



IEC 61184

Edition 4.2 2024-07
CONSOLIDATED VERSION

INTERNATIONAL STANDARD



Bayonet lampholders

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

BAYONET LAMPHOLDERS

FOREWORD

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This consolidated version of the official IEC Standard and its amendments has been prepared for user convenience.

IEC 61184 edition 4.2 contains the fourth edition (2017-05) [documents 34B/1898/FDIS and 34B/1905/RVD], its amendment 1 (2019-12) [documents 34B/2030/CDV and 34B/2041A/RVC] and its amendment 2 (2024-07) [documents 34B/2194/FDIS and 34B/2196/RVD].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendments 1 and 2. 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 61184 has been prepared by subcommittee 34B: Lamp caps and holders, of IEC technical committee 34: Lamps and related equipment.

This fourth 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.

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 this document and its amendments will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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 document using a colour printer.

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.

INTRODUCTION to Amendment 1

Some changes and corrections needed for IEC 61184 became obvious during the work on the fourth edition of IEC 61184.

Change 1:

Actual lamp holder safety standards require a ball pressure test in line with IEC 60695-10-2 in sections "Resistance to heat, fire and tracking". Within this test there is an alternative depth indentation method described for the calculation of the indentation diameter.

This alternative calculation option was removed from the latest edition of IEC 60695-10-2 dated 2014 and during its meeting held in Sydney in 2018, SC 34B/WG1 agreed to delete the alternative method as well from IEC 61184.

Change 2:

Based on IEC 60664-1:2007, 4.8.1.5 "Non tracking materials":

"For glass, ceramics or other inorganic insulating materials which do not track, creepage distances need not be greater than their associated clearance for the purpose of insulation coordination. The dimensions of this table are appropriate."

This is not completely reflected in TC 34 standards as revised recently. For applications with ELV it is of high importance whether the creepage distance shall be 0,6 mm or may be 0,2 mm in the case where inorganic insulating material is used.

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.

<http://www.iteh.com/standards/iec/61184-2017>

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 [4:2017](https://standards.iteh.ai/catalog/standards/iec/53bfd0c2-f93e-47dc-83e3-65c19008df92/iec-61184-2017)

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