

ABOUT THE LASER CUTTER

The Fablab is now equipped with a Universal Systems ILS12.75 Laser Cutter. The ILS12.75 has a material processing platform of 48"W x 24"L x 9"H and a 75 watt laser.



ACCEPTED FILE TYPES

Illustrator files: Vector Cutting, Vector Engraving, Raster Engraving
Photoshop files: Raster Engraving
JPEGS: Raster Engraving

Fablab Staff will not resize, adjust, or manipulate your files. Files must adhere to the color, format, and size requirements of the Laser Cutter Program before being submitted. If any changes are required to successfully complete the job, the Fablab will not proceed until the client fixes the errors and resubmits the corrected file. The Fablab is not responsible for cutting or engraving errors if they are a result of a improperly prepared file.



ACCEPTED MATERIAL

Only the following materials will be accepted for use with the laser cutter.

- *Bristol Board
- *Butter Board
- *Cardboard
- *Chipboard
- *Museum Board
- *Poster Board
- *Fine Art Paper
- *Cardstock
- *Illustration Board
- *Construction Paper
- *Matte Board
- *Marker Board
- Wood Veneer
- Basswood
- Plywood
- Balsa Wood
- Birch Wood
- Cork
- Leather
- Rubber
- Glass (Etch only)
- Marble (Etch only)
- Acrylic Sheets (Only with brown paper backing)
- Natural Fabrics
- Hard Woods

Please see our separate acceptable materials list for local suppliers and online vendors. We reserve the right to refuse material if we deem it to be unsafe or inappropriate.

***Note:** Chipboard, illustration board, poster board, museum board, matte board, and paper board products have specific cutting guidelines that can be found on our site under Fablab Services>Laser Cutting.

M

TESTING MATERIAL

For non-standard or specialty materials, we recommend supplying a separate piece of material (recommended at least 2"x4") for the Fablab Staff to test and determine the correct Laser settings. This testing is covered by the \$7.00* setup fee per material submitted. We will do our best to determine suitable settings, but depending on the results of the testing, the Fablab may not be able to perform your job exactly as submitted. We will not replace damaged testing material.

We will return any scrap material from the job to the client. If the client does not supply a separate piece of testing material, the Fablab may use areas of the client's material to perform testing.



FABLAB POLICIES

Turnaround time for laser cutting is 5 business days, but this may vary and is subject to change. All jobs must be paid for with your FIT ID card before the job is released. 5 business days turnaround time changes if your job's on hold because of file errors and/or additional information is needed for Fablab to complete it.



\$7.00* minimum

After the \$7.00 setup fee (per different material), the price for use of the laser (for Vector Cutting, Vector Engraving, and Raster Engraving) is \$1.00 per minute. *Complex laser cut job setup fee: \$10.00, please see staff for details.



Updated temp NOV 2023

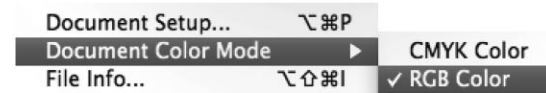


Pomerantz Center 5th Floor D529A
www.fitnyc.edu/printfx
212.217.5470

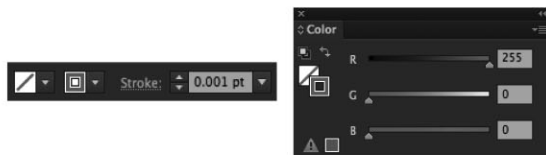
Ai**VECTOR CUTTING & ENGRAVING**

The laser cutter can cut or engrave along vector paths. The laser cutter program will “read” your Illustrator file, and depending on the **Stroke Weight** and **Color** of a vector, the laser will cut through or engrave (i.e. scorch/mark) the surface of your material.

In order for your Illustrator file to be read by the laser cutter program, your files must be in **RGB Color Mode**:

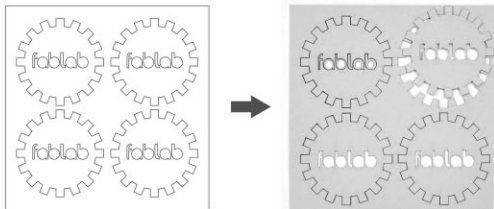
**VECTOR CUTTING**

Lines that you would like to be cut through your material should be **Vector Paths** in your Illustrator files, with a **Stroke Weight** of .001 pt and colored RGB Red (255-0-0, or #FF0000).



Mode	Stroke	Color
Vector Cut	0.001	RGB Red

Depending on the density of the material, certain objects may not be able to be cut at all. For acceptable material thickness, please see our **Laser Cutting Acceptable Materials List**.

**VECTOR ENGRAVING**

Lines that you would like to be engraved on the surface of your material should be **Vector Paths** in your Illustrator files, with a **Stroke Weight** of .001 pt and colored RGB Blue (0-0-255, or #0000FF).



Mode	Stroke	Color
Vector Engrave	0.001	RGB Blue

Depending on the density and surface texture of the material, certain objects may not be able to be engraved at all. Please see our **Laser Cutting Acceptable Materials List**. We can accept any thickness on approved and appropriate materials.

**RASTER ENGRAVING**

When Raster Engraving, the laser cutter travels in horizontal lines, moving down the image (like an inkjet printer), engraving (i.e. scorching/mark) the surface of the material. Any type of image can be Raster Engraved.

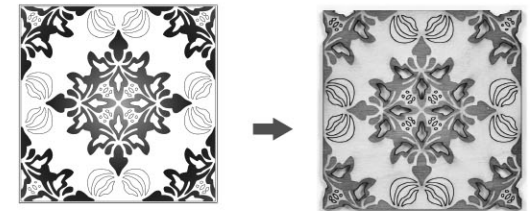
Images to be Raster Engraved should be grayscale or B&W. Black colors in the image will be engraved the deepest and colored darkest, and lighter shades of gray will be progressively engraved shallower and colored lighter. We can accept any thickness on approved and appropriate materials. Please see our **Laser Cutting Acceptable Materials List**.

Mode	Stroke	Color
Raster Engrave	N/A	B&W Grayscale

**Ai****Ps****CUTTING, ENGRAVING & RASTER ENGRAVING**

The laser cutter can **Vector Cut**, **Vector Engrave**, and **Raster Engrave** all from one image. Import grayscale or B&W images (JPEG or PSD) into an Illustrator file, and follow the guidelines for **Stroke Width** and **Stroke Color** for vectors described here. The laser cutter program will automatically distinguish between vector paths meant to be cut, vector paths meant to be engraved, and grayscale or B&W artwork will be Raster Engraved.

Mode	Stroke	Color
Vector Cut	0.001	RGB Red
Vector Engrave	0.001	RGB Blue
Raster Engrave	N/A	B&W Grayscale

**HELPFUL TIPS**

Vector Cutting & Engraving: Depending on the physical properties of the material, the line being cut or engraved will have a variable “thickness.” This is determined by how the material reacts to being burned or scorched by the laser. Vector artwork should be designed with this in mind, as vector paths that are very close together in an Illustrator file may actually overlap or touch once cut (or engraved) onto the material.

Raster Engraving: Higher contrast images are desirable. Depending on the characteristics of the material being engraved, the range of dark to light tones (i.e. the depth being engraved) may be very limited – in some cases only a two-tone, black & white color range is possible.