

HOW TO CHOOSE YOUR LAMINAR FLOW CABINET

Opting for a standard Vertical or Horizontal Laminar Flow Cabinet is largely a matter of personal preference. Both types of cabinets will provide clean air conditions to better than Class 100. There are however some pointers that may help in your decision making:

HORIZONTAL LAMINAR FLOW

- + The air coming directly towards you will not cause the air-stream to be deflected, therefore there will be little opportunity for the creation of turbulence.
- + Little turbulence occurs between the operators hands and samples.
- + There is no screen or obstruction between the operator and the work area.
- Large pieces of equipment in the cabinet may increase turbulence.
- Extended periods of use in a direct air-stream may be tiring for an operator.

VERTICAL LAMINAR FLOW

- + Air-stream is not directed at the operator causing less stress over time.
- + Larger pieces of equipment cause less turbulence.
- + Larger working area.
- Downflow of air will be caused to change direction at the worksurface.
- Possible turbulence may occur between operators hands and the worksurface.
- Front screen can cause obstruction.

Should you require containment in addition to the laminar flow then there is only one option – Labcaire Recirculating Vertical Laminar Flow Cabinet. It is not possible to provide containment with Horizontal Laminar Flow cabinets.

Also available in the Labcaire Laminar Flow Range:



< PCR Cabinet

PCR Cabinet with Containment >



Laminar Flow Cabinets

Vertical & Horizontal Clean Air Laminar Flow Cabinets



LABCAIRE
For Tomorrow's Environment

175 Kenn Road, Clevedon,
North Somerset BS21 6LH,
England

UK CONTACT
Tel: 01275 793000
Fax: 01275 341313
email: info@labcaire.co.uk

INTERNATIONAL CONTACT
Tel: +44 1275 793000
Fax: +44 1275 341313
email: int@labcaire.co.uk

Web: www.labcaire.co.uk
Registered No: 2683459

LABCAIRE
For Tomorrow's Environment

Vertical Laminar Flow Cabinets

Clean air directly above the worksurface

Vertical Laminar Flow Cabinets

The Vertical Laminar Flow range offers Clean air to BS5725 and clean conditions to better than Class 100.

This is achieved through the use of an EU4 pre-filter and HEPA filters that are rated at 99.997% efficient at 0.3 microns. Higher rated HEPA filters, such as 0.12 micron, are available if required.

The cabinets are manufactured from Zintec mild steel that has been epoxy powder coated to prevent corrosion. They are provided with a stainless steel worksurface to enable thorough and easy cleaning (optional on VLF6).

The front screen is hinged across the whole width of the cabinet to enable access to the working area. This will also allow the housing of, and access to, larger pieces of equipment.

Internal lighting and glazed end-panels are fitted as standard to ensure maximum visibility when working at the cabinet. An optional UV light is available if required.

The range is available in three different widths – 670mm, 1320mm, and 1930mm however should you have a requirement for a specific size of cabinet, Labcaire offer a bespoke design and manufacturing service where we can construct a cabinet to your exact application.



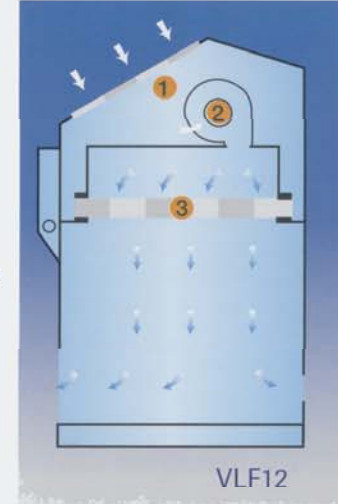
VLF12

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 worksurface where the air will spread towards the front and rear exits of the cabinet.



VLF12



VLF6

VLF6 – A compact alternative

The VLF6 is an ideal alternative to a full-sized Vertical Laminar Flow cabinet when space is at a premium.

The footprint of the unit is just 670mm wide x 560mm deep and will fit on most standard worktops.

It still provides better than Class 100 clean air just like the larger versions but takes up much less room. It can be easily sited over equipment or services such as gas, electric or water as necessary, alternatively, an optional worksurface/spillage tray can be provided.

Specifications	VLF6	VLF12	VLF18
Dimensions mm (W x D x H)	670 x 560 x 940	1320 x 710 x 1340	1930 x 710 x 1340
Mini-helic gauge	X	✓	✓
Worksurface	Optional	Stainless Steel	Stainless Steel
BS 5295	✓	✓	✓
CE Marking	✓	✓	✓
Better than Class 100 Clean Air	✓	✓	✓
Better than Class 10 Clean Air	Optional	Optional	Optional
Base Stand	Optional	Optional	Optional
Easy-change pre-filter	✓	✓	✓
Negative pressure seals	✓	✓	✓
Variable speed fans	✓	✓	✓
Hours run indicator	✓	✓	✓
Noise Level	<55db (A)	<55db (A)	<55db (A)

VLF Cabinets

- Variable Speed Fans
- Stainless Steel Worksurface with rolled edge (optional on VLF6)
- Filter seals under negative pressure
- Low air-flow indicators (not VLF6)
- Easy-change pre-filters
- Integral lighting
- Hours run indicators (not VLF6)
- Mini-helic pressure differential gauges (not VLF6)
- Sample protection to BS5295
- Zintec steel construction with epoxy powder coating
- Large working area
- Folding front shield
- Extra quiet operation

Recirculating Laminar Flow Cabinets

Class 100 clean air with user protection

Recirculating Laminar Flow Cabinets

The new recirculating range of Vertical Laminar Flow Cabinets are available in three different sizes.

They offer full product protection to BS 5295 just like the other Labcaire Laminar Flow Cabinets but in addition, they also give full operator protection to BS EN 12469:2000.

The product and operator protection is achieved using identical technology to that found in the latest range of Labcaire Class II Microbiological Safety Cabinets and as a result also uses the same High Efficiency Particulate Air filters.

All filters are kept under negative pressure inside the cabinet to prevent any leaks back into the room or the clean sections of the cabinet.

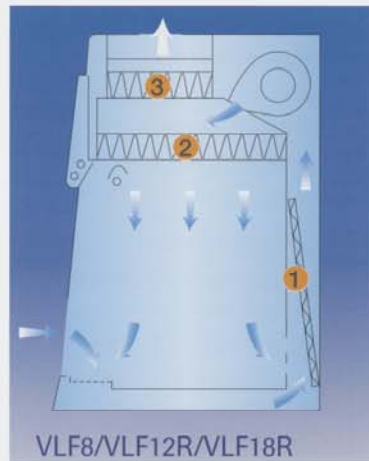
Access to the working area is through the extra large fixed height aperture. The glass screen is also hinged to allow entry for and access to larger pieces of equipment that may be sited inside.

They are available with an optional service module fitted to the right-hand side of the cabinet which can house electrical sockets and gas taps. Water services, UV lighting and base stands can also be added.



Unique Grille Configuration

The unique design and layout of the air inflow grille ensures that an even airflow is achieved over the entire aperture to optimise containment.



Airflow Characteristics

Air is drawn in through the front aperture in a uniform manner via the unique grille configuration.

It travels underneath the worksurface and behind the back panel of the cabinet where any 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).

The remaining 30% of air is then expelled through the exhaust HEPA filter (3) where any hazardous material is filtered out.

Recirculating Vertical Laminar Flow Cabinets

- Operator protection to BS EN 12469:2000
- Sample protection to BS 5295
- Better than Class 100 clean air
- Zintec steel construction with epoxy powder coating
- Folding and locking front shield
- Audible and visual Low-airflow alarms
- Optional services module
- Stainless steel worksurface
- Quiet operation
- Optional UV light & interlocking nightdoor
- Filter seals under negative pressure
- Membrane control panel

Specification	VLF8R	VLF12R	VLF18R
Dimensions mm (W x D x H)	800 x 710 x 1060	1200 x 710 x 1200	1800 x 710 x 1200
Work Area Size mm (W x D x H)	790 x 610 x 610	1190 x 610 x 610	1790 x 610 x 610
Worksurface	2 piece Stainless Steel		
Sample protection to BS 5295	✓	✓	✓
Containment to BS EN 12469:2000	✓	✓	✓
CE Marking	✓	✓	✓
Better than Class 100 Clean Air	✓	✓	✓
Better than Class 10 Clean Air	Optional	Optional	Optional
Base Stand	Optional	Optional	Optional
Face Velocity	>0.6m/sec	>0.6m/sec	>0.6m/sec
Laminar Downflow Velocity	>0.4m/sec	>0.4m/sec	>0.4m/sec
Services Module	Optional	Optional	Optional
Night door with Safety interlocks	Optional	Optional	Optional
Easy-change pre-filter	✓	✓	✓
Negative pressure seals	✓	✓	✓
Membrane control Panel	✓	✓	✓
Internal Lighting	2 x 18w	2 x 30w	2 x 58w
Noise Level	<55db (A)	<55db (A)	<55db (A)

Horizontal Laminar Flow Cabinets

Cleanest air available inside a cabinet

Horizontal Laminar Flow Cabinets

Labcaire Horizontal Laminar Flow Cabinets will provide protection to products and samples with a parallel flow of clean air through filters situated at the rear of the cabinet.

The standard HEPA filters are 99.997% efficient at 0.3 microns which enables better than Class 100 conditions. Where additional sample protection is required, air cleanliness levels may be enhanced by the use of 0.12 micron HEPA filters.

All fans used in the HLF range are large diameter, high performance, variable speed units that ensure the cabinets are very quiet in operation. Essential if a number of cabinets are in the same room.

The HLF cabinets are provided with stainless steel worksurfaces and overhead lighting to enhance visibility for the operator.

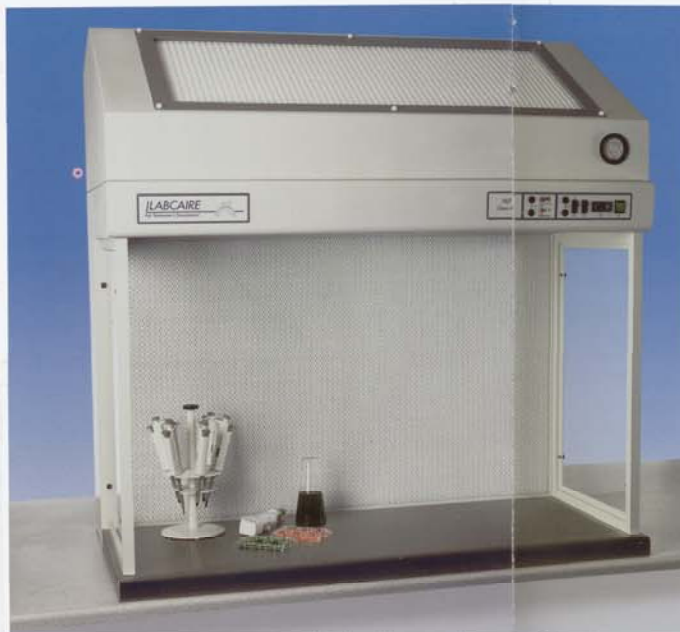
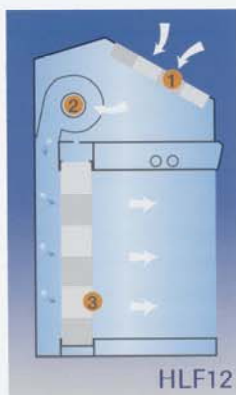
Hours run indicators, Minihelic differential pressure gauges and variable speed controllers are fitted as standard across the HLF range to ensure filter life is maximised.

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 a rear plenum chamber to ensure even distribution of air over the whole HEPA filter (3) face.

Filtered air will then flow horizontally towards the operator at a velocity of 0.35 – 0.55 m/sec to ensure no air from the room can flow back into the working area.

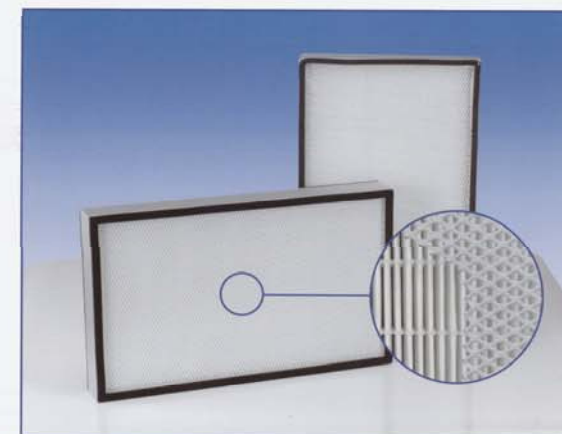


Specification	HLF12	HLF18
External Dimensions (mm) W x D x H	1270 x 740 x 1290	1880 x 740 x 1290
Internal Dimensions (mm) W x D x H	1190 x 500 x 730	1800 x 500 x 730
Mini-helic gauge	✓	✓
Hours run indicator	✓	✓
Worksurface	Stainless Steel	Stainless Steel
Sample protection to BS 5295	✓	✓
CE Marking	✓	✓
Better than Class 100 Clean Air	✓	✓
Better than Class 10 Clean Air	Optional	Optional
Base Stand or Cupboard	Optional	Optional
Easy-change pre-filter	✓	✓
Negative pressure seals	✓	✓
Variable speed fans	✓	✓
Internal lighting	✓	✓
Noise Level	<55db (A)	<55db (A)

Horizontal Laminar Flow Cabinets

- Low air-flow indicator
- Stainless Steel worksurface
- Rolled edge on worksurface
- Variable speed fans
- Integral Mini-helic gauges
- Overhead internal lighting
- Easy change pre-filter
- Zintec steel construction with epoxy powder coating
- Hours run indicator
- Clear end panels

HEPA Filters



The HEPA (High Efficiency Particulate Air) filters used in every Labcaire Horizontal and Vertical Laminar Flow Cabinet form the very heart of the system.

Each Labcaire HEPA filter used is rated at 99.997% efficient at 0.3 microns and enables the Cabinets to produce Clean Air to levels better than Class 100. If a greater level of cleanliness is required, then 0.12 micron filters can be used at an efficiency of 99.9998%, offering clean air levels to better than Class 10.

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.

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 assured.

Each HEPA filter installed into a Labcaire Laminar Flow Cabinet is protected by a pre-filter to stop premature blocking with dust and prolong its life. This pre-filter is rated 95% efficient at 0.5 microns.