



SLOVENSKI STANDARD
SIST EN 50705:2023

01-junij-2023

Oprema za razsvetljavo z radijsko komunikacijo - Varnostne zahteve

Lighting equipment with radio communication - safety requirements

Beleuchtungseinrichtung mit Funkkommunikation - Sicherheitsanforderungen

Appareil d'éclairage avec équipement radioélectrique - Exigences de sécurité

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Lighting equipment with radio communication - safety requirements

Équipements radioélectriques intégrés dans des appareils d'éclairage - Exigences de sécurité

Beleuchtungseinrichtung mit Funkkommunikation - Sicherheitsanforderungen

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European foreword

This document (EN 50705:2023) has been prepared by CLC/TC 34 "Lighting".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2023-10-28
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2026-04-28

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EN 50705:2023 (E)**1 Scope**

This document specifies safety requirements for radio-integrated lighting equipment.

NOTE 1 Examples for lighting equipment are light sources, lamps, luminaires and controlgear for light sources.

NOTE 2 With the radio equipment integrated into the lighting equipment, the lighting equipment itself becomes radio equipment which is subject to the provisions of the RED.

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.

EN 60570, *Electrical supply track systems for luminaires (IEC 60570)*

EN IEC 60598-2-1, *Luminaires - Part 2: Particular requirements - Section 1: Fixed general purpose luminaires (IEC 60598-2-1)*

EN 60598-2-2, *Luminaires - Part 2-2: Particular requirements - Recessed luminaires (IEC 60598-2-2)*

EN 60598-2-3, *Luminaires - Part 2-3: Particular requirements - Luminaires for road and street lighting (IEC 60598-2-3)*

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

EN 60598-2-5, *Luminaires - Part 2-5: Particular requirements – Floodlights (IEC 60598-2-5:2015)*

EN 60598-2-8, *Luminaires - Part 2-8: Particular requirements – Handlamps (IEC 60598-2-8:2013)*

EN 60598-2-10, *Luminaires - Part 2-10: Particular requirements - Portable luminaires for children (IEC 60598-2-10)*

EN 60598-2-11, *Luminaires - Part 2-11: Particular requirements - Aquarium luminaires (IEC 60598-2-11)*

EN 60598-2-12, *Luminaires - Part 2-12: Particular requirements - Mains socket-outlet mounted nightlights (IEC 60598-2-12)*

EN 60598-2-13, *Luminaires - Part 2-13: Particular requirements - Ground recessed luminaires (IEC 60598-2-13)*

EN IEC 60598-2-17, *Luminaires - Part 2-17: Particular requirements - Luminaires for stage lighting, television and film studios (outdoor and indoor) (IEC 60598-2-17)*

EN 60598-2-18, *Luminaires - Part 2: Particular requirements - Section 18: Luminaires for swimming pools and similar applications (IEC 60598-2-18)*

EN 60598-2-19, *Luminaires - Part 2: Particular requirements - Section 19: Air-handling luminaires (safety requirements) (IEC 60598-2-19)*

EN 60598-2-20, *Luminaires - Part 2-20: Particular requirements - Lighting chains (IEC 60598-2-20:2014)*

EN 60598-2-21, *Luminaires - Part 2-21: Particular requirements - Rope lights (IEC 60598-2-21)*

EN 60598-2-22, *Luminaires - Part 2-22: Particular requirements - Luminaires for emergency lighting (IEC 60598-2-22)*

EN IEC 60598-2-23, *Luminaires - Part 2-23: Particular requirements - Extra-low-voltage lighting systems for ELV light sources*

EN 60598-2-24, *Luminaires - Part 2-24: Particular requirements - Luminaires with limited surface temperatures (IEC 60598-2-24)*

EN 60598-2-25, *Luminaires - Part 2-25: Particular requirements - Luminaires for use in clinical areas of hospitals and health care buildings (IEC 60598-2-25)*

EN 61347-2-7, *Lamp controlgear - Part 2-7: Particular requirements for battery supplied electronic controlgear for emergency lighting (self-contained) (IEC 61347-2-7)*

EN 61347-2-11, *Lamp controlgear - Part 2-11: Particular requirements for miscellaneous electronic circuits used with luminaires (IEC 61347-2-11)*

EN 61347-2-13, *Lamp controlgear - Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules (IEC 61347-2-13)*

EN IEC 62031, *LED modules for general lighting - Safety specifications*

EN 62493:2015, *Assessment of lighting equipment related to human exposure to electromagnetic fields*

EN 62560, *Self-ballasted LED-lamps for general lighting services by voltage > 50 V - Safety specifications (IEC 62560)*

EN 62776, *Double-capped LED lamps designed to retrofit linear fluorescent lamps - Safety specifications*

EN 62838, *LEDs lamps for general lighting services with supply voltages not exceeding 50 V a.c. r.m.s. or 120 V ripple free d.c. - Safety specifications (IEC 62838)*

EN 62868, *Organic light emitting diode (OLED) panels for general lighting - Safety requirements*

3 Terms and definitions

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

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

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

3.1

radio integrated lighting equipment

active or non-active radio integrated lighting equipment

3.2

active radio integrated lighting equipment

lighting equipment with an intentional radiator incorporated in a fixed and permanent way

3.3

non-active radio integrated lighting equipment

lighting equipment with radio receivers and/or radio transducers only incorporated in a fixed and permanent way

Note 1 to entry: Radio transducers, such as NFC transducers, receive the power (for the purpose of NFC communication) from another source, such as an NFC reader, and, thus, do not emit any net power (for the purpose of NFC communication) and thus are classified as non-active.

4 Electrical, mechanical thermal, photobiological and other safety requirements

4.1 General

Radio integrated lighting equipment shall comply with the relevant product safety standards as specified in either 4.2, 4.3 or 4.4.

With respect to mechanical, electrical, photobiological and other safety requirements, these are considered fully covered, if the radio integrated lighting equipment with the built-in radio equipment complies with all requirements of the document as selected from either 4.2, 4.3 or 4.4.

Aside from the hazards covered in Clause 5, no additional safety risks are identified with the integration of radio equipment into the lighting equipment.

4.2 Luminaires

Radio integrated luminaires shall comply with either of the following:

- for fixed general purpose luminaires: EN IEC 60598-2-1;
- for recessed luminaires (excluding air-handling or liquid-cooled luminaires): EN 60598-2-2;
- for luminaires for road, street lighting and other public outdoor lighting applications, including tunnel lighting and column-integrated luminaires with a minimum total height above normal ground level of 2,5 m: EN 60598-2-3;
- for portable general purpose luminaires for indoor and/or outdoor use (e.g. garden use), other than handlamps: EN 60598-2-4;
- for floodlights: EN 60598-2-5;
- for handlamps and similar portable luminaires which are held in the hand, hooked up or resting on a surface: EN 60598-2-8;
- for portable luminaires for children and for use with tungsten filament lamps or single capped fluorescent lamps EN 60598-2-10;
- for household aquarium luminaires: EN 60598-2-11;
- for mains socket-outlet mounted nightlights: EN 60598-2-12;
- for ground recessed luminaires for indoor and outdoor use: EN 60598-2-13;
- for stage, television, film and photographic studio luminaires (including spot and floodlighting projectors), for use outdoors and indoors: EN IEC 60598-2-17;
- for fixed luminaires intended for use in the water, or in contact with the water (e.g. swimming pools, fountains) EN 60598-2-18;
- for air-handling luminaires for use with a ventilation duct or ventilated space (plenum), for use with tubular fluorescent lamps: EN 60598-2-19;
- for lighting chains, indoor and outdoor use: EN 60598-2-20;
- for rope light (sealed lighting chains), indoor and outdoor use: EN 60598-2-21;
- for emergency luminaires for use on emergency power supplies: EN 60598-2-22;
- for luminaires in extra low voltage system: EN IEC 60598-2-23;

- for luminaires intended for use where the necessity of limited temperature on the outer surface exists: EN 60598-2-24;
- for luminaires for use with tungsten filament, fluorescent and other discharge lamps for use in clinical areas in which medical treatment, examination and medical care takes place in hospitals and health care buildings: EN 60598-2-25;

4.3 Light sources

Radio integrated light sources shall comply with either of the following:

- for LED modules: EN IEC 62031;
- for self-ballasted LED lamps with voltages above 50 V: EN 62560;
- for double-capped LED lamps designed to retrofit linear fluorescent lamps: EN 62776;
- for LEDsi lamps with supply voltages not exceeding 50 V AC or 120 V: EN 62838;
- for OLED panels: EN 62868.

4.4 Other lighting equipment

Radio integrated track systems for the connection of luminaires to the electrical supply shall comply with EN 60570. Radio integrated controlgear shall comply with either of the following:

- for battery supplied electronic controlgear for emergency lighting: EN 61347-2-7;
- for miscellaneous electronic circuits used with luminaires: EN 61347-2-11;
- for AC or DC supplied controlgear for LED modules: EN 61347-2-13;

5 Requirements on the human exposure to electromagnetic fields

Radio integrated lighting equipment shall comply with EN 62493:2015. However, with respect to EN 62493:2015, Clause 7 non-active radio integrated lighting equipment is deemed compliant without testing.

For active radio integrated lighting equipment, EN 62493:2015, Clause 7 is deemed compliant without testing only, if the following requirements are fulfilled:

- the radio equipment integrated into the lighting equipment complies with the appropriate EMF safety standard

NOTE 1 Typically the corresponding applicable EMF standard is EN IEC 62311.

- the radio equipment is integrated into the lighting equipment according to the specifications as provided by the radio equipment manufacturer as essential for the RED compliance of the radio equipment
- it is ensured that after integration into the lighting equipment, the radio equipment will be used according to the specifications as provided by the radio equipment manufacturer as essential for the RED compliance of the radio equipment

Battery operated radio integrated lighting equipment is deemed compliant with EN 62493:2015, 4.2.2 without testing.

NOTE 2 Battery operation does not imply compliance without testing for active radio integrated lighting equipment.

EN 50705:2023 (E)**6 Product Information**

The following information shall be made available in the instructions for use, on the packaging or as marking on the product:

a) frequency band(s) in which the radio equipment operates

EXAMPLE Frequency band: 5 GHz (WiFi)

b) maximum radio-frequency power transmitted in the frequency band(s) in which the radio equipment operates

EXAMPLE RF power: < 0,1 W

NOTE Further product marking and information requirements apply according to the corresponding product safety standard.

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