

Bayonet lampholders

The European Standard EN 61184 : 1994 has the status of a
British Standard

ICS 29.140.10

Committees responsible for this British Standard

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British Lighting Association for the Preparation of Standards (Britlaps)
Electrical Installation Equipment Manufacturers' Association (BEAMA Ltd.)
Institution of Electrical Engineers
Lighting Industry Federation Ltd.
Society of Motor Manufacturers and Traders Limited

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British Industrial Ceramic Manufacturers' Association
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Department of Trade and Industry (Consumer Safety Unit, CA Division)
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Summary of pages

The following table identifies the current issue of each page. Issue 1 indicates that a page has been introduced for the first time by amendment. Subsequent issue numbers indicate an updated page. Vertical sidelining on replacement pages indicates the most recent changes (amendment, addition, deletion).

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National foreword

This British Standard has been prepared by Subcommittee CPL/34/2 and is the English language version of EN 61184 : 1994 Bayonet lampholders, published by the European Committee for Electrotechnical Standardization (CENELEC). It was derived by CENELEC from IEC 1184 : 1993, including amendment A1 : 1996 published by the International Electrotechnical Commission (IEC).

Amendment A1: 1996 to IEC 1184 : 1993 erroneously instructed the replacement of the sixth paragraph of subclause 19.1. This instruction should have read 'seventh paragraph', and the amendment has been implemented accordingly in this British Standard.

The CENELEC common modifications have been implemented at the appropriate places in the text and are indicated by a side line in the margin.

The foreword of the European Standard makes reference to the 'date of withdrawal' (dow) of the relevant national standard. In this case the relevant national standard is BS 5042 : 1987 which will be withdrawn on 1996-06-01. Certificates and Marks will not be awarded after this date with respect to the withdrawn British Standard. However, such Certificates and Marks, already awarded, may continue to apply to production until 2001-06-01.

For ease of reproduction, pages from IEC 1184 containing dual language text have been used in the production of BS EN 61184.

Cross-references

Publication referred to	Corresponding British Standard
EN 60061 (IEC 61)	BS EN 60061 <i>Specification for lamp caps and holders together with gauges for the control of interchangeability and safety</i>
EN 60061-1 : 1993 (IEC 61-1 : 1969)	BS EN 60061-1 : 1993 <i>Lamp caps</i>
EN 60061-2 : 1993 (IEC 61-2 : 1969)	BS EN 60061-2 : 1993 <i>Lampholders</i>
EN 60061-3 : 1993 (IEC 61-3 : 1969)	BS EN 60061-3 : 1993 <i>Gauges</i>
EN 60064 : 1989 (IEC 64 : 1987)	BS 161 : 1990 <i>Specification for tungsten filament lamps for domestic and similar general lighting purposes. Performance requirements</i>
HD 214 S2 : 1980 (IEC 112 : 1979)	BS 5901 : 1980 <i>Method of test for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions</i>
HD 21 HD 22	BS 6500 : 1990 <i>Specification for insulated flexible cords and cables</i>
EN 60399 : 1993 (IEC 399 : 1972)	BS EN 60399 : 1994 <i>Standard sheets for barrel thread for E14 and E27 lampholders with shade holder ring</i>
HD 243 S10 (IEC 417 : 1973)	BS 6217 : 1981 <i>Guide to graphical symbols for use on electrical equipment</i>
EN 60432 : 1988 (IEC 432 : 1984)	BS EN 60432 : 1988 <i>Specification for safety of tungsten filament lamps for domestic and similar general lighting purposes</i>
EN 60529 : 1991 (IEC 529 : 1989)	BS EN 60529 : 1992 <i>Specification for degrees of protection provided by enclosures (IP code)</i>
EN 60598-1 : 1993 (IEC 598-1)	BS EN 60598 <i>Luminaires</i> BS EN 60598-1 : 1993 <i>General requirements and tests</i>

IEC 664 : 1980	PD 6499 : 1981 <i>Guide to insulation co-ordination within low-voltage systems including clearances and creepage distances for equipment</i>
IEC 664A : 1981	
EN 60695	BS 6458 <i>Fire hazard testing for electrotechnical products</i>
(IEC 695)	
	Part 2 <i>Test methods</i>
IEC 695-2-1 : 1991	Section 2.1 : 1984 <i>Glow-wire test</i>
EN 60695-2-2 : 1994	BS EN 60695-2-2 : 1995 ¹⁾ <i>Needle flame test</i>
(IEC 695-2-2 : 1991)	
ISO 4046 : 1978	BS 3203 : 1979 <i>Glossary of paper, board, pulp and related terms</i>

Compliance with a British Standard does not of itself confer immunity from legal obligations.

¹⁾ In preparation

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Descriptors: Electrical equipment, lighting equipment, lamp caps, bayonet lamp caps, classifications, marking, dimensions, protection against electric shocks, earthing, moisture proofing, mechanical strength, thermal resistance, fire protection

English version

Bayonet lampholders

(includes amendment A1 : 1996)

(IEC 1184 : 1993 + A1 : 1996, modified)

Douilles à baïonnette

(inclut l'amendement A1 : 1996)

(CEI 1184 : 1993 + A1 : 1996 modifiée)

Bajonett-Lampenfassungen

(enthält Änderung A1 : 1996)

(IEC 1184 : 1993 + A1 : 1996, modifiziert)

This European Standard was approved by CENELEC on 1994-05-15. 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.

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CENELEC

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

At the request of the CENELEC Technical Committee TC 34Z, Luminaires and associated equipment, the International Standard IEC 1184 : 1993 together with some common modifications prepared by TC 34Z was submitted to the CENELEC Unique Acceptance Procedure (UAP) in July 1993 for acceptance as a European Standard. The text of the draft was approved by CENELEC as EN 61184 on 1994-05-15.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1995-06-01
- latest date of withdrawal of conflicting national standards (dow) 1996-06-01

For products which have complied with the relevant national standard before 1996-06-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2001-06-01.

Annexes designated 'normative' are part of the body of the standard. In this standard, annexes A, ZA and ZB are normative.

Foreword to amendment A.1

The text of the document 34B/594/FDIS, future amendment 1 to IEC 1184 : 1993, 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 amendment A1 to EN 61184 : 1994 on 1996-07-02

The following dates were fixed:

- latest date by which the amendment 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 amendment have to be withdrawn (dow) 1997-04-01

For products which have complied with EN 61184 : 1994 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.

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BAYONET LAMPHOLDERS

INTRODUCTION

This standard covers safety requirements for bayonet lampholders and includes references to IEC 61 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 standard are based on two different principles, as presently found in IEC 238 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 standard.

1 General

1.1 Scope

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

As far as it reasonably applies, the standard also covers lampholders which are wholly or partly integral with a luminaire or intended to be built into appliances.

Independent lampholders, e.g. backplate lampholders, not specifically intended for building-in, are submitted to the additional requirements detailed in clause 3.

NOTE - Where lampholders are used in luminaires, their maximum operating temperatures are specified in IEC 598.

B15 denotes the cap/holder fit as defined by IEC 61-1, sheet 7004-11 and IEC 61-2, sheet 7005-16 with the corresponding gauges.

B22 denotes the cap/holder fit as defined by IEC 61-1, sheet 7004-10 and IEC 61-2, sheet 7005-10 with the corresponding gauges.

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: Lamp caps and holders together with gauges for the control of interchangeability and safety.

IEC 61-1: 1969, 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 64: 1987, Tungsten filament lamps for domestic and similar general lighting purposes.

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

IEC 417: 1973, Graphical symbols for use on equipment.

IEC 432: 1984, Safety requirements for tungsten filament lamps for domestic and similar general lighting purposes.

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

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

IEC 664: 1980, Insulation co-ordination within low-voltage systems including clearances and creepage distances for equipment.

IEC 664A: 1981, Insulation co-ordination within low-voltage systems including clearances and creepage distances for equipment, first supplement.

IEC 695-2-1: 1991, 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.

ISO 4046: 1978, Paper, board, pulp and related terms - Vocabulary.

ASTM specification D 785-65: 1981.

2 Definitions

For the purpose of this International Standard; the following definitions apply:

NOTE - For clarification of some definitions, see also figure 4.

2.1 Materials

2.1.1 plastics lampholder: a lampholder, the exterior of which is made wholly of plastics material.

NOTE - 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 529.

2.1.2 ceramic lampholder: a lampholder, the exterior of which is made wholly of ceramic material (see note to 2.1.1).

2.1.3 metal lampholder: a lampholder, the exterior of which is made wholly or partly of metal (see note to 2.1.1).

2.2 Means of fixing

2.2.1 cord grip lampholder: a lampholder incorporating a method of retaining a flexible cord by which it may be suspended (see figure 4(a)).

2.2.2 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) (see figure 4(b)).

2.2.3 backplate lampholder: a 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 4(c)).

2.3 terminal/contact assembly: a part or an 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.

(a) Rising type, where the terminal is allowed to rise parallel with the lamp axis on insertion of a lamp cap.

(b) Non-rising type, where the terminal is not allowed to rise on insertion of a lamp cap.

NOTE - The terminal and the barrel may be a unique element.

2.4 union ring: a cylindrical component which joins together separate external parts of the lampholder.

2.5 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.

2.6 skirt: (plastics lampholders only) a component similar to a shade ring but having a longer cylindrical form to extend to the full length of the lampholder body.

2.6.1 protective shield: (plastics lampholders only) a component similar to a skirt but having a flared open end to protect the user from accidental contact with the lamp cap.
(See figure 9).

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

2.8 barrel: part of a lampholder which serves for mechanical connection of the lamp cap with the lampholder.

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

2.9.1 unenclosed lampholder: a lampholder for building-in so designed that it requires additional means, for example enclosures, to meet the requirements of this standard with regard to protection against electric shock.

2.9.2 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, if appropriate, IP classification.

2.10 independent lampholder: a 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.

2.11 switched lampholder: a lampholder provided with an integral switch to control the supply to the lamp.

2.12 basic insulation: 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: 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: 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 parts: a conductive part which may cause an electric shock in normal use. The neutral conductor shall, however, be regarded as a live part.

The test to determine whether or not a conductive part is a live part which may cause an electric shock is given in Appendix A of IEC 598-1.

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 lampholder is designed.

3 General requirements

Lampholders shall be so designed and constructed that in normal use their performance is reliable and without danger to the user 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 clauses of IEC 598-1 where these requirements are not covered by the requirements of this standard.

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

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 control.

4.2 Unless otherwise specified, the samples are tested as delivered and installed as in normal use without lamps, at an ambient temperature of $20\text{ °C} \pm 5\text{ °C}$.

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

- 8 specimens for unswitched lampholders, or
- 11 specimens for switched lampholders;

in the order of the clauses as follows:

- 3 specimens: clauses 3 to 12;
- 3 specimens: clauses 14 to 18;
- 3 specimens: clause 13 (switched lampholder tests only);
- 2 specimens: clauses 19 and 20.

NOTE - For testing of screwless terminals according to subclause 10.2 separate additional specimens are required.

This is also necessary for independent lampholders not specifically intended for building-in (see clause 3).

4.4 If no lampholder fails in the complete series of tests specified in 4.3, then lampholders of that type shall be deemed to comply with this standard.

If one lampholder fails in any group in the complete series of tests specified in 4.3, the lampholders of that type shall be deemed to have failed to comply with this standard, unless that lampholder can be shown to be not representative of normal production or design, in which case a further set of lampholders shall be submitted to the test or tests in that group. Generally it will be necessary to only repeat the test in which failure occurs. However, if the lampholder fails in the test specified in clauses 14 to 18 inclusive, the tests shall be repeated from the tests of clause 14 onwards.

An additional type test sample may be submitted, together with the first type test sample, in case one lampholder fails, in which case the additional type test sample shall then be tested and shall only be rejected if a further failure occurs. If there is no failure in this retest then lampholders of that type shall be deemed to comply with this standard. If the additional type test sample is not submitted at the same time, a failure of one lampholder shall entail a rejection.

If more than one sample fails in the complete series of tests specified in 4.3 then lampholders of that type shall be deemed to have failed to comply with this standard.

NOTE - In view of the duration of the test procedure, lampholders differing only in detail and having the same constructional principles and materials may be covered by a single series of type tests, subject to agreement between applicant and test house.

5 Standard ratings

5.1 Standard rated voltage

For all lampholders only a rated voltage of 250 V is allowed.

5.2 Standard rated currents are:

- 2 A for lampholders B15;
- 2 A for lampholders B22.

The rated current shall be not less than the standard value. Rated currents higher than 2 A are allowed.

Compliance with the requirements under subclauses 5.1 and 5.2 is checked by inspection of the marking.

6 Classification

Lampholders are classified:

6.1 According to the material of the exterior:

- lampholders whose exterior is made wholly of plastic material;
- lampholders whose exterior is made wholly of ceramic material;
- lampholders whose exterior is made wholly or partly of metal.

NOTE - For definition of "exterior" see note to 2.1.1.

Lampholders with external parts consisting partly of metal and lampholders comprising external parts of insulating material with a conductive outer surface, e.g. a metallized outer shell, are considered as metal lampholders.

This does not apply to threaded entries and external parts, as for example a metal shade ring mounted on to the outside of a lampholder of insulating material, which cannot become live even in the case of an insulation fault. Metal lampholders with insulating coverings are considered as metal lampholders.

If in doubt as to whether or not a surface is conductive, two stripe-electrodes 1,5 mm wide, 25 mm long and with a distance of 2 mm from each other are applied to the surface (e.g. with silver conductive paint). In accordance with subclause 14.3, the insulating resistance is measured between the stripes. The surface is considered to be conductive if the resistance is less than 5 MΩ.

6.2 According to degree of protection against solid objects and ingress of water:

- ordinary lampholders;
- drip-proof lampholders.

NOTE - A classification for higher degrees of protection against ingress of water is under consideration.

6.3 According to method of fixing:

- threaded entry lampholders;
- cord grip lampholders;
- backplate lampholders;
- other lampholders.

NOTE - Examples of other lampholders are lampholders provided with a mechanical suspension device e.g. a hook.

6.4 According to type:

- switched lampholders provided with an integral switch to control the supply to the lamp;
- non-switched lampholders.

6.5 According to protection against electric shock:

- enclosed lampholders;
- unenclosed lampholders;
- independent lampholders.

6.6 According to resistance to heat:

- without T marking, suitable for rated operating temperatures up to and including 135 °C for B15d lampholders and 165 °C for B22d lampholders;
- with Txxx marking, suitable for rated operating temperatures up to and including the temperature marked or declared by the manufacturer. These temperatures shall be not lower than 140 °C for B15d lampholders and not lower than 170 °C for B22d lampholders;

NOTE - The value of the temperature marking shall be increased by steps of 10 °C.

- with T1 marking, suitable for temperatures on the lamp cap up to and including 165 °C;

NOTE - The continued use of T1 lampholders is subject to review.

- with T2 marking, suitable for temperatures on the lamp cap up to and including 210 °C.

7 Marking

7.1 Lampholders shall be marked with:

- rated voltage, in volts;
- rated operating temperature Txxx, T1 or T2, if applicable (see 6.6);

In the first version the letter T shall be followed by the value of the rated operating temperature in degrees Celsius.

- symbol for nature of supply, if required (for switched lampholders only);
- for lampholders whose exterior is made wholly of ceramic material, information on the rated operating temperature, if applicable, shall either be marked on the lampholder or given in the manufacturer's catalogue;
- mark of origin (this may take the form of a trade mark, or the manufacturer's or responsible vendor's name or identification mark);

NOTE - The mark of origin is not intended to mean the country of origin.

- either a unique catalogue number or an identifying reference;

NOTE - An identifying reference may include numbers, letters, colour, etc. to identify the lampholder by reference to the manufacturer's or responsible vendor's catalogue or similar literature.

- rated current, in amperes, if greater than 2 A;
- IP number, if other than ordinary, for degree of protection against ingress of water (see subclause 6.2);
- for single pole switched lampholder the switched pole shall be identified.

7.2 If symbols are used for current and voltage, A shall denote amperes and V volts.

Alternatively, figures alone may be used, the figure for the rated current being marked before or above that for the rated voltage and separated from the latter by a line.

Therefore the marking for current and voltage may be as follows:

4 A 250 V or 4/250 or $\frac{4}{250}$

The symbol for d.c. shall be --- (See IEC 417, sheet 417-IEC-5031-a).

The symbol for protection against ingress of water shall, for drip-proof lampholder, be IPX1.

NOTE - Where X is used in an IP number, it is intended to indicate a missing numeral in the symbol but both the appropriate numerals in accordance with IEC 529 shall be marked on the lampholder.

7.3 The marking of degree of protection against ingress of water shall be on the outside of the lampholder.

7.4 An earthing terminal shall be indicated by the symbol 
(See IEC 417, sheet 417-IEC-5019-a).

This symbol shall not be placed on screws, removable washers or other easily removable parts.

Compliance is checked by inspection.

NOTE - In the United Kingdom metal lampholders intended for retail sale shall have the following warning notice attached or incorporated in the associated packaging:

"THIS LAMPHOLDER MUST BE EARTHED".

7.5 Where the terminal size specified in subclause 10.2 is not complied with, the relevant value, or values in case of a range, shall be shown in mm² followed by a small square (for example 0,5 □)

For unenclosed lampholders such marking is not required but relevant information shall be given in the manufacturer's mounting instructions.

7.6 Marking shall be durable and easily legible.

Compliance with the requirements of subclauses 7.1 to 7.5 shall be checked by inspection, and by trying to remove the marking by rubbing lightly for 15 seconds with a piece of cloth soaked with water and for a further 15 seconds with a piece of cloth soaked with petroleum spirit.

After the tests the marking shall be still legible.

NOTE - The petroleum spirit used should consist of a solvent hexane with a content of aromatics of maximum 0,1 volume percentage, a kauri-butanol value of 29, an initial boiling-point of approximately 65 °C, a dry-point of approximately 69 °C and a specific density of approximately 0,68 g/cm³.

7.7 In the United Kingdom a threaded entry lampholder without means for restraining the flexible cord, intended for retail sale, shall have the following warning notice attached or incorporated in the associated packaging:

"Do not connect this lampholder to a flexible cord which may be subject to tension in normal use, unless means are provided to relieve the conductors from strain and to protect the insulation".

8 Dimensions

8.1 Lampholder dimensions shall comply with the current edition of the standard sheets of IEC 61.

Compliance is checked by measuring in conformity with standard sheets 7005-10 and 7005-16 respectively of IEC 61-2 and by application of the specified gauges according to the current edition of IEC 61-3.

Lampholders designed for use with shade support devices shall comply with the dimensional requirements of figure 8 and those of the current edition of the standard sheets of IEC 399, where applicable.

Compliance is checked by measurement.

8.2 The threaded entries of lampholders shall be provided with one of the following screw threads in accordance with figure 13.

- lampholders B15: M10x1;
- lampholders B22: M10x1 or M13x1.

NOTES - The threaded entry M10x1 is mainly intended for the internal wiring of luminaires.

- In the United Kingdom, threaded entry lampholders with 3/8 inch x 26 TPI and 1/2 inch x 26 TPI screw threads are permitted for retail sale.

- In France, threaded entry lampholders with 11 mm x 19 TPI and 17 mm x 19 TPI screw threads are permitted for replacement.

Compliance is checked by means of the gauges in accordance with figure 14. In case of doubt, the gauge is introduced into the entry by applying a torque of 0,5 Nm.

NOTE - Other thread sizes are permissible for lampholders not intended for retail sale.

8.3 The dimensions of threaded entries and set screws, if any, shall not be less than the values shown in table 1.

Table 1

Nominal thread diameter	M10x1 M13x1 (mm)
Length of threaded entry	
- metal entry	3,0
- entry of insulating material	5,0
Diameter of set screw (if any)	
- screw with head	2,5
- screw without head	3,0

A negative deviation of 0,15 mm from the nominal value for thread diameter is allowed.

Compliance is checked by measurement.

NOTE - If it is necessary to take the lampholder apart in order to check compliance with the requirements of subclauses 8.2 to 8.3, such checking is done after the tests of clause 12.

9 Protection against electric shock

9.1 Lampholders shall be so designed that, when fully assembled, live parts of the lampholder are not accessible when the lampholder is fitted with the testing device shown in figure 7.

NOTE - The use of a skirt or protective shield (see 2.6 and 2.6.1) is optional. An example of a protective shield is shown in figure 9.

For independent and enclosed lampholders compliance shall be checked by the application of the standard test finger in accordance with IEC 529.

This test finger is applied in every possible position with a force of 10 N, an electrical indicator being used to show contact with live parts. It is recommended that a voltage of not less than 40 V is used.

Independent lampholders and enclosed lampholders are mounted as in normal use, i.e. on a threaded support or on a supporting surface or the like.

Unenclosed lampholders are tested only after appropriate installation in a luminaire or other additional enclosure. For these reasons such lampholders are not for retail sale.

9.2 The construction shall be such that no metal parts of the lampholder other than the terminals and contact mechanism shall become live in normal service either before, during or after insertion of the lamp.

Compliance is checked by inspection.

9.3 Parts providing protection against accidental contact with live parts shall, when correctly assembled, have sufficient mechanical strength to withstand such forces as may arise during normal removal and replacement as may be necessary to fit supply cords or cables.

They shall also withstand the normal stresses arising from the fitting of corresponding normal lamps and appropriate lamp shades.

It shall be possible to remove and replace, using a reasonable degree of force corresponding to normal use, a corresponding normal lamp and shade, or similar device if fitted, without removing those parts providing protection against accidental contact with live parts.

Compliance is checked by inspection and by the tests of 15.3 which shall be repeated following the test of 18.1.

9.4 External parts of drip-proof lampholders shall be of insulating material, with the exception of threaded entries and shade carrier rings, which cannot become live in the event of a fault.

Lacquer or enamel is not deemed to provide adequate protection for the purpose of this clause.

Compliance is checked by inspection.

NOTE - Parts which are separated from live parts by double or by reinforced insulation are considered as parts which cannot become live in the event of a fault.

10 Terminals

10.1 Lampholders shall be provided with at least one of the following means of connection:

- terminals with screw clamping;
- screwless terminals;
- tabs or pins for push-on connections;
- posts for wire wrapping;
- soldering lugs;
- connecting leads (non-rewirable tails).

Compliance is checked by inspection.

10.2 Terminals shall permit the connection of conductors having the following nominal cross-sectional areas unless otherwise specified in the manufacturer's mounting instructions or marked on the lampholder (see 7.5):

- 0,5 mm² to 1,0 mm², for lampholders B15d and B22d with M10x1 threaded entry and those with cord grip;

NOTE - In the United Kingdom this requirement is amended to read:

"- 0,5 mm² to 0,75 mm² for 2 and 3 core PVC insulated sheathed flexible cord for use with lampholders B15d and B22d with a cord grip, or 0,5 mm² to 1,0 mm² for single insulated conductors for use with B15d and B22d lampholders with M10x1 threaded entry".

- 0,5 mm² to 2,5 mm² for other B22d lampholders.

Compliance is checked by inspection, by fitting conductors of the smallest and largest cross-sectional area specified and by the tests of clause 16.

For cord grip lampholders, lampholders B15d and B22d with M10x1 threaded entry, flexible conductors are used; in all other cases the conductors are of the solid type. Threaded entry lampholders are tested on a screwed conduit.