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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Bayonet lampholders

Douilles à baïonnette

IEC 61184:2017-05(en-fr)

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BAYONET 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.
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International Standard IEC 61184 has been prepared by subcommittee 34B: Lamp caps and holders, of IEC technical committee 34: Lamps and related equipment.

This fourth edition cancels and replaces the third edition published in 2008 and Amendment 1:2011. This edition constitutes a technical revision.

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

a) Restructuring of the standard in accordance with IEC Directives Part 2.

b) Clause 18: Update on creepage distances and clearances;

c) Addition of Annex B.

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

FDIS	Report on voting
34B/1898/FDIS	34B/1905/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:

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

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

INTRODUCTION

This document covers safety requirements for bayonet lampholders and includes references to IEC 60061 (all parts) for the control of interchangeability and safety of the cap and holder fit.

NOTE Safety requirements ensure that electrical equipment constructed in accordance with these requirements does not endanger the safety of persons, domestic animals or property when properly installed and maintained and used in applications for which it was intended.

The thermal characteristics of lampholders are specified by the rated operating temperature (symbol T), which is the highest temperature for which the lampholder is designed. The temperature rating and the resistance to heat specified in this document are based on two different principles, as presently found in IEC 60238 for Edison screw lampholders and in other national standards for bayonet lampholders. After experience, it may be possible to rationalize the systems in future editions of this document.

BAYONET LAMPHOLDERS

1 Scope

This document applies to bayonet lampholders B15d and B22d for connection of lamps and semi-luminaires to a supply voltage of 250 V.

This document also covers lampholders which are 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 are observed and tested after building into the appropriate equipment, when that equipment is tested according to its own standard. Lampholders for use by luminaire manufacturers only are not for retail sale.

Where lampholders are used in luminaires, their maximum operating temperatures are specified in IEC 60598-1.

B15d denotes the cap/holder fit as defined by IEC 60061-1, sheet 7004-11 and IEC 60061-2, sheet 7005-16 with the corresponding gauges.

B22d denotes the cap/holder fit as defined by IEC 60061-1, sheet 7004-10 and IEC 60061-2, sheet 7005-10 with the corresponding gauges.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60061 (all parts), *Lamp caps and holders together with gauges for the control of interchangeability and safety* (available at http://std.iec.ch/iec60061)

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 60068-2-75:2014, *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*
IEC 60112:2003/AMD1:2009

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 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 60432 (all parts), *Incandescent lamps – Safety specifications*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
IEC 60529:1989/AMD1:1999
IEC 60529:1989/AMD2:2013

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

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

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*

ISO 4046-4:2016, *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.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1 Materials

3.1.1
plastic lampholder
lampholder, the exterior of which is made wholly of plastic material

Note 1 to entry: The exterior is any part of the lampholder which, when wired and fully assembled and fitted with the testing device shown in Figure 7, can be touched directly by the standard test finger of IEC 60529:1989 and IEC 60529:1989/AMD1:1999.

3.1.2
ceramic lampholder
lampholder, the exterior of which is made wholly of ceramic material

Note 1 to entry: See note in 3.1.1.

3.1.3
metal lampholder
lampholder, the exterior of which is made wholly or partly of metal

Note 1 to entry: See note in 3.1.1.

3.2 Means of fixing

3.2.1
cord grip lampholder
lampholder incorporating a method of retaining a flexible cord by which it may be suspended

SEE: Figure 4a).

3.2.2
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 “nipple lampholder”.

SEE: Figure 4b).

3.2.3
backplate lampholder
lampholder so designed as to be suitable for mounting, by means of an associated or integral backplate, directly on to a supporting surface or appropriate box

SEE: Figure 4c).

3.3
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 as well as resilient means to maintain contact pressure

Note 1 to entry: A rising type is where the terminal is allowed to rise parallel with the lamp axis on insertion of a lamp cap.

Note 2 to entry: A non-rising type is where the terminal is not allowed to rise on insertion of a lamp cap;

Note 3 to entry: The terminal and the barrel can be a unique element.

SEE: Figure 4.

3.4
union ring
cylindrical component which joins together separate external parts of the lampholder

SEE: Figure 4.

3.5
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

SEE: Figure 4.

3.6
skirt
component similar to a shade ring but having a longer cylindrical form to extend to the full length of the lampholder body

Note 1 to entry: Applicable to plastic lampholders only.

SEE: Figure 4.

3.6.1
protective shield
component similar to a skirt but having a flared open end to protect the user from accidental contact with the lamp cap

Note 1 to entry: Applicable to plastic lampholders only.

SEE: Figure 9.

3.7
dome
part of a cord grip lampholder or threaded entry lampholder which shields the connecting terminals

SEE: Figure 4.

3.8
barrel
part of a lampholder which serves for mechanical connection of the lamp cap with the lampholder

SEE: Figure 4.

3.9
lampholder for building-in
lampholder designed to be built into a luminaire, an additional enclosure or the like

3.9.1
unenclosed lampholder
lampholder for building-in so designed that it requires additional means, for example enclosures, to meet the requirements of IEC 61184 with regard to protection against electric shock

3.9.2
enclosed lampholder
lampholder for building-in so designed that, on its own, it fulfils the requirements of IEC 61184 with regard to protection against electric shock and, if appropriate, IP classification

3.10
independent lampholder
lampholder so designed that it can be mounted separately from a luminaire and at the same time provide all the necessary protection according to its classification and marking

3.11
switched lampholder
lampholder provided with an integral switch to control the supply to the lamp

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 in normal use

Note 1 to entry: The neutral conductor is, however, regarded as a live part.

Note 2 to entry: The test to determine whether or not a conductive part is a live part which may cause an electric shock is given in Annex A of IEC 60598-1.

3.17
type test
test or series of tests made on a type test specimen 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 lampholder is designed

3.21
rated ignition voltage
highest peak of an ignition pulse voltage that the holder is able to withstand

3.22
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 categories 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 installation or between the fixed installation and the equipment – to limit transient overvoltages to the specific level.

Equipment of impulse withstand category II is equipment to be connected to the fixed electrical installations of buildings.

Equipment of impulse withstand category III is equipment which is part of the fixed electrical installations and other equipment where a higher degree of availability is expected.

Equipment of impulse withstand category IV is for use at or in the proximity of the origin of the electrical installations of buildings upstream of the main distribution board.

3.23
primary circuit
circuit which is directly connected to the AC mains supply

Note 1 to entry: It includes, for example, the means for connection to the AC mains supply, the primary windings of transformers, motors and other loading devices.

3.24
secondary circuit
circuit which has no direct connection to a primary circuit and derives its power from a transformer, converter or equivalent isolation device, or from a battery

Note 1 to entry: Exception: autotransformers. Although having direct connection to a primary circuit, the tapped part of them is also deemed to be a secondary circuit in the above sense.

Note 2 to entry: Mains transients in such a circuit are attenuated by the corresponding primary windings. Also inductive ballasts reduce the mains transient voltage height. Therefore, components located after a primary circuit or after an inductive ballast can be suited for an impulse withstand category of one step lower, i.e. for impulse withstand category II.

3.25
enclosed reinforced insulated lampholder
lampholder for building-in, so designed that on its own it fulfils the requirements for double or reinforced insulated parts in class II applications

3.26
partly reinforced insulated lampholder
lampholder for building-in, so designed that some parts of the lampholder require additional means to fulfil the requirements with regard to double or reinforced insulation

Note 1 to entry: In some cases, the dimensions might be achieved only after mounting into the luminaire.

3.27
rated voltage
voltage declared by the manufacturer to indicate the highest working voltage for which the lampholder is intended

[SOURCE: IEC 60838-1:2016, 3.1]

3.28
working voltage
highest r.m.s. voltage that may occur across any insulation, transients being disregarded, both when the lamp is operating under normal conditions and when the lamp is removed

[SOURCE: IEC 60838-1:2016, 3.2]

3.29
rated current
current declared by the manufacturer to indicate the highest current for which the lampholder is intended

[SOURCE: IEC 60838-1:2016, 3.3]

3.30
ignition voltage
peak voltage applied to ignite a discharge lamp

[SOURCE: IEC 61347-1:2015, 3.46]

3.30.1
ignition pulse voltage
peak ignition voltage with a total duration of ≤ 750 μs (summation of all pulse durations) within 10 ms, with the duration time (width) of each pulse being measured at the level of 50 % of the maximum absolute peak value

Note 1 to entry: Ignition pulse waveforms, which are considered as ignition pulse voltage, should not contain any dominant frequency above 30 kHz or should be usually highly damped (after 20 μs the peak voltage level should be less than one half of the maximum peak voltage). For the assessment of the dominant frequency IEC 60664-4:2005, Annex E should be consulted.

[SOURCE: IEC 61347-1:2015, 3.46.1]

4 General requirements

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 relevant tests specified.

Independent lampholders, not specifically intended for building-in, shall comply with the requirements of the following sections and subclauses of IEC 60598-1 where the subject-matter of these headings is not dealt with in the present document.

Section 2	–	Classification
Section 3	–	Marking
Section 4	–	Construction (as appropriate)
Section 8	–	Protection against electric shock
Section 9	–	Resistance to dust, solid objects and moisture
Section 10	–	Insulation resistance and electric strength (for class II)
Subclauses 12.4 and 12.5	–	Thermal tests

5 General conditions for tests

5.1 Tests according to this document are type tests.

NOTE The requirements and tolerances given in this document 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 can include routine tests and quality control.

For further information see IEC 60061-4, sheet 7007-13.

5.2 Unless otherwise specified, the samples are tested as delivered and installed as in normal use without lamps, at an ambient temperature of 20 °C ± 5 °C.

5.3 All inspections and tests are carried out on a total of:

– 8 specimens for unswitched lampholders, or