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## Longer RAY5 Mini 3.5W

# Longer RAY5 Mini Laser Engraver (3.5W) Instruction Manual

Your guide to setting up, operating, and maintaining your Longer RAY5 Mini Laser Engraver.

## 1. PRODUCT OVERVIEW

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The Longer RAY5 Mini is a compact and portable laser engraver and cutter designed for various materials. It features a 3.5W laser module, a 140x130mm engraving area, and multiple connectivity options for ease of use.



Figure 1: Longer RAY5 Mini Laser Engraver (3.5W) - Overall View

## 2. SAFETY INFORMATION

Always prioritize safety when operating the laser engraver. Failure to follow safety guidelines can result in serious injury or damage to the device.

- **Eye Protection:** Always wear the provided laser protective glasses during operation.
- **Laser Shield:** Ensure the laser shield is properly installed to reduce laser exposure.
- **Emergency Stop:** Familiarize yourself with the emergency stop button and its location. Press it immediately in case of any malfunction or hazard.
- **Ventilation:** Operate the device in a well-ventilated area to dissipate fumes and smoke generated during engraving/cutting.
- **Flammable Materials:** Avoid engraving or cutting highly flammable materials without proper precautions.

# Multiple Protections

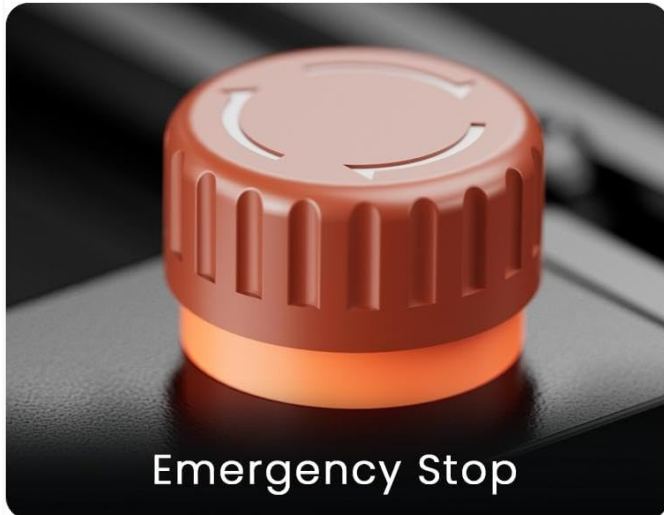


Figure 2: Multiple Safety Protections

## 3. SETUP GUIDE

### 3.1 Unboxing and Initial Inspection

The Longer RAY5 Mini comes pre-assembled for quick setup. Carefully remove all components from the packaging and check for any missing items or damage.

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Video 1: LONGER RAY5 Mini Laser Engraver Unboxing. This video demonstrates the unboxing process and initial setup of the laser engraver.

## Ready to Use

Pre-assembled Frame  
Laser Engraver

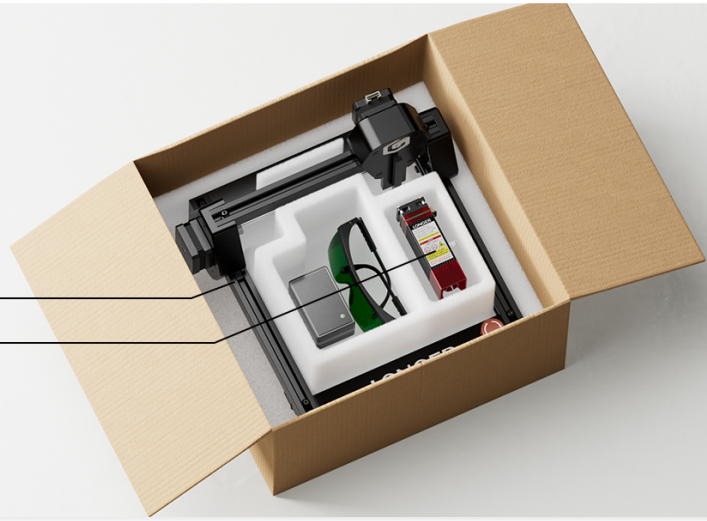


Figure 3: Pre-assembled frame and laser engraver components inside the box.

### 3.2 Connecting the Laser Module

1. Carefully insert the laser module into its designated slot on the machine.
2. Secure the laser module using the provided thumb screws.
3. Connect all necessary cables from the laser module to the main unit, ensuring they are firmly seated.

### 3.3 Power Connection

1. Plug the DC power adapter into the machine's power port.
2. Connect the power adapter to a suitable power outlet.
3. Ensure the emergency stop button is disengaged (turned counter-clockwise) and the rocker switch is in the 'ON' position.

## 4. OPERATING INSTRUCTIONS

### 4.1 Software Installation and Connection

The Longer RAY5 Mini supports various software for design and control, including LaserGRBL (free) and LightBurn (paid). It also offers Wi-Fi and APP connectivity.

- **LaserGRBL:** Download and install LaserGRBL from the official website. Ensure the CH340 driver is installed for USB connection.
- **LightBurn:** Download and install LightBurn. Import the device configuration file for RAY5 Mini.
- **APP/Wi-Fi:** Connect your device to the engraver via Wi-Fi using the dedicated app for mobile control.

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Video 2: Ray5 mini Laser GRBL Installation and Usage Guide. This video provides a step-by-step guide on installing and using LaserGRBL software.

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Video 3: Ray5 mini LightBurn Installation and Usage Guide. This video demonstrates the installation and usage of LightBurn software.

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Video 4: Ray5 mini tutorial by using LaserBurn APP in STA mode. This video guides users through using the LaserBurn app in STA mode.

## 4.2 Focusing the Laser

Accurate focusing is crucial for optimal engraving and cutting results. Use the provided focus block to set the correct distance between the laser module and the material surface.

1. Place the material to be engraved/cut on the working area.
2. Position the focus block directly under the laser module.
3. Loosen the thumb screw on the laser module.
4. Lower the laser module until its bottom edge gently touches the top of the focus block.
5. Tighten the thumb screw to secure the laser module in place.
6. Remove the focus block. The laser is now focused.

## 4.3 Engraving and Cutting Process

Once the laser is focused and connected to your chosen software, you can begin your projects.

- **Material Compatibility:** The RAY5 Mini can engrave over 300 types of materials, including wood, leather, metal, and acrylic.
- **Precision:** Achieve detailed results with a 0.04mm x 0.04mm ultra-fine laser spot and 0.01mm accuracy.
- **Speed:** Engrave at speeds up to 12,000mm/min for efficient project completion.



Light weight, High Speed



LaserGRBL & LightBurn & LaserBurn

**12,000mm/min**

Engraving Speed



0.04x0.04mm  
Laser Spot Size



130\*140 mm Working Area

**300+** Materials  
Can be engraved



# Outstanding Performance

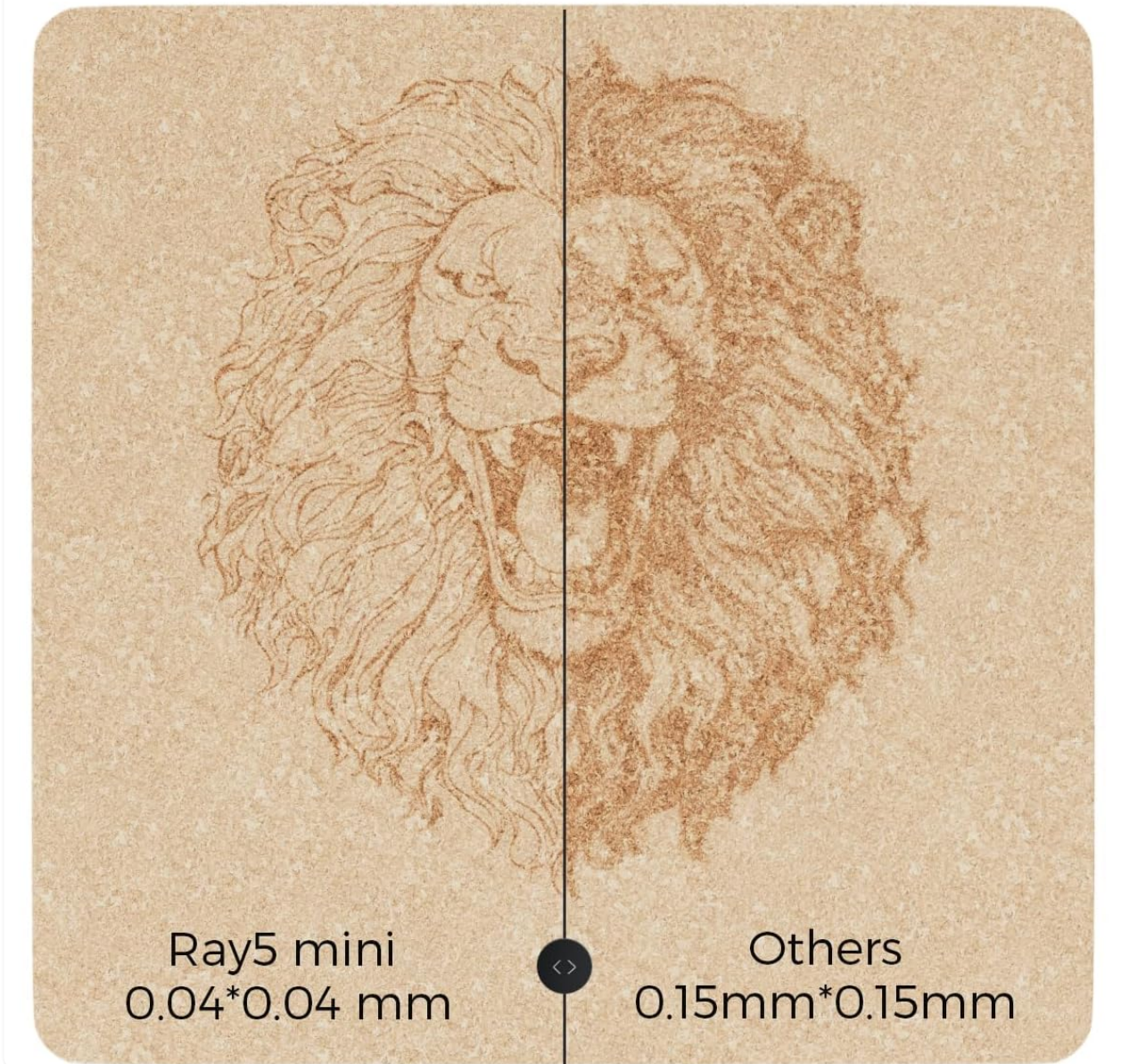


Figure 5: Comparison of Engraving Precision

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Video 5: Ray5 Mini Engraves Wood Panels with Ease & Precision. This short video demonstrates the engraver's ability to create precise designs on wood.

## 5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your Longer RAY5 Mini.

- **Cleaning:** Regularly clean the laser lens and the working area to prevent debris buildup. Use a soft, lint-free cloth and appropriate cleaning solutions.
- **Lubrication:** Periodically lubricate the guide rails and moving parts as recommended in the detailed manual to ensure smooth operation.
- **Cable Inspection:** Check all cables for wear or damage. Replace any damaged cables immediately.

## 6. TROUBLESHOOTING

If you encounter issues with your Longer RAY5 Mini, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Laser not firing or weak output	Incorrect focus, dirty lens, low power setting, loose cable.	Re-focus the laser, clean the lens, increase power setting in software, check cable connections.
Machine not connecting to computer/app	Driver not installed, incorrect COM port, Wi-Fi issues.	Install CH340 driver, select correct COM port, ensure stable Wi-Fi connection.
Engraving quality is poor or inconsistent	Incorrect speed/power settings, material not flat, loose X/Y axis.	Adjust speed and power settings, ensure material is flat and secure, tighten eccentric nuts if axes are loose.
Machine makes unusual noises	Loose components, debris in moving parts.	Inspect and tighten all screws, clean guide rails, lubricate moving parts.

## 7. SPECIFICATIONS

- **Product Dimensions:** 11.5 x 11.26 x 6.5 inches
- **Item Model Number:** RAY5 Mini
- **Laser Power:** 3.5W
- **Engraving Area:** 140x130mm
- **Engraving Speed:** Up to 12,000mm/min
- **Laser Spot Size:** 0.04mm x 0.04mm
- **Connectivity:** USB, Wi-Fi, APP
- **Supported Software:** LaserGRBL, LightBurn
- **Item Weight:** 5.15 pounds
- **Manufacturer:** LONGER

## 8. WARRANTY AND SUPPORT

Longer provides comprehensive support for your RAY5 Mini Laser Engraver.

- **Warranty:** Please refer to the official Longer website or your purchase documentation for detailed warranty information.
- **Technical Support:** Lifetime technical support is available. Contact Longer customer service for assistance with any issues or questions.
- **Contact:** For support, visit the [Longer Official Store on Amazon](#) or refer to the contact information in your product packaging.