


# ENR355 Laser Cutter Tutorial

Xiang Li  
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# Scheduling site:

 **Coe College Engineering Physics**

INSTRUMENTS   GENERAL RULES   CONTACT

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## INSTRUMENT SCHEDULING

**Location: Stuart 154**

Welcome to the lab booking site. Reserve your equipment sessions below.

Note: Training for each device is required before use.

For off-hour access (non 9-5), please contact the admin.

### GENERAL RULES

- Safety first. Read the manuals.
- Be nice to each other. Clean equipment after every session.
- Report all issues to the admin.

### MANUALS & INSTRUCTIONS

#### LASER CUTTER

[PDF](#) Gweike User Manual

[PDF](#) LightBurn Manual

[PDF](#) Material Settings

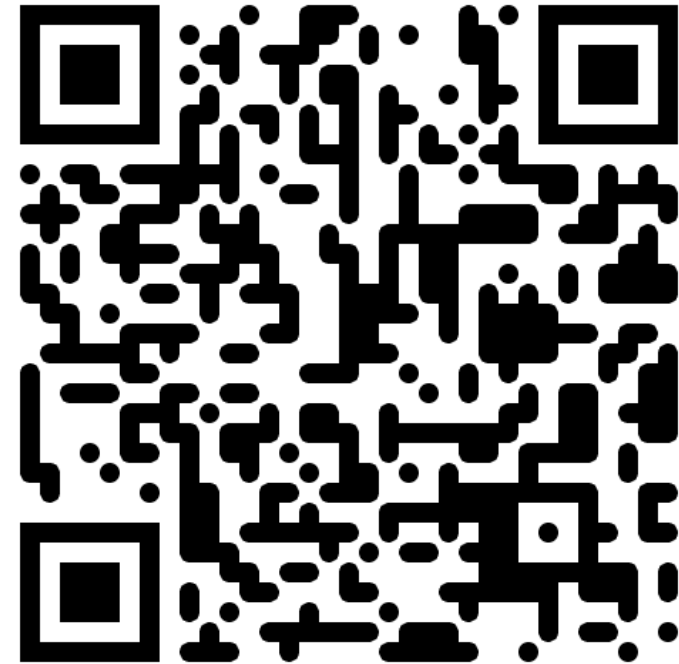
#### 3D PRINTERS

[Link](#) Chitubox (slicer) documentation

[Link](#) Phrozen Sonic Mini 8K

### FACULTY CONTACT

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# Current laser cutter:



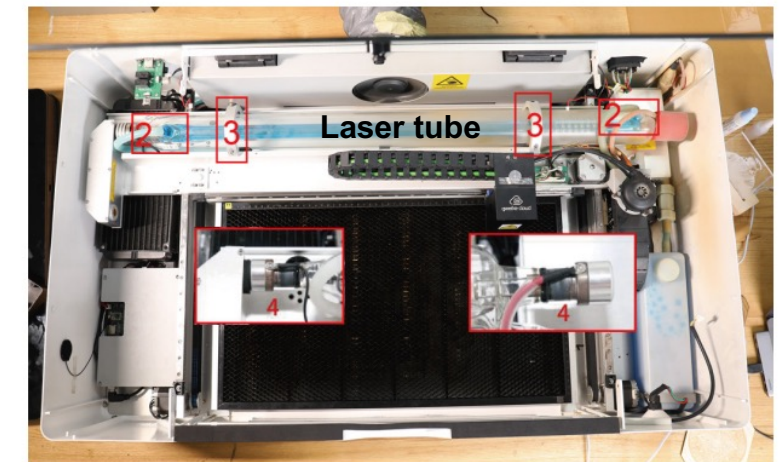
## ≡ Carbon-dioxide laser

Article [Talk](#)

From Wikipedia, the free encyclopedia

The **carbon-dioxide laser** (**CO<sub>2</sub> laser**) was one of the earliest [gas lasers](#) to be developed. It was invented by [Kumar Patel](#) of [Bell Labs](#) in 1964<sup>[1]</sup> and is still one of the most useful types of laser. [Carbon dioxide](#) lasers are the highest-power [continuous-wave lasers](#) that are currently available. They are also quite efficient: the ratio of output power to [pump](#) power can be as large as 20%. The CO<sub>2</sub> laser produces a beam of [infrared light](#) with the principal [wavelength](#) bands centering on 9.6 and 10.6 [micrometers](#) (μm).

POWER	550W
Voltage	100-240V
Circuit Current	13amp
Bandwidth	50hz/60hz

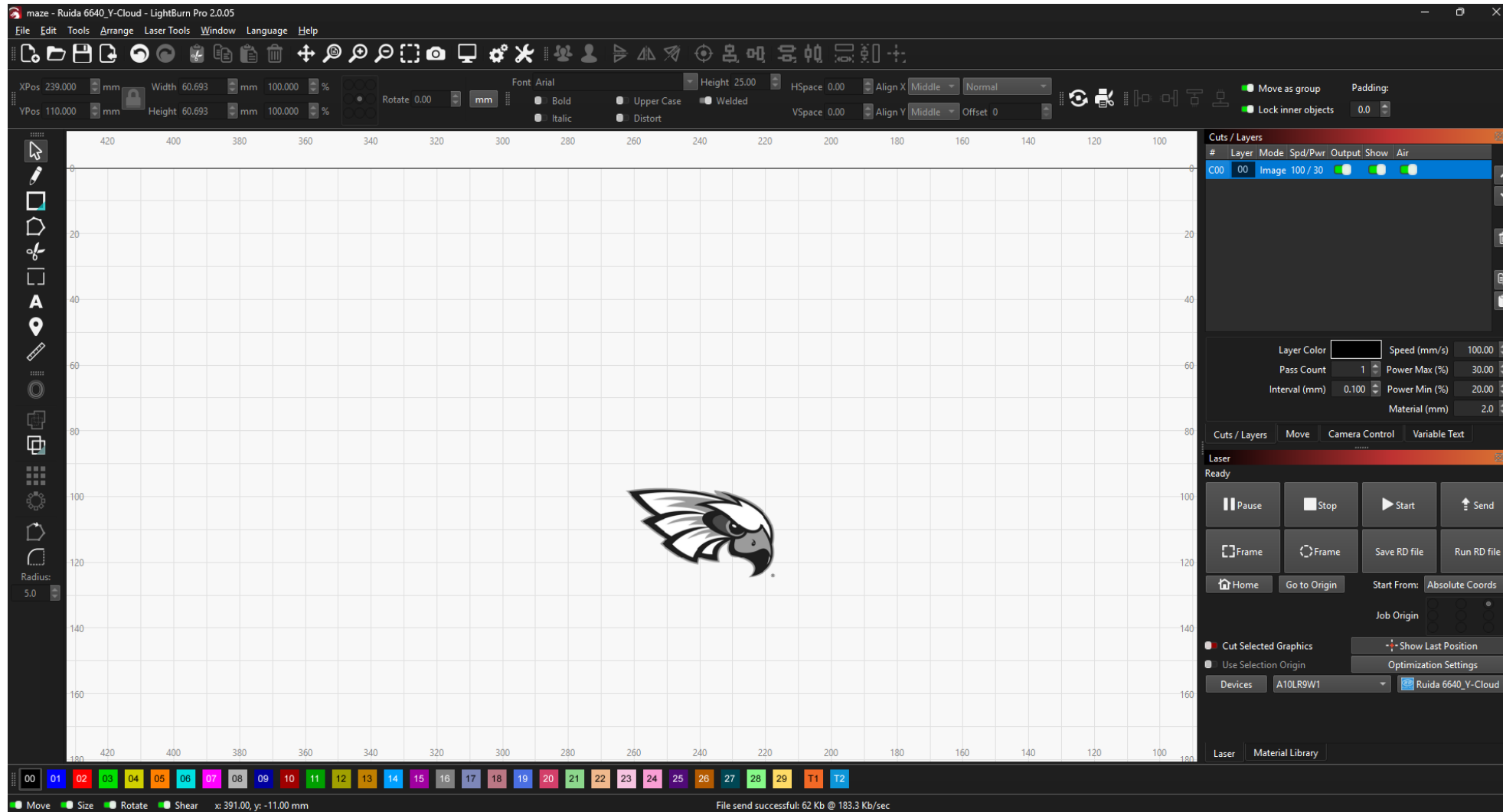


# Laser safety

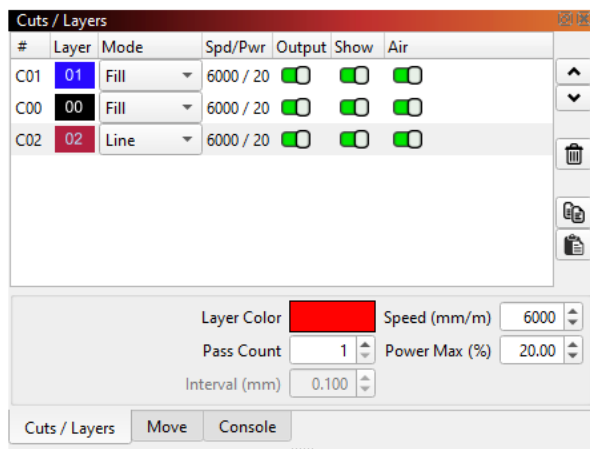
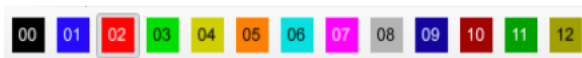
- The laser cabinet has safety interlocks that turn the laser off if any access door is opened during operation.
  - Never operate the laser system with an access panel removed.
  - The visible red dot is not the real laser, but it is still potentially harmful if beamed into the eye directly.
- 
- DO NOT disassemble the machine or remove any of its protective covers while the unit is plugged in.
    - DO NOT attempt to defeat the door interlocks.
    - DO NOT view directly into the beam of the Laser Diode Pointer (Red Dot Pointer).
    - DO NOT operate the Laser Diode Pointer (Red Dot Pointer) without the machine's focus lens in place. If the unfocused beam strikes a reflective surface, it could be directed out of the cabinet.



# Thanks to the Physics Department



# Lightburn tutorial



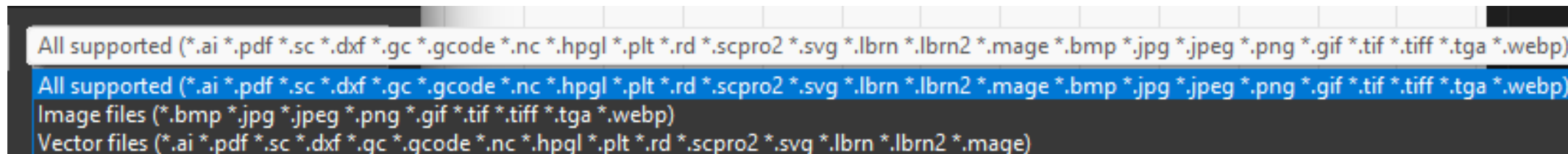
- Lasers don't print in color, so these colors are only used to assign different kinds of operations to the shapes in your design.

- You assign different mode to each layer for line/fill tasks.

Line = Cut: laser power ↑ laser speed ↓

Fill = Draw: laser power ↓ laser speed ↑

- All supported formats:





# Lightburn tutorial



Then you set:

Layer Color	<input type="text"/>	Speed (mm/s)	100.00
Pass Count	1	Power Max (%)	30.00
Interval (mm)	0.100	Power Min (%)	20.00
		Material (mm)	2.0



**The laser head will hit the base if you got this number wrong.**

And you burn:

Ready

Pause Stop Start Send

Frame Frame Save RD file Run RD file

Home Go to Origin Start From: Absolute Coords

# Draw 2D SVG graph:

<https://inkscape.org/>

<https://inkscape.org/learn/>



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