

STN	Svietidlá. Časť 1: Všeobecné požiadavky a skúšky.	STN EN 60598-1 36 0600
------------	--	--

Luminaires - Part 1: General requirements and tests

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 05/15

Obsahuje: EN 60598-1:2015, IEC 60598-1:2014

Oznámením tejto normy sa od 20.10.2017 ruší
STN EN 60598-1 (36 0600) zo septembra 2009

120772

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2015
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy
rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

EUROPEAN STANDARD

EN 60598-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2015

ICS 29.140.40

Supersedes EN 60598-1:2008

English Version

Luminaires -
Part 1: General requirements and tests
(IEC 60598-1:2014 , modified)

Luminaires -
Partie 1: Exigences générales et essais
(IEC 60598-1:2014 , modifiée)

Leuchten -
Teil 1: Allgemeine Anforderungen und Prüfungen
(IEC 60598-1:2014 , modifiziert)

This European Standard was approved by CENELEC on 2014-10-20. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of document 34D/1110/FDIS, future edition 8 of IEC 60598-1, prepared by SC 34D "Luminaires" of IEC/TC 34 "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60598-1:2015.

A draft amendment, which covers common modifications to IEC 60598-1 (34D/1110/FDIS), was prepared by CLC/TC 34Z "Luminaires and associated equipment" and approved by CENELEC.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-10-20
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-10-20

This document supersedes EN 60598-1:2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60598-1:2014 are prefixed "Z".

Endorsement notice

The text of the International Standard IEC 60598-1:2014 was approved by CENELEC as a European Standard with agreed common modifications.

COMMON MODIFICATIONS

3 Marking

3.2.12 Delete NOTE 4.

3.3 Add a new subclause:

3.3.101 Where the terminal block is not supplied with the luminaire, the packaging needs to contain the following wording:

"Terminal block not included. Installation may require advice from a qualified person."

4 Construction

4.11.6 At the end of the paragraph commencing "Following completion of these tests...", **add** "[the test voltage however being reduced to 1 500 V]".

5 External and internal wiring

5.2.1 **Add** under the item 'connecting leads (tails)', related to the indent "Fixed luminaires" the following additional text:

connecting leads (tails):

account shall be taken of national installation rules/practice when deciding whether to supply a connection device or not. Where the luminaire is delivered with connecting leads (tails) and without a means of connection to the supply, the manufacturer of the luminaire shall specify which terminal block may be used which shall conform to EN 60998-2-1 or EN 60998-2-2; either the terminal block to be used shall be specified or the following shall be defined:

- the type of terminal (screw/screwless);
- number of terminals;
- rated voltage;
- rated connecting capacity;
- any necessary preparation of the ends of conductors;
- any fixing method.

The requirements of 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 shall be applied.

5.2.2 In paragraph 1, **replace** "IEC 60227 and IEC 60245" by "EN 50525".

Delete paragraph 2.

Replace Table 5.1 by:

Table 5.1 – Supply cord

Luminaire	Rubber	PVC	No insulation
Ordinary class I luminaires	H03RT-H ^c	H03VVH2-F ^c H03VV-F ^c	
Ordinary class II luminaires	H05RR-F ^c	H03VVH2-F ^{(a)c} H03VV-F ^c	
Luminaires other than ordinary class I and II	H05RN-F ^c	H03VVH2-F ^{(a)c} H03VV-F ^{a c}	
Portable rough service luminaires	H07RN-F ^c	-	
Class III or with SELV circuits luminaires (up to 25V a.c./60V d.c.)			Un-insulated conductor ^b
Class III or with SELV circuits luminaires (above 25V a.c./60V d.c.), including 50V a.c./120 d.c.	Unsheathed basic insulated conductor		
^a For indoor use only ^b In accordance to HD 60364 "Electrical installations of buildings" uninsulated conductors are not allowed in certain special installations and locations e.g. HD 60364-7-701 "Locations containing a bath or shower". ^c For supply voltages greater than 250 V, higher voltage grade cables and cords than those given in the above table may be necessary.			

12 Endurance test and thermal test

12.4.2 c) Line 2, after "90 °C" **add** "(see footnote ^c to Table 12.2 relating to unsleeved fixed wiring)".

Table 12.2 In footnote ^c **add** the following:

- after "European installation standards": "(HD 60364 (HD 384))";
- after "European cable standards": "(EN 50525)".

Bibliography

Add the following notes for the standards indicated:

IEC 60081:1997	NOTE Harmonized as EN 60081:1998 (not modified).
IEC 60216 Series	NOTE Harmonized as EN 60216 Series (not modified).
IEC 60364 Series	NOTE Harmonized as HD 384/HD 60364 Series (partly modified).
IEC 60364-5-51:2001	NOTE Harmonized as HD 60364-5-51:2006 (modified). ¹⁾
IEC 60364-7-701	NOTE Harmonized as HD 60364-7-701.
IEC 60364-7-702	NOTE Harmonized as HD 60364-7-702

¹⁾ Superseded by HD 60364-5-51:2009.

IEC 60598-2-3:2002	NOTE Harmonized as EN 60598-2-3:2003 (not modified).
IEC 60598-2-5:1998	NOTE Harmonized as EN 60598-2-5:1998 (not modified).
IEC 60598-2-6:1994	NOTE Harmonized as EN 60598-2-6:1994 (not modified).
IEC 60664-3:2003	NOTE Harmonized as EN 60664-3:2003 (not modified).
IEC 60695 Series	NOTE Harmonized as EN 60695 Series (not modified).
IEC 60695-2-11:2000	NOTE Harmonized as EN 60695-2-11:2001 (not modified).
IEC 60811-3-1:1985	NOTE Harmonized as EN 60811-3-1:1995 (not modified).
IEC 60901:1996	NOTE Harmonized as EN 60901:1996 (not modified).
IEC 60921:2004	NOTE Harmonized as EN 60921:2004 (not modified).
IEC 60923:2005	NOTE Harmonized as EN 60923:2005 (not modified).
IEC 60925:1989	NOTE Harmonized as EN 60925:1991 (not modified).
IEC 60929:2006	NOTE Harmonized as EN 60929:2006 (not modified). 2)
IEC 60950-1:2005	NOTE Harmonized as EN 60950-1:2006 (modified).
IEC 61195:1999	NOTE Harmonized as EN 61195:1999 (not modified).
IEC 61210:1993	NOTE Harmonized as EN 61210:1995 (modified). 3)
IEC 61346-1:1996	NOTE Harmonized as EN 61346-1:1996 (not modified).
IEC 61535:2009	NOTE Harmonized as EN 61535:2009 (modified).
IEC 61995 Series	NOTE Harmonized as EN 61995 Series (partly modified).
ISO 75-2:1993	NOTE Harmonized as EN ISO 75-2:1996 (not modified). 4)

2) Superseded by EN 60929:2011.

3) Superseded by EN 61210:2010.

4) Superseded by EN ISO 75-2:2004, which is also superseded by EN ISO 75-2:2013.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60061	Series	Lamp caps and holders together with gauges for the control of interchangeability and safety	EN 60061	Series
IEC 60061-2 (mod)	1969	Lamp caps and holders together with gauges for the control of interchangeability and safety - Part 2: Lampholders	EN 60061-2 + A1 to A37	1993
IEC 60061-3	1969	Lamp caps and holders together with gauges for the control of interchangeability and safety - Part 3: Gauges	EN 60061-3 + A1 to A38	1993
IEC 60065 (mod)	2001	Audio, video and similar electronic apparatus - Safety requirements	EN 60065 + corr. March + corr. August + A11 + A12	2002 2006 2007 2008 2011
IEC 60068-2-75	1997	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	1997
IEC 60079	Series	Explosive atmospheres	EN 60079	Series
IEC/TR 60083	–	Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC	–	–
IEC 60085	2007	Electrical insulation - Thermal evaluation and designation	EN 60085	2008
IEC 60112	2003	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	2003
IEC 60155	1993	Glow-starters for fluorescent lamps	EN 60155	1995
IEC 60227	Series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	EN 50525 ¹⁾	Series

¹⁾ EN 50525 Series, which is related to, but not directly equivalent with IEC 60227 Series, applies instead.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60238	2004	Edison screw lampholders	EN 60238 + corr. January	2004 2005
IEC 60245	Series	Rubber insulated cables - Rated voltages up to and including 450/750 V	EN 50525 ²⁾	Series
IEC 60269	Series	Low-voltage fuses	EN/HD 60269	Series
IEC 60320	Series	Appliance couplers for household and similar general purposes	EN 60320	Series
IEC 60357	2002	Tungsten halogen lamps (non-vehicle) - Performance specifications	EN 60357 + corr. July	2003 2003
IEC 60360	1998	Standard method of measurement of lamp cap temperature rise	EN 60360	1998
IEC 60364-4-41 (mod)	2005	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41 + corr. July	2007 2007
IEC 60384-14	2005	Fixed capacitors for use in electronic equipment - Part 14: Sectional specification - Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	EN 60384-14	2005 ³⁾
IEC 60400	2008	Lampholders for tubular fluorescent lamps and starterholders	EN 60400	2008
IEC 60417	data-base	Graphical symbols for use on equipment	–	–
IEC 60432-1 (mod) A1	1999 2005	Incandescent lamps - Safety specifications - Part 1: Tungsten filament lamps for domestic and similar general lighting purposes	EN 60432-1 A1	2000 2005
IEC 60432-2 (mod) A1 (mod)	1999 2005	Incandescent lamps - Safety specifications - Part 2: Tungsten halogen lamps for domestic and similar general lighting purposes	EN 60432-2 A1	2000 2005
IEC 60432-3	2002	Incandescent lamps - Safety specifications - Part 3: Tungsten-halogen lamps (non-vehicle)	EN 60432-3	2003 ⁴⁾
IEC 60449 + A1	1973 1979	Voltage bands for electrical installations of buildings	HD 193 S2	1982
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993

2) EN 50525 Series, which is related to, but not directly equivalent with IEC 60245 Series, applies instead.

3) Superseded by EN 60384-14:2013 (DOW = 2016-07-10).

4) Superseded by EN 60432-3:2013 (DOW = 2015-08-08).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60570 (mod)	2003	Electrical supply track systems for luminaires	EN 60570	2003
IEC 60598-2	Series	Luminaires - Part 2: Particular requirements	EN 60598-2	Series
IEC 60598-2-4	1997	Luminaires - Part 2: Particular requirements - Section 4: Portable general purpose luminaires	EN 60598-2-4	1997
IEC 60634	1993	Heat test source (H.T.S.) lamps for carrying out heating tests on luminaires	EN 60634	1995
IEC 60662 (mod)	1980	High-pressure sodium vapour lamps	EN 60662	1993 ⁵⁾
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60682	1980	Standard method of measuring the pinch temperature of quartz-tungsten-halogen lamps	EN 60682	1993
IEC 60684	Series	Flexible insulating sleeving	EN 60684	Series
IEC 60695-2	Series	Fire hazard testing - Part 2: Glowing/hot-wire based test methods	EN 60695-2	Series
IEC 60695-2-10	2000	Fire hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	2001 ⁶⁾
IEC 60695-11-5	2004	Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	2005
IEC 60838	Series	Miscellaneous lampholders	EN 60838	Series
IEC 60989	–	Separating transformers, autotransformers, variable transformers and reactors	–	–
IEC 60990	1999	Methods of measurement of touch current and protective conductor current	EN 60990	1999
IEC 61032	1997	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998

⁵⁾ Superseded by EN 60662:2012 (DOW = 2015-01-02).

⁶⁾ Superseded by EN 60695-2-10:2013 (DOW = 2016-05-14).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61058-1 (mod)	2000	Switches for appliances - Part 1: General requirements	EN 61058-1	2002 ⁷⁾
IEC 61140	2001	Protection against electric shock - Common aspects for installation and equipment	EN 61140	2002
IEC 61167	1992	Metal halide lamps	EN 61167	1994 ⁸⁾
IEC 61184	2008	Bayonet lampholders	EN 61184	2008
IEC 61199	1999	Single-capped fluorescent lamps - Safety specifications	EN 61199	1999 ⁹⁾
IEC 61249	Series	Materials for printed boards and other interconnecting structures	EN 61249	Series
IEC 61347	Series	Lamp controlgear	EN 61347	Series
IEC 61347-2-9	2000	Lamp controlgear - Part 2-9: Particular requirements for ballasts for discharge lamps (excluding fluorescent lamps)	EN 61347-2-9 + corr. July + corr. December	2001 ¹⁰⁾ 2003 2010
IEC 61558-1	2005	Safety of power transformers, power supplies, reactors and similar products - Part 1: General requirements and tests	EN 61558-1 + corr. August	2005 2006
IEC 61558-2 (mod)	Series	Safety of power transformers, power supplies, reactors and similar products - Part 2: Particular requirements and test	EN 61558-2	Series
IEC 61558-2-5	1997	Safety of power transformers, power supply units and similar - Part 2-5: Particular requirements for shaver transformers and shaver supply units	EN 61558-2-5 + A11	1998 ¹¹⁾ 2004 ¹¹⁾
IEC 61558-2-6	1997	Safety of power transformers, power supply units and similar - Part 2-6: Particular requirements for safety isolating transformers for general use	EN 61558-2-6	1997 ¹²⁾
IEC 62031	2008	LED modules for general lighting - Safety specifications	EN 62031	2008

7) EN 61058-1 includes A1:2001 to IEC 61058-1 (mod).

8) Superseded by EN 61167:2011.

9) Superseded by EN 61199:2011.

10) Superseded by EN 61347-2-9:2013 (DOW = 2015-12-04).

11) Superseded by EN 61558-2-5:2010.

12) Superseded by EN 61558-2-6:2009.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62035 (mod)	1999	Discharge lamps (excluding fluorescent lamps) - Safety specifications	EN 62035	2000 ¹³⁾
IEC 62471 (mod)	2006	Photobiological safety of lamps and lamp systems	EN 62471	2008
IEC 80416-1	2001	Basic principles for graphical symbols for use on equipment - Part 1: Creation of symbol originals	EN 80416-1	2001 ¹⁴⁾
ISO 4046-4	2002	Paper, board, pulps and related terms - Vocabulary - Part 4: Paper and board grades and converted products	—	—

¹³⁾ Superseded by EN 62035:2014 (DOW = 2017-09-15).

¹⁴⁾ Superseded by EN 80416-1:2009.

Annex ZB (normative)

Special national conditions

Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions.

NOTE If it affects harmonization, it forms part of the European Standard or Harmonization Document.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

Clause Special national condition

3.3 **Denmark**

Supply cords of class I luminaires, which are delivered without a plug, shall be provided with a visible tag with the following text:

Vigtigt !
Lederen med grøn/gul isolation
må kun tilsluttes en klemme mærket



If essential for the safety of the luminaire, the tag shall in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text:

For tilslutning af the øvrige ledere,
se medfølgende vejledning.

NOTE "ø" may be replaced by "oe"; "æ" may be replaced by "æe".

Clause Special national condition

4.5.1 **Denmark**

Socket-outlets intended for providing power to other appliances shall be in compliance with DS60884-2-D1:2011, the Standard Sheets being applied as follows:

Class I Standard Sheet DK 1-3a, DK 1-1c and DK 1-1d

For class I luminaires, the earthing contact of the socket-outlet shall be electrically connected to the earthing terminal of the appliance.

Class II luminaires with a degree of protection not higher than IPX0, Standard Sheet DKA 1-4a can be used.

EXEMPTION:

Socket-outlets supplied from isolation transformers (shaver supply units) and socket-outlets on outdoor luminaires may be in accordance with the requirement of DS60884-2-D1:2011 for fixed socket-outlets.

5.2.1 **Cyprus**

Domestic luminaires intended for connection to a standard United Kingdom 13 A socket must be pre-fitted with an approved plug complying with BS 1363.

Cord sets for domestic luminaires for connection with an appliance inlet must be pre-fitted with an approved plug complying with BS 1363.

Plugs must be fitted with the correct fuse.

Denmark

Supply cords on single-phase portable luminaires having a rated current not exceeding 13 A shall be provided with a plug according to the following table:

Class of luminaire	DS60884-2-D1:2011	EN 50075 Standard Sheet
Class I	DK 2-1a, C 2b, C 3b or C 4	
Class II	DKA 2-1a, DKA 2-1b, C 5, C 6	I

For luminaires having an appliance inlet, the plug on the supply cord shall comply with the above requirements.

If multi-phase luminaires and single-phase luminaires having a rated current exceeding 13 A are provided with a supply cord with a plug, the plug shall comply with the following table or EN 60309.

Plug	
Class of luminaire	DS60884-2-D1:2011
Class I	DK 6-1a
Class II	DK 6-1a*
* Earthing contact not connected.	

Clause Special national condition

Finland

For luminaires provided with non-detachable flexible cables and cords and a plug, the plug shall comply with the requirements of CEE Publication 7 and EN 50075, the Standard Sheets to be applied being as follows:

- Class I luminaires CEE 7, sheet IV or VII
- Class II luminaires CEE 7, sheet XVI (alt I only) or CEE 7, sheet XVII or
EN 50075, sheet I

United Kingdom

Domestic luminaires intended for connection to a standard United Kingdom 13 A socket must be pre-fitted with an approved plug complying with BS 1363.

Cord sets for domestic luminaires for connection with an appliance inlet must be pre-fitted with an approved plug complying with BS 1363.

Plugs must be fitted with the correct fuse.

Annex ZC (informative)

A-deviations

A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN/CENELEC member.

This European Standard falls under Directive 2006/95/EC.

NOTE (from CEN/CENELEC IR Part 2:2008, 2.17) Where standards fall under EC Directives, it is the view of the Commission of the European Communities (OJ No. C59; 1982-03-09) that the effect of the decision of the Court of Justice in case 815/79 Cremonini/Vrankovich (European Court Reports 1980, p. 3583) is that compliance with A-deviations is no longer mandatory and that the free movement of products complying with such a standard should not be restricted except under the safeguard procedure provided for in the relevant Directive.

A-deviations in an EFTA-country are **valid instead** of the relevant provisions of the European Standard in that country until they have been removed.

<u>Clause</u>	<u>Deviation</u>
---------------	------------------

4 & 5	
------------------	--

	France
--	---------------

	(Arrêté of the 22 th September 1969)
--	---

	Socket-outlets 10/16 A intended for providing power to other appliances except those supplied by an isolating transformer shall be shuttered.
--	---

	(Arrêté du 30 décembre 2011 portant règlement de sécurité pour la construction des immeubles de grande hauteur et leur protection contre les risques d'incendie et de panique)
--	---

	Section VIII, Installations électriques et éclairage
--	--

	Article GH 48, Eclairage
--	--------------------------

	§ 1 Généralités:
--	------------------

	c) Les parties externes des luminaires satisfont à l'essai au fil incandescent, la température du fil incandescent étant de :
--	---

	– 850°C pour les luminaires dans les escaliers et les circulations horizontales communes ;
--	--

	– 650°C pour les luminaires dans les locaux.
--	--

	United Kingdom
--	-----------------------

	(Approved Document B of the United Kingdom Building Regulations)
--	--

	Particular fire protection requirements relating to thermoplastic diffusers are listed in Subclause 6.15 of the above Regulations.
--	--



IEC 60598-1

Edition 8.0 2014-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Luminaires –
Part 1: General requirements and tests**

**Luminaires –
Partie 1: Exigences générales et essais**





THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2014 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in 14 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

More than 55 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Catalogue IEC - webstore.iec.ch/catalogue

Application autonome pour consulter tous les renseignements bibliographiques sur les Normes internationales, Spécifications techniques, Rapports techniques et autres documents de l'IEC. Disponible pour PC, Mac OS, tablettes Android et iPad.

Recherche de publications IEC - www.iec.ch/searchpub

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

Electropedia - www.electropedia.org

Le premier dictionnaire en ligne de termes électroniques et électriques. Il contient plus de 30 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans 14 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

Plus de 55 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: csc@iec.ch.



IEC 60598-1

Edition 8.0 2014-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Luminaires –
Part 1: General requirements and tests**

**Luminaires –
Partie 1: Exigences générales et essais**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE **XH**
CODE PRIX

ICS 29.140.40

ISBN 978-2-8322-1553-1

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	9
SECTION 0: GENERAL INTRODUCTION.....	11
0.1 Scope	11
0.2 Normative references	12
0.3 General requirements.....	15
0.4 General test requirements and verification.....	15
0.5 Components of luminaires	16
0.6 List of parts of IEC 60598-2.....	17
SECTION 1: TERMS AND DEFINITIONS	18
1.1 General.....	18
1.2 Terms and definitions	18
SECTION 2: CLASSIFICATION OF LUMINAIRES.....	31
2.1 General.....	31
2.2 Classification according to type of protection against electric shock	31
2.3 Classification according to degree of protection against ingress of dust, solid objects and moisture.....	31
2.4 Classification according to material of supporting surface for which the luminaire is designed	31
2.5 Classification according to the circumstances of use	32
SECTION 3: MARKING	32
3.1 General.....	32
3.2 Marking on luminaires	32
3.3 Additional information.....	37
3.4 Test of marking	39
SECTION 4: CONSTRUCTION.....	40
4.1 General.....	40
4.2 Replaceable components	40
4.3 Wireways	40
4.4 Lampholders	40
4.5 Starterholders	42
4.6 Terminal blocks.....	42
4.7 Terminals and supply connections	43
4.8 Switches	45
4.9 Insulating linings and sleeves	45
4.10 Double and reinforced insulation.....	46
4.11 Electrical connections and current-carrying parts	47
4.12 Screws and connections (mechanical) and glands	48
4.13 Mechanical strength	51
4.14 Suspensions, fixings and means of adjustment.....	54
4.15 Flammable materials	58
4.16 Luminaires for mounting on normally flammable surfaces	59
4.17 Drain holes.....	60
4.18 Resistance to corrosion	60
4.19 Ignitors.....	61
4.20 Rough service luminaires – Vibration requirements.....	61
4.21 Protective shield.....	61

4.22	Attachments to lamps	62
4.23	Semi-luminaires	63
4.24	Photobiological hazards	63
4.25	Mechanical hazard	64
4.26	Short-circuit protection	64
4.27	Terminal blocks with integrated screwless earthing contacts	64
4.28	Fixing of thermal sensing controls	64
4.29	Luminaire with non replaceable light source	65
4.30	Luminaires with non-user replaceable light sources	65
4.31	Insulation between circuits	65
4.32	Overvoltage protective devices	68
SECTION 5: EXTERNAL AND INTERNAL WIRING		68
5.1	General	68
5.2	Supply connection and other external wiring	68
5.3	Internal wiring	73
SECTION 6: Not used		76
SECTION 7: PROVISION FOR EARTHING		76
7.1	General	76
7.2	Provision for earthing	76
SECTION 8: PROTECTION AGAINST ELECTRIC SHOCK		78
8.1	General	78
8.2	Protection against electric shock	78
SECTION 9: RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		82
9.1	General	82
9.2	Tests for ingress of dust, solid objects and moisture	82
9.3	Humidity test	86
SECTION 10: INSULATION RESISTANCE AND ELECTRIC STRENGTH, TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT		86
10.1	General	86
10.2	Insulation resistance and electric strength	87
10.3	Touch current, protective conductor current and electric burn	90
SECTION 11: CREEPAGE DISTANCES AND CLEARANCES		91
11.1	General	91
11.2	Creepage distances and clearances	91
SECTION 12: ENDURANCE TEST AND THERMAL TEST		94
12.1	General	94
12.2	Selection of lamps and ballasts	94
12.3	Endurance test	94
12.4	Thermal test (normal operation)	96
12.5	Thermal test (abnormal operation)	101
12.6	Thermal test (failed windings in lamp control gear)	105
12.7	Thermal test in regard to fault conditions in lamp control gear or electronic devices incorporated in thermoplastic luminaires	107
SECTION 13: RESISTANCE TO HEAT, FIRE AND TRACKING		110
13.1	General	110
13.2	Resistance to heat	110
13.3	Resistance to flame and ignition	110
13.4	Resistance to tracking	111

SECTION 14: SCREW TERMINALS	112
14.1 General	112
14.2 Terms and definitions	112
14.3 General requirements and basic principles	113
14.4 Mechanical tests	115
SECTION 15: SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS.....	118
15.1 General	118
15.2 Terms and definitions	119
15.3 General requirements	119
15.4 General instructions on tests	120
15.5 Terminal and connections for internal wiring	121
15.6 Terminals and connections for external wiring	123
Annex A (normative) Test to establish whether a conductive part may cause an electric shock.....	151
Annex B (normative) Test lamps.....	152
B.1 General	152
B.2 Filament lamps within the scope of IEC 60432-1 and IEC 60432-2	152
B.2.1 Principal modes of heat transfer and lamps used for testing	152
B.2.2 Filament test lamps.....	152
B.3 Halogen lamps within the scope of IEC 60432-3	154
B.4 Tubular fluorescent and other discharge lamps	154
B.5 LED modules within the scope of IEC 62031	154
Annex C (normative) Abnormal circuit conditions	155
Annex D (normative) Draught-proof enclosure	158
Annex E (normative) Determination of winding temperature rises by the increase-in-resistance method.....	161
Annex F (normative) Test for resistance to stress corrosion of copper and copper alloys	162
F.1 Test cabinet	162
F.2 Test solution	162
F.3 Test piece	162
F.4 Test procedure.....	163
Annex G (normative) Measurement of touch current and protective conductor current).....	164
Annex H (Void).....	168
Annex I (Void).....	169
Annex J (informative) Explanation of IP numbers for degrees of protection	170
Annex K (informative) Temperature measurement	172
K.1 Temperature measurements of the luminaire	172
K.2 Temperature measurement of the insulation parts of lampholders.....	173
Annex L (informative) Guide to good practice in luminaire design.....	175
L.1 General	175
L.2 Plastics in luminaires.....	175
L.3 Rust resistance	176
L.4 Corrosion resistance	176
L.5 Chemically corrosive atmospheres	177
L.6 Reflector design	177
L.7 Components in different kinds of luminaires.....	178
L.8 Recommendations for electromagnetic ballast protection for end of life phenomenon of HID lamps	179

L.9	Resistance against the effects of vibration	179
L.10	Flammability of components	179
Annex M (normative)	Determination of creepage distances and clearances	180
Annex N (informative)	Explanation of marking for luminaires that are not suitable for mounting on normally flammable surfaces and covering with insulation materials	181
N.0	General	181
N.1	Protection against flame	181
N.2	Protection against heat	181
N.2.1	Spacing	182
N.2.2	Temperature measurements of mounting surface under abnormal or failed ballast conditions	182
N.3	Thermal protectors	183
N.4	Deletion of the F mark requirements	184
Annex O (Void)	185
Annex P (normative)	Absorption requirements for the protective shield to be fitted to luminaires designed for metal halide lamps which emit a high level of UV radiation	186
P.1	General	186
P.2	Procedure A	186
P.3	Procedure B	187
Annex Q (informative)	Conformity testing during manufacture	188
Q.1	General	188
Q.2	Testing	188
Annex R (normative)	Schedule of amended subclauses containing more serious/critical requirements which require products to be retested	190
Annex S (normative)	Requirements for the identification of a family or range of luminaires for type testing	191
S.1	General	191
S.2	Range or family of luminaires	191
Annex T (informative)	Reference to Class 0	192
T.1	General	192
T.2	Definition	192
T.3	Requirements and tests	192
Annex U (informative)	Creepage and clearances distances for luminaires where a higher degree of availability (impulse withstand category III) may be requested	193
U.1	General	193
U.2	Requirements for impulse withstand category III	193
Annex V (normative)	Additional test requirements for terminal blocks with integrated screwless earthing contact for direct connection to the luminaire housing or to parts of the body	195
V.1	Additional requirements to 7.2.1	195
V.2	Additional requirements to 7.2.3	195
Annex W (normative)	Alternative thermal test for thermoplastic luminaires	197
W.1	Thermal test in regard to fault conditions in lamp controlgear or electronic devices without temperature sensing controls in thermoplastic luminaires for fluorescent lamps ≤ 70 W	197
Annex X (normative)	199
Bibliography	201
Figure 1 – Symbols (1 of 2)	128

Figure 2 – Terminal block arrangement for installation test for luminaires with connecting leads (tails)	129
Figure 3 – <i>This figure has been withdrawn from the present edition.</i>	129
Figure 4 – Illustration of the requirements of 4.15	130
Figure 5 – <i>This figure has been withdrawn from the present edition.</i>	130
Figure 6 – Apparatus for proving protection against dust.....	131
Figure 7 – Apparatus for testing protection against rain and splashing	132
Figure 8 – Nozzle for spray test.....	133
Figure 9 – Relation between winding temperature and mounting surface temperature	134
Figure 10 – Ball-pressure apparatus	135
Figure 11 – Arrangement and dimensions of the electrodes for the tracking test	135
Figure 12 – Pillar terminals.....	136
Figure 13 – Screw terminals and stud terminals (1 of 2).....	137
Figure 14 – Saddle terminals.....	139
Figure 15 – Lug terminals.....	140
Figure 16 – Mantle terminals	141
Figure 17 – Construction of electrical connections	142
Figure 18 – Examples of spring-type screwless terminals	142
Figure 19 – Further examples of screwless terminals.....	143
Figure 20 – Illustration of the terms “lopping-in” and “through wiring”	144
Figure 21 – Apparatus for ball impact tests.....	145
Figure 22 – Examples of self-tapping, thread-cutting and thread-forming screws (from ISO 1891)	145
Figure 23 – <i>This figure has been withdrawn from the present edition.</i>	145
Figure 24 – Illustration of creepage and clearance measurements at a supply terminal	146
Figure 25 – Tumbling barrel	146
Figure 26 – Test circuit for safety during insertion.....	147
Figure 27 – Ignition temperatures of wood as a function of time	147
Figure 28 – Example of permitted degree of soldering	148
Figure 29 – Test chain	148
Figure 30 – Example of a thread forming screw used in a groove of a metallic material.....	149
Figure 31 – Electro-mechanical contact system with plug/socket connection	150
Figure 32 – Test circuit for luminaires incorporating fluorescent lamp ≤ 70 W	150
Figure C.1 – Circuit for testing rectifying effect (some capacitive starterless ballasts only)	156
Figure C.2 – Circuit for testing rectifying effect (ballasts for single pin lamps)	156
Figure C.3 – Circuit for testing rectifying effect of some high pressure sodium and some metal halide lamps.....	157
Figure D.1 – Example of test recess where a luminaire comprises separate parts	159
Figure D.2 – Correct test box size (insulating ceilings) for settable and adjustable luminaires	160
Figure G.1 – Test configuration: single-phase equipment on star TN or TT system.....	166
Figure G.2 – Measuring network, touch current weighted for perception or reaction	166
Figure G.3 – Measuring network, touch current weighted for let-go (for portable class I luminaires).....	166

Figure G.4 – Measuring network, weighted for high frequency protective conductor currents	167
Figure K.1 – Placing of thermocouples on a typical lampholder	174
Figure V.1 – Arrangement for voltage drop test.....	196
Figure X.1 – Declaration of LV_{supply} and U_{out} and the insulation barriers between the light source and accessible parts.....	199
Table 3.1 – Marking	33
Table 4.1 – Torque tests on screws	49
Table 4.2 – Torque tests on glands.....	51
Table 4.3 – Impact energy and spring compression	52
Table 4.4 – Test on semi-luminaires	56
Table 4.5 – Test on adjusting devices.....	57
Table 5.1 – Supply cord.....	69
Table 5.2 – Tests for cord anchorage	72
Table 9.1 – Solid-object-proof luminaire test.....	84
Table 10.1 – Minimum insulation resistance.....	88
Table 10.2 – Electric strength.....	90
Table 10.3 – Limits of touch current or protective conductor current and electric burn	91
Table 11.1 – Minimum distances for a.c. (50/60 Hz) sinusoidal voltages (to be used in conjunction with Annex M).....	93
Table 11.2 – Minimum distances for sinusoidal or non-sinusoidal pulse voltages.....	94
Table 12.1 – Maximum temperatures under the test conditions of 12.4.2, for principal parts (1 of 2)	99
Table 12.2 – Maximum temperatures under the test conditions of 12.4.2, for common materials used in luminaires (1 of 2)	100
Table 12.3 – Maximum temperatures under the test conditions of 12.5.1.....	103
Table 12.4 – Maximum temperature of windings under abnormal operating conditions and at 110 % of rated voltage for lamp control gear	104
Table 12.5 – Maximum temperature of windings under abnormal operating conditions and at 110 % of rated voltage for lamp control gear marked “D6”	104
Table 12.6 – Temperature overshoot time limitation.....	106
Table 14.1 – Nominal cross-sectional areas of conductors according to terminal sizes.....	114
Table 14.2 – Nominal cross-sectional areas of conductors according to maximum current.....	114
Table 14.3 – Composition of conductors	115
Table 14.4 – Torque to be applied to screws and nuts	117
Table 14.5 – Pull to be applied to conductor	118
Table 15.1 – Conductor rating	124
Table 15.2 – Conductor pull force.....	124
Table F.1 – pH value of the test solution.....	162
Table G.1 – Position of switch e, n and p for the measurements of the different classes of luminaires	165
Table J.1 – Degrees of protection indicated by the first characteristic numeral	170
Table J.2 – Degrees of protection indicated by the second characteristic numeral	171
Table L.1 – Damaging influences.....	175

Table M.1 – Determination of creepage distances and clearances (see Table 11.1)	180
Table N.1 – Guidance on when to use the symbol and its explanation on the luminaire or in the manufacturer’s instructions provided with the luminaire	181
Table N.2 – Thermal protection operation	183
Table Q.1 – Minimum values for electrical tests	189
Table U.1 – Minimum distances for a.c. (50/60 Hz) sinusoidal voltages impulse withstand category III	194
Table X.1 – Insulation requirements between active parts and accessible conductive parts	200

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LUMINAIRES –

Part 1: General requirements and tests

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60598-1 has been prepared by subcommittee 34D: Luminaires, of IEC technical committee 34: Lamps and related equipment.

This eighth edition cancels and replaces the seventh edition published in 2008. This edition constitutes a technical revision and includes the following significant technical changes with respect to the previous edition:

- a) requirements to support the construction methods for new LED luminaires entering the market;
- b) photobiological requirements extended;
- c) more precise requirements for insulation between different types of electrical circuit;
- d) other general updates and improvements.

The major changes which may affect certification are given in Annex R.

Annex R shows where a new text has been included which contains more serious/critical requirements requiring products to be re-tested.

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

FDIS	Report on voting
34D/1110/FDIS	34D/1121/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

NOTE In this standard, the following print types are used:

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

A list of all parts of the IEC 60598 series, under the general title: *Luminaires*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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.

LUMINAIRES –

Part 1: General requirements and tests

SECTION 0: GENERAL INTRODUCTION

0.1 Scope

This Part 1 of IEC 60598 specifies general requirements for luminaires, incorporating electric light sources for operation from supply voltages up to 1 000 V. The requirements and related tests of this standard cover: classification, marking, mechanical construction, electrical construction and photobiological safety.

Each section of this Part 1 is read in conjunction with this Section 0 and with other relevant sections to which reference is made.

Each part of IEC 60598-2 details requirements for a particular type of luminaire or group of luminaires on supply voltages not exceeding 1 000 V. These parts are published separately for ease of revision and additional sections will be added as and when a need for them is recognized.

The presentation of photometric data for luminaires is under consideration by the International Commission on Illumination (CIE) and is not, therefore, included in this Part 1.

Requirements are included in this Part 1 for luminaires incorporating ignitors with nominal peak values of the voltage pulse not exceeding those of Table 11.2. The requirements apply to luminaires with ignitors built into ballasts and to luminaires with ignitors separate from ballasts. For luminaires with ignitors built into lamps, the requirements are under consideration.

Requirements for semi-luminaires are included in this Part 1.

In general, this Part 1 covers safety requirements for luminaires. The object of this Part 1 is to provide a set of requirements and tests which are considered to be generally applicable to most types of luminaires and which can be called up as required by the detail specifications of IEC 60598-2. This Part 1 is thus not regarded as a specification in itself for any type of luminaire, and its provisions apply only to particular types of luminaires to the extent determined by the appropriate part of IEC 60598-2.

The parts of IEC 60598-2, in making reference to any of the sections of Part 1, specify the extent to which that section is applicable and the order in which the tests are to be performed; they also include additional requirements as necessary.

The order in which the sections of Part 1 are numbered has no particular significance as the order in which their provisions apply is determined for each type of luminaire or group of luminaires by the appropriate part of IEC 60598-2. All parts of IEC 60598-2 are self-contained and therefore do not contain references to other parts of IEC 60598-2.

Where the requirements of any of the sections of Part 1 are referred to in the parts of IEC 60598-2 by the phrase "The requirements of section... of IEC 60598-1 apply", this phrase is to be interpreted as meaning that all the requirements of that section of Part 1 apply except those which are clearly inapplicable to the particular type of luminaire covered by that part of IEC 60598-2.

For explosion proof luminaires, as covered by IEC 60079, the requirements of IEC 60598 (selecting the appropriate parts 2) are applied in addition to the requirements of IEC 60079. In the event of any conflict between IEC 60598 and IEC 60079, the requirements of IEC 60079 take priority.

Attention is drawn to lamp performance standards which contain "information for luminaire design"; this should be followed for proper lamp operation; however, this standard does not require the testing of lamp performance as part of the type test approval for luminaires.

Improvements in safety to take into account the state of the art technology are incorporated in the standards with revisions and amendments on an ongoing basis. Regional standardisation bodies may include statements in their derived standards to cover products which have complied with the previous document as shown by the manufacturer or standardization body. The statements may require that for such products, the previous standard may continue to apply to production until a defined date after which the new standard shall apply.

0.2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60061, *Lamp caps and holders together with gauges for the control of interchangeability and safety*

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 60065:2001, *Audio, video and similar electronic apparatus – Safety requirements*
Amendment 1:2005

IEC 60068-2-6:2007, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-14:2009, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-75, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC/TR 60083, *Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC*

IEC 60085, *Electrical insulation – Thermal evaluation and designation*

IEC 60112:2003, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60155, *Glow-starters for fluorescent lamps*

IEC 60227(all parts), *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*

IEC 60238, *Edison screw lampholders*

IEC 60245 (all parts), *Rubber insulated cables – Rated voltages up to and including 450/750 V*

IEC 60320 (all parts), *Appliance couplers for household and similar general purposes*

IEC 60357, *Tungsten halogen lamps (non-vehicle) – Performance specifications*

IEC 60360, *Standard method of measurement of lamp cap temperature rise*

IEC 60384-14, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

IEC 60400, *Lampholders for tubular fluorescent lamps and starterholders*

IEC 60417, *Graphical symbols for use on equipment* Available at: <http://www.graphical-symbols.info/equipment>

IEC 60432-1, *Incandescent lamps – Safety specifications – Part 1: Tungsten filament lamps for domestic and similar general lighting purposes*

IEC 60432-2, *Incandescent lamps – Safety specifications – Part 2: Tungsten halogen lamps for domestic and similar general lighting purposes*

IEC 60432-3, *Incandescent lamps – Safety specifications – Part 3: Tungsten-halogen lamps (non-vehicle)*

IEC 60449:1973, *Voltage bands for electrical installations of buildings*
Amendment 1:1979

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60570:2003, *Electrical supply track systems for luminaires*

IEC 60598-2 (all parts), *Luminaires – Part 2: Particular requirements*

IEC 60598-2-4, *Luminaires – Part 2: Particular requirements – Section 4: Portable general purpose luminaires*

IEC 60662, *High-pressure sodium vapour lamps – Performance specifications*

IEC 60682, *Standard method of measuring the pinch temperature of quartz-tungsten-halogen lamps*

IEC 60684 (all parts), *Flexible insulating sleeving*

IEC 60695-2-11, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products*

IEC 60695-11-5, *Fire hazard testing – Part 11-5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance*

IEC 60838 (all parts), *Miscellaneous lampholders*

IEC 60989, *Separating transformers, autotransformers, variable transformers and reactors*

IEC 60990:1999, *Methods of measurement of touch current and protective conductor current*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

IEC 61058-1:2000, *Switches for appliances – Part 1: General requirements*

IEC 61167, *Metal halide lamps – Performance specification*

IEC 61184, *Bayonet lampholders*

IEC 61199, *Single-capped fluorescent lamps – Safety specifications*

IEC 61249 (all parts), *Materials for printed boards and other interconnecting structures*

IEC 61347 (all parts), *Lamp controlgear*

IEC 61347-1, *Lamp controlgear – Part 1: General and safety requirements*

IEC 61347-2-9, *Lamp controlgear – Part 2-9: Particular requirements for electromagnetic controlgear for discharge lamps (excluding fluorescent lamps)*

IEC 61558 (all parts), *Safety of power transformers, power supplies, reactors and similar products*

IEC 61558-1:2005, *Safety of power transformers, power supplies, reactors and similar products – Part 1: General requirements and tests*

IEC 61558-2 (all parts), *Safety of power transformers, power supplies, reactors and similar products – Part 2: Particular requirements and tests*

IEC 61558-2-5, *Safety of transformers, reactors, power supply units and combinations thereof – Part 2-5: Particular requirements and test for transformer for shavers, power supply units for shavers and shaver supply units*

IEC 61558-2-6, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers*

IEC 61643-11, *Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power systems – requirements and tests*

IEC 62031, *LED modules for general lighting – Safety specifications*

IEC 62035, *Discharge lamps (excluding fluorescent lamps) – Safety specifications*

IEC/TR 62778, *Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN