



**SLOVENSKI STANDARD**  
**SIST EN 62560:2013/A1:2015**  
**01-september-2015**

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**LED-sijalke za splošno razsvetljavo z vgrajeno predstikalno napravo pri napetosti nad 50 V - Varnostne specifikacije - Dopolnilo A1**

Self-ballasted LED-lamps for general lighting services by voltage > 50 V - Safety specifications

LED-Lampen mit eingebautem Vorschaltgerät für Allgemeinbeleuchtung für Spannungen > 50 V - Sicherheitsanforderungen

Lampes à DEL autoballastées pour l'éclairage général fonctionnant à des tensions > 50 V - Spécifications de sécurité

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**Ta slovenski standard je istoveten z: EN 62560:2012/A1:2015**

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**ICS:**

29.140.30 Fluorescenčne sijalke. Sijalke Fluorescent lamps.  
Discharge lamps

**SIST EN 62560:2013/A1:2015** en

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EUROPEAN STANDARD

**EN 62560:2012/A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2015

ICS 29.140.30

English Version

**Self-ballasted LED-lamps for general lighting services by voltage  
> 50 V - Safety specifications  
(IEC 62560:2011/A1:2015 , modified)**

Lampes à LED autoballastées pour l'éclairage général  
fonctionnant à des tensions > 50 V - Spécifications de  
sécurité  
(IEC 62560:2011/A1:2015 , modifiée)

LED-Lampen mit eingebautem Vorschaltgerät für  
Allgemeinbeleuchtung für Spannungen > 50 V -  
Sicherheitsanforderungen  
(IEC 62560:2011/A1:2015 , modifiziert)

This amendment A1 modifies the European Standard EN 62560:2012; it was approved by CENELEC on 2015-05-04. 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, 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**

## Foreword

The text of document 34A/1836/FDIS, future IEC 62560:2011/A1, prepared by SC 34A "Lamps" of IEC/TC 34 "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62560:2012/A1:2015.

A draft amendment, which covers common modifications to IEC 62560:2011/A1 (34A/1836/FDIS), was prepared by CLC/TC 34A "Lamps" and approved by CENELEC.

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) 2016-05-04
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-05-04

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.

This European Standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LYD - 2006/95/EC).

### Endorsement notice

<https://standards.iteh.ai/catalog/standards/sist/f6867c68-b596-4570-8217-878578b4ec05/iec-62560-2011-a1-2015>

The text of the International Standard IEC 62560:2011/A1:2015 was approved by CENELEC as a European Standard with agreed common modifications.

**COMMON MODIFICATIONS**

**CONTENTS** **Add** the following annexes:  
 Annex ZA (normative) Normative references to international publications with their corresponding European publications

Lamps with the following caps are excluded from EN 62560:2012/A1:2015 as they do not comply with European safety requirements:

- E11;
- E12;
- E17;
- E26;
- E26d;
- E39.

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**Bibliography** **Add** to the bibliography of EN 62560:2012 the following notes for the standards indicated:

[SIST EN 62560:2013/A1:2015](http://standards.iteh.ai/catalog/standards/sist/en-62560-2013-a1-2015)  
<http://standards.iteh.ai/catalog/standards/sist/en-62560-2013-a1-2015>

IEC 60432-1 **NOTE** Harmonized as EN 60432-1:570-8217-  
 IEC 62471 **NOTE** Harmonized as EN 62471.

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## 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](http://www.cenelec.eu)

#### **Modification in Annex ZA of EN 62560:2012:**

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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#### **Update the reference to IEC 61347-1:2007 as follows:**

IEC 61347-1	-	Lamp controlgear - Part 1: General and safety requirements	EN 61347-1	-
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#### **Add to the existing list the following new reference:**

IEC/TR 62778	2014	Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires	-	-
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<https://standards.iteh.ai/catalog/standards/sist/f6867c68-b596-4570-8217-f678f78bc0c6/sist-en-62560-2013-a1-2015>

#### **Delete from the existing list the following references:**

IEC/TR 62471-2	-	Photobiological safety of lamps and lamp systems - Part 2: Guidance on manufacturing requirements relating to non-laser optical radiation safety		
IEC 60432-1	-	Incandescent lamps - Safety specifications - Part 1: Tungsten filament lamps for domestic and similar general lighting purposes	EN 60432-1	-



IEC 62560

Edition 1.0 2015-04

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

AMENDMENT 1  
AMENDEMENT 1

Self-ballasted LED-lamps for general lighting services by voltage > 50 V – Safety specifications

(standards.iteh.ai)

Lampes à LED autoballastées pour l'éclairage général fonctionnant à des tensions > 50 V – Spécifications de sécurité

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## FOREWORD

This amendment has been prepared by subcommittee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

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

FDIS	Report on voting
34A/1836/FDIS	34A/1845/RVD

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

The committee has decided that the contents of this amendment and the base 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.

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The contents of the corrigendum of June 2015 have been included in this copy.

SIST EN 62560:2013/A1:2015

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## CONTENTS

*Replace the title of subclause 6.2 as follows:*

6.2 Bending moment and mass imparted by the lamp at the lamp holder

*Replace the titles of subclauses 9.1, 9.2 and 9.3 as follows.*

9.1 Requirements  
9.2 Tests  
9.3 Compliance criteria

*Add the title of the new subclause 9.4 as follows.*

9.4 Axial strength of Edison caps

*Replace the titles of subclauses 13.1, 13.2 and 13.3 as follows:*

13.1 General requirements  
13.2 Test conditions  
13.3 Compliance



*Delete the titles of the existing subclauses 13.4 to 13.6.*

*Add the titles of new Clauses 15 to 18 along with their corresponding subclauses as follows:*

- 15 Abnormal operation
- 16 Test conditions for dimmable lamps
- 17 Photobiological safety
  - 17.1 UV radiation
  - 17.2 Blue light hazard
  - 17.3 Infrared radiation
- 18 Ingress protection
  - 18.1 Requirements
  - 18.2 Tests
- 19 Information for luminaire design

*Replace the title of Annex A as follows:*

Annex A (informative) Information for luminaire design

*Delete the title of Annex B.*

*Replace, in the list of figures, the titles for Figures 3 and 4 as follows.*

Figure 3 – Holder for torque test on lamps with screw caps (from IEC 60432-1, Figure C.2)  
 Figure 4 – Holder for torque test on lamps with bayonet caps (from IEC 60432-1, Figure C.1)

*Add, in the list of figures, the titles for new Figures 6, 7 and 8 as follows:*

Figure 6 – Lamp not suitable for use under moisture  
 Figure 7 – Test equipment for applying an axial force  
 Figure 8 – Test circuit for testing a non-dimmable lamp at a dimmer or electronic switch

*Add, in the list of tables, the title for new Table 4 as follows:*

Table 4 – Values for axial force

## 1 Scope

*Add, below the existing note, a new note 2 as follows and renumber the existing note to NOTE 1:*

NOTE 2 This standard includes photobiological safety.

## 2 Normative references

*Update the reference to IEC 61347-1:2007 as follows:*

IEC 61347-1:—, *Lamp controlgear – Part 1: General and safety requirements*

*Add, to the existing list, the following new reference:*

IEC TR 62778: 2014, *Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires*

Delete, from the existing list, the following references:

IEC/TR 62471-2, *Photobiological safety of lamps and lamp systems – Part 2: Guidance on manufacturing requirements relating to non-laser optical radiation safety*

IEC 60432-1, *Incandescent lamps – Safety specifications – Part 1: Tungsten filament lamps for domestic and similar general lighting purposes*

### 3 Terms and definitions

Add, after definition 3.9, the following new definition 3.10:

#### 3.10

#### ultraviolet hazard efficacy of luminous radiation

$K_{S,v}$

quotient of an ultraviolet hazard quantity to the corresponding photometric quantity

NOTE 1 Ultraviolet hazard efficacy of luminous radiation is expressed in mW/klm.

NOTE 2 The ultraviolet hazard efficacy of luminous radiation is obtained by weighting the spectral power distribution of the lamp with the UV hazard function  $S_{UV}(\lambda)$ . Information about the relevant UV hazard function is given in IEC 62471. It only relates to possible hazards regarding UV exposure of human beings. It does not deal with the possible influence of optical radiation on materials, such as mechanical damage or discoloration.

#### Subclause 5.2

Delete, item a) and its text.

[SIST EN 62560:2013/A1:2015](https://standards.iteh.ai/catalog/standards/sist/f6867c68-b596-4570-8217-107880000000/iec-62560-10-1-2015)

[https://standards.iteh.ai/catalog/standards/sist/f6867c68-b596-4570-8217-](https://standards.iteh.ai/catalog/standards/sist/f6867c68-b596-4570-8217-107880000000/iec-62560-10-1-2015)

Replace the text of item e) with the following new text and new Figure 6:

- e) Lamps with bulbs not suitable for water contact shall be marked with the symbol according to Figure 6. The marking shall be provided on the packaging or accompanying information. The height of the graphical symbol shall be at least 5 mm. The symbol is not needed if a written cautionary notice is provided such as 'Use in Dry Locations only'.



[SOURCE: IEC 60417-6179-1 (2014-10)]

Figure 6 – Lamp not suitable for use under moisture

### 6.2 Bending moment, axial pull and mass

Replace the title and text of this subclause including Table 2 as follows:

#### 6.2 Bending moment and mass imparted by the lamp at the lamp holder

The value of the bending moment and mass, imparted by the lamp at the lampholder shall not exceed the value given in Table 2 or, where not given, the value in the system information on cap sheets specified in IEC 60061-1.

The bending moment shall be determined by measuring the weight of the lamp (e. g. by means of a balance) at the tip of the bulb of the horizontally held lamp and multiplying this force by the distance between the tip of the bulb and the pivot line. The pivot line shall lie at

the bottom end of the cylindrical part (for Edison and bayonet caps) or at the end of the contact pins (for pin caps). It shall be supported by an upright held thin metal sheet or a similar means.

**Table 2 – Bending moments and masses**

Cap	Bending moment Nm	Mass kg
B15d	1	u.c.
B22d	2	1
E11	0,5	u.c.
E12	0,5	u.c.
E14	1	u.c.
E17	1	u.c.
E26	2	1
E27	2	1
E39	1 (u.c.)	u.c.
E40	1 (u.c.)	u.c.
GU10	0,1	u.c.
GZ10	0,1	u.c.
GX53	0,3	u.c.
u.c.: under consideration		

NOTE 1 For lamps with caps different to those in Table 2, the effect of the bending moment should be regarded and limited. A measurement method for these lamps with these caps is under consideration.

NOTE 2 It should be taken care that the luminaire surface where the lampholder is fixed to can withstand the bending moment. For the calculation of this bending moment, the length of the lampholder needs to be taken into account when measuring the overall length. This should be made sure for the elevated temperature during operation in order to check the possible softening of the surface material.

NOTE 3 Requirements for lamps with additional mechanical fixation e.g. rim mounted lamps, is under consideration.

### 8.3 Electric strength

*Replace the existing text of this subclause by the following:*

*Immediately after the insulation resistance test, the same parts as specified above shall withstand a voltage test for 1 min with an a.c. voltage or a d.c. voltage equal to the peak voltage of the prescribed a.c. voltage as follows.*

NOTE The use of either a.c. or d.c. voltage is advised by the manufacturer.

*During the test, the supply contacts of the cap are short-circuited. Accessible parts of insulating material of the lamp are covered with metal foil. Initially, no more than half the voltage prescribed in IEC 60598-1, Table 10.2, reference d) for double and reinforced insulation is applied between the contacts and the metal foil. It is then gradually raised to the full value. Care shall be taken that the metal foil is so placed that no flashover occurs at the edges of the insulation.*

No flashover or breakdown shall occur during the test. Measurements shall be carried out in the humidity cabinet.