

# User Manual



**Model: FSL200 Laser Fume Extractor**



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## 1. Product Overview

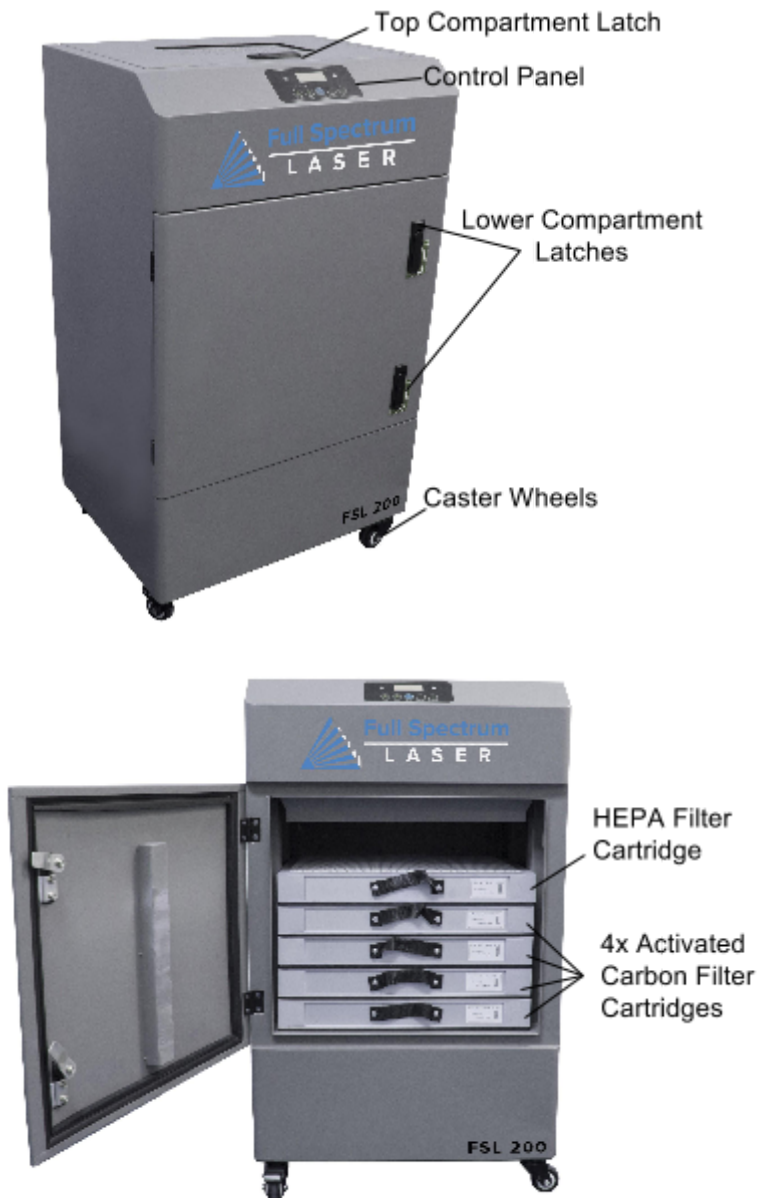
This high quality fume extractor featuring low noise brushless motor technology is designed for capturing dust particles and removing odors when cutting or engraving with the Full Spectrum Laser line of laser cutters. Use only OEM replacement filters from Full Spectrum Laser in this machine to maintain top performance and warranty.

## 2. Unpacking Inspection

Please check carefully to ensure that the following listed parts are included. If there are any missing or damaged items, please contact customer service.

Name of Parts	Qty	Remarks
Main Unit	1	
Power Cord	1	
4" Hose	1	
Top Pre-Filter	1	Installed.
HEPA Filter Cartridge	1	Installed in main unit
Activated Carbon Lower Filter Cartridges	4	Installed in main unit

### 3. Unit Components





## 4. Specifications

<b>Model FSL200 Specifications</b>	
<b>Air Inlet Size</b>	<i>4" duct</i>
<b>Input Voltage</b>	<i>AC110V</i>
<b>Maximum Power</b>	<i>450W</i>
<b>Noise</b>	<i>&lt;70dB</i>
<b>Length of Duct</b>	<i>Ø100mmx3m</i>
<b>Typical Flow Rate</b>	<i>295 CFM</i>
<b>Dimensions of Main Unit</b>	<i>21.5" × 16.5" × 36.25"</i>
<b>Weight</b>	<i>132 lbs</i>

## 5. Installation & Use Instructions

The FSL200 fume extractor features 2 separated compartments: a top compartment containing the Top Pre-filter to trap large particles and a bottom compartment containing the HEPA and Activated Carbon filter cartridges.

### 5.1 Maintenance of Top Pre-filter and Top Compartment

Air flows from the top air inlet downward through through the top compartment containing the Top Pre-filter down into the bottom compartment. Most of the large particles are trapped in the upper compartment and it must be cleaned regularly. Use the glass window to check for contaminants. Follow the steps below to clean and maintain the inlet box when contaminants are observed:

1. Pull the twist lock upward, and rotate clockwise to the "OPEN" position to open the top compartment.
2. Clean or replace the Top Pre-filter.
3. Vacuum the inside of the top compartment to remove any accumulated particles.



The top compartment should be cleaned periodically (at least weekly) to prevent premature clogging of the filtering system.

## **5.2 Lower Filter Compartment**

1. The bottom compartment contains 1x HEPA Filter and 4x Activated Carbon Filter cartridges.
2. Pull the two twist locks upward and rotate clockwise to the "OPEN" position to open the front gate.
3. Grasp the handle on the top cartridge and pull out each of the filter elements one by one.
4. After replacement, put the elements back in sequence from bottom to top layer by layer.

## **5.3 Suction Duct Hose Installation**

Remove the hose from the package, and attach one end of the top 4" air inlet duct of the machine and the other end to your Full Spectrum Laser machine's outlet duct. Optionally you may connect another hose (not included) to the bottom air outlet port to vent the air outside. It is not normally not necessary to vent the air outside.



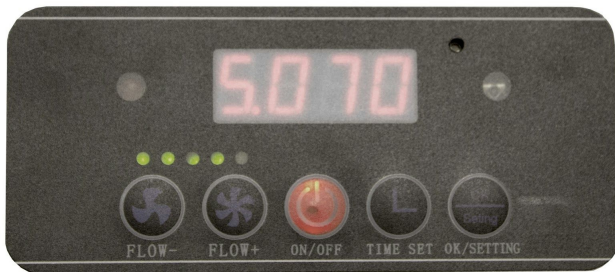
Do not introduce a bend radius of more than 10" on the hose.

## **5.4 Machine Operating Instructions**

Plug in and check if the power plug is properly fit into the socket.  
Turn on the power switch.



## 5.5 Control Panel Button Functions



### On/Off Button

Pressing the On/Off button on the control panel should cause the machine to start running and the orange light on the machine control panel should turn ON. Pressing the power button again should cause the machine to stop running and the orange indicator light on the machine control panel should turn OFF.

### Flow+ Button

Press this button when the machine is running to increase the fan speed, the number on digital display increases in multiples of 10, the maximum number is 100 which means the machine is running in full speed.

### Flow- Button

Press this button when the machine is running, the number on digital display decreases in multiples of 10.

### Proper Fan Speed

The fan speed should be set according to the actual requirements to remove all smoke without creating too much of a vacuum. During laser cutting, the laser machine should not fill up with smoke. If there is lingering smoke during cutting increase the fan speed. Too high a setting may cause the work piece to lift up and be pulled toward the vacuum created. In addition, too high a fan speed increases the power consumption as well as the noise level.

### **Time Set Button**

While the machine is running, press the Timer Set button, the digital display will show HXXX. Then press the Flow+/Flow- buttons to adjust the shutdown timing. XXX represents the timer countdown in hours with a maximum of 300 hours and minimum of 1 hour. After you are satisfied with the setting, press the Timer Set button again and the digital display will show HXXX and start the countdown timer. For example, H005 represents that the machine will shut down automatically in 5 hours. This function is useful at the end of the day when you turn the laser off but still want to keep cleaning any smell residues that may remain inside the machine.

### **Ok/Setting Button**

If the machine is in alarm status and buzzer sounds, press the Ok/Setting button to turn OFF the alarm. If the machine is not in alarm status, press the Confirm/Set button to check the total working hours of the machine.



## 6. Troubleshooting



**Make sure the power is switched off and unplugged before inspecting or repairing the machine!**

- Problem 1:** The machine still works, but the air flow is very weak and suction power is greatly reduced.
- Cause:** Air Inlet is blocked or foreign body exists inside the duct. The filter becomes saturated and hence gets blocked and gives an alarm. Usually only the pre-filter gets clogged quickly with large particles and needs to be vacuumed or replaced.
- Solution:** Turn off the power and open the top cover. Check if there is any foreign objects blocking the air inlet. Then check if the air vent is blocked or not. If the suction power of the empty-loaded machine is normal, it means the filter needs to be replaced.
- Problem 2:** The machine shuts down automatically after it is just started. Even if you restart the machine, the same problem happens again.
- Cause:** The air flow through the machine is obstructed. As a result, the starting current of the fan becomes very high, hence the machine shuts down automatically for self protection.
- Solution:** Turn off the power and open the top cover. Check if there is any obstructions in the air inlet or replace filters.
- Problem 3:** Power switch is ON, but machine does not run and the power indicator does not light up.
- Cause:** The fuse might be bad.
- Solution:** The fuse needs to be replaced. Pop the fuse out from the power socket using a flat head screwdriver and replace.



***If the problem remains after these inspections and maintenance are performed, please contact customer service.***

## 7. Filter Use & Maintenance

This product has consumable replacement filters. They need to be cleaned or replaced periodically to ensure proper operation.

### 1. Top Pre-filter

Place the Pre-filter at the bottom of the top compartment. When the accumulated dust on the Pre-filter is over 70% coverage and cannot be cleaned anymore and must be replaced with a new one.


### 2. Activated Carbon Filter Cartridges



Load 4x Activated Carbon Filter Cartridges into the lower compartment. The cartridges are marked with an arrow in the direction of airflow. In the FSL200 these cartridges should be loaded with the arrow facing down. If there is good airflow but the odors are not removed, the Activated Carbon Filter is consumed and must be replaced.

### 3. Bottom HEPA Filter Cartridge

Load the HEPA Filter Cartridge with the arrow pointing down on top of the 4x activated carbon filter cartridges. It should be immediately cleaned off by vacuuming when any accumulated dust affects the suction power. When cleaning does not help replace the Middle HEPA Filter with a new one.

## 8. Replacement Parts

Name	Remarks	Pictures
Top Pre-filter	Contained in Top Compartment. Filters large particles. Replace or clean weekly.	

Lower HEPA Filter	Contained in the lower Compartment. Placed on top of Activated Carbon Cartridges. Removes small particles.	
Lower Activated Carbon Filter Cartridges	Removes odors.	

## 9. Important Use Considerations



While using the machine, the ambient temperature range of the gas and the dust which is sucked into the air inlet should be within the range 15-60°C. Never use the machine when the temperature is higher or lower than this temperature range.



When using the machine, the humidity of the gas and the dust sucked into the air inlet should be between the range of 40%-80%. If the humidity is excessively high, the activated carbon filter element will become rapidly saturated with water and consumed.



Do not use this machine without all filter elements because the fumes or the dust particles may be sucked into the air blower and the control system causing damage. Any operation without all filter elements installed is not covered under warranty. Use only OEM replacement filter elements from Full Spectrum Laser.



Do not continue to use the machine when the HEPA Filter Cartridge or the Pre-Filter is clogged as this will increase motor wear and shorten the service life of the machine. Please clean and/or replace the filter elements regularly to ensure proper machine operation.

**The warranty will not cover any losses or damage that may be incurred by the user if instructions are not followed.**

## **10. Contact Information**

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