

PAKISTAN STANDARD

TUNGSTEN FILAMENT LAMPS FOR DOMESTIC AND SIMILAR GENERAL LIGHTING PURPOSES-Performance requirements



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TUNGSTEN FILAMENT LAMPS FOR DOMESTIC AND SIMILAR GENERAL LIGHTING PURPOSES-Performance requirements

0. FOREWORD

- 0.1 This Pakistan Standard was adopted by the authority of the Board of Directors for Pakistan Standard and Quality Control Authority after the draft prepared by the Technical Committee for "Rotating Electrical Machines (EDC-5)" had been approved and endorsed by the National Standards Committee on
- 0.2 This Pakistan Standard was prepared in 1979 on the basis of IEC: 60064/1979. Since IEC Standard have been revised in 1987, hence it is deemed necessary to revise our standard to keep abreast with the latest technology and at par with IEC Standard.
- 0.3 This standard is based on IEC: 60064/2009 "Tungsten filament lamps for domestic and similar general lighting purposes-Performance requirements" alonhwith Amendment-5 and its use hereby acknowledged with thanks.
- 0.4 This Standard is subject to periodical review in order to keep pace with the changing requirements and latest development in the industry. Any suggestions for improvement will be recorded and placed before the revising committee in due course.
- 0.5 This Standard covers technical provisions and it does not purport to include all the necessary provision of a contract.

CONTENTS

FOREWORD	7

SECTION 1 : GENERAL

Clause

1.1	Scope	11
1.2	Normative references	11
1.3	General format	13
1.4	Bulb shape	13
1.5	Definitions	13

SECTION 2 : LAMP CHARACTERISTICS AND SPECIFICATIONS

2.1 Lamp characteristics and specifications	17
---------------------------------------------	----

SECTION 3 : GENERAL, DIMENSIONAL, ELECTRICAL, PHOTOMETRIC, AND LIFE REQUIREMENTS

3.1	General	19
3.2	Marking	19
3.3	Lamp dimensions	21
3.4	Characteristics and tolerances of initial readings	21
3.5	Lumen maintenance	21
3.6	Life test requirements	21

SECTION 4 : CONDITIONS OF COMPLIANCE

4.1	Whole production of a manufacturer	23
4.2	Compliance of individual batches	27

SECTION 5 : SAMPLING

5.1	Principles of sampling	29
	Sampling for whole production testing	29
5.3	Sampling for batch testing	33

SECTION 6 : PRINCIPLES OF DIMENSIONING

6.1	Principles of dimensioning incandescent lamps with bulb shape A or PS, and cap B22d	35
6.2	Principles of dimensioning incandescent lamps with bulb shape A or PS, and Edison screw cap	37

SECTION 7 : ANNEXES

Page

А	Test procedure	39
В	Life calculation and limits	45
С	Recommended pre-compliance tests for certification purposes	47
D	Statistical compliance tables	53
Е	Statistical concepts and basis of this standard	61
F	Test rack circuit characteristics	63
	SECTION 8 : LAMP DATA SHEETS	

8.1	List of lamp data sheets and ILCOS codes	65
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TUNGSTEN FILAMENT LAMPS FOR DOMESTIC AND SIMILAR GENERAL LIGHTING PURPOSES –

Performance requirements

Section 1: General

1.1 Scope

This Pakistan Standard applies to tungsten filament incandescent lamps for general lighting service (GLS) which comply with the safety requirements in PS: IEC 60432-1 and having:

- rated wattage of 25 W to 200 W, inclusive;
- rated voltage 100 V to 250 V, including marked voltage range not exceeding ±2,5 % of the mean voltage¹;
- bulbs of the A or PS shapes;
- bulbs with clear, frosted or equivalently coated finishes, or white finishes;
- caps B22d, E26 or E27

Specific lamp types are covered in Section 8.

This standard states the performance requirements for lamps, including test methods and means of confirming compliance with the requirements. Whole production appraisal methods regarding a lamp manufacturer's test record on finished products are defined. This method can be applied for certification purposes. Details of a batch test procedure, which can be used to make an assessment of specific batches, are included, but it is not suitable for certification purposes.

For some of the requirements given in this standard, reference is made to "the relevant data sheet". For some lamps, these data sheets are contained in this standard. For other lamps, falling under the scope of this standard, the relevant data are supplied by the lamp manufacturer or responsible vendor.

The test and measurement methods contained in this standard are also applicable for the assessment of tungsten filament incandescent lamps not directly covered by the scope of this standard e.g. other bulb shapes, finishes etc.

NOTES

1 A lamp used in China having a rated wattage 15 W and rated voltage 220 V is included.

2 A lamp used in Japan having a rated wattage 18 W and rated voltage 100 V or 110 V is included.

3 Separate references are made to E26/24 caps used in North America and E26/25 caps used in Japan. The two are not compatible.

4 W here reference is made to the cap E27/27, the use of the cap E27/25 is also allowed.

1.2 Normative references

The following referenced documents are indispensable for the application 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.

In countries in the process of changing from 220 V to 230 V nominal supply voltage, a range of ±3,5 % will apply temporarily.

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

PS: IEC 60061-2, Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 2: Lampholders

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

PS: IEC 60432-1, Incandescent lamps – Safety specifications – Part 1: Tungsten filament lamps for domestic and similar general lighting purposes

PS: IEC 60630, Maximum lamp outlines for incandescent lamps

PS: IEC 60887, Glass bulb designation system for lamps

1.3 General format

This standard is divided into several sections with self-descriptive titles. These sections are:

- Section 1: General
- Section 2: Lamp characteristics and specifications
- Section 3: General, dimensional, electrical, photometric, and life requirements
- Section 4: Conditions of compliance
- Section 5: Sampling
- Section 6: Principles of dimensioning
- Section 7: Annexes

Section 8: Lamp data sheets

1.4 Bulb shape

Nomenclature for bulbs used as envelopes for lamps specified in this standard can be found in IEC Technical Report 60887: *Glass bulb designation system for lamps.*

1.5 Definitions

For the purpose of this International Standard the following definitions apply:

1.5.1 **type:** Lamps which, independent of type of cap, are identical in photometric and electrical characteristics.

1.5.2 **group:** Lamps of the same rated wattage, from the same lamp data sheet (normal or high luminous flux), whose rated voltage falls within the same voltage range (e.g. 100 V - 150 V; 200 V - 250 V).

1.5.3 **white finish:** A low-loss white bulb finish, usually applied internally, that provides diffused light.

1.5.4 **manufacturer:** An organization making lamps within the scope of this standard at one or more nominated factories, not necessarily in the same country, but having a common quality management.

1.5.5 **production:** The number of lamps, within the scope of this standard, manufactured in a factory within a 12-month period.

1.5.6 **total production:** The number of lamps, within the scope of this standard, manufactured in all the nominated factories of a single manufacturer within a 12-month period.

1.5.7 **whole production:** The production of all types of lamps within the scope of this standard manufactured during a period of 12 months and nominated in a list by the manufacturer for inclusion in any certificate provided by a certification authority.

1.5.8 **batch:** All the lamps of one type put forward at one time for test and for checking compliance.

1.5.9 **light centre length:** In the sense of this standard and where specified on a lamp data sheet, light centre length is the distance from the geometrical centre of the filament to the contact plate of the cap, including solder.

NOTE - This definition applies regardless of the type of cap used. A light centre length specification applies only to lamps with a clear finish.

1.5.10 **inspection test quantity (ITQ):** The number of lamps to be tested with the intention of determining acceptability, either of the whole production or of the batch, as to dimensional requirements.

1.5.11 **rating test quantity (RTQ):** The number of lamps to be tested with the intention of determining acceptability, either of the whole production or of the batch, as related to initial readings.

1.5.12 **life test quantity (LTQ):** The number of lamps to be tested with the intention of determining acceptability, either of the whole production or of the batch, as related to life.

1.5.13 **initial readings:** The photometric and electrical measurements made at the end of the ageing period.

1.5.14 **rated voltage:** Voltage or voltage range specified in the relevant lamp standard or assigned by the manufacturer or responsible vendor.

NOTE - If lamps are marked with a voltage range, it shall be interpreted that they are appropriate for use on any line voltage within that range.

1.5.15 **test voltage:** The rated voltage unless otherwise specified. If lamps are marked with a voltage range, the test voltage shall be taken as the mean of the voltage range unless otherwise specified.

1.5.16 **rated wattage:** Wattage specified in the relevant lamp standard or assigned by the manufacturer or responsible vendor.

1.5.17 rated luminous flux (unit: lumen [lm]): The lumen value declared by the manufacturer.

1.5.18 **lumen maintenance:** The ratio of luminous flux at 75 % of rated life to the initial luminous flux, expressed as a percentage.

1.5.19 **life:** The total time for which a lamp has been operated before it becomes useless, or to any other criterion of life performance laid down in this standard.

1.5.20 **rated life:** The life value specified on a lamp data sheet. Within the context of the life testing method of this standard, it represents the mean value of the truncated life distribution.

NOTE - Since the specified life test method of this standard is a truncated life test, all the lamps that may have been commercially rated relative to the arithmetic mean of full duration life tests must be rerated. The correction from arithmetic mean life to truncated mean life is based on statistical factors of the normal distribution. Considering the lower limit on individual lamp life of sub-clause 3.6.2 the statis tical concepts of annex E and sensoring at 125 % of the truncated life rating, the truncated life rating is approximately

 $90\ \%$ of the arithmetic life rating. As an example, the E26 capped, $60\ W$ HE lamp of data sheet

60064-IEC-1050 is a USA design with a commercial life rating of 1 000 h; its truncated life rating becom es

900 h.

1.5.21 **normal life test:** A life test wherein the lamps are operated at their rated voltage.

1.5.22 **accelerated life test:** A life test wherein the lamps are intentionally operated at a voltage above the rated voltage with results converted to equivalent life at rated voltage.

1.5.23 **truncated life test:** A censored life test wherein the test is terminated at a fixed point, 125 % of rated life.

Section 2: Lamp characteristics and specifications

2.1 Lamp characteristics and specifications

2.1.1 Lamp characteristics and specific performance limits are listed on the individual lamp data sheets. These data sheets are filed in section 8.

2.1.2 Each lamp data sheet defines a particular lamp "group" by listing the characteristics and limiting values that apply. The technical specifications on each sheet are: dimensions, minimum rated luminous flux, lumen maintenance, rated life, and information for luminaire design. 2.1.3 The sequence of the data sheets in section 8 is by wattage within the following subdivisions.

Category	Data sheet numbers
Lamps with E26 caps, rated life varying with rated wattage	1000 – 1999
Lamps with E26 caps, rated life 1 000 h	2000 – 2999
Reserve	3000 – 3999
Lamps with B22 caps, rated life 1 000 h	4000 – 4999
Lamps with E27 caps, rated life 1 000 h	5000 – 5999
Reserve	6000 – 6999

2.1.4 Numbering system for lamp data sheets

A lamp data sheet number is made up of four parts as follows:

- the first number represents the number of this publication (IEC 60064);
- the second part is the letter grouping "IEC";
- the third part is the basic data sheet number from the series in sub-clause 2.1.3;
- the fourth part is a number indicating the edition of the sheet.

NOTE – When amendments are made to data sheets, the affected pages are issued with an updated edition number. For example, if data sheet 60064-IEC-1050-1 were amended, the new issue would be numbered 60064-IEC-1050-2.

Section 3: General, dimensional, electrical, photometric, and life requirements

3.1 General

3.1.1 The lamps on which compliance with this standard is claimed shall comply with the requirements of IEC 60432-1.

3.1.2 Lamps shall be so designed that their performance is reliable in normal and accepted use. In general, this can be achieved by satisfying the requirements of this section (section 3).

3.1.3 Lamps shall be tested under the procedures of annex A, Test procedure.

3.2 Marking

Information identifying the finish of white lamps shall be either marked on the lamp or on the packaging.

3.3 Lamp dimensions

3.3.1 Lamps shall comply with the dimensional requirements specified on the appropriate lamp data sheet.

3.3.2 Lamps with screw caps shall comply with the relevant contact making gauges as described in IEC 60061-3.

3.3.3 Lamps with E26 caps shall comply with the gauge for testing contact-making, sheet 7006-29 of IEC 60061-3

3.4 Characteristics and tolerances of initial readings

3.4.1 Wattage

The initial wattage of individual lamps shall not exceed 104 % of the rated wattage specified on the relevant lamp data sheet plus 0,5 W.

3.4.2 Luminous flux initial

3.4.2.1 Rated luminous flux of the lamps shall not be less than the values shown on the relevant lamp data sheet.

3.4.2.2 The initial luminous flux readings of individual frosted, frosted equivalently coated or clear lamps shall not be less than 93 % of the rated luminous flux.

3.4.2.3 The initial luminous flux readings of individual white-coated lamps shall not be less than 90 % of the rated luminous flux.

3.5 Lumen maintenance

The lumen maintenance of individual lamps at 75 % of rated life shall be not less than the minimum value specified on the relevant lamp data sheet.

NOTES

1 For the compliance conditions of subclauses 4.1.2.6, 4.1.3.3 and 4.2.3, lamps that do not satisfy this requirement are treated as life failures.

2 In some countries, particularly North America, manufacturers' records may yield data at 70 % of rated life rather than the defined 75 % of rated life. This is due to long-established domestic and regulatory practices. Such data will have to be linearly extrapolated to the 75 % point.

3.6 Life test requirements

3.6.1 The truncated average life of a normal life test or the equivalent truncated average life of an accelerated life test, calculated by the method of subclause B.1.1 of annex B, shall be equal to or greater than the limits in subclause B.1.2, as related to rated life and the LTQ.

3.6.2 Individual lamps shall have a life of not less than 70 % of rated life.

Section 4: Conditions of compliance

4.1 Whole production of a manufacturer

Compliance is proven by satisfying the requirements of section 3 (general, dimensional, electrical, photometric, and life requirements) assessed on the following basis.

4.1.1 **Pre-compliance testing for certification purposes**

NOTE - For certification purposes a recommended pre-compliance test is given in annex C. Such a test provides temporary recognition of a supplier as explained in C.1.

4.1.2 Compliance of manufacturer's test data

4.1.2.1 The assessment shall be based on the test data in the manufacturer's records from all nominated factories under the common quality management, grouped together, meeting the requirements of subclause 4.1.2.3. For certification purposes, one certificate may cover all the nominated factories, but the Certification Authority shall have the right to visit each site, examine the local records and quality control procedures in respect of finished products.

4.1.2.2 For certification purposes, the manufacturer shall declare a list of lamp types and marks of origin which are to be within the scope of this standard, and this shall be taken to include all lamps so listed made by the manufacturer. Notifications of additions or deletions may be made at any time.

4.1.2.3 The whole production of a manufacturer shall be considered as satisfying the requirements of this standard if the conditions of subclauses 4.1.2.4, 4.1.2.5 and 4.1.2.6 are fulfilled for at least 75 % (rounded to the nearest whole number) of the total number of types, as selected in subclause 5.2.2, for which test data has been submitted.

4.1.2.4 Dimensions

A type from the whole production of a manufacturer shall be considered to comply if, for that type, the number of lamps in the manufacturer's records failing the dimensional requirements of clause 3.3 does not exceed the qualifying limit shown in table D.2, annex D. (This number of lamps is established from data supplied by the manufacturer.)

4.1.2.5 Initial readings

A type from the whole production of a manufacturer shall be considered to comply with the initial reading requirements, if for that type:

1) the number of lamps in the manufacturer's records whose wattage is above the limitation of subclause 3.4.1 does not exceed the value given in table D.3, annex D;

2) the number of lamps in the manufacturer's records having luminous flux values below the limitation of subclauses 3.4.2.2 or 3.4.2.3, does not exceed the value given in table D.3, annex D.

4.1.2.6 Life and lumen maintenance

A type from the whole production of a manufacturer shall be considered to comply if for that type:

1) the manufacturer's records show that the truncated average life results satisfy the requirements of subclause 3.6.1; and

2) the total number of individual lamps failing the requirement of subclause 3.6.2 together with those failing clause 3.5 does not exceed the number given in table D.4, annex D.

4.1.2.7 A manufacturer who has met, but no longer meets, the specified acceptance levels for subclauses 4.1.2.4, 4.1.2.5 and 4.1.2.6 shall not be disqualified from claiming compliance with this standard providing he can show that either:

a) action was taken to remedy the situation as soon as the trend was reasonably confirmed from his data and the specified acceptance level was re-established within a period of six months. When corrective action has been taken, compliance is assessed excluding the test records for the period of non-compliance from the 12-month summation. Such data shall form part of the record;

b) or the type which does not meet the specified acceptance level is deleted from the list of lamp types which he may claim are in conformity with this specification.

4.1.2.8 In the case of a lamp type which has been deleted under subclause 4.1.2.7 from the list (see 4.1.2.2), it may be reinstated if satisfactory results are obtained from tests on a number of lamps equivalent to the minimum 12-month period sample in the clause for which failure occurred. This sample may be collected over a short period.

4.1.3 Compliance to comparability test

Samples for a comparability test are selected for the purpose and by the methods defined in subclause 5.2.3. For each condition, each lamp type shall be dealt with separately.

4.1.3.1 Dimensions

For clause 3.3, calculate the percentage of non-conforming lamps, p, recorded in the manufacturer's records. Enter through this value of p in table D.1, annex D, to determine the allowable number of non-conforming lamps in the market sample. If the actual number of non-conforming lamps in the market sample exceeds the allowable number, the market sample shall be deemed to be inconsistent with the manufacturer's records.

4.1.3.2 Initial readings

Use the same procedure as in subclause 4.1.3.1. The wattage and the luminous flux shall be appraised separately. Wattage non-conforming lamps are those that do not satisfy subclause 3.4.1. Luminous flux non-conforming lamps are those that do not satisfy subclause 3.4.2.2 or 3.4.2.3.

4.1.3.3 Life and lumen maintenance

Use the procedure given in subclause 4.1.3.1. Non-conforming lamps are those that do not meet the requirement of subclause 3.6.2 for life together with those failing to meet the requirements of clause 3.5 for lumen maintenance.

4.2 Compliance of individual batches

Sampling for a batch shall be made in accordance with clause 5.3. A batch shall be considered as satisfying the requirements of this standard if the conditions contained in subclauses 4.2.1, 4.2.2 and 4.2.3 are fulfilled. If the batch fails to satisfy any of these subclauses, it shall be deemed as not complying with the standard.

4.2.1 Dimensions

A batch shall be considered to comply to the dimensional requirements if the number of lamps failing clause 3.3 does not exceed four.

4.2.2 Initial readings

A batch shall be considered to comply to initial requirements if:

1) the number of lamps whose wattage is above the maximum value specified in subclause 3.4.1 does not exceed 12;

2) the number of lamps whose lumen are below the minimum values specified in subclause 3.4.2.2 or 3.4.2.3 does not exceed 12.

4.2.3 Life and lumen maintenance

A batch shall be considered to comply to life requirements if:

- 1) the truncated average life of the LTQ satisfies subclause 3.6.1;
- 2) the total number of individual lamps failing the requirement of subclause 3.6.2 together with those failing clause 3.5 does not exceed eight.

4.2.4 Summary of compliance conditions for individual batches

A summary of the above conditions are given in the following table.

Characteristics	Sample siza	Qualifying limit
	n	C
ITQ Dimensional requirements	50	4
RTQ Wattage	100	12
RTQ Luminous flux	100	12
LTQ Average life	50	98 % of rated life
LTQ Life < 70 % of rated life plus lumen maintenance < minimum value on data sheet	50	8

Section 5: Sampling

5.1 Principles of sampling

The lamps for testing shall be selected so as to ensure proper representation.

NOTE - It should first be ascertained that the values of the rated luminous flux comply with the requirements of the relevant lamp data sheet.

It is not necessary to replace an accidentally broken lamp if the result of the test (approval or rejection) is not affected by its replacement, provided the required quantity of lamps for any subsequent test is available. If replaced, a broken lamp shall be neglected in calculating the test results.

NOTE - Accidentally broken lamps include, for example, lamps damaged during handling and transportation and also lamps becoming defective for reasons which are not connected with the purpose of a particular test being applied.

For batch and comparability testing, some lamps additional to the test quantity shall be selected. These lamps shall only be substituted for lamps of the test quantity, if necessary to make up the required number of lamps for the test.

5.2 Sampling for whole production testing

5.2.1 Pre-compliance testing for certification purposes

Sampling for the pre-compliance test is given in annex C, clause C.2.

5.2.2 Manufacturer's test data

The manufacturer shall make available all the data of his finished product tests so far as these relate to the lamp types on the manufacturer's nominated list and are pertinent to the requirements of this standard.

These data shall refer to a sufficient number of lamps, selected over a 12-month period, so as to be representative of the whole production. To meet this requirement there shall be provided:

1) in respect of each factory, test data on:

- for the four largest groups (or all groups if there are less than four), at least 200, 300 and 200 lamps for, respectively, ITQ, RTQ and LTQ with a minimum of 40, 60 and 40 lamps per group for, respectively, ITQ, RTQ and LTQ. If the LTQ of 200 represents more than 0,01 % of the production, then only 0,01 % or 40 lamps, whichever is the greater, need be tested;

- for each of the other groups, which together with the four largest groups make up at least 75 % of the production, a minimum of 20, 30 and 20 lamps for, respectively, ITQ, RTQ and LTQ;

- where a number of types make up a group, test quantities shall be selected from each of those types which make up at least 50 % of the production for that group;

- for each type for which data has to be presented to meet the above requirements a minimum of 20, 30 and 20 lamps for, respectively, ITQ, RTQ and LTQ;

2) in respect of all the manufacturer's factories, taken together:

- if the selected types do not make up at least 75 % of the total production of the manufacturer, additional types shall be selected to meet this requirement.

Providing the above requirements have been met, any types in the manufacturer's records for which there are less than the quantities for ITQ, RTQ and LTQ of 20, 30 and 20, respectively, shall not be considered.

All tests need not necessarily be carried out on the same lamps. The RTQ may contain other individuals than the ITQ, but the LTQ shall be carried out on individuals selected at random from lamps which have passed the rating test.

NOTE - This is because the life test results are dependent on the rating test results, this not being the case for the inspection test results.

As it may be difficult at the time of sampling to forecast the 12-month production of a type, as a fraction of the whole, percentage values in this section are to be regarded as guidelines, and some flexibility is permitted, provided that the manufacturer's selection of test samples is designed to give proper representation and the minimum test quantities are met.

Where a major change in types made by a factory creates a situation where the minimum test quantities are not met in the 12-month period, it shall be sufficient to show that the rate of testing at the time was compatible with the requirements of this clause.

5.2.3 Sampling for comparability test

5.2.3.1 In the case of an independent test authority, operating a certification scheme, there shall be an open-market selection of 20 lamps of three different lamp types taken in a representative manner through the production year.

Each of the samples of 20 lamps shall be tested primarily for the purpose of checking the validity of the manufacturer's own test information. The manufacturer shall make available

to the test authority the means by which the factory and approximate date of manufacture of the market selection may be determined.

NOTE - In order to ensure that the market sample is taken at random, it is recommended that the lamps be obtained at intervals evenly distributed over the year from a minimum of two sales outlets. The sample would not be random if these precautions were not taken and the results of the market sample could not then be compared with the manufacturer's records.

5.2.3.2 The lamps from subclause 5.2.3.1 shall be submitted to the inspection test.

5.2.3.3 The lamps from subclause 5.2.3.1 shall be submitted to the rating test.

5.2.3.4 The lamps from subclause 5.2.3.1 shall be submitted to the life test.

5.3 Sampling for batch testing

5.3.1 There shall be selected a random sample for an ITQ consisting of 50 lamps.

5.3.2 There shall be selected at random an RTQ comprising 100 lamps. The ITQ can be used as part of the RTQ.

5.3.3 From lamps which have passed the rating test, there shall be selected at random an LTQ of 50 lamps.

Section 6: Principles of dimensioning

6.1 Principles of dimensioning incandescent lamps with bulb shape A or PS, and cap B22d

6.1.1 All dimensions specified on the lamp data sheets of section 8 are in millimetres (mm).

6.1.2 Figure 1 presents graphical definitions of the dimensional codes for B22d capped lamps.

6.1.3 In the bulb designations on the lamp data sheets, the numerals shown indicate the nominal bulb diameter and are not to be used for assessing the dimensions of the lamps.

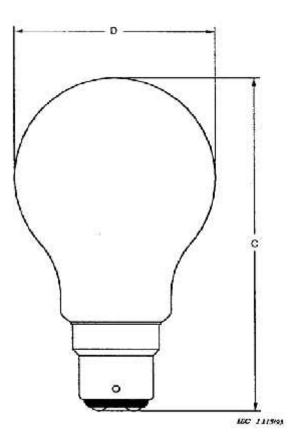


Figure 1 - Lamp with B22d cap

6.2 Principles of dimensioning incandescent lamps with bulb shape A or PS, and Edison screw cap

 $6.2.1\,$ All dimensions specified on the lamp data sheets of Section 8 are in millimeters (mm).

6.2.2 Figure 2 presents graphical definitions of the dimensional codes for Edison screw-capped lamps.

6.2.3 In the bulb designations on the lamp data sheets, the numerals shown indicate the nominal bulb diameter and are not to be used for assessing the dimensions of the lamps.

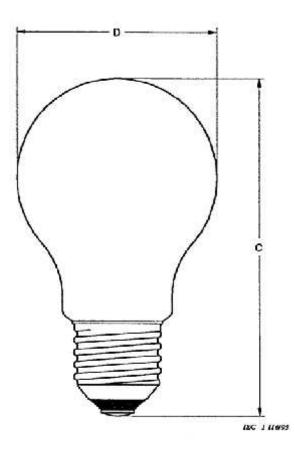


Figure 2 - Lamp with Edison screw cap

Section 7: Annexes

Annex A

(normative)

Test procedure

A.1 Test voltage for measurements

Measurements at the required intervals shall be made at the rated voltage of the lamps under test. Lamps marked with a voltage range shall be measured at a test voltage that is half-way between the range limits.

A.2 Ageing procedure

Before the initial readings are taken, lamps shall be aged at a voltage between rated voltage and 110 % of rated voltage for a period equivalent to 0,04 % to 0,1 % of rated life.

NOTE - In North America, test lamps are aged for a period of up to the equivalent of 1 % of rated life.

A.3 Photometry procedure

Measurements shall be carried out while utilizing a suitable integrating photometer. This applies both for initial readings and lumen maintenance readings. When taking photometric measurements the test voltage shall be adjusted to be within ± 0.2 % of the rated voltage of the lamp.

A.4 Test procedure for lumen maintenance and life

A.4.1 Operating position

Lamps shall be operated in a vertical position, cap up. The lampholder's axis on a test rack shall not deviate from the vertical by more than 5°.

A.4.2 Mechanical stability

Lamps shall operate free from noticeable vibration. No vibration or shock shall be perceptible when touching the lampholders, either during operation or during switching on or off.

A.4.3 Lampholders

A.4.3.1 Lampholders on the life test racks shall be of sturdy construction and shall be designed to ensure adequate electrical contact and to avoid overheating.

A.4.3.2 The voltage drop between the point of voltage measurement and the cap contacts shall not exceed 0,1 % of the test voltage.

A.4.3.3 Bayonet lampholders shall have an earthed metal barrel.

A.4.3.4 Lampholders shall be so designed that the torque necessary to insert or extract a lamp shall not exceed the values specified in IEC 60432-1 for the relevant lamp cap.

A.4.4 Operating temperature

A.4.4.1 The lamp's cap temperature during operation shall not exceed the maximum cap operating temperature as specified in table K.1 of IEC 60432-1.

A.4.4.2 Lamps shall not be operated at excessive ambient temperatures; neither shall there be undue heating of a lamp by other lamps.

A.4.5 Life test voltage

A life test shall be made at rated voltage of the lamps or at a higher value. The test voltage shall be a stable voltage per subclause A.4.7 between 100 % and approximately 110 % of the rated voltage. For certification purposes, the value of the life test voltage is to be selected by mutual agreement.

NOTES

1 In general, testing at voltages in excess of the rated voltage is practised for reasons of economy.

2 In some countries such as Japan, test voltages up to 140 % of rated voltage have been mutually agreed for certification purposes. In such cases the exponent *n* of the formula in subclause A.4.6 may become a different value.

A.4.6 Equivalent life for rated voltage

The equivalent life for rated voltage of an accelerated life test shall be determined in accordance with the following equation:

$$L_{o} = L \left(\frac{U}{U_{o}}\right)^{n}$$

where

 L_0 is the life at rated voltage

L is the life at test voltage

 $U_{\rm O}$ is the rated voltage

U is the test voltage

n = 13 for vacuum lamps and 14 for gas-filled lamps

A.4.7 Supply and voltage control

Lamps shall be operated on alternating current at a frequency of a nominal value of 50 Hz or 60 Hz.

Voltage variations on the test racks shall not exceed 1 % of the test voltage.

NOTES

1 It is normally necessary to provide voltage stabilization equipment, and where one stabilizer serv es several groups of lamps, fine voltage control for each group is usually necessary to compensate for small voltage variations due to changes in load. Voltage checks and the resetting of the voltage as near as pos-sible to the test voltage are desirable on a daily basis but the interval should not exceed 100 h.

2 The response of voltage stabilizers to changes in supply voltage should be such that changes greater than 1 % are corrected within 1 min.

3 For the case of high-voltage short-duration surges, see annex F.

4 Mains resistance and inductance values relate to the resistance and inductance values when looking back from the lamp position into the mains. When these parameters are measured, voltage stabilizers and devices for providing voltage adjustment should be in circuit at approximately their normal settings. If small resistors or inductors have to be added to achieve the specified values, these s hould be in place.

A.4.8 Test cycle

Lamps shall be switched off twice daily for periods of not less than 15 min. Such off periods are not to be considered as part of the operating hours of the lamp.

NOTE - In North America, test lamps are switched off once daily for a period of 30 min.

A.4.9 Test rack circuit characteristics

The test rack circuit is to have the characteristics given in annex F.

A.4.10 Intermediate measurements

Lamps subjected to the life test shall be measured for luminous flux at the rated voltage, at 75 % \pm 2,5 % of rated life or its equivalent if accelerated testing is used.

A.4.11 Termination of test

The life test shall be considered to have terminated at 125 % of rated life, or its equivalent if accelerated testing is used.

Annex B

(normative)

Life calculation and limits

B.1 Truncated average life

B.1.1 The truncated average life or equivalent truncated average life is obtained by the summation of the lives of individual lamps divided by the number of lamps. Those lamps still operating at the termination of the test per annex A, subclause A.4.11 (125 % of rated life) are treated as having lives of 125 % of rated life.

B.1.2 The minimum limit of truncated average life is given in the following table.

LTQ	Minimum, truncated average or equivalent truncated average life in percent of rated life
20 to 24 inclusive	96 %
25 to 249 inclusive	98 %
250 and more	100 %

Annex C

(normative)

Recommended pre-compliance tests for certification purposes

C.1 Scope

This annex recommends a pre-compliance testing scheme for certification purposes to establish confidence between the testing authority and the manufacturer before relying on reference to the manufacturer's own test data for whole production testing.

C.2 Sampling

C.2.1 Sampling shall be subject to an agreement between the manufacturer and the testing authority and shall be representative of a 12-month period of manufacture.

C.2.2 The type with the larger production percentage shall be tested.

C.2.3 For this type the lamps for testing shall be selected so as to be distributed as evenly as possible throughout a period of 12 consecutive months.

C.2.4 Lamps shall be selected at the same time, one lot for measurement by the manufacturer and the other lot for measurement by the testing authority.

C.2.5 For this selected type a quantity of 60 lamps shall be taken for, respectively, the ITQ, RTQ and LTQ.

C.3 Conditions of compliance

The pre-compliance selected type shall be considered as satisfying the requirements of this standard, if the requirements contained in subclauses C.3.1, C.3.2 and C.3.3 are fulfilled. If the pre-compliance selected type fails to satisfy the requirements of any of these clauses, it shall be deemed as not complying with the standard.

C.3.1 Dimensions

The pre-compliance selected type shall be considered to comply if the number of lamps failing clause 3.3 does not exceed five.

C.3.2 Initial readings

The pre-compliance selected type shall be considered to comply if:

a) the number of lamps whose wattage is above the maximum value specified in subclause 3.4.1 does not exceed eight;

b) the number of lamps whose lumen values are below the minimum values specified in subclause 3.4.2.2 or 3.4.2.3 does not exceed eight.

C.3.3 Life and lumen maintenance

The pre-compliance selected type shall be considered to comply if:

a) the truncated average life of the LTQ attains the value set in subclause B.1.2 of annex B;

b) the total number of individual lamps failing the requirements of subclause 3.6.2 together with those failing clause 3.5 does not exceed nine.

C.3.4 Summary of conditions for pre-compliance selected type

A summary of the above conditions are given in the following table.

	Characteristics	Sample size n	Qualifying limit c
ITQ	Dimensional requirements	60	5
RTQ	Wattage	60	8
RIQ	Luminous flux		8
	Average life	60	98 % of rated life
LTQ	Life < 70 % of rated life plus lumen maintenance < minimum value on data sheet	60	9

Table C.1

C.3.5 Pre-compliance comparability test

C.3.5.1 Dimensions

For clause 3.3 take the number of non-conforming lamps, K_1 , recorded in the manufacturer's test results. Use this value of K_1 in table C.2 to determine the allowable number of non-conforming lamps in the testing authority's test results, K_2 . If the actual number of non-conforming lamps in the testing authority's test results exceeds the allowable number, the testing authority's test results shall be deemed to be inconsistent with the manufacturer's test results.

C.3.5.2 Initial readings

Use the same procedure as in subclauses C.3.5.1.

The wattage and the luminous flux shall be appraised separately. Wattage non-conforming lamps are those that do not satisfy subclause 3.4.1. Luminous flux non-conforming lamps are those that do not satisfy subclause 3.4.2.2 or 3.4.2.3.

C.3.5.3 Life

Use the procedures given in subclause C.3.5.1. Non-conforming lamps are those that do not meet the requirements of subclause 3.6.2 for life together with those failing to meet the requirements of clause 3.5 for lumen maintenance.

Number of non-conforming lamps in manufacturer's test results K ₁	Number of non-conforming lamps, in testing authority's test results K ₂		
0	6		
1	8		
2	10		
3	-11		
4	13		
5	14		
6	15		
7	16		
а	17		
9	18		
10	50		

Table C.2 - Allowable number¹) of non-conforming lamps

1) These limits have been chosen so that the probability of consistency between the manufacturer's test results and the testing authority's test results is as near as possible and at least 0,975 when the two sets of lamps have both come from the same population.

In evaluating the selected type, five assessments have to be made. Following the laws of probability, noncomparability may occur even if consistency exists between the manufacturer's data and the esting authority's data. In the complete range of tests on the selected type, allowance should be made for noncomparability on one individual test (for this one individual test, maximum limits are under consideration).

Annex D

(normative)

Statistical compliance tables

Percentage of non-conforming lamps in manufacturer's records ²⁾	Allowable number of non-conforming lamps in market sample ¹⁾
0	1
1	1
2	1
3	2
4	2
5	3
6	3
7	4
8	4
9	4
10	5
11	5
12	5
13	5
14	6
15	6

Table D.1 - Allowable number 1) of non-conforming lampsin the market sample of 20 lamps

1) These limits have been chosen such that the probability of consistency between manufacturer's results and market results is as near as possible to 0,975 when the two sets of lamps have both come from the same population. The actual probabilities lie between 0,940 and 0,991, with 90 % of them lying between 0,96 and 0,99. In evaluating three market samples, 15 test assessments have to be made. Following the laws of probability, non- comparability may occur even if consistency exists between manufacturer's data and market samples. In the complete range of tests on three market samples, allowance should be made for non-comparability on two individual tests.

2) In the case of a fraction resulting from the calculation of p, the next higher whole number shall be taken.

20 - 34 35 - 54 55 - 74 75 - 95 96 - 116 117 - 138	2 3 4
55 – 74 75 – 95 96 – 116 117 – 138	
75 – 95 96 – 116 117 – 138	4
96 – 116 117 – 138	
117 – 138	5
	6
	7
139 – 161	8
162 – 184	9
185 – 208	10
209 – 231	11
232 – 257	12
258 – 281	13
282 – 307	14
308 – 332	15
333 – 357	16
358 – 383	17
384 – 409	18
410 – 436	19
437 – 461	20
462 – 488	21
489 – 515	22
516 – 542	23
543 – 569	24
570 – 596	25
597 – 623	26
624 – 650	27
651 – 677	28
678 – 706	29
707 – 733	30
734 – 761	31
762 – 789	32
790 – 817	33
818 – 845	34
846 – 873	35
874 – 901	36
902 – 929	37
930 – 958	38
959 – 987	39
988 – 1016	40
1017 and above	See formula in annex E

Table D.2 – Dimensional requirements

Number of lamps in records	Qualifying limit	Number of lamps in records	Qualifying limit
30 - 34	4		
35 - 41	5	524 - 535	48
42 - 50	6	536 - 547	49
51 - 60	7	548 - 560	50
61 - 70	8	561 - 573	51
71 - 80	9	574 - 586	52
81 - 90	10	587 - 599	53
91 - 101	11	600 - 611	54
102 - 111	12	612 - 624	55
112 - 122	13	625 - 637	56
123 - 133	14	638 - 649	57
134 - 144	15	650 - 661	58
145 - 154	16	662 - 674	59
155 - 165	17	675 - 687	60
166 - 177	18	688 - 699	61
178 - 188	19	700 - 712	62
189 - 200	20	713 - 725	63
201 - 211	21	726 - 737	64
212 - 223	22	738 - 749	65
224 - 234	23	750 - 762	66
235 - 246	24	763 - 775	67
247 - 258	25	776 - 787	68
259 - 270	26	788 - 799	69
271 - 282	27	800 - 811	70
283 - 293	28	812 - 824	71
294 - 305	29	825 - 837	72
306 - 317	30	838 - 849	73
318 - 329	31	850 - 862	74
330 - 340	32	863 - 874	75
341 - 353	33	875 - 887	76
354 - 365	34	888 - 899	77
366 - 376	35	900 - 912	78
377 - 389	36	913 - 924	79
390 - 401	37	925 - 938	80
402 - 413	38	939 - 951	81
414 - 425	39	952 - 964	82
426 - 437	40	965 - 977	83
438 - 449	41	978 - 990	84
450 - 461	42	991 - 1003	85
462 - 473	43	1004 and above	See formula
474 - 486	44		in annex E
487 - 498	45		
499 - 510	46		
511 - 523	47		

Table D.3 – Initial readings

NOTE – The statistical basis for this table is described in annex E.

lumber of lamps in records	Qualifying limit	Number of lamps in records	Qualifying limit	Number of lamps in records	Qualifying limit
20- 28	4				
29 - 36	5	342 - 352	37	690 - 700	69
37 - 44	6	353 - 363	38	701 - 711	70
45 - 53	7	364 - 373	39	712 - 722	71
54 - 61	8	374 - 384	40	723 - 733	72
62 - 70	9	385 - 394	41	734 - 744	73
71 - 79	10	395 - 405	42	745 - 755	74
80 - 89	11	406 - 415	43	756 - 767	75
90 - 98	12	416 - 426	44	768 - 778	76
99 - 107	13	427 - 437	45	779 - 789	77
108 - 117	14	438 - 447	46	790 - 800	78
118 - 127	15	448 - 458	47	801 - 811	79
128 - 137	16	459 - 469	48	812 - 822	80
138 - 146	17	470 - 480	49	823 - 833	81
147 - 156	18	481 - 491	50	834 - 844	82
157 - 165	19	492 - 502	51	845 - 855	83
166 - 175	20	503 - 513	52	856 - 867	84
176 - 185	21	514 - 523	53	868 - 878	85
186 - 195	22	524 - 535	54	879 - 889	86
196 - 205	23	536 - 547	55	890 - 901	87
206 - 216	24	548 - 557	56	902 - 912	88
217 - 226	25	558 - 567	57	913 - 924	89
227 - 236	26	568 - 578	58	925 - 935	90
237 - 247	27	579 - 589	59	936 - 947	91
248 - 257	28	590 - 601	60	948 - 958	92
258 - 268	29	602 - 612	61	959 - 969	93
269 - 278	30	613 - 623	62	970 - 980	94
279 - 288	31	624 - 633	63	981 - 991	95
289 - 299	32	634 - 644	64	992 - 1002	96
300 - 310	33	645 - 655	65	1003 and above	See
311 - 320	34	656 - 667	66		formula
321 - 331	35	668 - 678	67		in annex E
332 - 341	36	679 - 689	68		

Table D.4 – Life test

Annex E

(normative)

Statistical concepts and basis of this standard

Of the various dimensional and performance characteristics covered by this standard, some may be conveniently checked by gauges on a Go, Not Go basis and some are ascribed a specific numerical value. To provide a uniform approach, the former and latter are classified as non-conformities if either they fail the gauges or they fall below (or above) a specific value. All the results may then be treated on an attribute basis and compliance of each tested parameter assessed by reference to qualifying limits in the various tables.

In selecting the AQL levels and the specified limit for the various parameters, it is possible to call for low AQLs associated with a particular specified limit, or to operate with a higher AQL, and with a specified limit nearer the mean value. If the parameter being assessed forms a distribution which approximates to a Gaussian (or normal) distribution then it is more efficient in quality control procedures to operate in the mode with a tighter limit, but a reasonably high AQL.

Such an approach has been adopted in this standard for many years. One of the reasons for this is that some of the tests are either lengthy or destructive making statistical sampling procedures essential. Thus, if a "non-conformity" is recorded against a particular lamp, it may still be a sound lamp and the probability of it being unsuitable for use is low.

The qualifying limits are such that there is a 0,975 probability of compliance with each condition provided that the bulk from which the sample (or samples) is drawn contains approximately:

- 1) 3 % failing any single dimensional requirement;
- 2) 7 % outside either of the requirements for initial rating;
- 3) 8 % failing the individual life requirements.

NOTE - Because 0,975 probability of compliance applies to each condition separately, it follows that, at the specified level of quality, the overall probability of compliance would be somewhat lower (by how much it is not possible to estimate accurately).

For larger samplings of test data than those given in the relevant tables in annex D, the qualify limit for acceptance shall be obtained from the following formula:

$$QL = \frac{AN}{100} + 1,96 \sqrt{\frac{AN}{100}}$$

where

A is the appropriate percentage

N is the number of lamps in records

QL is the qualifying limit for acceptance

If a fraction results, it shall be rounded to the nearest whole number.

Annex F

(normative)

Test rack circuit characteristics

For 100 V to 250 V lamps, the test rack circuit has the following characteristics:

		100 V to 150 V	200 V to 250 V
Resistance	:	1)	$0,5 \pm 0,1$
Inductance	РН	1)	$500 \pm 100^{(2)} {}^{(3)}$
Individual external lamp fuse min.	А	1)	10 slow-acting
Surge limit	V	600 ⁴⁾	600 ⁴⁾

1) Under consideration.

 Manufacturers undertaking their own testing may use higher levels of inductance provided the total impedance does not exceed 0,7 ±. On a 60 Hz supply, the inductance should be proporti onally lower (values under consideration).

3) The maximum lamp current loading that may be switched on simultaneously is 16 A, for 200 V to 250 V test racks.

4) This information is given to enable surge-limiting means, of the correct rating, to be selected. A 600 V average value is chosen to take into account practical tolerances on such surge-limiting means to ensure that incidental peaks greater then 900 V are suppressed.

Section 8: Lamp data sheets

8.1 List of lamp data sheets and ILCOS codes

As additional information this table shows for each data sheet the ILCOS codes according to IEC/TS 61231 ²⁾.

NOTE 1 The code does not give all the technical characteristics necessary to specify a lamp fully, but it should aid in the correct replacement of lamps concerning their interchangeability and compatibility.

NOTE 2 The code is given here in its standard version (ILCOS D). If needed, the code can be shortened according to subclause 4.3 of IEC/TS 61231.

NOTE 3 Where "*voltage*" is shown here in the code, it is intended that the actual rated lamp voltage or voltage range will be given. In case of a voltage range the two numbers are given separated by a slash.

NOTE 4 Some lamps show the same ILCOS code but are different regarding their luminous flux (normal or high) or regarding their life. According to subclause 4.3 of IEC/TS 61231 this can be indicated by an asterisk (*) and explained in a separate remark.

Sheet No.	Watts	Bulb	Сар	Finish*	Life	Luminous flux**	ILCOS code
	w				h	TIUX***	
60064-IEC-1010	25	A60	E26/24	C, F	2 250	N	IAA/C-25-voltage-E26/24-60 IAA/F-25-voltage-E26/24-60
60064-IEC-1011	25	A60	E26/24	W	2 250	Ν	IAA/W-25-voltage-E26/24-60
60064-IEC-1030	40	A60	E26/24	C, F	1 350	N	IAA/C-40- <i>voltage</i> -E26/24-60 IAA/F-40- <i>voltage</i> -E26/24-60
60064-IEC-1031	40	A60	E26/24	W	1 350	Ν	IAA/W-40-voltage-E26/24-60
60064-IEC-1040	40	A60	E26/24	C, F	900	N	IAA/C-40- <i>voltage</i> -E26/24-60 IAA/F-40- <i>voltage</i> -E26/24-60
60064-IEC-1041	40	A60	E26/24	W	900	Ν	IAA/W-40-voltage-E26/24-60
60064-IEC-1050	60	A60	E26/24	C, F	900	Н	IAA/C-60- <i>voltage</i> -E26/24-60 IAA/F-60- <i>voltage</i> -E26/24-60
60064-IEC-1051	60	A60	E26/24	W	900	н	IAA/W-60-voltage-E26/24-60
60064-IEC-1060	75	A60	E26/24	C, F	675	Н	IAA/C-75- <i>voltage</i> -E26/24-60 IAA/F-75- <i>voltage</i> -E26/24-60
60064-IEC-1061	75	A60	E26/24	W	675	н	IAA/W-75-voltage-E26/24-60
60064-IEC-1070	100	A60	E26/24	C, F	675	Н	IAA/C-100- <i>voltage</i> -E26/24-60 IAA/F-100- <i>voltage</i> -E26/24-60
60064-IEC-1071	100	A60	E26/24	W	675	н	IAA/W-100-voltage-E26/24-60
60064-IEC-1090	150	A67	E26/24	C, F	675	Н	IAA/C-150- <i>voltage</i> -E26/24-67 IAA/F-150- <i>voltage</i> -E26/24-67
60064-IEC-1091	150	A67	E26/24	W	675	н	IAA/W-150-voltage-E26/24-67
60064-IEC-1110	200	A71	E26/24	C, F	675	н	IAA/C-200- <i>voltage</i> -E26/24-71 IAA/F-200- <i>voltage</i> -E26/24-71
60064-IEC-1111	200	A67	E26/24	W	675	н	IAA/W-200-voltage-E26/24-67

²⁾ IEC/TS 61231:1999, International lamp coding system (ILCOS)

- 60 - 60064 amend. 3 " CEI:2005

Sheet No.	Watts	Bulb	Сар	Finish*	Life	Luminous	ILCOS code
	w			_	h	flux**	
60064-IEC-2010	30	A55,PS55	E26/25	C, F	1 000	Н	IAA/C-30-voltage-E26/25-55 IAA/F-30-voltage-E26/25-55
60064-IEC-2011	29	A55,PS55	E26/25	F	1 000	н	IAA/F-29-voltage-E26/25-55
60064-IEC-2012	29	A60,PS60	E26/25	F	1 000	Н	IAA/F-29-voltage-E26/25-60
60064-IEC-2030	40	A55,PS55	E26/25	C, F	1 000	Н	IAA/C-40- <i>voltage</i> -E26/25-55 IAA/F-40- <i>voltage</i> -E26/25-55
60064-IEC-2031	38	A55,PS55	E26/25	F	1 000	Н	IAA/F-38-voltage-E26/25-55
60064-IEC-2032	38	A60,PS60	E26/25	F	1 000	Н	IAA/F-38-voltage-E26/25-60
60064-IEC-2033	36	A55,PS55	E26/25	W	1 000	Н	IAA/W-36-voltage-E26/25-55
60064-IEC-2050	60	A60,PS60	E26/25	C, F	1 000	Н	IAA/C-60- <i>voltage</i> -E26/25-60 IAA/F-60- <i>voltage</i> -E26/25-60
60064-IEC-2051	57	A60,PS60	E26/25	F	1 000	Н	IAA/F-57-voltage-E26/25-60
60064-IEC-2052	54	A55,PS55	E26/25	W	1 000	Н	IAA/W-54-voltage-E26/25-55
60064-IEC-2053	54	A60,PS60	E26/25	W	1 000	Н	IAA/W-54-voltage-E26/25-60
60064-IEC-2070	100	A60,PS60	E26/25	C, F	1 000	Н	IAA/C-100-voltage-E26/25-60 IAA/F-100-voltage-E26/25-60
60064-IEC-2071	95	A60,PS60	E26/25	F	1 000	Н	IAA/F-95-voltage-E26/25-60
60064-IEC-2072	90	A60,PS60	E26/25	W	1 000	Н	IAA/W-90-voltage-E26/25-60
60064-IEC-2090	150	A75,PS75	E26/25	C, F	1 000	Н	IAA/C-150- <i>voltage</i> -E26/25-75 IAA/F-150- <i>voltage</i> -E26/25-75
60064-IEC-2091	150	A75,PS75	E26/25	W	1 000	Н	IAA/W-150-voltage-E26/25-75
60064-IEC-2110	200	A75,PS75	E26/25	C, F	1 000	Н	IAA/C-200-voltage-E26/25-75 IAA/F-200-voltage-E26/25-75
60064-IEC-2111	200	A75,PS75	E26/25	W	1 000	Н	IAA/W-200-voltage-E26/25-75
60064-IEC-4005	15	A50, A55, A60,PS60	B22d/25x26	C, F	1 000	Ν	IAA/C-15-voltage-B22d-50 IAA/F-15-voltage-B22d-50 IAA/C-15-voltage-B22d-55 IAA/F-15-voltage-B22d-55 IAA/C-15-voltage-B22d-60
60064-IEC-4010	25	A50 A55,	B22d/25x26	C, F	1 000	н	IAA/F-15-voltage-B22d-60 IAA/C-25-voltage-B22d-50 IAA/F-25-voltage-B22d-50 IAA/C-25-voltage-B22d-55
		A60,PS60					IAA/F-25- <i>volta</i> ge-B22d-55 IAA/C-25- <i>volta</i> ge-B22d-60 IAA/F-25- <i>voltage</i> -B22d-60
60064-IEC-4015	25	A50 A55, A60,PS60	B22d/25x26	C, F	1 000	Ν	IAA/C-25-voltage-B22d-50 IAA/F-25-voltage-B22d-50 IAA/C-25-voltage-B22d-55 IAA/F-25-voltage-B22d-55 IAA/C-25-voltage-B22d-60 IAA/F-25-voltage-B22d-60
60064-IEC-4030	40	A50 A55, A60,PS60	B22d/25x26	C, F	1 000	Н	IAA/C-40-voltage-B22d-50 IAA/F-40-voltage-B22d-50 IAA/C-40-voltage-B22d-55 IAA/F-40-voltage-B22d-55 IAA/C-40-voltage-B22d-60 IAA/F-40-voltage-B22d-60
60064-IEC-4035	40	A60,PS60	B22d/25x26	C, F	1 000	Ν	IAA/C-40- <i>voltage</i> -B22d-60 IAA/F-40- <i>voltage</i> -B22d-60

Sheet No.	Watts W	Bulb	Сар	Finish*	Life h	Luminous flux**	ILCOS code
60064-IEC-4050	60	A50 A55, A60,PS60	B22d/25x26	C, F	1 000	н	IAA/C-60-voltage-B22d-50 IAA/F-60-voltage-B22d-50 IAA/C-60-voltage-B22d-55 IAA/F-60-voltage-B22d-55 IAA/C-60-voltage-B22d-60 IAA/F-60-voltage-B22d-60
60064-IEC-4055	60	A60,PS60	B22d/25x26	C, F	1 000	N	IAA/C-60- <i>voltage</i> -B22d-60 IAA/F-60- <i>voltage</i> -B22d-60
60064-IEC-4060	75	A50 A55, A60,PS60	B22d/25x26	C, F	1 000	н	IAA/C-75-voltage-B22d-50 IAA/F-75-voltage-B22d-50 IAA/C-75-voltage-B22d-55 IAA/F-75-voltage-B22d-55 IAA/C-75-voltage-B22d-60 IAA/F-75-voltage-B22d-60
60064-IEC-4070	100	A50 A55, A60,PS60	B22d/25x26	C, F	1 000	Н	IAA/C-100-voltage-B22d-50 IAA/F-100-voltage-B22d-50 IAA/C-100-voltage-B22d-55 IAA/F-100-voltage-B22d-55 IAA/C-100-voltage-B22d-60 IAA/F-100-voltage-B22d-60
60064-IEC-4075	100	A60,PS60	B22d/25x26	C, F	1 000	N	IAA/C-100- <i>voltage</i> -B22d-60 IAA/F-100- <i>voltage</i> -B22d-60
60064-IEC-4090	150	A68,PS68	B22d/25x26	C, F	1 000	Н	IAA/C-150- <i>voltage</i> -B22d-68 IAA/F-150- <i>voltage</i> -B22d-68
60064-IEC-4095	150	A80,PS80	B22d/25x26	C, F	1 000	Ν	IAA/C-150- <i>voltage</i> -B22d-80 IAA/F-150- <i>voltage</i> -B22d-80
60064-IEC-4110	200	A80,PS80	B22d/25x26	C, F	1 000	н	IAA/C-200- <i>voltage</i> -B22d-80 IAA/F-200- <i>voltage</i> -B22d-80
60064-IEC-4115	200	A80,PS80	B22d/25x26	C, F	1 000	Ν	IAA/C-200- <i>voltage</i> -B22d-80 IAA/F-200- <i>voltage</i> -B22d-80
60064-IEC-5005	15	A50 A55, A60,PS60	E27/27	C, F	1 000	Ν	IAA/C-15-voltage-E27-50 IAA/F-15-voltage-E27-50 IAA/C-15-voltage-E27-55 IAA/F-15-voltage-E27-55 IAA/C-15-voltage-E27-60 IAA/F-15-voltage-E27-60
60064-IEC-5010	25	A50 A55, A60,PS60	E27/27	C, F	1 000	Н	IAA/C-25-voltage-E27-50 IAA/F-25-voltage-E27-50 IAA/C-25-voltage-E27-55 IAA/F-25-voltage-E27-55 IAA/C-25-voltage-E27-60 IAA/F-25-voltage-E27-60
60064-IEC-5015	25	A55, A60,PS60	E27/27	C, F	1 000	Ν	IAA/C-25-voltage-E27-55 IAA/F-25-voltage-E27-55 IAA/C-25-voltage-E27-60 IAA/F-25-voltage-E27-60
60064-IEC-5030	40	A50 A55, A60,PS60	E27/27	C, F	1 000	н	IAA/C-40-voltage-E27-50 IAA/F-40-voltage-E27-50 IAA/C-40-voltage-E27-55 IAA/F-40-voltage-E27-55 IAA/C-40-voltage-E27-60 IAA/F-40-voltage-E27-60
60064-IEC-5035	40	A60,PS60	E27/27	C, F	1 000	N	IAA/C-40- <i>voltage</i> -E27-60 IAA/F-40- <i>voltage</i> -E27-60
60064-IEC-5050	60	A55, A60,PS60	E27/27	C, F	1 000	н	IAA/C-60-voltage-E27-55 IAA/F-60-voltage-E27-55 IAA/C-60-voltage-E27-60 IAA/F-60-voltage-E27-60
60064-IEC-5055	60	A60,PS60	E27/27	C, F	1 000	Ν	IAA/C-60- <i>voltage</i> -E27-60 IAA/F-60- <i>voltage</i> -E27-60

* C = clear; F = frosted or frosted equivalently coated; W = white

** N = normal luminous flux; H = high luminous flux -62 -

60064 amend. 3 " CEI:2005

Sheet No.	Watts	Bulb	Сар	Finish*	Life	Luminous	ILCOS code
	w				h	flux**	
60064-IEC-5060	75	A50	E27/27	C, F	1 000	Ν	IAA/C-15- <i>voltage</i> -E27-60 IAA/F-15- <i>voltage</i> -E27-60
		A55,					IAA/C-25- <i>voltage</i> -E27-60 IAA/F-25- <i>voltage</i> -E27-60
		A60,PS60					
60064-IEC-5070	100	A50	E27/27	C, F	1 000	н	IAA/C-25- <i>voltage</i> -E27-60 IAA/F-25- <i>voltage</i> -E27-60 IAA/C-40- <i>voltage</i> -E27-60 IAA/F-40- <i>voltage</i> -E27-60
		A55,					
		A60,PS60		C, F		N	IAA/C-40- <i>voltage</i> -E27-60 IAA/F-40- <i>voltage</i> -E27-60
60064-IEC-5075	100	A60,PS60	E27/27		1 000		·
60064-IEC-5090	150	A68,PS68	E27/27	C, F	1 000	н	IAA/C-60- <i>voltage</i> -E27-60 IAA/F-60- <i>voltage</i> -E27-60
60064-IEC-5095	150	A80,PS80	E27/27	C, F	1 000	Ν	IAA/C-60- <i>voltage</i> -E27-60 IAA/F-60- <i>voltage</i> -E27-60
60064-IEC-5110	200	A80,PS80	E27/27	C, F	1 000	н	IAA/C-75-voltage-E27-60
60064-IEC-5115	200	A80,PS80	E27/27	C, F	1 000	Ν	IAA/F-75- <i>voltage</i> -E27-60 IAA/C-100- <i>voltage</i> -E27-60
							IAA/F-100-voltage-E27-60

		E26	ENT LAMP DAT 25 W	2 250 h	
		E20	25 W	2 250 11	
		Dimer millim	nsions in etres		
Bulb designat					
3ulb finish: cl	ear, frosted	or frosted equiva	alently coated		
Cap: E26/24					
Rated wattag Dimensions: a		agation 6			
		e requirements of	of clause 3.3		
		C max.	D max.		
		100.	61.9		
Rated life (h):					
For ref Lumen mainte		e requirements o 74	of clause 3.6		
Condit	ions of claus	e 3.5 apply			
Vinimum rate Condit	d luminous f ions of claus				
		V	Im		
		120	220		
		125	215		
		130	215		
		lesign:			
nformation fo Maxim		cording to IEC	60630 under co	Insideration	
		ccording to IEC	60630: under cc	onsideration	
		ccording to IEC	60630: under cc	onsideration	
		ccording to IEC	60630: under cc	onsideration	
		ccording to IEC	60630: under cc	onsideration	
		ccording to IEC	60630: under cc	onsideration	
		ccording to IEC	60630: under cc	onsideration	
		ccording to IEC	60630: under cc	onsideration	
		ccording to IEC	60630: under co	onsideration	
		ccording to IEC	60630: under co	onsideration	
		ccording to IEC	60630: under co	onsideration	

	NORMAL LUMINOUS FLUX INCANDESCENT LAMP DATA SHEET			
	E26	25 W 2 250 h	White	
I	Dimens	ions in millimetres		
Bulb designati	on: A60			
Bulb finish: wh	ite			
Cap: E26/24				
Rated wattage	(W): 25			
	s defined in section 6 erence in the requireme	nts of clause 3.3		
	C max.	D max.		
	100.	61.9		
Lumen mainter	erence in the requireme	nts of clause 3.6		
	l luminous flux: ons of clause 3.4 apply			
	V	Im Im		
	120	175		
	129	²²⁹		
	130	215 0		
	130	215		
	luminaire design: m outline according to	IEC 60630: under cor	sideration	
			Publ	ication
Texte français au CEI 60064			Dubl	

	E26	40 V	N	1 350 h			
		Dimension	s in millimetres			[
Bulb designa	tion: A60						
	lear, frosted of f	rosted equivalent	lly coated				
Cap: E26/24							
Rated wattag	e (W): 40						
	as defined in se ference in the re	ction 6 quirements of cla	ause 3.3				
		C max.	D ma	ix.			
		112,7	61,9	9			
For re _umen maint		quirements of cla .5 apply	ause 3.6				
For re ₋umen maint Condit Minimum rate	ference in the re enance (%): 85	.5 apply	ause 3.6				
For re Lumen maint Condit Minimum rate	ference in the re enance (%): 85 tions of clause 3 ed luminous flux:	.5 apply	ause 3.6				
For re Lumen maint Condit Minimum rate	ference in the re enance (%): 85 tions of clause 3 ed luminous flux:	.5 apply .4 apply					
For re Lumen maint Condit Minimum rate	ference in the re enance (%): 85 tions of clause 3 ed luminous flux:	.5 apply .4 apply V	Im				
For re Lumen maint Condit Minimum rate	ference in the re enance (%): 85 tions of clause 3 ed luminous flux:	.5 apply .4 apply V 120	Im 440				
For re Lumen maint Condit Minimum rate	ference in the re enance (%): 85 tions of clause 3 ed luminous flux:	.5 apply .4 apply V 120 125	Im 440 435				
For re ∟umen maint Condit Minimum rate Condit	ference in the re enance (%): 85 tions of clause 3 ed luminous flux: tions of clause 3	.5 apply .4 apply V 120 125 130	Im 440 435 430	sideration	1		
For re ∟umen maint Condit Minimum rate Condit	ference in the re enance (%): 85 tions of clause 3 ed luminous flux: tions of clause 3	.5 apply .4 apply V 120 125 130 gn:	Im 440 435 430	sideration	1		
Lumen maint Condit Minimum rate Condit	ference in the re enance (%): 85 tions of clause 3 ed luminous flux: tions of clause 3	.5 apply .4 apply V 120 125 130 gn:	Im 440 435 430	sideration	1		

60064-IEC-1030-1

NORMAL LUMINOUS FLUX INCANDESCENT LAMP DATA SHEET

E 26 40 W 1 350 h White

Dimensions millimeters

Bulb designation: A60

Bulb finish: white

Cap: E26/24

Rated wattage (W): 40

Dimensions: as defined in section 6 For reference in the requirements of clause 3.3

C max.	D max.
112.7	61.9

Rated life (h): 1 350

For reference in the requirements of clause 3.6

Lumen maintenance (%): 84 Conditions of clause 3.5 apply

Minimum rated luminous flux: Conditions of clause 3.4 apply

V	Lm
120	425
125	420
130	415

Information for luminaire design: Maximum outline according to IEC 60630: under consideration

NORMAL LUMINOUS FLUX INCANDESCENT LAMP DATA SHEET

E 26 40 W 900 h

Dimensions millimeters

Bulb designation: A60

Bulb finish: clear, frosted or frosted equivalently coated

Cap: E26/24

Rated wattage (W): 40

Dimensions: as defined in section 6 For reference in the requirements of clause 3.3

C max.	D max.
112.7	61.9

Rated life (h): 900

For reference in the requirements of clause 3.6

Lumen maintenance (%): 85 Conditions of clause 3.5 apply

Minimum rated luminous flux: Conditions of clause 3.4 apply

V	Lm
120	460
125	455
130	450

Information for luminaire design: Maximum outline according to IEC 60630: under consideration

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French text overleaf	60064-IEC-1030-1	IEC Publication 60064	

	NORMAL LUMINOUS FLUX INCANDESCENT LAMP DATA SHEET			60064 ©	IEC:1993	
	E 26	40 W	900 h	White		
		Dimens	sions millimet	ers		
Bulb desi	gnation: A60					
Bulb finis	h: white					
Cap: E26	/24					
Rated wa	ttage (W): 40					
	ns: as defined in sect r reference in the req		clause 3.3			
	C max.	D max.				
	112.7	61.9				
Minimum	nditions of clause 3. rated luminous flux: nditions of clause 3.					
	V	Lm				
	120	805				
	125	795				
	130	790				
	on for luminaire desig Itline according to IE0		r considerati	on		
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		MINOUS FLUX					
	INCANDESCENT	LAMP DATA	SHEET				
E2	6/24	75 W	675 h				
	Dimensio	ns in millimetres	·				
Bulb designation:	A60						
Bulb finish:	clear, froste	d or frosted equ	ivalently coated				
Cap:	E26/24	E26/24					
Rated wattage (W):	75						
Dimensions:	as defined in For referenc		ments of clause 3.3				
	C max.	D max.					
	112,7	61,9					
Lumen maintenance (%):	85	e in the require of clause 3.5 ap	ments of clause 3.6 ply				
Minimum rated luminous flux:	Conditions of	of clause 3.4 ap	ply				
	V	1	_				
	120	1 180	_				
	125	1 160					
	130	1 150					
Information for luminaire desi Maximum outline according to	ign: o IEC 60630: shee	t 60630-IEC-20	10				
Texte français au verso		64-IEC-1060-1		CEI 6006			

		HIGH LUMI	NOUS FLUX	
	INC	ANDESCENT L	AMP DATA SH	IEET
	E26/24	75 W	675 h	White
I		Dimensions i	n millimetres	
ulb designatior	1:	A60		
Bulb finish:		white		
Cap:		E26/24		
Rated wattage (W):	75		
Dimensions:		as defined in s For reference i		nts of clause 3.3
		C max.	D max.	
		112,7	61,9	
Lumen maintenance (%): Minimum rated luminous flux:		85 Conditions of c	n the requirements clause 3.5 apply clause 3.4 apply	
in alou i				
		V	lm	
		V 120 125	lm 1 160 1 140	

		GH LUMINOU ESCENT LAMI	S FLUX P DATA SHEET		
	E2	6 100W	675 h		
		Dimensions m	illimeters		
Bulb de	signation: A60				
Bulb fir	ish: clear, frosted or frosted	d equivalently co	ated		
Cap: E	26/24				
Rated	vattage (W): 100				
	ions: as defined in section For reference in the require		3.3		
		C max.	D max.		
		112.7	61.9		
Minimu	Conditions of clause 3.5 ap m rated luminous flux: Conditions of clause 3.4 ap				
		V	Im		
		120	1.620		
		120 125	1630 1615		
		130	1600		
	ation for luminaire design:		de continue		
viaximum	outline according to IEC 60	oso, under consi	นยาสแบบ		
	Texte français au verso French text overleaf	60064-IEC-1030-	1 IEC Publica	ntion 60064	

	HIGH LUMINOUS FLUX INCANDESCENT LAMP DATA SHEET					
	E26	100W Dimer	675 h	White ers		
Bulb de	signation: A60					
Bulb fin	ish: white					
Cap: E	26/24					
Rated v	vattage (W): 100					
	ions: as defined in sec For reference in the rec		clause 3.3			
		C max.	D m	ax.		
		112.7	61.	9		
Minimu	Conditions of clause 3.4 m rated luminous flux: Conditions of clause 3.4					
	V	Im				
	120	1580				
	125 130	1565 1550				
Informa aximum	tion for luminaire desig outline according to IE0	ın: C 60630: und	er consideratio	on		
	Texte français au verso					
	French text overleaf	60064-IE	C-1030-1	IEC Publication 600	64	

		H LUMINOUS CENT LAMP	S FLUX DATA SHEET		
	E 26	150 W	675 h		
		Dimensions mil	limseters		<u>.</u>
Bulb de	signation: A60				
Bulb fir	ish: clear, frosted or frosted e	equivalently coa	ted		
Cap: E	26/24				
Rated	vattage (W): 150				
	ions: as defined in section 6 For reference in the requirem	ents of clause 3	.3		
	C m	ax.	D max.		
	139	9,7	68,3		
Minimu	maintenance (%): 85 Conditions of clause 3.5 apply m rated luminous flux: Conditions of clause 3.4 apply				
		V	Im		
		120	2 650		
		125	2 625		
		130	2 600		
	tion for luminaire design: outline according to IEC 6063	30: under consid	leration		
	Texte français au verso French text overleaf 60	064-IEC-1030-1	IEC Public	cation 60064	

HIGH LUMINOUS FLUX INCANDESCENT LAMP DATA SHEET E 26 150 W 675 h White **Dimensions millimseters** Bulb designation: A60 Bulb finish: clear, frosted or frosted equivalently coated Cap: E26/24 Rated wattage (W): 150 Dimensions: as defined in section 6 For reference in the requirements of clause 3.3 C max. D max. 112.7 61.9 Rated life (h): 675 For reference in the requirements of clause 3.6 Lumen maintenance (%): 84 Conditions of clause 3.5 apply Minimum rated luminous flux: Conditions of clause 3.4 apply V Im 120 2 5 7 0 125 2 5 4 5 130 2 5 2 0 Information for luminaire design: Maximum outline according to IEC 60630: under consideration Texte français au verso 60064-IEC-1030-1 French text overleaf IEC Publication 60064

	DIG	HIGH LUMINOU		
	INCA	ANDESCENT LAMI	' DATA SHEET	
		E26 200W	675 h	
		Dimensions m	illimeters	
Bulb de	signation: A71			
Bulb fin	ish: clear, frosted or f	rosted equivalently co	ated	
Cap: E2	26/24			
Rated v	vattage (W): 200			
	ions: as defined in se For reference in the re	ection 6 equirements of clause	3.3	
		C max.	D max.	
		160.3	73.0	
Minimu	maintenance (%): 85 Conditions of clause 3 m rated luminous flux Conditions of clause 3	:		
		V	Im	
		120	3 730	
		125 130	3 700 3 660	
Informa Maximum	tion for luminaire des outline according to II	ign: EC 60630: under cons	deration	
	Texte français au verso French text overleaf	60064-IEC-1030-	1 IEC Publication 60064	

	HIGH LUMINOUS FLUX INCANDESCENT LAMP DATA SHEET					
	E26	200W	675 h White			
		Dimensior	s millimeters			
Bulb de	esignation: A71					
Bulb fir	nish: clear, frosted or froste	ed equivalently	/ coated			
Cap: E	26/24					
Rated	wattage (W): 200					
	sions: as defined in section For reference in the requir		ıse 3.3			
		C max.	D max.			
		139.7	68.3			
	Im rated luminous flux: Conditions of clause 3.4 a	pply V	Im			
		20	3 610			
		25 30	3 580 3 540			
	ation for luminaire design: outline according to IEC 6	0630: under c	onsideration			
	Texte français au verso French text overleaf	60064-IEC-10	IEC Publication 6006	4		

	HIGH LUMINOUS FLUX INCANDESCENT LAMP DATA SHEET						
	E26	30 W	1 000 h	ı			
		Dimensions in n	illimetres				
Bulb designa	ation: A55 or PS55						
Bulb finish: f	rosted or clear						
Cap: E26/25							
Rated wattag	ge (W): 30						
	as defined in section eference in the requ		3.3				
		C max.	D max.]			
		104	56	_			
Minimum rat	itions of clause 3.5 ed luminous flux: itions of clause 3.4						
		V	Im				
		100	340				
		110	335				

60064-IEC-2010-1

E2	6	29 W	1 000 h			
	Dimension	ns in millimetres				
Bulb designation:	A55 or PS55					
Bulb finish:		frosted or frosted equivalently coated				
Cap:	E26/25	E26/25				
Rated wattage (W):	29					
Dimensions:	as defined in For reference	section 6 in the requiremen	ts of clause			
Γ	C max.	D max.				
	104	61				
Lumen maintenance (%): Minimum rated luminous fle	85 Conditions of	in the requiremen clause 3.5 apply clause 3.4 apply				
[V	Im				
-	100 110	325 320				
Information for luminaire de Maximum outline according	esign: g to IEC 60630: shee	t 60630-IEC-3010				

	HIGH LUMINOUS FLUX INCANDESCENT LAMP DATA SHEET				
	E26	29 W	1 000 h		
		Dimensions in mil	imetres		
3ulb designatio	n: A55 or PS55				
3ulb finish: fros	ted or frosted equ	ivalently coated			
Cap: E26/25					
Rated wattage (W): 29				
	defined in section ence in the require		.3		
	С	max.	D max.		
	1	104	61		
umen mainten Conditior		νια			
Conditior Ainimum rated I	ns of clause 3.5 ap				
Conditior Ainimum rated I	ns of clause 3.5 ap luminous flux:		Im		

60064-IEC-2010-1

		HIGH LUMINOUS FLUX INCANDESCENT LAMP DATA SHEET				
		E26	38 W		1 000 h	
			Dimensions in	millimetres		
ulb designa	tion: A60 c	or PS60				
ulb finish: fi	rosted or fr	osted equi	valently coat	ed		
Cap: E26/25						
Rated wattag	je (W): 38					
Dimensions: For re) nents of claus	e 3.3		
		C n	nax.	D ma	ax.	
		1	14	61		
Minimum rate	ed luminous	use 3.5 app s flux: use 3.4 app				
			v		m	
			00 10		85 75	
Information f Maxin			to IEC 60630:	under cons	sideration	

60064-IEC-2010-1

	INC							
	E26	60 W	1 000 h					
		Dimensions i	n millimetres					
Bulb designation: A60 or PS60								
Bulb finish: frosted or clear								
Cap: E26/25								
Rated wattag	Rated wattage (W): 60							
	as defined in sec ference in the rec	ction 6 quirements of clau	se 3.3					
		C max.	D max.]				
		114	61					
Rated life (h): For re Lumen maint Condit	For clear lamps, light centre length (see subclause 1.5.9) requirements are: 78 mm ± 5 mm Rated life (h): 1 000 For reference in the requirements of clause 3.6 Lumen maintenance (%): 85 Conditions of clause 3.5 apply Minimum rated luminous flux:							
Condit	tions of clause 3.	4 apply						
		V	lm					
		100	850					
		110	840					
Information for luminaire design: Maximum outline according to IEC 60630: under consideration								

60064-IEC-2050-1

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		INOUS FLUX LAMP DATA SHEET		
E	26 5	7 W 1	000 h	
	Dimensions	in millimetres		
Bulb designation:	A60 or PS60			
Bulb finish:	frosted or froste	ed equivalently coated		
Cap:	E26/25			
Rated wattage (W):	57			
Dimensions:	as defined in se For reference ir	ection 6 n the requirements of o	clause 3.3	
	C max.	D max.		
	114	61		
Rated life (h):	1 000 For reference ir	n the requirements of a	clause 3.6	
Lumen maintenance (%):	85 Conditions of cl	ause 3.5 apply		
Minimum rated luminous	flux: Conditions of cl	ause 3.4 apply		
	V	Im		
	100 110	810 800		

Information for luminaire design: Maximum outline according to IEC 60630: sheet 60630-IEC-3020

			LUMINOUS F			
		E26	100 W	1 000 h		
		Dir	mensions in millin	netres		<u> </u>
Bulb designa	tion: A60 o	r PS60				
Bulb finish: fr	osted or cl	ear				
Cap: E26/25						
Rated wattag	e (W): 100					
Dimensions: For re		in section 6 he requirement	s of clause 3.3	3		
		C max.		D max.]	
		114		61		
Lumen maint Condit Minimum rate	enance (%) ions of cla ed luminous	use 3.5 apply				
		V		Im		
		100 110		1600 1580		
Information fo Maxim			C 60630: und	er consideration		

60064-IEC-2070-1

	HIGH LUMI INCANDESCENT I	INOUS FLUX LAMP DATA SH	EET
E26	9	5 W	1 000 h
	Dimensions	in millimetres	
Bulb designation:	A60 or PS60		
Bulb finish:	frosted or froste	ed equivalently c	oated
Cap:	E26/25		
Rated wattage (W):	95		
Dimensions:	as defined in se For reference ir	ection 6 n the requiremer	ts of clause 3.3
	C max.	D max.	
	114	61	
Rated life (h):	1 000 For reference ir	n the requiremer	ts of clause 3.6
Lumen maintenance (%):	85 Conditions of cl	ause 3.5 apply	
Minimum rated luminous flux:	Conditions of cl	ause 3.4 apply	
	V	Im	
	100 110	1 520 1 500	

Information for luminaire design: Maximum outline according to IEC 60630: sheet 60630-IEC-3020

Bulb finish: fr	E2 tion: A75 or PS	Dimensions	N 1 000) h	
Bulb finish: fr			in millimetres		
Bulb finish: fr		375			
	osted or clear				
Cap: E26/25					
Rated wattag	e (W): 150				
	as defined in s ference in the	ection 6 requirements of cla	use 3.3		
		C max.	D max.		
		160	76		
Lumen maint Condit Minimum rate		3.5 apply x:	use 3.6		
	_	V	Im	_	
		100	2 450		
	or luminaire de num outline acc		2 420	ion	

	HIGH LUMI INCANDESCENT L	NOUS FLUX	r
E26	150 W	1 000 h	White
	Dimensions	in millimetres	
Bulb designation: A7	5 or PS75		
Bulb finish: white			
Cap: E26/25			
Rated wattage (W): 1	50		
Dimensions: as define For reference	ed in section 6 n the requirements of cla	use 3.3	
	C max.	D max.	
	160	76	
/inimum rated luming Conditions of a	ous flux: clause 3.4 apply v	Im	
	100	2 330	
	110	2 330	
nformation for lumina Maximum outli	aire design: ne according to IEC 6063	0: under considera	tion

		HIGH LUMI	NOUS FLUX AMP DATA SHEET	
		E26 200 W	/ 1 000 h	
		Dimensions	in millimetres	1
Bulb designa	tion: A75 o	r PS75		
Bulb finish: fr	osted or c	lear		
Cap: E26/25				
Rated wattag	e (W): 200			
Dimensions: For re		in section 6 the requirements of cla	use 3.3	
		C max.	D max.	
		160	76	
Lumen maint Condit Minimum rate	ference in t enance (%) tions of clated ad luminous	use 3.5 apply	use 3.6	
		V	Im	
		100 110	3450 3410	
Information fo Maxim		e design: according to IEC 6063	0: under consideration	
Texte français au French text overl		60064-IEC	-2091-1	Publication CEI 60064 IEC Publication 60064

	E26	200 W	1 000 h	White	
		Dimensions	in millimetres		
Bulb designa	tion: A75 or P	S75			
Bulb finish: w	/hite				
Cap: E26/25					
Rated wattag	e (W): 200				
Dimensions:	as defined in s	section 6			
For re	ference in the	requirements of cla			
		C max.	D max.		
		160	76		
For re ₋umen maint Condi	ference in the enance (%): 8 tions of clause	e 3.5 apply	use 3.6		
For re Lumen maint Condir Minimum rate	ference in the enance (%): 8	5 9 3.5 apply JX:	use 3.6		
For re ∟umen maint Condir Minimum rate	ference in the enance (%): 8 tions of clause ed luminous flu	5 9 3.5 apply JX:	use 3.6		
For re ∟umen maint Condir Minimum rate	ference in the enance (%): 8 tions of clause ed luminous flu	5 9 3.5 apply ux: 9 3.4 apply	Ι		
Lumen maint Condi Minimum rate	ference in the enance (%): 8 tions of clause ed luminous flu	5 9 3.5 apply ux: 9 3.4 apply V	lm		
For re Lumen maint Condi Minimum rate	ference in the enance (%): 8 tions of clause ed luminous flu	5 9 3.5 apply ux: 9 3.4 apply V 100	lm 3 280		
For re ∟umen maint Condit Minimum rate Condit	ference in the enance (%): 8 tions of clause ed luminous flu tions of clause	5 9 3.5 apply ux: 9 3.4 apply V 100 110 110	lm 3 280 3 240		
For re ∟umen maint Condit Minimum rate Condit	ference in the enance (%): 8 tions of clause ed luminous flu tions of clause	5 9 3.5 apply Jx: 9 3.4 apply V 100 110	lm 3 280 3 240	tion	
For re ∟umen maint Condit Minimum rate Condit	ference in the enance (%): 8 tions of clause ed luminous flu tions of clause	5 9 3.5 apply ux: 9 3.4 apply V 100 110 110	lm 3 280 3 240	tion	
For re ∟umen maint Condir Minimum rate Condir	ference in the enance (%): 8 tions of clause ed luminous flu tions of clause	5 9 3.5 apply ux: 9 3.4 apply V 100 110 110	lm 3 280 3 240	tion	
For re Lumen maint Condit Minimum rate Condit	ference in the enance (%): 8 tions of clause ed luminous flu tions of clause	5 9 3.5 apply ux: 9 3.4 apply V 100 110 110	lm 3 280 3 240	tion	

INC	ANDESCENT L	AMP DATA S	SHEET	
B22		w	1 000 h	
	Dimensions i	n millimetres		
Bulb designation:	A 50, A55 or A6	60 or PS60		
Bulb finish:	clear, frosted o	r frosted equiv	valently coated	
Cap:	B22/25x26			
Rated wattage (W):	15			
Dimensions:	as defined in s For reference i		nents of clause 3	3.3
	C max.	D max.		
	108,5	62		
Rated life (h):	1 000 For reference i	n the requiren	nents of clause 3	3.6
Lumen maintenance (%):	72 (100 V – 12 74 (200 V – 25 Conditions of c	0 V)	ly	
Minimum rated luminous flux:	Conditions of c	lause 3.4 appl	у	
	V	lm		
	220	110		
nformation for luminaire design: Maximum outline according to IE		0630-IEC-101	0	

		INCANDESCENT	LAMP DATA S	SHEET	
	B2		5 W	<u>1 000 h</u>	
			s in millimetres		
ulb designatio	n:	A 50, A55 or A	A60 or PS60		
ulb finish:		clear, frosted	or frosted equiv	valently coated	
ap:		B22/25x26			
ated wattage (W):	25			
limensions:		as defined in For reference		nents of clause 3	.3
		C max.	D max.		
		108,5	62		
umen maintena	ance (%):	72 (100 V – 1 74 (200 V – 2 Conditions of		ly	
linimum rated	uminous flux:	Conditions of	clause 3.4 appl	ly	
				(T	
V	Im	V	Im	V	Im
100 110	260 255	200 220	225 220	230 240	220 215
120	255	225	220	250	215
nformation for I	uminaire desi e according to	gn: o IEC 60630: sheet	60630-IEC-101	0	

		NORMAL L	UMINOUS FL	_UX	
	IN	CANDESCEN	LAMP DAT	A SHEET	
	B22		25 W	1 000 h	
I		Dimensic	ons in millimetres		1
Bulb designation	::	A50, A55 or	A60 or PS60		
Bulb finish:		clear, froste	d or frosted ec	quivalently coate	ed
Cap:		B22/25x26			
Rated wattage (\	W):	25			
Dimensions:		as defined i For referenc		ements of claus	e 3.3
		C max.	D max.		
		108,5	62		
Rated life (h): Lumen maintena Minimum rated le		72 (100 V – 74 (200 V – Conditions (120 V) or		e 3.6
	Im	V	lm	V	lm
V		200	225	230	220
V 100	230	200			
		200	220	240	215

	INC	ANDESCENT L	AMP DATA S	HEET		
	B22	4() W	1 000 h		
		Dimensions	in millimetres			
Bulb designatio	n:	A50, A55 or A6	30 or PS60			
Bulb finish:		clear, frosted	or frosted equiv	alently coated		
Cap:		B22/25x26				
Rated wattage	(W):	40				
Dimensions:		as defined in s For reference		ents of clause 3	.3	
		C max.	D max.			
		108,5	62			
Rated life (h): .umen mainten	ance (%):	85	in the requirem clause 3.5 apply	ents of clause 3 y	.6	
/linimum rated	luminous flux:		clause 3.4 apply			
V	Im	V	Im	V	Im	7
100	510	200	420	230	415	1
110	500	220	415	240	410	
120	495	225	415	250	410	
	luminaire design: ne according to IE0	C 60630: sheet 6	30630-IEC-1010)		

			IORMAL LUMIN			
		B22	40 W	1 000 h	1	
			Dimensions in	millimetres		
Bulb	o designation: A	A60 or PS60				
Bulb	o finish: frosted	l or clear,				
Сар	: B22d/25 × 26					
Rate	ed wattage (W)	: 40				
Dim		fined in section	ements of clause	e 3.3		
			C max.	D max.		
			108.5	62		
	ien maintenand Conditions d imum rated lum	e (%): 85 of clause 3.5 a _l iinous flux:		3.6		
	ien maintenand Conditions d imum rated lum	e (%): 85 of clause 3.5 a	pply	9 3.6 Im	V	Im
	en maintenanc Conditions o imum rated lum Conditions o	e (%): 85 of clause 3.5 a ninous flux: of clause 3.4 a lm 450	pply	Im	V 230	345
	ien maintenanc Conditions o imum rated lum Conditions o V	e (%): 85 of clause 3.5 a ninous flux: of clause 3.4 a Im	pply pply V	lm		
Mini	rmation for lum	e (%): 85 of clause 3.5 a ninous flux: of clause 3.4 a <u>Im</u> 450 445 435	pply pply V 200	Im 360 350 350	230 240	345 340

	INCAN				
	B22	60 W	1 000 h		
		Dimensions ir	n millimetres		
Bulb designa	ation: A50, A55, A60	or PS60			
Bulb finish: d	clear, frosted or froste	ed equivalently	coated		
Cap: B22/25	×26				
Rated wattag	ge (W): 60				
	as defined in sectior eference in the requir		se 3.3		
		C max.	D max.		
		110	62		
Lumen main): 1 000 eference in the requir tenance (%): 85 itions of clause 3.5 a		se 3.6		
	ed luminous flux: itions of clause 3.4 a	pply			
V	Im	V	Im	V	Im
100	850	200	725	230	710
	840	220	715	240	700
110		225			100

Information for luminaire design: Maximum outline according to IEC 60630: under consideration

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60064-IEC-2111-1

Publication CEI 60064 IEC Publication 60064

			NORMAL LUMI DESCENT LAN	NOUS FLUX IP DATA SHEET		
		B22	60 W	1 000 h		
			Dimensions in	millimetres		
Bulb designa	ation: A60	or PS60				
Bulb finish: f	forested or	r cleared				
Cap: B22d/2	25 × 26					
Rated wattag	ge (W): 60					
Dimensions:			6 ements of claus	033		
TOTIE			C max.	D max.		
			108.5	62		
		L			I	
For re umen main Cond ⁄linimum rat	tenance (% itions of cla ed luminou	6): 85 ause 3.5 ap is flux:		e 3.6		
For re umen main Cond ⁄linimum rat	eference in tenance (% itions of cla red luminou itions of cla	6): 85 ause 3.5 ap us flux: ause 3.4 ap	oply		V	Im
For re umen main Cond /linimum rat Cond	eference in tenance (% itions of cla ed luminou itions of cla	6): 85 ause 3.5 ap is flux:	oply	e 3.6	V 230	Im 620
For re umen main Cond /linimum rat Cond	eference in tenance (% itions of cla red luminou itions of cla	6): 85 ause 3.5 ap is flux: ause 3.4 ap Im	oply oply V	Im		
For re umen main Cond Minimum rat Cond	eference in tenance (% itions of cla ed luminou itions of cla	6): 85 ause 3.5 ap us flux: ause 3.4 ap Im 780	oply oply V 200	lm 650	230	620
For re Lumen main Cond Minimum rat Cond V 100 110 120	eference in tenance (% itions of cla red luminou itions of cla o o o	6): 85 ause 3.5 ap as flux: ause 3.4 ap 1m 780 770 760	oply V 200 220 225	lm 650 630	230 240 250	620 610

For reference in the requirements of clause 3.3 C max. D max. 108.5 62 Rated life (h): 1 000 For reference in the requirements of clause 3.6 Lumen maintenance (%): 85 Conditions of clause 3.5 apply Minimum rated luminous flux: Conditions of clause 3.4 apply			NORMA		FLUX	
Dimensions in millimetres Bulb designation: A60 or PS60 Bulb finish: frosted or clear Cap: B22d/25x26 Rated wattage (W): 60 Dimensions: as defined in section 6 For reference in the requirements of clause 3.3 C max. D max. 108.5 62 Rated life (h): 1 000 For reference in the requirements of clause 3.6 Lumen maintenance (%): 85 Conditions of clause 3.5 apply Winimum rated luminous flux: Conditions of clause 3.4 apply			INCANDESCE	NT LAMP DAT	A SHEET	
Bulb designation: A60 or PS60 Bulb finish: frosted or clear Cap: B22d/25x26 Rated wattage (W): 60 Dimensions: as defined in section 6 For reference in the requirements of clause 3.3 			B22	75 W	1 000 h	
Bulb finish: frosted or clear Bulb finish: frosted or clear Cap: B22d/25x26 Rated wattage (W): 60 Dimensions: as defined in section 6 For reference in the requirements of clause 3.3 Imax. Imax. Imax. 108.5 Imax. 62 Rated life (h): 1 000 For reference in the requirements of clause 3.6 Lumen maintenance (%): 85 Conditions of clause 3.5 apply Minimum rated luminous flux: Conditions of clause 3.4 apply			Dimens	sions in millimetres		
Cap: B22d/25x26 Rated wattage (W): 60 Dimensions: as defined in section 6 For reference in the requirements of clause 3.3	3ulb designatio	on:	A60 or PS	60		
Rated wattage (W): 60 Dimensions: as defined in section 6 For reference in the requirements of clause 3.3	3ulb finish:		frosted or	clear		
Dimensions: as defined in section 6 For reference in the requirements of clause 3.3	Cap:		B22d/25x2	26		
For reference in the requirements of clause 3.3 C max. D max. 108.5 62 Rated life (h): 1 000 For reference in the requirements of clause 3.6 Lumen maintenance (%): 85 Conditions of clause 3.5 apply Minimum rated luminous flux: Conditions of clause 3.4 apply	Rated wattage	(W):	60			
108.5 62 Rated life (h): 1 000 For reference in the requirements of clause 3.6 Lumen maintenance (%): 85 Conditions of clause 3.5 apply Minimum rated luminous flux: Conditions of clause 3.4 apply	Dimensions:				ements of claus	e 3.3
Rated life (h): 1 000 For reference in the requirements of clause 3.6 Lumen maintenance (%): 85 Conditions of clause 3.5 apply Minimum rated luminous flux: Conditions of clause 3.4 apply			C max.	D max.		
For reference in the requirements of clause 3.6 Lumen maintenance (%): 85 Conditions of clause 3.5 apply Minimum rated luminous flux: Conditions of clause 3.4 apply			108.5	62		
		ance (%):	85			se 3.6
	dinimum rated	luminous flu	ux: Conditions	of clause 3.4 a	pply	
		Im	V	lm 650	V	lm 620
	V	780	200	030		
110 770 220 630 240 610 120 760 225 630 250 600	100	780 770		(20)	040	

			HIGH LUMIN	OUS FLUX		
		INC	ANDESCENT LA	MP DATA S	HEET	
		B22	75	w	1 000 h	
			Dimensions ir	millimetres		
Bulb designati	on:		A50, A55, A60 c	or PS60		
Bulb finish:			clear, frosted or	frosted equiva	alently coated	l
Cap:			B22/25x26			
Rated wattage	(W):		75			
Dimensions:			as defined in se For reference ir		ents of clause	3.3
			C max.	D max.		
			108,5	62		
Lumen mainter Minimum ratec			85 Conditions of cl Conditions of cl			
	V	Im	V	lm	V	Im
	100	1110	200	960	230	935
1	110	1100	220	940	240	925
			225	940		920

		HIGH LU	MINOUS FLUX		
	INC		LAMP DATA	SHEET	
	B22		100 W	1 000 h	
		Dimensic	ns in millimetres		I
Bulb designatio	n:	A50, A55, A	60 or PS60		
Bulb finish:		clear, froste	d or frosted equ	ivalently coate	d
Cap:		B22/25x26			
Rated wattage	(W):	100			
Dimensions:		as defined i For referend	n section 6 ce in the require	ments of claus	e 3.3
		C max.	D max.		
		108,5	62		
Lumen mainten	ance (%):	85	ce in the requirent of clause 3.5 app		e 3.6
Minimum rated	luminous flux:	Conditions of	of clause 3.4 app	bly	
	Im	V	Im	V	Im
V	1	200	1 370	230	1 340
V 100	1 600	200			
	1 600 1 580	220	1 350	240	1 330

Bulb designa Bulb finish: fo Cap: B22d/25	B22 tion: A60 or PS60	100 W Dimensions in	1 000 h	I	
Bulb finish: fo		Dimensions in			
Bulb finish: fo			millimetres		
Jan. Boog/or	prested or clear				
Jap. DZZU/20	5 x 26				
Rated wattag	e (W): 100				
Dimensions:	as defined in sectio	n 6			
For ref	ference in the requi	rements of clause	ə 3.3		
		C max.	D max.		
		108.5	62		
	ed luminous flux: tions of clause 3.4 a	apply			
V	Im	V	Im	V	lm
100	1440	200	1270	230	1240
110 120	1420	220 225	1250	240 250	1230
120	1400	220	1250	200	1220

		150		4 000 1	
	B22	150	W	1 000 h	
		Dimensions	s in millimetres		
lb designa	ition: A68 or PS6	8			
lb finish: f	rosted or clear				
ıp: B22d/2	5 x 26				
-	ge (W): 150				
	je (w). 100				
	as defined in sec ference in the rea		use 3 3		
10110		function of the			
		C max.	D max.		
ited life (h	1: 1 000	128,5	70		
For re men main	ference in the reaternance (%): 85	128,5 quirements of cla	70		
For re men main Condi	ference in the rec enance (%): 85 tions of clause 3.	128,5 quirements of cla	70		
For re men main Condi nimum rat	ference in the rec enance (%): 85 tions of clause 3. ed luminous flux:	128,5 quirements of cla 5 apply	70		
For re men main Condi nimum rat Condi	ference in the reasonance (%): 85 tions of clause 3. ed luminous flux: tions of clause 3.	128,5 quirements of cla 5 apply 4 apply	70 Iuse 3.6		Im
For re men main Condi nimum rat	ference in the rec enance (%): 85 tions of clause 3. ed luminous flux:	128,5 quirements of cla 5 apply	70	V 230	Im 2160
For re men main Cond nimum rat Cond	eference in the real tenance (%): 85 tions of clause 3. ed luminous flux: tions of clause 3.	128,5 quirements of cla 5 apply 4 apply V	70 Iuse 3.6		

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60064-IEC-4095-1

		B22	150 \	V	1 000 h	
			Dimensions	in millimetres		
Bulb d	lesignation: A	A80 or PS80				
Bulb fi	inish: frosted	or clear				
Cap: E	322d/25 x 26					
Rated	wattage (W)	: 150				
Dimen		fined in section ce in the require		use 3.3		
			C max.	D max.		
			165	82		
	n maintenand	ce in the requirece (%): 85		use 3.6		
Lumer	For reference n maintenance Conditions of um rated lum	ce in the requir ce (%): 85 of clause 3.5 aj ninous flux:	pply	use 3.6		
Lumer	For reference n maintenance Conditions of um rated lum	ce in the requir ce (%): 85 of clause 3.5 aj	pply	use 3.6	V	Im
Lumer	For reference n maintenance Conditions of um rated lum Conditions of	ce in the requir ce (%): 85 of clause 3.5 a ninous flux: of clause 3.4 a	pply pply		V 230	lm 2 070
Lumer	For reference on maintenance Conditions of um rated lum Conditions of V	ce in the require ce (%): 85 of clause 3.5 a ninous flux: of clause 3.4 a Im	pply pply V	Im		
Lumer	For reference on maintenance Conditions of um rated lum Conditions of V 100	ce in the require ce (%): 85 of clause 3.5 a ninous flux: of clause 3.4 a Im 2 380	pply pply V 200	lm 2 120	230	2 070
Lumer	For reference on maintenance Conditions of um rated lum Conditions of V 100 110	ce in the require ce (%): 85 of clause 3.5 a ninous flux: of clause 3.4 a Im 2 380 2 360	pply pply V 200 220	Im 2 120 2 090	230 240	2 070 2 060
Lumer Minim	For reference on maintenance Conditions of um rated lum Conditions of V 100 110 120 nation for lum	ce in the require ce (%): 85 of clause 3.5 a ninous flux: of clause 3.4 a Im 2 380 2 360 2 320 ninaire design:	pply pply 200 220 225	Im 2 120 2 090 2 090	230 240 250	2 070 2 060
Lumer Minim	For reference on maintenance Conditions of um rated lum Conditions of V 100 110 120 nation for lum	ce in the require ce (%): 85 of clause 3.5 a ninous flux: of clause 3.4 a m 2 380 2 360 2 320	pply pply 200 220 225	Im 2 120 2 090 2 090	230 240 250	2 070 2 060
Lumer Minim	For reference on maintenance Conditions of um rated lum Conditions of V 100 110 120 nation for lum	ce in the require ce (%): 85 of clause 3.5 a ninous flux: of clause 3.4 a Im 2 380 2 360 2 320 ninaire design:	pply pply 200 220 225	Im 2 120 2 090 2 090	230 240 250	2 070 2 060

Dimensions in millimetres Bulb designation: A80 or PS80 Bulb finish: frosted or clear Cap: B22d/25 x 26 Rated wattage (W): 200 Dimensions: as defined in section 6 For reference in the requirements of clause 3.3 $\frac{C \max}{165}$ Bulb finish: frosted or clear Rated life (h): 1 000 For reference in the requirements of clause 3.6 Rumen maintenance (%): 85 Conditions of clause 3.5 apply Minimum rated luminous flux: Conditions of clause 3.4 apply $V \ M \ V \ M \ V \ M \ V \ M \ V \ M \ V \ V$		В	22 20	0 W	1 000 h	
Bulb designation: A80 or PS80 Bulb finish: frosted or clear Cap: B22d/25 x 26 Rated wattage (W): 200 Dimensions: as defined in section 6 For reference in the requirements of clause 3.3 $\frac{C \text{ max} D \text{ max}}{165 \qquad 82}$ Rated life (h): 1 000 For reference in the requirements of clause 3.6 Rumen maintenance (%): 85 Conditions of clause 3.5 apply Minimum rated luminous flux: Conditions of clause 3.4 apply V M V M V M M M M M				-		
Bulb finish: frosted or clear Cap: B22d/25 x 26 Rated wattage (W): 200 Dimensions: as defined in section 6 For reference in the requirements of clause 3.3 Imax D max 165 82 Rated life (h): 1 000 For reference in the requirements of clause 3.6 Conditions of clause 3.5 apply Attact liminum rated luminous flux: Conditions of clause 3.4 apply Imax V Imax 100 3 440 200 3 190 230 3 040 110 3 390 220 3 090 240 2 990 120 3 390 225 3 090 250 2 950			Dimensio	ons in millimetres		
Cap: B22d/25 x 26 Rated wattage (W): 200 Dimensions: as defined in section 6 For reference in the requirements of clause 3.3	Bulb design	ation: A80 or F	PS80			
Rated wattage (W): 200 Dimensions: as defined in section 6 For reference in the requirements of clause 3.3	Bulb finish:	frosted or clea	r			
Dimensions: as defined in section 6 For reference in the requirements of clause 3.3	Cap: B22d/2	25 x 26				
V Im V Im V Im V Im V Im V Im 100 3 440 200 3 190 230 3 040 100 3 440 200 3 190 230 3 040 100 3 440 200 3 190 230 3 040 100 3 440 200 3 190 230 3 040 110 3 390 220 3 090 240 2 990 120 3 390 225 3 090 250 2 950	Rated watta	ge (W): 200				
C max. D max. 165 82 Rated life (h): 1 000 For reference in the requirements of clause 3.6 cumen maintenance (%): 85 Conditions of clause 3.5 apply Minimum rated luminous flux: Conditions of clause 3.4 apply V Im V Im 100 3 440 200 3 190 230 3 040 110 3 390 220 3 090 240 2 990 120 3 390 225 3 090 250 2 950	Dimensions	: as defined in	section 6			
165 82 Rated life (h): 1 000 For reference in the requirements of clause 3.6 cumen maintenance (%): 85 Conditions of clause 3.5 apply Animum rated luminous flux: Conditions of clause 3.4 apply	For r	eference in the	e requirements of a	clause 3.3	1	
Rated life (h): 1 000 For reference in the requirements of clause 3.6 Lumen maintenance (%): 85 Conditions of clause 3.5 apply Minimum rated luminous flux: Conditions of clause 3.4 apply $\frac{V Im V Im V Im}{100 3 \ 440 200 3 \ 190 230 3 \ 040 \\ 110 3 \ 390 220 3 \ 090 240 2 \ 990 \\ 120 3 \ 390 225 3 \ 090 250 2 \ 950 \\ \hline \end{tabular}$			C max.	D ma	x.	
For reference in the requirements of clause 3.6 .umen maintenance (%): 85 Conditions of clause 3.5 apply Minimum rated luminous flux: Conditions of clause 3.4 apply $\boxed{V \text{Im} V \text{Im} V \text{Im}}$ $100 3 \ 440 200 3 \ 190 230 3 \ 040$ $110 3 \ 390 220 3 \ 090 240 2 \ 990$ $120 3 \ 390 225 3 \ 090 250 2 \ 950$			165	82		
100 3 440 200 3 190 230 3 040 110 3 390 220 3 090 240 2 990 120 3 390 225 3 090 250 2 950	For r umen mair Conc	eference in the ntenance (%): (litions of claus	35 e 3.5 apply	clause 3.6		
110 3 390 220 3 090 240 2 990 120 3 390 225 3 090 250 2 950	For r umen mair Conc Minimum ra Conc	eference in the itenance (%): t litions of claus ted luminous fl litions of claus	35 e 3.5 apply ux: e 3.4 apply			
120 3 390 225 3 090 250 2 950 Information for luminaire design:	For r umen mair Conc Minimum ra Conc	eference in the itenance (%): t litions of claus ted luminous fl litions of claus	35 e 3.5 apply ux: e 3.4 apply		V	Im
nformation for luminaire design:	For r umen mair Conc Minimum ra Conc	eference in the itenance (%): 8 litions of claus ted luminous fl litions of claus	85 e 3.5 apply lux: e 3.4 apply n V	Im		
	For r umen mair Conc Minimum ra Conc	eference in the litenance (%): 8 litions of claus ted luminous fl litions of claus V Ir 100 3 4	35 e 3.5 apply lux: e 3.4 apply n V 140 200	Im 3 190	230	3 040
	For r .umen mair Conc /inimum ra Conc	eference in the litenance (%): 8 litions of claus ted luminous fl litions of claus V Ir 100 3 2	35 e 3.5 apply lux: e 3.4 apply n V 140 200 390 220	Im 3 190 3 090	230 240	3 040 2 990
	For r	for luminaire d	35 e 3.5 apply lux: e 3.4 apply n V 140 200 390 220 390 225	Im 3 190 3 090 3 090	230 240 250	3 040 2 990
	For r .umen mair Conc Ainimum ra Conc	for luminaire d	85 e 3.5 apply lux: e 3.4 apply n V 440 200 890 220 890 225	Im 3 190 3 090 3 090	230 240 250	3 040 2 990
	For r .umen mair Conc Ainimum ra Conc	for luminaire d	85 e 3.5 apply lux: e 3.4 apply n V 440 200 890 220 890 225	Im 3 190 3 090 3 090	230 240 250	3 040 2 990
	For r	for luminaire d	85 e 3.5 apply lux: e 3.4 apply n V 440 200 890 220 890 225	Im 3 190 3 090 3 090	230 240 250	3 040 2 990

	B22	2	00 W	1 000 h		
	DZZ	2		1 000 11		
		Dimer	sions in millimetr	es		
ulb designati	on: A80 or PS8	0				
ulb finish: fro	sted or clear					
ap: B22d/25	x 26					
ated wattage	(W): 200					
	s defined in sec erence in the re		f clause 3.3			
		C max.	D max.			
		165	82			
umen mainter Conditions	nance (%): 85 of clause 3.5 a I luminous flux:	apply	f clause 3.6			
For refe umen mainter Conditions inimum rated	erence in the re nance (%): 85 of clause 3.5 a	apply	f clause 3.6			1
For refe umen mainter Conditions inimum rated	erence in the re nance (%): 85 of clause 3.5 a I luminous flux:	apply	f clause 3.6 Im	V	Im	
For refe umen mainter Conditions inimum rated Conditio	erence in the re nance (%): 85 of clause 3.5 a l luminous flux: ons of clause 3 Im 3 300	apply .4 apply	lm 2 960	V 230	2 900	
For refe umen mainter Conditions inimum rated Conditio V 100 110	erence in the re nance (%): 85 of clause 3.5 a l luminous flux: ons of clause 3 Im 3 300 3 250	apply .4 apply V	Im 2 960 2 920		2 900 2 880	
For refe umen mainter Conditions inimum rated Conditio	erence in the re nance (%): 85 of clause 3.5 a l luminous flux: ons of clause 3 Im 3 300	apply .4 apply V 200	lm 2 960	230	2 900	

		NORMAL L	UMINOUS FLU	x	
	IN	CANDESCEN	T LAMP DATA S	SHEET	
	E27		15 W	1 000 h	
		Dimensio	ons in millimetres		
Bulb designatio	n:	A50, A55 or	A60 or PS60		
Bulb finish:		clear, froste	ed or frosted equiv	valently coated	
Cap:		E27/27			
Rated wattage ((W):	15			
Dimensions:		as defined i For referen		ents of clause 3.3	
		C max.	D max.		
		110	62		
Rated life (h): Lumen mainten	ance (%):	72 (100 V – 74 (200 V -	120 V) or	ents of clause 3.6 y	
Minimum rated	luminous flux:	Conditions	of clause 3.4 appl	У	
		V	Im		
		220	110		
	luminaire design e according to l		et 60630-IEC-1020)	
Texte français au v F rench text overlea		60	064-IEC-5005-2		CEI 6006 IEC 6006

		HIGH LU	MINOUS FLU	X	
	INC			A SHEET	
	E27		25 W	1 000 h	
		Dimensio	ns in millimetres		
Bulb designatio	n:	A50, A55, A	60 or PS60		
Bulb finish:		clear, froste	d or frosted eq	uivalently coated	d
Cap:		E27/27			
Rated wattage	(W):	25			
Dimensions:		as defined in For referenc		ements of clause	ə 3.3
		C max.	D max.		
		110	62		
Rated life (h):		1 000 For referenc	e in the require	ements of clause	∋ 3.6
Lumen mainten	ance (%):	72 (100 V – 74 (200 V – Conditions o		oply	
Minimum rated	luminous flux:	Conditions of	of clause 3.4 ap	oply	
V	Im	V	lm	V	Lm
100	260	200	225	230	220
100	255	220	220	240	215
110					

Information for luminaire design: Maximum outline according to IEC 60630: sheet 60630-IEC-1020

	IN	CANDESCEN	UMINOUS FL		
	E27		25 W	1 000 I	n
		Dimensio	ons in millimetres		
Bulb designatio	n:	A55, A60 or	PS60		
Bulb finish:		clear, froste	ed or frosted eq	uivalently coa	ited
Cap:		E27/27			
Rated wattage ((W):	25			
Dimensions:		as defined i For referend	n section 6 ce in the requir	ements of cla	use 3.3
		C max.	D max.		
		110	62		
Rated life (h): Lumen mainten Minimum rated		72 (100 V – 74 (200 V – Conditions		oply	use 3.6
	Im	V	Im	V	Im
V	230	200	225	230	220
100		220	220	240	215
	225	_			

		NCANDESCEN	IT LAMP DAT	A SHEET	
	E2	7	40 W	1 000 h	
		Dimens	ions in millimetres		
Bulb designatio	n:	A50, A55, A	A60 or PS60		
Bulb finish:		clear, frost	ed or frosted eq	uivalently coate	ed
Cap:		E27/27			
Rated wattage	(W):	40			
Dimensions:			in section 6 nce in the require	ements of claus	e 3.3
			D max.		
		C max.	D max.		
Rated life (h):		110	62		
Rated life (h): .umen mainten	ance (%):	110 1 000 For referer 85			e 3.6
		110 1 000 For referen 85 Conditions	62	oply	e 3.6
umen mainten	luminous flux:	110 1 000 For referer 85 Conditions Conditions	62 nce in the require of clause 3.5 ap of clause 3.4 ap	oply	
umen mainten Ainimum rated	luminous flux:	110 1 000 For referen 85 Conditions Conditions	62 nce in the require of clause 3.5 ap of clause 3.4 ap	oply oply V	Im
umen mainten	luminous flux:	110 1 000 For referer 85 Conditions Conditions	62 nce in the require of clause 3.5 ap of clause 3.4 ap	oply	

		NDESCENT LAN			
	E22	40 W	1 000	h	
		Dimensions in	millimetres		
Bulb designatio	n: A60 or PS60				
Bulb finish: fros	ted or clear,				
Cap: E27/27					
Rated wattage ((\\\): 40				
	defined in section ence in the requir		e 3.3		
		C max.	D max.		
		110	62		
Condition Ainimum rated					
Condition Ainimum rated Condition	luminous flux: ns of clause 3.4 a	ipply	Im	V	Im
Condition Ainimum rated Condition	luminous flux: ns of clause 3.4 a	v 200	Im 360 350	230	Im 345 340
Condition Ainimum rated Condition	luminous flux: ns of clause 3.4 a	ipply V			
Condition Ainimum rated Condition V 100 110	luminous flux: ns of clause 3.4 a Im 450 445	200 220	360 350	230 240	345 340
Condition Ainimum rated Condition V 100 110	luminous flux: ns of clause 3.4 a Im 450 445	200 220	360 350	230 240	345 340
Condition Ainimum rated Condition V 100 110	luminous flux: ns of clause 3.4 a Im 450 445	200 220	360 350	230 240	345 340
Condition Ainimum rated Condition V 100 110	luminous flux: ns of clause 3.4 a Im 450 445	200 220	360 350	230 240	345 340
Condition Ainimum rated Condition V 100 110 120	luminous flux: ns of clause 3.4 a Im 450 445 435	v 200 220 225	360 350 350	230 240 250	345 340
Condition Ainimum rated Condition V 100 110 120	luminous flux: ns of clause 3.4 a 1m 450 445 435	v 200 220 225	360 350 350	230 240 250	345 340
Condition Ainimum rated Condition V 100 110 120	luminous flux: ns of clause 3.4 a Im 450 445 435	v 200 220 225	360 350 350	230 240 250	345 340
Minimum rated Condition V 100 110 120	luminous flux: ns of clause 3.4 a Im 450 445 435	v 200 220 225	360 350 350	230 240 250	345 340

60064-IEC-2111-1

		INCANDESCEN	I LAMP DATA	SHEET			
	E2	27	60 W	1 000 h			
		Dimensio	ons in millimetres				
Bulb designatio	n:	A50, A55, A	60 or PS60				
Bulb finish:	clear, frosted or frosted equivalently coated						
Cap:		E27/27					
Rated wattage	(W):	60					
Dimensions:		as defined i For referen	n section 6 ce in the require	ments of clause	9 3.3		
		C max.	D max.				
		110	62				
Rated life (h): Lumen mainten	ance (%):	85	ce in the require of clause 3.5 ap		9 3.6		
Minimum rated	luminous flux		of clause 3.4 ap				
		. Conditions	51 clause 5.4 ap	pry			
V	Im	V	Im	V	Im		
	850	200	725	230	710		
100	840	220	715	240	700		
100 110 120	830	225	715	250	695		

	F	27	DESCENT LA 60 W		1 000 h		
		.21	00 11		1 000 11		
			Dimensions i	n millimetres			
lb design <i>a</i>	ition: A60 or F	S60					
ılb finish: f	rosted or clea	ar					
ap: E27/27							
ated wattag	ge (W): 60						
mensions:	as defined in	section f	3				
	eference in the			se 3.3			
			C max.			1	
			' may	D ma	X.		
		(-	
ated life (h)			110	62			
For re	eference in the	requirer	110	62			
For re Imen maint Conditior	eference in the tenance (%): 8 ns of clause 3.	requirer 35 5 apply	110	62			
For re men maint Condition nimum rate	eference in the tenance (%): 8	e requirer 35 5 apply ux:	110 nents of clau	62			
For re men maint Condition nimum rate	eference in the tenance (%): 8 ns of clause 3 ed luminous fl tions of clause	e requirer 35 5 apply ux: e 3.4 app	110 nents of clau	62		v	Im
For re men maint Conditior nimum rate Condi	eference in the tenance (%): 8 ns of clause 3 ed luminous fl tions of clause	e requirer 35 5 apply ux: e 3.4 app	110 nents of clau bly	62 se 3.6		V 230	lm 620
For re men maint Condition nimum rate Condi	eference in the tenance (%): & ns of clause 3. ed luminous fl tions of clause / In	e requirer 35 5 apply ux: e 3.4 app n 10	110 ments of clau bly V	62 se 3.6 Im	2		

Texte français au verso French text overleaf

60064-IEC-5055-1

		CANDESCENT LAN			
	E27	75 W	1 000 h		
		Dimensions in	millimetres		
Bulb designat	tion: A50, A55, A	\60 or PS60			
Bulb finish: cl	ear, frosted or t	frosted equivalent	ly coated		
Cap: E27/27					
Rated wattag	e (W): 75				
Dimensions: a	as defined in sec	tion 6			
For ref	ference in the rec	quirements of claus	e 3.3		
		C max.	D max.		
		110	62		
V	ions of clause 3.	V	Lm	V	Lm
		200 220	960 940	230 240	935 925
100 110 120	1100 1080	225	940	250	920
110 120	1080 or luminaire desig	225	940	250	920

	HIGH LUMINOUS FLUX						
	INCAND	ESCENT LAN	IP DATA SI	IEET			
	E27	100 W		1 000 h			
		Dimensions in m	nillimetres				
Bulb designation:	A50,	A55, A60 or P	S60				
Bulb finish:	clear	r, frosted or fro	osted equival	ently coated			
Cap:	E27/	27					
Rated wattage (W):	100						
Dimensions:		efined in section reference in th		nts of clause 3	3		
	C max		D max.				
	110		62				
Rated life (h):	1 00 For		e requiremer	nts of clause 3	.6		
_umen maintenance		nditions of clau	ise 3.5 apply				
Lumen maintenance Minimum rated lumi	Cor inous flux: Cond	ditions of claus	se 3.4 apply	V			
Minimum rated Iumi	Cor inous flux: Cono Im	ditions of claus	se 3.4 apply Im	V 230	lm 1 340		
Minimum rated lumi	Cor inous flux: Cond	ditions of claus	se 3.4 apply	V 230 240	Im 1 340 1 330		

	NORMAL LUMINOUS FLUX INCANDESCENT LAMP DATA SHEET					
	E2	7	100 W	1 000) h	
		Ľ	Dimensions in r	nillimetres		
Bulb designa	tion: A60 or P	S60				
Bulb finish: fr	osted or clear					
Cap: E27/27						
Rated wattag	e (W): 100					
	as defined in s ference in the		nts of clause	3.3		
Rated life (h)	4 000	C m		D max. 62		
	ference in the	requiremer	nts of clause	3.6		
	ed luminous flutions of clause					
	V	Im	V	Im	V	Im
	V	lm 1440	V 200	Im 1 270	V 230	lm 1 240
	100	1440	200	1 270	230	1 2 4 0
Information fo	100 110 120 Dr luminaire de	1440 1 420 1 400 esign:	200 220 225	1 270 1 250	230 240 250	1 240 1 230

		E27	150 W	1	1 000 h	
			Dimensions i	in millimetres		
Bulb designa	tion: A68 or	PS68				
Bulb finish: f	rosted or clea	ar				
Cap: E27/27						
Rated wattag	je (W): 150					
Dimensions:	as defined ir	n section	6			
For re	ference in th	e require	ements of clau	se 3.3		
			C max.	D max		
			130	70		
For re Lumen maint		85	ements of clau	se 3.6		
For re Lumen maint Conditior Minimum rate	ference in th enance (%):	85 3.5 apply flux:	,	se 3.6		
For re Lumen maint Conditior Minimum rate	ference in th enance (%): as of clause a ed luminous tions of clause	85 3.5 apply flux:	,	lse 3.6 Im	V	Im
For re Lumen maint Conditior Minimum rate Condi	ference in the renance (%): as of clause a ed luminous tions of clause	85 3.5 apply flux: se 3.4 ap	pply		V 230	lm 2 160
Lumen maint Conditior Minimum rate Condi	ference in the renance (%): as of clause a ed luminous tions of clause 200 2	85 3.5 apply flux: se 3.4 ap	, oply V	Im		
For re Lumen maint Condition Minimum rate Condi	ference in the renance (%): as of clause and tions of clause 200 2 10 2	85 3.5 apply flux: se 3.4 ap Im 460	pply V 200	lm 2 200	230	2 160
For re Lumen main Condition Minimum rate Condi	eference in the renance (%): as of clause and tions of clause 20 2 20 2	85 3.5 apply flux: se 3.4 ap Im 460 440 420	oply V 200 220	lm 2 200 2 180	230 240	2 160 2 140
For re Lumen main Condition Minimum rate Condi	eference in the renance (%): as of clause a ed luminous tions of clause 00 2 10 2 20 2 or luminaire	85 3.5 apply flux: se 3.4 ap Im 460 440 420 design:	oply V 200 220	lm 2 200 2 180 2 160	230 240 250	2 160 2 140
For re Lumen main Condition Minimum rate Condi	eference in the renance (%): as of clause a ed luminous tions of clause 00 2 10 2 20 2 or luminaire	85 3.5 apply flux: se 3.4 ap Im 460 440 420 design:	oply V 200 220 225	lm 2 200 2 180 2 160	230 240 250	2 160 2 140
For re Lumen main Condition Minimum rate Condi	eference in the renance (%): as of clause a ed luminous tions of clause 00 2 10 2 20 2 or luminaire	85 3.5 apply flux: se 3.4 ap Im 460 440 420 design:	oply V 200 220 225	lm 2 200 2 180 2 160	230 240 250	2 160 2 140
For re Lumen main Condition Minimum rate Condi	eference in the renance (%): as of clause a ed luminous tions of clause 00 2 10 2 20 2 or luminaire	85 3.5 apply flux: se 3.4 ap Im 460 440 420 design:	oply V 200 220 225	lm 2 200 2 180 2 160	230 240 250	2 160 2 140

60064-IEC-5090-1

	INCAN	DESCENT LAN	IP DATA SHE	ET	
	E27	150 W	1	000 h	
		Dimensions ir	n millimetres		
Bulb designation	: A80 or PS80				
Bulb finish: froste	ed or clear				
Cap: E27/27					
Rated wattage (V	V): 150				
)imensions: as c	lefined in section	6			
For refere	nce in the require				
		C max. 166,5	D max. 82		
		100,5	02		
For refere umen maintena Conditions of	nce in the require nce (%): 85 f clause 3.5 apply		se 3.6		
For refere umen maintena Conditions of linimum rated lu	nce in the require nce (%): 85 f clause 3.5 apply	1	se 3.6		
For refere umen maintena Conditions of linimum rated lu	nce in the require nce (%): 85 clause 3.5 apply iminous flux:	1	se 3.6 Im	V	Im
For refere umen maintena Conditions of Iinimum rated lu Conditions	nce in the require nce (%): 85 clause 3.5 apply iminous flux: s of clause 3.4 ap	/ oply		V 230	lm 2 070
umen maintena Conditions of Ainimum rated lu Conditions	nce in the require nce (%): 85 clause 3.5 apply iminous flux: s of clause 3.4 ap	v oply V	Im		
For refere umen maintenat Conditions of Ainimum rated lu Conditions V 100	nce in the require nce (%): 85 clause 3.5 apply iminous flux: s of clause 3.4 ap Im 2 380	v oply V 200	lm 2 120	230	2 070
For refere umen maintenat Conditions of Ainimum rated lu Conditions V 100 110	nce in the require nce (%): 85 clause 3.5 apply iminous flux: s of clause 3.4 ap Im 2 380 2 360	v oply V 200 220	Im 2 120 2 090	230 240	2 070 2 060
For refere	Ince in the require nce (%): 85 clause 3.5 apply iminous flux: s of clause 3.4 ap Im 2 380 2 360 2 320 iminaire design:	7 500 200 220 225	lm 2 120 2 090 2 090	230 240 250	2 070 2 060
For refere	nce in the require nce (%): 85 clause 3.5 apply iminous flux: s of clause 3.4 ap 1m 2 380 2 360 2 320	7 500 200 220 225	lm 2 120 2 090 2 090	230 240 250	2 070 2 060
For refere	Ince in the require nce (%): 85 clause 3.5 apply iminous flux: s of clause 3.4 ap Im 2 380 2 360 2 320 iminaire design:	7 500 200 220 225	lm 2 120 2 090 2 090	230 240 250	2 070 2 060
For refere	Ince in the require nce (%): 85 clause 3.5 apply iminous flux: s of clause 3.4 ap Im 2 380 2 360 2 320 iminaire design:	7 500 200 220 225	lm 2 120 2 090 2 090	230 240 250	2 070 2 060
For refere	Ince in the require nce (%): 85 clause 3.5 apply iminous flux: s of clause 3.4 ap Im 2 380 2 360 2 320 iminaire design:	7 500 200 220 225	lm 2 120 2 090 2 090	230 240 250	2 070 2 060
For refere	Ince in the require nce (%): 85 clause 3.5 apply iminous flux: s of clause 3.4 ap Im 2 380 2 360 2 320 iminaire design:	7 500 200 220 225	lm 2 120 2 090 2 090	230 240 250	2 070 2 060

60064-IEC-5095-1

		E27	200 W	1 000	h	
			Dimensions in	millimetres		
Bulb de	signation:	A80 or PS80				
Bulb fin	ish: frosted	d or clear,				
Cap: E2	27/27					
-	vattage (W)). 200				
		fined in sectior ce in the requir	ements of clause	e 3.3		
			C max.	D max.		
			166.5	82		
		ninous flux: of clause 3.4 a	pply			
	V	Im	V	Lm	V	Lm
	100	3440	200	3190	230	3040
	110	3390	220	3090	240	2990
	120	3390	225	3090	250	2950

60064-IEC-2111-1