



SLOVENSKI STANDARD
oSIST prEN 50689:2019
01-junij-2019

Varnost laserskih izdelkov - Posebne zahteve za laserske izdelke, namenjene potrošniku

Safety of laser products - Particular Requirements for Consumer Laser Products

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Ta slovenski standard je istoveten z: prEN 50689

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ICS:

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

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EUROPEAN STANDARD
NORME EUROPÉENNE
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English Version

Safety of laser products - Particular Requirements for Consumer Laser Products

To be completed

Sicherheit von Laserprodukten - Besondere Anforderungen
an Verbraucher-Laser-Produkte

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2019-05-24.

It has been drawn up by CLC/TC 76.

If this draft becomes a European Standard, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CENELEC in three official versions (English, French, German).
A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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14 European foreword

15 This document (prEN 50689:2019) has been prepared by CLC/TC 76 "Optical radiation safety and laser
16 equipment".

17 This document is currently submitted to the second Enquiry.

18 The following dates are proposed:

- latest date by which the existence of this (doa) dor + 6 months
document has to be announced at national
level
- latest date by which this document has to be (dop) dor + 12 months
implemented at national level by publication of
an identical national standard or by
endorsement
- latest date by which the national standards (dow) dor + 36 months
conflicting with this document have to be (to be confirmed or
withdrawn modified when voting)

19 This document has been prepared under a mandate given to CENELEC by the European Commission
20 and the European Free Trade Association, and supports essential requirements of EU Directive(s).

21 For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this
22 document.

23 This standard provides requirements for consumer products containing lasers. The laser beam should
24 always be enclosed so that no eye or skin exposure can occur. However, for some applications the laser
25 beam needs to be accessible. The objective of this standard is to ensure that laser products available
26 to consumers are safe.

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27 **1 Scope**

28 This document specifies the requirements for laser products intended for consumers. The scope of this
29 document does not include products intended for professional use (non-consumer laser products) and
30 restrictions as specified in this standard do not apply to non-consumer laser products.

31 For non-consumer laser products, compliance with EN 60825-1 is sufficient to achieve the necessary
32 level of safety.

33 Electric Toys containing lasers, which are covered by EN 62115, are excluded from the scope of this
34 document.

35 Class 1C consumer laser products are not in the scope of this document. For example, cosmetic and
36 beauty care Class 1C laser products are covered by FprEN 60335-2-113.

37 **2 Normative references**

38 The following documents are referred to in the text in such a way that some or all of their content
39 constitutes requirements of this document. For dated references, only the edition cited applies. For
40 undated references, the latest edition of the referenced document (including any amendments) applies.

41 EN 60825-1:2014/prA:2018, *Safety of laser products — Part 1: Equipment classification and*
42 *requirements*

43 **3 Terms and definitions**

44 For the purposes of this document, the terms and definitions given in EN 60825-1 and the following
45 apply.

46 ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- 47 • IEC Electropedia: available at <http://www.electropedia.org/>
- 48 • ISO Online browsing platform: available at <http://www.iso.org/obp>

49 **3.1**

50 **child appealing laser**

51 laser product, including any accessory which can be incorporated later or any attachment which can be
52 fixed later, that resembles by any means another object commonly recognised as appealing to or
53 intended for use by children younger than 51 months, or has entertaining audio effects or animated
54 effects and can resemble cartoon characters, toys, guns, watches, telephones, musical instruments,
55 vehicles, human body or parts of the human body, animals, food or beverages, or play musical notes,
56 or have flashing lights or moving objects or other entertaining features

57 Note 1 to entry: The emission of a laser beam alone does not make a laser product child appealing.

58 Note 2 to entry: "Child appealing" depends on a case-by-case assessment of the child appealing character of the
59 product, taking into account the specific characteristics of the product in question (see "New Declaration of ADCO
60 on Child Appealing Appliances, LVDWP/14/4, 15-06-2009).

61 **3.2**

62 **consumer laser product**

63 product or assembly of components that constitutes or incorporates a laser or laser system and that is
64 intended for consumers, or is likely to be used by consumers under reasonably foreseeable conditions
65 even though it is not intended for them

66 **3.3**67 **laser pointer**

68 laser product promoted and intended as a handheld laser either for entertainment purposes or for
69 pointing out objects and/or locations

70 Note 1 to entry: Examples which are not considered as laser pointers are: gunsights, laser levelling devices and
71 positioning aids.

72 **4 Classification of laser products**

73 Laser products in the scope of this standard shall comply with EN 60825-1, including classification,
74 labelling and user instructions.

75 As a general principle, the product shall be in the lowest feasible class commensurate with the intended
76 function.

77 **5 Child appealing laser products**

78 Child appealing laser products that are not Electric Toys shall be Class 1 laser products.

79 NOTE Electric Toys are not in the scope of this standard. Requirements for Electric Toys incorporating lasers
80 are specified in EN 62115.

81 **6 All other consumer laser products**

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82 **6.1 Generic requirement for consumer laser products**

83 Consumer laser products shall be Class 1 or Class 2 except as provided in 6.2.

84 NOTE Class 1C laser products are not in the scope of this standard, see scope.

85 **6.2 Requirements for non-Class 1 and non-Class 2 consumer laser products**

86 When the specific application of the consumer laser product requires higher laser classes than specified
87 in 6.1, i.e. higher than Class 1 or Class 2, the following requirements shall be met.

88 If one or more of the requirements 6.2 a) to 6.2 f) is not met, then the product shall not be a consumer
89 laser product:

90 a) the laser product shall not be child appealing, i.e. higher classes are permitted only for a product
91 that is not child appealing;

92 b) the laser product shall not be a laser pointer, i.e. higher classes are not permitted for a product
93 when it is a laser pointer;

94 NOTE 1 Laser pointers that exceed Class 2 are associated with a higher risk of causing temporary visual
95 disturbance effects. When persons who are undertaking safety critical tasks, such as driving a car, are exposed
96 to the laser beam resulting in visual glare and visually disturbing effects, this can represent a severe risk. While
97 glare and visually disturbing effects are also possible for lower power lasers, even Class 1 lasers, the effect,
98 for a given wavelength, will be more pronounced for power levels exceeding Class 2.

99 c) the laser product shall not be Class 1M, Class 2M, Class 3B or Class 4;

100 d) a consumer laser product is permitted to be Class 3R provided that requirement d1) or d2) is met:

101 1) the accessible emission (AE) shall be limited to five times the accessible emission limit (AEL)
102 of Class 1 or Class 2 provided that all of the following restrictions are met:

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- 103 — the wavelength shall be within the range of 400 nm to 1400 nm;
- 104 — the AEL that is applied for classification shall be based on $C_6 = 1$ (i.e. using the simplified
105 (default) method in subclause 5.4.1 from EN 60825-1:2014);
- 106 — either the accessible emission is continuous wave (i.e. not pulsed with pulse durations less
107 than 0,25 s) or the peak power shall be below five times the AEL of Class 1 or Class 2;
- 108 2) the AE shall be limited:
- 109 — to twice the AEL of Class 1 or Class 2 for $400 \text{ nm} < \lambda \leq 500 \text{ nm}$;
- 110 — to 1,5 times the AEL of Class 1 or Class 2 for $500 \text{ nm} < \lambda \leq 600 \text{ nm}$;
- 111 — to twice the AEL of Class 1 or Class 2 for $600 \text{ nm} < \lambda \leq 700 \text{ nm}$;
- 112 — irrespective of the angular subtense of the apparent source or pulse duration, and provided
113 that the following restriction is met:
- 114 — the wavelength shall be within the range of 400 nm – 700 nm;

115 NOTE 2 If the AE is limited to the requirements of d1) or d2), according to the state of science and
116 technology, the risk is considered low enough for the product to be made available on the market as a
117 consumer product.

118 NOTE 3 The accessible emission in the ultraviolet wavelength range ($\lambda < 400 \text{ nm}$) is limited to the AEL of
119 Class 1 due to requirement 6.1.

- 120 e) It shall be documented in the technical documentation that an emission level that makes the product
121 a Class 3R laser product is necessary for the functioning of the product;
- 122 f) The following additional wording is required on the explanatory label (Clause 7 of
123 EN 60825-1:2014) to show that the laser product is suitable for consumer use:

124 EN 50689:2019

125 An example of the wording for the explanatory label of a Class 3R laser product that meets requirements
126 of subclause 6.2 is:

127 LASER RADIATION

128 AVOID DIRECT EYE EXPOSURE

129 CLASS 3R LASER PRODUCT

130 EN 60825-1:2014 + A11:2019

131 EN 50689:2019

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Annex ZZ (informative)

Relationship between this European Standard and the requirements of Directive 2001/95/EC [2002 OJ L11] aimed to be covered

137 This European Standard has been prepared under a Commission's standardization request M/531
138 C(2015) 557 final to provide one voluntary means of conforming to the safety requirements of Directive
139 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on General Product
140 Safety [2002 OJ L11].

141 Once this standard is cited in the Official Journal of the European Union under that Directive, compliance
142 with the normative clauses of this standard given in Table ZZ.1 confers, within the limits of the scope of
143 this standard, a presumption of conformity with the corresponding safety requirements of that Directive
144 and associated EFTA regulations.

145 **Table ZZ.1 — Correspondence between this European Standard and Article 3**
146 **of Directive 2001/95/EC [2002 OJ L11]**

Safety Requirements of Directive 2001/95/EC	Clause(s) / subclause(s) of this EN	Remarks / Notes
Article 3.1 Producers shall be obliged to place only safe products on the market.	All normative clauses	

147 **WARNING 1** — Presumption of conformity stays valid only as long as a reference to this European
148 Standard is maintained in the list published in the Official Journal of the European Union. Users of this
149 standard should consult frequently the latest list published in the Official Journal of the European Union.

150 **WARNING 2** — Other Union legislation may be applicable to the products falling within the scope of this
151 standard.

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Bibliography

153 IEC 60050 (all parts), *International Electrotechnical Vocabulary*

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