

## Ortur HS-OLM3-LU2-10A-US

# ORTUR Laser Master 3 User Manual

Model: HS-OLM3-LU2-10A-US

Brand: Ortur

## 1. INTRODUCTION

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The ORTUR Laser Master 3 is a high-performance laser engraver and cutter designed for precision work on various materials such as wood and metal. Featuring a 10000mW laser module and an engraving speed of up to 20000mm/min, this device offers advanced capabilities for both hobbyists and professionals. It supports multiple control methods, including app control, and incorporates several safety features to ensure secure operation.



Image 1.1: The ORTUR Laser Master 3 laser engraver, showcasing its design and an example of a detailed engraving on a wooden surface. Various engraved items like mugs, tumblers, and wooden crafts are also displayed.

## 2. SAFETY INFORMATION

Operating a Class 4 laser device requires strict adherence to safety protocols. Failure to follow these guidelines can result in serious injury or damage to property.

### 2.1 General Safety Precautions

- Always wear appropriate laser safety goggles during operation. The laser emits invisible radiation that can cause permanent eye damage.
- Ensure the work area is well-ventilated to dissipate fumes and smoke produced during engraving or cutting.
- Never leave the machine unattended while it is operating.
- Keep a fire extinguisher nearby. Certain materials can ignite during laser processing.
- Keep children and pets away from the operating area.
- Do not engrave or cut reflective materials without proper precautions, as reflected laser beams can be hazardous.
- Ensure the emergency stop switch is easily accessible and understood by all users.

### 2.2 Integrated Safety Systems

The ORTUR Laser Master 3 is equipped with 7 safety protection systems:

1. **Safety Lock:** Requires a key for professional use, preventing unauthorized operation.
2. **Active Position Protection:** Stops operation if the machine is moved or tilted unexpectedly.
3. **Sloping Position Protection:** Detects and halts operation if the machine's angle changes significantly.
4. **Exposure Duration Detection and Limitation:** Prevents prolonged laser exposure in one spot.
5. **Voltage and Current Safety Control System:** Monitors electrical parameters for safe operation.
6. **Host Computer Watchdog:** Ensures continuous communication and control from the host device.
7. **Emergency Stop Switch:** Immediately cuts power to the laser in case of an emergency.



Image 2.1: Diagram illustrating the ORTUR Laser Master 3's seven safety protection systems, including mobile location protection, buzzer alarm, stable framework, exposure detection, security lock, and power control system.

### 3. SETUP

#### 3.1 Unpacking and Inspection

Carefully unpack all components from the packaging. Verify that all parts listed in the packing list are present and undamaged. Report any missing or damaged parts to customer support immediately.

## 3.2 Assembly

The ORTUR Laser Master 3 requires some assembly. Follow the detailed instructions provided in the separate assembly guide. Key steps include:

- Attaching the frame components securely.
- Installing the laser module onto the gantry.
- Connecting all necessary cables, ensuring they are properly routed and secured to prevent interference with movement.
- Tensioning the drive belts correctly to ensure smooth and accurate movement of the laser module.

## 3.3 Software Installation and Connection

The Laser Master 3 supports various software and connection methods:

- **Desktop Software:** Compatible with LaserGRBL and LightBurn. Install the chosen software on your Windows (XP/7/8/10) or Mac system.
- **Mobile App:** Use the professional 'Laser Explorer' app, compatible with iPhone, Android phones, iPad, and Android tablets.
- **Connection Methods:**
  - **USB:** Connect the machine directly to your computer via USB cable.
  - **Wi-Fi:** For app control, ensure your device is connected to a 2.4GHz Wi-Fi network. Press the machine's button 5 times quickly (within 2 seconds) to enter discovery mode for Wi-Fi pairing.
  - **TF Card:** For offline operation, save your NC files to a TF card and insert it into the machine.

# Support Multiple System and File Formats

App/LightBurn/LaserGRBL  
(JPG/SVG/PNG/DXF/TIF/BMP/PDF/NG)



Image 3.1: The ORTUR Laser Master 3 demonstrating compatibility with various systems and file formats, showing connections to a laptop running LightBurn and a smartphone using the Laser Explorer app.

## 4. OPERATING INSTRUCTIONS

### 4.1 Powering On and Initializing

- Connect the power adapter to the machine and a suitable power outlet.
- Turn on the main power switch. The machine will perform a self-check and home the laser module to its starting position.

### 4.2 Material Preparation

- Place the material to be engraved or cut securely on the work surface. Ensure it is flat and stable.
- For optimal results, use the included rubber mat or a dedicated engraving platform.
- Avoid materials that produce toxic fumes when laser processed, such as certain plastics or circuit boards.

### 4.3 Focusing the Laser

The ORTUR Laser Master 3 features a foldable focal gauge for easy focusing. Adjust the laser module's height until the focal gauge touches the material surface, then retract the gauge.

## 4.4 Starting an Engraving/Cutting Job

- **Using Software (LaserGRBL/LightBurn):** Load your design file (NC, BMP, JPG, PNG, DXF, etc.), set parameters (power, speed, passes), and send the job to the machine.
- **Using App (Laser Explorer):** Select your design, choose material settings, and initiate the job directly from your mobile device. The app provides an automatic operation guide for novice users.
- **Using TF Card:** Ensure your NC file is on the TF card. Insert the card, and the machine will automatically detect and begin the job. You can disconnect your computer or phone after the job starts.



Image 4.1: A visual guide demonstrating the process of connecting the ORTUR Laser Master 3 to a computer or phone, importing a DXF cutting file, and completing the artwork.

## 4.5 Monitoring Operation

Always monitor the engraving or cutting process. Be prepared to use the emergency stop switch if any issues arise, such as smoke, flames, or unexpected machine behavior.

# 20000mm/min Engraving Speed

Much faster speed increases engraving efficiency over **100%.** 



Image 4.2: A comparison showing the ORTUR Laser Master 3 completing an engraving in 30 minutes at 20000mm/min, while another laser at 10000mm/min has not finished the same task in the same timeframe.

## 5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your ORTUR Laser Master 3.

### 5.1 Cleaning the Laser Module

Periodically clean the laser lens and the air assist nozzle. Use a soft, lint-free cloth and appropriate lens cleaning solution. Ensure the machine is powered off and disconnected before cleaning.

# ORTUR



## STRONGER POWER HIGHER SPEED DUAL LASER TECHNOLOGY



(Weight)  
235g



(Laser Spot)  
0.05mm\*0.1mm



Eye  
Protection



Cut 20mm  
Wood



Cut 30mm  
Acrylic

Image 5.1: A close-up view of the ORTUR laser module, highlighting its dual fan cooling system for efficient heat dissipation and stable long-term operation.

### 5.2 Cleaning Rails and Belts

Dust and debris can accumulate on the guide rails and drive belts, affecting movement accuracy. Clean these components regularly with a dry cloth. Inspect belts for wear and tear and ensure they maintain proper tension.

### 5.3 Firmware Updates

Check the official Ortur website or app for available firmware updates. Keeping your machine's firmware up-to-date can improve performance, add new features, and resolve potential issues.

## 6. TROUBLESHOOTING

This section addresses common issues you might encounter with your ORTUR Laser Master 3.

### 6.1 Connection Issues

- Wi-Fi Connection Failure:** Ensure your router is broadcasting a 2.4GHz network. Confirm you are pressing the machine's button 5 times rapidly to enter Wi-Fi discovery mode.
- USB Connection Not Detected:** Verify the USB cable is securely connected to both the machine

and your computer. Ensure necessary drivers are installed. Try a different USB port or cable.

## 6.2 Movement Problems (e.g., Y-axis not moving)

- **Check Cables:** Inspect all motor cables for secure connections and any signs of damage.
- **Inspect Belts:** Ensure the drive belts are properly tensioned and not slipping. Check for any obstructions on the rails.
- **Firmware Reset:** If movement issues persist, try performing a factory reset and re-downloading the latest firmware as per the official instructions.

## 6.3 Poor Engraving/Cutting Quality

- **Focus:** Re-check the laser focus using the focal gauge. Incorrect focus is a common cause of poor quality.
- **Material Settings:** Adjust power, speed, and number of passes in your software based on the material type and desired effect. Refer to material test guides.
- **Clean Lens:** A dirty laser lens can significantly reduce laser power and quality. Clean the lens as described in the Maintenance section.

### Important Note:

If you encounter persistent issues that cannot be resolved using this guide, please contact Ortur customer support for assistance. Do not attempt unauthorized repairs, as this may void your warranty and pose safety risks.

## 7. SPECIFICATIONS

Feature	Detail
Model Number	HS-OLM3-LU2-10A-US
Laser Module Output Power	10000mW (10W)
Engraving Speed	Up to 20000mm/min
Laser Spot Area	0.05 x 0.1 mm
Engraving Area	400 x 400 mm
Product Dimensions	25.98 x 9.45 x 7.87 inches
Item Weight	8.3 ounces
Connectivity	TF Card, USB, Wi-Fi, App Control
Supported File Formats	NC, BMP, JPG, PNG, DXF, etc.
Supported Operating Systems	Win XP/7/8/10, Mac (LightBurn)
Safety Features	7 protection systems (Active Position, Sloping Position, Emergency Stop, etc.)

## 8. WARRANTY INFORMATION

The ORTUR Laser Master 3 comes with a manufacturer's warranty. Please refer to the warranty card included with your product or visit the official Ortur website for detailed terms and conditions regarding coverage, duration, and claims procedures. Keep your proof of purchase for warranty service.

## 9. SUPPORT

For further assistance, technical support, or inquiries, please utilize the following resources:

- Official Website:** Visit the Ortur official website for FAQs, software downloads, and additional documentation.
- Email Support:** Contact Ortur customer service via email for detailed inquiries.
- Live Chat:** Access live chat support on the Ortur website during business hours.
- Community Forums/Social Media:** Engage with the Ortur community on platforms like Facebook for tips, tricks, and peer support.



Email Support



Live Chat

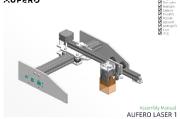


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### Related Documents

	<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 LU2-2 Laser Module User Manual: Focusing Guide</a></p> <p>Comprehensive guide on how to adjust the focus of the Ortur LU2-2 laser module using the laser shield, focal gauge, and aluminum plate. Includes technical specifications and safety information for Ortur laser engravers.</p>

 AUFERO LASER 1	<p><a href="#"><b>Aufero Laser 1 Assembly Manual and Features Guide</b></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>
 ORTUR LASER MASTER 2 PRO S2	<p><a href="#"><b>Ortur Laser Master 2 Pro S2: Assembly Manual and Safety Guide</b></a></p> <p>Comprehensive guide to assembling and safely operating the Ortur Laser Master 2 Pro S2 desktop laser engraver, including features, parts list, safety instructions, assembly steps, optional parts, and software settings.</p>