UF Environmental Health and Safety
UNIVERSITY of FLORIDA

Laser Cutter/Engraver Guide

INTRODUCTION

Laser cutters serve a variety of purposes and can be found within labs, maker spaces, workshops and elsewhere on campus. Laser cutters utilize a high-power laser to cut or engrave materials such as wood and acrylic.

The majority of laser cutters are considered Class 1 laser devices due to the beam being completely enclosed with interlocks in place, meaning that they are safe to use without special precautions. However, they do contain powerful Class 3B or 4 lasers which can cause serious harm if safety features are disabled.

REQUIREMENTS

There are a few hazards that must be addressed when utilizing a laser cutter:

1) Laser cutters can easily cause fires if not properly maintained or if an easily combustible material is used
2) Cutting certain materials can release hazardous air contaminants
3) Even safe materials can release irritating or harmful air contaminants
4) If safety features are disabled exposure to a hazardous beam is possible

Therefore, UF EH&S requires that:

1) Laser cutters be cleaned and maintained regularly
2) A fire extinguisher be located nearby and users of the cutter made aware of its location
3) The laser cutter be properly exhausted to the outside of the building
4) A list of acceptable and unacceptable material be posted for the cutter.
5) Safety features are not disabled unless adequate laser safety measures are taken

RESOURCES

An example list of common acceptable/unacceptable materials is available from UF EH&S, and may be used as a generic posting if it covers all expected materials to be used in your space. If additional materials may be used, a list specific to your cutter should be posted.

Links and Contacts

Further guidance on acceptable materials may be found from the National Resource Center and from the Austin Texas Hackerspace.

Contact lso@ehs.ufl.edu or 392-7359 with any questions.