Laser Safety Policy – Version 7

Key requirements:

- Hazardous lasers* must be used in a safe manner, and anyone using them must receive the appropriate training and instruction and be registered as laser users.
- Hazardous lasers* must be registered with the Laser Safety Officer and written permission to purchase or borrow lasers of class 3A and above must be obtained from the Laser Safety Officer.

Definitions

Hazardous laser. Any laser of class 1M, 2M, 3A, 3R, 3B, 3B*, 3B** or 4, or the equivalent in the American classification system.
Note: class 3A, 3B* and 3B** are no longer laser categories under BS EN 60825. Class 3A and 3B* will fall under the current class 3R and class 3B** will fall under the current class 3B. If the lasers with these older classifications have not been modified in any way, there is no requirement to reclassify them under the current system. If you require further advice then please contact your Laser Safety Officer.

Laser Pointer. This includes distance measures, spirit levels, temperature measuring devices and other device where a Class 2 laser is used for targeting, and where Class 2 is the maximum output of the device.

References

BS EN 60825-1:2014+A11:2021 Safety of laser products
HSE Guidance for Employers on the Control of Artificial Optical Radiation at Work Regulations (AOR) 2010
HSG95 The Radiation Safety of Lasers Used for Display Purposes

Introduction

This Policy should not be considered a definitive guide to the management of lasers and the requirements of the Regulations. Where any doubt exists as to the action to be taken, or advice or assistance is required, contact should be made with the University Laser Safety Officer.

Note that lasers in the class 1C are not covered by this document. Any intended use of class 1C lasers must be discussed with the Laser Safety Officer first.

Note that LED's and LED arrays are no longer part of BS EN60825-1 and are now included in PD IEC/TR 62471-3:2015 – Photobiological safety of lamps and lamp systems.

Management of Laser Safety

1. The Director of Health, Safety, and Business Continuity must ensure that a suitably competent person is appointed as the University Laser Safety Officer.

2. The University Laser Safety Officer will provide expert advice and guidance to students and staff, including providing assurance to the University that laser safety is being appropriately managed.

This includes working with Department Laser Safety Officers (DLSO) to implement, monitor and review the management arrangements in place.

The Laser Safety Officer will carry out an annual audit on Departments that operate lasers.

3. Heads of Departments operating hazardous lasers must ensure that they are managed appropriately.

This includes:

- Ensuring that risks associated with lasers are assessed and managed.
- Implementing a process to ensure that any person who is required to work with lasers is trained and authorised.
- Implementing procedures for reporting any incidents or accidents involving lasers.
- Escalate any health and safety issues that cannot be resolved to the Faculty Dean.

4. Heads of Departments operating hazardous lasers must appoint one or more Department Laser Safety Officers (DLSO).

A DLSO will also be appointed where lasers embedded in equipment, when serviced, could expose persons to laser radiation of Class 3A and above. The University Laser Safety Officer must be informed in writing of any appointment and will ensure that the individual has received sufficient training to carry out their role effectively.

5. Heads of Department must inform the University Laser Safety Officer when they plan to purchase or dispose of any laser of Class 3A or above.

Heads of Department will ensure that all lasers (except those of low power Class 1 and laser pointers of Class 2) are registered with the University Laser Safety Officer by completing the University's 'Registration of Laser' form (see Appendix 4). Any person wishing to bring a laser of Class 3 or 4 onto University premises, either by purchase, loan or transfer, must obtain written authorisation from the University Laser Safety Officer.

Where a laser is to be purchased, this permission must be sought no less than 3 weeks before the order is placed. Where a laser is to be transferred from another establishment, this permission must be sought no less than 3 weeks before the recipient formally agrees to the transfer. This time period will allow the University Laser Safety Officer to assess any safety requirements of the laser.

Some lasers contain harmful substances and must be disposed of through a licenced waste contractor and the Laser Safety Officer will be able to give advice on requirements.

6.	Department Laser Safety Officers (DLSO) must be competent to carry out their duties effectively.

The duties of this role can be found in Appendix 1.

Use of Lasers

7.	Staff and students using hazardous lasers must be competent to do so.

All Principal Investigators and Research Assistants using hazardous lasers must attend a training course provided by the University Laser Safety Officer, or equivalent.

Other users of hazardous lasers (i.e. postgraduates and undergraduates) will be given training by the University Laser Safety Officer (LSO), followed by further instruction on use of the equipment from their supervisor.

Staff who use laser pointers that are Class 2 do not have to be registered but must be issued with the Code of Practice for Laser Pointers and Pens (see also section 15 of this document).

In addition, all registered laser workers using lasers of Class 3 or above should read any relevant sections of IEC 60825-1 as they identify important aspects of laser safety.

Principle Investigators must also ensure that staff under their supervision who use lasers are issued with relevant Codes of Practice.

The provided information, instruction and training (including refresher training) must be suitable and sufficient, including providing an understanding of the risks to health created by exposure and the precautions identified as necessary to ensure safe use.

8.	Staff and students using hazardous lasers must be authorised to do so.

Staff and students required to work with hazardous lasers must be authorised to undertake such activities. Such authorisation shall require completion of the University 'Laser Personal Registration' form (see Appendix 3) which shall be completed in full, signed by the user, and countersigned by the DLSO. Copies of completed forms will be retained in the department and with the University Laser Safety Officer.

9.	Undergraduate use of lasers must be restricted to Class 1 and 2 unless written approval is provided by the University Laser Safety Officer.

The University Laser Safety Officer will ensure that undergraduates carrying out this work are registered and that the risk assessment for the work is suitable and sufficient. Students must not use lasers of these classes at any time when unsupervised.

10. Lasers must not be accessible to undergraduates at any time other than when they are being used as part of approved experimental work.

11. Use of any hazardous laser must be risk assessed.

The University 'Laser Survey' form (see Appendix 5) and accompanying notes (see Appendix 6) can be used to assist with the risk assessment process. It identifies essential control measures as required by BS EN60825-1.

Where the risk assessment identifies that risk controls are required which are outside those currently provided, then the laser shall not be brought into service/use until the requirements identified to be necessary by this assessment have been implemented.

Completed risk assessments, and other relevant documentation (i.e. Codes of Practice) shall be held in the immediate vicinity in which the laser is in use. This will ensure they are available for reference purposes during use, and such other means as may be appropriate for the restriction of exposure.

Where work with lasers is to be carried out the exposure must be restricted so far as reasonably practicable. This will be achieved by ensuring that the following hierarchy of risk control measures is in place:

- Engineering Controls – controlling exposure to staff, students and others through physical controls such as interlocks and enclosure.
- Safe systems of work – the production and promulgation of clear and concise information, written codes of practice, instruction, training, and supervision.
- Personal Protective Equipment – in the event that exposure cannot be adequately controlled by engineering controls and safe systems of work, personal protective equipment must be provided to further restrict exposure.

It is important to introduce students to good safety practice and the DLSO and the lecturer in charge should conduct a risk assessment and draw up a written 'Code of Practice' for each experiment or demonstration. A copy of this code of practice should be displayed in a position where it can be clearly seen by persons carrying out the experiment or demonstration. In addition clear written instructions should be provided for each student experiment.

12. A code of practice must be produced for all work involving lasers of Class 3R (when used in non-visible wavelengths), 3B, 3B** and 4, where the beam paths are not totally enclosed.

The Code will identify the necessary precautions for the containment of laser light inside the experimental area in order to ensure the protection of users and others. In addition, it will identify all personnel who are authorised to use the laser.

13. The University Laser Safety Officer must be informed of any accidents or incidents involving lasers.

If there is suspected eye damage, then Occupational Health Provider must be informed so that an assessment of the injury can be carried out, including an eye examination if required.

14. Where PPE is required, the risk assessment must identify the required standard based on the wavelength and power of the laser.

The Laser Safety Officer can provide guidance on the appropriate standards for PPE.

Where the need for protective clothing is identified, then the hands and forearms are the area's most at risk and must be appropriately covered.

15. All Staff using laser pointers must be provided information about their safe use.

Lasers pointers and pens above Class 2 are a significant risk to persons and their use is, therefore, prohibited.

For laser pointers up to and including Class 2, each user shall be issued with a copy of the University's Code of Practice for Laser Pointers and Pens (see Appendix 7).

Students should not use any personally owned laser pointers. If they require one for a talk or presentation, then this should be issued by the relevant department.

Visiting lecturers may use their own laser pointers provided that they are Class 2 or below. The visitor must be issued with the Code of Practice before any lecture.

16. Staff using lasers for entertainment and display purposes must ensure they are operated in line with the appropriate HSE guidance.

All persons attending such a display must be protected from either accidental or reckless exposure. Lasers that are used on campus for display purposes must be operated in accordance with the HSE guidance document HSG 95 The Radiation Safety of Lasers Used for Display Purposes.

Further advice on the use of entertainment and display lasers can be obtained from the University Laser Safety Officer.

Douglas Searle
Director of Health, Safety, and Business Continuity
Version 7

Approved by: University Health, Safety and Security Committee
Date: 13 November 2025
Review Risk: Medium (3 years)
To be reviewed: November 2028

Appendices:

Appendix 1 - Duties of Departmental Laser Safety Officers
Appendix 2 - Radiation Safety Group - Membership & Constitution
Appendix 3 - Laser Personal Registration form
Appendix 4 - Registration of Laser form
Appendix 5 - Laser Survey form
Appendix 6 - Accompanying notes to the Laser Survey Form
Appendix 7 - Code of Practice - Laser Pointers and Pens

Roles and Responsibilities

Director of Health, Safety, and Business Continuity	
1.	The Director of Health, Safety, and Business Continuity must ensure that a suitably competent person is appointed as the University Laser Safety Officer.

University Laser Safety Officer	
2.	The University Laser Safety Officer will provide expert advice and guidance to students and staff, including providing assurance to the University that laser safety is being appropriately managed.
9.	Undergraduate use of lasers must be restricted to Class 1 and 2 unless written approval is provided by the University Laser Safety Officer.
12.	A code of practice must be produced for all work involving lasers of Class 3R (when used in non-visible wavelengths), 3B, 3B** and 4, where the beam paths are not totally enclosed.
13.	The University Laser Safety Officer must be informed of any accidents or incidents involving lasers.
15.	All Staff using laser pointers must be provided information about their safe use.

Heads of Department	
3.	Heads of Departments operating hazardous lasers must ensure that they are managed appropriately.
4.	Heads of Departments operating hazardous lasers must appoint one or more Department Laser Safety Officers (DLSO).
5.	Heads of Department must inform the University Laser Safety Officer when they plan to purchase or dispose of any laser of Class 3A or above.
13.	The University Laser Safety Officer must be informed of any accidents or incidents involving lasers.

Department Laser Safety Officer	
6.	Department Laser Safety Officers (DLSO) must be competent to carry out their duties effectively.
7.	Staff and students using hazardous lasers must be competent to do so.
10.	Lasers must not be accessible to undergraduates at any time other than when they are being used as part of approved experimental work.
11.	Use of any hazardous laser must be risk assessed.
13.	The University Laser Safety Officer must be informed of any accidents or incidents involving lasers.
14.	Where PPE is required, the risk assessment must identify the required standard based on the wavelength and power of the laser.
15.	All Staff using laser pointers must be provided information about their safe use.

PI's and Supervisors	
7.	Staff and students using hazardous lasers must be competent to do so.

8.	Staff and students using hazardous lasers must be authorised to do so.
10.	Lasers must not be accessible to undergraduates at any time other than when they are being used as part of approved experimental work.
11.	Use of any hazardous laser must be risk assessed.
13.	The University Laser Safety Officer must be informed of any accidents or incidents involving lasers.
14.	Where PPE is required, the risk assessment must identify the required standard based on the wavelength and power of the laser.

Postgraduate students	
7.	Staff and students using hazardous lasers must be competent to do so.
8.	Staff and students using hazardous lasers must be authorised to do so.
10.	Lasers must not be accessible to undergraduates at any time other than when they are being used as part of approved experimental work.
11.	Use of any hazardous laser must be risk assessed.
13.	The University Laser Safety Officer must be informed of any accidents or incidents involving lasers.
14.	Where PPE is required, the risk assessment must identify the required standard based on the wavelength and power of the laser.

Undergraduate students	
7.	Staff and students using hazardous lasers must be competent to do so.
8.	Staff and students using hazardous lasers must be authorised to do so.
9.	Undergraduate use of lasers must be restricted to Class 1 and 2 unless written approval is provided by the University Laser Safety Officer.
10.	Lasers must not be accessible to undergraduates at any time other than when they are being used as part of approved experimental work.
13.	The University Laser Safety Officer must be informed of any accidents or incidents involving lasers.

Those organising events	
16.	Staff using lasers for entertainment and display purposes must ensure they are operated in line with the appropriate HSE guidance.