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Part 2-24: Particular requirements - Luminaires with limited surface temperatures

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Luminaires -
Part 2-24: Particular requirements -
Luminaires with limited surface temperatures

FOREWORD

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IEC 60598-2-24:2026 EXV includes the content of IEC 60598-2-24:2026 and the references made to IEC 60598-1:2024.

The specific content of IEC 60598-2-24:2026 is displayed on a blue background.

IEC 60598-2-24 has been prepared by subcommittee 34D: Luminaires, of IEC technical committee 34: Lighting. It is an International Standard.

This third edition cancels and replaces the second edition, published in 2013. This edition constitutes a technical revision.

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

a) the clause numbers and structure have been aligned with those of IEC 60598-1;
b) improved terms and definitions;
c) more detailed classification of luminaires;
d) indication of luminaire mounting positions and use locations;
e) thermal protection of built-in controlgear and other built-in devices required.

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

Draft	Report on voting
34D/1819/FDIS	34D/1828/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.

This document is to be used in conjunction with the latest edition of IEC 60598-1. It was established on the basis of the tenth edition (2024) of that standard.

NOTE When "Part 1" is mentioned in this document, it refers to IEC 60598-1.

Where this document states "*addition*", "*modification*" or "*replacement*", the relevant text of Part 1 is to be adapted accordingly.

Subclauses, additional to those in Part 1 are numbered starting from 101; supplementary annexes are entitled AAA, AAB, etc.

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

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.

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

1 Scope

This part of IEC 60598 specifies requirements for luminaires for which limited surface temperatures are provided to counteract risks from combustible dusts (conductive or non-conductive) or ignition of materials that can be deposited on luminaires. The luminaires are for use with electric light sources on supply voltages not exceeding 1 000 V.

NOTE The risk of thermal effects (combustion or degradation caused by the luminaire) to the mounting surface is covered in Part 1 for all types of luminaires.

This document specifically excludes requirements for luminaires for use in explosive gas atmospheres and explosive dust atmospheres.

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*

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

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

IEC 60112:2020, *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 60238:2016, *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 60335-1:2020, *Household and similar electrical appliances – Safety – Part 1: General requirements*

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 60417, *Graphical symbols for use on equipment*, available at http://www.graphical-symbols.info/equipment

IEC 60432-1:1999, *Incandescent lamps – Safety specifications – Part 1: Tungsten filament lamps for domestic and similar general lighting purposes*
IEC 60432-1:1999/AMD1:2005
IEC 60432-1:1999/AMD2:2011

IEC 60432-2:1999, *Incandescent lamps – Safety specifications – Part 2: Tungsten halogen lamps for domestic and similar general lighting purposes*
IEC 60432-2:1999/AMD1:2005
IEC 60432-2:1999/AMD2:2012

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

IEC 60598-1:2024, *Luminaires - Part 1: General requirements and tests*

IEC 60570:2003, *Electrical supply track systems for luminaires*
IEC 60570:2003/AMD1:2017
IEC 60570:2003/AMD2:2019

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

IEC 60598-2-4:2017, *Luminaires – Part 2-4: Particular requirements – Portable general purpose luminaires*

IEC 60603 (all parts), *Connectors for frequencies below 3 MHz for use with printed boards*

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

IEC 60664-4:2005*, Insulation coordination for equipment within low-voltage systems – Part 4: Consideration of high-frequency voltage stress*

IEC 60669-1, *Switches for household and similar fixed-electrical installations – Part 1: General requirements*

IEC 60669-2-1, *Switches for household and similar fixed electrical installations – Part 2-1: Particular requirements – Electronic control devices*

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

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

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

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

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*

IEC 60998-2-2, *Connecting devices for low-voltage circuits for household and similar purposes – Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units*

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

IEC 61051-2:2021, *Varistors for use in electronic equipment – Part 2: Sectional specification for surge suppression varistors*

IEC 61058-1:2016, *Switches for appliances – Part 1: General requirements*

IEC 61058-1-1*, Switches for appliances – Part 1-1: Requirements for mechanical switches*

IEC 61058-1-2*, Switches for appliances – Part 1-2: Requirements for electronic switches*

IEC 61058-2-1*, Switches for appliances – Part 2-1: Particular requirements for cord switches*

IEC 61167, *Metal halide lamps – Performance specification*

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

IEC 61347 (all parts), *Lamp controlgear*

IEC 61347-1, *Controlgear for electric light sources - Safety - Part 1: General requirements*

IEC 61347-1:2015, *Lamp controlgear – Part 1: General and safety requirements*
IEC 61347-1:2015/AMD1:2017

IEC 61535:2023, *Installation couplers intended for permanent connection in fixed installations*

IEC 61558 (all parts), *Safety of transformers, reactors, power supply units and combinations thereof*

IEC 61558-1:2017, *Safety of transformers, reactors, power supply units and combinations thereof – Part 1: General requirements and tests*

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

IEC 61643-331:2020, *Components for low-voltage surge protection – Part 331: Performance requirements and test methods for metal oxide varistors (MOV)*

IEC 61984:2008, *Connectors – Safety requirements and tests*

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*

IEC 62368-1:2018, *Audio/video, information and communication technology equipment – Part 1: Safety requirements*

IEC 62391-1, *Fixed electric double-layer capacitors for use in electric and electronic equipment – Part 1: Generic specification*

IEC 62391-2, *Fixed electric double-layer capacitors for use in electronic equipment – Part 2: Sectional specification – Electric double layer capacitors for power application*

IEC 62471-7:2023, *Photobiological safety of lamps and lamp systems – Part 7: Light sources and luminaires primarily emitting visible radiation*

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*

IEC TR 62778:2014 [1], *Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires*

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 terms and definitions given in Part 1 apply with the following additions:

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.

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]

[1] Withdrawn.