

Introductory Project for the Laser Cutter and Engraver



Muhlenberg Coaster Cut Out Project

This project will walk you through the basic tools, tips, and tricks to the Laser Cutter and Engraver. At the end, you will walk out with a cardboard coaster depicting the lovely Haus bell tower.

Materials Needed:

- Image of Muhlenberg College found on Makerspace website
- Small square of cardboard

You will use:

- Laser engraver
- LightBurn- PC

Steps:

Step 1. Adjust the image

1. Upload the image provided into LightBurn
2. Right click on the image and select "Adjust Image"
3. Here you can adjust the desired contrast, brightness, and gamma of the image
4. Select "Image Mode," select "Grayscale"
 - a. Image Mode includes the burn settings and modes to produce the best image for your material. While Grayscale is the best mode for this image, it may not be the best for your designs in the future!
5. Create a circle using the "ellipse" tool.
6. Ensure that your circle is small enough to fit inside your piece of cardboard.
7. Adjust the circle so it is centered on the image, then select the T1 Layer in the bottom right corner. This should highlight the circle in orange.
8. Highlight both the image and circle. Right click and select "apply mask to image," then "flatten image mask."
9. Draw another circle with the ellipse tool and center it over the image. Make sure it is a layer # above the image.
10. Turn "output" on for both layers.
11. Increase the "power max (%)" for the line to 40% and "power min (%)" to 40%

12. Decrease the “power max (%)” to 35% and the “power min (%)” to 2.5%
13. Increase the speed to 200 for the “image” layer and decrease to 20 for the “line” layer
14. Change the “pass count” to 2 for the “line” layer
 - a. Not all designs will need two pass counts, this just works the best for this material

Step 2. Prepare the machine

1. Insert the cardboard square into the laser cutter
2. Use the “FOCUS” block to adjust to the proper distance from the laser to the material.
3. Close the laser cutter and move the laser to the center of the material using the arrow keys on the machine

Step 3. Start laser cutting!

1. Preview the image by right clicking and selecting “Preview”
2. Be aware of the size and scale of your design.
 - a. We suggest a width and height below 100 mm for this project
3. If you are satisfied with the results, click “Start”
4. Wait for your design to be finished!