Ortur OLM2-S2-LF (OLM2S2-LU2-4-LF-US)

ORTUR Laser Master 2 S2 LF User Manual

Model: OLM2-S2-LF (OLM2S2-LU2-4-LF-US) | Brand: Ortur

1. Introduction

Welcome to the user manual for your ORTUR Laser Master 2 S2 LF Laser Engraver and Cutting Machine. This device features a 5500mW laser with ultra-fine compression technology (0.17*0.25mm focal area), designed for precise engraving and cutting across a wide range of materials. This manual provides essential information for safe operation, setup, maintenance, and troubleshooting to help you achieve optimal results and ensure the longevity of your machine.



Figure 1.1: The ORTUR Laser Master 2 S2 LF laser engraver with examples of engraved items like a wooden eagle, a motorcycle model, and a deer art piece.

2. Safety Precautions

Your safety is paramount. The ORTUR Laser Master 2 S2 LF incorporates several safety features, but it is crucial to follow all precautions during operation.

- **Eye Protection:** The machine features a panoramic filter glass protective cover that filters 97% of ultraviolet light. While this reduces the need for separate goggles, always exercise caution and avoid direct eye exposure to the laser beam.
- **G-sensor Protection:** A G-sensor on the motherboard automatically stops the laser if the engraving machine is displaced during operation.
- **USB Disconnection Safety:** If your computer system halts or the USB cable disconnects, causing the laser engraver to stop moving, the laser beam will automatically cease to prevent fire hazards.
- **Idle Shutdown:** If the engraving machine is turned on but remains stationary for an extended period, the laser will

automatically turn off.

- **Ventilation:** Ensure adequate ventilation in your workspace to dissipate fumes produced during engraving or cutting.
- **Flammable Materials:** Keep flammable materials away from the working area.



Figure 2.1: Overview of the four safety protections integrated into the OLM2 S2-LF model.



Figure 2.2: Detailed diagram explaining the functionality of each safety protection system.

3. Components Overview

The ORTUR Laser Master 2 S2 LF is designed with a modular structure for ease of assembly and maintenance. Key components include:

- **Laser Module:** The core component, featuring a 5500mW fixed-focus laser with ultra-fine compression technology for precise engraving and cutting.
- **Frame Assembly:** Comprising the X and Y axis rails, providing the movement platform for the laser module.
- **Control Box:** Houses the 32-bit professional motherboard, power input, and USB connection.
- **Limit Switches:** For precise homing and boundary detection.
- **Anti-friction Rollers:** Ensure smooth movement of the laser module.
- **Air Assist Nozzle:** Integrated for improved cutting performance when used with an external air pump.



Figure 3.1: Key optimized components of the ORTUR Laser Master 2 S2.

4. Setup Guide

The ORTUR Laser Master 2 S2 LF features a modular design for straightforward assembly. Please follow the detailed instructions provided in the official User Manual PDF for step-by-step assembly and initial setup.
Initial Steps:

1. Unpack all components and verify against the packing list.
2. Assemble the frame according to the provided diagrams.
3. Install the laser module onto the gantry.
4. Connect all necessary cables (power, USB, motor cables).
5. Ensure the machine is placed on a stable, level surface in a well-ventilated area.

For comprehensive assembly instructions, please refer to the Official User Manual (PDF).

5. Operating Instructions

The ORTUR Laser Master 2 S2 LF is compatible with various mature engraving software, including LaserGRBL and LightBurn. It supports Windows 7 / 8 / XP / 10 / 11, as well as MacOS and Linux systems.

5.1 Software Compatibility

- **LaserGRBL:** Free, open-source software for Windows. Ideal for basic engraving tasks.
- **LightBurn:** Paid, professional software offering advanced features for both engraving and cutting. Available for Windows, MacOS, and Linux.



Figure 5.1: The laser engraver demonstrating compatibility with various operating systems and software like LaserGRBL and LightBurn.

5.2 Engraving and Cutting Process

1. **Prepare Material:** Place your chosen material (e.g., wood, leather, acrylic, paper, bamboo, aluminum oxide, metal, glass) within the 390x410mm engraving area.
2. **Software Setup:** Open your preferred software (LaserGRBL or LightBurn). Import your design and adjust parameters such as laser power, speed, and passes based on the material and desired effect.
3. **Focus Adjustment:** Ensure the laser is properly focused for optimal precision. The fixed-focus design simplifies this step.
4. **Start Operation:** Initiate the engraving or cutting process from the software. Monitor the machine during operation.
5. **Air Assist (Optional):** For enhanced cutting speed and cleaner cuts, connect an external air pump to the integrated air assist nozzle.



Figure 5.2: Illustration of the upgraded compressed spot technology, highlighting the ultra-fine laser focal area for better precision.

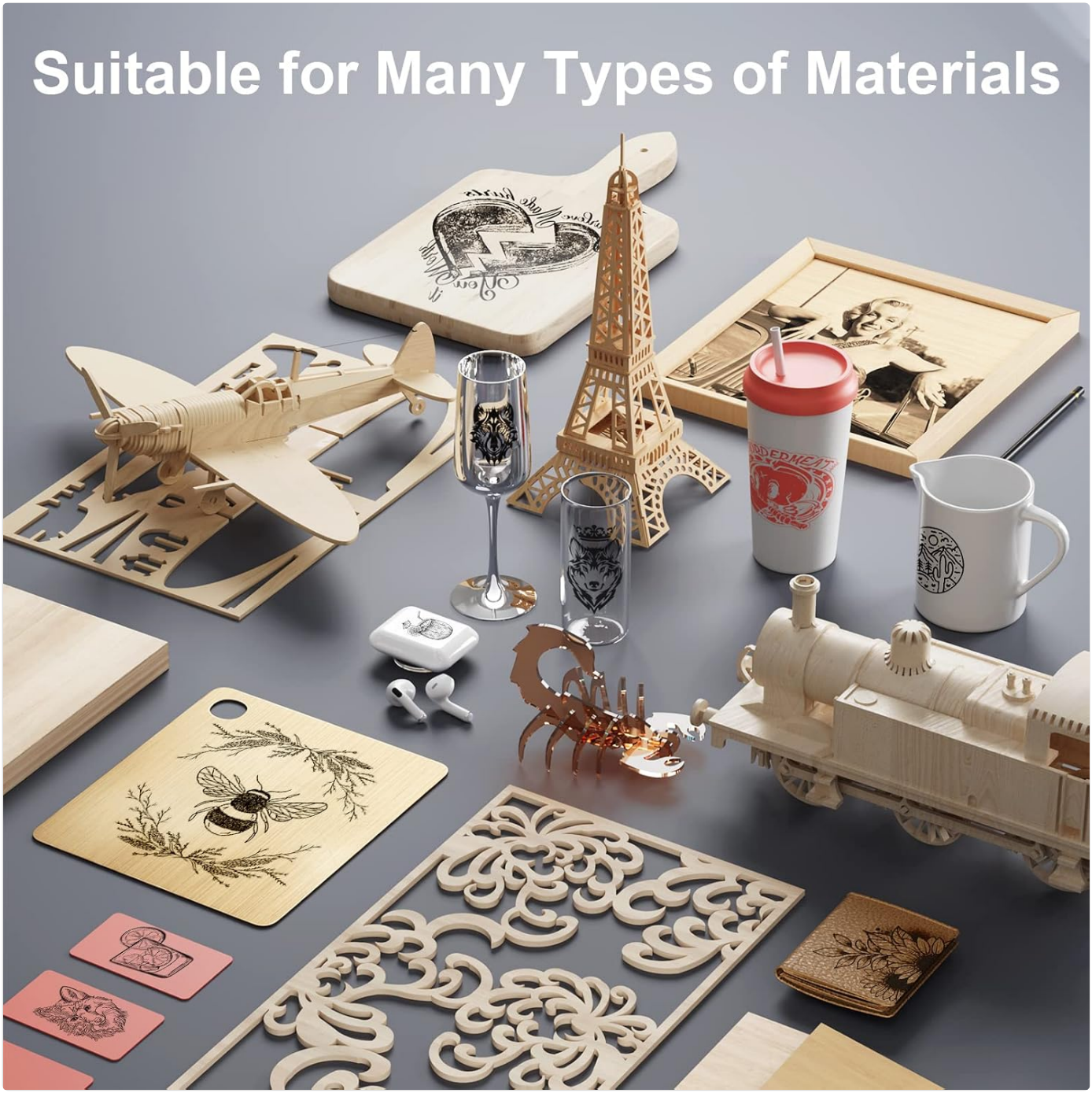


Figure 5.3: Examples of diverse materials suitable for engraving and cutting with the ORTUR Laser Master 2 S2 LF.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your laser engraver.

- **Cleaning:** Periodically clean the laser lens and the machine's rails to prevent dust and debris buildup, which can affect performance. Use a soft, lint-free cloth.
- **Lubrication:** Apply a small amount of lubricant to the moving parts of the rails as recommended in the full user manual to ensure smooth operation.
- **Cable Management:** Ensure all cables are neatly organized and not obstructing the laser module's movement.
- **Firmware Updates:** Check the official Ortur website for any available firmware updates to keep your machine running with the latest improvements.

7. Troubleshooting

If you encounter issues with your ORTUR Laser Master 2 S2 LF, consider the following common solutions:

- **Laser Not Firing/Weak Output:**
  - Check power connections and USB cable.
  - Ensure the laser module is properly seated.
  - Verify software settings (laser power, speed).
  - Clean the laser lens.
- **Machine Not Moving/Responding:**
  - Check USB connection to computer.
  - Restart the machine and software.
  - Ensure no physical obstructions on the rails.
  - Verify motor cable connections.
- **Engraving Quality Issues (Blurry/Inconsistent):**
  - Re-check laser focus.
  - Ensure material is flat and securely placed.
  - Adjust engraving speed and power settings.
  - Clean the laser lens.
- **Safety Features Triggering Unexpectedly:**
  - Ensure the machine is on a stable surface to prevent G-sensor activation.
  - Check USB cable for secure connection and integrity.

For more detailed troubleshooting steps or persistent issues, please refer to the comprehensive User Manual PDF or contact Ortur customer support.

8. Product Specifications

Feature	Specification
Model	OLM2-S2-LF (OLM2S2-LU2-4-LF-US)
Laser Power	5500mW
Focal Spot Size	0.17 * 0.25mm (Ultra-fine compression)
Engraving Area	390 x 410mm
Engraving Speed	Up to 5000 mm/min
Motherboard	32-bit Professional Motherboard
Compatibility	LaserGRBL, LightBurn
Operating Systems	Win 7 / 8 / XP / 10 / 11, MacOS, Linux
Product Weight	8.48 pounds
Package Dimensions	25.1 x 10.5 x 5.5 inches
Manufacturer	Ortur

9. Warranty and Support

Ortur is committed to providing high-quality products and comprehensive pre-sales and after-sales services. The entire engraving machine adopts a modular design, facilitating assembly, repair, replacement, and updates of machine parts.
If you encounter any issues or have questions regarding your ORTUR Laser Master 2 S2 LF, please do not hesitate to contact our

support team. We are always here and happy to answer your questions and guide you on your creative journey.

Contact Information:

Please refer to the official Ortur website or your purchase documentation for the most current contact methods, including email, live chat, and social media support.



Figure 9.1: Ortur's commitment to round-the-clock customer support.

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Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

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Email

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question