



SAFE USE OF ARTIFICIAL OPTICAL RADIATION LIGHT SOURCES

This Policy Standard states the requirements placed on the University and its Colleges and Professional Services with regards to the safe use of hazardous artificial optical radiation light sources, in compliance with the Control of Artificial Optical Radiation at Work Regulations.

The Policy Standard applies to:

- *The University and its Colleges and Professional Services.*
- *All equipment producing hazardous artificial optical radiation (infrared, visible and ultraviolet (UV)).*
- *All staff, students, contractors and visitors who could be affected by artificial optical radiation whilst working / studying or visiting the University.*

The Policy Standard does not consider:

- *The use of lasers (see dedicated laser safety information).*

Approved by Health & Safety Committee:	23 rd May 2018
Date of Implementation:	23 rd May 2018

1. POLICY STATEMENT

It is the policy of Bangor University, so far as is reasonably practicable, but in accordance with the relevant legislation, statutory requirements and good practice, to ensure the health and safety of staff, students and visitors to the University.

2. INTRODUCTION

In addition to those general duties in law, the University and its constituent Colleges and Professional Services, has a specific obligation under the Control of Artificial Optical Radiation at Work Regulations (AOR) to ensure no person is harmed as a result of exposure to artificial optical radiation.

Lasers are excluded from this Policy – please refer to specific Laser Policy & Guidance.

3. TERMINOLOGY AND DEFINITIONS

For the purpose of this Policy Standard the following terms and definitions apply:

- i. *Artificial Optical Radiation (AOR)*: Includes light emitted from all artificial sources, i.e. light in all its forms such as ultraviolet, infrared and laser beams¹, but excluding sunlight. This Policy concentrates on the potentially hazardous forms of AOR.

4. BACKGROUND AND INFORMATION

Optical radiation is another term for light, covering ultraviolet (UV) radiation, visible light and infrared radiation. Any man-made source of light, whether visible or invisible, is considered to be artificial optical radiation.

Optical radiation is absorbed in the outer layers of the body. The risk posed by optical radiation depends on the type of radiation, its intensity and the part of the body exposed. The areas of the body most at risk are the skin and the eyes. Exposure of the eyes to optical radiation can damage the cornea and lens. The effects on the skin range from redness, burning, blistering and accelerated ageing through to various types of skin cancer.

Adverse effects from artificial sources of optical radiation are rare as they are well controlled, with the hazards from the majority of workplace light sources considered trivial, presenting little or no risk of causing injury or ill health.

Everybody will be exposed to optical radiation. One of the challenges is to ensure sources that may present an exposure risk in excess of the stated Exposure Limit Values are adequately assessed without the burden of having to assess the majority of so-called 'safe light' sources that do not present a risk under reasonably foreseeable circumstances.

5. DUTIES OF THE UNIVERSITY

In accordance with the University's Health and Safety Policy, day to day managerial responsibility for health and safety has been delegated to each College and Professional Service. It is the responsibility of these to implement this Policy Standard and associated guidance, as applicable to their activities.

¹ See Safe Use of Lasers Policy Standard for specific laser guidance

6. ALL COLLEGES / PROFESSIONAL SERVICES RESPONSIBILITIES

Each College and Professional Service is required to identify hazardous sources of artificial optical radiation. **Only** if hazardous substances are identified are they required to introduce the following management arrangements to reduce the risk of harm to the eyes and skin from hazardous light sources within their areas of control²:

- a) Assess the risk to operators and others from hazardous sources (*paying particular attention to pre-existing medical conditions of the eye which may increase a person's vulnerability of risk*);
- b) Put in place appropriate controls to reduce the risk of harm to the eyes and skin of operators and others affected to as low as reasonably practicable. For example:
 - i. Use an alternative, safer light source.
 - ii. Use filters, screens, remote viewing, curtains, safety interlocks, remote controls and time delays.
 - iii. Establish dedicated rooms. Restrict access to areas.
 - iv. Issue suitable personal protective equipment which protects against the type of light (e.g. UV) and which is suitable for the user (eg size).
 - v. Demarcate areas with suitable warning signs.
- c) Seek advice from central Health and Safety if the Risk Assessment indicates there is a risk of adverse health effects to the skin or eyes, or where a person has a particular health vulnerability that may be adversely impacted by an exposure;
- d) Undertake 3-monthly, recorded checks of any safety critical device eg safety interlocks; and,
- e) Provide appropriate instruction and training to any person at risk of exposure from hazardous light sources which includes:
 - i. The risks.
 - ii. Measures taken in order to reduce exposure.
 - iii. The findings of the Risk Assessment.
 - iv. Detecting and reporting adverse health effects.
 - v. Health Surveillance (if required).
 - vi. Safe working practices.
 - vii. The correct use of personal protective equipment.

7. STAFF, STUDENTS, CONTRACTORS AND VISITORS RESPONSIBILITIES

As with those duties placed upon the University and its Colleges / Professional Services, staff, students, visitors and contractors also have responsibilities in law. With regards to this Policy they must:

- a) Follow all management controls implemented by the relevant College / Professional Service.
- b) Only use systems they have been instructed and / or trained and authorised to operate, including associated protective devices and personal protective equipment.
- c) Not interfere with or mis-use systems put in place to protect against exposure to hazardous sources of artificial optical radiation.

² At the University such would generally be UV light sources. Colleges / Professional Services should contact Health and Safety Services if hazardous infrared sources are identified

- d) Immediately report concerns with general arrangements or defects with any light source or control put in place to manage risk to an appropriate person.
- e) Advise supervisors and local H&S Officers/Coordinators of a pre-existing medical condition, particularly of the eye, that should be considered in the risk assessment.

8. FURTHER INFORMATION AND PRACTICAL GUIDANCE

The following Information Sheet is available which provides practical guidance on the action Colleges / Professional Services need to take to meet the requirements of this Standard:

- Information Sheet: Managing Ultraviolet Light Risks Generated by Science and Engineering Equipment.

9. EQUALITY ASSURANCE

It is recognised that there may be a requirement to treat *'persons with a pre-existing medical condition of the eye'* differently in order to safeguard them from potential adverse impacts of exposure to optical radiation, particularly UV.

10. REVIEW AND AUDIT PROCEDURES

Health and Safety Services will carry out general and periodic audits to assess compliance against this Policy Standard and legislation in general.

Colleges / Professional Services must periodically review their own procedures to ensure the requirements of this Policy Standard are implemented, suitable and effective.

In addition, the University's Health and Safety Committee may from time to time review the effectiveness of the University's system for the management of hazardous artificial optical radiation sources across Colleges and Professional Services.

End.