

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Self-ballasted fluorescent lamps for general lighting services – Safety requirements

Lampes à fluorescence à ballast intégré pour l'éclairage général – Règles de sécurité



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SELF-BALLASTED FLUORESCENT LAMPS
FOR GENERAL LIGHTING SERVICES –
SAFETY REQUIREMENTS**

FOREWORD

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International Standard IEC 60968 has been prepared by subcommittee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

This third edition cancels and replaces the second edition published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition, where additions have been made to the following:

- a) caps and prevention of cap misuse;
- b) interchangeability;
- c) mechanical and electrical strength;
- d) creepage distances and clearances;
- e) end of lamp life precaution;
- f) abnormal operation;

- g) test conditions for dimmable and three-way lamps;
- h) water contact related marking;
- i) verification, and assessment;
- j) information for luminaire design in the form of annexes.

The text of this third edition is based on the following documents:

FDIS	Report on voting
34A/1811/FDIS	34A/1838/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

In this standard, the following print types are used:

- Requirements proper: in roman type.
- *Test specifications: in italic type.*
- Explanatory matter: in smaller roman type.

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- withdrawn,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.

SELF-BALLASTED FLUORESCENT LAMPS FOR GENERAL LIGHTING SERVICES – SAFETY REQUIREMENTS

1 Scope

This International Standard specifies the safety and interchangeability requirements, together with the test methods and conditions required to show compliance of tubular fluorescent lamps with integrated means for controlling starting and stable operation (self-ballasted fluorescent lamps).

These lamps are intended for domestic and similar general lighting purposes, having a rated voltage of 50 V to 250 V, having a rated frequency of 50 Hz or 60Hz and having IEC 60061-1 compliant caps.

For a cap-holder system not specifically mentioned in this standard, the relevant information on safety related tests provided by the manufacturer will apply.

The requirements of this standard relate only to type testing.

Recommendations for whole product testing or batch testing are given in Annex A.

This part of the standard covers photobiological safety according to IEC 62471 and IEC TR 62471-2. Blue light and infrared hazards are below the level which requires marking.

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

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

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

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

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

IEC 60695-2-11:2000, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end products*

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

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

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

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 following terms and definitions apply:

3.1

self-ballasted lamp

unit which cannot be dismantled without being permanently damaged, provided with a lamp cap and incorporating a light source and any additional elements necessary for starting and stable operation of the light source

3.2

nominal value

approximate quantity value used to designate or identify a lamp

[SOURCE: IEC 60901:1997, 1.4.3]

3.3

rated value

quantity value for a characteristic of a lamp for specified operating conditions

Note 1 to entry: The value and the conditions are specified in this standard, or assigned by the manufacturer or responsible vendor.

[SOURCE: IEC 60901:1997, 1.4.4, modified — The second sentence is moved to a note to entry.]

3.4

cap temperature rise

Δt_s

surface temperature rise (above ambient) of a standard test lampholder fitted to the lamp's cap, when measured in accordance with the standard method described in IEC 60360

[SOURCE: IEC 60432-1:1999, 1.3.8]

3.5

live part

conductive part which may cause an electric shock in normal use

3.6

type test

test or series of tests made on a type test sample for the purpose of checking compliance of the design of a given product with the requirements of the relevant standard

3.7

type test sample

sample consisting of one or more similar units submitted by the manufacturer or responsible vendor for the purpose of the type test

3.8

specific effective radiant UV power

effective power of the UV radiation of a lamp related to its luminous flux