Control of Artificial Optical Radiation at Work Regulations 2010 (SI 2010 No. 1140)

Amending Legislation
None as yet.

Summary
These Regulations implement in Great Britain European Directive 2006/25/EC on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation). They impose duties on employers to protect both employees who may be exposed to risk from exposure to artificial optical radiation (AOR) at work and other persons at work who might be affected by that work. A specific form of risk assessment is required where there is a reasonably foreseeable risk of adverse health effects to the eyes or skin and where those risks have not already been eliminated or controlled. In these circumstances there is also a duty to eliminate, or where this is not reasonably practicable, to reduce the risk to as low a level as is reasonably practicable. Specific control measures are required.

AOR includes light emitted from all artificial sources in all its forms such as ultraviolet, infrared and laser beams, but excludes sunlight. It is likely that workers will be exposed to some form of artificial light at work, whether from general lighting, equipment or from a work process. The majority of light sources are safe, but some forms of artificial light can be harmful to workers unless protective measures are in place.

Note: HSE Guidance for Employers on the Control of Artificial Optical Radiation at Work Regulations (AOR) 2010 (available on the HSE website) will help decide whether workers are already adequately protected, or whether more should be done.

Citation and Commencement (Reg. 1(1))
The Regulations cited as the Control of Artificial Optical Radiation at Work Regulations 2010 came into force on 27 April 2010.

Interpretation (Reg. 1(2))
AOR means any electromagnetic radiation in the wavelength range between 100nm and 1mm which is emitted by non-natural sources.

The exposure limit values mean:
♦ for non-coherent radiation, those exposure limit values set out in Annex I to the Directive; and

Health surveillance means assessment of the state of health of an employee, as related to exposure to artificial optical radiation and its effects on the skin.

Irradiance means the radiant power incident per unit area upon a surface expressed in watts per square metre (Wm-2).

Laser (i.e. light amplification by stimulated emission of radiation) means any device which can be made to produce or amplify electromagnetic radiation in the optical radiation wavelength range primarily by the process of controlled stimulated emission.

Laser radiation means artificial optical radiation from a laser.

Non-coherent radiation means any artificial optical radiation other than laser radiation.

Radiance means the radiant flux or power output per unit solid angle per unit area expressed in watts per square metre per steradian (Wm-2 sr-1).

Radiant exposure means the time integral of the irradiance, expressed in joules per square metre (Jm-2).

Application (Reg. 2)
(1) Where a duty is placed on an employer in respect of its employees, the employer must, so far as is reasonably practicable, be under a like duty in respect of any other person at work who may be affected by the work carried out by the employer, except that the duties of the employer:

(a) under Regulation 5 (information and training) do not extend to persons who are not its employees, unless those persons are present in the workplace where the work is being carried out; and

(b) under Regulation 6 (health surveillance) do not extend to persons who are not its employees.

(2) These Regulations do not apply to the master or a crew of a ship, or to the employer of such persons, in respect of the normal shipboard activities of a ship’s crew which are carried out solely by the crew under the direction of the master, and for the purposes of this paragraph “ship” includes every description of vessel used in navigation, other than a ship forming part of Her Majesty’s Navy.
Risk Assessment (Reg. 3)

(1) Where:
(a) the employer carries out work which could expose any of its employees to levels of AOR that could create a reasonably foreseeable risk of adverse health effects to the eyes or skin of the employee; and
(b) that employer has not implemented any measures to either eliminate or, where this is not reasonably practicable, reduce to as low a level as is reasonably practicable, that risk based on the general principles of prevention set out in Schedule 1 to MHSWR 1999;
the employer must make a suitable and sufficient assessment of that risk for the purpose of identifying the measures it needs to take to meet the requirements of these Regulations.

(2) The employer must as part of that risk assessment assess, and if necessary, measure or calculate, the levels of artificial optical radiation to which employees are likely to be exposed.

(3) In carrying out the assessment, measurement or calculation, the employer must follow the following standards or recommendations:
(a) for laser radiation, the standards of the IEC; or
(b) for non-coherent radiation, the standards of the IEC and the recommendations of the CIE and the CEN.

(4) In exposure situations which are not covered by those standards or recommendations, the assessment, measurement or calculation must follow national or international science-based guidelines.

(5) The assessment must also include consideration of:
(a) the level, wavelength and duration of exposure;
(b) the exposure limit values;
(c) the effects of exposure on employees or groups of employees whose health is at particular risk from exposure;
(d) any possible effects on the health and safety of employees resulting from interactions between artificial optical radiation and photosensitising chemical substances;
(e) any indirect effects of exposure on the health and safety of employees such as temporary blinding, explosion or fire;
(f) the availability of alternative equipment designed to reduce levels of exposure;
(g) appropriate information obtained from health surveillance, including where possible published information;
(h) multiple sources of exposure;
(i) any class 3B or 4 laser that is classified in accordance with the relevant IEC standard that is in use by the employer and any artificial optical radiation source that is capable of presenting the same level of hazard; and
(j) information provided by the manufacturers of artificial optical radiation sources and associated work equipment in accordance with the relevant European Union Directives.

(6) The risk assessment must be reviewed regularly if:
(a) there is reason to suspect that it is no longer valid; or
(b) there has been a significant change in the work to which the assessment relates.

(7) The employer must record:
(a) the significant findings of the risk assessment as soon as is practicable after it is made or changed; and
(b) the measures which have been taken and which the employer intends to take to meet the requirements of Regulations 4 and 5.

(8) In paragraphs (3) and (4):
(a) a reference to standards or recommendations is a reference to standards or recommendations as revised or reissued from time to time;
(b) “CEN” means the European Committee for Standardisation;
(c) “CIE” means the International Commission for Illumination; and
(d) “IEC” means the International Electrotechnical Commission.

(9) In paragraph (5)(a) “level” means the combination of irradiance, radiant exposure and radiance to which an employee is exposed.

Obligations to Eliminate or Reduce Risks (Reg. 4)

(1) An employer must ensure that any risk of adverse health effects to the eyes or skin of employees as a result of exposure to artificial optical radiation which is identified in the risk assessment is eliminated or, where this is not reasonably practicable, reduced to as low a level as is reasonably practicable.
(2) For the purposes of paragraph (1) measures to eliminate or reduce the risk must be based on the general principles of prevention set out in Schedule 1 to MHSWR 1999.

(3) If the risk assessment indicates that employees are exposed to levels of artificial optical radiation which exceed the exposure limit values, the employer must devise and implement an action plan comprising technical and organisational measures designed to prevent exposure exceeding the exposure limit values.

(4) The action plan must take into account:

(a) other working methods;
(b) choice of appropriate work equipment emitting less artificial optical radiation;
(c) technical measures to reduce the emission of artificial optical radiation including, where necessary, the use of interlocks, shielding or similar health protection mechanisms;
(d) appropriate maintenance programmes for work equipment, workplaces and workstation systems;
(e) the design and layout of workplaces and workstations;
(f) limitation of the duration and level of the exposure;
(g) the availability of personal protective equipment;
(h) the instructions of the manufacturer of the equipment where it is covered by relevant European Union Directives;
(i) the requirements of employees belonging to particularly sensitive risk groups.

(5) If, despite the measures taken under paragraphs (1) and (3), employees are still exposed to levels of artificial optical radiation that exceed the exposure limit values, the employer must take immediate action to:

(a) reduce exposure to below the exposure limit values;
(b) identify the reasons why employees have been exposed to levels which exceed the exposure limit values, and
(c) modify the measures taken in accordance with paragraph (3) to prevent employees being exposed again to levels which exceed the exposure limit values.

(6) and (7) demarcate, limit access to, and provide for appropriate signs in those areas where levels of artificial optical radiation are indicated in the risk assessment as exceeding the exposure limit values.

Information and Training (Reg. 5)

(1) If the risk assessment indicates that employees could be exposed to artificial optical radiation which could cause adverse health effects to the eyes or skin of employees, the employer must provide its employees and representatives with suitable and sufficient information and training relating to the outcome of the risk assessment, and this must include the following:

(a) the technical and organisational measures taken in order to comply with the requirements of Regulation 4;
(b) the exposure limit values;
(c) the significant findings of the risk assessment, including any measurements taken, with an explanation of those findings;
(d) why and how to detect and report adverse health effects to the eyes or skin;
(e) the circumstances in which employees are entitled to appropriate health surveillance;
(f) safe working practices to minimise the risk of adverse health effects to the eyes or skin from exposure to artificial optical radiation; and
(g) the proper use of personal protective equipment.

(2) The employer must ensure that any person, whether or not that person is an employee, who carries out work in connection with the employer’s duties under these Regulations has suitable and sufficient information and training.

Health Surveillance and Medical Examinations (Reg. 6)

(1) If the risk assessment indicates that there is a risk of adverse health effects to the skin of employees as a result of exposure to artificial optical radiation, the employer must ensure that such employees are placed under suitable health surveillance.

(2) Health surveillance pursuant to paragraph (1) must be carried out by a doctor or occupational health professional and the risk assessment must be made available to that doctor or occupational health professional.

(3) The employer must ensure that a health record of each of its employees who undergoes health surveillance pursuant to paragraph (1) is made and maintained and that the record or copy of it is kept available in a suitable form.

(4) The health record must contain a summary of the results of the health surveillance carried out.

(5) The employer must:

(a) on reasonable notice being given, allow an employee access to his or her personal health record; and
(b) provide the enforcing authority with copies of such health records as it may require.

(6) An employer must ensure that a medical examination is made available to an employee if:

(a) the risk assessment indicates that the employee has been exposed to levels of artificial optical radiation which exceed the exposure limit values; or

(b) as a result of health surveillance the employee is found to have an identifiable disease or adverse health effects to the skin which is considered by a doctor or occupational health professional to be the result of exposure to artificial optical radiation.

(7) Where an examination is carried out under paragraph (6), the employer must:

(a) ensure that a doctor or suitably qualified person informs the employee of the results of the examination which relate to the employee and provides advice on whether health surveillance may be appropriate;

(b) ensure that it is informed of any significant findings from any further health surveillance of the employee taking into account any medical confidentiality;

(c) review the risk assessment;

(d) review any measures taken to comply with Regulation 4 taking into account any advice given by a doctor or other suitably qualified person or the enforcing authority; and

(e) provide continued health surveillance if appropriate.