



SLOVENSKI STANDARD

oSIST prEN IEC 63545:2025

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Vrtnarska razsvetljava - Svetilke za vrtnarsko razsvetljava - Varnost

Horticultural lighting - Luminaires for horticultural lighting - Safety

Ta slovenski standard je istoveten z: prEN IEC 63545:2024

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65.060.70	Vrtnarska oprema	Horticultural equipment

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Safety

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TITLE:

Horticultural lighting – Luminaires for horticultural lighting – Safety

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

Horticultural lighting – Luminaires for horticultural lighting – Safety

FOREWORD

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IEC 63545 has been prepared by IEC technical committee 34: Lighting. It is an International Standard.

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

Draft	Report on voting
34/XX/FDIS	34/XX/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 and its amendment(s); and also the corresponding IEC 60598 part 2 series for general lighting purpose, as follows:

- Part 2-1 Fixed general purpose luminaires,
- Part 2-2 Recessed luminaires,
- Part 2-4 Portable general purpose luminaires,
- Part 2-5 Floodlights,
- Part 2-20 Lighting chains,
- Part 2-21 Rope lights.

Where this document states "*addition*", "*modification*" or "*replacement*", the relevant text of IEC 60598-1 and IEC 60598 Part 2 series is to be adapted accordingly.

NOTE 2 In this document, the following print type is used:

- Compliance statements: *in italic type*.

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,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

131 This document acknowledges the need for safety specification for horticultural luminaires, which
132 are considered as additional requirements or deviated requirements comparing with the similar
133 type of luminaires used for general lighting purpose.

134 Compared with the safety requirements for general lighting purpose luminaires, the differences
135 for horticultural luminaires are mainly derived based on following consideration:

- 136 • Changing of environmental conditions for the application. Horticultural luminaires are
137 normally indoor used, but with horticulture cultivation purpose, the environmental
138 conditions are normally severe.
- 139 • Changing of application purpose from vision sensation to horticulture use. Photobiological
140 safety requirements and UV resistance requirements are developed based on this nature.

141 The provisions in this document represent the technical knowledge of experts from the field of
142 the horticultural lighting, and are developed in close context with IEC 60598-1 (the Safety
143 standard for luminaires in general) and the corresponding Part 2 of IEC 60598 (the particular
144 safety standard of corresponding type of luminaires for general lighting purpose).

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Horticultural lighting – Luminaires for horticultural lighting – Safety

1 Scope

This document specifies safety requirements for horticultural luminaires, incorporating electric light sources for operation from supply voltage up to 1000 V.

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 60068-2-11, *Environmental testing - Part 2-11: Tests - Test Ka: Salt mist*

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

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

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

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

IEC 60598-2-5, *Luminaires - Part 2-5: Particular requirements - Floodlights*

IEC 60598-2-20, *Luminaires - Part 2-20: Particular requirements - Lighting chains*

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

IEC 60730-1, *Automatic electrical controls - Part 1: General requirements*

IEC 62471:2006, *Photobiological safety of lamps and lamp systems*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60598-1, IEC 60598-2-1, IEC 60598-2-2, IEC 60598-2-4, IEC 60598-2-5, IEC 60598-2-20, IEC 60598-2-21 and the following apply.

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>

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182 **3.1**183 **horticultural lighting**

184 application of optical radiation to stimulate biological response of plants and the plant tissues

185 Note 1 to entry: Examples of the application scenarios are plant factory, greenhouse, field application and home
186 application.

187 Note 2 to entry: Examples of the application manners are top lighting and inter-plant lighting.

188 **3.2**189 **inter-plant lighting**

190 horticultural lighting applied within the foliage of plants

191 Note 1 to entry: Supplemental inter-plant lighting is normally used in greenhouses.

192 **3.3**193 **horticultural luminaire**

194 luminaire designed to incorporate sources of optical radiation for horticultural lighting

195 **3.4**196 **skilled person** <photobiological safety>197 person with relevant education and experience to enable him or her to perceive risks and to
198 avoid photobiological hazards199 **3.5**200 **instructed person** <photobiological safety>201 person adequately advised or supervised by optical radiation skilled persons to enable him or
202 her to perceive risks and to avoid photobiological hazards203 **3.6**204 **ordinary person**

205 person who is neither a skilled person nor an instructed person

206 [SOURCE: IEC 60050-826:2004, 826-18-03]

207 **3.7**208 **industrial and professional use**

209 use intended only for skilled or instructed persons

210 [SOURCE: IEC 60050-851:2008, 851-11-12, modified – the word “experts” has been changed
211 in “skilled”]212 **3.8**213 **without restriction for use**

214 use applicable for skilled persons, instructed persons, and also ordinary persons