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C22.2 No. 43-17

Lampholders

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Lampholders

September 5, 2017

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Preface

This is the common CSA and UL standard for lampholders. It is the seventh edition of CSA C22.2 No. 43, and the fourteenth edition of UL 496. This edition of CSA C22.2 No. 43 supersedes the previous editions published in 2008, 2004, 1984, 1965, 1958, and 1937. This edition of UL 496 supersedes the previous edition published in 2008.

This common standard was prepared by a task force comprising members representing the Canadian Standards Association (CSA), Underwriters Laboratories Inc. (UL), NEMA (National Electrical Manufacturers Association), and EFC (Electro-Federation Canada). The efforts and support of the Technical Harmonization Committee for Lampholders of the Council on the Harmonization of Electrotechnical Standards of the Nations of the Americas (CANENA) are gratefully acknowledged.

This standard is considered suitable for use for conformity assessment within the stated scope of the standard.

This standard was reviewed by the CSA Integrated Committee on Lighting Products under the jurisdiction of the CSA Technical Committee on Consumer and Commercial Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

This standard has been approved by the American National Standards Institute (ANSI) as an American National Standard.

A UL standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements.

Where reference is made to a specific number of samples to be tested, the specified number is to be considered a minimum quantity.

Note: Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

Level of harmonization

This standard uses the IEC format but is not based on, nor is it to be considered equivalent to, an IEC standard. This standard is published as an identical standard for CSA and UL.

An identical standard is a standard that is exactly the same in technical content except for national differences resulting from conflicts in codes and governmental regulations. Presentation is word for word except for editorial changes.

Reasons for differences from IEC

This standard provides requirements for Lampholders in accordance with the codes of Canada and USA. At present there is no IEC standard for Lampholders for use in accordance with these codes. Therefore, this standard does not employ any IEC standard for base requirements.

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Interpretations

The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

CSA effective date

The effective date for CSA International will be announced through CSA Informs or a CSA Certification Notice.

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1 Scope

1.1 The requirements of this standard cover holders and connectors for electric lamps, including incandescent, fluorescent, and other electric-discharge-type lamps, rated as indicated in Clause 6, to be used in accordance with the Canadian Electrical Code (CEC), Part I, C22.1, and the National Electrical Code (NEC), ANSI/NFPA 70.

1.2 These requirements cover screw lampholders, including those intended to be mounted directly on an outlet-box, lampholders for special uses, lampholders for electric signs, and adapters that convert one lampholder size to another.

1.3 These requirements also cover holders for automatic starters used with fluorescent lamps.

1.4 These requirements also cover GU24 and GU24-1 holders for fluorescent and LED self-ballasted lamps and fluorescent lamp adapters with mating pin bases.

1.5 These requirements also cover indicator lamps.

1.6 These requirements also cover lampholder inserts.

1.7 These requirements also cover naval-use lampholders. See Supplement SA.

1.8 These requirements do not cover fluorescent self-ballasted lamps and fluorescent lamp adapters covered in UL 1993.

1.9 These requirements do not cover seasonal-lighting lampholders, which are covered in UL 588, and CSA C22.2 No. 37.

1.10 These requirements do not cover electrode receptacles for use in gas-tube signs, which are covered in UL 879 and CSA C22.2 No. 34.

1.11 These requirements do not cover devices requiring a cross-bar, mounting strap, or other mounting means; such devices are considered to be luminaires.

1.12 These requirements do not cover nightlights, which are covered in UL 1786 and CSA C22.2 No. 256.

1.13 These requirements do not cover ceiling outlet-box lampholders that incorporate one or more of the following features:

a) more than one lampholder;

b) provisions for conduit connection such as openings or knockout;

c) an integral ballast, transformer or power supply; or

d) a lamp shade or lamp guard that completely encloses the lamp.

Such devices are covered by UL 1598 and CSA C22.2 No. 250.0.

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1.14 In Canada, general requirements applicable to these products are provided in CAN/CSA-C22.2 No. 0.

2 Definitions

2.1 For the purpose of this standard, the following definitions apply:

2.2 Actuating member – the part of a switch actuator that extends outside the body and is exposed to contact by the user.

2.3 Actuator – the part that drives a switch mechanism into action.

2.4 Adapter – a device that adapts one form or size of connecting means to another, and in some cases incorporates circuits or controls such as a dimmer or photo-control or a switch.

2.5 Base – that part of a lampholder that is used for mounting of the device.

2.6 Cap – a component of screw-type lampholders that is provided to supply a mounting means for the lampholder, enclose live or current-carrying parts, and/or prevent inadvertent accessibility to live parts.

Note: Internationally, the word "cap" is used in place of the North American term "base" to describe the means of connection of the lamp to the lampholder.

2.7 Center contact – a contact used in a screw lampholder to engage the center contact of a lamp base.

2.8 Current tap – an adapter that is screwed into a base-supply lampholder and provides multiple outlets of the lampholder or slotted receptacle type.

2.9 Damp location – an interior or exterior location that is normally or periodically subject to condensation of moisture. Damp locations include partially protected locations under canopies, roofed open porches, and similar locations.

2.10 Device screw base – a cylindrical component of a screw device having an external male thread or form for engaging a corresponding lampholder.

2.11 Dry location – a location not normally subject to dampness. Dry locations include locations subject to temporary dampness, as in the case of a building under construction, provided ventilation is adequate to reduce the likelihood of accumulation of moisture.

2.12 Enclosure – that part or parts of a lampholder that:

a) renders inaccessible all or any parts of the equipment that may otherwise present a risk of electric shock; or

b) retards propagation of flame caused by electrical disturbances occurring within.

2.13 General-use – suitable for direct installation in the field.

2.14 Holder, GU24 and GU24-1 – a holder with a twist and lock bi-pin configuration that is intended to supply power to fluorescent and LED self-ballasted lamps and fluorescent lamp adapters with mating pin bases. This holder is not intended for use with incandescent lamps.

2.15 Husk – a covering over a screwshell, usually of paper, that renders the screwshell and terminals inaccessible.

2.16 Indicator lamp – an indicating device consisting of a lamp, with or without a lampholder, that is provided with leads or terminals. In some cases indicator lamp also incorporates a bracket or other mounting provision.

2.17 Insulating link – a section of the chain of a pull-type switching mechanism intended to prevent the accessible portion of the chain from becoming energized.

2.18 Interior – a component of an screw metal shell lampholder that engages the threads of the lamp base and that supports live parts, such as lamp contacts, switch contacts, and actuators, and that is intended to be enclosed within a body.

2.19 Intermediate contact – a contact used in an E26d or E39d double-contact lampholder to engage the ring contact of a double-filament lamp.

2.20 Isolated screwshell – a mechanical device for engaging the threads of a screw base lamp that supports the lamp but is not conductively connected to the supply circuit.

2.21 Lamp base – the part of a lamp that engages the lampholder and makes contact with the electrical circuits of the lampholder.

2.22 Lamp cavity – that portion of the lampholder which is provided for the insertion of the lamp.

2.23 Lamp connector – a set of contacts provided with flexible conductors which provides for electrical connection to a lamp but does not provide support.

2.24 Lampholder – a wiring device intended for making connection to the electrical circuits of a lamp and, in some cases, providing support.

2.25 Lampholder, bayonet – a device equipped with retaining slots in the shell for holding the lamp base.

2.26 Lampholder, candle-type (stem type) – a screw lampholder having an insulating covering (husk), such as paper, over the screwshell and terminals, which in some cases provides the required depth of lamp cavity. In some cases the lampholder also has a close-fitting, nonmetallic outer decorative casing.

Note: These lampholders are commonly used in luminaires and portable luminaires to give the appearance of a candle.

2.27 Lampholder, ceiling outlet-box – a lampholder intended for mounting to a ceiling outlet-box that also serves as the outlet-box cover.

2.28 Lampholder, circuit-interrupting – a fluorescent-type lampholder that incorporates a switch to de-energize a circuit when the lamp is removed.

2.29 Lampholder, cleat-type – a lampholder used for open wiring on insulators that in some cases have exposed wiring terminals prior to installation.

2.30 Lampholder, flush-type – a lampholder intended for mounting in an outlet-box with a cover plate, usually serving as a pilot or indicator light.

2.31 Lampholder insert – a device that is interposed between the base of a screw lamp and the lampholder center contact.

Note: Such devices are commonly used to reduce the lamp power consumption or for remote control such as dimming.

2.32 Lampholder, metal cap and shell – a lampholder type consisting of a metal cap and shell, an interior, and an insulating lining.

2.33 Lampholder, open-rated – a screw lampholder with an EX26 medium base or EX39 mogul base and intended for use with a “Type O” metal halide lamp. These lampholders have a physical means that only allows the use of a lamp that is “Type O” and excludes lamps with an E26 or E39 base.

2.34 Lampholder, pendant-type (cord-grip lampholder) – a lampholder intended to be supported and suspended by a flexible cord.

2.35 Lampholder, pulse-rated – a lampholder or lamp connector intended for use with a lamp that requires a starting pulse in excess of 600 Vpk.

2.36 Lampholder, refrigeration – a lampholder intended to be installed in a refrigerated compartment of refrigerators or freezers.

Note: The interior of a refrigerated compartment is considered an indoor damp location.

2.37 Lampholder, screw – a lampholder employing a threaded screwshell.

Note: Standardized screw types include the following bases:

a) E10 (miniature);

b) E11 (mini can);

c) E12 (candelabra);

d) E17 (intermediate);

e) E26 (medium);

f) E29 (admedium) (not standardized);

g) E39 (mogul).

2.38 Lampholder, screw-ring – an externally threaded lampholder intended for mounting in a panel opening by means of a threaded ring.

2.39 Lampholder, seasonal-lighting – a lampholder that is restricted for use with Christmas-tree and decorative lighting outfits and which by its construction and application is not suitable for general use.

2.40 Lampholder, skeleton-type – a screw lampholder that does not use conductive screwshell threads to make electrical contact with the lamp screw base. Electrical contact with the lamp screw base is made with one or more separate contacts in the side wall of the lamp cavity or a ring contact in the bottom of the lamp cavity.

2.41 Lampholder, temporary use – a lampholder intended for installation and use in accordance with Article 527 of the National Electrical Code, ANSI/NFPA 70, and Section 76 of the Canadian Electrical Code, Part I, C22.1.

2.42 Lampholder, weatherproof – a lampholder intended for direct exposure to the weather.

2.43 Lamplock – a feature intended to keep a lamp from being removed except by a person having a key or special tool.

2.44 Lining – an intermediate piece of insulating material constructed to prevent electrical contact between live parts, such as the screwshell, and the outer shell, cap, or cover.

2.45 Live part – a part that is energized during normal operation.

2.46 Normal hand tools – any standard American or metric wrench or screwdriver (straight blade, Phillips (cross point) or Robertson head (square)).

2.47 Ratcheting mechanism – a device mechanism that does not permit removal of the lamp or lamp adapter.

2.48 Rated operating temperature – the highest temperature for which the device is rated.

2.49 Rated voltage – the voltage declared by the manufacturer to indicate the highest working voltage for which the device is rated.

2.50 Screwshell – a cylindrical component of a screw lampholder having an internal thread or form for the retention of the corresponding lamp.

Note: In some constructions, the screwshell is permanently fixed to or integral with the outer shell.

2.51 Screw types – a trade name (e.g., medium-screw) or designation (e.g., E26) assigned to a standardized lamp and lampholder configuration to control their interchangeability. Lamp base and holder designations, where referenced in this standard, are those assigned by the International Electrotechnical Commission (IEC).

Note: They may be followed by the commonly used trade name in parentheses.

2.52 Sealing compound – an insulating material that may be used to insulate live parts on the underside of a lampholder from the surface to which it is intended to be mounted or used to fill a void for the purpose of reducing clearances.

2.53 Set screw – a threaded device for securing a lampholder to its support or for securing leads within a terminal assembly.

2.54 Shell – a component of a screw metal shell lampholder that serves as the enclosure. A shell may also serve as the mounting surface for reflectors or guards.

2.55 Terminal – provision for the connection of supply conductors.

2.56 Terminal, insulation-piercing – a terminal having a contact pin that punctures the conductor insulation and penetrates between the conductor strands.

Note: Stripping the insulation from the conductor is not required for this type of connection.

2.57 Terminal, push-in – a terminal in which the stripped end of a conductor is pushed into the terminal and the clamping pressure is maintained by a spring mechanism without the use of screws.

2.58 Terminal, screw – a terminal in which the conductor is bent around the screw and clamped directly under the head of the screw when it is tightened.

2.59 Upset – a process for peening, staking, cross threading, or rounding, for example, a screw's shaft end to prevent it from loosening or being backed out.

2.60 Vulcanized fiber – a material normally used as electrical insulation, made by combining layers of chemically jelled paper.

Note: "Fish paper" is a designation commonly used in the trade to refer to thin sheets of electrical grade vulcanized fiber.

2.61 Wet location – a location in which uncontrolled liquids may drip, splash, or flow on or against electrical equipment.

3 General

3.1 Components

3.1.1 Except as indicated in Clause 3.1.2, a component of a product covered by this standard shall comply with the requirements for that component. See Annex A for a list of standards covering components generally used in products covered by this standard. A component shall comply with the Underwriters Laboratories Inc. or the Canadian Standards Association standards as appropriate for the country where the product is to be used.

3.1.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or

b) Is superseded by a requirement in this standard.