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(JELMA/JSA)

**Self-ballasted fluorescent lamps for
general lighting services—
Part 1: Safety specifications**

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In the event of any doubts arising as to the contents,
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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Electric Lamp Manufacturers Association (JELMA)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS C 7620-1:2000** is replaced with this Standard.

This **JIS** document is protected by the Copyright Law.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public or utility model right. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public or utility model right.

JIS C 7620 series consists of the following 2 parts under the general title “*Self-ballasted fluorescent lamps for general lighting services*”:

Part 1: Safety specifications;

Part 2: Performance specifications.

Self-ballasted fluorescent lamps for general lighting services— Part 1: Safety specifications

Introduction

This Japanese Industrial Standard has been prepared based on Edition 1.2 of **IEC 60968** [consolidated version consisting of the first edition (1988), Amendment 1 (1991) and Amendment 2 (1999)] published in 1999, with some modifications of the technical contents so as to reflect the actualities in Japan.

The portions with continuous sidelines or dotted underlines are the matters in which the contents of the corresponding International Standard have been modified. A list of modifications with explanations is given in Annex JD. Annexes JA to JC contain matters that are not given in the corresponding International Standard.

1 Scope

This Standard specifies the safety and interchangeability requirements, together with the test methods and conditions, required to show compliance of self-ballasted fluorescent lamps with integrated means for controlling starting and stable operation, intended for domestic and similar general lighting purposes, having:

- a rated wattage: up to 60 W;
- a rated input voltage: a.c. (50 Hz or 60 Hz), 100 V to 250 V;
- cap: E-type, B-type and GX53.

NOTE : The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows:

IEC 60968:1999 *Self-ballasted lamps for general lighting services—Safety requirements* (MOD)

The symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

1A Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS C 0920 *Degrees of protection provided by enclosures (IP Code)*

JIS C 7551-1 *Incandescent lamps—Safety specifications—Part 1: Tungsten filament lamps for domestic and similar general lighting purposes*

JIS C 7709-1 *Lamp caps and holders together with gauges for the control of interchangeability and safety Part 1: Lamp caps*

- JIS C 7709-2 *Lamp caps and holders together with gauges for the control of interchangeability and safety Part 2: Lampholders*
- JIS C 7709-3 *Lamp caps and holders together with gauges for the control of interchangeability and safety—Part 3: Gauges*
- JIS C 8280 *Edison screw lampholders*
- JIS C 60695-2-10 *Fire hazard testing—Glow-wire apparatus and common test procedure*
- JIS C 60695-2-11 *Fire hazard testing—Glow-wire flammability test method for end-products*
- JIS Z 8113 *Lighting vocabulary*
- JIS Z 9015-1 *Sampling procedures for inspection by attributes—Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*
- IEC 60360 *Standard method of measurement of lamp cap temperature rise*

2 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS Z 8113** and the following apply.

2.1 self-ballasted fluorescent lamp

a unit which can not be dismantled without being permanently damaged, provided with a lamp cap and incorporating an arc tube and any additional elements necessary for starting and stable operation of the arc tube

2.2 type

lamps of the same group, that are identical in optical characteristics and light source colour

2.2A group

lamps with the same cap, that are identical in the electric characteristics, dimensions and starting method

2.3 rated voltage

the voltage or voltage range marked by the manufacturer or the responsible vendor

NOTE : For the purpose of this Standard, “the manufacturer or the responsible vendor” is a manufacturer engaged in manufacturing the products in Japan or a dealer (wholesale, etc.) engaged in importing the products, who are similar to a “notifying supplier” as defined in the Electrical Appliance and Material Safety Act.

2.4 rated wattage

the wattage marked by the manufacturer or the responsible vendor

2.5 rated frequency

the frequency marked by the manufacturer or the responsible vendor

2.6 cap temperature rise, Δt_s

the surface temperature rise, above the ambient temperature, of a standard test lamp-holder fitted to the lamp, when measured in accordance with JIS C 7551-1 or IEC 60360

For GX53 cap, it is the temperature rise of a cap above the ambient temperature, when measured in accordance with Annex JA.

2.7 live part

a conductive part which may cause an electric shock in normal use

2.8 type test

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

2.9 type test sample

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

2.9A magnetic ballast type

a starting system where a starter is built in, the lamp is operated by a magnetic ballast and the starting frequency is equal to the power supply frequency

2.9B electronic ballast type

a starting system of lamp having a built-in device which consists of semiconductor elements including ballast elements for the purpose of starting one or more discharge lamps under a.c. power employing a d.c. or a.c. power as the supply

2.9C design test

a test performed in the event where a major modification is to be made in the design of the lamp, such as the structure or used material

2.9D acceptance test

a special test performed upon request made by the vendor to the manufacturer

3 General requirements and general test requirements

3.1 Self-ballasted lamps shall be so designed and constructed that in normal use they function reliably and cause no danger to the user or surroundings.

In general, compliance is checked by carrying out all the tests specified. The test items and acceptance criteria of the design test, type test and acceptance test shall be as given in Annex JB.

3.2 All measurements, unless otherwise specified, are carried out at rated voltage and frequency and in a draught-proof room at $25\text{ °C} \pm 1\text{ °C}$.

If lamps are marked with a voltage range, rated voltage is taken as the mean of the voltage range marked.

3.3 Self-ballasted fluorescent lamps are non repairable, factory sealed units, so that safety and performance, which may be lost if they are opened, are ensured. They shall not be opened for any tests.

In the case of doubt based on the inspection of the lamp and the examination of the circuit diagram, and in agreement with the manufacturer or responsible vendor, lamps specially prepared so that a fault condition can be simulated shall be submitted for testing safety in clause **12**.

4 Marking

4.1 Marking on products

Lamps shall be clearly and durably marked with the following information.

- a) Name of manufacturer or the name of responsible vendor, or their trade mark.
- b) Rated input voltage or voltage range (marked “V” or “volts”)
- c) Rated lamp wattage (marked “W” or “watts”)
- d) Rated frequency (marked in “Hz”)
- dA) Type

4.2 Marking on packaging

The following information shall be given either on the lamp package or in installation instructions.

It may be given on the lamp itself.

- a) Rated input current
- b) Burning position or other matters, if restricted
- c) For lamps with a weight significantly higher than that of the lamps for which they are a replacement, attention should be drawn to the fact that the increased weight may reduce the mechanical stability of certain luminaires.
- d) Special conditions or restrictions which shall be observed for lamp operation, for example, operation in dimming circuits.
- dA) A safety-related marking of appropriate classification, graphical symbol and instruction description selected as required from the table in Annex JC.

4.3 Compliance checking

The compliance shall be checked as follows.

- a) Presence and legibility of the marking required in **4.1** shall be checked by visual inspection.
- b) The durability of the marking required in **4.1** is checked by trying to remove it by rubbing lightly for 15 s (at an approximate rate of 1 reciprocation/second) with a piece of cloth soaked with water and, after drying, for a further 15 s with a piece of cloth soaked with hexane. The marking shall be legible after the test.

c) Availability of information required in **4.2** shall be checked by visual inspection.

5 Interchangeability

5.1 Interchangeability shall be ensured by the use of caps in accordance with **JIS C 7709-1**.

5.2 Compliance of the combination of cap and bulb is checked by the use of gauges for checking the dimensions controlling interchangeability (see table 1). Instead of this gauge, the measuring instrument specified in **JIS C 7709-1** may be used. The gauge shall be in accordance with **JIS C 7709-3**.

5.3 Self-ballasting fluorescent lamps, when capped either B22d or E26, shall have a mass not exceeding 1 kg and shall not impart a bending moment, at the lampholder, of more than 2 Nm.

Self-ballasting fluorescent lamps capped E17 shall impart a bending moment of not more than 1 Nm at the lampholder.

Compliance shall be checked by measurement.

NOTE 1 The maximum mass of self-ballasted fluorescent lamps with E17 caps is under consideration.

NOTE 2 Measurement method of bending moment for self-ballasted fluorescent lamps with E26 and E17 caps is under consideration.

Table 1 Lamp cap dimensions and interchangeability gauges

Cap	Lamp cap dimensions	Gauge sheet No. (JIS C 7709-3)
E26	Max. dimensions of the screw thread	3-21-1-1
	Min. major diameter of the screw thread	3-21-2-1
E17	Max. dimensions of the screw thread	3-20-1-1
	Min. major diameter of the screw thread	3-20-2-1
GX53	A min. and A max.	3-122-1-1
	D min. and D max.	3-122-2-1
	M max.	3-122-2A-1
	Key groove	3-122-2B-1
B22d	A min. and A max. D1 max. N min. Diametrical position of the pins Insertion in lampholder Retention in lampholder	} 3-2-1-1 and 3-2-2-1

6 Protection against electric shock

The conformance of protection against electric shock shall be checked in accordance with the following **a)**, and **b)** or **c)**.