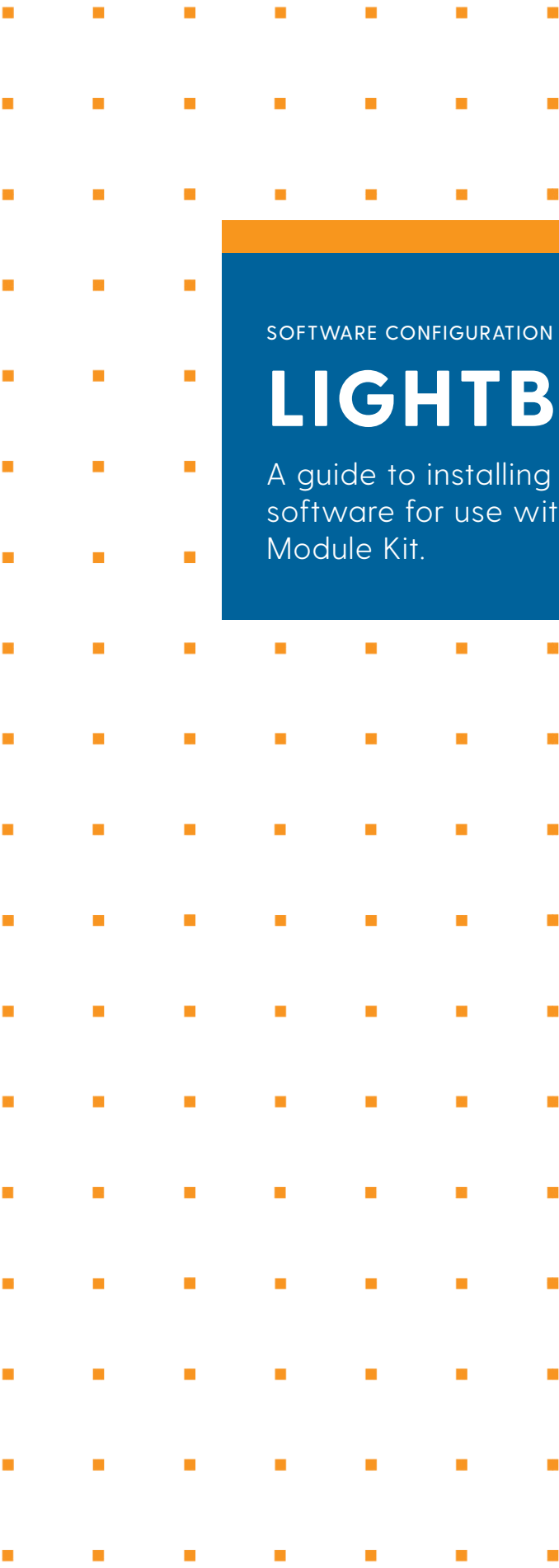


A decorative grid of small orange squares is positioned on the left side of the page, extending from the top to the bottom. The grid is composed of 7 columns and 16 rows of squares.

SOFTWARE CONFIGURATION GUIDE

LIGHTBURN

A guide to installing and configuring LightBurn software for use with MakerMade's Laser Module Kit.

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The instructions in this document are intended for use with your MakerMade M2 or Maslow CNC cutting machine. This document does not include full instructions, warnings and disclaimers for using a laser with your CNC machine and are only for set up of your LightBurn software. If you have any questions, you can fill out a support ticket at: <https://makermade.freshdesk.com/support/tickets/new>

These instructions are based on the download and installation instructions from LightBurn. You can find their full documentation here:

<https://lightburnsoftware.github.io/NewDocs/Downloading.html>

<https://lightburnsoftware.github.io/NewDocs/Installation.html>

<https://lightburnsoftware.github.io/NewDocs/FirstRun.html>

<https://lightburnsoftware.github.io/NewDocs/AddingYourLaser.html>

<https://lightburnsoftware.github.io/NewDocs/CreateManually.html>

DOWNLOADING LIGHTBURN

The first step is to go to lightburnsoftware.com

At the top, click “Download and Trial” (or [click here](#))

You’ll see links for the current release of LightBurn.
Download the version that matches your computer.

Windows 64-bit - nearly all modern computers are 64 bit

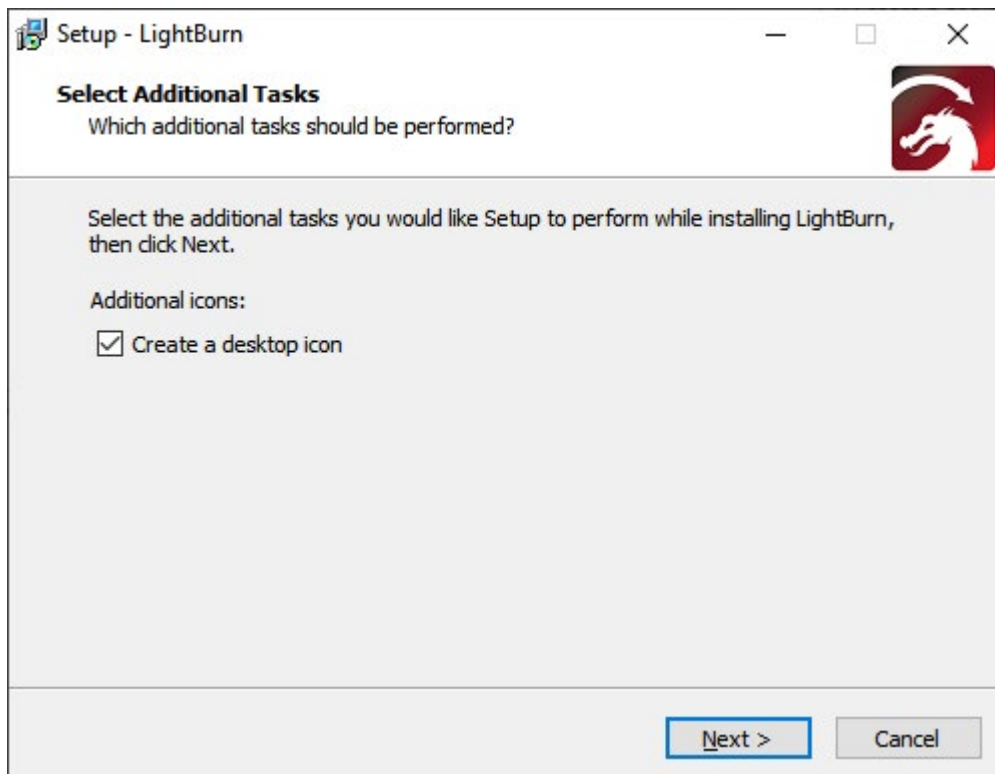
Windows 32-bit - some older systems might need this

Mac OSX

Linux 64-bit

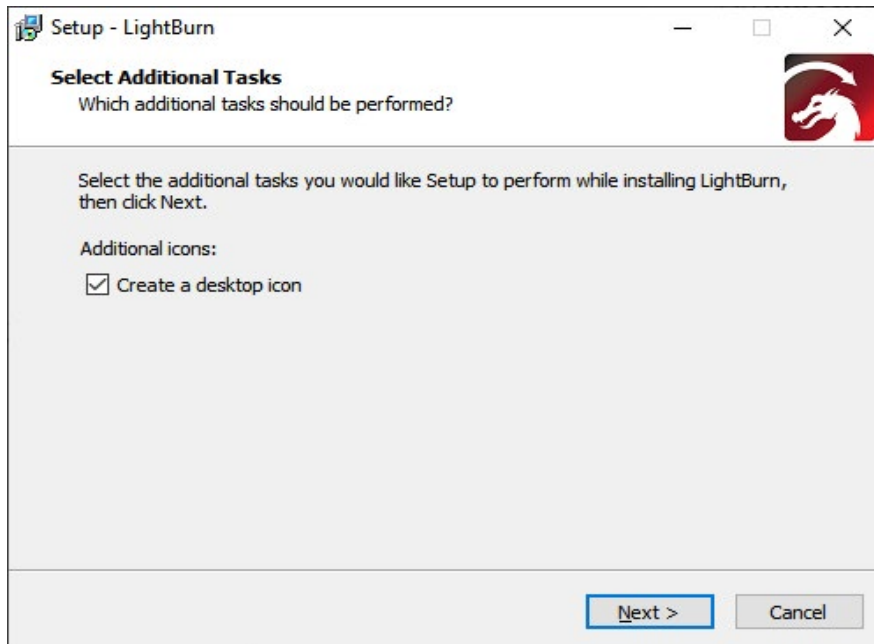
When you’ve completed the download, you should see the file in your
“Downloads” folder.

On Windows and Mac you can just double-click the downloaded file.



WINDOWS INSTALLATION

Launch the installer by double-clicking it.



Click Next, then click 'Install'. The installation will proceed. When it completes, you'll see this:



That's it! Locate the LightBurn icon to launch the program.

MACOS INSTALLATION

Double-click the LightBurn.dmg file to mount the disk image.

Drag the LightBurn application into your applications folder.

Eject the LightBurn disk image, or drag it to the trash bin.

Please note that at this time, LightBurn for MacOS is not digitally signed. This means that you will need to tell MacOS that you trust us. (Read about this here: <https://support.apple.com/en-gb/guide/mac-help/mh40616/mac>)

To launch LightBurn for the first time:

Open a Finder window.

Browse to the 'Applications' folder.

Hold the Command key and double-click the LightBurn icon, or two-finger tap the icon.

When MacOS asks if it should open the program, say yes, and it will be listed as an exception in your launcher. From now on you can just launch the application normally.

LINUX INSTALLATION

1. Open a terminal and run the following command:

```
sudo adduser $USER dialout && sudo adduser $USER tty
```

2. IMPORTANT! Log out and log back in (this refreshes the permissions we just added)

3. Download the Linux 64-bit version, either the .run file or the .7z file and follow the appropriate steps below:

.run installer

1. Open your terminal and cd to the directory you downloaded the file to.

2. Run `bash ./LightBurn-Linux64-v*.run`

3. It will now automatically install and create a program listing in your desktop environment.

.7z installer

1. Extract the folder wherever you want Lightburn to exist

2. Right click AppRun > Properties > Permissions > 'Allow executing file as program'

3. Double click AppRun inside your Lightburn folder

ACTIVATING LIGHTBURN

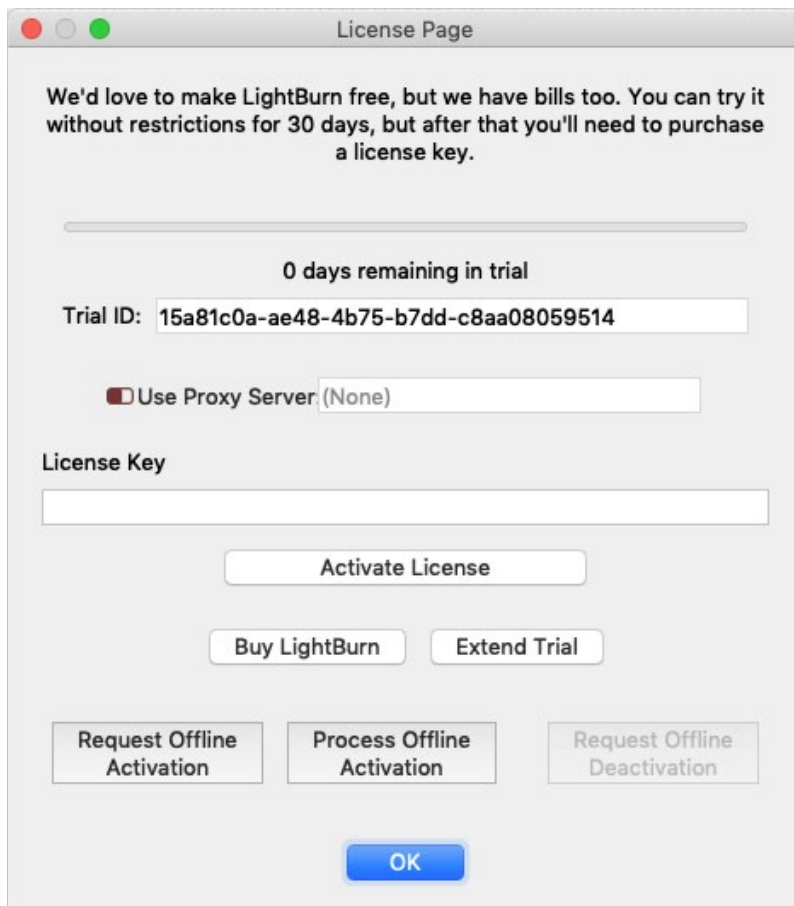
If you've never used LightBurn before, you'll be shown the License and Trial page first.

Here you can either enter and activate a license key if you have one, or you can activate a free 30 day trial by clicking "Activate Trial".

If you do have a license key, be sure to enter it exactly, including the dashes, then click the 'Activate License' button.

We recommend just copying the key and pasting it into the License Key box.

You can get back to this screen in LightBurn at any time by going to the menu and clicking Help > License Management.



The screenshot shows a macOS-style window titled "License Page". Inside, there is a message: "We'd love to make LightBurn free, but we have bills too. You can try it without restrictions for 30 days, but after that you'll need to purchase a license key." Below this is a progress bar and the text "0 days remaining in trial". A "Trial ID:" label is followed by a text box containing "15a81c0a-ae48-4b75-b7dd-c8aa08059514". There is a checkbox labeled "Use Proxy Server" which is unchecked, followed by a text box containing "(None)". Below this is a "License Key" label and a large empty text box. At the bottom, there are several buttons: "Activate License", "Buy LightBurn", "Extend Trial", "Request Offline Activation", "Process Offline Activation", "Request Offline Deactivation", and a blue "OK" button at the very bottom.

Once you have activated your license or the trial, click 'OK'

The next thing you'll see is the 'General Usage Notes' page - this is a brief help page just to get you going. You can get back to it any time in the Help menu, under Help > Quick Help and Notes. Click OK.

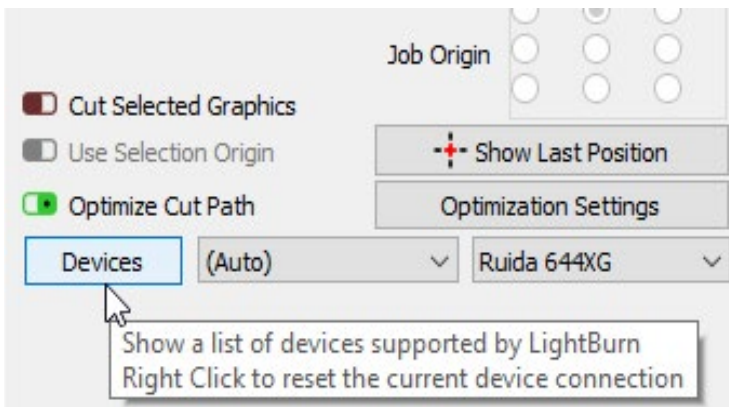
ADDING YOUR LASER TO LIGHTBURN

LightBurn can't control every laser, but it can talk to a number of different types of laser controllers, all of which use different ways of communicating, and have different abilities and settings.

This step tells LightBurn what you have.

If you've never configured a device in LightBurn, you'll be brought here automatically when you run the software. It is important that you pick something because the interface in LightBurn will change depending on the capabilities of the laser you choose.

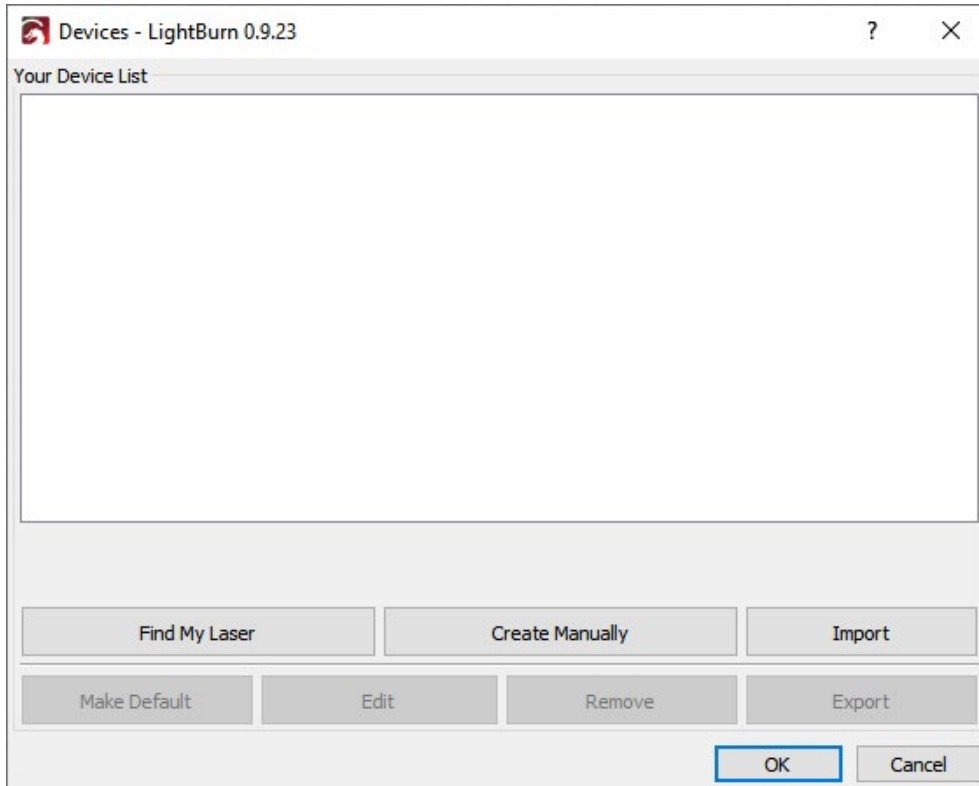
If you've done this before, but want to change your laser, or add a new one, click the 'Devices' button in the Laser Window to bring up the devices list.



LightBurn can also be configured to control more than one laser, and there are settings stored for each device.

If you don't pick one, we have nowhere to put these settings, and a number of features within LightBurn will not work until this is set up.

The Devices Page

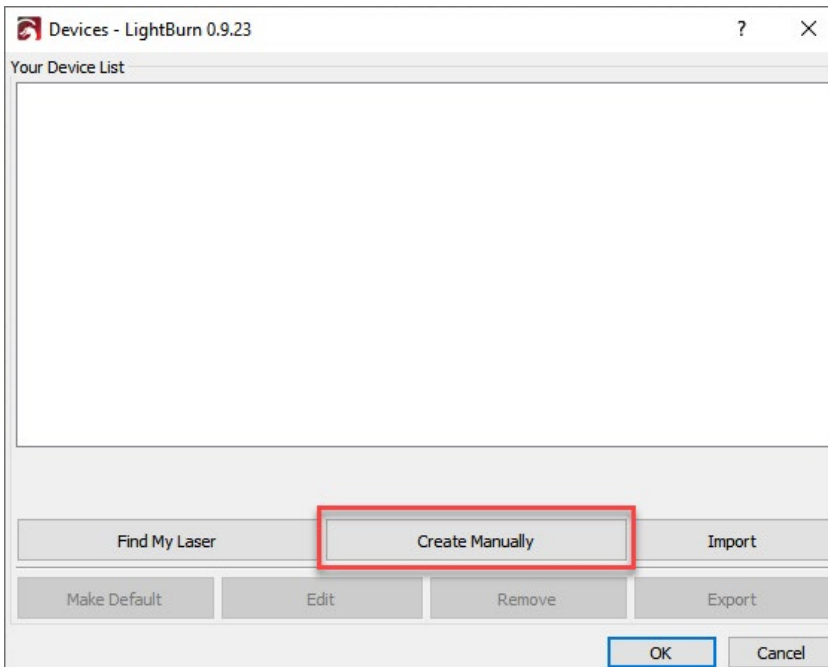


This is the Devices page in LightBurn.

Here you will see a list of all the laser devices you've added to LightBurn, or an empty list when you're first starting.

Manually Adding a Laser

To add your laser in LightBurn you can click the 'Create Manually' on the Devices page.



Device type:

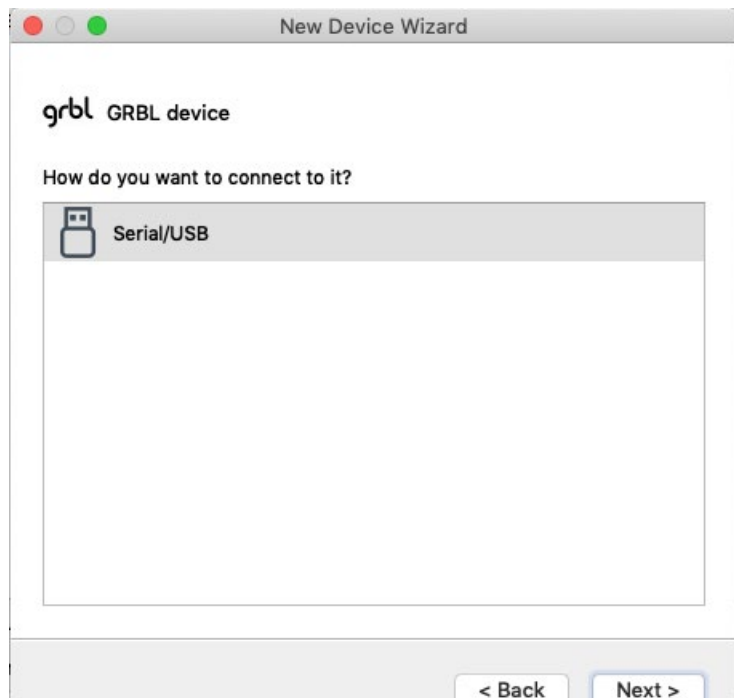
LightBurn will open the New Device Wizard, and the first thing you'll see is a list of the controllers supported by your version of LightBurn:



Choose GRBL and click Next.

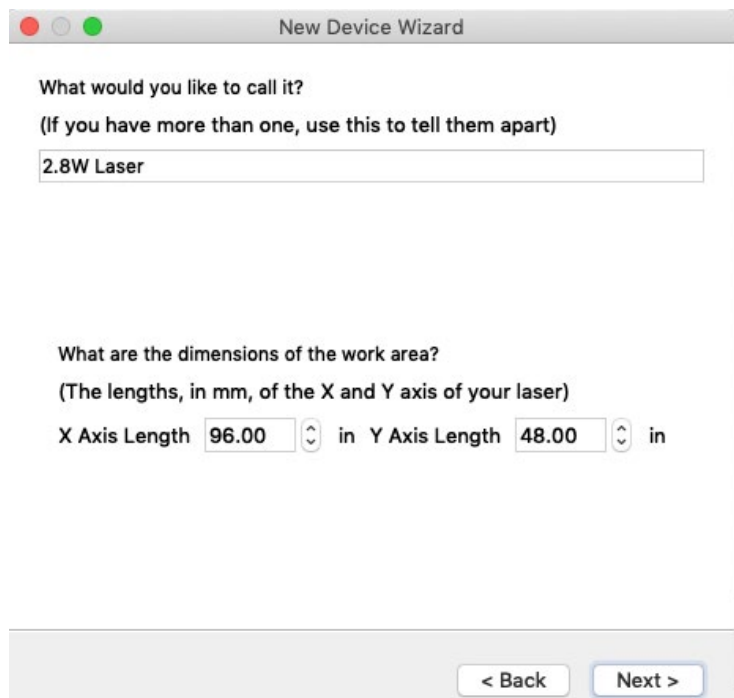
Connection Type:

The next step is choosing how you connect to your laser. Choose Serial/USB and click Next.



Name and Work Area Size:

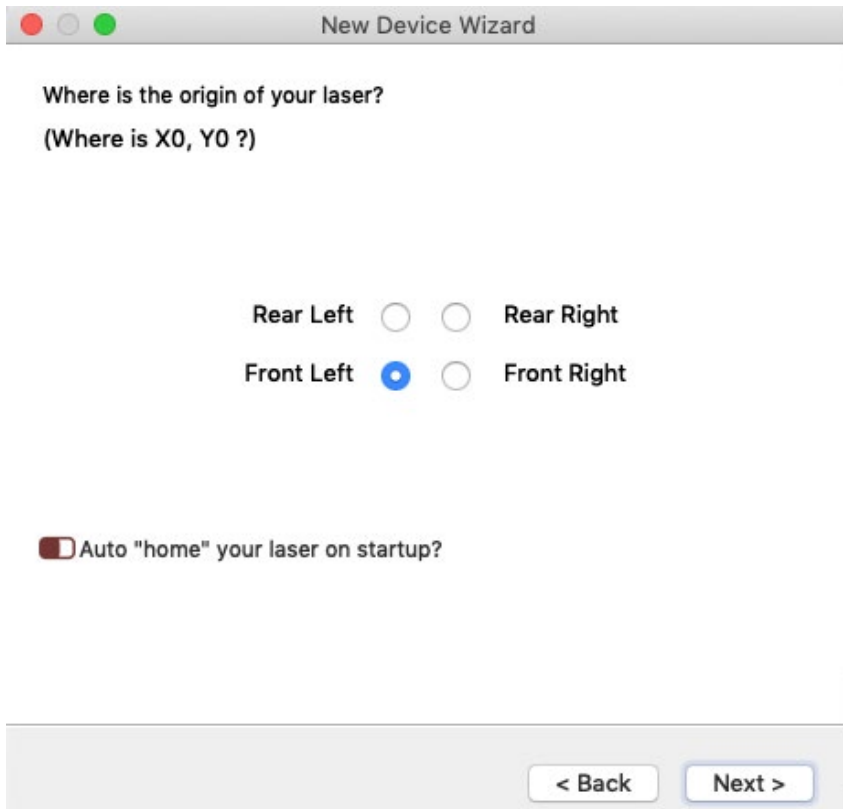
Name the laser and set the size of your work area.



You must set the size of the work area for your laser so that LightBurn can make try to prevent things from going out of bounds. If you don't know the exact size, you can easily change this later in the Device Settings page.

Laser Origin and Homing:

The origin setting is where the 'zero' point of your X & Y axis meet. If you get this wrong, you can change it later in the Device Settings page. This setting also controls the orientation of the output - if it's wrong, the output from your laser may be mirrored or upside down.



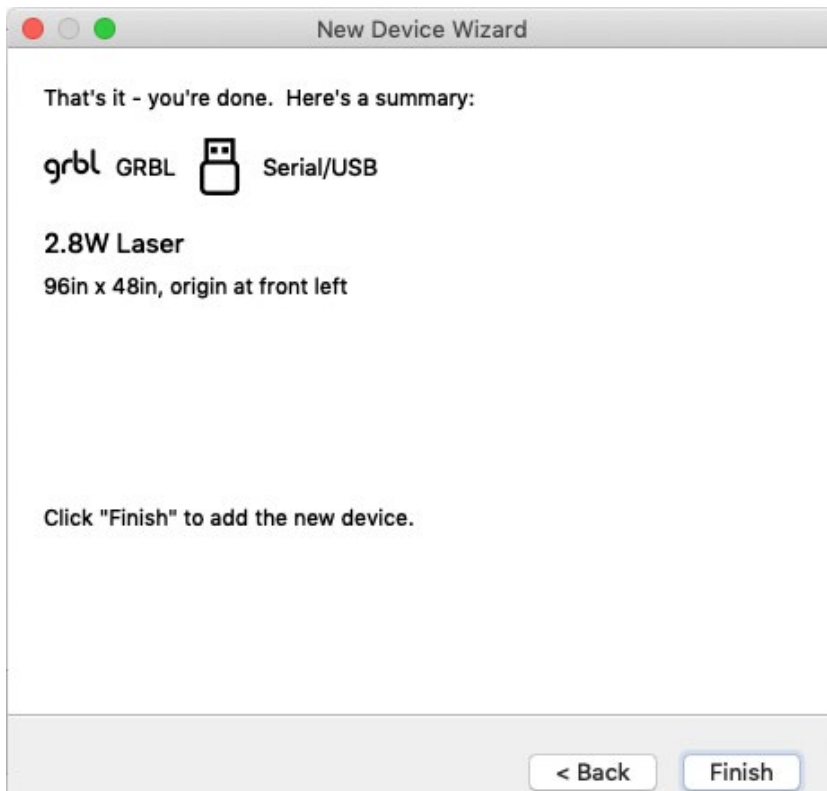
The screenshot shows a window titled "New Device Wizard". Inside, the text "Where is the origin of your laser?" is followed by "(Where is X0, Y0 ?)". Below this, there are four radio button options: "Rear Left", "Rear Right", "Front Left", and "Front Right". The "Front Left" option is selected, indicated by a blue dot in its radio button. At the bottom of the window, there is a checkbox labeled "Auto 'home' your laser on startup?" which is currently unchecked. At the very bottom of the window, there are two buttons: "< Back" and "Next >".

For the M2, the origin will be Front Left in LightBurn.

Auto "home" your laser on startup should not be checked.

You have created your new device!

That's it - The final page will show you a summary of your choices. You can go back and fix anything if necessary, or click Finish to create the new device entry.

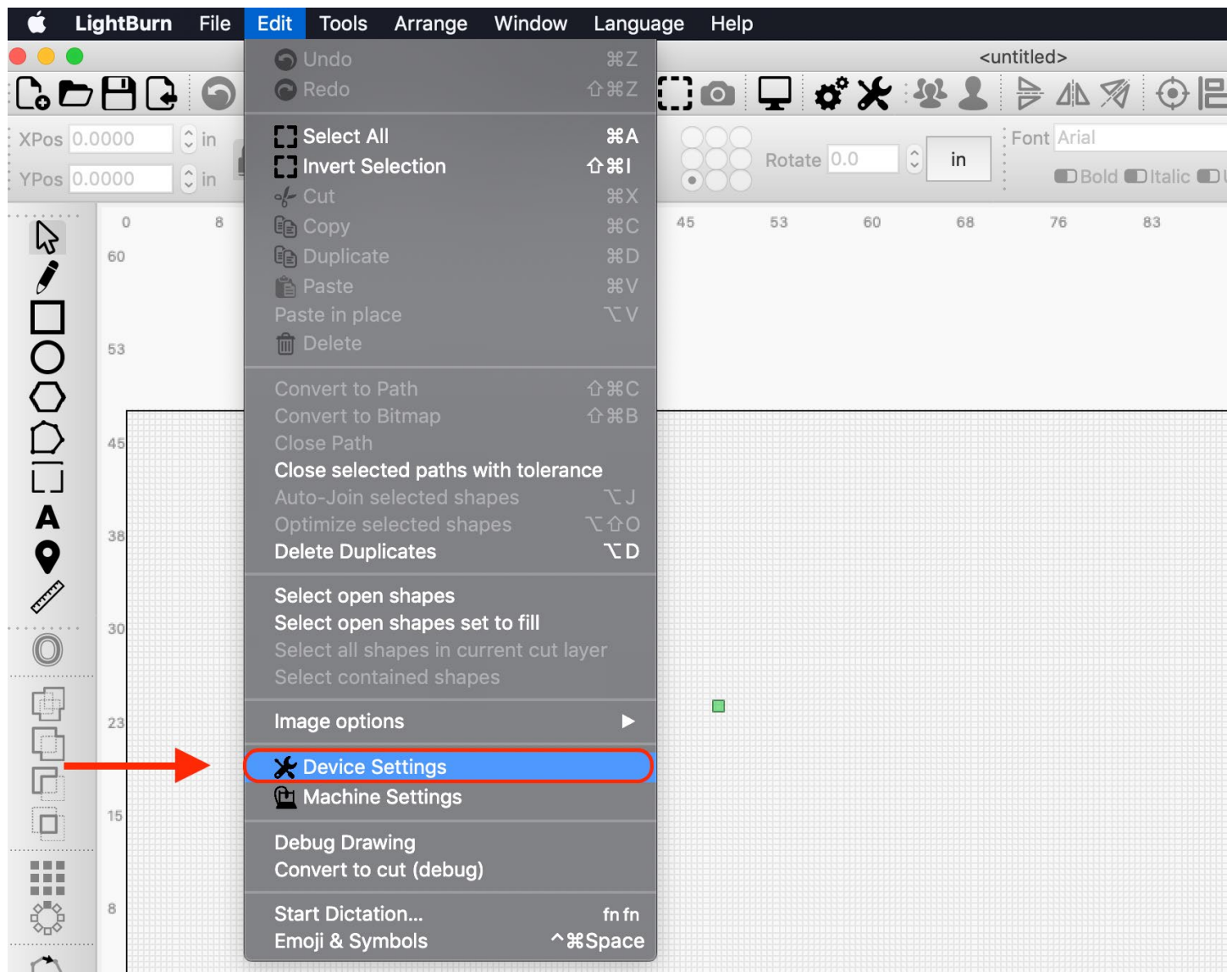


Next, we need to change some Device Settings in LightBurn.

Device Settings

Open Device Settings

Go To Edit > Device Settings



If it is not already, set the S-value max to 1000. Click OK.

This number must match the \$30 setting in Makerverse.

The screenshot shows the 'Device settings for LASER' window with the 'Additional Settings' tab selected. The 'S-value max' field is highlighted with a red circle and a red arrow pointing to it from the left. The field is set to 1000. Other settings visible include 'Working Size' (Width: 95.980in, Height: 47.988in), 'Laser Offset' (X: 0.00mm, Y: 0.00mm), 'Z Axis Control' (Enable Z axis, Reverse Z direction, Relative Z moves only, Optimize Z moves), 'Scanning Offset Adjust' (Enable Scanning Offset Adjustment), 'Other options' (Tab Pulse Width (mm): 0.050, Auto-home on startup, Fast Whitespace Scan, 889 mm/min, Enable \$J Jogging, Enable DTR signal, Use G0 moves for overscan, Enable laser fire button, Enable 'Out of Bounds' warning, Return to Finish Position, X: 0.0, Y: 0.0), 'Air Assist' (M7, M8), 'Baud Rate' (38,400), and 'Transfer mode' (Buffered). The 'Origin' section shows a 2x2 grid of buttons with the bottom-left button selected. The 'Speed' tab is selected in the 'Scanning Offset Adjust' section. The 'Add', 'Delete', 'Import', and 'Export' buttons are at the bottom left, and 'Cancel' and 'OK' buttons are at the bottom right.

Device settings for LASER

Basic Settings | GCode | **Additional Settings**

Working Size
Width: 95.980in
Height: 47.988in

Origin
[Grid of 4 buttons, bottom-left selected]

Laser Offset
☐ Enable pointer offset
X: 0.00mm Y: 0.00mm

Z Axis Control
☐ Enable Z axis
☐ Reverse Z direction
☐ Relative Z moves only
☐ Optimize Z moves

Scanning Offset Adjust
☒ Enable Scanning Offset Adjustment
Speed | Line Shift | Initial Offset

Other options
Tab Pulse Width (mm): 0.050
☐ Auto-home on startup
☐ Fast Whitespace Scan
889 mm/min
☐ Enable \$J Jogging
☐ Enable DTR signal
☐ Use G0 moves for overscan
☒ Enable laser fire button
☒ Enable 'Out of Bounds' warning
☒ Return to Finish Position
X: 0.0 Y: 0.0

Air Assist
☐ M7 ☒ M8

S-value max: 1000 (highlighted with red circle and arrow)

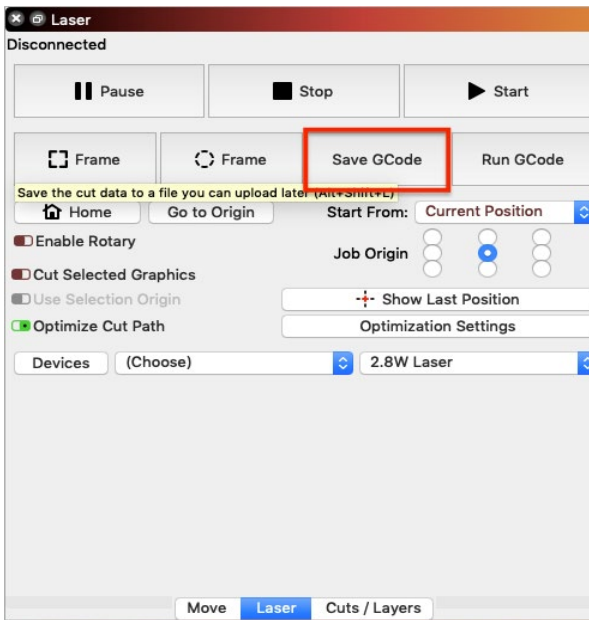
Baud Rate: 38,400
Transfer mode: Buffered

Add Delete
Import Export

Cancel OK

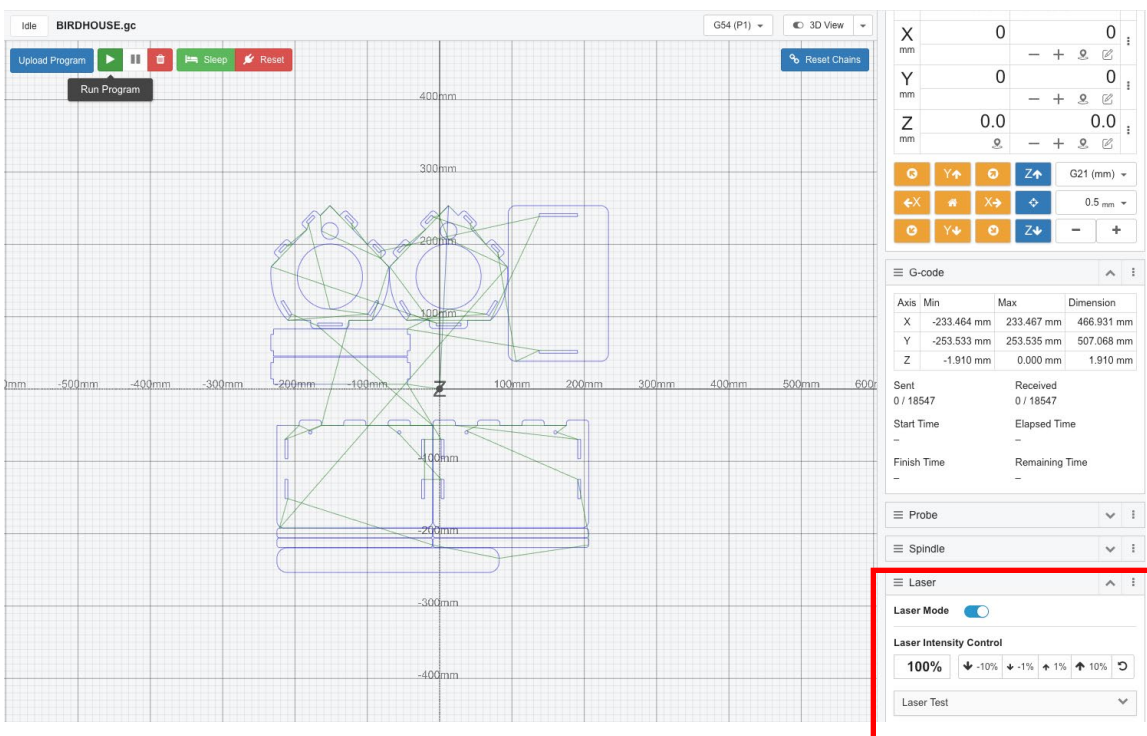
LIGHTBURN + MAKERVERSE

Now that you have added the laser as a device, you can create G Code for the laser from your project in LightBurn. Click on the Save G Code button to save the G Code to your hard drive.

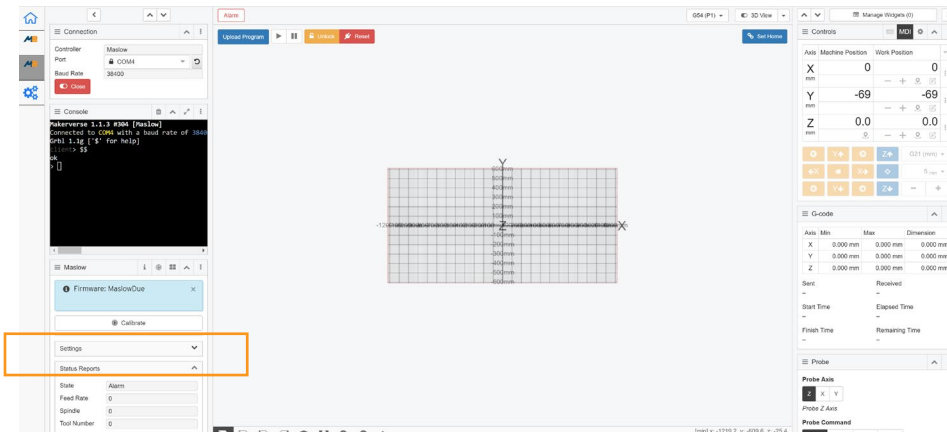


Save your project and close LightBurn.

Open Makerverse and the activate laser mode widget on the right side. Upload the G Code you created and click the Play button to run the project.



Open up the **Settings** tab in the Maslow widget on the left hand side of the screen.

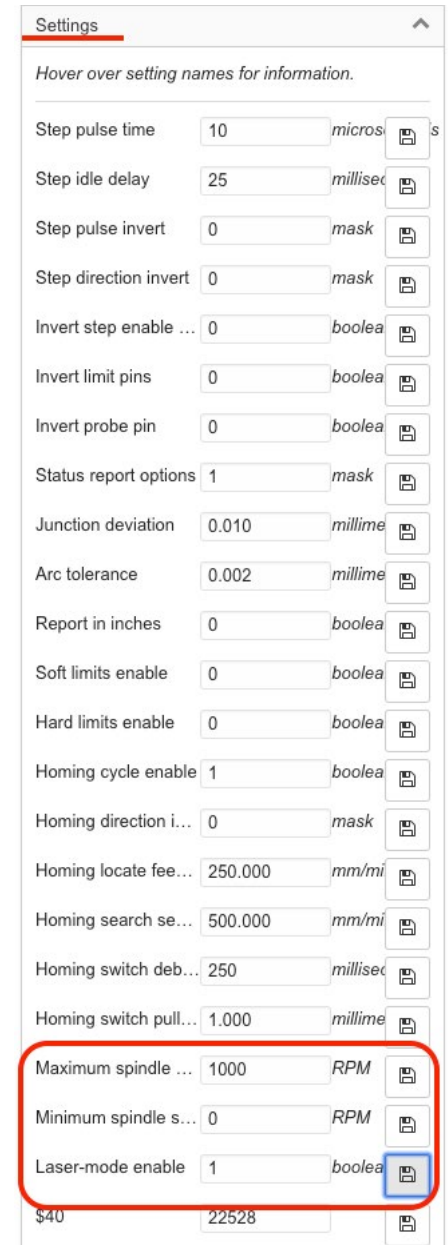


These three settings need to be changed or confirmed that they have the correct value entered.

First, find the setting for **Maximum spindle speed (\$30)** and change the value to 1000. Click the little save icon to the right of the value.

Next, find the setting for **Minimum spindle speed (\$31)** and change the value to 0. Click the little save icon to the right of the value.

Last is **Laser-mode Enable (\$32)** This value should already be 1. If it isn't already, change it to 1 and click the little save icon to the right of the value.



Now you are ready to upload the G Code you created and click the Play button to run the project!

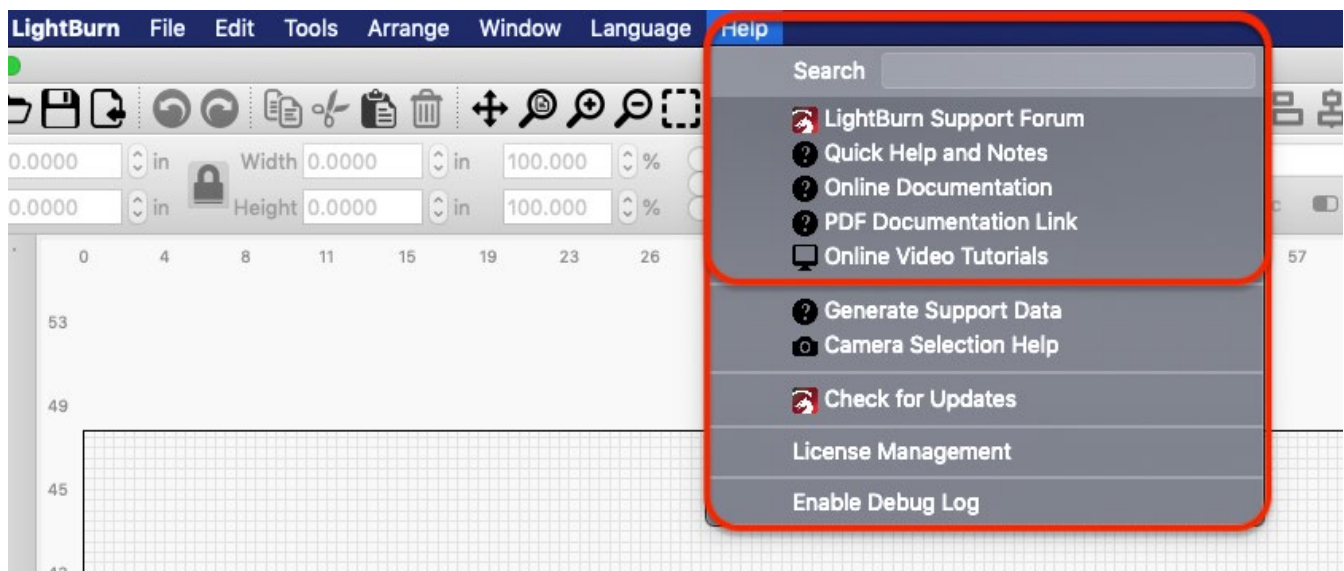
LightBurn is now configured!

Have a question or need guidance?

The MakerMade technical team is available to help! You can fill out a support ticket at: <https://makermade.freshdesk.com/support/tickets/new>

LightBurn also has some great resources available to learn how to use their software.

Go to the Help tab at the top of the screen and select from the drop down menu.



We can't wait to see what you make! Be sure to tag us in any of your projects and use our hashtags #madewithMM and #makermadeCNC!

Find us on [Instagram](#), [Facebook](#), [YouTube](#) and [TikTok](#)!

Happy Making!

- Team MakerMade

