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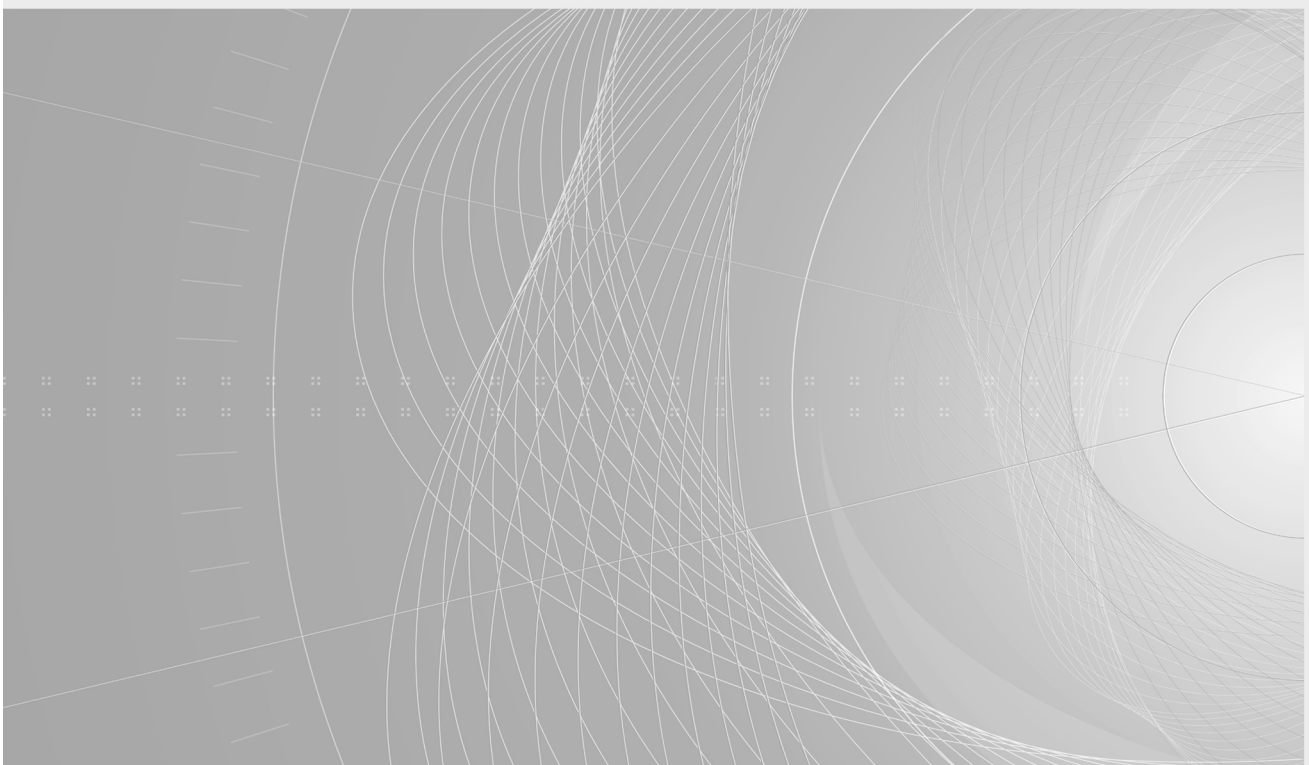
Edison screw lampholders

Douilles à vis edison pour lampes

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

EDISON SCREW LAMPHOLDERS

FOREWORD

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IEC 60238 edition 9.1 contains the ninth edition (2016-07) [documents 34B/1852/FDIS and 34B/1860/RVD], and its amendment 1 (2017-01) [documents 34B/1887/FDIS and 34B/1892/RVD] and its corrigendum (2018-01).

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 60238 has been prepared by subcommittee 34B: Lamp caps and holders, of IEC technical committee 34: Lamps and related equipment.

This ninth edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Addition of a pull test for certain E5 and E10 lampholders.
- b) Annex D listing amended requirements/clauses which require products to be retested.

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

In this standard, the following print types are used:

– *compliance statements: 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

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- withdrawn,
- replaced by a revised edition, or
- amended.

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EDISON SCREW LAMPHOLDERS

1 Scope

This International Standard applies to lampholders with Edison thread E14, E27 and E40, designed for connection to the supply of lamps and semi-luminaires¹ only.

It also applies to switched-lampholders for use in AC circuits only, where the working voltage does not exceed 250 V r.m.s.

This standard also applies to lampholders with Edison thread E5 designed for connection to the supply mains of series connected lamps, with a working voltage not exceeding 25 V, to be used indoors, and to lampholders with Edison thread E10 designed for connection to the supply mains of series connected lamps, with a working voltage not exceeding 60 V, to be used indoors or outdoors. It also applies to lampholders E10 for building-in, for the connection of single lamps to the supply. These lampholders are not intended for retail sale.

As far as it reasonably applies, this standard also covers lampholders other than lampholders with Edison thread designed for connection of series-connected lamps to the supply.

NOTE This type of lampholder is for example used in Christmas tree lighting chains.

As far as it reasonably applies, this standard also covers adapters.

This standard also covers lampholders which are, wholly or partly, integral with a luminaire or intended to be built into appliances. It covers the requirements for the lampholder only. For all other requirements, such as protection against electric shock in the area of the terminals or of the lamp cap, the requirements of the relevant appliance standard are observed and tested after building into the appropriate equipment, when that equipment is tested according to its own standard. Such lampholders as well as lampholders provided with a snap-on outer shell, for use by luminaire manufacturers only, are not for retail sale.

This standard applies to lampholders to be used indoors or outdoors in residential as well as in industrial lighting installations. It also applies to candle lampholders. In locations where special conditions prevail, as for street lighting, on board ships, in vehicles and in hazardous locations, for example where explosions are liable to occur, special constructions may be required.

This standard does not apply to three-light lampholders E26d.

This standard is based on the following data relative to lamps for general lighting service:

- caps E14 are used for lamps with a current not exceeding 2 A;
- caps E27 are used for lamps with a current not exceeding 4 A;
- caps E40 are used for lamps with a current not exceeding 16 A, or 32 A if the nominal voltage of the supply does not exceed 130 V (see 5.5 and 6.3).

Where lampholders are used in luminaires, their maximum operating temperatures are specified in IEC 60598.

¹ Requirements for lampholders suitable for semi-luminaires are under consideration.

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

IEC 60061-2, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 2: Lampholders*

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

IEC 60068-2-32:1975, *Basic environmental testing procedures – Part 2-32: Tests – Test Ed: Free fall*

IEC 60068-2-75:2014, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC 60112:2003, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*
Amendment 1:2009

IEC 60227 (all parts), *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*

IEC 60245 (all parts), *Rubber insulated cables – Rated voltages up to and including 450/750 V*

IEC 60352-1:1997, *Solderless connections – Part 1: Wrapped connections – General requirements, test methods and practical guidance*

IEC 60399, *Barrel thread for lampholders with shade holder ring*

IEC 60417, *Graphical symbols for use on equipment* (available at: <http://www.graphical-symbols.info/equipment>)

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
Amendment 1:1999
Amendment 2:2013²

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

IEC 60630, *Maximum lamp outlines for incandescent lamps*

IEC 60695-2-11:2014, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)*

IEC 60695-11-5, *Fire hazard testing – Part 11-5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance*

² A consolidated edition 2.2 (2013) exists including edition 2.0 (1989) and its Amendment 1 (1999) and Amendment 2 (2013).

IEC 61058-1:2000, *Switches for appliances – Part 1: General requirements*

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

cord-grip lampholder

lampholder incorporating a method of retaining a flexible cord by which it may then be suspended

3.2

threaded entry lampholder

lampholder incorporating a threaded component at the point of entry of the supply wires permitting the lampholder to be mounted on a mating threaded support

Note 1 to entry: A threaded entry lampholder was formerly called a “nipple lampholder”.

3.3

backplate lampholder

lampholder so designed as to be suitable for mounting by means of an associated or integral backplate, directly onto a supporting surface or appropriate box

3.4

lampholder for building-in

lampholder designed to be built into a luminaire, an additional enclosure or the like

3.4.1

unenclosed lampholder

lampholder for building-in so designed that it requires additional means, for example an enclosure, to meet the requirements of this standard with regard to protection against electric shock

3.4.2

enclosed lampholder

lampholder for building-in so designed that on its own it fulfils the requirements of this standard with regard to protection against electric shock and IP classification, if appropriate

3.5

independent lampholder

lampholder so designed that it can be mounted separately from a luminaire and at the same time providing all the necessary protection according to its classification and marking

3.6

terminal/contact assembly

part or assembly of parts which provides a means of connection between the termination of a supply conductor and the contact making surfaces of the corresponding lamp cap

Note 1 to entry: For clarification of some definitions, see also Figure 17.

3.7

outer shell

cylindrical component protecting the user from contact with the lamp cap.

Note 1 to entry: It may or may not be provided with an external screw thread for fixing a shade ring.

Note 2 to entry: For clarification of some definitions, see also Figure 17.

3.7.1

snap-on outer shell

outer shell for screwless assembly which does not contain the screw shell

Note 1 to entry: The lampholder should not be used when the snap-on outer shell is removed. It is therefore recommended to place an approval mark, if provided, in such a way that it is not visible when this type of outer shell is removed.

3.8

screw shell

cylindrical component having an internal screw thread of Edison form for the retention of the corresponding lamp (cap)

Note 1 to entry: In some constructions, the screw shell is permanently fixed to or integral with the outer shell.

Note 2 to entry: For clarification of some definitions, see also Figure 17.

3.9

insulating ring

cylindrical intermediate piece of insulating material separating a metal screw shell and a metal outer shell

Note 1 to entry: For clarification of some definitions, see also Figure 17.

3.10

shade ring

cylindrical component having an internal thread or other means to engage a corresponding support on the outer shell and intended to carry or retain a shade

Note 1 to entry: For clarification of some definitions, see also Figure 17.

3.11

dome

part of a cord-grip lampholder or threaded entry lampholder which shields the connecting terminals

Note 1 to entry: For clarification of some definitions, see also Figure 17.

3.12

basic insulation

insulation applied to live parts to provide basic protection against electric shock

Note 1 to entry: Basic insulation does not necessarily include insulation used exclusively for functional purposes.

3.13

supplementary insulation

independent insulation applied in addition to basic insulation in order to provide protection against electric shock in the event of a failure of basic insulation

3.14

double insulation

insulation comprising both basic insulation and supplementary insulation

3.15

reinforced insulation

single insulation system applied to live parts, which provides a degree of protection against electric shock equivalent to double insulation under the conditions specified

Note 1 to entry: The term "insulation system" does not imply that the insulation is one homogeneous piece. It may comprise several layers which cannot be tested singly as supplementary or basic insulation.

3.16

live part

conductive part which may cause an electric shock

3.17

type test

test or series of tests made on a type test sample, for the purpose of checking compliance of the design of a given product with the requirements of the relevant standard

3.18

type test sample

sample consisting of one or more similar specimens submitted by the manufacturer or responsible vendor for the purpose of a type test

3.19

semi-luminaire

unit similar to a self-ballasted lamp but designed to utilize a replaceable light source and/or starting device

3.20

rated operating temperature

highest temperature for which the holder is designed

3.21

rated minimum temperature

lowest temperature for which the holder is designed (applicable only to lampholders intended for use in refrigerators and food freezers)

3.22

angled lampholder

lampholder, the rear side of which (threaded entry and/or dome) is at an angled position to the screw shell axis

3.23

lampholder with retention device

lampholder with a device intended to prevent the lamp from becoming loose in the holder

Note 1 to entry: Lamps can, for example, become loose due to changes in temperature or to vibrations.

3.24

impulse withstand category

numeral defining a transient overvoltage condition

Note 1 to entry: Impulse withstand categories I, II, III and IV are used.

a) Purpose of classification of impulse withstand categories

Impulse withstand categories are to distinguish different degrees of availability of equipment with regard to required expectations on continuity of service and on an acceptable risk of failure.

By selection of impulse withstand levels of equipment insulation, co-ordination can be achieved in the whole installation, reducing the risk of failure to an acceptable level providing a basis for overvoltage control.

A higher characteristic numeral of an impulse withstand category indicates a higher specific impulse withstand of the equipment and offers a wider choice of methods for overvoltage control.

The concept of impulse withstand category is used for equipment energized directly from the mains.

b) Description of impulse withstand categories

Equipment of impulse withstand category I is equipment which is intended to be connected to the fixed electrical installations of buildings. Protective means are taken outside the equipment – either in the fixed