Laser Cutting ESR update

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Materials

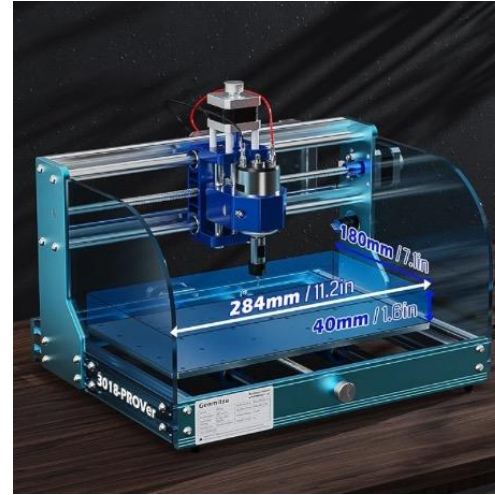Genmitstu CFL55P Compressed Spot Fixed Focus Laser Module

-5.5W diode laser.

-Wavelength 445nm

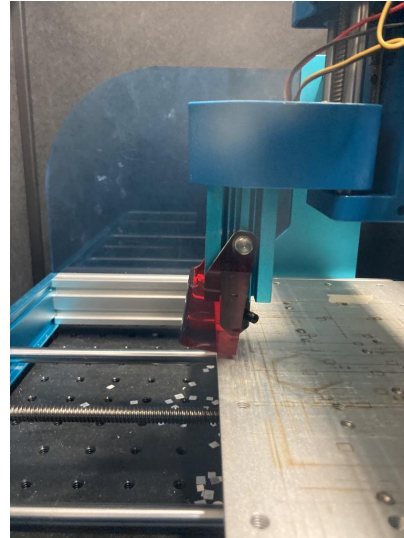Genmitsu 3018-PROVer V2 CNC Router Machine
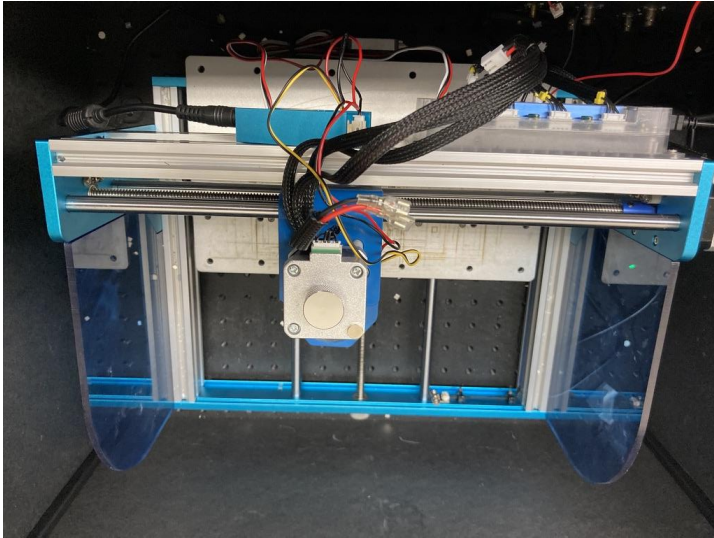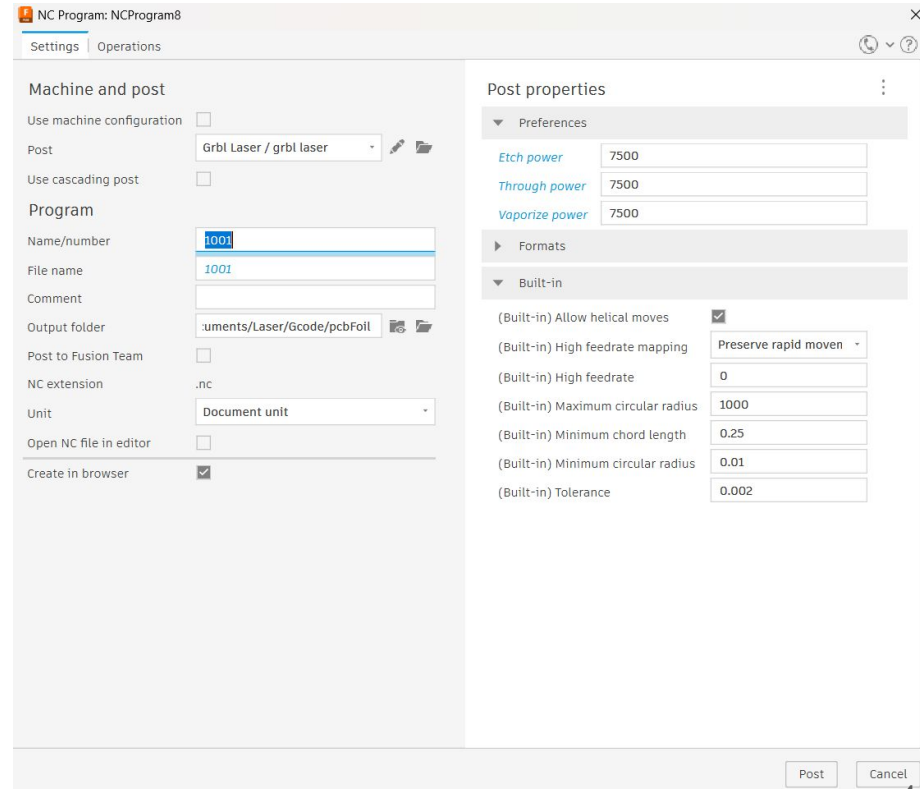
LaserGRBL Software

Fusion360 CAD Software

Set Up

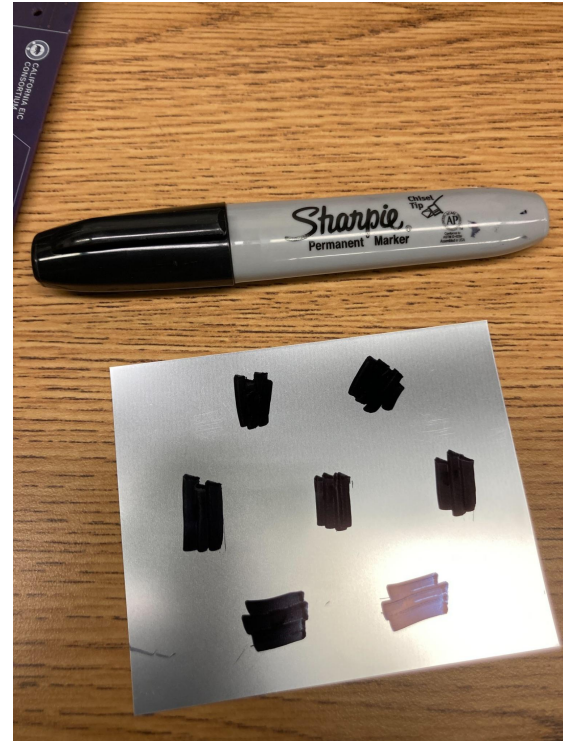Laser component attached to CNC Machine, and placed in a dark box for safety.

Power Settings on Fusion360

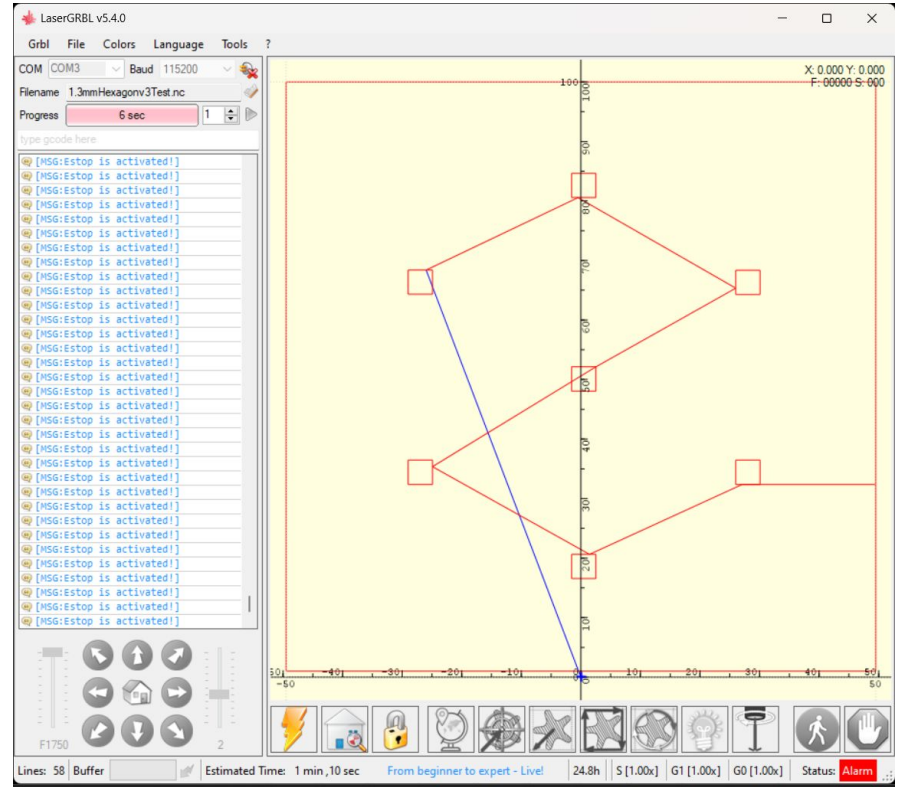In Post Process the Through power is set to 7500.

Updated Method

Coloring in the areas the laser will hit
with a black sharpie improves the
efficiency of the laser.

Updated Method

With this method the laser can cut through at 1x Power and 1x Linear speed.
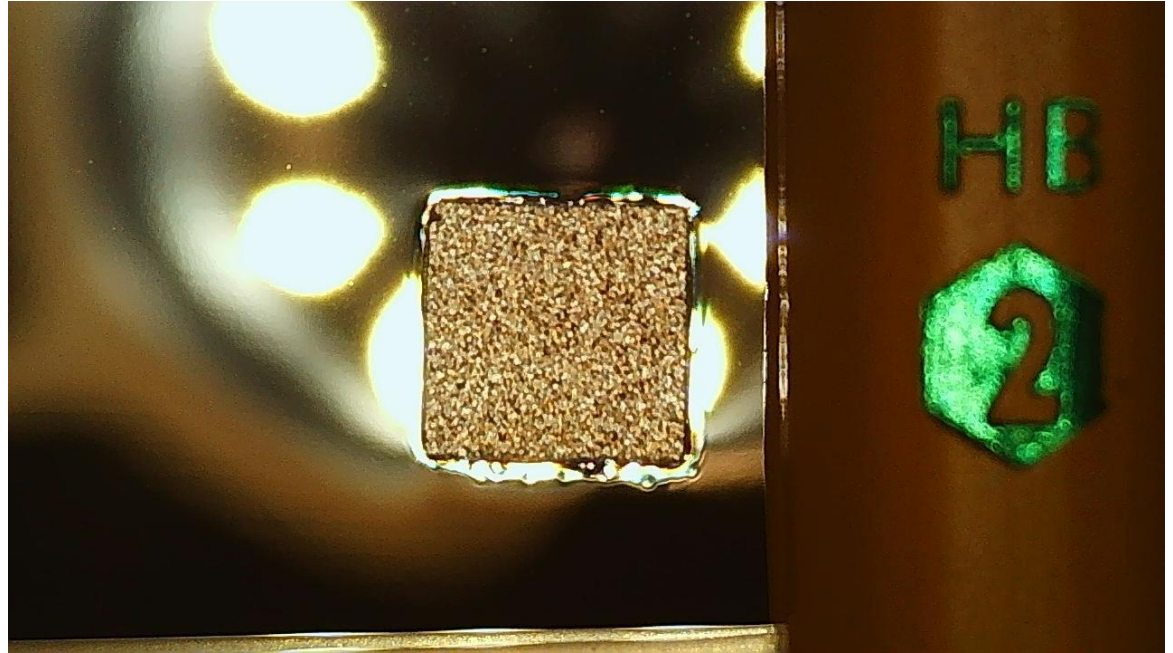
Total time it takes to cut this is ~1 minute.

Results

While it may look like it is getting burned, this is the layer that gets pealed off.

Results (Continued)

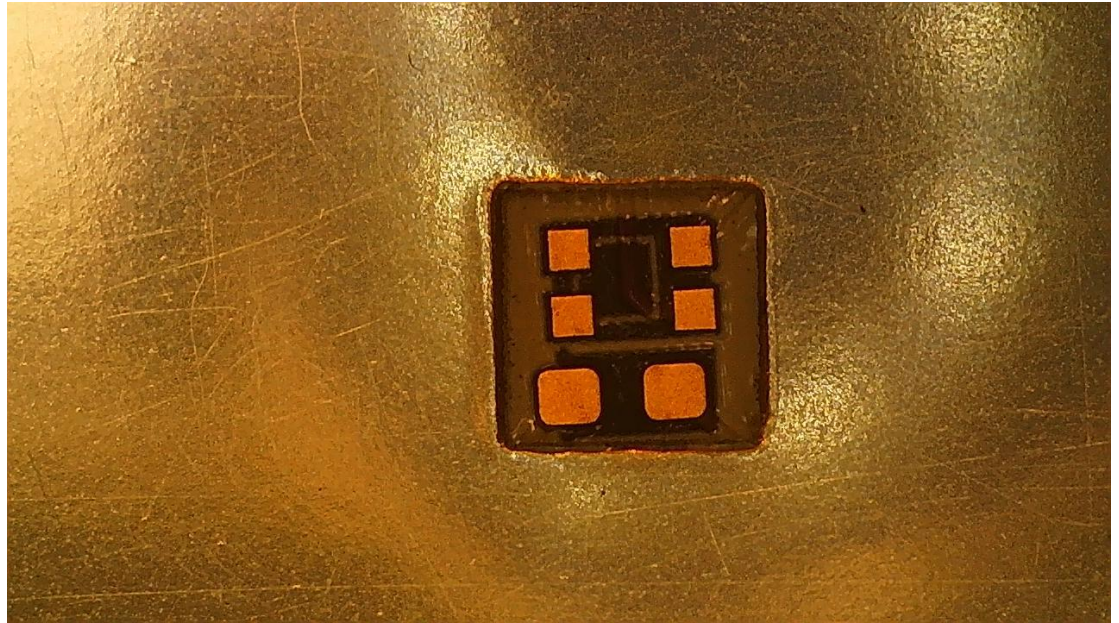Here it is shown with the layer peeled off to fully reflect light.
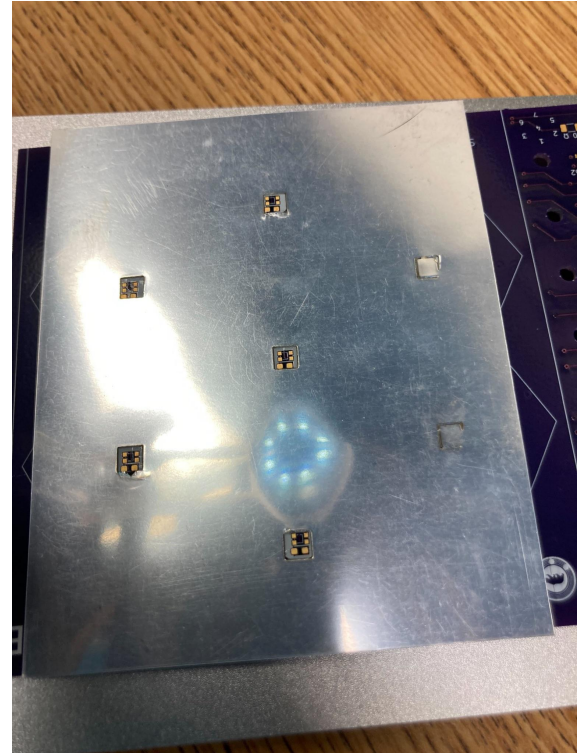
Results (Continued)

Results (Continued)

Results overlaid where SiPM is soldered.

Results (Continued)

Results overlaid on PCB Board.

Creating Folds

Setting the Power to 50% while also coloring in one side results in Foil that can be folded.

Next Steps:

Implement this pattern, including the
Cutting and bending in one go.

Time it and QA for reproducibility

Document the entire procedure for
Laser cutting so that anyone can
Implement the same setup we have
Which is very low cost and simple