PACE

SAFETY • SERVICE • SAVINGS
A TRUST BUILT FOR STUDENTS

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QUICK REFERENCE GUIDE

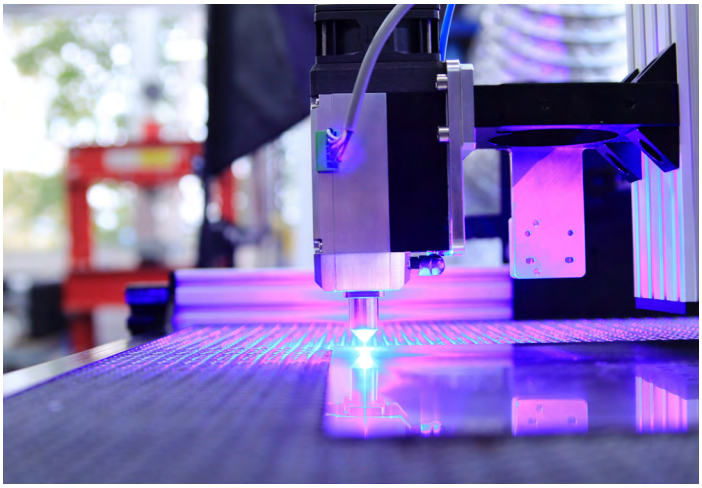
LASER SYSTEMS

Laser systems have become a common, useful tool for schools, allowing students and teachers to make everything from specialty design items to the hull structure for a functional boat. As with all technology, safety rules and precautions must be taught and followed.

Laser systems can be a great addition to your CTE classroom. **When looking to add a laser system to your program, things to consider are:**

- Manufacturer's recommendations for extraction/ventilation and maintenance
- UL or ETL listed
- Safety features included
- Room for a dedicated workspace, extraction or filtration and computer
- Type and size of materials you want to engrave or cut

Laser systems pose potential hazards from exposure to laser light, high temperatures that could result in a fire and toxic air contaminants that may be inhaled. Proper setup, operation and engineering hazard controls must be implemented for safe use of the laser system. It is also essential that all users receive training on the potential hazards, operating procedures, personal protective equipment and safety precautions before operating the laser system.



Laser Light

The risk of exposure to the laser beam is relatively low due to the safety feature that disables the beam when the door is open. However, it is important to know that the beam can cause eye damage, including blindness and skin burns.

- Do not modify or disable any manufacturer safety features of the laser system.
- Do not look directly into the laser beam.
- Do not operate the laser unless all covers are in place and the interlocks are working properly.
- Follow manufacturers recommendations for personal protective equipment.

Laser Generated Air Contaminants

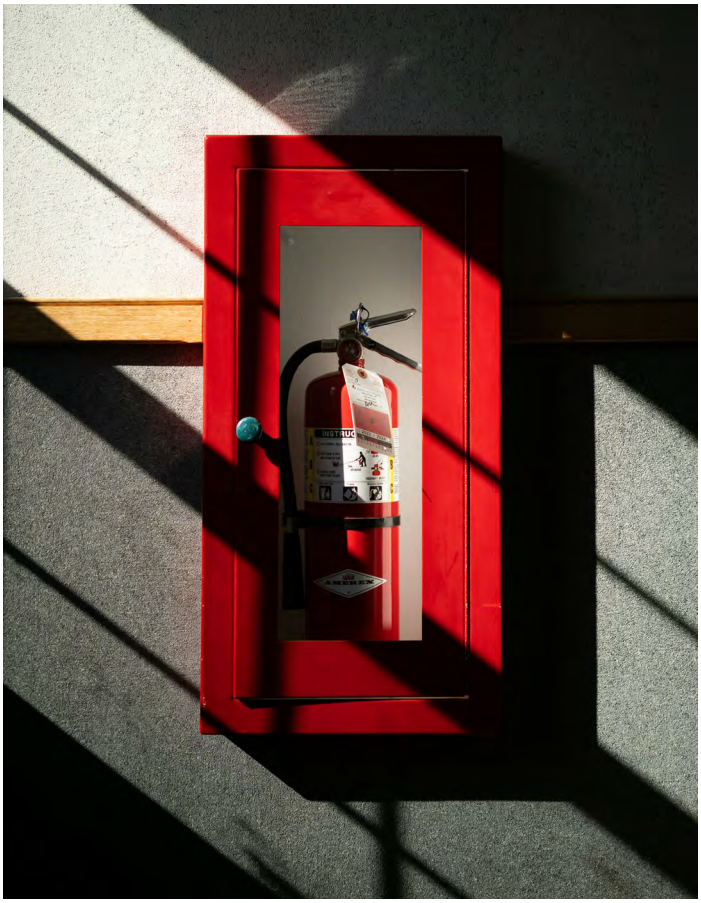
As the laser beam strikes materials, there is potential to produce air contaminants. These may be gaseous or particulate and can pose health risks to those exposed to them. The contaminants generated will depend on the materials being cut. To control the contaminates, filtration and/or exhaust systems must be used to reduce or eliminate staff and student exposures.

- Ensure the laser system is equipped with a fume exhaust system and/or filtration system that meets manufacturer specifications.
- Maintain a list of materials acceptable for use in the laser system.
- Vinyl and PVC can release chlorine gas and should not be used.
- Obtain the safety data sheets from each materials manufacturer to ensure safe handling.
- Do not use a laser system with a malfunctioning exhaust system or clogged air filter.

Fire Hazards

Laser systems use a high intensity beam that can produce extremely high temperatures as it contacts the material it is cutting or engraving. Some of the materials used also have the potential to leave flammable debris that can ignite inside the system.

- Always supervise the laser system process in case combustible materials ignite.
- Always keep the area around the laser system free of debris, clutter and flammable materials.
- Always keep a properly maintained fire extinguisher in the area.
- Keep the interior of the system clean and free of debris. Visually inspect the interior between uses and clean the tray if necessary.
- Leave materials on the cutting bed until it is cool to the touch.



For further assistance, PACE Risk Management Consultants are available to conduct thorough assessments of your facilities, helping you identify and mitigate potential risks. If you're interested in scheduling a risk assessment or have any questions, please contact us at riskmanagement@sdao.com.