

Laser and Spectroscopy Facility

Center For Microanalysis of Materials
Frederick Seitz Materials Research Laboratory

Precautions for the safe use of lasers

1. **NEVER LOOK DIRECTLY INTO ANY LASER BEAM, REGARDLESS OF POWER.**
2. The lab door safety lamp “LASER in USE” **must be illuminated when operating any laser.** Before you turn a laser on, make sure the lamp is on. **Only personnel who have had safety training may enter the lab when the lamp is on.**
3. The lasers are operated in a well-defined area called the Nominal Hazard Zone (NHZ), marked by the white curtains. Only authorized personnel should enter the NHZ. **The curtains defining the NHZ should be closed before a laser in that NHZ is turned on.**
4. Remove all unnecessary shiny reflecting surfaces from the work area. Remove jewelry from hands and wrists, minimize the laser power, and wear adequate protective eyewear before aligning a laser beam, changing its path, or putting samples or optical elements into, or removing them from its path.
5. Appropriate protective eyewear should **ALWAYS** be worn when changing or aligning the beam path, or when observing diffuse reflections or scatter. Keep the laser beam away from eye level, and keep your eyes away from the level of the beam. **NEVER LOOK DIRECTLY INTO ANY LASER BEAM even when wearing protective eyewear.** Protective eyewear is on the shelf against the east wall, arranged by laser wavelength. Make sure you choose the right one for the laser you will be using.
6. When using invisible (ultraviolet < 400 nm or infrared > 700 nm) laser light, **or anytime any laser is being aligned,** protective eyewear must be worn by everyone in the NHZ.
7. Install beam blocks to keep all beams within the perimeter of the optical table. **Even scattered laser light can be hazardous,** so minimize it. Secure laser beam blocks by bolting them to the optical table. They are easy to knock over, especially in the dark.
8. When a laser beam must be sent between tables, install a tube to prevent people from walking into the beam.
9. **Any accident should be reported immediately to the LSF staff and to your individual medical provider.** If your eye is accidentally exposed to laser light, the services of an ophthalmologist should be obtained immediately. **Dial 9-911 in case of emergency.**
10. Any laser malfunction should be described in the log book and reported immediately to LSF staff. Do not defeat the laser system interlocks and do not try to service any laser.
11. **Do not leave an operating laser system unattended for more than one hour at a time.** In case of a malfunction or water leak, it's better to catch the problem sooner rather than later.
12. **Never leave an unblocked invisible laser beam unattended.**
13. When turning a laser on, check to make sure the beam will fall on a beam block. **Block the beam and close system shutters before turning off the laser.**
14. Work with maximum ambient room light to keep the pupil of your eye from becoming any larger than necessary. The larger the pupil, the easier it is to damage the retina.
15. **NEVER OPERATE ANY LASER SYSTEM FOR WHICH YOU HAVE NOT BEEN TRAINED AND OFFICIALLY AUTHORIZED TO USE BY THE FACILITY STAFF.**

By signing this form I certify that I have read and understand the importance of the above precautions, and I have also read and understood the contents of the “Laser Safety Manual” published by the University of Illinois Department of Research Safety.

Signature_____ Name (print)_____ Date_____