

# INTERNATIONAL STANDARD

# IEC 60598-1

Sixth edition  
2003-10

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**Luminaires –**

**Part 1:  
General requirements and tests**

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*This **English-language** version is derived from the original **bilingual** publication by leaving out all French-language pages. Missing page numbers correspond to the French-language pages.*



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## Publication numbering

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### Part 1: General requirements and tests

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International Electrotechnical Commission  
Международная Электротехническая Комиссия

**IS 01 Interpretation Sheet of clause 1.2.23  
IEC 60598-1:2003  
Luminaires – Part 1: General requirements and tests**

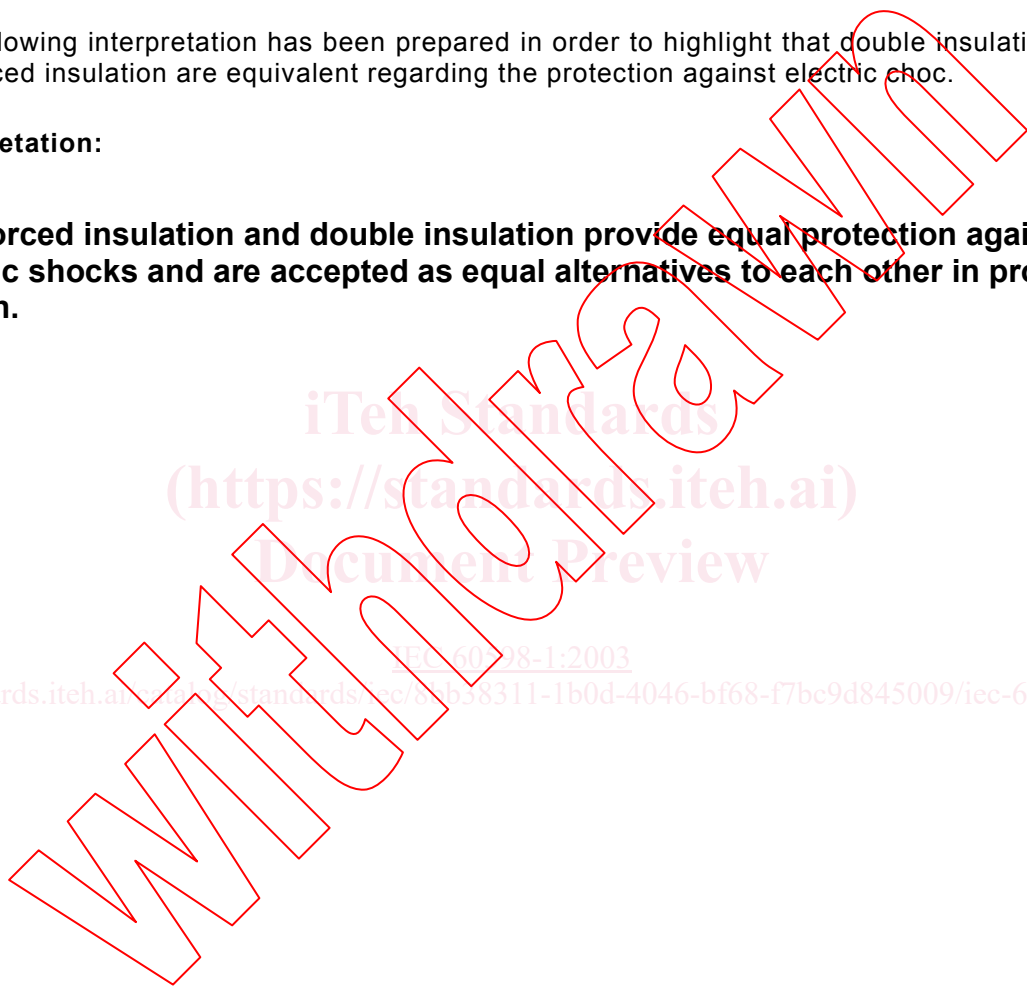
**Introduction:**

The following interpretation was initiated at the **Brugges** meeting of **IEC/SC 34D WG LUMEX** held in **May 2003** and agreed at the **Brighton** meeting of **IEC/SC 34D WG LUMEX** held in **October 2003** after discussion during the intermediate **LUMEX Interpretation Panel** meeting held in **June 2003**.

The following interpretation has been prepared in order to highlight that double insulation and reinforced insulation are equivalent regarding the protection against electric choc.

**Interpretation:**

**Reinforced insulation and double insulation provide equal protection against electric shocks and are accepted as equal alternatives to each other in product design.**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## LUMINAIRES –

## Part 1: General requirements and tests

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60598 has been prepared by subcommittee 34D: Luminaires, of IEC technical committee 34: Lamps and related equipment.

This sixth edition cancels and replaces the fifth edition published in 1999. It constitutes a technical revision.

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

FDIS	Report on voting
34D/788/FDIS	34D/794/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.

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

The committee has decided that the contents of this publication will remain unchanged until 2005-08. At this date, the publication will be

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

Withdrawing

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## LUMINAIRES –

### Part 1: General requirements and tests

#### SECTION 0: GENERAL INTRODUCTION

##### 0.1 Scope and object

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

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

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

Attention is drawn to the fact that this Part 1 covers all aspects of safety (electrical, thermal and mechanical).

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

Requirements are included in this Part 1 for luminaires incorporating ignitors with nominal peak values of the voltage pulse not exceeding those of Table 11.3. The requirements apply to luminaires with ignitors built into ballasts and to luminaires with ignitors separate from ballasts. For luminaires with ignitors built into lamps, the requirements are under consideration.

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

In general this Part 1 covers safety requirements for luminaires. The object of this Part 1 is to provide a set of requirements and tests which are considered to be generally applicable to most types of luminaires and which can be called up as required by the detail specifications of IEC 60598-2. This Part 1 is thus not to be 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 section of part 2.

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

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

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

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

In accordance with IEC guidelines, new IEC standards are divided into those covering either safety or performance. In the lamp safety standards, "information for luminaire design" is given for the safe operation of lamps; this should be regarded as normative when testing luminaires to this standard.

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

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

## 0.2 Normative references

The following referenced documents are indispensable for the application 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*

IEC 60061-3, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 3: Gauges*

IEC 60065:2001, *Audio, video and similar electronic apparatus – Safety requirements*

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

IEC 60079 (all parts), *Electrical apparatus for explosive gas atmospheres*

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

IEC 60085, *Thermal evaluation and classification of electrical insulation*

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

IEC 60155, *Glow-starters for fluorescent lamps*

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

IEC 60238:1998, *Edison screw lampholders*

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

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

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

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

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

IEC 60400, *Lampholders for tubular fluorescent lamps and starter-holders*

IEC 60417-DB:2002,\*<sup>1)</sup> *Graphical symbols for use on equipment*

IEC 60432-1:1999, *Incandescent lamps – Safety specifications – Part 1: Tungsten filament lamps for domestic and similar general lighting purposes*

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

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

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

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

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

IEC 60598-2-4:1997, *Luminaires – Part 2: Particular requirements – Section 4: Portable general purpose luminaires*

IEC 60634, *Heat test source (H.T.S.) lamps for carrying out heating tests on luminaires*

IEC 60662, *High pressure sodium vapour lamps*

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

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

IEC 60695-2 (all parts), *Fire hazard testing – Part 2: Test methods*

IEC 60695-2-2, *Fire hazard testing – Part 2: Test methods – Section 2: Needle-flame test*

IEC 60695-2-10, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

IEC 60838 (all parts), *Miscellaneous lampholders*

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<sup>1)</sup> "DB" refers to the IEC on-line database.

IEC 60901, *Single-capped fluorescent lamps – Performance specifications*

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

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

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

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

IEC 61184: *Bayonet lampholders*

IEC 61195: *Double-capped fluorescent lamps – Safety specifications*

IEC 61199:1999, *Single-capped fluorescent lamps – Safety specifications*

IEC 61347 (all parts), *Lamp controlgear*

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

IEC 61558-2 (all parts), *Safety of power transformers, power supply units and similar – Part 2: Particular requirements*

IEC 61558-2-5, *Safety of power transformers, power supply units and similar – Part 2-5: Particular requirements for shaver transformers and shaver supply units*

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

IEC 80416-1: *Basic principles for graphical symbols for use on equipment – Part 1: Creation of symbol originals*

ISO 75-2:1993, *Plastics – Determination of temperature of deflection under load – Plastics and ebonite*

ISO 4046-4:2002, *Paper, board, pulp and related terms – Vocabulary – Part 4: Paper and board grades and converted products*

### **0.3 General requirements**

Luminaires shall be so designed and constructed that in normal use they function safely and cause no danger to persons or surroundings. In general, compliance is checked by carrying out all the tests specified.

**0.3.1** A luminaire shall comply with a section of part 2. If, however, an appropriate section of part 2 does not exist for a particular luminaire or group of luminaires, the nearest applicable section of part 2 may be used as a guide to the requirements and tests.

Where the design of a luminaire is such that two or more sections of part 2 are applicable, the luminaire shall comply with both or all of the appropriate sections.

**0.3.2** Semi-luminaires should be regarded as luminaires for test purposes.