



SLOVENSKI STANDARD
SIST EN 60238:1999

01-julij-1999

Edison screw lampholders (IEC 60238:1996)

Edison screw lampholders

Lampenfassungen mit Edisongewinde

Douilles à vis Edison pour lampes

Ta slovenski standard je istoveten z: EN 60238:1996

ITEN STANDARD PREVIEW
(standards.iteh.ai)
<https://standards.iteh.ai/catalog/standards/sist/67f4039f-0675-4820-bc6b-26531a3eb9b3/sist-en-60238-1999>

ICS:

29.140.10 Grla in držala žarnic Lamp caps and holders

SIST EN 60238:1999 **en**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60238:1999

<https://standards.iteh.ai/catalog/standards/sist/67f4039f-0675-4820-bc6b-26531a3eb9b3/sist-en-60238-1999>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60238

July 1996

ICS 29.140.10

Supersedes EN 60238:1992 and its amendments

Descriptors: Edison screw holders, dimensions, requirements, testing, definitions, switches

English version

**Edison screw lampholders
(IEC 238:1996)**

Douilles à vis Edison pour lampes
(CEI 238:1996)

Lampenfassungen mit Edisongewinde
(IEC 238:1996)



iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60238:1999

<https://standards.iteh.ai/catalog/standards/sist/67f4039f-0675-4820-bc6b-40811389174/sist-en-60238-1999>
This European Standard was approved by CENELEC on 1996-07-02. CENELEC members are bound to comply with the CEN/CENELEC internal Regulations which stipulate the conditions for giving this European Standard 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 Central Secretariat or to any CENELEC member.

This European Standard 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 34B/591/FDIS, future edition 6 of IEC 238, prepared by SC 34B, Lamp caps and holders, of IEC TC 34, Lamps and related equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60238 on 1996-07-02.

This European Standard supersedes EN 60238:1992 and its amendments.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 1997-04-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 1997-04-01

For products which have complied with EN 60238:1992 and its amendments A1:1995 and A2:1995 before 1997-04-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2002-04-01.

Annexes designated "normative" are part of the body of the standard.
In this standard, annexes A and ZA are normative.
Annex ZA has been added by CENELEC.

(standards.iteh.ai)

Endorsement notice

SIST EN 60238:1999

The text of the International Standard IEC 238:1996 was approved by CENELEC as a European Standard without any modification.



Annex ZA (normative)

Normative references to international publications
with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 61-1 + supplements (mod)	1969	Lamp caps and holders together with gauges for the control of interchangeability and safety Part 1: Lamp caps	EN 60061-1 + amendments	1993
IEC 61-2 + supplements (mod)	1969	Part 2: Lampholders	EN 60061-2 + amendments	1993
IEC 61-3 + supplements (mod)	1969	Part 3: Gauges SIST EN 60238:1999 https://standards.iteh.ai/catalog/standards/sist/67f4039f-0675-4820-bc6b-26531a3eb9b3/sist-en-60238-1999	EN 60061-3 + amendments	1993
IEC 68-2-20	1979	Basic environmental testing procedures Part 2: Tests - Test T: Soldering	HD 323.2.20 S3 ¹⁾	1988
IEC 112	1979	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	HD 214 S2	1980
IEC 227 (mod)	series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	HD 21	series
IEC 245 (mod)	series	Rubber insulated cables of rated voltages up to and including 450/750 V	HD 22	series
IEC 335-1	1976	Safety of household and similar electrical appliances Part 1: General requirements	EN 60335-1 ²⁾	1988

1) HD 323.2.20 S3 includes A2:1987 to IEC 68-2-20.

2) EN 60335-1 is superseded by EN 60335-1:1994, which is based on IEC 335-1:1991, mod.

<u>Publication</u>	<u>Année</u>	<u>Titre</u>	<u>EN/HD</u>	<u>Année</u>
IEC 352-1	1983	Solderless connections Part 1: Solderless wrapped connections General requirements, test methods and practical guidance	EN 60352-1	1994
IEC 399	1972	Standard sheets for barrel thread for E14 and E27 lampholders with shade holder ring	EN 60399	1993
IEC 529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
IEC 598-1 (mod)	1992	Luminaire Part 1: General requirements and tests	EN 60598-1 + corr. May	1993 1996
IEC 695-2-1/X	1994 ³⁾	Fire hazard testing Part 2: Test methods Section 1	-	-
IEC 695-2-2	1991	Section 2: Needle-flame test	EN 60695-2-2	1994
IEC 1058-1	1990	Switches for appliances Part 1: General requirements	EN 61058-1	1992
ASTM specification D 785-65	1981		-	-

iteh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60238:1999

<https://standards.iteh.ai/catalog/standards/sist/67f4039f-0675-4820-bc6b-26531a3eb9b3/sist-en-60238-1999>

3) IEC 695-2-1/0 to 1/3:1994 are being harmonized by CENELEC.

NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
238

Sixième édition
Sixth editio
1996-0

Douilles à vis Edison pour lampes

Edison screw lampholders

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60238:1999

<https://standards.iteh.ai/catalog/standards/sist/67f4039f-0675-4820-bc6b-26531a3eb9b3/sist-en-60238-1999>

© CEI 1996 Droits de reproduction réservés — Copyright - all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur.

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher

Bureau central de la Commission Electrotechnique Internationale 3, rue de Varembe Genève Suisse



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

X/

● Pour prix, voir catalogue en vigueur.
For price, see current catalogue

CONTENTS

	Page
FOREWORD	5
Clause	
1 General	7
1.1 Scope	7
1.2 Normative references	9
2 Definitions	11
3 General requirements	15
4 General conditions for tests	15
5 Standard ratings	17
6 Classification	19
7 Marking	21
8 Dimensions	25
9 Protection against electric shock	31
10 Terminals	35
11 Provision for earthing	43
12 Construction	45
13 Switched-lampholders	55
14 Moisture resistance, insulation resistance and electric strength	57
15 Mechanical strength	61
16 Screws, current-carrying parts and connections	71
17 Creepage distances and clearances	75
18 Normal operation	79
19 General resistance to heat	81
20 Resistance to heat, fire and tracking	87
21 Resistance to excessive residual stresses (season cracking) and to rusting	93
Annex	
A - Season cracking/corrosion test	95
Figures	98

INTERNATIONAL ELECTROTECHNICAL COMMISSION

EDISON SCREW LAMP HOLDERS

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters, express as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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

The text of this standard is based on the fifth edition, amendment 1, amendment 2 and the following documents:

FDIS	Report on voting
34B/591/FDIS	34B/620/RVD

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

Annex A forms an integral part of this standard.

In this standard, the following print types are used:

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

EDISON SCREW LAMPHOLDERS

1 General

1.1 Scope

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

It also applies to switched-lampholders for use in a.c. 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.

(standards.iteh.ai)

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.

<https://standards.iteh.ai/catalog/standards/sist/67f4039f-0675-4820-bc6b-20551a5c6905/sist-en-60238-1999>
NOTE - This type of lampholder is for example used in Christmas tree lighting chains.

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, the requirements of the relevant appliance standard shall be observed and tested after building into the appropriate equipment, when that equipment is tested according to its own standard. Such lampholders are not intended for retail sale. Independent lampholders, e.g. backplate lampholders, not specifically intended for building-in, are also tested as luminaires.

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, e.g. where explosions are liable to occur, special constructions may be required.

NOTES

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

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

- 2) 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.
- 3) If the nominal voltage of the supply does not exceed 130 V, the maximum current for caps E40 is 32 A (see 4.5 and 5.3).
- 4) Where lampholders are used in luminaires, their maximum operating temperatures are specified in IEC 598.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All normative documents are subjected to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 61: 1969, *Lamp caps and holders together with gauges for the control of interchangeability and safety.*

IEC 61-1: *Lamp caps and holders together with gauges for the control of interchangeability and safety - Part 1: Lamp caps.*

IEC 61-2: *Lamp caps and holders together with gauges for the control of interchangeability and safety - Part 2: Lampholders.*

IEC 61-3: *Lamp caps and holders together with gauges for the control of interchangeability and safety - Part 3: Gauges.*

IEC 68-2-20: 1979, *Environmental testing - Part 2: Tests - Test T: Soldering*

IEC 112: 1979, *Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions.*

IEC 227: *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V.*

IEC 245: *Rubber insulated cables of rated voltages up to and including 450/750 V.*

IEC 335-1: 1976, *Safety of household and similar electrical appliances - Part 1: General requirements.*

IEC 352-1: 1983, *Solderless connections - Part 1: Solderless wrapped connections - General requirements, test methods and practical guidance*

IEC 399: 1972, *Standard sheets for barrel thread for E14 and E27 lampholders with shade holder ring.*

IEC 529: 1989, *Classification of degrees of protection provided by enclosures.*

IEC 598-1: 1992, *Luminaires - Part 1: General requirements and tests.*

IEC 695-2-1: 1994, *Fire hazard testing – Part 2: Test methods – Section 1: Glow-wire test and guidance.*

IEC 695-2-2: 1991, *Fire hazard testing – Part 2: Test methods – Section 2: Needle-flame test.*

IEC 1058-1: 1990, *Switches for appliances – Part 1: General requirements*

Other publication quoted:

ASTM specification D 785-65: 1981.

2 Definitions

For the purpose of this International Standard, the following definitions apply. For clarification of some definitions see also figure 18.

2.1 cord-grip lampholder: A lampholder incorporating a method of retaining a flexible cord by which it may then be suspended.

2.2 threaded entry lampholder: A 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 (formerly called "nipple lampholder").

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

2.4 lampholder for building-in: A lampholder designed to be built into a luminaire, an additional enclosure or the like.

2.4.1 unenclosed lampholder: A 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.

2.4.2 enclosed lampholder: A 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.

2.5 independent lampholder: A 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.

2.6 terminal/contact assembly: A part or assembly of parts which provide(s) a means of connection between the termination of a supply conductor and the contact making surfaces of the corresponding lamp cap.

2.7 outer shell: A cylindrical component protecting the user from contact with the lamp cap. It may or may not be provided with an external screw thread for fixing a shade ring.

2.8 screw shell: A cylindrical component having an internal screw thread of Edison form for the retention of the corresponding lamp (cap). In some constructions, the screw shell is permanently fixed to or integral with the outer shell.

2.9 insulating ring: A cylindrical intermediate piece of insulating material separating a metal screw shell and a metal outer shell.

2.10 shade ring: A 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.

2.11 dome: A part of a cord-grip lampholder or threaded entry lampholder which shields the connecting terminals.

2.12 basic insulation: An insulation applied to live parts to provide basic protection against electric shock.

NOTE - Basic insulation does not necessarily include insulation used exclusively for functional purposes.

2.13 supplementary insulation: An 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.

2.14 double insulation: An insulation comprising both basic insulation and supplementary insulation.

2.15 reinforced insulation: A 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 - The term "insulation system" does not imply that the insulation must be one homogeneous piece. It may comprise several layers which cannot be tested singly as supplementary or basic insulation.

2.16 live part: A conductive part which may cause an electric shock.

2.17 type test: A 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.

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

2.19 semi-luminaire: A unit similar to a self-ballasted lamp but designed to utilize a replaceable light source and/or starting device.

2.20 rated operating temperature: The highest temperature for which the holder is designed

2.21 rated minimum temperature: The lowest temperature for which the holder is designed (applicable only to lampholders intended for use in refrigerators and food freezers).

3 General requirement

Lampholders shall be so designed and constructed that in normal use they function reliably and cause no danger to persons or surroundings.

In general, compliance is checked by carrying out all the tests specified.

In addition, the enclosure of independent lampholders shall comply with the requirements of IEC 598-1, including the classification and marking requirements of that standard.

4 General conditions for tests

4.1 Tests according to this standard are type tests.

NOTE - The requirements and tolerances permitted by this standard are related to testing of a type test sample submitted for that purpose.

Compliance of the type test sample does not ensure compliance of the whole production of a manufacturer with this safety standard.

In addition to type testing, conformity of production is the responsibility of the manufacturer and may include routine tests and quality assurance.

4.2 *Unless otherwise specified, the tests are made at an ambient temperature of $20\text{ °C} \pm 5\text{ °C}$ and with the holder tested as delivered and installed as in normal use.*

4.3 *The tests and inspections are carried out on a total of:*

- *nine specimens for non-switched lampholders, or*
- *twelve specimens for switched lampholders;*

in the following order of clauses:

- *three specimens clauses 1 to 12 (except for 10.2) and 14 to 17;*
- *three specimens clause 13 (switched-lampholder tests only);*
- *three specimens clauses 18 and 19;*
- *two specimens clause 20 (of which one specimen for the test of 20.1 and the other for the tests of 20.3 or 20.4);*
- *one specimen 20.5 and clause 21.*

NOTE - For testing of screwless terminals according to 10.2, separate specimens are required in addition.

4.4 *In case of doubt, gauges, test caps and mandrels are introduced into the specimens, unless otherwise specified, by applying the following torques:*

- *0,2 Nm for lampholders E5;*
- *0,2 Nm for lampholders E10;*
- *0,2 Nm for lampholders E14;*
- *0,4 Nm for lampholders E27;*
- *0,8 Nm for lampholders E40.*

4.5 For lampholders E40 with a rated current of 32 A, the tests shall be based on this rated current.

4.6 Lampholders are deemed to comply with this standard if no specimen fails in the complete series of tests specified in 4.3.

If one specimen fails in one test, that test and the preceding ones which may have influenced the result of that test are repeated on another set of specimens to the number required by 4.3, all of which shall then comply with the repeated tests and with the subsequent tests. Lampholders are deemed not to comply with this standard if there are more failures than one.

NOTE - In general, it will only be necessary to repeat the relevant test unless the specimen fails in the tests according to clauses 18 and 19, or if failure occurs with regard to resilient side or central contact(s); in these cases, both tests are repeated with a second set of three specimens.

The applicant may submit, together with the first set of specimens, the additional set which may be wanted in case of failure of one specimen. The testing station shall then, without further request, test the additional specimens and will reject only if a further failure occurs.

If the additional set of specimens is not submitted at the same time, a failure of one specimen entails a rejection.

5 Standard ratings

5.1 Standard rated voltages are: 250 V, 500 V and 750 V.

For lampholders E14, and for switched lampholders E27, a rated voltage of 250 V only is allowed.

For lampholders E5 and E10 intended for the connection of series-connected lamps to the supply, the rated voltage shall not exceed 25 V for lampholders E5 and not exceed 60 V for lampholders E10.

NOTE - These values refer to the voltage between parts of different polarity.

For lampholders E10 intended for the connection of single lamps to the supply, a rated voltage of 250 V only is allowed.

NOTE - These lampholders should also be used for such special cases as series-connected lamps, whereby the low number of lamps 60 V per lampholder is exceeded.

With the exception given for lampholders E5 and E10 the rated voltage shall be not less than 250 V. Additionally a rated voltage of 125 V is allowed for lampholders E40.

Compliance is checked by inspection of the marking.

5.2 Standard rated currents are:

- 0,2 A for lampholders E5;
- 0,5 A for lampholders E10;