



Horizontal Laminar Flow Cabinet

LMLH-B101

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1. Safety Measures

1.1 Basic safety matters

- LMLH-B101 is suitable for indoor use, do not use it outdoors. Do not place it near high-speed dust sources or vibration sources.
- Do not wipe the main body with volatile oil, thinner, etc. to avoid damaging the paint dust or causing the paint dust to discolor.
- It is prohibited to use in the following places: low temperature, high temperature, high humidity, condensation, dust, or places with oil smoke and fog.
- Ensure maintenance space and facilitate replacement of fans and filters and inspection of electrical components and circuits.

1.2 Electrical safety matters

- There is a grounding device on the lower right side of this product to implement reliable grounding operations.
- Put the product in place before wiring and connecting the power plug to avoid electric shock.
- Check whether the plug conductor and the socket conductor are stained with dust. If they are stained with dust, it may cause fire.
- Be sure to connect the power cord to a grounded socket.
- It is prohibited to operate the power switch repeatedly within one minute to avoid damage to electrical components due to frequent operations.
- This equipment does not have explosion-proof capability and is strictly prohibited from use in flammable and explosive environments.
- Do not touch the electrical components inside the product. If the user must touch them, unplug the power plug first.
- Modification is strictly prohibited to avoid accidents such as electric shock and fire.
- Do not place heavy objects on the power lead and do not apply pressure to the power lead to avoid fire or electric shock caused by damage to the power lead.
- When replacing a fuse, ensure that its capacity does not exceed the specified capacity.
- When not in use for a long period, unplug the power plug from the socket.

1.3 Operational safety matters

- Do not use water to wash the cabinet.
- Under normal atmospheric conditions, the insulation resistance between the power input terminal of this product and the housing or exposed conductive parts should be greater than $20\text{M}\Omega$. The insulation resistance after the humidity test should be greater than $2\text{M}\Omega$.
- If any abnormality is found, the power supply should be cut off in time and relevant personnel should be notified for inspection and maintenance.
- When inspecting and repairing, the power supply should be cut off first to avoid accidental startup and personal injury.

Horizontal Laminar Flow Cabinet LMLH-B101

2. Features

- Intuitive LCD screen displays system work function
- Microprocessor controller assures temperature and humidity control
- Motorized front door for convenient, one hand operation
- Efficient sterilization is performed at 253.7 nm UV emission
- Washable, polyester pre-filter to persist main filter Waterproof sockets for using small devices
- High quality stainless steel gas tap Non-corrosive 304 stainless steel work bench
- Cold-rolled steel body construction with anti-bacteria powder coating

3. Specifications

Model No.	LMLH-B101
Cabinet Size	70 Inches
Cabinet Type	Single-side type / Double User
Airflow Velocity	0.3 - 0.5 m/s
Display	LCD Display
Glass Door Thickness	Side and Front Glass: 5 mm, Motorized
Pre-Filter	Polyester Fiber Filter
HEPA Filter	99.999 % efficiency at 0.3 μ m
Cleanliness Class	Class 100
Max. opening Height	430 mm
Working Surface Height	750 mm
UV Lamp	30 W
Illuminating Lamp	LED Lamp (16 W)
Illumination	$\geq$ 350 Lux
Noise	< 65 dB
Product Safety	$\leq$ 0.5 CFU / time
Power Consumption	500 W
Power Supply	AC 220 / 110 V $\pm$ 10 % ; 50 / 60 Hz
Internal Dimension	1700 x 500 x 570 mm
External Dimension	1800 x 820 x 2070 mm
Gross Weight	328 kg

4. Instrument Introduction

Structural characteristics:

The cabinet is composed of several major parts, including the chassis, high-efficiency filter, variable air volume blower unit, work surface, and operation panel. The chassis is made of a thin steel plate with plastic spraying on the surface. The table and back panel are made of stainless steel, while the left and right sides are constructed from transparent tempered glass.

The cabinet adopts a fan system with adjustable air volume. By adjusting the working conditions of the fan, the average wind speed in the clean working area can be kept within the rated range, and the service life of the ultra-high-efficiency air filter, the main component of the cabinet, is effectively extended.

Panel dimension:

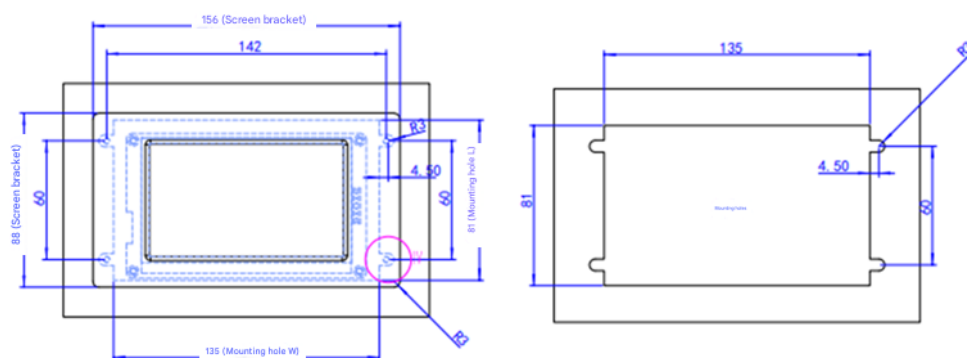


Figure-1

5. Working Principle

The cabinet is a horizontal unidirectional flow type local air purification equipment. The indoor air passes through the pre-filter and is pressed into the static pressure box by the centrifugal fan. After being filtered by the high-efficiency air filter, it is blown out from the air outlet. The clean air flows through the working area at a uniform cross-sectional wind speed, thus forming a highly clean working environment.

6. Installation

6.1 Unpacking and inspection

- 1) When unpacking, the user must work in a civilized manner and avoid rough or brutal movements to avoid damaging the cabinet inside the box or causing personal injury.
- 2) After unpacking, first confirm whether this product is the ordered product, and then carefully check the contents of the packing list to see if there are any missing parts and whether the parts are damaged during transportation.

6.2 Installation and adjustment

- 1) The cabinet should be placed in a clean room or a cleaner environment.
- 2) The workplace should be away from high-speed dust sources and vibration sources.
- 3) When unpacking and placing the cabinet, be careful and gentle, and avoid collision or tipping.
- 4) The cabinet has been inspected by personnel before leaving the factory, so ensure that the cabinet is clean.

6.3 Environmental conditions

- 1) **Temperature:** 5°C – 35°C
- 2) **Relative humidity:** Must not be more than 85% (at +35°C)
- 3) **Atmospheric pressure:** 86kpa – 106kpa
- 4) **Maximum dust concentration:** 100,000 particles/ft³ (dust particle size not less than 0.5µm, 100,000 level).
- 5) **Power supply:** AC 220V±10%, 50Hz±2Hz.

7. Operations

- 1) Plug in the 220V50HZ power plug and start powering on the machine.
- 2) The machine should be started and run 20 minutes in advance before formal use.
- 3) Newly installed cabinets or those that have not been used for a long time must be carefully cleaned with an ultra-clean vacuum cleaner or a non-fiber-producing item before use. Unplug the power plug of a cabinet that has not been used for a long time.
- 4) No unnecessary items should be stored on the work surface to keep the clean airflow in the work area undisturbed.
- 5) It is prohibited to take notes or write on the cabinet, and when working, try to avoid any actions that disturb the airflow.
- 6) The fan and lighting are indicated by indicator lights. When working, the digital tube displays numbers.
- 7) When the fan speed needs to be adjusted, use the touch switch on the cabinet operation panel to adjust it.
- 8) It is prohibited to place objects at the air inlet of the filter to avoid blocking the air inlet, which will reduce the air intake and reduce the purification capacity.

8. Software Operations

8.1 Power-on interface



Figure-2

8.2 Main interface



Figure-3

- 1) Showing the date (Wind speed and different pressure display is optional).
- 2) The Button Icon is gray: Close; Button icon in blue: Open.
- 3) For a fan, Sterilization, and illumination, the fan can run separately, and illumination and sterilization are interlocking (**Remark:** Only shutting down the illumination can enable the sterilization function or opposite works).

8.3 Setting interface



Figure-4



Figure-5

- 1) **Input password: 8888;** Enter into setting interface, there are two modules “**Parameter setting and system setting**”.
- 2) **Parameter Setting:** The Sterilization time, Ex.: 38s, the sterilization will be automatically shut down after 38s. (Setting range: 1 – 9999s)
System Setting: Other or English, when the control loses power, the system will automatically switch over the system language; Time, and date setting.
- 3) **System Setting:** Temperature and humidity sensor, differential pressure transducer, and wind speed sensor can be set up as expanded functions.

8.4 Check interface



Figure-6

- 1) **Sterilization accumulative time:** In hours (Zero clearing after germicidal lamp replaced).
Efficiency accumulative time: In hours (Zero clearing after the filter is replaced).
- 2) **Sterilization Reservation:** The germicidal lamp will automatically turn on when the reservation time is up, after the setting running time is out the germicidal lamp will automatically turn off the Sterilization frequency setting: Single or day.
- 3) **Tap position for the fan:** Setting range 1 –3, tap position will show up on the main interface.

9. Maintenance

9.1 Repair and daily maintenance

- 1) Depending on the cleanliness of the environment, the filter material in the primary filter should be removed and cleaned or replaced regularly, generally once every 2 months and replaced once every 4 months.
- 2) Regularly (usually once a month) measure the wind speed in the working area with a hot-bulb anemometer. If it is found that it does not meet the requirements of the technical parameters, the working position of the large fan can be adjusted.
- 3) When the fan unit is adjusted to the maximum gear, the working area still cannot reach 0.3m/s, then the high-efficiency air filter must be replaced. After replacing the high-efficiency air filter, use a dust particle counter to check whether the surrounding seals are good. If there is a leak, seal it with sealant.
- 4) Generally, high-efficiency air filters should be replaced once a year.
- 5) The machine should be stopped when replacing the high-efficiency air filter and pre-filter.
- 6) When replacing a high-efficiency air filter, pay attention to the following:
 - When replacing a new high-efficiency air filter, special attention should be paid to protecting the integrity of the filter paper during unpacking, transportation, installation, and use. It is forbidden to touch the filter paper with your hands to cause damage.
 - Before installation, place the new high-efficiency air filter in a bright place and visually check whether the high-efficiency air filter has holes due to transportation, etc. If there are holes, it cannot be used.
 - When replacing, open the rear cover of the chassis, and make sure that the shoulder mark on the filter is consistent with the airflow direction of the cabinet.
 - When tightening the frame screws, apply force evenly and appropriately to ensure that the high-efficiency air filter is fixed and sealed stably and reliably while avoiding deformation of the high-efficiency air filter and leakage.
 - After replacement, a dust particle counter should be used to check for leaks, especially scanning and checking around the high-efficiency filter frame.

9.2 Transportation and storage

- 1) The cabinet is packed in wooden boxes and is suitable for transportation by general means of transportation. During transportation and storage, it should be carried out strictly following the packaging, storage, and transportation diagrams and signs. It is strictly forbidden to collide or fall sideways, and it is prevented from being attacked by rain and snow to avoid damage and rust.
- 2) The cabinet should be stored in a warehouse with a temperature of -10°C to +40°C, a relative humidity of no more than 80%, and no corrosive gases such as acid and alkali.
- 3) The tilt of the equipment during transportation must not exceed 10°.

10. Troubleshooting

Phenomenon	Cause	Solution
The average wind speed is lower than or higher than the rated value	The fan unit voltage is too low or too high	Adjustable touch switch
The adjustable voltage touch switch has been adjusted to the maximum, but the wind speed is still low	Too much dust on the pre-filter	Clean or replace the pre-filter
	High-efficiency filter failure	Replace the high-efficiency filter
The fan does not rotate	The intermediate relay does not work	Check whether the fan control circuit is in good contact
	The fan power fuse is broken	Replace the fuse
Lights not working	The lamp is broken	Replace the lamp
	The starter is loose or broken	Check the starter
	The lamp power fuse is broken	Replace the fuse

Note:

- 1) **Screen is black:** Check if the data cable is connected well or wrong position.
- 2) **No response while touching the screen:** Check if the power is on and the icon is showing blue.
- 3) **Buzzing keep alarm:** If the germicidal lamp is turned on, check door magnetic 1 and door magnetic 2 have a short circuit.

11. Accessories

Standard Accessories

S. No	Accessory Name	Quantity
1	Base Stand	1
2	Gas Tap	1
3	LED lamp	1 (12 W)
4	Universal caster (with levelling feet)	4
5	UV lamp	2 (30 W)
6	Waterproof Socket	2 (Total Load: ≤500 W)

Optional Accessories

S. No	Accessory Name	Quantity
1	Electric height adjustable base stand (Max. Route: 400 mm, Max. Load: 400 kg, Load Speed: 5 mm/s, Power: 100 - 200 W; AC 220 / 110 V ± 10 % ; 50 / 60 Hz)	1



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