

# Laser Cutter

The UTSOA Technology Lab has 2 Epilog Fusion Pro Laser Cutters/Engravers with a cutting bed size of 48" x 36". **You must be certified by a member of the UTSOA Technology Lab staff in order to use the laser cutter!**

## Laser Cutter Certification

## Laser Cutter Reservations

## How to Prepare Your File for Laser Cutting

## How to Use the Laser Cutter

## Suggested Material Settings

## Laser Cutter Policies

### General

- If the laser cutter computers aren't logged in, notify staff at the Technology Desk. Only the Technology Desk staff are permitted to give you access to the system. **Do not get another student to log in for you or share your EID credentials**, as this can result in revoking privileges for both students, as described below.
  - Sharing your EID password is in violation of the university's [Acceptable Use Policy](#) and can have severe consequences, up to and including disciplinary probation, suspension from the university, and criminal prosecution.
- Infractions of laser cutter or any other Technology Lab policies **will result in privileges being revoked**.
- **Operating the laser cutter without being trained AND paying the subscription for the semester will result in privileges being revoked.**
- If you notice that the laser cutter requires cleaning or maintenance, please notify the Technology Desk staff immediately in person or by calling 512-471-1189.

### Certification and Subscription

- In order to use the laser cutters the student, faculty, or staff must
  - be a member of the School of Architecture community (students, faculty, or staff) *AND*
  - purchase a subscription for the semester *AND*
  - complete online laser cutter training *AND*
  - be certified for laser cutter use by a member of the Technology Desk staff.

### Health and Safety

- Although this system uses a CO<sub>2</sub> laser that could damage your eyes or skin with direct contact, it uses both a system of safety interlocks and an IR-absorbing window on the top door, making the laser cutter safe to use without goggles or other safety gear.
  - Please note that the intense light that appears during the engraving or cutting process is the product of material combustion or vaporization. **DO NOT STARE AT THE BRIGHT LIGHT** or risk damage to your eyes.
  - Additionally, the Red Dot Pointer that appears on the material is just a positioning help, not the laser beam itself, however, **DO NOT STARE** at the Red Dot Pointer or risk damage to your eyes.
  - Lastly, the machine doors are safety interlocked and will disable the CO<sub>2</sub> laser beam from firing when the doors are opened. The Red Dot Pointer is NOT safety interlocked and can be activated with the door(s) either open or closed.
- Operating the laser cutter in any unsafe way can result in damage caused to the laser cutter, which costs the school money.
  - Unsafe practices include (but are not limited to):
    - Leaving the laser cutter unattended while it is running.
    - Cutting materials that are not on the acceptable materials list.
    - Tampering with the laser cutter's safety mechanisms.
    - Turning off the Air Assist feature, especially when vector cutting. Consult with Tech Desk staff for possible exemptions.
    - 'Sandwiching' more flammable material between less-flammable materials. (i.e. a sheet of cardboard between two layers of chipboard, etc.) The result could easily be a FIRE!
- **IN CASE OF FIRE, IMMEDIATELY PRESS THE EMERGENCY STOP BUTTON (located on top of the laser) AND USE THE FIRE EXTINGUISHER (located near the door).**

### Materials

- Use of prohibited materials could result in the material melting to the laser cutter bed and/or the release of toxic fumes. **Due to the severity of the risk, cutting prohibited materials will result in loss of lab privileges and possible fines for damages.** You may be asked at any time about your materials and their content. It's important for you to know what you're cutting, so please source it from trustworthy suppliers.
- **Prohibited Materials**
  - PVC
    - Note: The University Co-op sells material that looks like acrylic but is made of PVC and styrene, and is therefore [strictly prohibited](#).
  - Lexan
  - Polyurethane

- Styrene
- Polycarbonate
- Vinyl
- Glass
- Foam Core
- Metal
- Chloride-based materials
- **Questionable Materials (Consult with Tech Desk Staff for approval)**
  - Wood, ie. plywood with potentially flammable adhesives
  - Soft materials like leather
  - Reflective materials
- [Lime Powder MSDS](#)