

Longer ray5 mini

LONGER Ray5 mini Laser Engraver 3.5W User Manual

Model: Ray5 mini

1. INTRODUCTION

The LONGER Ray5 mini is a compact and portable laser engraving machine designed for hobbyists, DIY enthusiasts, and small business owners. It features a 3.5W laser module capable of engraving and cutting a wide range of materials with high precision. This manual provides essential information for the safe and effective use of your device.



Figure 1: LONGER Ray5 mini Laser Engraver 3.5W. This image displays the compact laser engraving machine with its laser module positioned over a piece of wood, ready for engraving.

2. SAFETY PRECAUTIONS

Operating a laser engraver involves potential hazards. Adhere strictly to the following safety guidelines to prevent injury or damage:

- **Eye Protection:** Always wear the provided laser safety glasses (IPL 200nm-2000nm) when the laser is active. Never look directly at the laser beam.
- **Ventilation:** Operate the machine in a well-ventilated area to dissipate fumes and smoke produced during engraving.
- **Fire Hazard:** Keep a fire extinguisher nearby. Do not leave the machine unattended during operation, especially when engraving flammable materials.
- **Emergency Stop:** Familiarize yourself with the emergency stop button and its location.
- **Material Compatibility:** Only engrave materials suitable for diode lasers. Avoid highly reflective materials or PVC, which can produce toxic fumes.

Multiple protections



Emergency
stop



Acrylic cover



Eyes Protection

Figure 2: Safety features of the LONGER Ray5 mini. This image highlights the emergency stop button, the acrylic laser cover, and the included laser safety glasses, emphasizing the importance of eye protection during operation.

3. PACKAGE CONTENTS

Upon unboxing your LONGER Ray5 mini, verify that all components are present:

- LONGER Ray5 mini Laser Engraver unit
- Laser Module (3.5W)
- Power Adapter
- USB-A to USB-C Cable
- Laser Safety Glasses
- Focus Block (Acrylic)
- Small Wrench (8mm & 10mm)
- Cleaning Brush
- Quick Start Guide

High speed engraving 20% faster than others

12000

mm/min

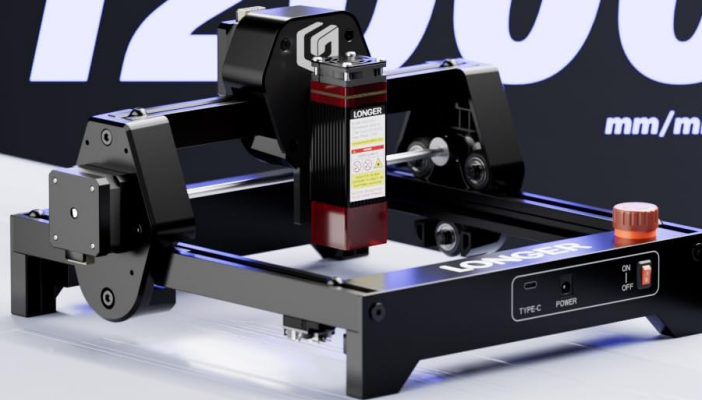


Figure 3: Included accessories for the LONGER Ray5 mini. This image shows the laser engraver unit alongside its accessories, including safety glasses, power adapter, USB cable, wrench, brush, and focus block.

Unboxing and Initial Inspection Video

Video 1: Longer Ray5 mini laser engraver. This video demonstrates the unboxing process, showing how to remove items from the box and check for missing components. It also covers the initial assembly of the laser module and cable connections.

4. SETUP

4.1 Laser Module Installation

1. Carefully insert the laser module into its designated slot on the X-axis carriage.
2. Tighten the thumb screws to secure the laser module in place.
3. Connect the laser module's cable to the corresponding port on the main unit.

4.2 Power Connection and Initial Checks

1. Plug the DC power adapter into the machine's power input.
2. Ensure all terminal connections are plugged in tightly.

3. Turn on the emergency stop switch (rotate clockwise to release).
4. Flip the rocker switch to the 'ON' position.

4.3 Focusing the Laser

Accurate focusing is crucial for optimal engraving and cutting results:

1. Place the material to be engraved on the working surface.
2. Position the acrylic focus block directly under the laser module, resting on the material.
3. Loosen the thumb screw on the side of the laser module.
4. Gently lower the laser module until its bottom edge touches the top of the focus block.
5. Tighten the thumb screw to secure the laser module.
6. Remove the focus block. Your laser is now focused for the material.

4.4 Software Installation (LightBurn / LaserGRBL)

The LONGER Ray5 mini is compatible with LightBurn and LaserGRBL software. Download the latest versions from their official websites.

- **LightBurn:** Visit lightburnsoftware.com to download the trial or full version.
- **LaserGRBL:** Visit lasergrbl.com to download the free software.
- Install the CH340 driver if prompted by the software or if the device is not recognized.

5. OPERATING INSTRUCTIONS

5.1 Connecting to the Engraver

1. Connect the LONGER Ray5 mini to your computer using the provided USB-A to USB-C cable.
2. Open your chosen software (LightBurn or LaserGRBL).
3. In the software, select the correct COM port for your engraver and establish a connection.

5.2 Preparing Your Design

1. Import your desired image or design file into the software.
2. Adjust the size and position of your design to fit your material.
3. Set the coordinate system to absolute coordinates for precise placement.

5.3 Setting Engraving Parameters

Parameters like speed, power, and line interval will vary based on material and desired effect. Refer to your software's documentation for detailed guidance.

1. Access the 'Cut/Layers' or 'Engraving Settings' menu in your software.
2. Adjust the engraving speed (e.g., up to 12,000mm/min).
3. Set the laser power (e.g., 2.5W or 3.5W module, adjust percentage).
4. Configure other settings such as line interval, image mode (dithering, grayscale), and air assist (if applicable).

5.4 Starting the Engraving Process

1. Perform a 'Frame' or 'Border' test to ensure the design fits within your material.
2. Ensure you are wearing your laser safety glasses.

3. Click 'Start' or 'Run' in the software to begin engraving.
4. Monitor the engraving process closely.

Engraving Demonstration Video

Video 2: Longer Ray5 mini laser engraver. This video demonstrates the software setup, parameter modification, and the actual engraving process on a piece of wood.

Creative Engraving Examples

What can I do ? Easy Customize Gifts

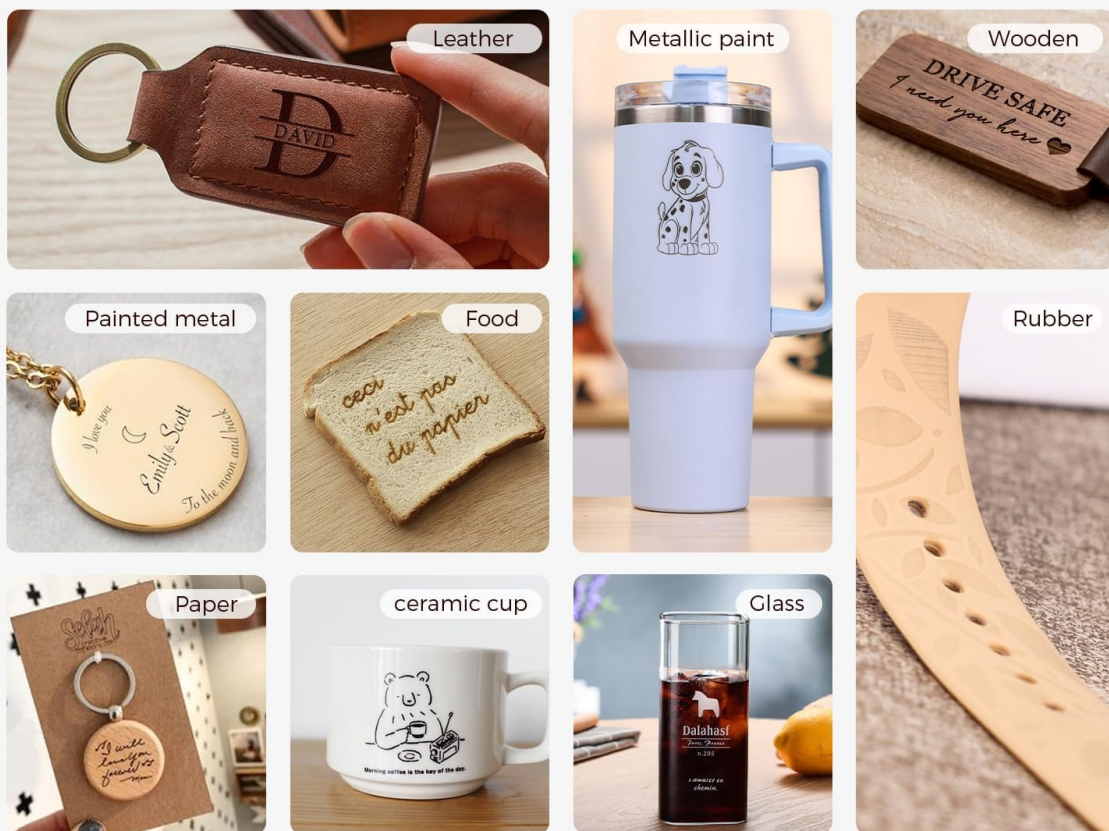


Figure 4: Examples of customized gifts created with the LONGER Ray5 mini. This image showcases various engraved items such as leather keychains, metallic painted tumblers, wooden signs, painted metal, food, rubber, paper, ceramic cups, and glass.

Video 3: Butterfly engraving with Longer Ray5 mini. This short video demonstrates the cutting capability of the Ray5 mini on paper to create intricate butterfly designs.

6. MAINTENANCE

6.1 Cleaning

- Regularly clean the laser lens with a soft, lint-free cloth and lens cleaning solution.

- Use the provided brush to remove dust and debris from the machine's rails and moving parts.

6.2 Checking for Loose Components

- Periodically inspect the X-axis and Y-axis belts for proper tension.
- Check the eccentric nuts on the wheels; if loose, adjust them using the provided wrench to ensure smooth movement of the laser module.

6.3 Honeycomb Working Table

The LONGER honeycomb working table (if included in your package) offers effective desk and material protection, efficient heat dissipation, and cleaner cuts. Ensure it is clean and properly positioned for optimal results.



Figure 5: LONGER Ray5 mini with honeycomb panel. This image shows the laser engraver positioned on a honeycomb panel, which helps protect the work surface and improve cutting quality by allowing smoke and debris to pass through.

7. TROUBLESHOOTING

- **Laser Not Firing:** Check power connections, USB connection, and ensure the emergency stop button is disengaged. Verify laser module is correctly installed.

- **Poor Engraving Quality:** Re-focus the laser. Adjust speed and power settings in the software. Ensure material is flat and stable.
- **Machine Not Connecting:** Verify USB cable is securely connected. Reinstall CH340 drivers. Check COM port selection in software.
- **Skipping/Misalignment:** Check for loose belts or eccentric nuts. Ensure the work area is clear of obstructions.

8. SPECIFICATIONS

- **Product Dimensions:** 11.28 x 11.5 x 6.5 inches
- **Item Model Number:** ray5 mini
- **Laser Power:** 3.5W (Advanced Package)
- **Engraving Speed:** Up to 12,000mm/min
- **Laser Spot Size:** 0.04mm x 0.04mm
- **Working Area:** 400 x 400mm (with honeycomb panel)
- **Item Weight:** 5.51 pounds
- **Manufacturer:** LONGER
- **Compatible Materials:** Wood, Metal, Acrylic, Leather, Paper, Fabric, etc.

9. WARRANTY AND SUPPORT


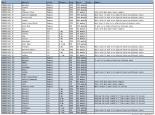
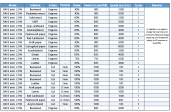
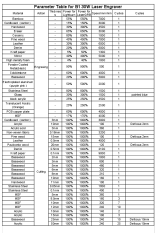
LONGER provides professional customer service and technical support. For any product issues or inquiries, please contact the support team.

- **Technical Support Phone:** +1 888-575-9099
- **Support Hours (Mon-Fri):** 9:00am–6:00pm (EST, UTC-5)
- **Support Hours (Sun-Thu):** 8:30pm–7:00am (EST, UTC-5)



Figure 6: LONGER customer support. This image shows a customer service representative, highlighting the availability of professional support.

Related Documents - ray5 mini

	<p>LONGER RAY5 Laser Cutter & Engraver: Material Settings Guide</p> <p>Comprehensive material settings for LONGER RAY5 series laser cutters and engravers, including models 5W, 10W, and 20W. This guide provides recommended engraving and cutting parameters such as thickness, power, and cycles for a wide range of materials.</p>
	<p>LONGER RAY5 Laser Engraver Material Settings Guide</p> <p>A comprehensive guide to material settings for LONGER RAY5 5W and 10W laser engravers, detailing optimal power, speed, and cycle settings for engraving and cutting various materials.</p>
	<p>LONGER RAY5 Mini Laser Engraver Material Settings (2.5W & 3.5W)</p> <p>Comprehensive material parameter guide for LONGER RAY5 Mini 2.5W and 3.5W laser engravers, covering engraving and cutting settings for various materials.</p>
	<p>B1 Laser Engraver Material Parameter Tables for 20W and 30W Models</p> <p>Comprehensive material parameter tables for the LONGER B1 laser engraver, covering both 20W and 30W models. Includes recommended settings for engraving and cutting various materials like wood, acrylic, leather, metal, and more.</p>

[LONGER RAY5 5W/10W Quick Install Limit Switch Instructions](#)

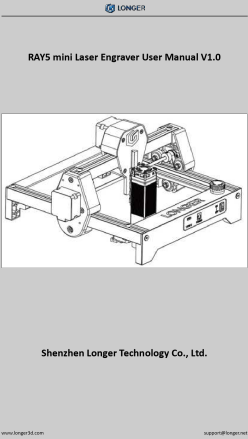
A concise guide for installing limit switches on the LONGER RAY5 5W/10W laser engraver, including a packing list, step-by-step installation, and firmware upgrade instructions.



[LONGER RAY5 Engraver Extension Frame Installation Guide](#)

Step-by-step installation guide for the LONGER RAY5 laser engraver extension frame. Learn how to assemble and connect components for your LONGER RAY5 engraver.

Documents - Longer – ray5 mini



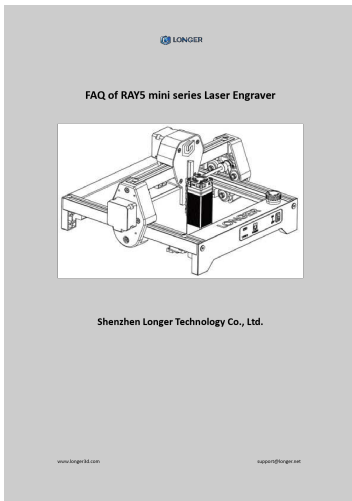
[LONGER RAY5 mini Laser Engraver User Manual V1.0](#)

Comprehensive user manual for the LONGER RAY5 mini Laser Engraver. Learn about safety, installation, LaserGRBL, LightBurn software, and APP operation.
lang:en **score:39** filesize: 8.98 M page_count: 68 document date: 2025-06-04

Material	Material	Actual Thickness	Power	Feed (in/Min)	Speed (in/Min)	Depth	Remarks
RAY5 mini 2.5W	Acrylic	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Polycarbonate	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Carbon steel	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Aluminum	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Stainless steel	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Brass	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Copper	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Gold	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Silver	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Plastic	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Wood	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Marble	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Granite	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Concrete	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Brick	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Stone	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Glass	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Crystal	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Leather	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Textile	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Paper	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Cardstock	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Photo paper	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Art paper	Engrave	40%	800	1000	1	
RAY5 mini 2.5W	Bookend	Engrave	40%	800	1000	1	

[LONGER RAY5 Mini Laser Engraver Material Settings \(2.5W & 3.5W\)](#)

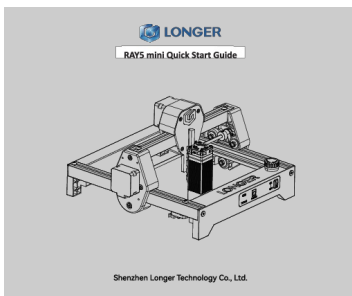
Comprehensive material parameter guide for LONGER RAY5 Mini 2.5W and 3.5W laser engravers, covering engraving and cutting settings for various materials.
lang:en **score:32** filesize: 60.88 K page_count: 2 document date: 2025-05-16



[LONGER RAY5 mini Series Laser Engraver FAQ and Troubleshooting Guide](#)

Frequently Asked Questions (FAQ) and troubleshooting guide for the LONGER RAY5 mini series laser engraver, covering firmware updates, connectivity, software issues, engraving quality, and more.

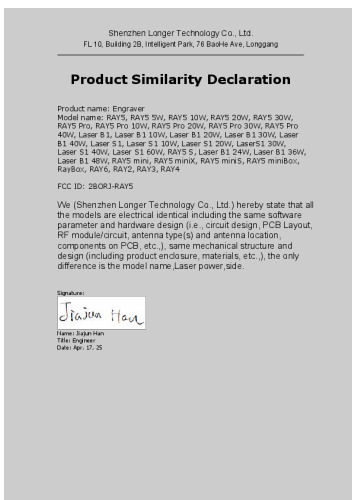
lang:en **score:32** filesize: 1.19 M page_count: 18 document date: 2025-06-05



[LONGER RAY5 mini Quick Start Guide - Laser Engraver](#)

This quick start guide provides essential information for setting up and operating the LONGER RAY5 mini laser engraver. It covers safety precautions, installation, software setup (LightBurn, LaserGRBL), app connectivity, project creation, and warranty details.

lang:en **score:27** filesize: 18.09 M page_count: 28 document date: 2025-05-23



[Product Similarity Declaration - Shenzhen Longer Technology Engraver Models](#)

Declaration by Shenzhen Longer Technology Co., Ltd. confirming product similarity across various Engraver models (RAY5 series, Laser B1, Laser S1, etc.) based on identical hardware and software design.

lang:en **score:20** filesize: 80.85 K page_count: 1 document date: 2025-04-17



[TopEngravers Magazine: Your Guide to Laser Engraving & Cutting - Summer 2025 Edition](#)

The Summer 2025 edition of TopEngravers Magazine, featuring the latest news, product reviews, and guides on laser engraving and cutting. Explore new partnerships, portable solutions, engraver comparisons, material guides, and safety tips.

lang:en **score:14** filesize: 26.5 M page_count: 40 document date: 2025-05-27

