

Small Laser Cutter

Risk assessment

This table outlines the possible risks that users of this tool should bear in mind. The risk rating, likelihood, and severity are all calculated assuming that the listed control measures are followed. If you are uncomfortable with these risks, or are not confident in your ability to use this tool safely, please do not use it.

Risk rating	Likelihood	Severity	Hazard	Who may be harmed & how	Control measures
M	L	H	Injuries due to laser light	<ul style="list-style-type: none"> User - the user may experience a minor skin burn, or damage to the eyes due to the high power of the laser used for cutting 	<ul style="list-style-type: none"> Signage - standard "laser radiation" signage is used to indicate a dangerous laser is present Training - informing the user about how to tell that the laser cutter and the laser is on and to properly operate the laser cutter Equipment - opaque walls and a sheet blocking the laser wavelength covers the laser cutter, an interlock is installed turning off the laser cutter when lid is opened, first aid kit is available
M	L	H	Fire started due to substrate overheating	<ul style="list-style-type: none"> The space - the equipment and surrounding area may be damaged from a fire started by a flammable material placed in the working area of the laser cutter User - the user may become injured from a fire by both heat and inhalation of smoke Bystanders - bystanders may become injured by both heat and inhalation of smoke 	<ul style="list-style-type: none"> Signage - suitable materials clearly indicated, along with settings they should be used at Training - users are instructed not to leave flammable materials in the working area of the laser cutter, users are trained on how to set appropriate laser power for different substrates Supervision - laser cutter is monitored during operation Equipment - fire alarms and extinguishers are installed, first aid kit is available
L	L	L	Body part or clothing is caught in gantry	<ul style="list-style-type: none"> User - the user may experience injuries such as cuts and stretch, crush, or pinch injuries 	<ul style="list-style-type: none"> Signage - standard "pinch point" or "crush hazard" signage is used to indicate the laser cutter is hazardous Training - users are instructed to remove or secure loose clothing and long hair, and to avoid placing hands near the laser cutter gantry mechanism Equipment - the laser cutter is enclosed during operation, first aid kit is available

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L	L	M	Hazardous gasses	<ul style="list-style-type: none"> Users of the room - anyone in the room may sustain injury from inhalation of hazardous gasses produced by heated substrates 	<ul style="list-style-type: none"> Enclosure - laser cutter is enclosed in a case to prevent hazardous gasses from escaping Extraction - a suitable extraction device is installed to extract hazardous gasses from the enclosure Training - users are informed about which substrates produce hazardous gasses, and to ensure that the enclosure is closed and the extraction device operational