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Edison screw lampholders

INTERNATIONAL
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COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

EDISON SCREW LAMPHOLDERS

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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 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 IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

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 cancels and replaces the eighth edition published in 2004, Amendment 1: 2008 and Amendment 2:2011. This 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.

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

FDIS	Report on voting
34B/1852/FDIS	34B/1860/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.

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 this 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.

IMPORTANT – The “colour inside” logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.

EDISON SCREW LAMPHOLDERS

1 ~~General~~

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 ~~shall be~~ 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.

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

~~NOTE 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, or 32 A if the nominal voltage of the supply does not exceed 130 V (see 5.5 and 6.3).

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

~~NOTE 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).~~

~~NOTE 4~~ Where lampholders are used in luminaires, their maximum operating temperatures are specified in IEC 60598.

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.

~~NOTE With regard to IEC 60598-1, the references cited in this document are liable to change.~~

~~IEC 60061 (all parts), Lamp caps and holders together with gauges for the control of interchangeability and safety~~

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 60068-2-20:1979, environmental testing – Part 2: Tests – Test T: Soldering~~

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

IEC 60068-2-75:1997 2014, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC 60112:1979 2003, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials under moist conditions*
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 60335-1:2001, Household and similar electrical appliances – Safety – Part 1: General requirements~~

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-~~DB:2002~~^{**}, *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 (all parts and sections), *Luminaires*~~

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

~~IEC 60664-1:1992, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*^{***}
Amendment 1 (2000)
Amendment 2 (2002)~~

~~IEC 60695-2-2:1991, *Fire hazard testing – Part 2: Test methods – Section 2: Needle-flame test*~~

~~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 60630, *Maximum lamp outlines for incandescent lamps*

IEC 60695-2-11:2000 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*

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*

~~**)"DB" refers to the IEC on-line database.~~

~~***) A consolidated edition 1.2 (2002) exists including edition 1.0 (1992) and its amendment 1 (2000) and amendment 2 (2002).~~

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

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Edison screw lampholders

Douilles à vis edison pour lampes



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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*

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Amendment 1:2009

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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*

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

DOUILLES À VIS EDISON POUR LAMPES

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La Norme internationale IEC 60238 a été établie par le sous-comité 34B: Culots et douilles, du comité d'études 34 de l'IEC: Lampes et équipements associés.

Cette neuvième édition annule et remplace la huitième édition parue en 2004, l'Amendement 1: 2008 et l'Amendement 2:2011. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- a) Addition d'un essai de traction pour certaines douilles E5 et E10.
- b) Une Annexe D répertoriant les exigences/articles amendés nécessitant la réalisation de nouveaux essais sur les produits.

Le texte de cette norme est issu des documents suivants:

FDIS	Rapport de vote
34B/1852/FDIS	34B/1860/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette norme.

Cette publication a été rédigée selon les Directives ISO/IEC, Partie 2.

Dans cette norme, les caractères d'imprimerie suivants sont utilisés:

– *les déclarations de conformité: en italique.*

Le comité a décidé que le contenu de cette publication ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous "<http://webstore.iec.ch>" dans les données relatives à la publication recherchée. A cette date, la publication sera

- reconduite,
- supprimée,
- remplacée par une édition révisée, ou
- amendée.

DOUILLES À VIS EDISON POUR LAMPES

1 Domaine d'application

La présente Norme internationale s'applique aux douilles à vis Edison E14, E27 et E40 destinées uniquement au raccordement des lampes et des semi-luminaires¹ à l'alimentation.

Elle s'applique aussi aux douilles à interrupteur destinées exclusivement aux circuits de courant alternatif dont la tension de travail ne dépasse pas 250 V (valeur efficace).

La présente norme est également applicable aux douilles à vis Edison E5 destinées à être raccordées au réseau d'alimentation de lampes montées en série et dont la tension de travail ne dépasse pas 25 V, pour utilisation à l'intérieur, ainsi qu'aux douilles à vis Edison E10 destinées au raccordement au réseau d'alimentation de lampes montées en série et dont la tension de travail ne dépasse pas 60 V, pour utilisation à l'intérieur ou à l'extérieur. Elle s'applique également aux douilles E10 à incorporer, pour le raccordement de lampes individuelles à l'alimentation. Ces douilles ne sont pas destinées à la vente au détail.

Pour autant que la présente norme soit raisonnablement applicable, elle couvre également d'autres douilles que celles à vis Edison destinées au raccordement à l'alimentation de lampes branchées en série.

NOTE Ce type de douille est employé par exemple dans les guirlandes lumineuses pour arbres de Noël.

Pour autant que l'on puisse raisonnablement l'appliquer, cette norme couvre également les adaptateurs.

La présente norme couvre aussi les douilles totalement ou partiellement intégrées au luminaire ou prévues pour être montées dans les appareils. Elle ne couvre que les exigences relatives à la douille. Pour toutes les autres exigences telles que la protection contre les chocs électriques dans la zone des bornes ou du culot de la lampe, les exigences de la norme de l'appareil concerné sont respectées et les essais réalisés après incorporation dans l'appareil approprié, lorsque cet appareil est soumis aux essais selon sa propre norme. De telles douilles ainsi que les douilles pourvues d'un écran extérieur enclenchable, destinées aux fabricants de luminaires exclusivement, ne sont pas destinées à la vente au détail.

La présente norme s'applique aux douilles utilisées à l'intérieur ou à l'extérieur de bâtiments et destinées aux installations d'éclairage domestique ou industriel. Elle s'applique également aux douilles-bougies. Des constructions spéciales peuvent être exigées dans des endroits où règnent des conditions particulières, comme dans le cas de l'éclairage public, à bord des navires, dans les véhicules et dans les locaux à atmosphère dangereuse présentant, par exemple, des risques d'explosion.

La présente norme n'est pas applicable aux douilles E26d pour lampes à trois puissances.

La présente norme est fondée sur les données suivantes, relatives aux lampes pour éclairage général:

- les culots E14 sont utilisés pour des lampes absorbant un courant ne dépassant pas 2 A;
- les culots E27 sont utilisés pour des lampes absorbant un courant ne dépassant pas 4 A;
- les culots E40 sont utilisés pour des lampes absorbant un courant ne dépassant pas 16 A, ou 32 A si la tension nominale de l'alimentation ne dépasse pas 130 V (voir 5.5 et 6.3).

¹ Les exigences applicables aux douilles pour semi-luminaires sont à l'étude.

Quand les douilles sont utilisées dans des luminaires, leurs températures maximales de travail sont spécifiées dans l'IEC 60598.

2 Références normatives

Les documents suivants sont cités en référence de manière normative, en intégralité ou en partie, dans le présent document et sont indispensables pour son application. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60061-1, *Culots de lampes et douilles ainsi que calibres pour le contrôle de l'interchangeabilité et de la sécurité – Partie 1: Culots de lampes*

IEC 60061-2, *Culots de lampes et douilles ainsi que calibres pour le contrôle de l'interchangeabilité et de la sécurité – Partie 2: Douilles*

IEC 60061-3, *Culots de lampes et douilles ainsi que calibres pour le contrôle de l'interchangeabilité et de la sécurité – Partie 3: Calibres*

IEC 60068-2-32:1975, *Essais fondamentaux climatiques et de robustesse mécanique – Partie 2-32: Essais – Essai Ed: Chute libre*

IEC 60068-2-75:2014, *Essais d'environnement – Partie 2-75: Essais – Essai Eh: Essais aux marteaux*

IEC 60112:2003, *Méthode de détermination des indices de résistance et de tenue au cheminement des matériaux isolants solides*
Amendement 1:2009

IEC 60227 (toutes les parties), *Conducteurs et câbles isolés au polychlorure de vinyle, de tension nominale au plus égale à 450/750 V*

IEC 60245 (toutes les parties), *Conducteurs et câbles isolés au caoutchouc – Tension assignée au plus égale à 450/750 V*

IEC 60352-1:1997, *Connexions sans soudure – Partie 1: Connexions enroulées – Règles générales, méthodes d'essai et guide pratique*

IEC 60399, *Filetage à filets ronds pour douilles avec bague support d'abat-jour*

IEC 60417, *Symboles graphiques utilisables sur le matériel* (disponible sous: <http://www.graphical-symbols.info/equipment>)

IEC 60529:1989, *Degrés de protection procurés par les enveloppes (Code IP)*
Amendement 1:1999
Amendement 2:2013 ²

IEC 60598-1, *Luminaires – Partie 1: Exigences générales et essais*

IEC 60630, *Encombrement maximal des lampes à incandescence*

² Il existe une édition consolidée 2.2 (2013) comprenant l'édition 2.0 (1989) et ses Amendement 1 (1999) et Amendement 2 (2013).

IEC 60695-2-11:2014, *Essais relatifs aux risques du feu – Partie 2-11: Essais au fil incandescent/chauffant – Méthode d'essai d'inflammabilité pour produits finis*

IEC 60695-11-5, *Essais relatifs aux risques du feu – Partie 11-5: Flammes d'essai – Méthode d'essai au brûleur-aiguille – Appareillage, dispositif d'essai de vérification et lignes directrices*

IEC 61058-1:2000, *Interrupteurs pour appareils – Partie 1: Règles générales*

ISO 4046-4:2002, *Papier, carton, pâtes et termes connexes – Vocabulaire – Partie 4: Catégories et produits transformés de papier et de carton*