SLOVENSKI STANDARD
oSIST prEN 60969:2018

01-februar-2018

Kompaktne fluorescenčne sijalke z vgrajeno predstikalno napravo za splošno razsvetljavo - Tehnične zahteve

Self-ballasted compact fluorescent lamps for general lighting services - Performance requirements

Lampen mit eingebautem Vorschaltgerät für Allgemeinbeleuchtung - Anforderungen an die Arbeitsweise

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Lampes à fluorescence compactes à ballast intégré pour l'éclairage général - Exigences de performances

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Ta slovenski standard je istoveten z: **prEN 60969:2017**

ICS:

29.140.30	Fluorescenčne sijalke. Sijalke	Fluorescent lamps. Discharge lamps

oSIST prEN 60969:2018 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 60969

November 2017

ICS 29.140.30

Will supersede EN 60969:1993

English Version

Self-ballasted compact fluorescent lamps for general lighting services - Performance requirements (IEC 60969:2016 , modified + COR1:2017)

Lampes à fluorescence compactes à ballast intégré pour l'éclairage général - Exigences de performances (IEC 60969:2016 , modifiée + COR1:2017)

Lampen mit eingebautem Vorschaltgerät für Allgemeinbeleuchtung - Anforderungen an die Arbeitsweise (IEC 60969:2016 , modifiziert + COR1:2017)

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2018-02-16.

The text of this draft consists of the text of IEC 60969:2016 + COR1:2017.

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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.

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This draft European Standard was established by CENELEC in three official versions (English, French, German).
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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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European foreword

This document (prEN 60969:2017*)* consists of the text of IEC 60969:2016 + COR1:2017 prepared by SC 34A "Lamps" of IEC/TC 34 "Lamp and related equipment", together with the common modifications prepared by CLC/TC 34 "Lamps and related equipment".

This document is currently submitted to the enquiry.

The following dates are proposed:

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

This document will supersede EN 60969:1993.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60969:2016 are prefixed "Z".

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

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For the relationship with EU Directive(s) see informative Annexes ZZA, ZZB and ZZC, which are integral parts of this document.

This standard provides test methods related to parameters as prescribed by Commission Regulation (EC) 244/2009, Commission Regulation (EU) 1194/2012 and Commission Regulation (EU) 874/2012 while conformity assessment (sampling, conformity procedures as well as limits) for market surveillance are specified in the text of the above Regulations.

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25 COMMON MODIFICATIONS

26 CONTENTS **Add** the following annexes:

27 28 Annex ZA (normative)	Normative references to international publications with their corresponding European publications
29 30 Annex ZZA (informative)	Relationship between this European Standard and the requirements of Commission Regulation (EC) No 244/2009
31 32 Annex ZZB (informative)	Relationship between this European Standard and the requirements of Commission Regulation (EC) No 1194/2012
33 34 Annex ZZC (informative)	Relationship between this European Standard and the requirements of Commission Regulation (EU) No 874/2012

35 **1 Scope**

36 Add the following new paragraph at the end of Clause 1:

37 38 Where a Commission Regulation specifies limits for parameters these limits shall be used instead of the limits specified in this standard.

39 **3 Terms and definitions**

40 3.Z1 After 3.25 **add** new definitions 3.Z1 up to 3.Z3:

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41 **3.Z1**

42 **directional lamp** (standards.iteh.ai)

43 lamp having at least 80 % light output within a solid angle of π sr (corresponding to a

44 cone with angle of 120°)

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45 [SOURCE: Regulation 1194/2012 Article 2]

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46 **3.Z2**

47 **partial luminous flux (of a light source, within a specified cone angle)**

48 total luminous flux emitted from a light source within a specified cone angle α,

49 determined from the luminous intensity distribution $I(\theta, \varphi)$ of the source:

$$\Phi_\alpha = \int_{\varphi=0}^{2\pi} \int_{\theta=0}^{\alpha/2} I(\theta,\varphi) \sin\theta \, \mathrm{d}\theta \, \mathrm{d}\varphi \quad (2)$$

50

51 Note 1 to entry: Partial luminous flux is expressed in lumen (lm)

52 Note 2 to entry: $(\theta, \varphi)=(0,0)$ is the direction of the cone axis

53 Note 3 to entry: The cone angle α is the full angle (diameter) of the cone

54 [SOURCE: EN 13032-4:2015, 3.41, modified, – NOTE 4 and NOTE 5 removed]

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3.Z3
useful luminous flux,
Φuse
partial luminous flux of a lamp falling within the cone used for calculating the lamp's energy efficiency according Annex III, point 1.1 of regulation (EU) No 1194/2012

Note 1 to entry: Useful luminous flux is expressed in lumen (lm)

Note 2 to entry: The regulation specifies 90° or 120° cones according to the product characteristics

Note 3 to entry: useful luminous flux is similar to partial luminous flux. It is determined with the cone axis coincident with the observed optical beam axis of the light source, the axis about which the luminous intensity is substantially symmetrical

4 Marking

4 **Replace** in Table 1 the text of the first column in row a) by:

a) Initial luminous flux of the lamp
(or useful luminous flux for directional lamps) (lm)

6 Performance criteria: assessment and compliance

6.2 **Replace** in Table 3 the text of cell 4B by:

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Initial luminous flux (or useful luminous flux for directional lamps)

Replace in Table 3 the text of cell 4E by:

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Annex A

6.Z1 After 6.2 **add** new Subclauses 6.Z1 up to 6.Z4:

6.Z1

The lamp survival factor shall be in accordance with CIE 97

6.Z2

The spectral power distribution shallbe in accordance with CIE 63

6.Z3

The average mercury content shall be measured in accordance with the CV AAS method as described in EN 62321-4. The lamp sample preparation shall be in accordance with EN 62554

6.Z4

The Correlated colour temperature (CCT) shall be in accordance with CIE 015

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Annex A (normative) General conditions for measurement of photometric and electrical characteristics and requirements for test equipment

A.5 Photometric measurements

Replace contents of A.5 by:

A.5.1 General

Photometric characteristics shall be measured in accordance with EN 13032-1

Measurement of Initial luminous flux, Beam angle (reflector lamps), Useful luminous flux and centre beam intensity (directional lamps), Chromaticity coordinates, Colour Rendering Index (CRI) shall be conducted on lamps aged for 100 h.

A.5.2 Useful luminous flux

For directional lamps the useful luminous flux is obtained by luminous intensity integration as described in EN 13032-4:2015, 6.3 “Partial luminous flux “.

Alternative measurement methods may be used if they can be shown to give equivalent results for the product being tested, if necessary by applying correction factors. Measurements with lamps operating horizontally are often much easier to carry out. The reference method, however, uses the measurement position according to A.1 (d).

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In case of doubt a goniophotometry measurement in accordance with EN 13032-4:2015, 6.3 shall be leading.

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NOTE Below are a few examples of alternative measurement methods. It is not an exhaustive list.

- For small beam angles shine into integrating sphere.
- Mount lamp on internal surface of integrating sphere.
- Mount lamp inside integrating sphere with screening (LM-20 technique).
- Illuminate a surface and measure the illuminance across the surface with a photometer.
- Illuminate a surface and measure the surface luminance with a luminance camera.
- Illuminate a translucent screen and measure the surface luminance of the rear side with a luminance camera.

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Bibliography **Add** the following notes for the standards indicated:

IEC 60669	NOTE	Harmonized as EN 60669
IEC 61547	NOTE	Harmonized as EN 61547
CISPR 15	NOTE	Harmonized as EN 55015

Add the following documents:

COMMISSION REGULATION (EC) No 244/2009 of 18 March 2009 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for non-directional household lamps

COMMISSION REGULATION (EU) No 874/2012 of 12 July 2012 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of electrical lamps and luminaires

COMMISSION REGULATION (EU) No 1194/2012 of 12 December 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for directional lamps, light emitting diode lamps and related equipment

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where 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
		Light and lighting – Measurement and presentation of photometric data of lamps and luminaires – Part 1: Measurement and file format	EN 13032-1 [1)]	-
		Light and lighting – Measurement and presentation of photometric data – Part 4: LED lamps, modules and luminaires	EN 13032-4	2015
IEC 60630	-	Maximum Lamp Outlines for incandescent lamps	EN 60630	-
IEC 60968	-	Self-ballasted fluorescent lamps for general lighting services – Safety requirements	EN 60968	-
IEC 61000-3-2	2014	Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current <= 16 A per phase)	EN 61000-3-2	2014
IEC 61000-4-7	-	Electromagnetic compatibility (EMC) – Part 4-7: Testing and measurement techniques – General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto	EN 61000-4-7	-
IEC/TR 61341	-	Method of measurement of centre beam intensity and beam angle(s) of reflector lamps	EN 61341	-
IEC 62321-4	2013	Determination of certain substances in electrotechnical products - Part 4: Mercury in polymers, metals and electronics by CV-AAS, CV-AFS, ICP-OES and ICP-MS	EN 62321-4	2014
IEC 62554	-	Sample preparation for measurement of mercury level in fluorescent lamps	EN 62554	-

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[1)] The consolidated version, EN 13032-1+A1, is the active edition.

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Publication	Year	Title	EN/HD	Year
CIE 13.3		Method of Measuring and Specifying Colour Rendering Properties of Light Source	-	-
CIE 015	2004	Colorimetry	-	-
CIE 63		The spectroradiometric Measurement of light sources	-	-
CIE 97		Maintenance of indoor electric lighting systems	-	-
CIE 121		The photometry and goniophotometry of luminaires	-	-

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Annex ZZA
(informative)

Relationship between this European Standard and the ecodesign requirements of Commission Regulation (EC) No 244/2009 aimed to be covered

This European standard has been prepared under a Commission's standardisation request M/495 to provide one voluntary means of conforming to the ecodesign requirements of Commission Regulation (EC) No 244/2009 of 18 March 2009 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for non-directional household lamps [2009 OJ L76].

Once this standard is cited in the Official Journal of the European Union under that Regulation, compliance with the normative clauses of this standard given in Table ZZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding ecodesign requirements of that Regulation and associated EFTA Regulations.

Table ZZA.1 – Correspondence between this European Standard and Commission Regulation (EC) No 244/2009 of 18 March 2009 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for non-directional household lamps [2009 OJ L76] and Commission's standardisation request M/495

Ecodesign requirements of Regulation (EC) No 244/2009 [2009 OJ L76]	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
Annex II, article 1 and articles 3.1(a) and 3.2(b)	Annex A	Lamp power
Annex II, article 1 and articles 3.1(a) and 3.2(c)	Annex A	Luminous flux
Annex II Table 4	Clause 6.Z1	Lamp survival factor
Annex II articles 3.1(b) and 3.2(d)	Annex G	Lamp life
Annex II Table 4 and article 3.2(f)	Annex D	Lumen maintenance
Annex II Table 4 and article 3.1(c)	Annex F	Number of switches before failure
Annex II Table 4	Annex G	Premature failure rate
Annex II Table 4 and article 3.2(g)	Annex B	Starting time
Annex II Table 4 and article 3.1(e)	Annex C	Warm-up time to 60% ϕ
Article 1 (a)	Clause 6.2	Chromaticity coordinates
Annex II Table 3 and Table 4, and article 3.2(h)	Clause 6.2	Colour rendering index (CRI)
Annex II Table 3 and article 3.1(d)	Clause 6.Z4	Correlated colour temperature (CCT)

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Ecodesign requirements of Regulation (EC) No 244/2009 [2009 OJ L76]	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
Annex II Table 4 and article 3.2(e)	Clause 6.2, Annex I	Power factor (only for lamps with integrated control gear)
Annex II article 3.1(h)	Clause 6.2	Lamp dimensions
Article 1 (a)	Clause 6.Z2	Spectral power distribution
Article 1 (a); Annex II Table 4	Clause 6.1 (Remark: =EN 60968, clause 16.1)	UVA+UVB radiation
Annex II Table 4	Clause 6.1 (Remark: =EN 60968, Clause 16.1)	UVC radiation
Annex II articles 3.1(k), 3.1(l), 3.2(i) and 3.2(j)	Clause 6.Z3	Mercury content
Annex II article 3.1(f)	Clause 6.1 (Remark: =EN 60968, clause 5.2)	Dimmability
Annex II article 3.1(g)	Clause 6.2	Information on design for non-standard conditions

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166 **WARNING 1:** Presumption of conformity stays valid only as long as a reference to this European
167 Standard is maintained in the list published in the Official Journal of the European Union. Users of this
168 standard should consult frequently the latest list published in the Official Journal of the European
169 Union.

170 **WARNING 2:** Other Union legislation may be applicable to the products falling within the scope of this
171 standard.

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Annex ZZB
(informative)

Relationship between this European Standard and the ecodesign requirements of Commission Regulation (EU) No 1194/2012 aimed to be covered

This European standard has been prepared under a Commission's standardisation request M/495 to provide one voluntary means of conforming to the ecodesign requirements of Commission Regulation (EU) No 1194/2012 of 12 December 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for directional lamps, light emitting diode lamps and related equipment [2012 OJ L342].

Once this standard is cited in the Official Journal of the European Union under that Regulation, compliance with the normative clauses of this standard given in Table ZZB.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding ecodesign requirements of that Regulation and associated EFTA Regulations.

Table ZZB.1 – Correspondence between this European Standard and Commission Regulation (EU) No 1194/2012 of 12 December 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for directional lamps, light emitting diode lamps and related equipment [2012 OJ L342] and Commission's standardization request M/495

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Ecodesign requirements of Regulation (EU) No 1194/2012 [2012 OJ L342]	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
Annex III, article 1.1 and articles 3.1.2(a) and 3.1.3(b)	Annex A	Lamp power
Annex III, article 1.1 and articles 3.1.1, 3.1.2(a) and 3.1.3(c)	Annex A	(Useful) luminous flux
Annex III, articles 3.1.1, 3.1.2(i) and 3.1.3(k)	Clause 6.2	Beam angle
Annex III, Table 3	Clause 6.Z1	Lamp Survival Factor
Annex III, articles 3.1.2(b) and 3.1.3(d)	Annex G	Lamp life
Annex III, Table 3, Table 7, and article 3.1.3(f)	Annex D	Lumen maintenance
Annex III, Table 3 and article 3.1.2(d)	Annex F	Number of switches before failure
Annex III, Table 3	Annex G	Premature failure rate
Annex III, Table 3 and article 3.1.3(g)	Annex B	Starting time
Annex III, Table 3 and article 3.1.2(e)	Annex C	Warm-up time to 60 % ϕ
Annex I	Clause 6.2	Chromaticity coordinates

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