# 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.

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| 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**

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| 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.

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| 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.

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

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

# DUTIES OF DEPARTMENTAL LASER SAFETY OFFICERS

(Appendix 1)

This document summarises the duties of Departmental Laser Safety Officers.

Departmental Laser Safety Officers will:

1.1 Assist their Head of Department in ensuring that all work with lasers within the Department is carried out in accordance with the University's Laser Safety Policy and Procedure.

1.2 Authorise persons required to work with lasers of Class 1M, 2M, 3 (including 3A, 3R, 3B, 3B*, 3B** & III) or Class 4 by way of a counter signature on the University's 'Laser Personal Registration' form (see Appendix 3).

1.3 Supervise the acquisition and purchase of lasers, ensuring that the University Laser Safety Officer is notified before acquisition or purchase, where required.

1.4 Assist managers and other key personnel with the risk assessment process.

1.5 Observe and audit, at least six monthly, all procedures within the department involving lasers, including engineering controls, safe systems of work and personnel protection.

1.6 Investigate and report to the University Laser Safety Officer, without delay, any accident/incident involving lasers.

1.7 Ensure that any required action identified in reports of either the University Laser Safety Officer or the Radiation Protection Adviser (RPA) are actioned within prescribed timescales, and where necessary, to involve the Head of Department to assist with completion of such actions.

1.8 Assist the Head of Department to identify the training needs of individual staff that are required to undertake work involving lasers as prescribed by the risk assessment process.

1.9 Maintain records of all lasers held and locations, at all times.

1.10 Supervise the removal and disposal of lasers from the department, and notify the University Laser safety Officer where necessary.

1.11 Liaise with the Head of Department and departmental Health and Safety Co-ordinator, as required, on matters relating to lasers.

1.12 Co-operate with inspectors of the relevant enforcement authorities during their visits and inspections.

1.13 Represent their department at meetings of the Radiation Safety Group.

Version 3
18th July 2025

# RADIATION SAFETY GROUP
## TERMS OF REFERENCE
(Appendix 2)

| | | | |
|---|---|---|---|
| Membership | 7 | Quorum | 4 |

| | |
|---|---|
| *Chair* | University Radiation Protection Officer |
| *Ex Officio* | Radiation Protection Supervisor from School of Biological Sciences<br>Radiation Protection Supervisor from Department of Earth Sciences<br>Radiation Protection Supervisor from Department of Geography<br>Departmental Laser Safety Officer from Department of Earth Sciences<br>Departmental Laser Safety Officer from the School of Biological Sciences |
| *Secretary* | Radiation Protection Supervisor from Department of Physics (and University Laser Safety Officer). |

### 1. TERMS OF REFERENCE

Specific functions of the Group shall be:

a) To discuss the introduction of new Regulations, Approved Codes of Practice and guidance and the implication for their adoption at both University and Departmental level.

b) Review the significant findings of radiation audits undertaken by the University's Radiation Protection Adviser.

c) To review and agree health and safety performance standards in relation to ionising and non-ionising radiation, such as policies and procedures.

d) To assist with the development of health and safety guidance and 'safe systems of work' in relation to ionising and non-ionising radiation.

e) To consider the effectiveness of training in relation to work involving ionising and non-ionising radiation.

f) To consider reports and information provided by inspectors of the enforcing authorities (i.e. Health and Safety Executive and Environment Agency).

g) To consider those matters arising at Departmental level and having failed to have been resolved within a reasonable period

**Reports to:** University Health and Safety Consultative Committee

### 2. PROCEDURE IN THE EVENT OF TEMPORARY ABSENCE OF A MEMBER OF THE GROUP

It is the responsibility of any member unable to attend a meeting to make arrangements for a person to attend on their behalf from within their respective area of representation, ensuring that person is suitably briefed.

## 3. TEMPORARY ATTENDANCE AT MEETINGS

The Chair may permit other people from outside of the Group to attend a meeting for a specific item, the purpose of which will be to assist members with consideration of it (e.g. University Radiation Protection Adviser for specialist radiation advice and the University Occupational Health Doctor for specialist medical advice). In such cases, requests and arrangements shall be made via the Chair.

## 4. FREQUENCY AND DURATION OF MEETINGS

Meetings shall be held three times a year, normally in September, January and May and at least two weeks prior to the University Health and Safety Consultative Committee. The exact date and starting time of each is to be identified by the Chair and Secretary. It is expected that meetings will be conducted within a period not exceeding 90 minutes, other than in exceptional circumstances and as identified necessary by the Chair.

## 5. PROCEDURE FOR:

### a) SUBMISSION OF AGENDA ITEMS

Members will be given at least four weeks notice of meetings by the Secretary. Items for consideration are to reach the Secretary no later than fourteen days prior to the meeting, for inclusion on the agenda.

### b) CIRCULATION OF AGENDAS

The Secretary shall circulate the agenda to members seven days in advance of the meeting.

### c) CIRCULATION OF MINUTES OF MEETING

The Secretary will circulate minutes of the last meeting within four weeks of it having taken place. Copies will be sent to all Group members, and to the University Radiation Protection Adviser for information.

Douglas Searle
Director of Health, Safety and Business Continuity
Version 5
10/10/2025

**LASER PERSONAL REGISTRATION FORM**
**(In accordance with the University Laser Safety Policy)**
**(Appendix 3)**

Any person required to work with lasers of Class 1M, 2M, 3(including 3A, 3R, 3B, 3B*, 3B** and III) or Class 4 (IV) must be authorised to undertake such activities.

If you intend to work with any of the above lasers, please complete this form in full and return to your Departmental Laser Safety Officer (DLSO) at least 10 days before your proposed starting date.

| Section A – for completion by the registration applicant | | | | | |
|---|---|---|---|---|---|
| Personal Details | | | | | |
| Full name and title (i.e. Mr, Mrs, Dr etc) | Click or tap here to enter text. | | | | |
| Department: | Click or tap here to enter text. | | | | |
| Position: | Click or tap here to enter text. | | | | |
| Name of Supervisor: | Click or tap here to enter text. | | | | |
| Details of the work exposure | | | | | |
| Lasers to be used:<br>Click or tap here to enter text. | | | | | |
| Experiments to be performed:<br>Click or tap here to enter text. | | | | | |
| Training | | | | | |
| Please give details of any training you have received for work involving lasers or any information, instruction and training that will be given for the proposed work:<br>Click or tap here to enter text. | | | | | |
| Declaration by Applicant | | | | | |
| I have read and will work in accordance with the University Policy relating to lasers. I also confirm that I have attended a training course provided by the University Laser Safety Officer, or equivalent, and will follow this guidance when working with lasers. | | | | | |
| Signed: | Click or tap here to enter text. | Print name: | Click or tap here to enter text. | Date: | Click or tap to enter a date. |
| **Section B – for completion by the Departmental Laser Safety Officer** | | | | | |
| I have checked the entries on this form and support the application for registration | | | | | |
| Signed: | Click or tap here to enter text. | Print name: | Click or tap here to enter text. | Date | Click or tap to enter a date. |

PLEASE SEND COPY OF COMPLETED FORM TO THE UNIVERSITY LASER SAFETY OFFICER

Version 4
13/10/2025

**REGISTRATION OF LASER FORM**
**(in accordance with the University Laser Safety Policy)**
**(Appendix 4)**

All lasers (except those of low power Class 1 and laser pointers of Class 2) must be registered with the University Laser Safety Officer by completing this form (in full).

If you intend to bring a laser of Class 3 or 4 onto University premises, either by purchase, loan or transfer, please note that you must obtain written authorisation from the University Laser Safety Officer at least 3 weeks prior to the delivery/arrival date.

| Section A – for completion by person registering the laser | | | | | |
|---|---|---|---|---|---|
| Laser Details | | | | | |
| Make and Model: | Click or tap here to enter text. | | | | |
| Serial Number: | Click or tap here to enter text. | | | | |
| Type (e.g. He-Ne, Ga-As, Ruby, etc): | Click or tap here to enter text. | | | | |
| Mode (e.g. CW, Pulsed, Q-Switched): | Click or tap here to enter text. | | | | |
| Pulse duration: | Click or tap here to enter text. | | | | |
| Repetition frequency: | Click or tap here to enter text. | | | | |
| Wavelengths used: | Click or tap here to enter text. | | | | |
| Maximum power output: | Click or tap here to enter text. | | | | |
| Beam diameter: | Click or tap here to enter text. | | | | |
| Beam divergence: | Click or tap here to enter text. | | | | |
| Description of the laser | | | | | |
| Click or tap here to enter text. | | | | | |
| Location and responsible person | | | | | |
| Department: | Click or tap here to enter text. | | | | |
| Responsible person: | Click or tap here to enter text. | | | | |
| Laboratory where used (building and room number) | Click or tap here to enter text. | | | | |
| Person registering laser | | | | | |
| Print name | Click or tap here to enter text. | | | Date: | Click or tap to enter a date. |
| **Section B – for completion by the University Laser Safety Officer** | | | | | |
| Class: | Click or tap here to enter text. | | | | |
| Date inspected: | Click or tap to enter a date. | | | | |
| Observations:<br>Click or tap here to enter text. | | | | | |
| Signed: | Click or tap here to enter text. | Print Name | Click or tap here to enter text. | Date: | Click or tap to enter a date. |

FOLLOWING COMPLETION OF **SECTION A** PLEASE SEND FORM TO BOTH YOUR DEPARTMENTAL LASER SAFTY OFFICER AND THE UNIVERSITY LASER SAFETY OFFICER

Version 4
13/10/2025

**LASER SURVEY FORM**
**(in accordance with the University Laser Safety Policy)**
**(Appendix 5)**

The University 'Laser Survey' form can be used to assist with the risk assessment process. It identifies essential control measures as required by BS EN60825-1. The risk assessment should investigate each of the control measures and assess their level of compliance.

| Laser Survey Form | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Name of person completing this form: | Click here to enter text. | | | | | | | | | |
| Date: | Click here to enter text. | | | | | | | | | |
| Department: | Click here to enter text. | | | | | | | | | |
| Laboratory: | Click here to enter text. | | | | | | | | | |
| Details of the laser | | | | | | | | | | |
| Make: | Click here | | | Mode: | Click here | | | | | |
| Model: | Click here | | | Wavelength: | Click here | | | | | |
| Serial Number: | Click here | | | Maximum power: | Click here | | | | | |
| Type: | Click here | | | Class: | Click here | | | | | |
| Control Measures | | | | | | | | | | |
| User precautions | Class 1 | Class 1M | Class 2 | Class 2M | Class 3A | Class 3B* | Class 3R | Class 3B(**) | Class 4 | Class 1(E) |
| Remote interlock | | | | | | | | | | |
| Key control | | | | | | | | | | |
| Emission indicator | | | | | | | | | | |
| Beam shutter | | | | | | | | | | |
| Beam stop | | | | | | | | | | |
| Beam level | | | | | | | | | | |
| Beam enclosure | | | | | | | | | | |
| Eye protection | | | | | | | | | | |
| Protective clothing | | | | | | | | | | |
| Eye examinations | | | | | | | | | | |
| Training | | | | | | | | | | |
| Laser labels | | | | | | | | | | |
| Door signs | | | | | | | | | | |
| | Mandatory control measure. Confirm control measure has been implemented | | | | | | | | | |
| | Assess need for this control measure as part of the risk assessment | | | | | | | | | |
| | Control measure required | | | | | | | | | |
| Details of control measures | | | | | | | | | | |
| Click here | | | | | | | | | | |
| Recommendation/further action required | | | | | | | | | | |
| Click here | | | | | | | | | | |

PLEASE RETAIN THIS COMPLETED LASER SURVEY FORM WITH THE RISK ASSESSMENT

Version 4
13/10/2025

**Notes accompanying the University 'Laser Survey' form**
(Appendix 6)

Please refer to the control measure key (red, orange and green colour coding system) when deciding what control measures are necessary for the laser in question. Precautions indicated on the table required for Class 3B** lasers are the same as those for Class 3B lasers.

a) Remote interlock: interlocked to the door or the enclosure that will execute a controlled shut down of the laser – required for all Class 3B, 3B** and Class 4 lasers.

b) Key control: all Class 3B, 3B** and Class 4 lasers must be provided with a key control to ensure that only authorised personnel use the laser.

c) Emission indicator: all Class 3B, 3B** and Class 4 lasers must have this control measure. The requirement should be assessed for Class 1(E), 3A and 3R lasers, particularly if they have high power or invisible radiation. The indicator may also be sited outside the lab to give a warning that the laser is in use.

d) Beam shutter: must be provided for all Class 3B, 3B** and Class 4 lasers. Should be considered for Class 3A and 3R lasers where the laser radiation is high powered or invisible.

e) Beam stop: required for Class 3B, 3B** and Class 4 to ensure that inadvertent exposure of bystanders to laser radiation is avoided. In addition, for all other classes of laser the beam should be terminated at the end of its useful path.

f) Beam level: avoid eye level for all classes.

g) Beam enclosure: needed to guard against specular reflection from Class 3B, 3B** and Class 4 lasers, and inadvertent exposure to Class 3A, 3B* and 3R lasers. It can mean anything from screening the experimental area or beam up to a total enclosure, though sometimes this is not achievable.

h) Eye protection: may be required for Class 3B, 3B** and Class 4 lasers, and Class 3R lasers operating outside the visible range where exposure to the laser beam is possible.

i) Protective clothing: mainly required for Class 4 lasers, may be necessary with other classes.

j) Eye examinations: only required after an accident but may be provided for people working with Class 3B, 3B** and Class 4 lasers.

k) Training: Training should be given to all persons working with Class 1M and 2M lasers under special conditions, and all Class 3A, 3R, 3B, 3B** and Class 4 lasers.

l) Laser labels: all lasers must display the appropriate labels.

m) Door signs: required for all laser areas where Class 3B, 3B** or Class 4 lasers are used, and are recommended for all fixed or semi-permanent laser installations.

Version 3
01/06/2017

# Code of Practice – Laser Pointers and Pens

(Appendix 7)

This Code of Practice applies to the use of laser pointers and pens. The misuse of lasers of any class can directly or indirectly result in serious injury and their misuse or use with malicious intent will constitute a disciplinary offence.

1. Laser pointers and pens of Class 2 and below do not need to be registered with the University Laser Safety Officer.

2. Laser pointers and pens above Class 2 are not to be used under any circumstances.

3. Use of personal laser pointers and pens will be limited to members of staff and PhD and equivalent students. Undergraduates who wish to use laser pointers or pens for presentation purposes should be supplied with one by their Departmental Office. Visiting lecturers may use their own laser pointers provided they are Class 2 or below.

4. Any laser pointer and pen must be clearly marked with its classification and other relevant information.

5. Laser pointers and pens of Class 2 have the potential to cause damage to the eye and the following must be complied with:

    i) Under no circumstances should the pointer/pen be directed towards any person (e.g. an individual within the audience).
    ii) Unless dictated by the nature of the presentation the room should not be entirely blacked out.
    iii) A visual check of the room must be carried out before the presentation to ensure that there are no reflective surfaces which might divert the beam back into the audience or towards the presenter.
    iv) In the event that any person (i.e. the presenter or a member of the audience) suffers an exposure to the eye from the laser beam, then the Health Centre and the Director of Health and Safety should be informed immediately. If necessary, they will arrange for an eye examination to be carried out within 24 hours at an appropriate hospital.

Note: Although most laser pointers are marked with a class number, there have been instances of pointers/pens exceeding the stated Class. Also, American classifications differ slightly from the European system.

Version 5
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