SLOVENSKI STANDARD
SIST EN 60825-1:2014

01-oktober-2014

Nadomešča:
SIST EN 60825-1:2009

Varnost laserskih izdelkov - 1. del: Klasifikacija opreme in zahteve (IEC 60825-1:2014)

Safety of laser products - Part 1: Equipment classification and requirements

Sicherheit von Lasereinrichtungen - Teil 1: Klassifizierung von Anlagen und Anforderungen

Sécurité des appareils à laser - Partie 1: Classification des matériels et exigences

Ta slovenski standard je istoveten z: **EN 60825-1:2014**

ICS:

13.280	Varstvo pred sevanjem	Radiation protection
31.260	Optoelektronika, laserska oprema	Optoelectronics. Laser equipment

SIST EN 60825-1:2014 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60825-1

August 2014

ICS 13.110; 31.260

Supersedes EN 60825-1:2007

English Version

Safety of laser products - Part 1: Equipment classification and requirements (IEC 60825-1:2014)

Sécurité des appareils à laser - Partie 1: Classification des matériels et exigences
(CEI 60825-1:2014)

Sicherheit von Lasereinrichtungen - Teil 1: Klassifizierung von Anlagen und Anforderungen
(IEC 60825-1:2014)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 60825-1:2014 E

Foreword

The text of document 76/502/FDIS, future edition 3 of IEC 60825-1, prepared by IEC/TC 76 "Optical radiation safety and laser equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60825-1:2014.

The following dates are fixed:

– latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2015-03-19
– latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2017-06-19

This document supersedes EN 60825-1:2007.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 60825-1:2014 was approved by CENELEC as a European Standard without any modification.

IEC 60027-1	NOTE	Harmonised in EN 60027-1.
IEC 60065	NOTE	Harmonised as EN 60065.
IEC 60079 (Series)	NOTE	Harmonised as EN 60079 (Series).
IEC 60204-1	NOTE	Harmonised as EN 60204-1.
IEC 60601-2-22	NOTE	Harmonised as EN 60601-2-22.
IEC 60825-2	NOTE	Harmonised as EN 60825-2.
IEC 60825-4	NOTE	Harmonised as EN 60825-4.
IEC 60825-12	NOTE	Harmonised as EN 60825-12.
IEC 60950 (Series)	NOTE	Harmonised as EN 60950 (Series).
IEC 61010-1	NOTE	Harmonised as EN 61010-1.
IEC 61508 (Series)	NOTE	Harmonised as EN 61508 (Series).
IEC 62115	NOTE	Harmonised as EN 62115.
IEC 62368-1	NOTE	Harmonised as EN 62368-1.
IEC/ISO 11553 (Series)	NOTE	Harmonised as EN ISO 11553 (Series).
ISO 11146-1	NOTE	Harmonised as EN ISO 11146-1.
ISO 12100	NOTE	Harmonised as EN ISO 12100.
ISO 13694	NOTE	Harmonised as EN ISO 13694.
ISO 13849 (Series)	NOTE	Harmonised as EN ISO 13849 (Series).
ISO 15004-2:2007	NOTE	Harmonised as EN ISO 15004-2:2007.
ISO 80000-1	NOTE	Harmonised as EN ISO 80000-1.

Annex ZA
(normative)
Normative references to international publications with their corresponding European publications

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

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60050	series	International Electrotechnical Vocabulary	-	series
IEC 62471 (mod)	-	Photobiological safety of lamps and lamp systems	EN 62471	-

IEC 60825-1

Edition 3.0 2014-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

GROUP SAFETY PUBLICATION
PUBLICATION GROUPÉE DE SÉCURITÉ

Safety of laser products – Part 1: Equipment classification and requirements

Sécurité des appareils à laser – Partie 1: Classification des matériels et exigences

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

PRICE CODE
CODE PRIX XE

ICS 13.110; 31.260

ISBN 978-2-8322-1499-2

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY OF LASER PRODUCTS –

Part 1: Equipment classification and requirements

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60825-1 has been prepared by IEC technical committee 76: Optical radiation safety and laser equipment.

This third edition of IEC 60825-1 cancels and replaces the second edition published in 2007. It constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a new class, Class 1C, was introduced;
- the measurement condition 2 ("eye loupe" condition) was removed;
- classification of the emission of laser products below a certain radiance level that are intended to be used as replacement for conventional light sources can, as an option, be based on the IEC 62471 series;
- the accessible emission limits (AELs) for Class 1, 1M, 2, 2M and 3R of pulsed sources, particularly of pulsed extended sources, were updated to reflect the latest revision of the

ICNIRP guidelines on exposure limits (accepted for publication in Health Physics 105 (3): 271 – 295; 2013, see also www.icnirp.org).

This part of IEC 60825 has the status of a Group Safety Publication, in accordance with IEC Guide 104[1)], for aspects of laser radiation pertaining to human safety.

The text of this standard is based on the following documents:

FDIS	Report on voting
76/502/FDIS	76/506/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The list of all parts of the IEC 60825 series, published under the title *Safety of laser products*, can be found on the IEC website.

This part of IEC 60825 is also referred to as "Part 1" in this publication.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

1) IEC Guide 104:2010, *The preparation of safety publications and the use of basic safety publications and group safety publications*
It gives guidance to IEC technical committees and to writers of specifications concerning the manner in which safety publications should be drafted.
This guide does not constitute a normative reference and reference to it is given for information only.