

## Ortur LU2-4-SF

# ORTUR Laser Module LU2-4-SF User Manual

Model: LU2-4-SF

## 1. INTRODUCTION

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This manual provides comprehensive instructions for the installation, operation, maintenance, and troubleshooting of the ORTUR Laser Module LU2-4-SF. This module is designed for use with desktop engraving machines such as Ortur Laser Master 2 Pro, OLM2 S2, and OLM2 Pro S2.

The LU2-4-SF module features an upgraded high-performance fixed-focus laser head with a 24V 2A power supply, offering high stability, efficiency, and excellent laser beam quality. It has a luminous power of 5500mW and a 30mm focal length, optimized for precise engraving and cutting.



Figure 1: ORTUR Laser Module LU2-4-SF. This image shows the red-colored laser module with its specifications label, indicating product name, model, wavelength, focal length, input voltage, and maximum luminous power.

For more detailed information, visit the official product page: [ortur.tech/LU2-4](http://ortur.tech/LU2-4)

## 2. KEY FEATURES

- **Brilliant Performance:** Upgraded high-performance fixed focus laser head, 24V 2A power supply featuring high stability, high efficiency, low noise, and excellent laser beam quality. 5500MW Luminous power, 30MM focal length is good for precise engraving and cutting.
- **High Speed & More Stable:** Adopting compression laser technology, the laser focal spot is approximately 0.12\*0.15 MM. This laser head is compatible with other 24V laser cutters, offering expanded creative

possibilities.

- **Safety Protection Design:** The laser module shield filters out 97% of UV rays, allowing engraving without protective glasses and preventing accidental contact with the laser spot. The aluminum housing and heat sink ensure rapid heat dissipation for long continuous operation.
- **Wide Compatibility:** Ideal for engraving wood, bamboo, cardboard, leather, circuit boards, glass, aluminum oxide, and non-reflective lacquered metal. Cuttable materials include plywood board, pine board, non-woven fabric, and acrylic.

### 3. SETUP AND INSTALLATION

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Before installation, ensure your engraving machine is powered off and disconnected from the power source. Refer to your engraving machine's specific manual for detailed instructions on module replacement or installation.

1. **Unpacking:** Carefully remove the LU2-4-SF laser module from its packaging. Inspect for any visible damage.
2. **Mounting:** Attach the laser module to the designated mounting bracket on your engraving machine. Ensure it is securely fastened to prevent movement during operation.
3. **Electrical Connection:** Connect the 24V power cable from your engraving machine to the laser module. Ensure the connection is firm and correct polarity is observed.
4. **Data Connection:** Connect any necessary data or control cables from the laser module to your engraving machine's control board.
5. **Focus Adjustment:** The LU2-4-SF features a fixed focus. Ensure the module is positioned at the correct working distance (focal length 30mm) from the material surface for optimal performance.



Figure 2: Key components of the ORTUR LU2-4-SF laser module. This image highlights the radiator for heat dissipation, the eye protection design of the shield, and the aluminum housing, all contributing to safe and efficient operation.

## 4. OPERATING INSTRUCTIONS

Always wear appropriate laser safety glasses when operating the laser module, even with the built-in shield. Ensure the work area is well-ventilated.

1. **Software Setup:** Use compatible laser engraving software (e.g., LightBurn, LaserGRBL) to prepare your design. Configure the software settings according to the material and desired effect.
2. **Material Placement:** Place the material to be engraved or cut on the machine's workbed, ensuring it is flat and secure.
3. **Focal Length Verification:** Verify the distance between the laser module and the material surface is approximately 30mm for optimal focus.
4. **Power and Speed Settings:** Adjust laser power and engraving/cutting speed in your software. Start with lower power settings and gradually increase as needed.
  - For engraving, the LU2-4-SF is highly effective.



- For cutting, it supports higher speeds and is well-suited for materials like plywood, pine board, non-woven fabric, and acrylic.

5. **Start Operation:** Initiate the engraving or cutting process through your software. Monitor the operation closely.



Figure 3: Comparison of the OLM2-SF's compressed laser focal spot (0.12x0.15mm) versus a typical laser, demonstrating its precision. The image also shows examples of engraving results on wood, highlighting the clean cuts and engravings achievable with the OLM2-SF.

# WIDELY APPLICABLE MATERIALS

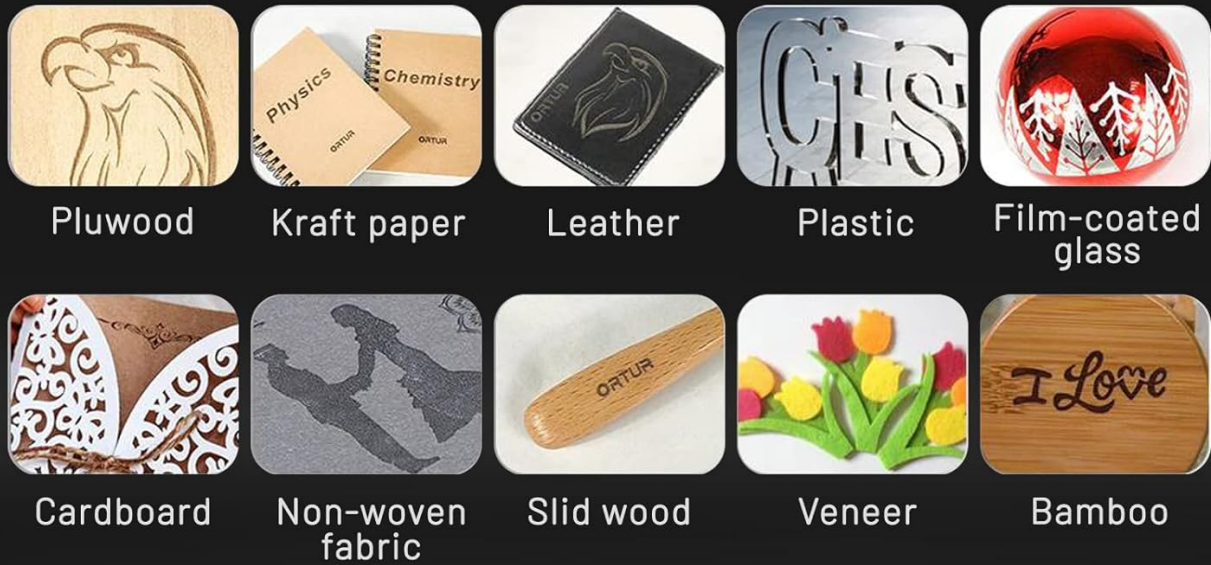


Figure 4: A visual guide to widely applicable materials for the ORTUR LU2-4-SF laser module, including plywood, kraft paper, leather, plastic, film-coated glass, cardboard, non-woven fabric, solid wood, veneer, and bamboo.

## 5. MAINTENANCE

Regular maintenance ensures optimal performance and extends the lifespan of your laser module.

- **Lens Cleaning:** Periodically inspect the laser lens for dust or debris. Use a soft, lint-free cloth and a small amount of lens cleaning solution (specifically designed for optical lenses) to gently clean the lens. Avoid abrasive materials.
- **Heat Sink Inspection:** Ensure the heat sink fins are free from dust and obstructions to allow for efficient heat dissipation. Use compressed air to clear any buildup.
- **Cable Connections:** Check all electrical and data cable connections regularly to ensure they are secure and free from wear or damage.
- **Storage:** When not in use, store the laser module in a clean, dry environment, away from direct sunlight and extreme temperatures.

## 6. TROUBLESHOOTING

Problem	Possible Cause	Solution
Laser not firing or weak output	<ul style="list-style-type: none"> <li>• Loose power connection</li> <li>• Dirty laser lens</li> <li>• Incorrect software settings (power too low)</li> <li>• Module overheating</li> </ul>	<ul style="list-style-type: none"> <li>• Check and secure power cables.</li> <li>• Clean the laser lens.</li> <li>• Increase laser power in software.</li> <li>• Ensure proper ventilation and check heat sink.</li> </ul>
Poor engraving/cutting quality	<ul style="list-style-type: none"> <li>• Incorrect focal distance</li> <li>• Material not flat</li> <li>• Speed too high or power too low</li> <li>• Dirty lens</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust module height to achieve 30mm focal distance.</li> <li>• Secure material flat on the workbed.</li> <li>• Adjust speed and power settings.</li> <li>• Clean the laser lens.</li> </ul>
Module not recognized by software	<ul style="list-style-type: none"> <li>• Loose data connection</li> <li>• Driver issues</li> <li>• Incompatible software version</li> </ul>	<ul style="list-style-type: none"> <li>• Check and secure data cables.</li> <li>• Reinstall or update drivers for your engraving machine.</li> <li>• Ensure software is compatible with your machine and module.</li> </ul>

## 7. SPECIFICATIONS

# PRODUCT DIMENSIONS

- Optical Power: 4,500–5,500mW  
Voltage: 4.2–5.0V  
Electric Current: 3.4–3.6A

- Wavelength: 445±10NM  
Focal Spot: About 0.12\*0.15 MM  
Focal Length: 30mm  
Light Path: Focused Beam

- Product Size: 40\*41\*122MM



Figure 5: Detailed product dimensions and key specifications of the ORTUR LU2-4-SF laser module, including optical power, voltage, current, wavelength, focal spot size, and overall product size.

Specification	Value
Product Name	Laser Module
Model No.	LU2-4-SF
Optical Power	4,500-5,500mW (5.5W Luminous Power)
Wavelength	450±5nm (445±10NM)
Voltage	4.2-5.0V (Input of Laser Diode) / 24V (Input of Laser Module)
Electric Current	3.4-3.6A (Input of Laser Diode) / 2A (Input of Laser Module)
Focal Length	30mm
Focal Spot	About 0.12*0.15 MM



Specification	Value
Light Path	Focused Beam
Product Size	40*41*122MM
Material	Aluminum
Color	Red
Item Weight	299 g

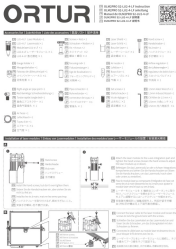


## 8. WARRANTY AND SUPPORT



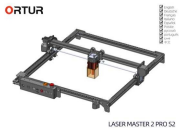
The ORTUR Laser Module LU2-4-SF comes with a **2-year warranty period**. Customer service is available for the lifetime of the product.

If you have any questions regarding instructions, operation, or require further assistance, please contact the ORTUR customer service team directly. They are available to provide professional support.

For more information and support resources, you may visit the official Ortur store on Amazon: [Ortur Amazon Store](#).

### Related Documents - LU2-4-SF

	<p><a href="#">ORTUR OLM2PRO S2 LU2-4-LF Laser Module Installation and Maintenance Guide</a></p> <p>Comprehensive guide for installing, adjusting focus, and maintaining the ORTUR OLM2PRO S2 LU2-4-LF laser module, including an accessories list and air pump usage instructions.</p>
	<p><a href="#">ORTUR LU2-4-LF Laser Module User Manual: Focus Adjustment and Air-Assist Installation</a></p> <p>User manual for the ORTUR LU2-4-LF Laser Module, detailing laser shield usage, focus adjustment methods (focal gauge, aluminum plate), and step-by-step air-assist installation. Includes safety information and a video tutorial link.</p>
	<p><a href="#">Ortur LU2-4-SF Laser Module: Installation and Usage Guide</a></p> <p>Comprehensive guide for the Ortur LU2-4-SF laser module, covering package contents, step-by-step installation, focal gauge usage for precise focusing, and essential maintenance tips.</p>

 <p>AUfero LASER 1</p>	<p><a href="#">Aufero Laser 1 Assembly Manual and Features Guide</a></p> <p>Comprehensive assembly instructions and key features for the Aufero Laser 1 desktop laser engraving machine. Includes safety tips and installation guides for LU2-2, LU2-4-SF, and LU2-4-LF laser modules.</p>
 <p>LU2-4-SF User Manual</p>	<p><a href="#">Ortur LU2-4-SF Laser Module User Manual - Focusing and Shield Replacement Guide</a></p> <p>Comprehensive user manual for the Ortur LU2-4-SF laser module. Learn how to safely remove and replace the laser shield, and master focus adjustment techniques using the focal gauge board or aluminum plate.</p>
 <p>LASER MASTER 2 PRO S2</p>	<p><a href="#">Ortur Laser Master 2 Pro S2 User Manual and Safety Guide</a></p> <p>Comprehensive guide for the Ortur Laser Master 2 Pro S2 laser engraver, covering safety instructions, features, assembly, and optional parts. Includes detailed steps and parameter recommendations for optimal use.</p>