

INTERNATIONAL STANDARD

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Luminaires – **iTeh STANDARD PREVIEW**
Part 2-17: Particular requirements – Luminaires for stage lighting, television and
(standards.iteh.ai) film studios (outdoor and indoor)

Luminaires – <https://standards.iteh.ai/catalog/standards/sist/343d4621-5d20-42bb-857d-311111111111>
Partie 2-17: Exigences particulières – Luminaires pour éclairage des scènes de
théâtre, pour prises de vues de télévision et de cinéma (à l'extérieur et à
l'intérieur)



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

LUMINAIRES –

**Part 2-17: Particular requirements – Luminaires for stage lighting,
television and film studios (outdoor and indoor)**

FOREWORD

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International Standard IEC 60598-2-17 has been prepared by subcommittee 34D: Luminaires, of IEC technical committee 34: Lamps and related equipment.

This second edition cancels and replaces the first edition published in 1984 and Amendment 2:1990. This edition constitutes a technical revision.

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

- a) extension of the applicable scope from light source to electric light source and replacement of "tungsten filament, tubular fluorescent and other discharge lamps" with "electric light source" in 17.1.
- b) consideration of the fact that there are many LED luminaires with non-replaceable light source, and light source without a glass bulb, or with low operation temperature: the applicable scope of relevant clauses therefore only applies to replaceable light source luminaires with a glass bulb lamp, or with high surface temperature.

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

FDIS	Report on voting
34D/1275/FDIS	34D/1284/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This publication is to be read in conjunction with IEC 60598-1: *Luminaires – Part 1: General requirements and tests*. It was established on the basis of the eighth edition (2014) of that standard.

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 standard, the following print type is used:

– *compliance statements: in italic type*

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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 [IEC 60598-2-17:2017](http://standards.iteh.ai/catalog/standards/sist/343d4621-5d20-42bb-94d9-4b31ff1d857e/iec-60598-2-17-2017)
- amended.

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LUMINAIRES –

Part 2-17: Particular requirements – Luminaires for stage lighting, television and film studios (outdoor and indoor)

17.1 Scope

This part of IEC 60598-2 specifies requirements for stage, television, film and photographic studio luminaires (including spot and floodlighting projectors) for use outdoors and indoors, with electric light sources on supply voltages not exceeding 1 000 V.

NOTE A hanger (stirrup) is a part of the luminaire. Supporting devices such as tripods, telescopic booms and suspensions are not parts of the luminaire. Where applicable, ballasts are built into or mounted separately from the luminaires.

17.2 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 60598-1, *Luminaires – Part 1: General requirements and tests*

17.3 Terms and definitions

<https://standards.iteh.ai/catalog/standards/sist/343d4621-5d20-42bb-94d9-4b31ff1d857e/iec-60598-2-17-2017>
IEC 60598-2-17:2017

For the purposes of this document, the terms and definitions given in IEC 60598-1 apply.

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

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

17.4 General test requirements

The provisions of Section 0 of IEC 60598-1 apply. The tests described in each appropriate section of Part 1 shall be carried out in the order listed in this document.

17.5 Classification of luminaires

Luminaires shall be classified in accordance with the provisions of Section 2 of IEC 60598-1.

17.6 Marking

The provisions of Section 3 of IEC 60598-1 apply, together with the requirements of 17.6.1 to 17.6.7.

17.6.1 Where the luminaire design imposes restrictions of use, the following information shall be marked on the luminaire:

- a) an indication of the "top" of the luminaire;
- b) the designed positions or range of angles of use;
- c) the mounting arrangements (or reference to a document which specifies the mounting arrangements).

17.6.2 The following warnings shall be clearly marked on the exterior of luminaires with replaceable light sources:

“Disconnect electrically before re-lamping”

“CAUTION – Hot Lamp”

17.6.3 The rated maximum ambient temperature t_a shall be clearly marked on the luminaire.

17.6.4 Minimum distances from flammable materials to all exterior surfaces of the luminaire (to prevent ignition of the flammable material) shall be clearly marked on the luminaire.

17.6.5 Luminaires for certain types of high-intensity discharge lamps shall, where appropriate, be marked with the following warning against opening immediately after switching off:

"DO NOT OPEN FOR X SECONDS AFTER SWITCHING OFF"

NOTE The value of "X" is determined by the manufacturer (see 17.7.2).

17.6.6 Under normal operating conditions, when the exterior of the luminaire exceeds 70 °C, the luminaire shall be clearly marked with the value of the highest exterior surface temperature.

17.6.7 The instruction leaflet supplied with the luminaire shall also contain a warning that:

- a) shields (see 17.7.3), lenses or ultraviolet screens shall be changed if they have become visibly damaged to such an extent that their effectiveness is impaired, for example by cracks or deep scratches;
- b) the lamp shall be changed if it has become damaged or thermally deformed;
- c) the luminaire is intended for professional use only.

17.7 Construction

The provisions of Section 4 of IEC 60598-1 apply, together with the requirements of 17.7.1 to 17.7.6.

17.7.1 The design of the luminaire shall be such that it is not possible to insert a lamp into a "live" lampholder of the luminaire. This requirement does not apply to luminaires intended only for professional use. If (e.g. in luminaires with ignitors) the working voltage calculated in accordance with the equation exceeds the value of 1 000 V, it shall only be possible to open the luminaire with the aid of a tool or the luminaire shall be provided with an automatic switch to interrupt all poles of the mains supply.

$$U_R = \frac{U_S}{4,6}$$

where

U_R is the effective value of the working voltage;

U_S is the peak value of the pulse voltage of the ignitor.

17.7.2 The luminaires for certain types of high-intensity discharge lamp, where an explosion risk is declared by the lamp manufacturer, shall incorporate a device to prevent immediate access to the lamp after switching-off or shall be marked in accordance with the requirements of 17.6.5.

17.7.3 For luminaires with a glass bulb lamp, the luminaire shall be constructed so as to retain particles of glass or quartz produced in the event of the lamp shattering.

Openings through which particles could fall under gravity, with the luminaire in any of its normal operating positions, shall be such as to retain fragments larger than 3 mm.

All other openings shall be constructed in such a way that parts of a shattered lamp cannot leave the luminaire by a direct path.

The luminaire is deemed to comply with the direct-path requirements if openings are screened with a mesh with openings not exceeding 8 mm or are screened with a labyrinth.

If, in front of the lamp, is a protective shield made of glass, the luminaire is deemed to be in accordance with the requirements if, in front of this glass shield, a mesh is mounted with openings not exceeding 12 mm.

If the luminaire is provided with a protective glass shield in the form of a single lens, the openings of the mesh shall not exceed 25 mm. If the luminaire is fitted with a multi-lens objective no mesh is necessary.

These protective shields shall be suitable for the temperature in normal use and their clamping means shall be able to keep a broken shield in position.

Compliance with the requirements of 17.7.3 shall be checked by inspection and by the test of 4.21.4 in IEC 60598-1 with an impact energy of 0,5 Nm.

17.7.4 Hanger (stirrup): Where a hanger is provided, the bearing parts of the hanger shall be capable of supporting six times the weight of the luminaire without appreciable deformation and shall be manufactured from non-combustible materials such as steel or its equivalent.

Parts of the hanger carrying the weight of the luminaire shall be capable of supporting six times the weight of the luminaire without permanent deformation.

Parts of the hanger carrying a proportion of the weight of the luminaire shall be capable of supporting six times the proportion of the weight.

The connection between hanger and luminaire shall be locked against loosening.

Compliance with the requirements of 17.7.4 shall be checked by inspection and by the following test: Add six times the weight of the supported luminaire for 1 h dwell time. After the test the hanger shall show no permanent deformation and no damages impairing safety.

17.7.5 The design of the luminaire shall be such that removable accessories, for example colour frames and barndoors, when properly inserted, cannot fall out of the luminaire from any position of the luminaire, irrespective of its normal burning angle.

17.7.6 A secondary suspension shall be provided for the luminaire, except where the luminaire is arranged for floor mounting or intended for hand-held use. This secondary suspension shall be designed and mounted in such a way that even in the event of the failure of the primary suspension no part of the luminaire can fall.

Compliance shall be checked by the following test.

With the end of the secondary suspension remote from the luminaire securely fixed, the luminaire is allowed to hang freely by means of the secondary suspension alone. The luminaire is raised in its hanging mode a distance of 300 mm vertically and allowed to fall freely. This test is made 30 times.

The secondary suspension shall not fail and no part of the luminaire shall fall.

17.8 Creepage distances and clearances

The provisions of Section 11 of IEC 60598-1 apply.

17.9 Provisions for earthing

The provisions of Section 7 of IEC 60598-1 apply.

17.10 Terminals

The provisions of Sections 14 and 15 of IEC 60598-1 apply except that spring-type screwless terminals of the Type b shown in Figure 18 of IEC 60598-1 shall not be used.

17.11 External and internal wiring

The provisions of Section 5 of IEC 60598-1 apply, together with the requirements of 17.11.1 to 17.11.2.

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17.11.1 For Class I and Class II luminaires, external and internal wiring shall have a cross-sectional area not less than 0,75 mm² for current ratings greater than 2 A and up to 3 A and a cross-sectional area not less than 1,5 mm² for current ratings over 3 A.

17.11.2 Where luminaires are fitted with plugs and sockets for connection to independent or remote controlgear, the plugs and sockets shall not be interchangeable with the plugs and sockets for connection to the mains supply if the direct connection of the luminaire or controlgear to the mains supply is dangerous or is capable of causing damage to the surroundings of the controlgear or luminaire.

17.12 Protection against electric shock

The provisions of Section 8 of IEC 60598-1 apply.

17.13 Endurance tests and thermal tests

The provisions of Section 12 of IEC 60598-1 apply, together with the requirements of 17.13.1 and 17.13.2.

17.13.1 Luminaires with an IP classification greater than IP20 shall be subjected to the relevant tests of Clauses 12.4, 12.5 and 12.6 and 12.7 of Section 12 of IEC 60598-1 after the test(s) of Clause 9.2 but before the test(s) of Clause 9.3 of Section 9 of IEC 60598-1 as specified in Clause 17.14 of this document.

17.13.2 The housing temperature shall not exceed the value marked on the luminaire in accordance with 17.6.6.

17.14 Resistance to dust, solid objects and moisture

The provisions of Section 9 of IEC 60598-1 apply.

For luminaires with an IP classification greater than IP20 the order of the tests specified in Section 9 of IEC 60598-1 shall be as specified in Clause 17.13 of this document.

17.15 Insulation resistance, electric strength, touch current and protective conductor current

The provisions of Section 10 of IEC 60598-1 apply.

17.16 Resistance to heat, fire and tracking

The provisions of Section 13 of IEC 60598-1 apply.

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