



SLOVENSKI STANDARD
SIST EN 62612:2014/A11:2017
01-september-2017

LED-sijalke za splošno razsvetljavo z vgrajeno predstikalno napravo pri napajalni napetosti nad 50 V - Tehnične zahteve

Self-ballasted LED lamps for general lighting services with supply voltages > 50 V - Performance requirements

LED-Lampen mit eingebautem Vorschaltgerät für Allgemeinbeleuchtung mit Versorgungsspannungen > 50 V - Anforderungen an die Arbeitsweise

Lampes à LED autoballastées pour l'éclairage général avec des tensions d'alimentation > 50 V - Exigences de performances

SIST EN 62612:2014/A11:2017
<https://standards.iteh.ai/catalog/standards/sist/6295b8ea-7838-473f-a420-1b1d31133d01/sist-en-62612-2014-a11-2017>

Ta slovenski standard je istoveten z: EN 62612:2013/A11:2017

ICS:

29.140.01 Žarnice na splošno Lamps in general

SIST EN 62612:2014/A11:2017 en

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EUROPEAN STANDARD

EN 62612:2013/A11

NORME EUROPÉENNE

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June 2017

ICS 29.140.01

English Version

Self-ballasted LED lamps for general lighting services with supply voltages > 50 V - Performance requirements

Lampes à LED autballastées pour l'éclairage général avec des tensions d'alimentation > 50 V - Exigences de performances

LED-Lampen mit eingebautem Vorschaltgerät für Allgemeinbeleuchtung mit Versorgungsspannungen > 50 V - Anforderungen an die Arbeitsweise

This amendment A11 modifies the European Standard EN 62612:2013; it was approved by CENELEC on 2017-02-20. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This amendment exists 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.

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



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

EN 62612:2013/A11:2017**European foreword**

This document (EN 62612:2013/A11:2017) has been prepared by CLC/TC 34A, "Lamps".

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) 2018-02-20
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-02-20

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.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62612:2013 and IEC 62612:2013/A1:2015 are prefixed "Z".

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).

For the relationship with EU Directive(s), see informative Annexes ZZA, ZZB and ZZC, which are an integral part 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.

CONTENTS Add the following annexes:

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

1.0.Z1 **Add** the following clause before Clause 2

1.0.Z1 Overall statement

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

3.Z1 After 3.21 **add** new definitions 3.Z1 up to 3.Z2:

3.Z1**partial luminous flux (of a light source, within a specified cone angle)**

luminous flux emitted from a light source within a specified cone angle α , determined from the luminous intensity distribution $I(\theta, \varphi)$ of the source:

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

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

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

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

[SOURCE: EN 13032-4, 3.41, modified, – Notes 4 and 5 removed]

3.Z2**useful luminous flux** Φ_{use}

partial luminous flux of a LED lamp falling within the cone used for calculating the LED 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

Z1 After Clause 12 **add** the following new clauses:

Z1 Requirements for directional LED lamps**Z1.1 Correlated colour temperature**

Correlated colour temperature of a LED lamp shall be measured in accordance with 7.1, Colorimetric Measurements of EN 13032-4.

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Z1.2 Useful luminous flux

The useful luminous flux of a directional LED lamp shall be measured according Annex A together with the following:

- useful luminous flux of a directional LED lamp with a rated beam angle $\geq 90^\circ$ shall be measured in a 120° cone;
- otherwise the useful luminous flux of a directional LED lamp shall be measured in 90° cone.

If no rated beam angle is provided the useful luminous flux shall be measured in a 90° cone.

Z1.3 - Functionality requirements**Z1.3.1 - Spectral power distribution**

The measurement of the spectral power distribution shall be made under the conditions of A.1 and in accordance with CIE 63.

Z1.3.2 Lamp starting and warm-up time

The starting time requirements for LED lamps that are intended to be switched on and off via a communication protocol (and normally not by switching the mains supply on and off) shall be determined from the time that the lamp receives an "on" signal

Starting and warm-up times shall be carried out as follows:

The test for starting and warm-up times shall be carried out in accordance with PrEN 60969:2016, B.3.

Starting time is determined as the period from the start of the test to when the LED lamp has fully completed the starting sequence (LED lamp has started and remains alight).

Warm-up time is the time taken from the start of the test to when the LED lamp achieves the required percentage of its stable luminous flux.

Z1.3.3 - Colour rendering (R_a)

Measurement of colour rendering indices shall be made in accordance with Annex A.

Z1.3.4 - Colour consistency

The requirements of 10.1 apply.

Compliance:

The variation of the chromaticity coordinates values of the LED lamp shall be within colour variation category 6.

NOTE Category 6 implies a 6-step MacAdam ellipse centred on the rated colour target.

Z1.3.5 - Power factor

LED lamps operating on direct mains shall be in accordance with 8.1 and 8.2. The distortion shall be measured according EN 61000-3-2 and the power factor λ be calculated according to the relation given in D.1.

NOTE In view of future regulations, EN 62612 defines - the primary metric displacement factor and its associated measurement method and recommended values – instead of the composite power factor metric. Definitions related to power quantities are given in Table 2 of IEC/TR 61000-1-7:2016.

Z2 Requirements for non-directional LED lamps

Z2.1 Lamp efficacy requirements for non-directional LED lamps

The requirements of 8.1 and 9.1 apply in combination with the limits in Annex II, article 1 of commission regulation (EU) No 244/2009.

Z2.2 Functionality requirements for non-directional LED lamps

The requirements of Z1.3 apply.

Annex A.1 **Replace** the entire A.1 in EN 62612:2013 and EN 62612:2013/A1:2017 by:

A.1 General

Unless otherwise specified, all measurements shall be made in a draught-free room at a temperature of 25 °C with a tolerance of ± 1 °C, a relative humidity of 65 % maximum and steady state operation of the LED lamp.

If not exempted by specific clause, lamps shall be operated free burning in a vertical position, cap-up, unless otherwise specified by the manufacturer or responsible vendor.

The test voltage shall be the voltage as determined in A.2.4.

LED lamps do not require any ageing prior to testing. However, the manufacturer may define an aging period up to 1 000 h.

For general conditions of photometric measurements see EN 13032-4.

For directional LED lamps the useful luminous flux is obtained by luminous intensity integration according to 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. However, the lamp reference measurement position is vertical base-up operated in free air. In case of doubt a goniophotometry measurement in accordance with EN 13032-4:2015, 6.3 shall be leading.

NOTE 1 Useful luminous flux measurements with lamps operating horizontally are often easier to carry out. Examples of alternative measurement methods are.

- 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.

For non-directional LED lamps the total luminous flux shall be measured according to EN 13032-4. Also the partial luminous flux within a solid angle of π sr of the LED lamps shall be evaluated to check the non-directionality.

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Once the non-directionality is verified for one lamp, for lamps of the same type, only the total luminous flux has to be measured.

Luminous intensity distribution shall be measured in accordance with EN 13032-4 and EN 61341.

NOTE 2 EN13032-4 refers to EN 61341 for beam angle evaluation.

Chromaticity coordinates of a LED lamps shall be measured in accordance with 7.1, Colorimetric Measurements of EN 13032-4:2015.

Annex A.3 **Delete** the entire A.3.

Bibliography **Add** the following documents:

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

COMMISSION REGULATION (EC) No 874/2012 of 12 December 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 (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

IEC TR 61000-1-7 (2016-02) Electromagnetic compatibility (EMC). Part 1-7: General. Power factor in single-phase systems under non-sinusoidal conditions

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Replace Annex ZA of EN 62612:2013 by:

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
		Light and lighting - Measurement and presentation of photometric data of lamps and luminaires - Part 1: Measurement and file format	EN 13032-1 + A1	2004 2012
		Light and lighting - Measurement and presentation of photometric data - Part 4: LED lamps, modules and luminaires	EN 13032-4	2015
IEC 60050	series	International Electrotechnical Vocabulary (IEV)	-	-
IEC 60068-2-14	2009	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	2009
IEC 60081	1997	Double-capped fluorescent lamps - Performance specification	EN 60081	1998
IEC 60630	1994	Maximum Lamp Outlines for incandescent lamps	EN 60630 + A3 + A4 + A5 + A6 + A7	1998 1999 2003 2005 2009 2015
IEC 61000-3-2	2005	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)	EN 61000-3-2	2006