESPOKE LAMINAR FLOW CABINETS

CUSTOM BUILT LAF (LAMINAR AIR FLOW) ENCLOSURES

PuriCore Scientific offer a range of bespoke designs to accommodate a wide variety of customer specific applications. Systems can be free standing as pictured below or integrated into rooms as overhead modules with either side walls or Mylar curtains to provide the enclosure. Units can also incorporate low level powder / fume extraction systems to facilitate bulk Pharmaceutical Manufacturing. For full details please contact our Product Specialist. Special Walk-In VLF Cabinet.

WALK-IN VLF

CUSTOM RHLF18

AREA'S OF APPLICATION

- Pharmaceutical Manufacturing
- Robotic Enclosures
- Electronics Manufacturing
- Aerospace Component Assembly
- Clean Rooms

PCR6 WORK STATION
(POLYMERASE CHAIN REACTION)

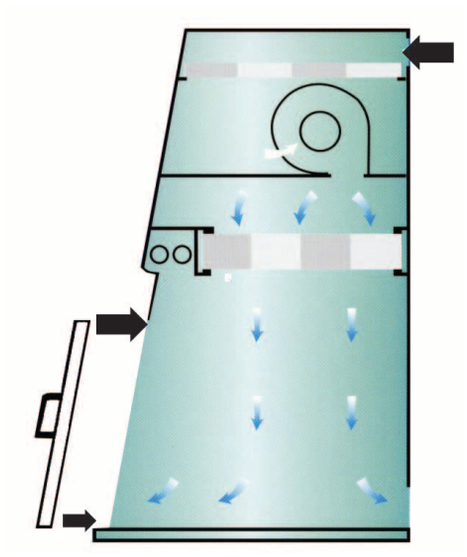
CONTAMINATION FREE

The PCR6 Work Station provides a cost- effective means of preparing PCR samples in a sterile environment.

The PCR6 is a mini Vertical Laminar Flow Cabinet providing better than EU GMP 2008 Grade B clean air conditions at the work surface.

To further reduce the risk of contamination, the PCR, has a built-in automatically timed UV steriliser. Between amplifications simply place all pipettes, tubes and flasks into the cabinet and press the UV switch. After five minutes the UV light automatically switches off and all potentially contaminating DNA & RNA denatured.

PCR6



PCR6 AIR FLOW CHARACTERISTICS

The EU GMP 2008 Grade B clean air within both the PCR6 & PCR8 provides product protection during the preparation of sample tubes, and the continual negative pressure filter seals eliminate the possibility of leaks.

The compact design ensures that the PCR6 takes up no more bench space than that normally used for PCR work, whilst the sloping front gives unhindered access for sample preparation. The interlocked attachable and lightweight UV filtering night door provides UV light shielding during UV sterilisation.

The stainless steel work surface is removable to allow for easy cleaning and is also illuminated with overhead lighting to ensure maximum visibility when working at the cabinet. With the modern laboratory in mind, our engineers have developed a fan design, which reduces sound levels to just 55db (A).

Acrylic glazed side panels and front visor provide maximum visibility and a comfortable working environment.

PCR8 PREP STATION WITH CONTAINMENT

The Labcaire PCR8 Prep Station has been designed for use where containment free PCR needs to be performed but also where operator protection is required.

The cabinet offers clean air over the work surface to better than EU GMP 2008 Grade B, whilst also offering full containment to BS EN 12469:2000 therefore protecting the operator from any hazardous materials.

The cabinet comes complete with a timed UV Light and interlocked lightweight night door to allow for safe and automatic sterilisation of the enclosure, along with implements such as flasks, pipettes and sample tubes between amplifications.

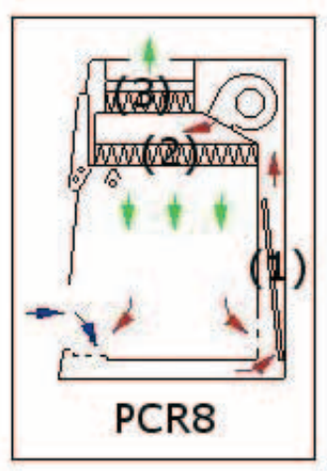
Airflow alarms are fitted as standard on both the laminar flow and face velocity airspeeds whilst a uniform face velocity is achieved with the unique air intake grille configuration. Safety interlocks are also used in the folding sash, ensuring 100% safe and efficient operation at all times.

The cabinet is constructed of epoxy powder coated Zintec Mild Steel with a stainless steel work surface and clear glazing to three sides. The clear panels used in conjunction with overhead internal lighting ensures maximum illumination of the working area.

Containment and Laminar Flow are achieved with the use of HEPA (High Efficiency Particulate Air) Filters making the cabinet easy to install as no connections to services are required, other than mains electricity.

PCR8 AIR FLOW CHARACTERISTICS

Air is drawn in through the front aperture in a uniform manner via the unique grille configuration. It travels underneath the work surface and behind the back panel of the cabinet where any large particulate is removed by the pre-filter (1). The air is then drawn into the plenum chamber where 70% of it is recirculated back into the cabinet via the first HEPA Filter (2) to create the downward laminar flow. The remaining 30% of air is then expelled through the exhaust HEPA filter (3) where any hazardous material is filtered out.



CABINET SPECIFICATION	PCR6	PCR8
Dimensions mm (W x D x H)	630 x 550 x 900	800 x 710 x 1060
Work Area Size mm (W x H)	610 x 550	790 x 610
Face Velocity	Not Applicable	>0.6m/sec
Laminar Flow Velocity	>0.4m/sec	>0.4m/sec
Filters	1 x Main HEPA (99.997% eff. @ 0.3µm) 1 x Pre-Filter (EU7 Grade)	1 x Main HEPA (99.997% eff. @ 0.3µm) 1 x Exhaust HEPA (99.997% eff. @ 0.3µm) 1 x Pre-Filter
Negative Pressure Filter Seals	Standard	Standard
Low Airflow Alarms	Standard	Standard
Internal Lighting	1 x 15 Watt Fluorescent	2 x 18 Watt Fluorescent
UV Lighting	254nm @ 15 Watts	254nm @ 18 Watts
Interlocked Night Door	Standard	Standard
Construction	Zintec Mild Steel With Epoxy Powder Coating Removable Stainless Steel Work Surface	
Fan	Centrifugal Sparkless To IP44	Centrifugal Sparkless To IP44
Electrical	240 Volts 50Hz 200 Watts	240 Volts 50Hz 450 Watts
Noise Level	<55 db (A)	<60 db (A)
Weight (Kg)	60	160