UL 1786

STANDARD FOR SAFETY

Direct Plug-In Nightlights

UL Standard for Safety for Direct Plug-In Nightlights, UL 1786

Fourth Edition, Dated December 17, 2014

Summary of Topics

This revision of ANSI/UL 1786 dated November 16, 2026 includes the following changes in requirements:

- ***Evaluation criteria for Folding or Retractable Blades in Direct Plug-In Nightlights; 7.6.4, 10.9, Table 5***
- ***Button Batteries or Coin Cell Batteries; 7.23.5, Annex A***
- ***French Marking Updates; Annex E***

Text that has been changed in any manner or impacted by ULSE's electronic publishing system is marked with a vertical line in the margin.

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated March 13, 2026 and July 3, 2026.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical photocopying, recording, or otherwise without prior permission of ULSE Inc. (ULSE).

ULSE provides this Standard "as is" without warranty of any kind, either expressed or implied, including but not limited to, the implied warranties of merchantability or fitness for any purpose.

In no event will ULSE be liable for any special, incidental, consequential, indirect or similar damages, including loss of profits, lost savings, loss of data, or any other damages arising out of the use of or the inability to use this Standard, even if ULSE or an authorized ULSE representative has been advised of the possibility of such damage. In no event shall ULSE's liability for any damage ever exceed the price paid for this Standard, regardless of the form of the claim.

Users of the electronic versions of UL's Standards for Safety agree to defend, indemnify, and hold ULSE harmless from and against any loss, expense, liability, damage, claim, or judgment (including reasonable attorney's fees) resulting from any error or deviation introduced while purchaser is storing an electronic Standard on the purchaser's computer system.

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

No Text on This Page

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

CSA Group
CSA C22.2 No. 256-14
Second Edition

ULSE Inc.
UL 1786
Fourth Edition

Direct Plug-In Nightlights

December 17, 2014

(Title Page Reprinted: November 16, 2026)

Approved American National Standard

ANSI/UL 1786-~~2024~~2026

Commitment for Amendments

This Standard is issued jointly by the Canadian Standards Association (operating as “CSA Group”) and ULSE Inc. (ULSE). Comments or proposals for revisions on any part of the standard may be submitted to CSA Group or ULSE at anytime. Revisions to this Standard will be made only after processing according to the standards development procedures of CSA Group and ULSE. CSA Group and ULSE will issue revisions to this Standard by means of a new edition or revised or additional pages bearing their date of issue.

ISBN 978-177139-710-0 **©2014 Canadian Standards Association All rights reserved.**

All rights reserved. No part of this publication may be reproduced in any form whatsoever without the prior permission of the publisher.

This Standard is subject to review within five years from the date of publication, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include "Proposal for change" in the subject line: Standard designation (number); relevant clause, table, and/or figure number; wording of the proposed change; and rationale for the change.

To purchase CSA Group Standards and related publications, visit CSA Group's Online Store at www.csagroup.org/store/ or call toll-free 1-800-463-6727 or 416-747-4044.

©~~2024~~2026 ULSE Inc. All rights reserved.

Our Standards for Safety are copyrighted by ULSE Inc. Neither a printed nor electronic copy of a Standard should be altered in any way. All of our Standards and all copyrights, ownerships, and rights regarding those Standards shall remain the sole and exclusive property of ULSE Inc.

This ANSI/UL Standard for Safety consists of the Fourth edition including revisions through ~~January 17, 2024~~ November 16, 2026. The most recent designation of ANSI/UL 1786 as an American National Standard (ANSI) occurred on ~~January 17, 2024~~ November 16, 2026. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface.

Comments or proposals for revisions on any part of the Standard may be submitted to ULSE at any time. Proposals should be submitted via a Proposal Request in the Collaborative Standards Development System (CSDS) at https://csds.ul.org.

For information on ULSE Standards, visit https://www.shopulstandards.com, call toll free 1-888-853-3503 or email us at ClientService@shopULStandards.com.

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

Contents

Preface **7**

1 Scope **9**

2 Reference Publications **9**

3 Components **11**

4 Units of Measurement **12**

5 Application of Requirements **12**

6 Definitions **12**

7 Construction **14**

7.1 Enclosures – General 14
7.2 Polymeric materials for enclosure and electrical insulation 15
7.3 Enclosure assembly methods 16
7.3.1 Mechanical fastenings 16
7.3.2 Adhesives 16
7.4 Corrosion protection 16
7.5 Current-carrying parts 16
7.6 Plug blades 16
7.7 Plug face dimensions 16
7.8 Polarization and identification 17
7.9 Switching mechanisms 17
7.10 Lampholder 17
7.11 Wiring and terminal connections 18
7.12 Internal wiring 18
7.13 Spacing of conductive parts 19
7.14 Grounding and bonding 20
7.15 Maximum tipping moment 20
7.16 Electroluminescent panels 20
7.17 Incandescent lamps 21
7.18 LED light sources 21
7.19 Receptacle 21
7.20 Ballasts 22
7.21 Vessels containing a liquid 22
7.22 Class 2 outputs 23
7.23 Secondary batteries 23

8 General Tests **23**

8.1 General 23
8.2 Accessibility of live parts 24
8.3 Dielectric voltage-withstand 24
8.4 Plug blades accessibility 24
8.5 Secondary battery tests 24

9 Normal Operation Tests **25**

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

9.1 Temperature..... 25
9.2 Lampholder and lamp base accessibility..... 26

10 Component Tests..... 26

10.1 Switch mechanism..... 26
10.1.1 General..... 26
10.1.2 Overload..... 27
10.1.3 Endurance..... 27
10.1.4 Actuating members..... 27
10.2 Plug blade secureness test..... 27
10.2.1 General..... 27
10.2.2 Pull test..... 28
10.2.3 Loading test..... 28
10.3 Folded blade compression test..... 28
10.4 Mold stress-relief distortion test..... 28
10.5 Lamp cavity separation test..... 29
10.6 Pull test..... 29
10.7 Enclosure impact test..... 29
10.8 Battery charge and discharge measurement..... 29
10.9 Endurance test of folding or retractable blades..... 30

11 Abnormal Tests..... 30

11.1 Blanketing test..... 30
11.2 Overlamping test..... 31
11.3 Limited short-circuit test..... 31
11.4 Overvoltage test..... 32
11.5 Component breakdown test..... 32
11.6 Voltage surge test..... 32
11.7 Humidity conditioning test..... 33
11.8 Leakage-current test..... 33
11.9 Grounding continuity test..... 35
11.10 Crush test..... 35
11.11 Torque test..... 35
11.12 Rotational endurance test..... 36
11.13 Envelope torque test..... 36

12 Factory Production Tests..... 36

12.1 Dielectric voltage-withstand test..... 36
12.2 Additional factory production tests in Canada..... 37

13 Marking..... 37

Annex A (Normative)
Standards for components..... 57

Annex B (CAN) (Normative)
Grounding and bonding of electrical equipment..... 59

B.1 General..... 59
B.2 Impedance..... 59
B.3 Impedance Test..... 59

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

ANNEX C (CAN) (Normative)
Printed circuit-board requirements..... 60

C.1 Application..... 60
C.2 Special Terminology..... 60
C.3 General..... 60
C.4 Printed Circuit-Board Coatings Tests..... 61
C.4.1 Dielectric strength..... 61
C.4.2 Adhesion..... 61
C.4.3 Abrasion resistance test apparatus..... 62
C.4.4 Insulation Resistance Test Voltage..... 62
C.4.5 Fault conditions test..... 63
C.5 Bond Strength of Printed-Wiring Boards..... 63
C.5.1 General..... 63
C.5.2 Test procedure..... 63

Annex D (CAN) (Normative)
Factory Tests for Canada..... 65

D.1 Grounding continuity..... 65
D.2 Separation..... 65
D.3 Candelabra lamp devices..... 65
D.4 Test records..... 66

Annex E (CAN) (Informative)
French translations and markings..... 67

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

No Text on This Page

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

Preface

This is the harmonized CSA Group and ULSE Standard for Direct Plug-In Nightlights. It is the second edition of CSA C22.2 No. 256 and the fourth edition of UL 1786. This edition of CSA C22.2 No. 256 supersedes the previous edition published in 2005. This edition of UL 1786 supersedes the previous editions published in 1995, 1988, and 2005. This harmonized standard has been jointly revised on ~~January 17, 2024~~November 16, 2026. For this purpose, CSA Group and ULSE are issuing revision pages dated ~~January 17, 2024~~November 16, 2026.

This harmonized Standard was prepared by the CSA Group and ULSE. The efforts and support of the CANENA Technical Harmonization Committee are gratefully acknowledged.

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

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

Application of Standard

Where reference is made to a specific number of samples to be tested, the specified number is 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 equivalent Standard for CSA Group and ULSE. An equivalent Standard is a Standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

Reasons for differences from IEC

There is not an IEC Standard that is equivalent to the requirements contained in this Standard.

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.

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

No Text on This Page

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

1 Scope

1.1 This Standard applies to direct plug-in nightlights not exceeding 10 W input, for indoor use only, in non-hazardous locations and intended to be used in accordance with the *Canadian Electrical Code, Part I*, CSA C22.1, and the *National Electrical Code*, ANSI/NFPA 70. Light source types include incandescent candelabra base lamps, non-replaceable lamps, [fluorescent, neon, or light-emitting diode (LED) type] or electroluminescent panels.

1.2 These requirements cover direct plug in nightlights for insertion into a parallel slot receptacle rated 125 volts maximum.

1.3 These requirements do not cover:

(a) cord-connected luminaires;

(b) nightlights with more than one receptacle;

(c) direct plug-in devices with other primary functions, such as room deodorizers, insect repellers, or flashlights; (Note: A nightlight provided with non-rechargeable (replaceable) batteries is considered to be a flashlight); or

(d) direct plug-in devices utilizing plasma light.

2 Reference Publications

2.1 For undated references to Standards, such reference shall be considered to refer to the latest edition and all revisions to that edition up to the time when this Standard was approved. For dated references to Standards, such reference shall be considered to refer to the dated edition and all revisions published to that edition up to the time the Standard was approved.

2.2 Products covered by this Standard shall comply with the reference installation codes and Standards as appropriate for the country where the product is to be used. When the product is intended for use in more than one country, the product shall comply with the installation codes and Standards for all countries where it is intended to be used. A list of reference publications is provided below.

CSA Group

C22.1-12
Canadian Electrical Code, Part I

C22.2 No. 0.4-04 (R2013)
Bonding of Electrical Equipment

CAN/CSA-C22.2 No. 0.17-00 (R2013)
Evaluation of Properties of Polymeric Materials

C22.2 No. 0.23-15 (R2020)
General requirements for battery-powered appliances

C22.2 No. 42-10
General Use Receptacles, Attachment Plugs, and Similar Wiring Devices

C22.2 No. 223-15 (R2020)
Power supplies with extra-low-voltage Class 2 outputs

C22.2 No. 250.13-22
Light emitting diode (LED) equipment for lighting applications

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

CAN/CSA C22.2 No. 60065-03 (R2012)
Audio, Video, and Similar Electronic Apparatus – Safety Requirements

CAN/CSA C22.2 No. 60590-1:07 (R2021)
I*nformation Technology Equipment – Safety – Part 1: General Requirements*

C22.2 No. 62133-1-20
Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications – Part 1: Nickel systems

C22.2 No. 62133-2-20
Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications – Part 2: Lithium systems

C22.2 No. 62368-1-19
Audio/video, information and communication technology equipment – Part 1: Safety requirements

UL (Underwriters Laboratories Inc)

UL 498
Attachment Plugs and Receptacles

UL 498A
Current Taps and Adapters

UL 746C
Polymeric Materials – Use in Electrical Equipment Evaluations

UL 796
Printed-Wiring Boards

UL 840
Insulation Coordination Including Clearances and Creepage Distances for Electrical Equipment

UL 1310
Class 2 Power Units

UL 1449
Surge Protective Devices

UL 2054
Household and Commercial Batteries

UL 8750
Light Emitting Diode (LED) Equipment for Use in Lighting products

UL 60590-1
Information Technology Equipment – Safety – Part 1: General Requirements

UL 62133-1
Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications – Part 1: Nickel systems

UL 62133-2
Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications – Part 2: Lithium systems

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

UL 62368-1
Audio/video, information and communication technology equipment – Part 1: Safety requirements

ASTM (American Society for Testing and Materials)

ASTM D 1000ASTM D1000
Standard Test Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications

ANSI/ASTM E230/E230M
Standard Specification and Temperature-Electromotive Force (emf) Tables for Standardized Thermocouples

IEC (International Electrotechnical Commission)

IEC 60061-1
Lamp caps and holders together with gauges for the control of interchangeability and safety Part 1: Lamp caps

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

NEMA (National Electrical Manufacturers Association)

NEMA ANSLG C81.61
Electrical Lamp Bases – Specifications for Bases (Caps) for Electric Lamps

NEMA ANSLG C81.63a
Gauges for Electric Lamp Bases and Lampholders

NFPA (National Fire Protection Association)

ANSI/NFPA 70
National Electrical Code (NEC)

3 Components

3.1 Except as indicated in Clause 3.2, 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 the products covered by this Standard. A component shall comply with the CSA or UL Standards as appropriate for the country where the product is to be used.

3.2 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. Electrical circuit components of an LED light source, including the LED itself, that are directly connected to line voltage are considered covered by the requirements of this Standard.

3.3 A component shall be used in accordance with its rating established for the intended conditions of use.

3.4 Specific components are accepted as being incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

3.5 In Canada, a driver or part thereof providing an isolated output to an LED light source shall comply with applicable requirements of the Standard for Light Emitting Diode (LED) Equipment for Lighting Applications, CAN/CSA-C22.2 No. 250.13.

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

In the United States, a driver or part thereof providing an isolated output to an LED light source shall comply with applicable requirements of the Standard for Light Emitting Diode (LED) Equipment for Use in Lighting Products, UL 8750.

4 Units of Measurement

4.1 The values given in SI (metric) units shall be normative. Any other values given are for information only.

Note: Wire gauge sizes are expressed in American Wire Gauge sizes because of its widespread usage.

4.2 Temperatures are given in degrees Celsius only.

4.3 Unless indicated otherwise, all voltage and current values mentioned in this Standard are root-mean-square (rms).

5 Application of Requirements

5.1 The requirements of the national installation code and other practices of Canada and the United States have been addressed in the requirements of this Standard.

5.2 Products intended to be used in both Canada and the United States shall comply with the requirements of this Standard.

5.3 Products to be used only in Canada or only in the United States shall comply with the requirements of this Standard, but need only comply with the applicable country-specific requirement, if provided.

6 Definitions

6.1 For the purpose of these requirements, the following definitions apply:

6.2 **Accessible** – able to be contacted by the articulate probe described in Clause 8.2.2.

6.2.1 BATTERY, PRIMARY – A battery that can only be discharged once. It is not designed to be electrically recharged and must be protected from charging current.

6.2.2 BATTERY, SECONDARY - A battery that is intended to be discharged and recharged many times in accordance with the manufacturer's recommendations.

6.3 **Child-appealing feature** – A feature that provides visual appeal and attraction to children in the form of shape, decoration, bright colors, or unusual illuminations.

6.3.1 CLASS 2 CIRCUIT – A circuit supplied by an isolating source whose electrical output complies with the requirements of one of the following:

In Canada:

(a) The Class 2 parameters of the Standard for Power Supplies with Extra-low Voltage Class 2 Outputs, CAN/CSA-C22.2 No. 223;

(b) The LPS (limited power source) parameters of the Standard for Information Technology Equipment – Safety – Part 1: General Requirements, CAN/CSA-60950-1 or the Standard for Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements, CSA-C22.2 No. 62368-1;

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

(c) The LVLE (low voltage limited energy) parameters of the Standard for Light Emitting Diode (LED) Equipment for Use in Lighting Products, CAN/CSA-C22.2 No. 250.13; or

(d) The Limited Power Source Test of the Standards for General Requirements for Battery-powered Appliances CSA C22.2 No. 0.23.

In the United States:

(a) The Class 2 parameters of the Standard for Class 2 Power Units, UL 1310;

(b) The LPS (limited power source) parameters of the Standard for Information Technology Equipment – Safety – Part 1: General Requirements, UL 60950-1 or the Standard for Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements, UL 62368-1;

(c) The LVLE (low voltage limited energy) parameters of the Standard for Light Emitting Diode (LED) Equipment for Use in Lighting Products, UL 8750; or

(d) The Limited Power Source Test of the Standards for General Requirements for Household and Commercial Batteries, UL 2054.

6.4 **Device** – the general term used to denote all direct plug-in nightlights covered by this Standard. A more specific term is used if a requirement applies only to a certain type of device.

6.5 **Direct Plug-In Nightlight** – a nightlight with an integral parallel blade plug and a 10 W maximum light source, and which may incorporate a shade. It is used not for general illumination but for illuminating obstacles. For the purpose of this Standard, a nightlight may be referred to as “a device.”

6.6 **Electroluminescent Panel** – a solid phosphor layer, contained between two electrodes, that will emit light when subjected to alternating current.

6.7 **Enclosure, Electrical** – a part of the device intended to reduce the risk of contact with parts at hazardous voltage or hazardous energy levels.

6.8 **Enclosure, Mechanical** – a part of the device intended to reduce the risk of injury due to mechanical or other physical hazards.

6.9 **Light Emitting Diode (LED)** – a solid state component embodying a p-n junction, emitting optical radiation when excited by an electric current.

6.10 **LED Light Source** – a system comprising one or more LEDs along with the necessary circuitry that supplies the proper voltage and current or that is used to switch, dim or otherwise control the electrical energy to operate the LEDs.

6.11 **Live Part** – a metal or other conductive part that, during intended use, has an electrical potential difference with respect to earth ground or any other conductive part.

6.12 **Measurement Indication Unit (MIU)** – the output voltage across the meter, in millivolts RMS, in the measurement instrument in Figure 1, divided by 500 Ω. (The instrument indication is equal to the RMS value in milliamperes when the frequency is 60 Hz (sinusoidal current). The reading may not be a direct indication of the RMS or other common amplitude quantifier of leakage-current when the leakage-current is of complex waveform or frequency other than 50 or 60 Hz.)

6.13 **Neon Lamp** – a discharge light source, also known as a “glow lamp,” that has a current limiting resistor in series with the lamp and is filled with a neon gas.

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

6.14 **Non-Relampable Direct Plug-In Nightlight** – a device constructed with permanent non-replaceable lamps.

6.15 **Relampable Direct Plug-In Nightlight** – a device constructed in such a way as to allow user replacement of the lamp.

6.16 **Risk Of Electric Shock** – a risk that exists between any two uninsulated conductive parts of a nightlight or between an uninsulated conductive nightlight part and earth ground, if the continuous current flow through a 1500 resistor in parallel with a 0.015μF capacitor connected between the two points exceeds 5 mA rms (7 mA peak) and if the open circuit voltage exceeds 30 V rms or 42.4 V peak.

6.17 **Shade** – a diffuser intended to reduce the glare of the lamp.

6.18 **Skeleton-Type Lampholder** – 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.

6.19 **User Maintenance** – servicing operations, such as relamping and cleaning, expected to be carried out by untrained persons.

6.20 UNIVERSAL SERIAL BUS (USB) – A wiring system for communication and power transfer between a wide range of digital devices. Several connector configurations and versions exist (with the downstream port typically implementing a USB Type A configuration) all with power levels limited to Class 2 circuit outputs (See 6.3.1).

7 Construction

7.1 Enclosures – General

7.1.1 Enclosures shall have the strength and rigidity required to resist the abuses to which they are liable to be subjected, without increasing the risk of fire, electric shock, or injury to persons due to a reduction of the required spacing for live parts or the loosening or displacement of live parts.

7.1.2 The enclosure material shall be metal or a polymeric material that complies with Clause 7.2.

7.1.3 A device shall be constructed so that it is not necessary to open or remove the enclosure during normal use or user maintenance. Parts that can be removed during normal use or for user maintenance such as cleaning or relamping shall not be considered to be a part of the enclosure. The incorrect replacement or discarding of such parts shall not affect the intended operation of the device.

7.1.4 A live part shall be contained within an enclosure. A part that is intended to be live at any time during the normal maintenance and use of a device shall be considered to be a live part. An enclosure shall comply with Clause 8.2.

7.1.5 Lampholder contacts need not be enclosed if live parts are not accessible with the lamp in place as determined by the requirements of Clause 9.2 for lampholder and lamp base accessibility.

7.1.6 The blades of a nightlight are not required to be enclosed.

7.1.7 An enclosure shall comply with the enclosure impact test of Clause 10.7.

7.1.8 There shall not be any method of construction, such as sharp edges or burrs, that causes damage to electrical insulation, reduces electrical spacings, or increases the risk of personal injury to the user.

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.