

SS IEC 62776:2015(2023)
IEC 62776:2014, IDT
(ICS 29.140.99)

SINGAPORE STANDARD

**Double-capped LED lamps designed to retrofit
linear fluorescent lamps**
– Safety specifications

Confirmed 2023

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Published by Enterprise Singapore

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National Foreword

This Singapore Standard was prepared by the Working Group on Lighting set up by the Technical Committee on Building Facilities and Services under the purview of the Electrical and Electronic Standards Committee.

This standard is an identical adoption of IEC 62776:2014, “Double-capped LED lamps to retrofit linear fluorescent lamps – Safety specifications”, published by the International Electrotechnical Commission.

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Double-capped LED lamps designed to retrofit linear fluorescent lamps – Safety specifications

Lampes à LED à deux culots conçues pour remplacer des lampes à fluorescence linéaires – Spécifications de sécurité





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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Double-capped LED lamps designed to retrofit linear fluorescent lamps – Safety specifications

Lampes à LED à deux culots conçues pour remplacer des lampes à fluorescence linéaires – Spécifications de sécurité

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC 62776
Edition 1.0 2014-12

**DOUBLE-CAPPED LED LAMPS DESIGNED
TO RETROFIT LINEAR FLUORESCENT LAMPS –
SAFETY SPECIFICATIONS**

INTERPRETATION SHEET 1

This interpretation sheet has been prepared by subcommittee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

The text of this interpretation sheet is based on the following documents:

FDIS	Report on voting
34A/2081/FDIS	34A/2090/RVD

Full information on the voting for the approval of this interpretation sheet can be found in the report on voting indicated in the above table.

Interpretation of Clause 7 of IEC 62776:2014

The statement in the first paragraph of Clause 7 that “there shall not be any electrical continuity between the two ends of the lamp during the insertion” is in contradiction with the compliance requirements that follow. In the physical world, establishing the complete lack of any electrical continuity between the two ends is not possible since all materials may be characterized by their inherent conductivity however small it may be.

The compliance requirements described in the fourth paragraph of Clause 7 shall take precedence.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**DOUBLE-CAPPED LED LAMPS DESIGNED
TO RETROFIT LINEAR FLUORESCENT LAMPS –
SAFETY SPECIFICATIONS**

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International Standard IEC 62776 has been prepared by subcommittee 34A: Lamps, of IEC of IEC technical committee 34: Lamps and related equipment.

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

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34A/1795/FDIS	34A/1816/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.*
- Notes: in small 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.

The contents of the corrigendum of March 2015 and Interpretation Sheet 1 of June 2018 have been included in this copy.

INTRODUCTION

Double-capped fluorescent lamps are installed in big volume in office lighting, street lighting, industrial lighting and much more. Double-capped LED lamps are intended as a possible replacement for G5- or G13-capped fluorescent lamps. This standard safeguards that the change from fluorescent lamp to LED lamp and the backward change from LED lamp to fluorescent lamp is carried out with safe LED lamps and under specified exchange conditions.

The establishing of a safety standard for double-capped LED lamps does not exclude future relocation as a part of IEC 60968, self-ballasted lamps (if re-edited as an umbrella standard), and further inclusion of requirements for conversion type double-capped LED lamps.

This proposal covers double-capped LED lamps with cap G5 and G13 only, where the fluorescent tube is replaced by a tubular LED lamp, without modifications to the luminaire. Only in case of electromagnetic controlgear, the starter is replaced by a LED starter.

DOUBLE-CAPPED LED LAMPS DESIGNED TO RETROFIT LINEAR FLUORESCENT LAMPS – SAFETY SPECIFICATIONS

1 Scope

This International Standard specifies the safety and interchangeability requirements, and the exchange operation together with the test methods and conditions required to show compliance of double-capped LED lamps with G5 and G13 caps, intended for replacing fluorescent lamps with the same caps, having:

- a rated power up to 125 W;
- a rated voltage of up to 250 V.

Such LED lamps are designed for replacement without requiring any internal modification of the luminaire.

The existing luminaires, into which the double-capped LED lamps are fitted, can be operated with electromagnetic or electronic controlgear.

The requirements of this standard relate only to type testing.

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

NOTE 1 Where in this standard the term “lamp(s)” is used, it is understood to stand for “double-capped retrofit LED lamp(s)”, except where it is obviously assigned to other types of lamps.

This standard does not cover double-capped conversion LED lamps where modification in the luminaire is required. The requirements in this standard are given for general lighting service (excluding for example explosive atmospheres). For lamps for other applications additional requirements may apply.

NOTE 2 This standard includes photobiological safety.

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

IEC 60081, *Double-capped fluorescent lamps – Performance specifications*

IEC 60155, *Glow-starters for fluorescent lamps*

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

IEC 60417, *Graphical symbols for use on equipment* (available at <http://www.graphical-symbols.info/equipment>)

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

IEC 60695-2-10:2013, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods; Glow-wire apparatus and common test procedure*

IEC 60695-2-11:2000¹, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end products*

IEC 60921, *Ballasts for tubular fluorescent lamps – Performance requirements*

IEC 61195, *Double-capped fluorescent lamps – Safety specifications*

IEC 61347-1:— 2, *Lamp controlgear – Part 1: General and safety requirements*

IEC 61347-2-8, *Lamp controlgear – Part 2-8: Particular requirements for ballasts for fluorescent lamps*

IEC 62031, *LED modules for general lighting – Safety specifications*

IEC 62504, *General lighting - Light emitting diode (LED) products and related equipment - Terms and definitions*

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, pulps and related terms – Vocabulary – Part 4: Paper and board grades and converted products*

¹ First edition. This edition has been replaced in 2014 by IEC 60695-2-11:2014, *Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (GWEPT)*

² To be published.