

Chapter 10: [Laser Safety](#)

Class 2 and Class 3R Laser Operation Requirements

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URL: <https://www-esh.slac.stanford.edu/eshmanual/references/laserReqClass2and3R.pdf>

1 Purpose

The purpose of these requirements is to protect workers from harmful exposure to low-power lasers, which can create a startle hazard and temporary flash-blindness, after images, and glare responses.

They cover using Class 2 and 3R lasers and posting of hazards. (These lasers are often used for alignment and surveying applications.)

They apply to workers whenever they are using lasers of this classification and their supervisors.

Note Laser pointers are also classified as Class 2 and 3R but the requirements they are subject to are in [Laser Safety: Laser Pointer Requirements](#). Class 3R lasers were formerly known as Class 3a lasers and may still bear a label with the former classification.

2 Requirements

Type	Construction Project	Non-construction Project
Training	Documented training required	Basic laser safety training recommended (such as ESH Course 132)
Operation	Unattended operation not permitted	Unattended operation should not be permitted unless additional controls such as appropriate barriers are used
	Keep laser beams in a horizontal plane below eye level, when practical Use barriers or beam blocks to terminate beams and restrict access to beam paths, when practical	
Equipment label	Label must be attached to the laser and specify its classification, wavelength, pulse duration (if applicable), and maximum output power	
Signage	An area hazard warning sign must be posted when a construction laser is in operation and should be posted when a non-construction laser is in operation. This sign must indicate type of laser, wavelength, power, and classification. (Templates for labels and signs are available on the Laser Safety Program Site .) - Required signal word for Class 2 lasers: CAUTION - Required signal word for Class 3R lasers: CAUTION	
	Note Construction lasers and commercial lasers may use DANGER, which is also acceptable.	

3 Forms

The following forms and systems are required by these requirements:

- None

4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- None

5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 10, “Laser Safety”](#)
 - [Laser Safety: Laser Pointer Requirements](#)
 - [Laser Safety Program Site](#) (SharePoint)

Other SLAC Documents

- ESH Course 132, Laser Safety Basics ([ESH Course 132](#))

Other Documents

- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 4, “Construction Safety Orders”, Article 34, “Nonionizing Radiation”, Section 1801, “Nonionizing Radiation” ([8 CCR 1801](#))