



National Standards Authority of Ireland

IRISH STANDARD

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ICS 31.260

**GUIDE TO LEVELS OF COMPETENCE
REQUIRED IN LASER SAFETY**

National Standards
Authority of Ireland
Glasnevin, Dublin 9
Ireland

Tel: +353 1 807 3800
Fax: +353 1 807 3838
<http://www.n Sai.ie>

Sales
<http://www.standards.ie>

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TECHNICAL REPORT

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English version

Guide to levels of competence required in laser safety

Recommandations pour les niveaux
de compétence requis pour la sécurité
des lasers

Leitfaden für die erforderlichen
Ausbildungslevel auf dem Gebiet
Lasersicherheit

This Technical Report was approved by CENELEC on 2005-01-08.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This Technical Report was prepared by the Technical Committee CENELEC TC 76, Optical radiation safety and laser equipment.

The text of the draft was submitted to the vote and was approved by CENELEC as CLC/TR 50448 on 2005-01-08.

1 Scope and object

1.1 Scope

This Guide has been prepared in order to provide information and guidance to employers and employees in organisations in which lasers are used. It is supplementary to the safety requirements specified in the EN 60825 series of standards on laser safety. The Guide outlines procedures for the management of laser hazards and defines levels of competence for those who work with laser equipment or who have responsibility for laser safety.

1.2 Object

The object of this Guide is to assist organisations in which lasers are used to adopt appropriate organisational arrangements covering the implementation and maintenance of effective control procedures as required by EN 60825-1 and by other standards in the EN 60825 series, and to ensure that persons using, controlling, or working with laser equipment, and those having responsibility for laser safety, have the necessary knowledge, understanding and ability to carry out their work without placing themselves or others at any undue health risk.

The Guide defines the employer's responsibility for laser safety, establishes a system of safety management to meet the practical needs of organisations using lasers, and sets out minimum standards of competence in order to help employers to determine the safety training needs of their employees.

2 References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 60825-1	<i>Safety of laser products – Part 1: Equipment classification, requirements and user's guide</i>
EN 60825-2	<i>Safety of laser products – Part 2: Safety of optical fibre communication systems</i>
EN 60825-4	<i>Safety of laser products – Part 4: Laser guards</i>
IEC 60825-8	<i>Safety of laser products – Part 8: Guidelines for the safe use of medical laser equipment</i>
IEC 60825-10	<i>Safety of laser products – Part 10: Laser safety application guidelines and explanatory notes</i>
EN 60825-12	<i>Safety of laser products – Part 12: Safety of free space optical communication systems used for transmission of information</i>
IEC 60825-14	<i>Safety of laser products – Part 14: A user's guide</i>
EN 60601-2-22	<i>Medical electrical equipment – Part 2: Particular requirements for the safety of diagnostic and therapeutic laser equipment</i>

3 Employer responsibilities

3.1 General

In any organisation in which lasers are in use, it is the employer's responsibility to take all reasonable steps to ensure that adequate safety controls are implemented and maintained, and that relevant safety information and training is provided to their employees.

General information with regard to the potential hazards arising from the use of laser equipment should be obtained in the first instance from the equipment supplier.

Suppliers of laser products have a duty to provide information to their customers on the safety of the products supplied, and should also ensure that their customers are aware of the existence of relevant safety standards and national regulations affecting the use of the products concerned.

Employees at all levels within organisations in which lasers are in use share responsibility for the safety of themselves and of others, but the employer must ensure that effective organisational and administrative safety arrangements are in place. Day-to-day implementation of these arrangements may be delegated to others through the line management structure, but the employer retains overall responsibility for ensuring that these arrangements remain adequate and that they are continuously in operation.

3.2 Safety arrangements

The arrangements for safety shall cover the following:

- the identification of laser and related hazards and the assessment of health risks that may arise from the laser equipment under all conditions of use, including
 - installation and set-up,
 - normal operation,
 - maintenance,
 - servicing and adjustment work,
 - fault situations,
 - foreseeable misuse,
 - removal and disposal;
- the implementation, monitoring and review of appropriate control procedures to eliminate these hazards or, where this is not practicable, to reduce the risk of harm to an acceptably low level;
- the provision of sufficient information, guidance, supervision and training to employees to ensure that the laser equipment is used in accordance with the procedures established, and only used by those who have an adequate knowledge and understanding of the hazards involved and of the need for the control procedures which have been established.

The policies adopted to implement these arrangements for the management and control of laser hazards should be documented and be made available to all employees who have any involvement with laser equipment.

3.3 Safety controls

The use of engineering controls for the elimination of laser hazards and the protection of employees should always be considered first. Where it is not feasible or reasonably practicable for such measures to provide adequate protection, then safe systems of work must be developed and implemented. If necessary, but only as a last resort where adequate protection cannot be provided by other means, suitable personal protective equipment (PPE) shall be provided by the employer. Such PPE may include, but is not limited to, laser protective eyewear. It is the employer's responsibility to

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