

**BALLASTSEADIST SISALDAVAD ÜLDTARBE-
LEEDLAMBID PINGEGA ÜLE 50 V. TOIMIVUSNÕUDED**

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 62612:2013 sisaldab Euroopa standardi EN 62612:2013 ja selle paranduse AC:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 62612:2013 consists of the English text of the European standard EN 62612:2013 and its corrigendum AC:2016.
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**Self-ballasted LED lamps for general lighting services with supply
voltages > 50 V -
Performance requirements
(IEC 62612:2013)**

Lampes à LED autoballastées pour
l'éclairage général avec des tensions
d'alimentation > 50 V -
Exigences de performances
(CEI 62612:2013)

LED-Lampen mit eingebautem
Vorschaltgerät für Allgemeinbeleuchtung
mit Versorgungsspannungen > 50 V -
Anforderungen an die Arbeitsweise
(IEC 62612:2013)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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

Foreword

The text of document 34A/1662/FDIS, future edition 1 of IEC 62612, prepared by SC 34A "Lamps" of IEC/TC 34A "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62612:2013.

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) 2014-04-23
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-07-23

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Endorsement notice

The text of the International Standard IEC 62612:2013 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated :

IEC 60598	NOTE	Harmonised as EN 60598.
IEC 60901	NOTE	Harmonised as EN 60901.
IEC 61547	NOTE	Harmonised as EN 61547.
CISPR 15:2005	NOTE	Harmonised as EN 55015:2006 (not modified)

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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050	Series	International Electrotechnical Vocabulary (IEV)	-	-
IEC 60068-2-14	-	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	-
IEC 60081	-	Double-capped fluorescent lamps - Performance specifications	EN 60081	-
IEC 60630	-	Maximum lamp outlines for incandescent lamps	EN 60630	-
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
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/TS 62504	-	General lighting - LEDs and LED modules - Terms and definitions	-	-
IEC 62560	-	Self-ballasted LED-lamps for general lighting services by voltage > 50 V - Safety specifications	EN 62560	-
IEC/TR 62732	-	Three-digit code for designation of colour rendering and correlated colour temperature	-	-
CIE 13.2	1974	Methods of measuring and specifying colour - rendering properties of light sources	-	-
CIE 13.3	1995	Method of measuring and specifying colour - rendering of light sources	-	-
CIE S 017/E	2011	ILV: International Lighting Vocabulary	-	-
CIE 191	1996	The photometry and goniophotometry of luminaires	-	-
CIE 177	2007	Colour rendering of white LED light sources	-	-

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INTRODUCTION

This International Standard is the first edition of a performance standard (precursor: IEC/PAS 62612) for self-ballasted LED lamps for general lighting applications and acknowledges the need for relevant tests for this new source of electrical light, sometimes called “solid state lighting”.

The provisions in this standard represent the technical knowledge of experts from the fields of the semiconductor (LED chip) industry and of those of the traditional electrical light sources.

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SELF-BALLASTED LED LAMPS FOR GENERAL LIGHTING SERVICES WITH SUPPLY VOLTAGES > 50 V – PERFORMANCE REQUIREMENTS

1 Scope

This International Standard specifies the performance requirements, together with the test methods and conditions, required to show compliance of LED lamps with integral means for stable operation, intended for domestic and similar general lighting purposes, having:

- a rated power up to 60 W;
- a rated voltage of > 50 V a.c. up to 250 V a.c.;
- a lamp cap as listed in IEC 62560.

These performance requirements are additional to the safety requirements in IEC 62560.

The only feature provided by this standard, when applied for replacement purposes, is information on maximum lamp outlines.

The requirements of this standard relate to type testing. This standard covers LED lamps that intentionally produce white light, based on inorganic LEDs.

Recommendations for whole product testing or batch testing are under consideration.

The life time of LED lamps is in most cases much longer than the practical test times. Consequently, verification of manufacturer's life time claims cannot be made in a sufficiently confident way, because projecting test data further in time is not standardised. For that reason the acceptance or rejection of a manufacturer's life time claim, past an operational time as stated in 7.1, is out of the scope of this standard.

Instead of life time validation, this standard has opted for lumen maintenance codes at a defined finite test time. Therefore, the code number does not imply a prediction of achievable life time. The categories, represented by the code, are lumen-depreciation character categories showing behaviour in agreement with manufacturer's information, provided before the test is started.

In order to validate a life time claim, several methods of test data extrapolation exist. A general method of projecting measurement data beyond limited test time is under consideration.

The pass/fail criterion of the life time test as defined in this standard is different from the life time metrics claimed by manufacturers. For explanation of recommended life time metrics, see Annex E.

NOTE When lamps are operated in a luminaire the claimed performance data can deviate from the values established via this standard due to e.g. luminaire components that impact the performance of the lamp.

2 Normative references

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.

IEC 60050 (all parts), *International Electrotechnical Vocabulary* (available at <http://www.electropedia.org>).

IEC 60068-2-14, *Environmental testing – Part 2-14: Tests – Test N: change of temperature*

IEC 60081, *Double-capped fluorescent lamps – Performance specifications*

IEC 60630, *Maximum lamp outlines for incandescent lamps*

IEC 61000-3-2:2005, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current $\leq 16\text{A}$ per phase)*, Amendment 2:2009.

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*

IEC/TR 61341, *Method of measurement of centre beam intensity and beam angle(s) of reflector lamps*

IEC/TS 62504, *General lighting – LEDs and LED modules – Terms and definitions*

IEC 62560, *Self-ballasted LED-lamps for general lighting services by voltage $> 50\text{ V}$ – Safety specifications*

IEC/TR 62732, *Three-digit code for designation of colour rendering and correlated colour temperature*

CIE 13.2:1974, *Methods of measuring and specifying colour rendering properties of light sources*

CIE 13.3:1995, *Method of measuring and specifying colour rendering of light sources*

CIE S 017/E:2011, *ILV: International Lighting Vocabulary*

CIE 121:1996, *The photometry and goniophotometry of luminaires*

CIE 177:2007, *Colour rendering of white LED light sources*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC/TS 62504 and IEC 60050-845 as well as the following apply.

3.1

rated value

quantity value for a characteristic of an LED lamp for specified operating conditions

Note 1 to entry: The value and the conditions are specified in this standard, or assigned by the manufacturer or responsible vendor.

3.2

test voltage

voltage at which tests are carried out

Note 1 to entry: Specification of test voltage is made in A.2.