FagronLab™ LF-800 UV

Positive pressure workbench

User Manual

FagronLab™

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1. Introduction

Thank you for purchasing the vertical laminar flow cabinet FagronLab™ LF-800 UV. This vertical laminar flow cabinet is specially designed for Pharmacies and is a positive pressure workbench which creates a particles-free working environment by taking air though a filtration system and exhausting it across a work surface in a laminar or unidirectional air stream. The laminar flow cabinet is enclosed on the sides and kept under constant positive pressure in order to prevent the infiltration of contaminated room air. You must carefully read and understand the contents of this manual prior to operating this device. After reading this manual, please put it in an appropriate position for easy access.

2. Service

In case of any problem, you can always contact the Service Department for technical support. Please provide the customer care representative with the following information:

- Description of problem (i.e., hardware or software).
- Methods and procedures adopted to resolve the problems.
- Your contact information.

3. Warranty

This device is under warranty and free from defects in materials and workmanship, under normal use and service, for a period of 12 months from the date of invoice (excluding consumable accessories, UV and LED lamp, fuse, filters). The warranty is extended only to the original purchaser. Warranty is not valid on device which has been damaged on account of improper installation, improper connections, misuse, accident or abnormal conditions of operation. If the warranty has been expired, Fagron would still responsible for repair with relative charges.

For claims under the warranty please contact your local supplier.

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4. Functions and use

Polluted Air
HEPA Filtered Air
Room Air

Horizontal Type   **Vertical Type**
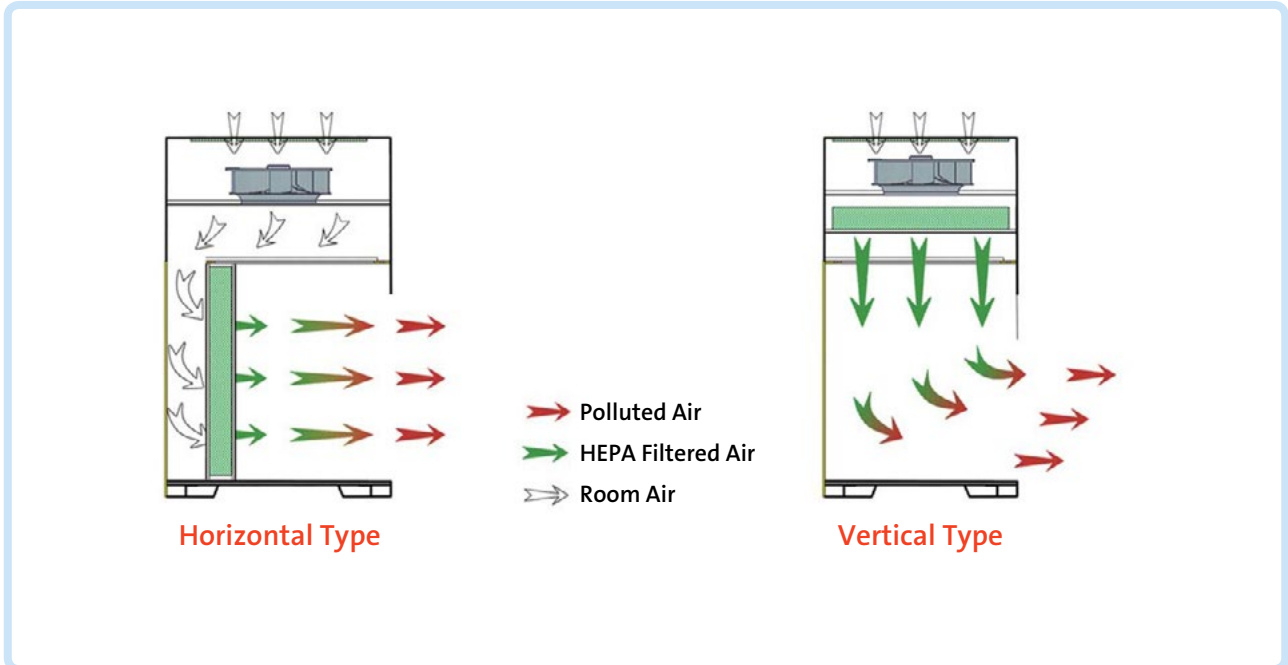
Laminar flow cabinet LF-800 UV creates a local high cleanliness air environment by vertical air flow. It is widely used in preparation process of compounded medication in pharmacies specially when contamination risk is high in the working environment. It is suggested to be used in high or medium risk preparations.

5. Working environment

- Indoor use only.
- Environment temperature: 15°C~35°C.
- Relative humidity: ≤75 %.
- Pressure range: 70 kPa~106 kPa.
- Power supply: AC 220 V ± 10 %, 50 Hz ± 1 Hz.

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6. Main technical parameters

Model / Technique parameters	LF-800 UV
External size (L*W*H)	802×650×1000 mm
Working Zone size (L*W*H)	800×600×540 mm
Dust (for ≥0.5mm)	≤3.5 Granule/L
Filter efficiency	99.999% efficiency at 0.3
Air velocity	0.3-0.5m/s
Noise	<60 dB (A)
Frequency	50Hz
Light	8 W LED x1
UV lamp	10 W x1
Power supply	220V/50HZ
Consumption	<350W

7. Features

- Cabinet body is built up of 1.2 mm cold-rolled steel with anti-powder coating.
- Working surface is fully made up of 304 stainless steel which has corrosion resistance performance.

8. Unpacking

Hexagon self-drilling screw   ST5.5*70
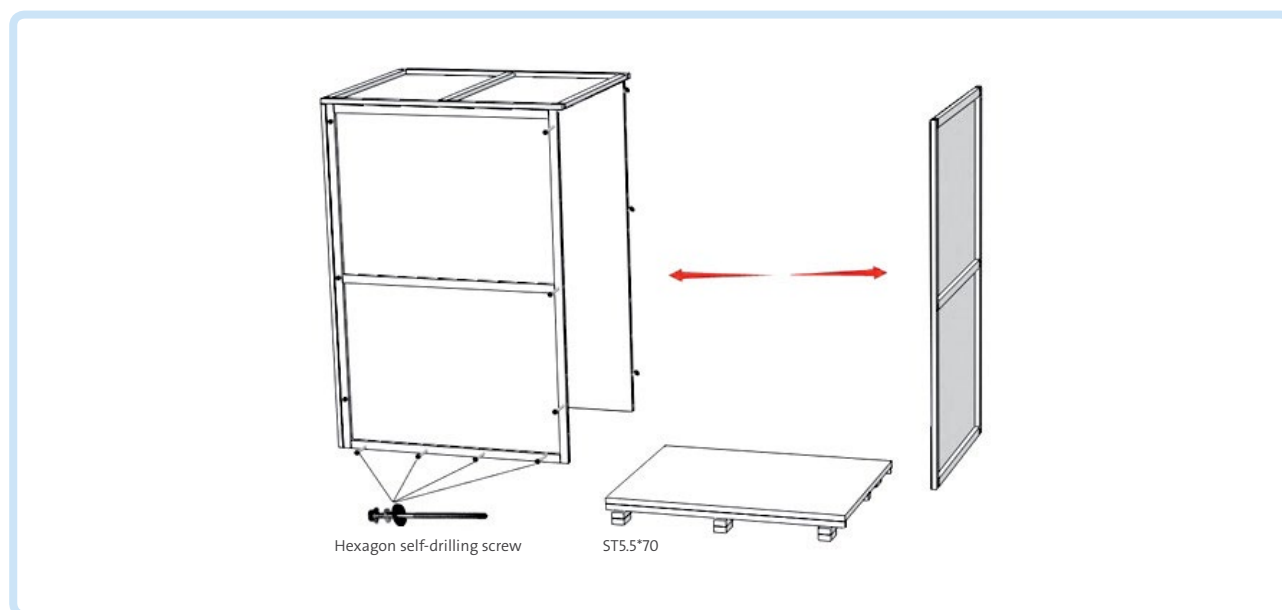
- Please check if packing box is in good condition.
- Choose proper tools for unpacking wooden box. Necessary tools: Electric screwdriver with hexagon driver head M8.
- The picture above demonstrates quick unpacking method. Remove the screws as shown, then remove the wooden box.

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9. Installation

Laminar flow cabinet shall be placed in a protection area. Workspace can not be right opposite to the door or window, and must be away from the outlet of air conditioning. Prevent it from the ventilation system, air conditioning, door, window, and personnel movement. At least 300 mm gap must be kept in the side and back side of the Laminar Air Flow for clean operating and for inspection.

- Move the entire equipment to the place where it is going to be installed.
- Remove all the packing materials.
- Check the surface of main body to make sure there is no scratch, deformation or foreign bodies.
- Install the cabinet on to the surface. Additionally, you can use the base stand.
- Install the power cord.
- Turn the power ON.

10. Structure

Driving system of front window
The front glass window are controlled by constant force spring. Glass window can be placed at any position, make sure in case of power failure, user can still control the glass window and remove the samples or instrument while operating.

Air filtration system
Air filtration system is the core system of laminar flow cabinet. It consists of blower and HEPA filter system. The main function of air filtration system is to transfer filtered air to work area, ensure airflow velocity, and keep Class 100 cleanness of work area.
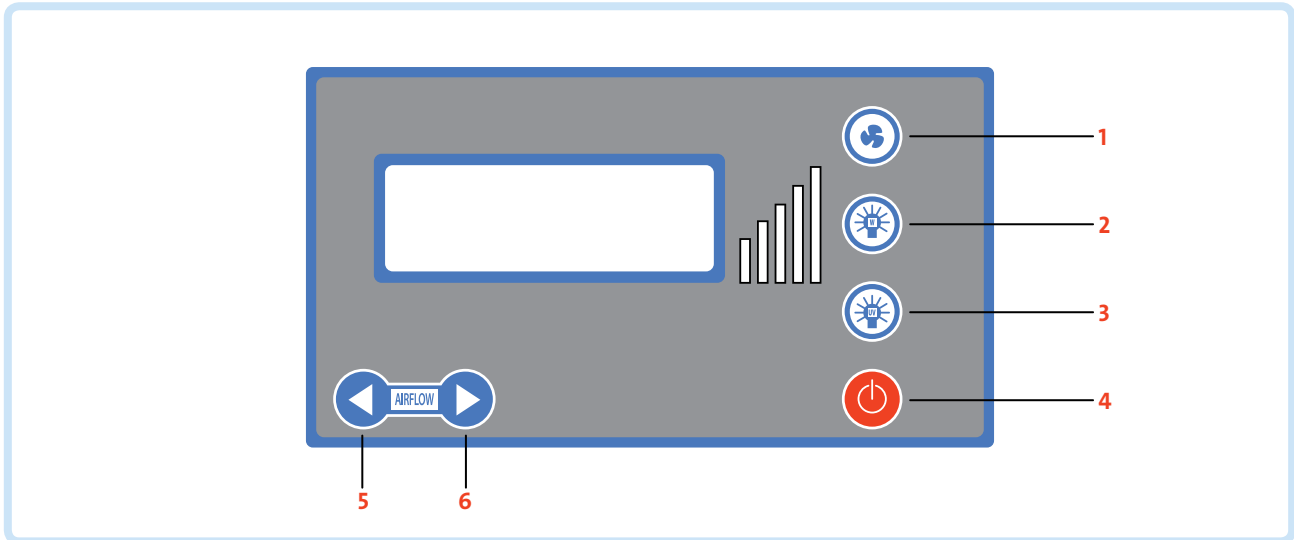
UV lamp
The entire work zone could be sterilized effectively by the UV lamp located at the top of work zone. Emission of 253.7 nanometers could ensure the most efficient decontamination.

Fluorescent light
The laminar flow cabinet is equipped with LED light, which ensures the standard requirement of average illumination is met.

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Control panel

No	Description
1	Blower control
2	LED light
3	UV lamp
4	Power switch
5	Air volume increase
6	Air volume decrease

11. Display

You can see the working differential pressure and air speed on the display window. **Press button lightly.** Now you re able to operate the equipment.

- Connect power supply (220v±10%, 50Hz).
- "⏻" The power button, makes machine switch between suspension mode and working mode.
- "❊" To control blower working status. Blower has memory function that blower can display last time blower gear, to avoid needing to adjust the fan gear each time.
- "◄" To control blower speed increase. When blower is working, each time you press, wind speed can increase a gear, and the buzzer rings once. Press this button when you use the UV lamp, UV lamp timer time increases, and the maximum time is 90 minutes, set up time stays in memory.
- "►" To control blower speed down. When blower is working, each time you press, wind speed can reduce a gear, and the buzzer rings once. Press this button when you use the UV lamp, UV lamp timer time decreases, and the minimum time is 10 minutes, set up time stays in memory.
- "☀" To control LED lamp. Turn ON/OFF button.
- "☀" To control UV lamp. Turn ON/OFF.

> **Note:**
> - When the LED lamp is ON the UV lamp cannot be lighted. You have to turn OFF the LED lamp first. When the UV lamp in ON, if you press the LED lamp button the UV turns immediately OFF and the LED lamp is lighted.

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Clock adjustment

In standby mode, press LED light button continuously for 5 seconds to enter clock setting mode after a buzzer alarm. Minute position is flashing, press UP and DOWN to adjust. Then press the blower button once, switching to hour position and adjust (UP and DOWN buttons are secret buttons on the right of speed control buttons) . To save the time, press the light button again continuously for 5 seconds, data will be saved after a buzzer alarm.

12. Airflow

A pre filter is used in the air inlet to protect the HEPA filter.

> **Note:**
> - The air inlet should not be blocked , nothing should be placed on the top of the equipment.

Fuse protector

The equipment is equipped with main power fuse, which is located near the power inlet.

13. Operation instruction

Operation Notice

- Make sure input voltage is correct and stable. The rated load of main power socket should be higher than cabinet consumption. Plug must be well grounded.
- Moving principles of different samples inside cabinet: When two or more samples need to be moved, be sure that low-polluting samples move to high-polluting samples. Movement of items should also follow the principles of moving slowly and stably.
- The weight of items placed in the cabinet should not be more than 23 kg/25×25 cm^2.
- Avoid vibration: avoid using vibration equipment inside the cabinet. The contamination might drop from the HEPA filter thus making the operation area cleanliness lower.
- No flame: An open flame would create turbulence which disrupts the pattern of HEPA-filtered air supplied to the work surface. If sterilization is required during the experiment, infrared sterilizer is highly recommended.
- HEPA filter life: With the usage time increasing, dust and bacteria accumulate within the HEPA filter, filter resistance is getting bigger, when it reaches the maximum point, the speed requirements can't be met. Please contact Fagron for replacement.
- Please do NOT remove or loose the screws of those parts.

Serious declaration: No responsibility is taken for risks caused by improper operation!

Operation Process

- Connect power supply
- Press relevant function keys (related keys, function and operation please refer to control panel section). Check if the function keys and the operation results are consistent, and according to the above technical parameters table to test whether the blower normal starts and wind speed is up to the standard requirements, LED and UV lamp are working normally.
- The cabinet should be sterilized by UV lamp for at least 30 minutes with the glass window fully closed before any experiment.
- Place the front window at the suitable height and turn on the fan. Make sure the experiment starts after fan working for at least 30 minutes.
- After finishing the experiment, please clean the working area, fully close the front window and make sure to sterilize the cabinet by UV lamp for 30 minutes before turning off the cabinet.

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> ⚠
> - UV lamp function could only be selected when front window is fully closed.
> - For safety of eyes and skin, people should leave the room during the UV sterilization and avoid direct eye or skin contact.
> - UV lamp should be checked regularly. It should be replaced when either the total working time reaches 1.600 hours or the intensity is lower than the requirement

14. Maintenance

- Preparations before maintenance
- Remove all the items from the working zone
- Use cotton or towel, concentrated soap, hot water, water, medical alcohol or other disinfectants, etc.

Clean the cabinet surface

Clean the surface of working zone
- Wipe the entire surface with a soft cotton cloth which has been soaked with concentrated liquid soap. Afterwards, wipe off the foam with another cotton cloth or towel which has been soaked with clean hot/warm water. At the end, wipe the entire surface with a dry cotton cloth or towel rapidly.
- For the work surface use 70% rubbing alcohol or other disinfectant to wipe.

> ⚠
> **Attention:**
> - Disinfectants used for wiping should not damage the 304 stainless steel.

Clean the external surface and front window
- Use a piece of soft cotton cloth or towel with non-abrasive household cleanser to wipe the surface.

Overall maintenance period
- The recommended interval period for comprehensive maintenance is either one year or 1000 working hours.

Daily or weekly maintenance
- Disinfect and clean the working zone.
- Clean the external surface and front window around the working zone
- Check the various functions of equipment
- Record down the maintenance result.

Monthly maintenance
- Clean external surface and front window
- Use towel with 70% rubbing alcohol or 1:100 dilution of household bleach(0.05% sodium hypochlorite) to wipe the working table, the inner face of front window and the inner wall surface of the working area(exclude the top wind grid). Use another towel with sterile water to wipe those area to erase the remaining
- Check the various functions of the cabinet
- Record down the maintenance result.

Annual maintenance
- Check the two lifting belt of the front window tubular motor, make sure both of them are well connected to the motor with same tightness.
- Check the UV lamp and LED light.
- Apply for overall performance test of the cabinet annually to ensure that the safety meets requirements.
- Record down the maintenance result.

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> **Attention:**
> ⚠ • When doing maintenance, please pay attention to cut off the power, so as to avoid electric shock!

Common failures and solutions

Please confirm that the power is well connected, the power cord and fuse are in good condition (without any damage).

Failure	Checking parts	Measures
Fluorescent lamp fail to work	LED stand plug	Connect the plug and stand tightly
	LED stand	Replace stand
	Circuit	Check the circuit
	Control panel	Replace the control panel
UV lamp fail to work	Interlock	Check the blower and fluorescent lamp turn off or not
	Lamp holder	Connect the tube and lamp holder tightly
	Lamp tube	Replace the lamp tube
	Ballast	Replace the ballast
	Circuit	Check the circuit
	Control panel	Replace the control panel
Button fail to work	Control panel	Make sure the power is well connected and the fuse is in good condition
		Check if the button is broken
		Make sure the connecting wire is well connected
		Replace the control panel
Blower fail to work	Blower	Replace the blower if it is damaged
	Circuit	Check the circuit
	Control panel	Replace the control panel
No electricity in equipment	Power supply	Check whether the power supply is well connected
	Power cord	Check whether power cord is in good condition
	Fuse	Check whether the fuse is damaged
	Potential transformer	Check whether the transformer works normally
	Control panel	Replace the control panel
Display fail to work	Connection wires	Check connection wires if in good connection
	Display screen	Check whether the screen is in good condition
	Control panel	Replace the control panel

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15. Notes

- Troubleshooting methods should be done by qualified electricians under safe conditions(cut off power supply). components should not be removed. Risk caused by failing to follow those instructions would be responsible by user.
- Please contact Fagron technical department if a failure could not be traced or solved. Do NOT repair the equipment without a qualified Technician.
- Troubleshooting and repair of this device only could be undertaken by trained and recognized technicians.

16. Content package

Name	Quantity
LF-800UV main body	1
RVV power cord	1
Fuse tube (10A)	1
LED lamp (12 W)	1
UV lamp (T8 30W)	2
User manual	1
Test report	1

17. Circuit diagram

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