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.
  - Infringements of laser cutter or any other Technology Lab policies may result in privileges being revoked.
  - Operating the laser cutter without being trained AND paying the subscription for the semester may result in privileges being revoked.
  - Use of more than one laser cutter at the same time is only permitted when there is no one on the calendar.
  - 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 CO₂ 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 CO₂ 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.

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, i.e. plywood with potentially flammable adhesives
  - Soft materials like leather
  - Reflective materials

- Lime Powder MSDS