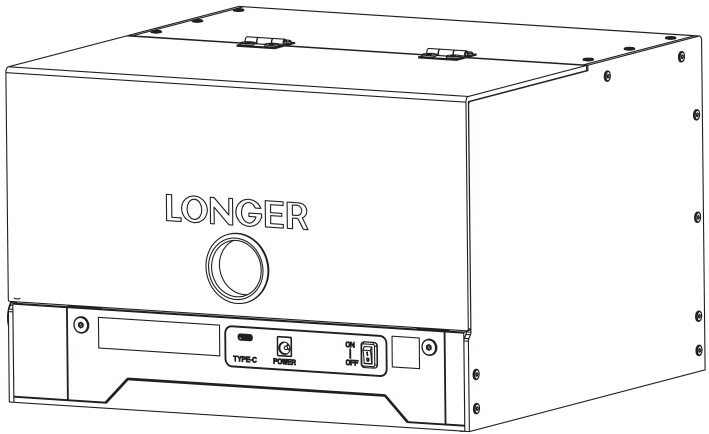
RAY5 miniS 5.5W Quick Start Guide



Shenzhen Longer Technology Co., Ltd.

LaserBurn APP & Software

① Please scan the QR code below or search for "LaserBurn" in the Google Play Store or Apple App Store to download the app.

Note: After downloading and installing the app, please carefully read the warnings and precautions in the app to ensure safe and proper use of this product.

② Download the PC software from the link below. LightBurn is compatible with Windows and macOS systems, and LaserGRBL is compatible with Windows.

LightBurn
https://LightBurnsoftware.com/pages/download-trial

LaserGRBL
https://lasergrbl.com/download/

Please download the software, configuration file, parameter table, manual, etc. from the following links: https://www.longer3d.com/pages/download

After-Sales Service

Technical servie for this product is available globally. Please contact us if you encounter any issues, and we will get back to you as soon as possible.

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Service Hotline: (+1) 888-575-9099

Mon-Fri: 9:00am-6:00pm (EST, UTC-5)

Sun-Thu: 8:30pm-7:00am (EST, UTC-5)

Email: support@longer.net

Facebook ID: Longer Global

Facebook Group: Longer Laser Engraver Official Group

Youtube Channel: Longer Official

Table of Contents

Safety Precautions

1. The RAY5 miniS 5.5W engraves and cuts materials using a high-energy diode laser beam. Hazards associated with this include the risk of fire, the generation of hazardous and/or irritating toxic fumes, and most importantly, potential damage to eyes and skin.

2. 

Laser engravers are divided into several internationally valid classes based on their performance and the risk of injury. The RAY5 miniS 5.5W falls into the Class I (Class 1 IEC standard focus on the American FDA classification).

Laser Class	Class Definition
Class I	Class I laser radiation is not considered.
Class IIa	Class IIa laser radiation is not considered hazardous if viewed for periods less than or equal to $1x10^3$ seconds, but may pose a chronic viewing hazard if viewed for periods longer than $1x10^3$ seconds.
Class II	Class II laser radiation is considered to be a chronic viewing hazard.
Class IIIa	Class IIIa laser radiation is considered to be, depending on the irradiance, either an acute intrabeam viewing hazard or a chronic viewing hazard, and poses an acute hazard if viewed directly with optical instruments.
Class IIIb	Class IIIb laser radiation is considered to be an acute hazard to the eyes and skin from direct exposure.
Class IV	Class IV laser radiation is considered to be an acute hazard to the skin and eyes from both direct and scattered exposure.

The high-energy laser beam can cause severe eye injuries, including blindness, and serious skin burns.

Improper use of controls or modification of safety features may result in serious eye injuries and burns.

Please wear Personal Protective Equipment (PPE). Safety glasses are designed to filter specific ranges of laser wavelengths. The RAY5 miniS 5.5W comes with safety glasses specifically designed for the LONGER Laser Module.

DO NOT look directly into the laser beam;

DO NOT aim the laser beam at reflective surfaces;

DO NOT operate the laser without PPE for all individuals in the vicinity of the RAY5 miniS 5.5W;

DO NOT allow unsupervised access to the RAY5 miniS 5.5W by children;

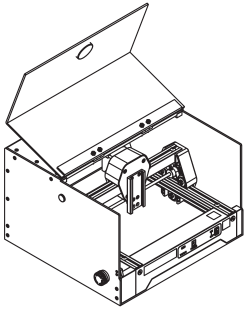
DO NOT allow pets near the RAY5 miniS 5.5W;

DO NOT modify or disable any safety features of the laser system;

DO NOT touch the high-energy laser beam.

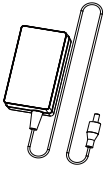
3. We strongly recommend placing the machine in a well-ventilated room. Ensure that the door seals properly and the windows have curtains to effectively prevent direct exposure to the laser beam, smoke, vapors, particles, and other potentially toxic substances. Additionally, you can consider Longer's protective covers for added safety in the future.
4. The high-energy diode laser beam can generate extremely high temperatures as it burns away material during engraving and cutting. Some materials are flammable and may catch fire, producing flames, fumes, and smoke.
5. During operation, ensure that any flare-ups or flames are immediately contained and extinguished.

List of Included Parts

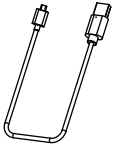


Ray5 miniS

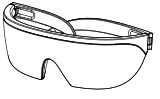
Laser Moudle



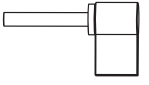
Power Adapter



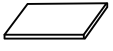
Data Cable



Protective Goggles



Handle screw

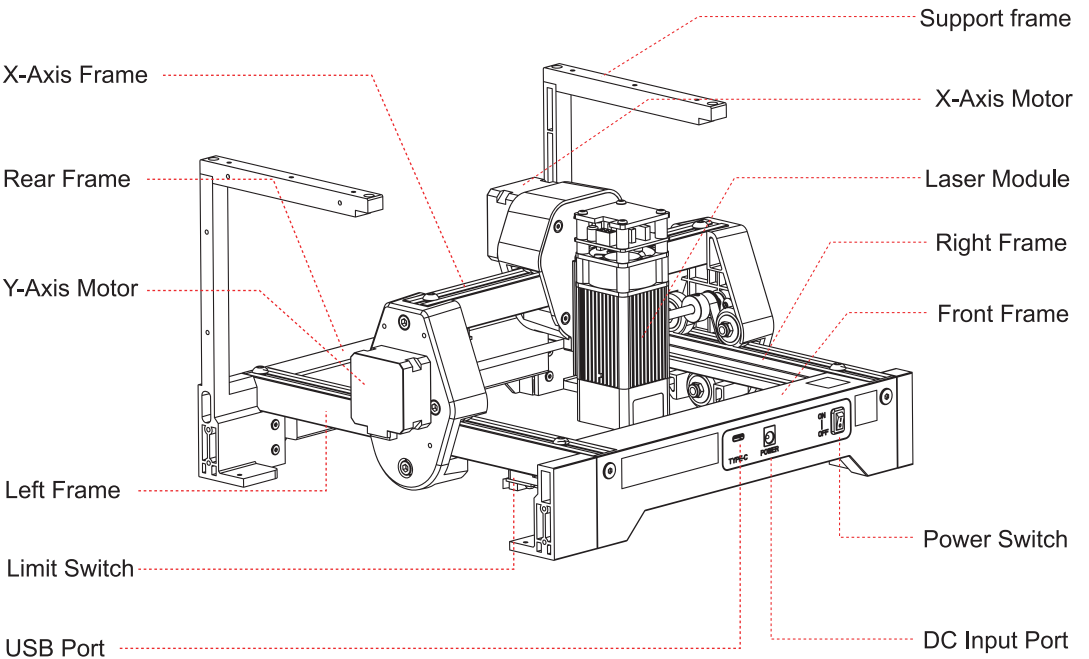


Focus Block

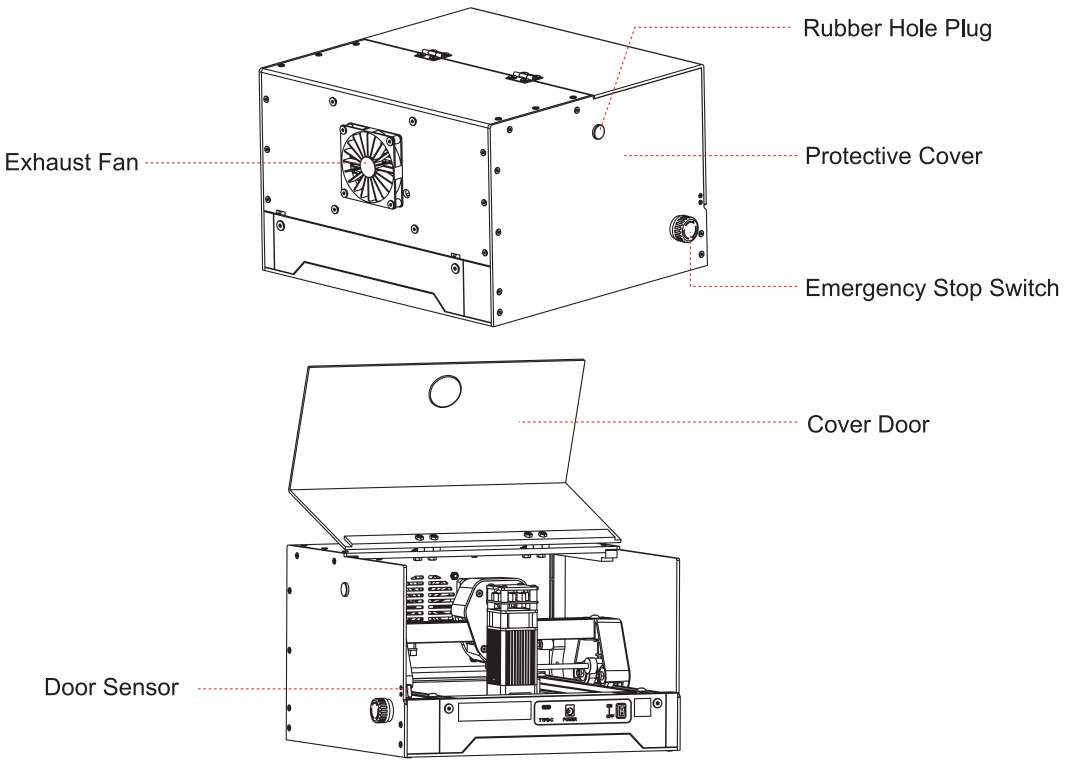
Wrench

Wooden Brush

Product Parts Overview



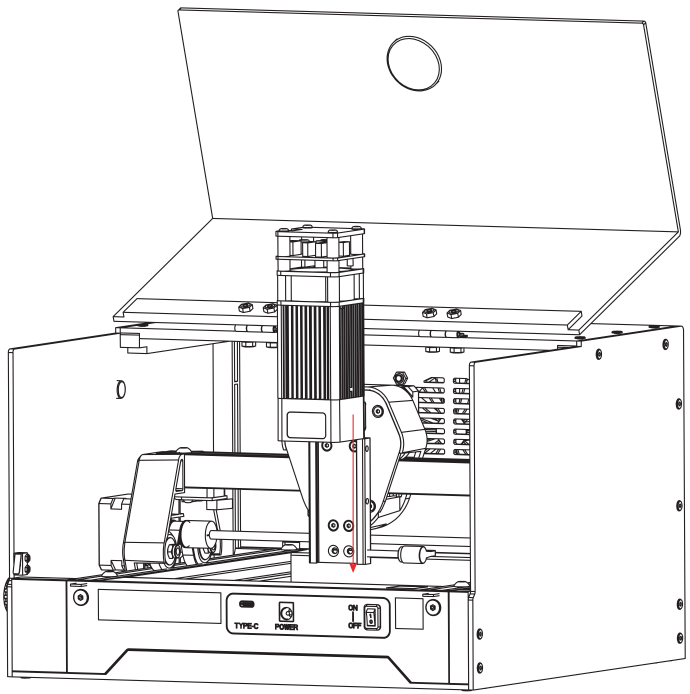
Product Parts Overview



Quick Installation

Install the laser module onto the X-axis frame

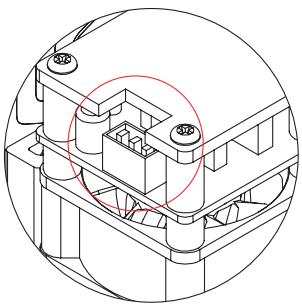
First, install the laser module onto the X-axis frame, then tighten the 7-shaped handle screw to secure it in place.

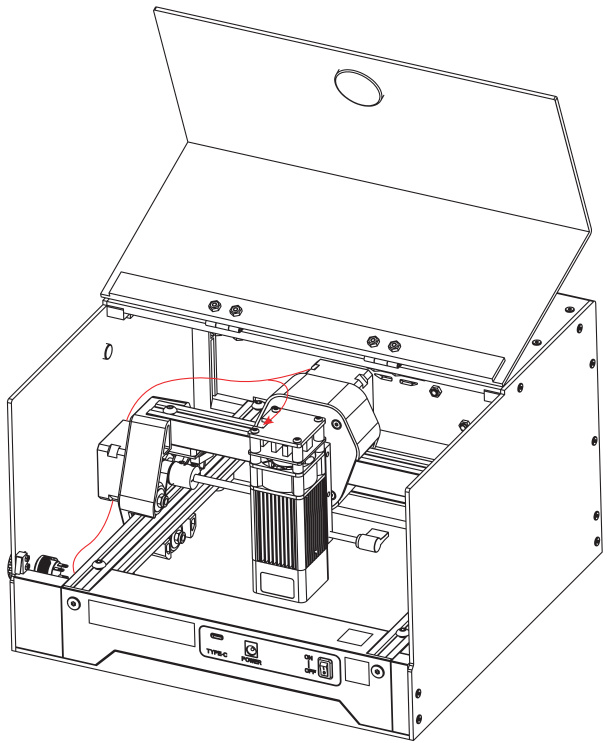


Quick Installation

Install the laser module onto the X-axis frame

Connect the cable to the laser module as shown in the figure.

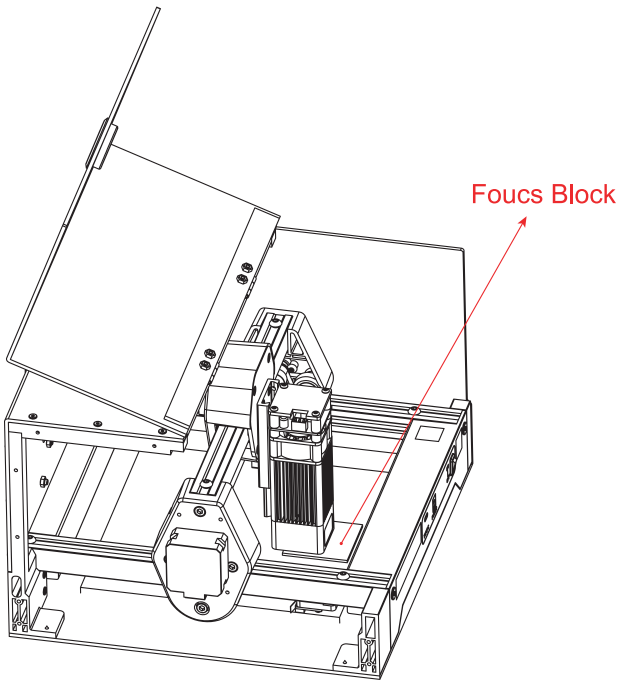




Focus Adjustment

Adjust the laser focus

Loosen the 7-shaped handle screw. Place the 5mm focus block on the engraving surface. Move the laser module downward until the bottom of the light shield touches the surface of the focus block. Then, tighten the 7-shaped handle screw.

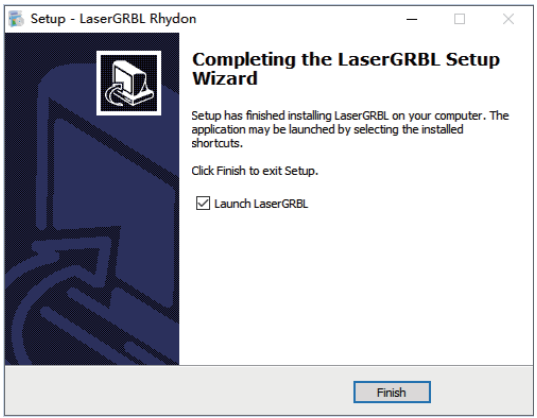


LaserGRBL Software Operation

Download

a) Download LaserGRBL download from the following link: https://lasergrbl.com/download/

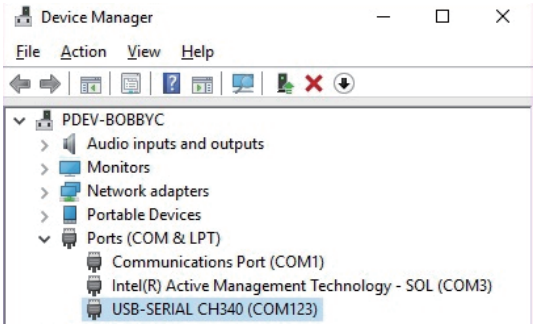
b) Double-click the software installation package to begin the installation process. Click "Next" until the installation is complete.



c) Once LaserGRBL is installed, rotate emergency stop switch clockwise, press the power switch button, power up the Ray5 miniS 5.5W, and connect the laser engraver to computer via data cable.

Install CH340 driver

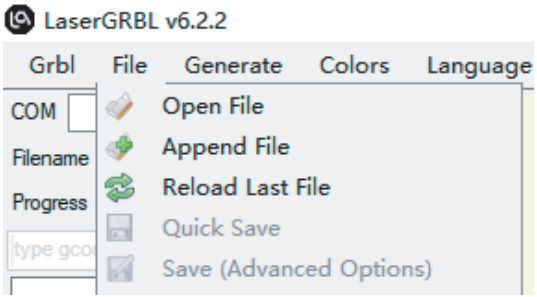
If you cannot find the correct port, install the CH340 driver manually by clicking Menu > Tools > Install CH340 Driver. After installation, restart your computer.



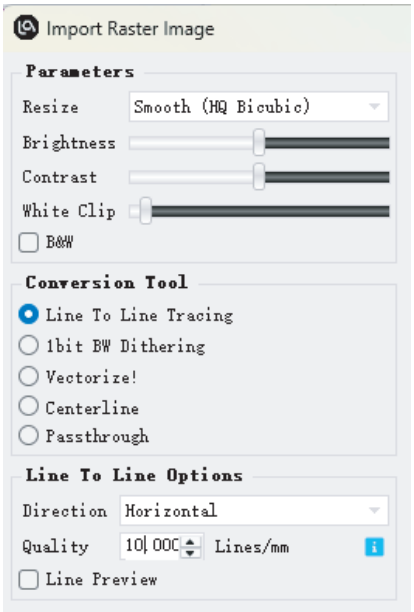
LaserGRBL Software Operation

Usage

First, click the 'File' button, then select 'Open File' to choose the file you want to engrave.



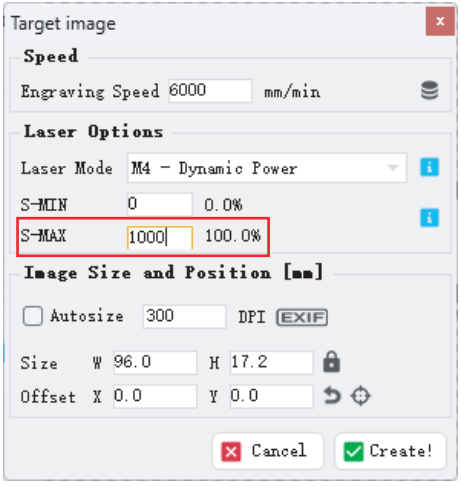
Once the file is open, set the Quality value to 10 Lines/mm.



LaserGRBL Software Operation

Usage

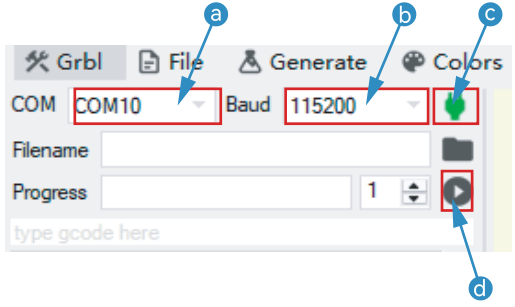
After clicking the Next button, adjust the speed and power values in this window according to parameter table.The S-MAX value should be ten times the actual power. Then, click Create.



a) Select correct port b) Set the baud rate to 115200

c) Connect to Ray5 miniS 5.5W

d) Click the Start button



For more help with LaserGRBL, please refer to the link: https://lasergrbl.com/usage/

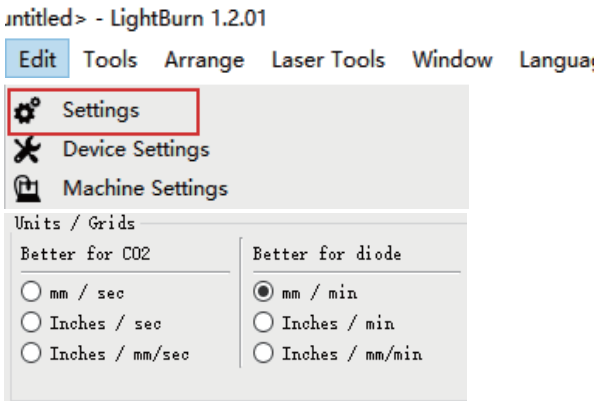
LightBurn Software Operation

Setup

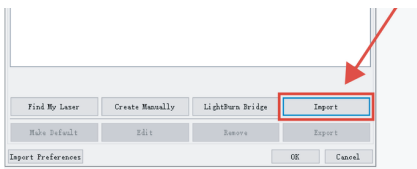
a) Download Lightburn from https://lightburnsoftware.com/download/ and double-click to install it.

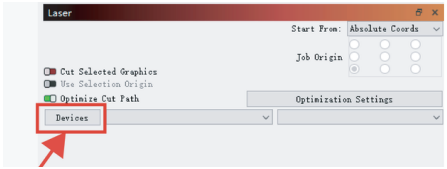
b) Download the 'Ray5 miniS 5.5W.lbdev' file from https://www.longer3d.com/pages/download-firmware

c) Click on Settings, then change the unit to mm/min.

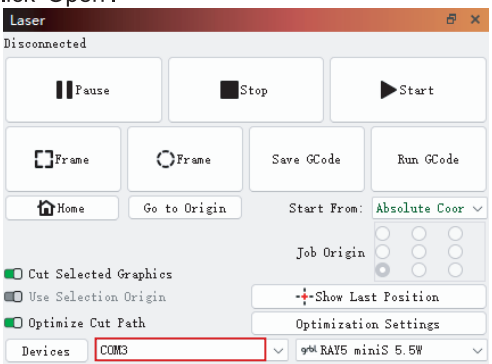


d) Upon launching LightBurn for the first time, the New Device Wizard will prompt to help you set up the machine. Click 'Import'.





e) Select the 'Ray5 miniS 5.5W.lbdev' file and click 'Open'.

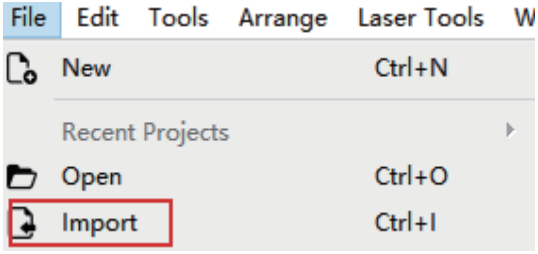


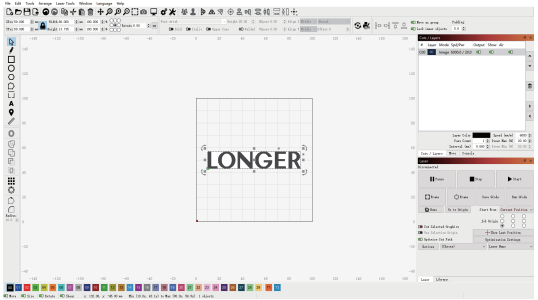
f) If no ports are listed in the drop-down menu, it means no engraver is detected. This could be due to the engraver not being plugged in correctly, not powered on, or the PC missing a driver. You will need to download and install the CH340 driver.

LightBurn Software Operation

Import graphic

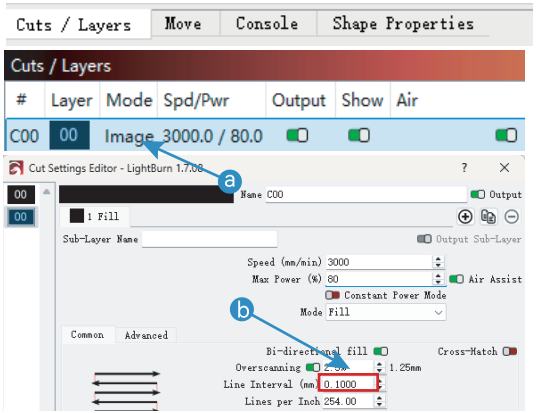
a) Click File > Import
b) Open the project you want to carve





Setting parameters

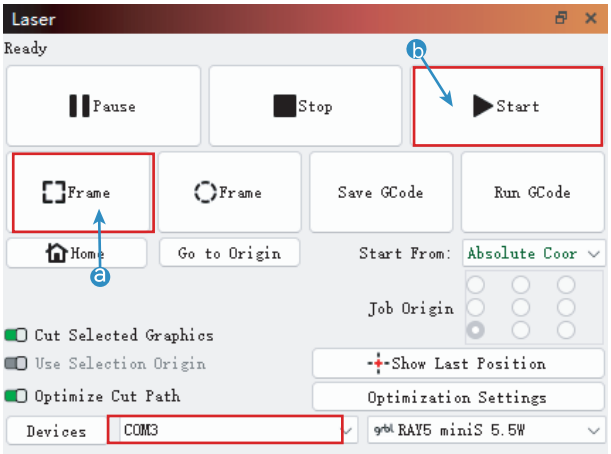
a) Double-click the layer.
b) Modify the laser power and speed accoring to the parameter table, set 'Interval' to 0.1mm.



LightBurn Software Operation

Prepare to engrave

a) Select the correct port connection, then click 'Frame'. Confirm the carving position, and then click 'Start'.

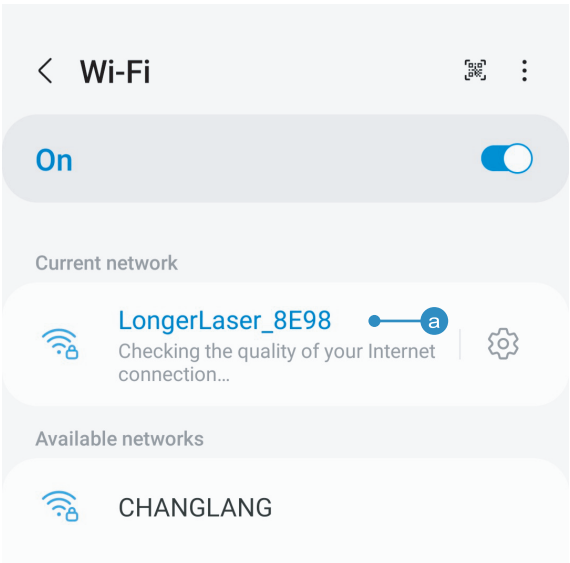


For more help with LightBurn, please refer to the tutorial at: https://lightburnsoftware.com/pages/tutorials.

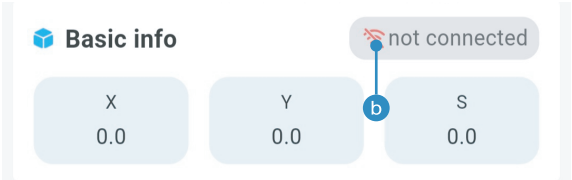
LaserBurn APP Operation

Connect to WI-FI in AP mode

a) Open the WLAN settings on your phone, search for the Wi-Fi network starting with LongerLaser_XXXX and input the password 12345678 to connect to the Ray5 miniS 5.5W Wi-Fi.

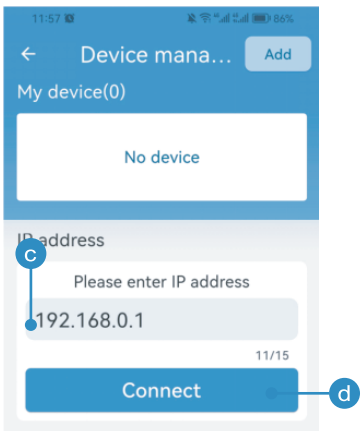


b) Return to LaserBurn and go to the Home page, then click the Not Connected icon.



c) Enter the IP address 192.168.0.1

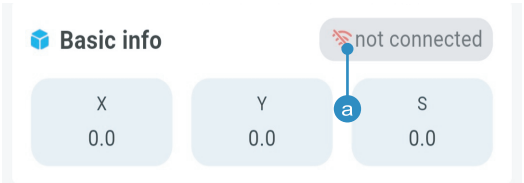
d) Click Connect. A message will appear saying 'Connection Succeeded' when the connection is successful.



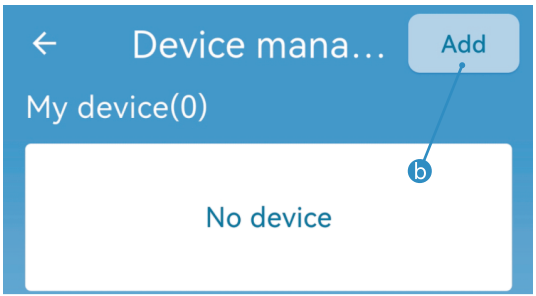
LaserBurn APP Operation

Connect to WI-FI in STA mode

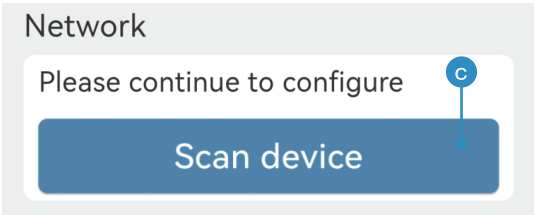
a) Open the WLAN settings on your phone. Run LaserBurn and go to the Home page, then click the Not Connected icon.



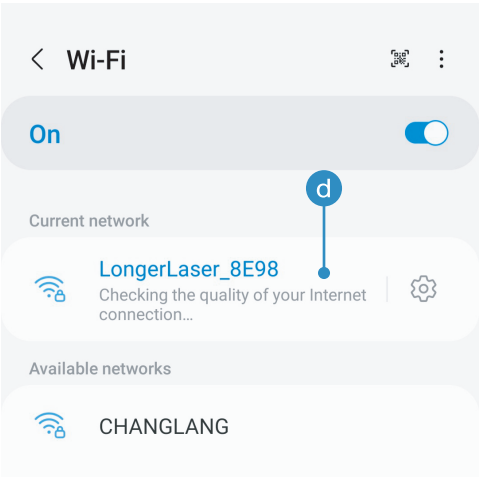
b) Enter the network configuration page, then click 'Add' in the upper right corner.



c) Click 'Scan device'.



d) Search for the Wi-Fi network starting with LongerLaser_XXXX and input the password 12345678 to connect to the Ray5 miniS 5.5W Wi-Fi.

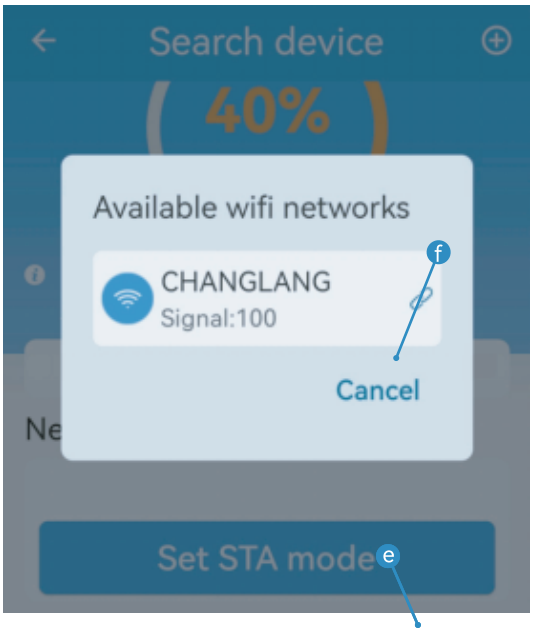


LaserBurn APP Operation

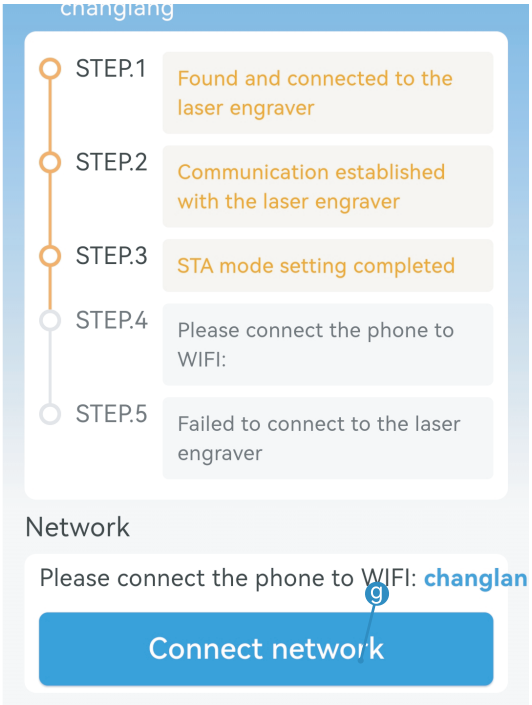
Connect to WI-FI in STA mode

e) After the connection is successful, return to LaserBurn and select Set STA mode.

f) Connect to the router's Wi-Fi (only supports 2.4G), and enter the password.



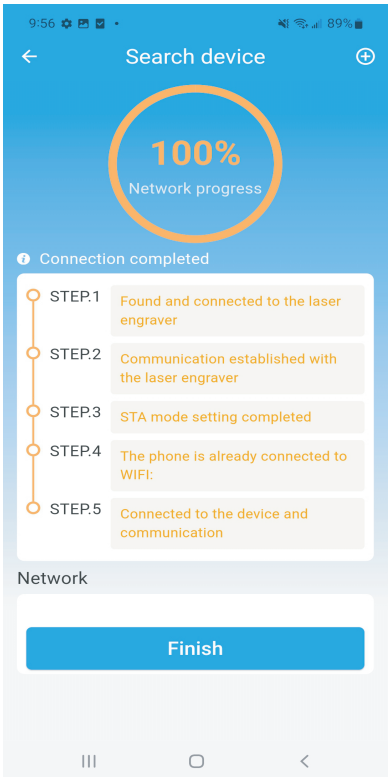
g) Go back to LaserBurn, click 'Connect network' at the bottom of the page, then connect your phone to the same Wi-Fi as the STA mode from the previous step. Wait for the network configuration to complete.



LaserBurn APP Operation

Connect to WI-FI in STA mode

h) When the connection is successful and the network process reaches 100%.

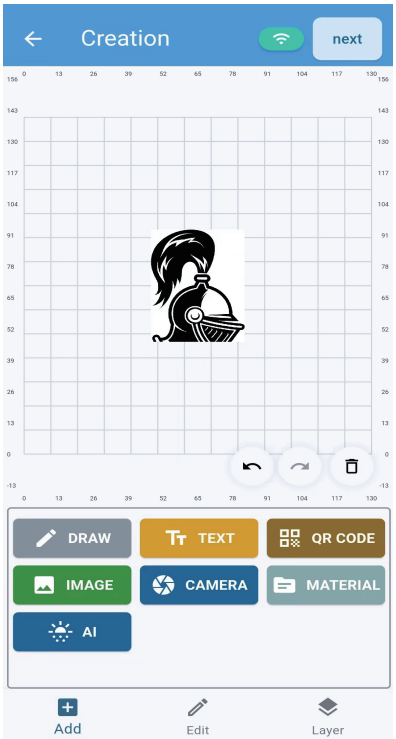


i) Click ‘FINISH’ at the bottom to return to the device list interface.

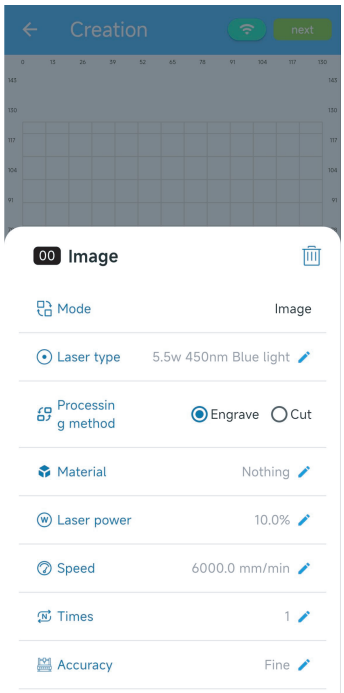
LaserBurn APP Operation

Make a project

a) Run the LaserBurn app, connect it to the Ray5 miniS 5.5W, add a graphic, and click ‘Edit’ to set the size and position.



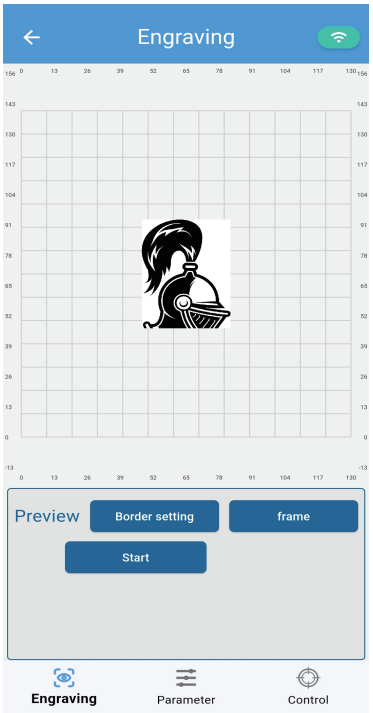
b) Click ‘Layer’ to set the parameter of the graphic, then click ‘next’ in the upper right corner. Accuracy has four values options, Ultra fine, Fine, Fast and Ultra fast.

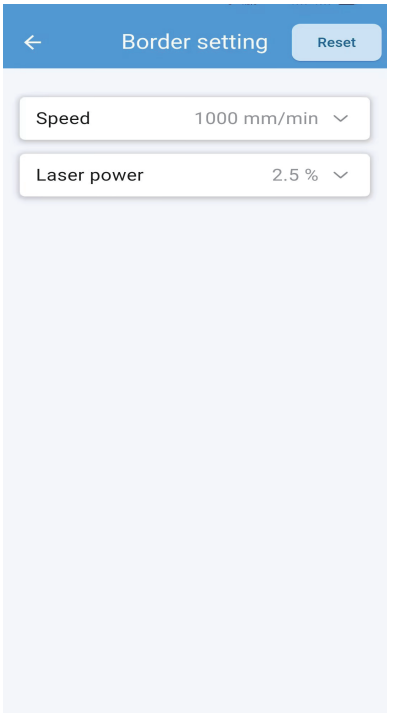


LaserBurn APP Operation

Make a project

c) Click ‘Next’ to enter the engraving preparation page, Click ‘Border’ setting to set the speed and patrol power. After setting, click ‘frame’ to patrol the border. After confirming that the engraving position is correct, click ‘Start’ to start engraving.

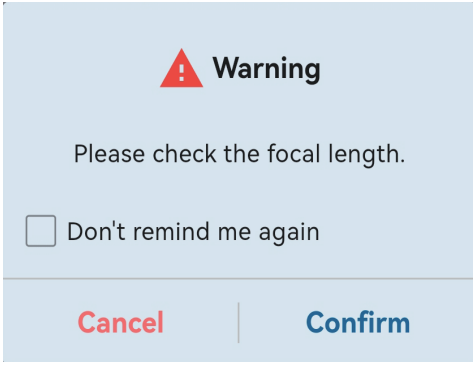


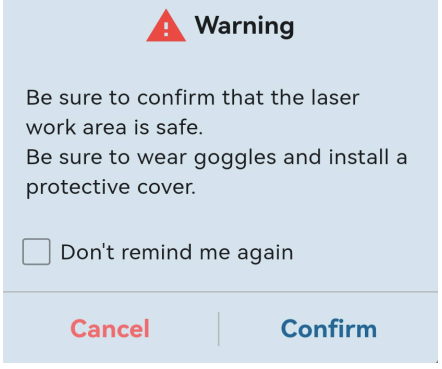


LaserBurn APP Operation

Make a project

d) After confirming that the focus is adjusted normally and the goggles are worn, click ‘Confirm’ .

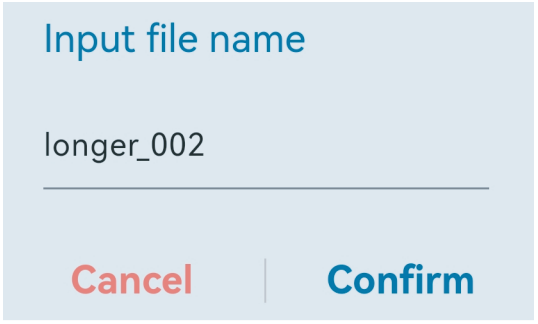




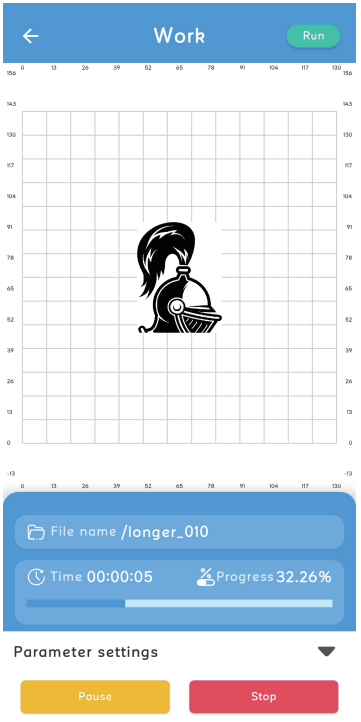
LaserBurn APP Operation

Make a project

e) Click ‘Confirm’ to make sure the file name, and then the file starts to upload to the Ray5 miniS 5.5W. After the upload is completed, Ray5 miniS 5.5W will start engraving task.



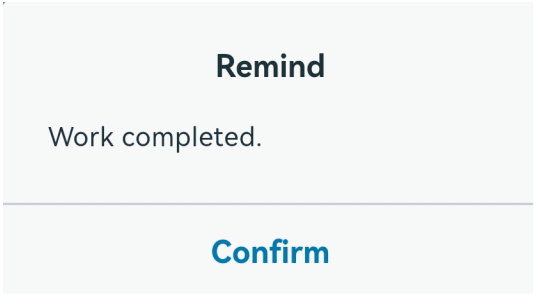
f) The APP will display the task progress.



LaserBurn APP Operation

Make a project

g) When task is completed, there will be a ‘Work completed’ prompt. Click ‘Confirm’ to return to Home page.



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- To the extent permitted by law, this warranty is exclusive and replaces all other warraties,whether express, implied, or statutory, including but not limited to warranties of fitness for a particular purpose or any statutory provisions. Longer Technology is not responsible for any incidental, special, indirect, or consequential damages arising from use, misuse, incompetence, or product defects.
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