IEC 62639

Edition 1.0 2012-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Fluorescent induction lamps – Performance specification

Lampes fluorescentes à induction – Spécification de performance

IEC 62639:2012

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FLUORESCENT INDUCTION LAMPS – PERFORMANCE SPECIFICATION

FOREWORD

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International Standard IEC 62639 has been prepared by subcommittee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

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

FDIS	Report on voting
34A/1526/FDIS	34A/1555/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.

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- withdrawn,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.

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INTRODUCTION

Performance standard IEC 62639 follows IEC 62532:2011-01, which is the safety standard for induction lamps.

Requirements are given on marking, dimensions, starting characteristics, electrical characteristics, photometric characteristics, lumen maintenance and life. Further, information is given for designing ballasts and luminaires.

The requirements are detailed by means of lamp data sheets, diagrammatic data sheets and maximum lamp outline sheets.

FLUORESCENT INDUCTION LAMPS – PERFORMANCE SPECIFICATION

1 Scope

This International Standard specifies the performance requirements for fluorescent induction lamps for general lighting purposes.

In this standard, the term “lamp” stands for “induction lamp”.

It may be expected that lamps which comply with this standard will start and operate satisfactorily at voltages between 92 % and 106 % of rated supply voltage and at an ambient air temperature between 10 °C and 50 °C, when operated with ballasts complying with IEC 60929 and IEC 61347-2-3, as far as applicable, and in a luminaire complying with IEC 60598-1.

NOTE For some lamps, additional information for ballast design is given for proper starting at an ambient air temperature of –15 °C.

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 60081:1997, *Double-capped fluorescent lamps – Performance specifications*

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

IEC 60929, *AC and/or DC-supplied electronic control gear for tubular fluorescent lamps – Performance requirements*

IEC 61347-2-3, *Lamp control gear – Part 2-3: Particular requirements for a.c. and/or d.c. supplied electronic control gear for fluorescent lamps*

IEC 62532:2011, *Fluorescent induction lamps – Safety specifications*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62532 and IEC 60081 apply, together with the following.

3.1
ambient temperature
T_{amb}
average temperature of air or another medium in the vicinity of the lamp

3.2
stabilization period
time required after switching on a lamp to reach stable values of luminous flux or lamp voltage

Note 1 to entry: Requirements on luminous flux are given in 4.6 and on tolerance of luminous flux in Clause B.2.

3.3
reference ballast
special electronic ballast, which is specified by the design specification of manufacturer

It is designed for the purpose of providing comparison standards for use in testing ballasts, for the selection of reference lamps or for testing regular production lamps under standardized conditions. It is essentially characterized by the fact that, at its rated frequency, it has a stable voltage/current ratio which is relatively uninfluenced by variations in current, temperature and magnetic surroundings, as outlined in the relevant ballast standard.

[SOURCE: IEC 60050-845:1987, 845-08-36, modified]

3.4
life
<general term> time during which a lamp is operated until its failure

Note 1 to entry: Switch-off times are not regarded when calculating life.

3.5
nominal life
life (in hours) as declared by the manufacturer

It is published together with the switching cycle and failure rate on which it is based.

Note 1 to entry: Example for a short version: 12B10 (12 h switching cycle / 10 % failures).

4 Lamp requirements

4.1 General

A lamp, on which compliance with this standard is claimed, shall comply with the requirements of IEC 62532.

A lamp has to comply with further requirements or more stringent requirements, if they published by manufacturer.

A lamp shall be so designed that its performance is reliable in normal and accepted use. In general, this can be achieved by satisfying the requirements of the following subclauses.

The requirements and information given apply to 95 % of production.

NOTE The requirements and tolerances permitted by this standard correspond to the testing of a type test sample, submitted by the manufacturer for that purpose. In principle, this type test sample should consist of units having characteristics typical of the manufacturer's production and being as close to the production centre point values as possible.

It may be expected with the tolerances given in the standard that products manufactures in accordance with the type test sample will comply with the standard of the majority of production. Due to the production spread however, it is inevitable that there will sometimes be products outside the specified tolerances.

Measurements are carried out under reference conditions with values specified on the data sheets, if available. Except where otherwise specified in the annexes, lamps shall be tested in an ambient temperature of between 20 °C and 27 °C.

4.2 Marking

4.2.1 General

In addition to the marking requirements of IEC 62532, the following is specified.

4.2.2 Correlated colour temperature (CCT) and colour rendering index (R_a)

The value of the correlated colour temperature and colour rendering index shall be provided on the lamp itself or on the packaging (under consideration). The value representing CCT and R_a may take the form as given in the International Lamp Coding System (ILCOS).

NOTE An R_a of 80 and a CCT of 3 000 K may be combined in the abbreviation “830”.

4.2.3 Polarity

The polarity shall be identified by marking the terminals (+, -). Other means of identifying are possible instead, see Clause B.2.

4.3 Dimensions

The dimensions of a lamp shall comply with the values specified on the relevant lamp data sheet.

Compliance: By measuring with callipers or equivalent.

4.4 Starting characteristics

A lamp shall start fully within the time specified on the relevant lamp data sheet and remain alight.

Compliance: Visual inspection to verify that lamps are starting and remain alight. If the lamp has achieved breakdown at $\leq U_{min}$ and stayed alight, it has passed the test.

Conditions and method of test are given in Annex A.

4.5 Electrical characteristics

Requirements for lamp voltage and power are given below.

a) The initial reading of the voltage at the lamp terminals shall comply with the values specified on the relevant lamp data sheet.

b) The initial reading of the power dissipated by a lamp shall not exceed the rated power specified on the relevant lamp data sheet by more than 5 %.

Conditions and method of test are given in Annex B.

4.6 Photometric characteristics

Requirements for luminous flux, chromaticity coordinates and colour rendering index are given below.

a) The initial reading of the luminous flux of a lamp shall be not less than 90 % and the average of a batch shall be not less than 95 % (under consideration) of the declared value.

b) If specified, the initial reading of the chromaticity co-ordinates x and y of a lamp shall be within 5 SDCM (standard deviation of colour matching) from the rated values.

c) The initial reading of the general colour rendering index R_a of a lamp shall be not less than the rated value decreased by three.

Conditions and method of test are given in Annex B.

4.7 Lumen maintenance

The lumen maintenance of a lamp, at any time in its life, shall be not less than 90 % of the rated lumen maintenance value.

Conditions and method of test are given in Annex C.

4.8 Life

Requirements are provided by the lamp manufacturer.

5 Information for ballast design

Refer to the relevant lamp data sheet and to Annex D for information for ballast design.

6 Information for luminaire design

Refer to the relevant lamp data sheet and to Annex E for information for luminaire design. The regional requirements on EMC should be regarded.

7 Data sheets

7.1 Diagrammatic data sheets for location of lamp dimensions

62639-IEC-01 rectangular shaped lamps

62639-IEC-02 circular shaped lamps

62639-IEC-03 A110, A130 and A140 shaped lamps

62639-IEC-04 G95 shaped lamps

62639-IEC-05 PS110 shaped lamps

62639-IEC-06 PS180 shaped lamps

62639-IEC-07 R160 shaped lamps

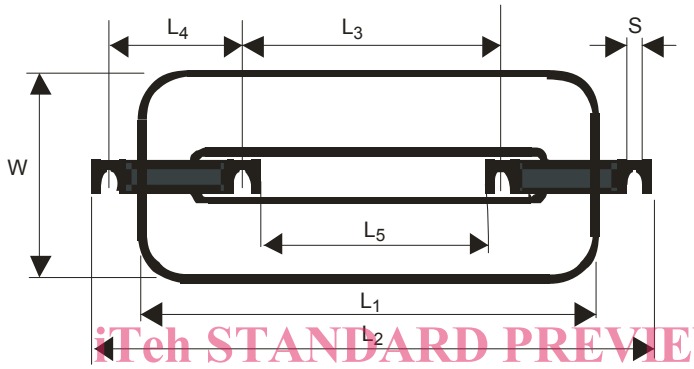
62639-IEC-08 T85 shaped lamps

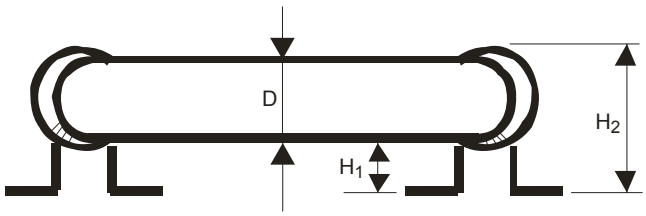
INDUCTION LAMPS

DIAGRAMMATIC DATA SHEET FOR LOCATION OF LAMP DIMENSIONS

Rectangular shaped, externally coupled, a-type

These drawings are intended only to indicate dimensions to be controlled and are to be used in conjunction with the relevant lamp standard sheets.



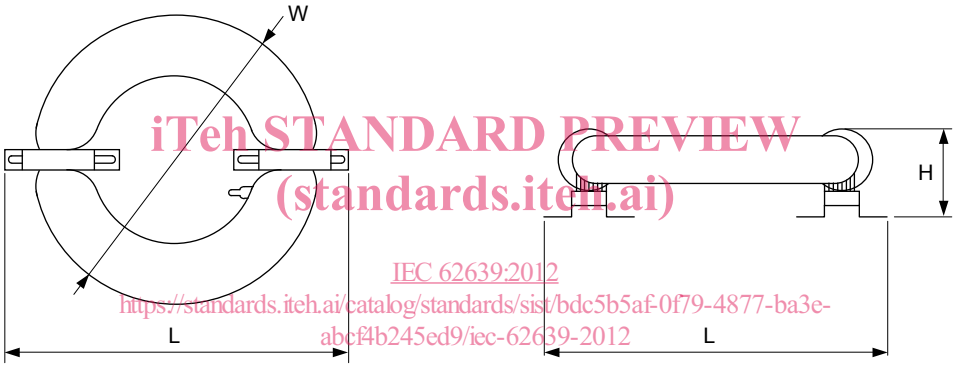


INDUCTION LAMPS

DIAGRAMMATIC DATA SHEET FOR LOCATION OF LAMP DIMENSIONS

Circular shaped, externally coupled, b-type

These drawings are intended only to indicate dimensions to be controlled and are to be used in conjunction with the relevant lamp standard sheets.



INDUCTION LAMPS

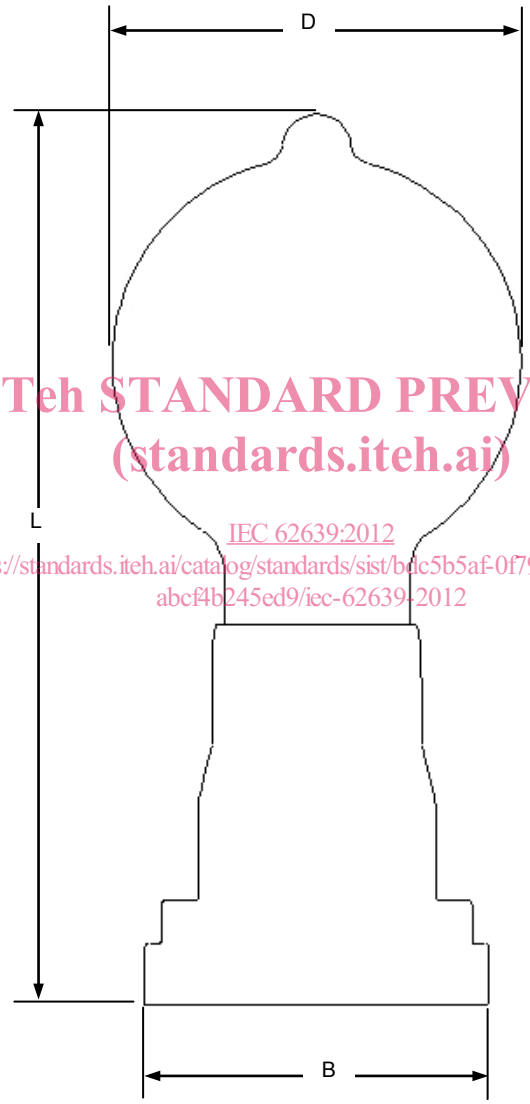
DIAGRAMMATIC DATA SHEET FOR LOCATION OF LAMP DIMENSIONS

A110, A130 and A140 shaped, internally coupled, a-type

These drawings are intended only to indicate dimensions to be controlled and are to be used in conjunction with the relevant lamp standard sheets.

	INDUCTION LAMPS **DIAGRAMMATIC DATA SHEET FOR LOCATION OF LAMP DIMENSIONS** **G95 shaped, internally coupled, b-type**	

These drawings are intended only to indicate dimensions to be controlled and are to be used in conjunction with the relevant lamp standard sheets.



Texte français au verso French text overleaf	**62639-IEC-04-1**	