

# Elution shielded laminar flow hood



## Principle

The LEMER PAX elution shielded laminar flow hood provides safety and protection from radiation emitting isotopes for the operator and the environment during the delicate procedures of tagging, dissection, evaporation, etc.

## Technical description

The de-dusted, filtered and sterile air passing through the main HEPA filter ensures optimum airflow laminarity on the work surface, thanks to its even perforation and the frontal air barrier. The system is designed to create a protective barrier and prevent exchanges between the internal, potentially biologically and radiologically contaminated air, and the outside.

The LEMER PAX elution shielded laminar flow hood is Class II Biohazard cabinets, according to the definitions now adopted by all the main international standards. It's suitable for the treatment of class CDC-2/3, DHSS-B2/B1 micro-organisms, and wherever a product-personnel-environment cross-protection is required.

The performances of the cabinets are detailed in the TESTING CERTIFICATE (delivered with the product), in compliance with the requirements of EN 12469 (2000), on electrical safety EN 61010-1.

## Shielding

- A vertical lead glass shielding viewing windows 16 or 24 mm thick. This shielded viewing windows is easily removable in order to have easily fully access to the inside of the bench during the decontamination procedure.
- A shielded safe for two Tc99m generators, each with an electric elevator: shielded with 50 mm of lead on 5 sides with key lock front door. As standard, it can contain 2 generators type CIS Bio or Mallinckrodt (or on request, Nordion, Amersham, etc.). These generators are placed on electric elevators which are driven from the control panel. The work area has two shielded hatches that allows independently the access to the generators and which, when they are closed, are completely integrated in the worktop safe.
- Location for the well chamber: key lock front door shielded with 20 mm of lead on 5 sides. A hole with 72 mm diameter allows the access in the well for the sample holder.
- Key locked front door 30 mm lead shielded safe that receive the 7 liters capacity incinerable plastic bin (consumable ref : 08-08-0007). Thanks to a flush mounted stainless steel cap, the operator has a direct access to this bin.

## Option

- ☞ UV lamp for sterilization of the work chamber installed on the front closing panel, controlled by two timers, one with 0÷3 hours scale (1 minute steps), the other 3 fixed hours.

## References

REF	Lead thickness (mm)	Lead glass window thickness (mm)	Working area dimensions LxHxW (mm)	Over all dimensions* LxHxW (mm)	Total weight (Kg)	Power consumption (Kw)	Power supply
HFL EB 5-1200	5	16	1190x660x580	1550x2540x870	1900	1,6	220/240V 50Hz 16A
HFL EB 5-1500	5	16	1490x660x580	1850x2540x870	2000	1,8	
HFL EB 5-1800	5	16	1800x660x580	2160x2540x870	2100	2	

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<b>HFL EB 10-1200</b>	10	24	1190x660x580	1550x2540x870	2000	1,6	
<b>HFL EB 10-1500</b>	10	24	1490x660x580	1850x2540x870	2100	1,8	
<b>HFL EB 10-1800</b>	10	24	1800x660x580	2160x2540x870	2200	2	

### Elution shielded laminar flow hood

#### FOREWORD

The LEMER PAX elution shielded laminar flow hood has been designed as a Class II Biohazard cabinet according to EN-12469. Therefore it provides vertical laminar airflow with part of the air recirculated via the main HEPA filter whilst the remaining part is discharged through an exhaust HEPA filter. This cabinet is suitable for handling CDC 1-3, DPAG C-B1-B2 etiologic agents, providing operator, product and environmental protection.

#### APPLICATIONS

HFL EB 10-1500 cabinets can be used in a wide range of disciplines, as defined in appropriate standards. Especially suitable for applications such as:

- ☞ Radioisotope tagging
- ☞ Microbiology
- ☞ Virology
- ☞ Haematology
- ☞ Cell culture
- ☞ Recombinant DNA
- ☞ Handling of hazardous agents to human beings or animals as defined in the appropriate international standards.

#### BENEFITS

- ☞ Sophisticated microprocessor based monitoring system
- ☞ Sophisticated microprocessor based system of audible and visual alarms alerts the operator if the cabinet does not operate in complete safety.
- ☞ Self-adjusting system to ensure a constant laminar airflow speed even in the presence of a progressive clogging of the filters.
- ☞ The negative pressure plenum "bio-dynamic sealing" ensures that all contaminated particles are kept inside the system and are automatically drawn to the pressure chamber to be captured by the main and exhaust filters.
- ☞ The fan system assures that no part of the cabinet is under positive contaminated pressure to the laboratory, thus preserving environment and personnel from bio-contamination risks.
- ☞ Access from the front panel for ease of maintenance service.
- ☞ Available in two motors.

#### SPECIFICATIONS

Outside construction: Epoxy powder painted steel for improved strength and resistance to corrosion, cleaning and atmospheric agents.

Inside work surface: As standard 3, 4, 5 or 6 (depending on the width of the cabinet) pieces AISI-316L stainless steel, completely perforated to ensure flow laminar and air recycling at the work surface level. Frontal slots in the access area provide air barrier protection preventing any exchange of air between the inside of the cabinet and the environment.

On request (with no extra charges) the following work surfaces are available:

- ☞ AISI-316L stainless steel perforated work surface in 1 piece
- ☞ AISI-316L stainless steel solid work surface in 1 or 3, 4, 5, 6 pieces (depending on the width of the cabinet)

Work Chamber: in AISI-304 stainless steel sheet.

Absolute Filters: HEPA filters, tested with aerosol. Their efficiency, higher than 99,995% MPPS - 0.005% penetration - ensures a performance exceeding the requirements of EN1822, U.S. Federal Standard 209e, British Standard 5295, VDI-2083 and AS 1386-1976. The filtration system is designed to provide a barrier of air with minimum average speed over 0.4m/sec. according to EN-12469.

- ☞ Active charcoal filtering system.

Motor-blower/s: two centrifugal fans, direct driven motors, with protection factor IP-55, controlled by two automatic speed regulators and microprocessor system showing laminar flow and protection barrier work conditions.

Microprocessor based monitoring system: new generation system for controlling the cabinet in a fully digital way

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performs high level control and data processing.

The handy and practical keyboard and the rearlit LCD display keep the user constantly informed of the cabinet conditions and operation, in particular:

- ☞ display of laminar airflow velocity and frontal air barrier velocity
- ☞ display of inside and outside temperature
- ☞ display of residual lifetime of HEPA filters, U.V. Lamp and charcoal filter (if installed)
- ☞ display of total time of cabinet operation
- ☞ display of power rating factor of the main and exhaust (if installed) motor-blowers.

Alarms for:

- ☞ out of range laminar airflow velocity and front air barrier velocity
- ☞ front window opened.
- ☞ HEPA filters clogging
- ☞ UV lamp worn-out (if installed)
- ☞ charcoal filter (if installed) saturated
- ☞ blackout
- ☞ signal of other possible malfunctions and relevant remedies

Power Supply: 220/240V, 50Hz, single phase.

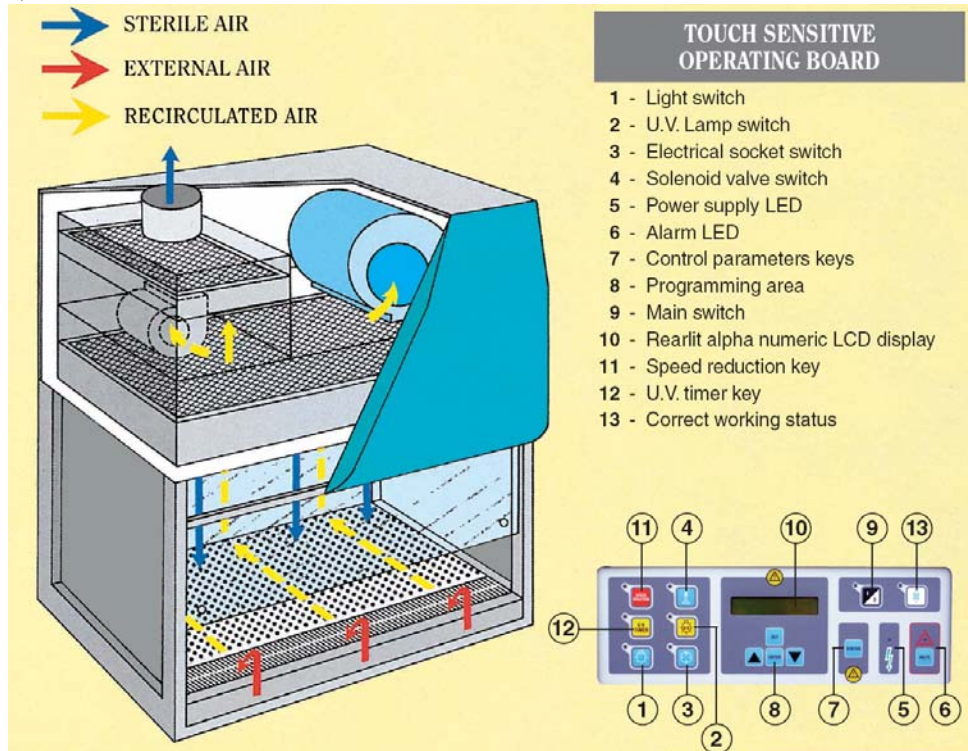
Lighting: fluorescent tubes in built-in housing, placed outside the contaminated area.

Front window: stratified safety glass, to give ease of access for large items.

It is provided with gas spring to keep it open during maintenance or sanitization operations.

- ☞ two vacuum or gas connections in the working area, one with manual tap, the other with solenoid valve (on the right-hand side).
- ☞ A stainless steel spillage tray beneath the work surface collects spilt liquids.
- ☞ An anodized aluminium front closing panel ensures the sealing of the cabinet for sterilization/fumigation.
- ☞ An inlet allows the DOP test of the absolute HEPA filters.
- ☞ Electrical socket with protection IP-44 (on the right-hand side)
- ☞ Maintenance: access to filters, motor-blower/s and control panel by lifting the front panel.

### OPERATIONAL PRINCIPLES



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