

SINGAPORE STANDARD

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

– Part 1 : Safety specifications

[Identical adoption of IEC 62560:2011]



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services with supply voltages > 50 V**

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M & P Consulting Engineers
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Nanyang Technological University
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CONTENTS

NATIONAL FOREWORD	7
FOREWORD	8
INTRODUCTION	10
1 Scope	11
2 Normative references	11
3 Terms and definitions	12
4 General requirements and general test requirements	13
5 Marking	14
6 Interchangeability	15
6.1 Cap interchangeability	15
6.2 Bending moment and mass imparted by the lamp at the lamp holder	16
7 Protection against accidental contact with live parts	16
8 Insulation resistance and electric strength after humidity treatment	18
8.1 General	18
8.2 Insulation resistance	18
8.3 Electric strength	18
9 Mechanical strength	19
9.1 Requirements	19
9.2 Tests	19
9.3 Compliance criteria	22
9.4 Axial strength of Edison caps	22
10 Cap temperature rise	23
11 Resistance to heat	24
12 Resistance to flame and ignition	25
13 Fault conditions	25
13.1 General requirements	25
13.2 Test conditions	25
13.3 Compliance	26
14 Creepage distances and clearances	26
15 Abnormal operation	27
16 Test conditions for dimmable lamps	28
17 Photobiological safety	28
17.1 UV radiation	28
17.2 Blue light hazard	28
18 Ingress protection	28
18.1 Requirements	28
18.2 Tests	29
19 Information for luminaire design	29
Annex A (informative) Information for luminaire design	30
Bibliography	31

Figure 1 – Dimming not allowed.....	14
Figure 6 – Lamp not suitable for use under moisture	14
Figure 2 – Standard test finger (according to IEC 60529)	17
Figure 3 – Holder for torque test on lamps with screw caps (from IEC 60432-1, Figure C.2).....	20
Figure 4 – Holder for torque test on lamps with bayonet caps (from IEC 60432-1, Figure C.1).....	21
Figure 7 – Test equipment for applying an axial force	23
Figure 5 – Ball-pressure test apparatus	24
Figure 8 – Test circuit for testing a non-dimmable lamp at a dimmer or electronic switch	27
Table 1 – Interchangeability gauges and lamp cap dimensions	15
Table 2 – Bending moments and masses.....	16
Table 3 – Torque test values for unused lamps.....	21
Table 4 – Values for axial force	23

National Foreword

This Singapore Standard was prepared by a Working Group appointed by the Technical Committee on Building Facilities and Services under the direction of the Electrical and Electronic Standards Committee.

This standard is an identical adoption of International Standard IEC 62560:2011, 'Self-ballasted LED lamps for general lighting services by voltage > 50 V – Safety specifications' published by the International Electrotechnical Commission.

Attention is drawn to the following:

1. Where appropriate, the words 'International Standard' shall be read as 'Singapore Standard'. The reference to 'IEC 60598-1' shall be replaced by 'SS 263-1'.
2. The comma has been used throughout as a decimal marker whereas in Singapore Standards it is a practice to use a full point on the baseline as the decimal marker.

SS 609 comprises the following two parts under the general title 'Self-ballasted LED lamps for general lighting services with supply voltages > 50 V':

Part 1: Safety specifications

Part 2: Performance requirements (Identical adoption of IEC 62612:2013)

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. Enterprise Singapore shall not be held responsible for identifying any or all of such patent rights.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SELF-BALLASTED LED-LAMPS FOR GENERAL
LIGHTING SERVICES BY VOLTAGE > 50 V –
SAFETY SPECIFICATIONS**

FOREWORD

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This Consolidated version of IEC 62560 bears the edition number 1.1. It consists of the first edition (2011-02) [documents 34A/1425/FDIS and 34A/1447/RVD] and its amendment 1 (2015-04) [documents 34A/1836/FDIS and 34A/1845/RVD]. The technical content is identical to the base edition and its amendment.

This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.

International Standard IEC 62560 has been prepared by subcommittee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

In this standard, the following print types are used:

- requirements proper: in roman type.
- *test specifications: in italic type.*

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

The contents of the corrigenda 1 (January 2012) and 2 (July 2015), and the corrigendum of Amendment 1 (June 2015) have been included in this copy.

INTRODUCTION

There will be and are already LED products in the market which substitute existing lamps, either as retrofit mains voltage incandescent or self-ballasted fluorescent lamps or as replacement for tungsten halogen lamps below 50 V.

The present document takes up the supply voltage range from > 50 V up to 250 V. A proposal for a safety standard for LED lamps with voltages ≤ 50 V may follow in due time.

Future work will also consequently comprise performance standards for all kind of LED lamps, including minimum photometric requirements for type testing.

Due to the urgent need of establishing this standard, it will be a stand-alone standard for the time being, not excluding a future relocation as a part of IEC 60968, self-ballasted lamps.

SELF-BALLASTED LED-LAMPS FOR GENERAL LIGHTING SERVICES BY VOLTAGE > 50 V – SAFETY SPECIFICATIONS

1 Scope

This International Standard specifies the safety and interchangeability requirements, together with the test methods and conditions required to show compliance of LED-lamps with integrated means for stable operation (self-ballasted LED-lamps), intended for domestic and similar general lighting purposes, having:

- a rated wattage up to 60 W;
- a rated voltage of > 50 V up to 250 V;
- caps according to Table 1.

The requirements of this standard relate only to type testing.

Recommendations for whole product testing or batch testing are identical to those given in Annex C of IEC 62031.

NOTE 1 Where in this standard the term “lamp(s)” is used, it is understood to stand for “self-ballasted LED-lamp(s)”, except where it is obviously assigned to other types of lamps.

NOTE 2 This standard includes photobiological safety.

2 Normative references

The following reference documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the reference document (including any amendments) applies.

IEC 60061-1, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 1 : Lamp caps*

IEC 60061-3, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 3 : Gauges*

IEC 60360, *Standard method of measurement of lamp cap temperature rise*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60598-1:2008, *Luminaires – Part 1: General requirements and tests*

IEC 60695-2-10:2000, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods; Glow-wire apparatus and common test procedure*

IEC 60695-2-11:2000, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end products*

IEC 60695-2-12:2000, *Fire hazard testing – Part 2-12: Glowing/hot-wire based test methods; Glow-wire flammability test method for materials*

IEC 60695-2-13:2000, *Fire hazard testing – Part 2-13: Glowing/hot-wire based test methods; Glow-wire ignitability test method for materials*

IEC 61199:1999, *Single-capped fluorescent lamps – Safety specifications*

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

IEC 62031:2008, *LED modules for general lighting – Safety requirements*

IEC/TS 62504, *Terms and definitions of LEDs and LED modules in general lighting*¹

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

ISO 4046-4:2002, *Paper, board, pulp and related terms – Vocabulary – Part 4: Paper and board grades and converted products*