

INTERNATIONAL STANDARD

Discharge lamps (excluding fluorescent lamps) – Safety specifications



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Discharge lamps (excluding fluorescent lamps) – Safety specifications

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**DISCHARGE LAMPS
(EXCLUDING FLUORESCENT LAMPS) –
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International Standard IEC 62035 has been prepared by subcommittee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

This second edition cancels and replaces the first edition published in 1999, AMD1:2003 and AMD2:2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition. Photobiological safety requirements are taken care of on basis of the risk group concept of IEC 62471 and the technical report IEC TR 62778 on blue light hazard. This has consequences for terms, marking, structure of 4.6, and introduction of a new symbol “Caution, do not stare at light source”. Special attention is given to blue light hazard.

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

CDV	Report on voting
34A/1600/CDV	34A/1643/RVC

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.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site 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- withdrawn,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
- amended.

A bilingual version of this publication may be issued at a later date.

DISCHARGE LAMPS (EXCLUDING FLUORESCENT LAMPS) – SAFETY SPECIFICATIONS

1 Scope

This International Standard specifies the safety requirements for discharge lamps (excluding fluorescent lamps) for general lighting purposes.

This International Standard is applicable to low-pressure sodium vapour lamps and to high-intensity discharge (HID) lamps, i.e. high-pressure mercury vapour lamps (including blended lamps), high-pressure sodium vapour lamps and metal halide lamps. It applies to single- and double-capped lamps, having caps as listed in Annex A.

This standard only concerns safety criteria and does not take into account performance. The performance standards IEC 60188, IEC 60192, IEC 60662, IEC 61167 and IEC 61549 should be referred to for such characteristics.

It may be expected that lamps which comply with this standard will operate safely at supply voltages between 90 % and 110 % of rated supply voltage and when operated with a ballast complying with IEC 61347-2-9 and IEC 60923, with a starting device complying with IEC 61347-2-1 and IEC 60927, and in a luminaire complying with IEC 60598-1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050, *International Electrotechnical Vocabulary* (available at <http://www.electropedia.org>)

IEC 60061-1, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 1: Lamp caps*

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 60061-4, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 4: Guidelines and general information*

IEC 60155, *Glow-starters for fluorescent lamps*

IEC 60662, *High-pressure sodium vapour lamps*

IEC 60695-2-10:2000, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

IEC 60923, *Auxiliaries for lamps – Ballasts for discharge lamps (excluding tubular fluorescent lamps) – Performance requirements*

IEC 61347-2-1, *Lamp controlgear – Part 2-1: Particular requirements for starting devices (other than glow starters)*

IEC 61167, *Metal halide lamps - Performance specification*

IEC TR 62778, *Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-845 and IEC TR 62778, as well as the following apply.

3.1

HID lamp

high intensity discharge lamp

electric discharge lamp in which the light-producing arc is stabilised by wall temperature and the arc has a bulb wall loading in excess of 3 W/cm^2

Note 1 to entry: HID lamps include groups of lamps known as high-pressure mercury, metal halide and high-pressure sodium lamps.

[SOURCE: IEC 60050-845:1987, 845.07.19]

3.2

high pressure mercury vapour lamp

high-intensity discharge lamp in which the major portion of the light is produced, directly or indirectly, by radiation from mercury operating at a partial pressure in excess of 100 kPa

Note 1 to entry: This term covers clear, phosphor coated (mercury fluorescent) and blended lamps. In a fluorescent mercury discharge lamp, the light is produced partly by the mercury vapour and partly by the layer of phosphors excited by the ultraviolet radiation of the discharge.

[SOURCE: IEC 60050-845:1987, 845.07.20]

3.3

blended lamp

self-ballasted mercury lamp, US

lamp containing in the same bulb certain elements of a mercury vapour lamp and an incandescent lamp filament connected in series

Note 1 to entry: The bulb may be diffusing or coated with phosphors.

[SOURCE: IEC 60050-845:1987, 845.07.21, modified — The words "certain elements of" are added.]]

3.4

high pressure sodium vapour lamp

high-intensity discharge lamp in which the light is produced mainly by radiation from sodium vapour operating at a partial pressure of the order of 10 kPa

Note 1 to entry: The term covers lamps with clear or diffusing bulb.