



SLOVENSKI STANDARD
SIST EN 60598-1:1995
01-marec-1995

Luminaires - Part 1: General requirements and tests

Luminaires -- Part 1: General requirements and tests

Leuchten -- Teil 1: Allgemeine Anforderungen und Prüfungen

Luminaires -- Partie 1: Prescriptions générales et essais

Ta slovenski standard je istoveten z: EN 60598-1:1993

[SIST EN 60598-1:1995](https://standards.iteh.ai/catalog/standards/sist/03f7d06a-afa2-4c67-8780-8227b228a15d/sist-en-60598-1-1995)

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ICS:

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EUROPEAN STANDARD

EN 60598-1

NORME EUROPEENNE

EUROPÄISCHE NORM

March 1993

UDC 621.327/.328:620.1

Descriptors: General requirements, luminaire, rated voltage, extra-low voltage, nominal current, flexible cable, flexible cord, temperature, capacitor, winding, ballast, switch, electric starter, cable, connector, flammable material, fire-resisting material, type test, electric earthing, protection against electric shock, resistance to dust, resistance to moisture, insulation resistance, electric strength, creepage distance, insulation clearance, thermal endurance test, resistance to heat, resistance to fire, resistance to tracking, electric terminal, marking

ENGLISH VERSION

Luminaires

Part 1: General requirements and tests
(IEC 598-1:1992, modified)

Luminaires

Partie 1: Prescriptions
générales et essais
(CEI 598-1:1992, modifiée)

Leuchten

Teil 1: Allgemeine Anforderungen
und Prüfungen
(IEC 598-1:1992, modifiziert)

(standards.iteh.ai)

This European Standard was approved by CENELEC on 1993-03-09. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

FOREWORD

At the request of the CENELEC Technical Committee TC 34Z, Luminaires and associated equipment, the International Standard IEC 598-1:1992 was submitted to the CENELEC Members for formal vote.

The text of the reference document, with agreed common modifications prepared by CLC/TC 34Z, was approved by CENELEC as EN 60598-1 on 9 March 1993.

The following dates are applicable:

- latest date of publication of an identical national standard (dop) 1993-12-01
- latest date of withdrawal of conflicting national standards (dow) -

This European Standard supersedes EN 60598-1:1989 and HD 77:1982. No date of withdrawal of conflicting national standards (dow) has been fixed because a national standard covering "general requirements for luminaires" may be required for use in conjunction with national standards not based on Parts 2 of the IEC Publication but which are published in the same format.

Attention is drawn to the fact that all Parts 2 of EN 60598 relate to the latest edition of Part 1 (see the reference to "Sliding; latest edition" in the normative annexes ZA to all EN 60598-2 entitled "Other international publications quoted in this standard with the references of the European publications").

In this European Standard, annexes ZA and ZB are normative and annex ZC is informative.

ENDORSEMENT NOTICE

The text of the International Standard IEC 598-1 : 1992 was approved by CENELEC as a European Standard with agreed common modifications as given below.

Clause	Common Modification																		
3.2.12	Delete the note.																		
3.3	After the notes of sub-clause 3.3.9, add the following requirement: 'Instructions related to safety shall be written in the official language(s) of the country in which the luminaire is to be sold.'																		
4.11.6	At the end of the paragraph commencing 'Following completion of these tests ...', add the following '[the test voltage however being reduced to 1500 V]'																		
5.2.2	<p>Replace the text of this sub-clause, including Table 5.1, with the following:</p> <p>STANDARD PREVIEW (standards.iteh.org)</p> <p>'Non-detachable flexible cables and cords shall be at least equal in mechanical and electrical properties to those indicated in Table 5.1 and specified in HD 21 S2 and HD 22 S2.'</p> <p><small>SIST EN 60598-1:1995 https://standards.iteh.org/sist-en-60598-1-1995/8227b228a15d/sist-en-60598-1-1995</small></p> <p>Table 5.1. Non-detachable flexible cables or cords</p> <table border="1"> <thead> <tr> <th></th> <th>Rubber</th> <th>PVC</th> </tr> </thead> <tbody> <tr> <td>Class 0 luminaires</td> <td>HO3RT-F</td> <td>HO3VH-H</td> </tr> <tr> <td>Ordinary Class I luminaires</td> <td>HO3RT-F</td> <td>HO3VVH2-F HO3VV-F</td> </tr> <tr> <td>Ordinary Class II luminaires</td> <td>HO5RR-F</td> <td>HO3VVH2-F HO3VV-F</td> </tr> <tr> <td>Luminaires other than ordinary</td> <td>HO5RN-F</td> <td>-</td> </tr> <tr> <td>Portable rough service luminaires</td> <td>HO7RN-F</td> <td>-</td> </tr> </tbody> </table>		Rubber	PVC	Class 0 luminaires	HO3RT-F	HO3VH-H	Ordinary Class I luminaires	HO3RT-F	HO3VVH2-F HO3VV-F	Ordinary Class II luminaires	HO5RR-F	HO3VVH2-F HO3VV-F	Luminaires other than ordinary	HO5RN-F	-	Portable rough service luminaires	HO7RN-F	-
	Rubber	PVC																	
Class 0 luminaires	HO3RT-F	HO3VH-H																	
Ordinary Class I luminaires	HO3RT-F	HO3VVH2-F HO3VV-F																	
Ordinary Class II luminaires	HO5RR-F	HO3VVH2-F HO3VV-F																	
Luminaires other than ordinary	HO5RN-F	-																	
Portable rough service luminaires	HO7RN-F	-																	

Clause	Common Modification
	<p>For supply voltages greater than 250 V, higher voltage grade cables and cords than those given in the above table may be necessary.</p> <p>To provide adequate mechanical strength, the nominal cross-sectional area of the conductors shall be not less than:</p> <p style="padding-left: 40px;">for ordinary luminaires 0,75 mm²</p> <p style="padding-left: 40px;">for other luminaires 1,0 mm²</p>
5.2.15	<p>Replace the text of this sub-clause with the following:</p> <p>'Connecting leads [tails] of extra-low voltage d.c. supplied fluorescent luminaires where supplied as the means of connection of the luminaire to the supply shall be colour coded red to indicate positive and black to indicate negative.'</p>
5.3.1	Delete the second note.
13.3.2	<p>Add the following paragraph:</p> <p>'The requirements of this sub-clause do not apply in those cases where the luminaire provides an effective barrier to burning drops or where the insulation material is ceramic.'</p>
Annex B	<p>In Note 4, replace 'this part 1' with 'IEC 598-1:1992'</p>

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

NOTE: When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC Publication	Date	Title	EN/HD	Date
61-2, mod	1969	Lamp caps and holders together with gauges for the control of interchangeability and safety Part 2: Lampholders	EN 60061-2*	1993
61-3, mod	1969	Part 3: Gauges	EN 60061-3*	1993
83 A1	1975 1979	Plugs and socket-outlets for domestic and similar general use Standards -8780- 8227b228a15d/sist-en-60598-1-1995	-	-
112	1979	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	HD 214 S2	1980
155, mod A1 A2	1983 1987 1991	Starters for tubular fluorescent lamps	EN 60155*	1989
227, mod	Series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	HD 21	Series
238, mod	1991	Edison screw lampholders	EN 60238 + corr.	1992 1992
245, mod	Series	Rubber insulated cables of rated voltages up to and including 450/750 V	HD 22	Series

* EN 60061-2 includes supplements A:1970 to K:1992 to IEC 61-2
EN 60061-3 includes supplements A:1970 to M:1992 to IEC 61-3
EN 60155 includes amendment 1:1987 to IEC 155

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IEC Publication Date	Title	EN/HD	Date
249	Series Base materials for printed circuits	HD 313	Series
320, mod A3	1981 Appliance couplers for household and 1987 similar general purposes	EN 60320-1 A1	1987 1989
360	1987 Standard method of measurement of lamp cap temperature rise	EN 60360	1989
364-3, mod A1	1977 Electrical installations of buildings 1980 Part 3: Assessment of general characteristics	HD 384.3 S1*	1985
400, mod	1991 Lampholders for tubular fluorescent lamps and starterholders	EN 60400	1992
417	1973 Graphical symbols for use on equipment Index, survey and compilation of the single sheets	HD 243 S10*	1993
432 A2 A3 A4	1984 Safety requirements for tungsten 1987 general lighting purposes 1988 1991	EN 60432 A1	1988 1989
529	1989 Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr.	1991 1992
570, mod A1	1985 Electrical supply track systems for 1990 luminaires	EN 60570	1989
598-2	Luminaires Part 2: Particular requirements		
598-2-4, mod A3	1979 Section Four - Portable general purpose 1990 luminaires	EN 60598-2-4 A3	1989 1993
630	1979 Maximum lamp outlines for general lighting lamps	-	-
634 A1	1978 Heat test source (H.T.S.) lamps for 1983 carrying out heating tests on luminaires	HD 392 S2*	1985
662, mod A1 A2 A3	1980 High-pressure sodium vapour lamps 1986 1987 1990	EN 60662*	1993

* HD 384.3 S1 includes supplements A:1979 + B:1980 to IEC 364-3
HD 243 S10 includes supplements A:1974 to K:1991 to IEC 417
HD 392 S2 includes amendment 1:1983 to IEC 634
EN 60662 includes amendments 1:1986, 2:1987 and 3:1990 to IEC 662

<u>IEC</u>	<u>Publication</u>	<u>Date</u>	<u>Title</u>	<u>EN/HD</u>	<u>Date</u>
664-1	1992		Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	-	-
695-2-1	1980		Fire hazard testing - Part 2: Test methods - Glow-wire test and guidance	HD 444.2.1 S1	1983
695-2-2	1991		Fire hazard testing - Part 2: Test methods - Section 2 - Needle-flame test	HD 444.2.2 S2	1992
750	1983		Item designation in electrotechnology	-	-
817	1984		Spring-operated impact-test apparatus and its calibration	HD 495 S1	1987
901	1987		Single-capped fluorescent lamps - Safety	EN 60901	1990
A1	1989		and performance requirements	A1	1990
924	1990		D.C. supplied electronic ballasts for tubular fluorescent lamps - General and safety requirements	EN 60924	1991
972	1989		Classification and interpretation of new lighting products	-	-
1032	1990		Test probes to verify protection by enclosures	HD 601 S1	1991
1058-1	1990		Switches for appliances Part 1: General requirements	EN 61058-1	1992

Other publications



ISO 1891	1979	Bolts, screws, nuts and accessories Terminology and nomenclature
ISO 4046	1978	Paper, board, pulp and related terms - Vocabulary

ANNEX ZB [Normative]

Special national conditions

The following special national conditions exist in the countries mentioned; in general, they are due to the electricity supply system and the wiring rules. They apply to all Parts 2 unless otherwise specified.

CLAUSE	SPECIAL NATIONAL CONDITIONS
2.2	<p>If in the CENELEC countries the wiring rules do not allow luminaires of Class 0, then luminaires shall not be classified according to the type of protection against electric shock provided, as Class 0.</p> <p>NOTE. In Austria, Denmark, Germany, Finland, France, Greece, Ireland, Norway, Sweden and the United Kingdom, wiring rules do not allow any luminaire to be Class 0. In Italy, wiring rules do not allow any luminaire to be Class 0 except in special installations called 'insulated installations'.</p>
3.3	<p>In the United Kingdom:</p> <ul style="list-style-type: none"> - power supply cords of Class I luminaires shall be provided with a label bearing the following words in legible characters: <p style="text-align: center;">(standards.iteh.ai)</p> <p style="text-align: center;">SIST EN 60598-1:1995</p> <p style="text-align: center;">The cores in this mains lead are coloured in accordance with the following code: 60598-1-1995</p> <ul style="list-style-type: none"> - green and yellow : earth - blue : neutral - brown : live.' - for Class I luminaires fitted with a power supply cord, the instruction sheet and the label required shall also include the substance of the following text: <p style="margin-left: 40px;">'As the colours of the cores in the mains lead of this luminaire may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:</p> <ul style="list-style-type: none"> - the core which is coloured green and yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol \perp, or coloured green or green and yellow, - the core which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black,

CLAUSE	SPECIAL NATIONAL CONDITIONS
3.3 [Cont'd]	<p>- the core which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.'</p> <p>- for Class II luminaires fitted with a power supply cord, the instruction sheet shall give instructions for the correct connection of a plug, making it clear that neither core is to be connected to the earth terminal of a three-pin plug.</p> <p>- for Class I luminaires, the instruction sheet and, for portable Class I luminaires, also the label attached to the power supply cord, shall quote the following warning:</p> <p style="text-align: center;">WARNING - THIS LUMINAIRE MUST BE EARTHED.</p> <p>In Denmark:</p> <p>- supply cords of Class I luminaires, which are delivered without a plug, shall be provided with a visible tag with the following text:</p> <p style="text-align: center;">Vigtigt!</p> <p style="text-align: center;">iTeH STANDARD PREVIEW Ledere med grøn/gul isolation ma kun tilsluttes en klemme mærket (standards.iteh.ai)</p> <p style="text-align: center;"> eller </p> <p style="text-align: center;">SIST EN 60598-1:1995</p> <p>- 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:</p> <p style="text-align: center;">For tilslutning af de øvrige ledere, Se medfølgende vejledning.</p> <p>- Class I luminaires which, according to the exemption for Denmark in Sub-clause 5.2.1, are delivered with a supply cord with a plug in accordance with Standard Sheets DKA 2-1a, DKA 2-1b, C 1b, C 2b, C 3b or C 4, shall either be provided with the above tag or the same information shall be given in an enclosed instruction. The text concerning conductors having green/yellow insulation shall be quoted word-for-word.</p> <p>NOTE. ϕ may be replaced by oe; \ae may be replaced by ae.</p> <p>In Italy:</p> <p>- for luminaires of Class 0, the manufacturers instructions shall include the following warning:</p> <p style="text-align: center;">ATTENZIONE - QUESTO APPARECCHIO E' IDONEO SOLO PER AMBIENTI ISOLATI</p>

CLAUSE	SPECIAL NATIONAL CONDITIONS															
4.51	<p>In Denmark:</p> <ul style="list-style-type: none"> - socket-outlets intended for providing power to other appliances shall be in compliance with Section 107-2-D1, the Standard Sheets being applied as follows: <ul style="list-style-type: none"> - Class I Standard Sheet DK 1-3a - 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 shall not be fitted with socket-outlets for providing power to other appliances. <p>Exemption:</p> <p>Socket-outlets supplied from isolation transformers [shaver supply units] and socket-outlets on outdoor luminaires may be in accordance with the requirements of Section 107-2-D1 for fixed socket-outlets.</p>															
5.2.1	<p>In Denmark</p> <p>iTeh STANDARD PREVIEW (standardsiteh.ai)</p> <ul style="list-style-type: none"> - supply cords on single-phase portable luminaires having a rated current not exceeding 10 A shall be provided with a plug according to the following table: <p style="text-align: center;">SIST EN 60598-1:1995 https://standards.iteh.ai/catalog/standards/sist/0317/d06a-afa2-4c67-8780-8227b228a15d/sist-en-60598-1-1995</p> <table border="1" data-bbox="331 1169 1337 1713"> <thead> <tr> <th colspan="2" data-bbox="331 1169 751 1361">Class of luminaire</th> <th data-bbox="751 1169 1185 1361">Section 107-2-D1 Standard Sheet</th> <th data-bbox="1185 1169 1337 1361">EN 50075 Standard Sheet</th> </tr> </thead> <tbody> <tr> <td data-bbox="331 1361 400 1617" rowspan="2">I</td> <td data-bbox="400 1361 751 1489">protection against indirect contact required</td> <td data-bbox="751 1361 1185 1489">Dk 2-1a*</td> <td data-bbox="1185 1361 1337 1489"></td> </tr> <tr> <td data-bbox="400 1489 751 1617">earthing connection not required</td> <td data-bbox="751 1489 1185 1617">DK 2-1a, DKA 2-1a, DKA 2-1b, C 1b, C 2b, C 3b, C 4</td> <td data-bbox="1185 1489 1337 1617"></td> </tr> <tr> <td colspan="2" data-bbox="331 1617 751 1713">II</td> <td data-bbox="751 1617 1185 1713">DKA 2-1a, DKA 2-1b, C 1b, C 5, C 6</td> <td data-bbox="1185 1617 1337 1713">I</td> </tr> </tbody> </table> <p>* - Luminaires fitted with a socket-outlet for providing power to other appliances.</p> <ul style="list-style-type: none"> - Luminaires which are mainly used in locations where protection against indirect contact is required, see Section 10, § 17. 	Class of luminaire		Section 107-2-D1 Standard Sheet	EN 50075 Standard Sheet	I	protection against indirect contact required	Dk 2-1a*		earthing connection not required	DK 2-1a, DKA 2-1a, DKA 2-1b, C 1b, C 2b, C 3b, C 4		II		DKA 2-1a, DKA 2-1b, C 1b, C 5, C 6	I
Class of luminaire		Section 107-2-D1 Standard Sheet	EN 50075 Standard Sheet													
I	protection against indirect contact required	Dk 2-1a*														
	earthing connection not required	DK 2-1a, DKA 2-1a, DKA 2-1b, C 1b, C 2b, C 3b, C 4														
II		DKA 2-1a, DKA 2-1b, C 1b, C 5, C 6	I													

CLAUSE	SPECIAL NATIONAL CONDITIONS													
	<p>For luminaires having an appliance inlet, the plug on the supply cord shall comply with the above requirements. If other single-phase luminaires having a rated current not exceeding 10A are provided with a supply cord with a plug, the plug shall comply with the above requirements.</p> <p>Exemption.</p> <p>If single-phase fixed Class I luminaires, intended for use in homes, and for which protection against indirect contact is required according to Section 10 of the Heavy Current Regulations, are provided with a plug this plug may, until further notice, be in accordance with Standard Sheet DKA 2-1a, DKA 2-1b, C 1b, C 2b, C 3b or C 4, provided that the cord close to the plug is marked as required in § 3.3.</p> <p>- if multi-phase luminaires and single-phase luminaires having a rated current exceeding 10 A are provided with a supply cord with a plug, the plug shall comply with the following table:</p> <table border="1" data-bbox="336 976 1321 1263"> <thead> <tr> <th data-bbox="338 978 612 1167">Class of luminaires</th> <th data-bbox="612 978 970 1167">Section 107-2 D1 Standard Sheet</th> <th data-bbox="970 978 1323 1167">Section 117 Standard Sheet</th> </tr> </thead> <tbody> <tr> <td data-bbox="338 1167 612 1265">I</td> <td data-bbox="612 1167 970 1265">DK 6-1a</td> <td data-bbox="970 1167 1323 1265">II</td> </tr> <tr> <td data-bbox="338 1265 612 1265">II</td> <td data-bbox="612 1265 970 1265">DK 6-1a*</td> <td data-bbox="970 1265 1323 1265">II*</td> </tr> </tbody> </table> <p>* Earthing contact not connected.</p> <p>In Finland and Sweden:</p> <p>- for luminaires provided with non-detachable flexible cables and cords and a plug, the plug shall comply with the requirements of CEE Publication 7, the Standard Sheets to be applied being as follows:</p> <table data-bbox="443 1599 1209 1659"> <tbody> <tr> <td>- Class I luminaires</td> <td>Sheet IV or VII</td> </tr> <tr> <td>- Class II luminaires</td> <td>Sheet XVI or XVII</td> </tr> </tbody> </table>	Class of luminaires	Section 107-2 D1 Standard Sheet	Section 117 Standard Sheet	I	DK 6-1a	II	II	DK 6-1a*	II*	- Class I luminaires	Sheet IV or VII	- Class II luminaires	Sheet XVI or XVII
Class of luminaires	Section 107-2 D1 Standard Sheet	Section 117 Standard Sheet												
I	DK 6-1a	II												
II	DK 6-1a*	II*												
- Class I luminaires	Sheet IV or VII													
- Class II luminaires	Sheet XVI or XVII													

ANNEX ZC [informative]

NATIONAL DEVIATIONS

The following national deviations are designated A-deviations which means:

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

Clause in EN 60598-1	NATIONAL DEVIATIONS DUE TO LEGAL REQUIREMENTS
3.3.3 [item c] and 4.7.5	<p><u>Finland, Resolution No. 205/74, Sub-clause 24.2</u> <u>Sweden, Wiring Regulations STEV-FS 1985 : 1.521b</u></p> <p>The highest permissible temperature of the insulation of cables or cords belonging to the fixed wiring shall not at any place exceed 70°C, unless they are covered by heat-resistant sleeves, when a temperature not exceeding 90°C is permissible.</p> <p>The temperature of the insulation of flexible cable or cord shall not exceed 90°C.</p>
12.4.2 [Table 12.1]	<p><u>Norway, Regulations for Electrical Installations by the Norwegian Water Resources and Energy Administration</u></p> <p>The maximum temperature allowed on a 'normally flammable surface' and on objects illuminated by spotlights is 80°C. The maximum temperature allowed on wood, paper, textile and the like is 80°C.</p>

NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

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Luminaire

Partie 1:
Prescriptions générales et essais

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Luminaire

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Part 1:
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