

Safety Guideline



Lasers

1. The classification of lasers, and the precautions to be followed in the use of lasers in each classification, are those given in the New Zealand/Australian Safety Harmonised Standard NZS/AS2211-91. These guidelines apply to all facilities in which lasers above Class 1 are used or where there is potential exposure; in particular, it covers all teaching and research activities involving such lasers with the University.
2. The monitoring of the laser installations, users and safety, and the giving of advice relating to the use of lasers, is the responsibility of the University **Laser Safety Officer (LSO)**. All laser installations must be inspected and approved by the LSO before use, who will also maintain records of installations and users.
3. All sites where lasers above Class 1 are used must meet the following requirements:
 - a) At each entrance, the site must be unambiguously identified using standard labels appropriate to the class of laser as one where such lasers are used, and where access is limited to authorised personnel only;
 - b) The site must be secure against inadvertent entry by unauthorised persons;
 - c) The site must possess appropriate measures for the prevention and control of inadvertent exposure of employees and others to laser radiation, including door interlocks and key controls as required by the Standard;
 - d) Emergency systems, including First Aid facilities and expertise, fire alarms and telephones must be provided;
 - e) Persons responsible for managing areas of the site where lasers are used must possess: knowledge of the requirements of the legislation and the Safety Standard; technical knowledge of the lasers used in that area; and practical skill at operating lasers safely;
 - f) An inventory of lasers at each site must be maintained and the LSO consulted whenever changes are proposed.
 - g) The following information and documentation must be readily available to employees, to enable them to use lasers safely:
 - h) Such instructions, guidelines, procedures and codes of practice (including the Standard) as are appropriate to the use of lasers at the site;
 - i) Means of access to other relevant technical information (CD-ROM databases, catalogued information, appropriate Web sites, etc);
 - j) Instructions for procedures to be followed in the event of an emergency.
4. All employees engaged in or associated with the use of lasers are required to receive safety training. Such training should deliver:
 - a) An understanding of the hazards associated with laser radiation;
 - b) Information on specific work practices or procedures, and on appropriate control measures;
 - c) Information on personal health and safety, including the use of personal protective equipment such as safety eye wear;
 - d) Advice on emergency procedures.
5. Supervision should be provided until an employee can demonstrate competence and an understanding of operating procedures involving lasers, and a record of training should be maintained. A list of all users must be given to the LSO at the start of each academic year.

Safe Use of Laser Pointers

1. Laser pointers are Class 2 or Class 3A devices.
2. Class 3A laser pointers emit up to 5 milliwatts and will produce exposures that can damage the eye leading to temporary flash blindness and glare. Occasionally retinal damage can occur following multi-second exposures to Class 3A laser pointers.
3. Laser pointers should clearly display their hazard classification and carry a warning about potential eye hazard.
4. The preferred choice of laser pointers is Class 2. Class 3A is recommended for a specific purpose and if used labeling and warning sign requirements must be followed in accordance with the standard AS 2211/NZS 5821.
5. Pointers should have a wavelength of less than 650 nm.
6. The laser beam should be prevented from being directed towards the eyes for more than 0.25 seconds.
7. Avoid pointing at reflective surfaces and never look directly in the line of the laser beam.