



BSI Standards Publication

Luminaires

Part 1: General requirements and tests

National foreword

This British Standard is the UK implementation of EN IEC 60598-1:2024+A11:2024. It is derived from IEC 60598-1:2024. It supersedes BS EN IEC 60598-1:2021+A11:2022 which will be withdrawn on 31 December 2027.

The UK participation in its preparation was entrusted to Technical Committee CPL/34/4, Luminaires.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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For the Great Britain market (England, Scotland and Wales), if UK Government has designated this publication for conformity with UKCA marking (or similar) legislation, it may contain an additional National Annex. Where such a National Annex exists, it shows the correlation between this publication and the relevant UK legislation. If there is no National Annex of this kind, the relevant Annex ZA or ZZ in the body of the European text will indicate the relationship to UK regulation applicable in Great Britain. References to EU legislation may need to be read in accordance with the UK designation and the applicable UK law. Further information on designated standards can be found at www.bsigroup.com/standardsandregulation.

For the Northern Ireland market, UK law will continue to implement relevant EU law subject to periodic confirmation. Therefore Annex ZA/ZZ in the European text, and references to EU legislation, are still valid for this market.

UK Government is responsible for legislation. For information on legislation and policies relating to that legislation, consult the relevant pages of www.gov.uk.

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Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 December 2024.

Amendments/corrigenda issued since publication

Date	Text affected
31 March 2025	CENELEC amendment A11:2024 text inserted and designator and National Foreword corrected

English Version

Luminaires - Part 1: General requirements and tests (IEC 60598-1:2024)

Luminaires - Partie 1: Exigences générales et essais
(IEC 60598-1:2024)

Leuchten - Teil 1: Allgemeine Anforderungen und
Prüfungen
(IEC 60598-1:2024)

This European Standard was approved by CENELEC on 2024-12-11. 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.

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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.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 34D/1739/FDIS, future edition 10 of IEC 60598-1, prepared by SC 34D "Luminaires" of IEC/TC 34 "Lighting" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60598-1:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2025-12-31 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2027-12-31 document have to be withdrawn

This document supersedes EN IEC 60598-1:2021 and all of its amendments and corrigenda (if any).

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

This document has been prepared under a standardization request addressed to CENELEC by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZZ, which is an integral part of EN IEC 60598-1:2024/A11:2024.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 60598-1:2024 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 60061 (series)	NOTE Approved as EN 60061 (series)
IEC 60068-2-2:2007	NOTE Approved as EN 60068-2-2:2007 (not modified)
IEC 60079 (series)	NOTE Approved as EN IEC 60079 (series)
IEC 60081	NOTE Approved as EN 60081
IEC 60086-1	NOTE Approved as EN IEC 60086-1
IEC 60086-2	NOTE Approved as EN IEC 60086-2

IEC 60216 (series)	NOTE	Approved as EN 60216 (series)
IEC 60228	NOTE	Approved as EN IEC 60228
IEC 60269 (series)	NOTE	Approved as EN 60269 (series)
IEC 60357	NOTE	Approved as EN 60357
IEC 60364 (series)	NOTE	Approved as HD 60364 (series)
IEC 60364-4-41	NOTE	Approved as HD 60364-4-41
IEC 60364-5-51	NOTE	Approved as HD 60364-5-51
IEC 60364-5-54:2011	NOTE	Approved as HD 60364-5-54:2011 (not modified) + A11:2017
IEC 60364-7-701	NOTE	Approved as HD 60364-7-701
IEC 60364-7-702	NOTE	Approved as HD 60364-7-702
IEC 60400	NOTE	Approved as EN 60400
IEC 60432-3	NOTE	Approved as EN 60432-3
IEC 60598-2-2	NOTE	Approved as EN IEC 60598-2-2
IEC 60598-2-3	NOTE	Approved as EN 60598-2-3
IEC 60598-2-5	NOTE	Approved as EN 60598-2-5
IEC 60664 (series)	NOTE	Approved as EN 60664 (series)
IEC 60664-1:2020	NOTE	Approved as EN IEC 60664-1:2020 (not modified)
IEC 60664-3	NOTE	Approved as EN 60664-3
IEC 60682	NOTE	Approved as EN 60682
IEC 60695 (series)	NOTE	Approved as EN IEC 60695 (series)
IEC 60695-2 (series)	NOTE	Approved as EN IEC 60695-2 (series)
IEC 60838 (series)	NOTE	Approved as EN 60838 (series)
IEC 60901	NOTE	Approved as EN 60901
IEC 60921	NOTE	Approved as EN 60921

EN IEC 60598-1:2024+A11:2024 (E)

IEC 60923	NOTE	Approved as EN 60923
IEC 60929	NOTE	Approved as EN 60929
IEC 61140:2016	NOTE	Approved as EN 61140:2016 (not modified)
IEC 61184	NOTE	Approved as EN 61184
IEC 61195	NOTE	Approved as EN 61195
IEC 61199:2011	NOTE	Approved as EN 61199:2011 (not modified)
IEC 61199:2011/A1:2012	NOTE	Approved as EN 61199:2011/A1:2013 (not modified)
IEC 61199:2011/A2:2014	NOTE	Approved as EN 61199:2011/A2:2015 (not modified)
IEC 61210	NOTE	Approved as EN 61210
IEC 61558-2-5	NOTE	Approved as EN 61558-2-5
IEC 61995 (series)	NOTE	Approved as EN 61995 (series)
IEC 62031	NOTE	Approved as EN IEC 62031
IEC 62035	NOTE	Approved as EN 62035
IEC 62133-1	NOTE	Approved as EN 62133-1
IEC 62368 (series)	NOTE	Approved as EN IEC 62368 (series)
IEC 62368-3:2017	NOTE	Approved as EN IEC 62368-3:2020 (not modified)
IEC 62471:2006	NOTE	Approved as EN 62471:2008
IEC 62504:2014	NOTE	Approved as EN 62504:2014 (not modified)
IEC 62722 (series)	NOTE	Approved as EN IEC 62722 (series)

European foreword to amendment A11

This document (EN IEC 60598-1:2024/A11:2024) has been prepared by CLC/TC 34, "Lighting".

The following dates are fixed:

- latest date by which this document has to be (dop) 2025-12-31
implemented at national level by publication of
an identical national standard or by
endorsement
- latest date by which the national standards (dow) 2027-12-31
conflicting with this document have to be
withdrawn

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For the relationship with EU Legislation, see informative Annex ZZ, which is an integral part of this document.

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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

6.4 **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 de øvrige ledere,
se medfølgende vejledning.

“ø” may be replaced by “oe”; “æ” may be replaced by “ae”.

8.2.18 **Denmark**

Socket-outlets intended for providing power to other appliances shall be in compliance with DS60884-2-D1:2017, 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-D1:2017 for fixed socket-outlets.

8.2.1 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-D1:2017	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-D1:2017
Class I	DK 6-1a
Class II	DK 6-1a*
* Earthing contact not connected.	

Finland

For luminaires provided with non-detachable flexible cables and cords and a plug, the plug shall comply with the requirements of SFS 5610 and EN 50075, the Standard Sheets to be applied being as follows:

- Class I luminaires SFS 5610, sheet IV or VII or IVA or VIIA
- Class II luminaires SFS 5610, sheet XVI (alt I only) or
SFS 5610, 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.

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 and/or CENELEC member.

This European Standard falls under Directive 2014/35/EU.

NOTE (from CEN/CENELEC IR Part 2:2018, 2.16) Where standards fall under EC Directives or Regulations, it is the view of the Commission of the European Communities (OJ No C 59; 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 within the EC except under the safeguard procedure provided for in the relevant Directive or Regulation.

A-deviations in non EU countries are valid instead of the respective provisions of the European Standard until the national situation causing the A-deviation has changed.

<u>Clause</u>	<u>Deviation</u>
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7 and 8	France
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(Arrêté of the 22th 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.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where 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.

Publication	Year	Title	EN/HD	Year
IEC 60061-2 (mod)	-	Lamp caps and holders together with gauge for the control of interchangeability and safe - Part 2: Lampholders	EN 60061-2 + A1 to A57	1993
IEC 60061-3	-	Lamp caps and holders together with gauge for the control of interchangeability and safety - Part 3: Gauges	EN 60061-3 + A1 to A58	1993
IEC 60068-2-6	-	Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)	EN 60068-2-6	2008
IEC 60068-2-14	2023	Environmental testing – Part 2-14: Tests – T N: Change of temperature	EN IEC 60068-2-14	2023
IEC 60068-2-31	2008	Environmental testing – Part 2-31: Tests – T Ec: Rough handling shocks, primarily for equipment-type specimens	EN 60068-2-31	2008
IEC 60068-2-75	-	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	2014
IEC/TR 60083	-	Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC	IEC/TR 60083	2015
IEC 60085	-	Electrical insulation - Thermal evaluation and designation	EN 60085	2008
IEC 60112	2020	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN IEC 60112	2020
IEC 60155	-	Glow-starters for fluorescent lamps	EN 60155 + A1 + A2	1995 1995 2007
IEC 60227	all parts	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	EN 50525 ¹	all parts (see below)

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

EN IEC 60598-1:2024+A11:2024 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 1: General requirements	EN 50525-1	2011
			+ A1	2022
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-11: Cables for general applications - Flexible cables with thermoplastic PVC insulation	EN 50525-2-11	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-12: Cables for general applications - Cables with thermoplastic PVC insulation for extensible leads	EN 50525-2-12	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-21: Cables for general applications - Flexible cables with crosslinked elastomeric insulation	EN 50525-2-21	2011
			+ AC	2013
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-22: Cables for general applications - High flexibility braided cables with crosslinked elastomeric insulation	EN 50525-2-22	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-31: Cables for general applications - Single core non-sheathed cables with thermoplastic PVC insulation	EN 50525-2-31	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-41: Cables for general applications - Single core cables with crosslinked silicone rubber insulation	EN 50525-2-41	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-42: Cables for general applications - Single core non-sheathed cables with crosslinked EVA insulation	EN 50525-2-42	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-51: Cables for general applications - Oil resistant control cables with thermoplastic PVC insulation	EN 50525-2-51	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-71: Cables for general applications - Flat tinsel cables (cords) with thermoplastic PVC insulation	EN 50525-2-71	2011

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/75V (U0/U) - Part 2-72: Cables for general applications - Flat divisible cables (cords) with thermoplastic PVC insulation	EN 50525-2-72	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/75V (U0/U) - Part 2-81: Cables for general applications - Cables with crosslinked elastomeric covering for arc welding	EN 50525-2-81	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/75V (U0/U) - Part 2-82: Cables for general applications - Cables with crosslinked elastomeric insulation for decorative chair	EN 50525-2-82	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/75V (U0/U) - Part 2-83: Cables for general applications - Multicore cables with crosslinked silicone rubber insulation	EN 50525-2-83	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/75V (U0/U) - Part 3-11: Cables with special fire performance - Flexible cables with halogen-free thermoplastic insulation, and low emission of smoke	EN 50525-3-11	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/75V (U0/U) - Part 3-21: Cables with special fire performance - Flexible cables with halogen-free crosslinked insulation, and low emission of smoke	EN 50525-3-21	2011
			+ AC	2013
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/75V (U0/U) - Part 3-31: Cables with special fire performance - Single core non-sheathed cables with halogen-free thermoplastic insulation, and low emission of smoke	EN 50525-3-31	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/75V (U0/U) - Part 3-41: Cables with special fire performance - Single core non-sheathed cables with halogen-free crosslinked insulation and low emission of smoke	EN 50525-3-41	2011
IEC 60238	2016	Edison screw lampholders	EN IEC 60238	2018

EN IEC 60598-1:2024+A11:2024 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60245	all parts	Rubber insulated cables - Rated voltages up to and including 450/750 V	EN 50525 ²	all parts (see below)
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 1: General requirements	EN 50525-1	2011
			+ A1	2022
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-11: Cables for general applications - Flexible cables with thermoplastic PVC insulation	EN 50525-2-11	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-12: Cables for general applications - Cables with thermoplastic PVC insulation for extensible leads	EN 50525-2-12	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-21: Cables for general applications - Flexible cables with crosslinked elastomeric insulation	EN 50525-2-21	2011
			+ AC	2013
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-22: Cables for general applications - High flexibility braided cables with crosslinked elastomeric insulation	EN 50525-2-22	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-31: Cables for general applications - Single core non-sheathed cables with thermoplastic PVC insulation	EN 50525-2-31	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-41: Cables for general applications - Single core cables with crosslinked silicone rubber insulation	EN 50525-2-41	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-42: Cables for general applications - Single core non-sheathed cables with crosslinked EVA insulation	EN 50525-2-42	2011
		Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-51: Cables for general applications - Oil resistant control cables with thermoplastic PVC insulation	EN 50525-2-51	2011

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
Electric cables - Low voltage energy cab rated voltages up to and including 450/ (U0/U) - Part 2-71: Cables for g applications - Flat tinsel cables (cords thermoplastic PVC insulation			EN 50525-2-71	2011
Electric cables - Low voltage energy cab rated voltages up to and including 450/ (U0/U) - Part 2-72: Cables for g applications - Flat divisible cables (cords thermoplastic PVC insulation			EN 50525-2-72	2011
Electric cables - Low voltage energy cab rated voltages up to and including 450/ (U0/U) - Part 2-81: Cables for g applications - Cables with cross elastomeric covering for arc welding			EN 50525-2-81	2011
Electric cables - Low voltage energy cab rated voltages up to and including 450/ (U0/U) - Part 2-82: Cables for g applications - Cables with cross elastomeric insulation for decorative chair			EN 50525-2-82	2011
Electric cables - Low voltage energy cab rated voltages up to and including 450/ (U0/U) - Part 2-83: Cables for g applications - Multicore cables with cross silicone rubber insulation			EN 50525-2-83	2011
Electric cables - Low voltage energy cab rated voltages up to and including 450/ (U0/U) - Part 3-11: Cables with speci performance - Flexible cables with halogen- thermoplastic insulation, and low emiss smoke			EN 50525-3-11	2011
Electric cables - Low voltage energy cab rated voltages up to and including 450/ (U0/U) - Part 3-21: Cables with speci performance - Flexible cables with halogen- crosslinked insulation, and low emissi smoke			EN 50525-3-21	2011
			+ AC	2013
Electric cables - Low voltage energy cab rated voltages up to and including 450/ (U0/U) - Part 3-31: Cables with speci performance - Single core non-sheathed c with halogen-free thermoplastic insulation low emission of smoke			EN 50525-3-31	2011
Electric cables - Low voltage energy cab rated voltages up to and including 450/ (U0/U) - Part 3-41: Cables with speci performance - Single core non-sheathed c with halogen-free crosslinked insulation low emission of smoke			EN 50525-3-41	2011

EN IEC 60598-1:2024+A11:2024 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60320	all parts	Appliance couplers for household and similar general purposes	EN 60320	all parts (see below)
		Appliance couplers for household and similar general purposes - Part 1: General requirements	EN IEC 60320-1	2021
		Appliance couplers for household and similar general purposes - Part 2-1: Sewing machine couplers	EN IEC 60320-2-1	2021
		Appliance couplers for household and similar general purposes - Part 2-3: Appliance coupler with a degree of protection higher than IPX0	EN IEC 60320-2-3	2021
		Appliance couplers for household and similar general purposes - Part 2-4: Appliance couplers dependent on appliance weight for engagement	EN IEC 60320-2-4	2021
		Appliance couplers for household and similar general purposes - Part 3: Standard sheets and gauges	EN 60320-3	2014
			+ A1	2021
			+ A2	2022
IEC 60335-1	2020	Household and similar electrical appliances – Safety – Part 1: General requirements	EN IEC 60335-1	2023
IEC 60360	-	Standard method of measurement of lamp cap temperature rise	EN 60360	1998
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	EN 60384-14	2013
			+ A1	2016
IEC 60417	database	Graphical symbols for use on equipment	-	-
IEC 60432-1 (mod)	1999	Incandescent lamps - Safety specifications - Part 1: Tungsten filament lamps for domestic and similar general lighting purposes	EN 60432-1	2000
+ A1	2005		+ A1	2005
+ A2	2011		+ A2	2012
IEC 60432-2 (mod)	1999	Incandescent lamps - Safety specifications - Part 2: Tungsten halogen lamps for domestic and similar general lighting purposes	EN 60432-2	2000
+ A1 (mod)	2005		+ A1	2005
+ A2	2012		+ A2	2012

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60529	-	Degrees of protection provided by enclos (IP Code)	EN 60529	1991
			+ corr. May	1993
			+ A1	2000
			+ A2	2013
IEC 60570 (mod)	2003	Electrical supply track systems for luminaire	EN 60570	2003
+ A1	2017		+ A1	2018
+ A2	2019		+ A2	2020
IEC 60598-2	all parts	Luminaires - Part 2: Particular requirements	EN 60598-2	all parts
IEC 60598-2-4 (mod)	2017	Luminaires - Part 2: Particular requirements Section 4: Portable general purpose luminaires	EN 60598-2-4	2018
IEC 60603	all parts	Connectors for frequencies below 3 MHz for with printed boards	EN 60603	all parts (see below)
		Connectors for frequencies below 3 MHz for with printed boards - Part 1: General specification - General requirements and g for the preparation of detail specifications, assessed quality	EN 60603-1	1998
		Connectors for frequencies below 3 MHz for with printed boards - Part 12: Detail specifications for dimensions, general requirements and t for a range of sockets designed for use integrated circuits	EN 60603-12	1998
		Connectors for frequencies below 3 MHz for with printed boards - Part 13: Detail specifications for two-part connectors of assessed quality printed boards for basic grid of 2,54 mm (0,1 in) with free connectors for non-access insulation displacement terminations (ID)	EN 60603-13	1998
		Connectors for frequencies below 3 MHz for with printed boards - Part 14: Detail specifications for circular connectors for low-frequency a and video applications such as audio, video audio-visual equipment	EN 60603-14	1998
		Connectors for frequencies below 3 MHz for with printed boards - Part 2: Detail specifications for two-part connectors with assessed quality for printed boards, for basic grid of 2,54 mm (0,1 in) with common mounting features	EN 60603-2	1998
			+ A1	2005
		Connectors for frequencies below 3 MHz for with printed boards - Part 3: Two-part connectors for printed boards having continuous spaced at 2,54 mm (0,1 in) centres staggered terminations at that same spacing	EN 60603-3	1998

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
		Connectors for frequencies below 3 MHz for use with printed boards - Part 4: Two-part connectors for printed boards having contacts spaced at 1,91 mm (0,075 in) centres and staggered terminations at that same spacing	EN 60603-4	1998
		Connectors for frequencies below 3 MHz for use with printed boards - Part 5: Edge-socket connectors and two-part connectors for double-sided printed boards with 2,54 mm (0,1 in) spacing	EN 60603-5	1998
		Connectors for frequencies below 3 MHz for use with printed boards - Part 6: Edge-socket connectors and printed-board connectors with 2,54 mm (0,1 in) contact spacing for single or double-sided printed boards of 1,6 mm (0,063 in) nominal thickness	EN 60603-6	1998
		Connectors for electronic equipment - Part 7: Detail specification for 8-way, unshielded, free and fixed connectors	EN IEC 60603-7	2020
		Connectors for electronic equipment - Part 7-1: Detail specification for 8-way, shielded, free and fixed connectors	EN 60603-7-1	2011
		Connectors for electronic equipment - Part 7-2: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 100 MHz	EN 60603-7-2	2010
		Connectors for electronic equipment - Part 7-3: Detail specification for 8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 100 MHz	EN 60603-7-3	2010
		Connectors for electronic equipment - Part 7-4: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz	EN 60603-7-4	2010
		Connectors for electronic equipment - Part 7-41: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 500 MHz	EN 60603-7-41	2010
		Connectors for electronic equipment - Part 7-5: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz	EN 60603-7-5	2010
		Connectors for electronic equipment - Part 7-51: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 500 MHz	EN 60603-7-51	2010
		Connectors for electronic equipment - Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors for data transmission with frequencies up to 600 MHz	EN 60603-7-7	2010

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
		Connectors for electronic equipment - Part 7- Detail specification for 8-way, shielded, free fixed connectors, for data transmission frequencies up to 1 000 MHz	EN 60603-7-71	2010
		Connectors for electronic equipment - Part 7- Detail specification for 8-way, shielded, free fixed connectors, for data transmissions frequencies up to 2 000 MHz	EN 60603-7-81	2016
			+ AC	2017
		Connectors for electronic equipment - Part 7- Detail specification for 8-way, 12 conti shielded, free and fixed connectors, for transmission with frequencies up to 2 000 M	EN 60603-7-82	2016
		Connectors for frequencies below 3 MHz for with printed boards - Part 8: Two- connectors for printed boards, for basic gr 2,54 mm (0,1 in), with square male contac 0,63 mm x 0,63 mm	EN 60603-8	1998
IEC 60662 (mod)	-	High pressure sodium vapour lamps	EN 60662	2012
			+ A11	2019
IEC 60664-4	2005	Insulation coordination for equipment within low voltage systems - Part 4: Consideration of high frequency voltage stress	EN 60664-4	2006
IEC 60669-1	-	Switches for household and similar fi electrical installations – Part 1: Ger requirements	EN 60669-1	2018
IEC 60669-2-1	-	Switches for household and similar 1 electrical installations - Part 2-1: Partic requirements - Electronic control devices	EN 60669-2-1	2021
			+ corrigendum Oct.	2006
IEC 60684	all parts	Flexible insulating sleeving	EN 60684	all parts (see below)
		Flexible insulating sleeving - Part 1: Definit and general requirements	EN 60684-1	2003
		Flexible insulating sleeving - Part 2: Metho test	EN 60684-2	2011
		Flexible insulating sleeving - Part Specifications for individual types of sleevi Sheets 100 to 105: Extruded PVC sleeving	EN 60684-3-100 to 105	2001
		Flexible insulating sleeving - Part Specifications for individual types of sleevi Sheets 116 and 117: Extruded polychloropr general purpose	EN 60684-3-116	2011
		Flexible insulating sleeving - Part Specifications for individual types of sleevi Sheets 121 to 124: Extruded silicone sleevi	EN 60684-3-121 to 124	2001

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
		Flexible insulating sleeving - Part 3: Specification for individual types of sleeving - Sheet 136: Extruded fluorosilicone sleeving - General purpose	EN 60684-3-136	1998
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheets 145 to 147: Extruded PTFE sleeving	EN 60684-3-145 to 147	2001
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 151: Extruded PVC/nitrile rubber - General purpose	EN 60684-3-151	1998
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 165: Extruded polyolefin, flame retarded, limited fire hazard sleeving	EN 60684-3-165	2004
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 205: Heat-shrinkable chlorinated polyolefin sleeving, flame retarded, nominal shrink ratio 1,7:1 and 2:1	EN 60684-3-205	2011
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 209: Heat-shrinkable polyolefin sleeving, general purpose, flame retarded	EN 60684-3-209	2010
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 211: Heat-shrinkable sleeving, semi-rigid polyolefin, shrink ratio 2:1	EN 60684-3-211	2007
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 212: Heat-shrinkable polyolefin sleeveings	EN 60684-3-212	2006
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 214: Heat-shrinkable, polyolefin sleeving, not flame retarded, thick and medium wall	EN IEC 60684-3-214	2019
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 216: Heat-shrinkable, flame- retarded, limited-fire-hazard sleeving	EN IEC 60684-3-216	2019
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 228: Heat-shrinkable, semi-rigid polyvinylidene fluoride sleeving, flame retarded, fluid resistant, shrink ratio 2:1	EN 60684-3-228	2004
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 229: Heat-shrinkable semi-flexible, polyvinylidene fluoride sleeving, flame retarded, fluid resistant, shrink ratio 2:1	EN 60684-3-229	2003

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		Flexible insulating sleeving - Pa Specifications for individual types of sleeving Sheet 233: Heat-shrinkable fluoroelastomer sleeving, flame retarded, fluid resistant, ratio 2:1	EN 60684-3-233	2006
		Flexible insulating sleeving - Pa Specifications for individual types of sleeving Sheets 240 to 243: Heat-shrinkable sleeving	EN 60684-3-240 to 243	2002
		Flexible insulating sleeving - Pa Specifications for individual types of sleeving Sheet 246: Heat-shrinkable polyolefin sleeve dual wall, not flame retarded	EN 60684-3-246	2007
		Flexible insulating sleeving - Pa Specifications for individual types of sleeving Sheet 247: Heat-shrinkable, polyolefin sleeve dual wall, not flame retarded, thick and medium wall	EN IEC 60684-3-247	2019
		Flexible insulating sleeving - Pa Specifications for individual types of sleeving Sheet 248: General purpose, heat-shrinkable dual wall polyolefin sleeving, flame retarded, shrink ratios 2:1, 3:1, 4:1	EN 60684-3-248	2007
		Flexible insulating sleeving - Pa Specifications for individual types of sleeving Sheet 271: Heat-shrinkable elastomer sleeving, flame retarded, fluid resistant, ratio 2:1	EN 60684-3-271	2011
		Flexible insulating sleeving - Pa Specifications for individual types of sleeving Sheet 280: Heat-shrinkable, polyolefin sleeve anti-tracking	EN IEC 60684-3-280	2019
		Flexible insulating sleeving - Pa Specifications for individual types of sleeving Sheet 281: Heat-shrinkable, polyolefin sleeve semiconductive	EN 60684-3-281	2010
		Flexible insulating sleeving - Pa Specifications for individual types of sleeving Sheet 282: Heat-shrinkable, polyolefin sleeve - Stress control	EN 60684-3-282	2010
		Flexible insulating sleeving - Pa Specifications for individual types of sleeving Sheet 283: Heat-shrinkable, polyolefin sleeve for bus-bar insulation	EN IEC 60684-3-283	2019
		Flexible insulating sleeving - Pa Specifications for individual types of sleeving Sheet 284: Heat-shrinkable sleeveings, barrier applications	EN 60684-3-284	2014
		Flexible insulating sleeving - Pa Specifications for individual types of sleeving Sheet 285: Heat-shrinkable polyolefin sleeve for medium voltage joint insulation	EN 60684-3-285	2014

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 300: Glass textile fibre sleeving, braided, uncoated	EN 60684-3-300	2002
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 320: Polyethylene terephthalate textile sleeving, lightly impregnated	EN 60684-3-320	2002
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheets 340 to 342: Expandable braided polyethylene terephthalate textile sleeving	EN 60684-3-340 to 342	2003
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheets 343 to 345: Expandable braided ethylene chlorotrifluoroethylene (E-CTFE) textile sleeving, uncoated	EN 60684-3-343 to 345	2002
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheets 400 to 402: Glass textile sleeving with silicone elastomer coating	EN 60684-3-400 to 402	2002
		Flexible insulating sleeving - Part 3: Specification for individual types of sleeving - Sheets 403 to 405: Glass textile sleeving with acrylic based coating	EN 60684-3-403 to 405	2002
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheets 406 to 408: Glass textile sleeving with PVC coating	EN 60684-3-406 to 408	2003
		Flexible insulating sleeving - Part 3: Specifications for individual types of sleeving - Sheet 409: Glass textile sleeving with polyurethane (PUR)-based coating	EN 60684-3-409	1999
		Flexible insulating sleeving - Part 3: Specification for individual types of sleeving - Sheets 420 to 422: Polyethylene terephthalate textile sleeving with acrylic based coating	EN 60684-3-420 to 422	2002
IEC 60695-2-11	-	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (GWEPT)	EN IEC 60695-2-11	2021
IEC 60695-11-5	-	Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	2017
IEC 60990	-	Methods of measurement of touch current and protective conductor current	EN 60990	2016
IEC 60998-2-1	-	Connecting devices for low-voltage circuits for household and similar purposes - Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units	EN 60998-2-1	2004

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60998-2-2	-	Connecting devices for low-voltage circuit household and similar purposes - Part 2- Particular requirements for connecting devices as separate entities with screwless-clamping units	EN 60998-2-2	2004
IEC 61032	1997	Protection of persons and equipment enclosures - Probes for verification	EN 61032	1998
IEC 61051-2	2021	Varistors for use in electronic equipment - 2: Sectional specification for surge suppression varistors	EN IEC 61051-2	2021
IEC 61058-1	2016	Switches for appliances -- Part 1: General requirements	EN 61058-1	2018
IEC 61058-1-1	-	Switches for appliances - Part 1-1: Requirements for mechanical switches	EN 61058-1-1	2016
IEC 61058-1-2	-	Switches for appliances - Part 1-2: Requirements for electronic switches	EN 61058-1-2	2016
IEC 61058-2-1	-	Switches for appliances - Part 2-1: Particular requirements for cord switches	EN 61058-2-1	2011
IEC 61167	-	Metal halide lamps	EN 61167 + A1	2018 2018
IEC 61249	all parts	Materials for printed boards and interconnecting structures	EN 61249	all parts
IEC 61347	all parts	Lamp controlgear	EN 61347	all parts
IEC 61347-1	2015	Lamp controlgear - Part 1: General and safety requirements	EN 61347-1	2015
+ A1	2017		+ A1	2021
IEC 61535	2023	Installation couplers intended for permanent connection in fixed installations	EN IEC 61535	2019
IEC 61558	all parts	Safety of power transformers, power supply reactors and similar products	EN 61558	all parts
IEC 61558-1	2017	Safety of power transformers, power supply reactors and similar products -- Part 1: General requirements and tests	EN IEC 61558-1	2019
IEC 61643-11	-	Low-voltage surge protective devices - Part 11: Surge protective devices connected to voltage power systems - Requirements and methods	EN 61643-11 + A11	2012 2018
IEC 61643-331	2020	Components for low-voltage surge protective devices - Part 331: Performance requirements and test methods for metal oxide varistors (MOV)	EN IEC 61643-331	2020
IEC 61984	2008	Connectors - Safety requirements and tests	EN 61984	2009

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IEC 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	EN 62133-2	2017
			+ A1	2021
			+ AC	2022
IEC 62368-1	2018	Audio/video, information and communication technology equipment - Part 1: Safety requirements	EN IEC 62368-1	2020
IEC 62391-1	-	Fixed electric double-layer capacitors for use in electric and electronic equipment – Part 1: Generic specification	EN IEC 61391-1	2022
IEC 62391-2	-	Fixed electric double-layer capacitors for use in electronic equipment - Part 2: Sectional specification - Electric double layer capacitors for power application	EN 62391-2	2006
IEC 62471-7	2023	Photobiological safety of lamps and lamp systems - Part 7: Light sources and luminaires primarily emitting visible radiation	EN IEC 62471-7	2023
IEC 62493	2015	Assessment of lighting equipment related to human exposure to electromagnetic fields	EN 62493	2015
+ A1	2022		+ A1	2022
IEC 62680	all parts	Universal Serial Bus interfaces for data and power	EN 62680	all parts (see below)
		Universal serial bus interfaces for data and power - Part 1: Universal serial bus specification, revision 2.0	EN 62680-1	2013
		Universal Serial Bus interfaces for data and power - Part 1-1: Universal Serial Bus interfaces - Common components - USB Battery Charging Specification, Revision 1.2 (TA 14)	EN 62680-1-1	2015
		Universal serial bus interfaces for data and power - Part 1-2: Common components - USB Power Delivery specification	EN IEC 62680-1-2	2022
		Universal serial bus interfaces for data and power - Part 1-3: Common components - USB Type-C® cable and connector specification	EN IEC 62680-1-3	2022
		Universal Serial Bus interfaces for data and power - Part 1-4: Common Components - USB Type-C™ Authentication Specification	EN IEC 62680-1-4	2018
		Universal serial bus interfaces for data and power - Part 1-5: Common components - USB Audio 3.0 device class definition	EN IEC 62680-1-5	2019

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
		Universal serial bus interfaces for data power - Part 1-6: Common components - Audio 3.0 device class definition basic fun	EN IEC 62680-1-6	2019
		Universal serial bus interfaces for data power - Part 1-7: Common components - Audio 3.0 device class definition data form	EN IEC 62680-1-7	2019
		Universal serial bus interfaces for data power - Part 1-8: Common components - Audio 3.0 device class definition terminal	EN IEC 62680-1-8	2019
		Universal Serial Bus interfaces for data power - Part 2-1: Universal Serial Specification, Revision 2.0 (TA 14)	EN 62680-2-1	2015
		Universal Serial Bus interfaces for data power - Part 2-2: Universal Serial Bus - Micro USB Cables and Connectors Specific Revision 1.01 (TA 14)	EN 62680-2-2	2015
		Universal Serial Bus interfaces for data power - Part 2-3: Universal Serial Bus C and Connectors Class Document, Revision (TA 14)	EN 62680-2-3	2015
		Universal serial bus interfaces for data power - Part 3: USB battery charging specification, Revision 1.2	EN 62680-3	2013
		Universal Serial Bus interfaces for data power - Part 3-1: Universal Serial Bus Specification	EN 62680-3-1	2017
		Universal Serial Bus interfaces for data power - Part 4-1: Universal Serial Bus Specification	EN IEC 62680-4-1	2022
IEC/TR 62778	2014	Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires	IEC/TR 62778	2014
ISO 3864-1	-	Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs and safety markings	ISO 3864-1	2011
ISO 7000	-	Graphical symbols for use on equipment	ISO 7000	2019
ISO 8124-1	2022	Safety of toys – Part 1: Safety aspects relating to mechanical and physical properties	ISO 8124-1	2022

Annex ZZ (informative)

Relationship between this European standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered

This European Standard has been prepared under a Commission's standardization request relating to harmonized standards in the field of the Low Voltage Directive, M/511, to provide one voluntary means of conforming to safety objectives of Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZ.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding safety objectives of that Directive, and associated EFTA regulations.

Table ZZ.1 — Correspondence between this European standard and Annex I of Directive 2014/35/EU [2014 OJ L96]

Safety objectives of Directive 2014/35/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
1. General conditions		
a) the essential characteristics, the recognition and observance of which will ensure that electrical equipment will be used safely and in applications for which it was made, shall be marked on the electrical equipment, or, if this is not possible, on an accompanying document;	Clause 6	To be used in conjunction with relevant part 2
b) the electrical equipment, together with its component parts, shall be made in such a way as to ensure that it can be safely and properly assembled and connected;	Clause 4 Clause 7	To be used in conjunction with relevant part 2
c) the electrical equipment shall be so designed and manufactured as to ensure that protection against the hazards set out in points 2 and 3 is assured, providing that the equipment is used in applications for which it was made and is adequately maintained.	See item 2 and 3 of this table	
2. Protection against hazards arising from the electrical equipment Measures of a technical nature shall be laid down in accordance with point 1, in order to ensure that:		

Safety objectives of Directive 2014/35/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
a) persons and domestic animals adequately protected against the danger of physical injury or other harm which might be caused by direct or indirect contact;	Clause 7 Clause 9 Clauses 16 and 17 Clause 8 Clause 10 Clause 13 Clause 12	All to be used in conjunction with relevant part 2
b) temperatures, arcs or radiation v would cause a danger, are not produced;	Clause 7 Clause 13 Clause 14 Clause 12	All to be used in conjunction with relevant part 2
c) persons, domestic animals and property are adequately protected against non-electrical dangers caused by the elec equipment which are revealed experience;	Clause 7 Clause 13	All to be used in conjunction with relevant part 2
d) the insulation is suitable for foreseeable conditions.	Clause 11 Clause 12 Clause 13	All to be used in conjunction with relevant part 2
3. Protection against hazards which may be caused by external influences on the electrical equipment Technical measures shall be laid dov accordance with point 1, in order to ensure that the electrical equipment:		
a) meets the expected mecha requirements in such a way that per: domestic animals and property are endangered;	Clause 6 Clause 7	All to be used in conjunction with relevant part 2
b) is resistant to non-mechanical influences in expected environmental condition such a way that persons, domestic animals and property are not endangered;	Clause 11 Clause 15	All to be used in conjunction with relevant part 2
c) does not endanger persons, dom animals and property in foresee conditions of overload.	Clause 7 Clause 14 Clause 15	All to be used in conjunction with relevant part 2

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

LUMINAIRES –

Part 1: General requirements and tests

FOREWORD

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IEC 60598-1 has been prepared by subcommittee 34D: Luminaires, of IEC technical committee 34: Lighting. It is an International Standard.

This tenth edition cancels and replaces the ninth edition published in 2020. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) new structure to comply with the ISO/IEC Directives, Part 2;
- b) addition of a new Annex V for comparison with the previous edition;
- c) revision of 7.32 for SPDs and for SPCs;
- d) the terms "live part" and "active part" were reviewed and aligned with the definitions of "live part" and "hazardous live part" given in IEC 60050-195;

- e) revision of 7.14.2 for conductor mechanical stress;
- f) revision of 14.5.2, Item 4 to include controlgear;
- g) revision of 9.2.1 (Earthing) with the deletion of the word "permanently";
- h) revision of Annex N: earth continuity test time;
- i) revision of 7.11.4; 7.14.1; Table 22 (14.4.3): Introduction of requirements for suspension by magnets;
- j) addition of a new Annex W for luminaires using batteries;
- k) clarification of Clause 6 for marking requirements for nature of supply;
- l) addition of a new Subclause 7.31.5: Additional requirements for luminaires using controllable controlgear providing SELV output(s);
- m) revision of 6.4.16: Information to be provided for luminaire having protective earth current > 10 mA;
- n) revision of 6.3.23; 6.4.18; 6.4.24; 7.30 and 10.2.1 for serviceable, non-user serviceable and non-serviceable components;
- o) revision of Annex D: Draught-proof enclosure;
- p) revision of 8.2.1 and 13.2.1: Inconsistencies in the inclusion of the limits of voltage ranges;
- q) revision of 9.2.10 for looping-in;
- r) Revision of Clause 2 and 7.8: update of the reference to IEC 61058-1-1, IEC 61058-1-2 and IEC 61058-2-1. Update of temperature limits in Table 21 (14.4.3) for luminaires incorporating switches according to IEC 60669-1 or IEC 60669-2-1;
- s) revision of 6.3.22 and 7.24 for photobiological safety;
- t) addition of a new Subclause 6.3.27 for marking of mains socket outlet moved from information requirements.

The major changes which can affect certification are given in Annex O.

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

The text of this International Standard is based on the following documents:

Draft	Report on voting
34D/1739/FDIS	34D/1751/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

When using this document with already published parts of the IEC 60598-2 series, Annex V of this document is to be used to update the cross-referencing of the relevant part of the IEC 60598-2 series to the new structure of this document. SC 34D projects to update the structure of the IEC 60598-2 series in line with the new structure of this document are to follow.

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

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

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

In general, this document covers safety requirements for luminaires. The object of this document 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 the IEC 60598-2 series. This document 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 the IEC 60598-2 series.

Each part of the IEC 60598-2 series details the requirements for a particular type of luminaire or group of luminaires. These parts of the IEC 60598-2 series are published separately for ease of revision and additional documents will be added as and when a need for them is recognized.

The IEC 60598-2 series comprises the following parts:

IEC 60598-2-1:	Fixed general purpose luminaires
IEC 60598-2-2:	Recessed luminaires and recessed air-handling luminaires
IEC 60598-2-3:	Luminaires for road and street lighting
IEC 60598-2-4:	Portable general purpose luminaires
IEC 60598-2-5:	Floodlights
IEC 60598-2-6:	Luminaires with built-in transformer for filament lamps (withdrawn)
IEC 60598-2-7:	Portable luminaires for garden use (withdrawn)
IEC 60598-2-8:	Handlamps
IEC 60598-2-9:	Photo and film luminaires (non-professional) (withdrawn)
IEC 60598-2-10:	Portable luminaires for children
IEC 60598-2-11:	Aquarium luminaires
IEC 60598-2-12:	Mains socket-outlet mounted nightlights
IEC 60598-2-13:	Ground recessed luminaires
IEC 60598-2-14:	Luminaires for cold cathode tubular discharge lamps (neon tubes) and similar equipment
IEC 60598-2-15:	Not used at present
IEC 60598-2-16:	Not used at present
IEC 60598-2-17:	Luminaires for stage lighting, television and film studios (outdoor and indoor)
IEC 60598-2-18:	Luminaires for swimming pools and similar applications
IEC 60598-2-19:	Air-handling luminaires (safety requirements) (withdrawn)
IEC 60598-2-20:	Lighting chains
IEC 60598-2-21:	Rope lights
IEC 60598-2-22:	Luminaires for emergency lighting
IEC 60598-2-23:	Extra-low-voltage lighting systems for filament lamps
IEC 60598-2-24:	Luminaires with limited surface temperatures
IEC 60598-2-25:	Luminaires for use in clinical areas of hospitals and health care buildings

LUMINAIRES –

Part 1: General requirements and tests

1 Scope

This part of IEC 60598 specifies general safety requirements for luminaires, incorporating electric light sources for operation from supply voltages up to 1 000 V.

Requirements for semi-luminaires are included in this document.

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

This document does not cover performance. Performance of luminaires is covered by the IEC 62722 series.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60061-2, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 2: Lampholders*, available at <http://std.iec.ch/iec60061>

IEC 60061-3, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 3: Gauges*, available at <http://std.iec.ch/iec60061>

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

IEC 60068-2-14:2023, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-31:2008, *Environmental testing – Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens*

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

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IEC 62493:2015, *Assessment of lighting equipment related to human exposure to electromagnetic fields*
IEC 62493:2015/AMD1:2022

IEC 62680 (all parts), *Universal serial bus interfaces for data and power*

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ISO 3864-1, *Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs and safety markings*

ISO 7000, *Graphical symbols for use on equipment – Registered symbols*, available at <https://www.graphical-symbols.info/equipment>

ISO 8124-1:2022, *Safety of toys – Part 1: Safety aspects related to mechanical and physical properties*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

NOTE Other definitions related to light sources can be found in the relevant light source standards.

¹ Withdrawn.

3.1

luminaire

apparatus which distributes, filters or transforms the light transmitted from at least one source of optical radiation and which includes, except the sources themselves, all the parts necessary for fixing and protecting the sources, and where necessary, circuit auxiliaries together with the means for connecting them to the power supply

[SOURCE: IEC 60050-845:2020, 845-30-001]

3.2

main part

<of luminaire> part that is fixed to the mounting surface or is directly suspended from it or standing on it

Note 1 to entry: The main part can, or cannot, carry the lamps, lampholders and controlgear.

Note 2 to entry: In luminaires for tungsten filament lamps, the part carrying the lampholder is usually the main part.

3.3

ordinary luminaire

luminaire providing protection against accidental contact with hazardous live parts but without any other special protection against dust, solid objects or moisture

[SOURCE: IEC 60050-845:2020, 845-30-006, modified – "hazardous" has been added.]

3.4

general purpose luminaire

luminaire which is not designed for a special purpose

Note 1 to entry: Examples of general purpose luminaires include pendants, some spotlights and certain fixed luminaires for surface or recessed mounting. Examples of special purpose luminaires are those for rough usage, photo and film applications and swimming pools.

3.5

adjustable luminaire

luminaire whose main part can be turned or moved by means of joints, raising and lowering devices, telescopic tubes or similar devices

Note 1 to entry: An adjustable luminaire can be fixed or portable.

[SOURCE: IEC 60050-845:2020, 845-30-010]

3.6

basic luminaire

smallest number of assembled parts that can satisfy the requirements of any of the parts of the IEC 60598-2 series

3.7

combination luminaire

luminaire consisting of a basic luminaire in combination with one or more parts which may be replaced by other parts, or used in a different combination with other parts and changed either by hand or with the use of tools

3.8

fixed luminaire

luminaire that cannot easily be moved from one place to another, either because the fixing is such that the luminaire can only be removed with the aid of a tool, or because it is intended for use out of arm's reach

Note 1 to entry: In general, fixed luminaires are designed for permanent connection to the power supply, but connection can also be made by means of a plug or similar device.

[SOURCE: IEC 60050-845:2020, 845-30-013]

3.9

portable luminaire

luminaire that can easily be moved from one place to another even while connected to the power supply

Note 1 to entry: Luminaires for wall mounting provided with a supply cord for connection to a plug and luminaires which can be fixed to their support by means of a wing screw, a clip or a hook so that they can easily be removed from their support by hand, are considered to be portable luminaires.

[SOURCE: IEC 60050-845:2020, 845-30-011]

3.10

recessed luminaire

luminaire intended by the manufacturer to be fully or partly recessed into a mounting surface

Note 1 to entry: The term applies both to luminaires for operation in enclosed cavities and to luminaires for mounting through a surface such as a suspended ceiling.

[SOURCE: IEC 60050-845:2020, 845-30-018]

3.11

rated voltage

supply voltage or supply voltages assigned to the luminaire by the manufacturer

3.11.1

rated constant input voltage

input voltage or input voltages assigned by the manufacturer for luminaires not equipped with controlgear

Note 1 to entry: The rated constant input voltage of the luminaire corresponds to the rated output voltage of the constant voltage controlgear.

3.12

supply current

current at the supply terminals when the luminaire has stabilized in normal use at the rated voltage and frequency

Note 1 to entry: The supply current is typically expressed in ampere (A).

[SOURCE: IEC 60050-845:2020, 845-27-120, modified – "when the luminaire has stabilized in normal use at the rated voltage and frequency" has been added.]

3.12.1

rated constant input current

input current or input currents assigned by the manufacturer for luminaires not equipped with controlgear

Note 1 to entry: The rated constant input current of the luminaire corresponds to the rated output current for constant current controlgear.

3.13

rated power

either the number and rated power of the lamps for which the luminaire is designed or the input power of the luminaire in case of other light sources

Note 1 to entry: Other light sources can be LED modules.

3.14

supply cord

external flexible cable or cord that is fixed to the luminaire for supply purposes

Note 1 to entry: Luminaires may be provided with the supply cord or designed for attachment of a supply cord e.g. type X or Y attachment.

Note 2 to entry: A supply cord can be termed a non-detachable flexible cable or cord.

3.15

live part

<electrical> conductive part intended to be energized under normal operating conditions, including the neutral conductor and mid-point conductor, but excluding the PEN conductor, PEM conductor and PEL conductor

Note 1 to entry: This concept does not necessarily imply a risk of electric shock.

Note 2 to entry: This definition is essentially equivalent to the term "active part" used in the ninth edition of this standard.

Note 3 to entry: For the definitions of PEN, PEM and PEL see IEC 60050-195.

[SOURCE: IEC 60050-195:2021, 195-02-19, modified – The Notes to entry have been added.]

3.16

hazardous live part

live part that, under certain conditions, can give a harmful electric shock

Note 1 to entry: The test to determine whether or not a conductive part is a live part which can cause an electric shock is given in Annex A.

Note 2 to entry: The neutral conductor is, however, regarded as a hazardous live part.

Note 3 to entry: This definition is essentially equivalent to the definition of "live part" in the ninth edition of this document.

[SOURCE: IEC 60050-195:2021, 195-06-05, modified – Note 1 to entry has been replaced by three new Notes to entry.]

3.17

basic insulation

insulation that provides basic protection

Note 1 to entry: This concept does not apply to insulation used exclusively for functional purposes.

[SOURCE: IEC 60050-195:2021, 195-06-06]

3.18

basic protection

protection against electric shock under normal conditions

[SOURCE: IEC 60050-195:2021, 195-06-01]