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**Self-ballasted LED-lamps for general
lighting services by voltage > 50 V—
Safety specifications**

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Foreword

This Japanese Industrial Standard has been 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 Lighting Manufacturers Association (JLMA)/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 8156**:2011 is replaced with this Standard.

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Self-ballasted LED-lamps for general lighting services by voltage > 50 V— Safety specifications

Introduction

This Japanese Industrial Standard has been prepared based on **IEC 62560:2011**, Edition 1 and Amendment 1 (2015), with some modifications of the technical contents. The contents of Amendment 1 has been incorporated into this Standard.

The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JA.

1 Scope

This Standard specifies the safety and interchangeability requirements, together with the test methods and conditions required to show compliance of LED-lamps with integrated means for stable operation (hereafter referred to as lamps), intended for domestic and similar general lighting purposes, having:

- a rated wattage up to 60 W;
- a rated voltage of > 50 V up to 250 V;
- caps according to Table 1.

The requirements of this Standard relate only to type testing.

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

NOTE 2 This Standard includes photobiological safety.

NOTE 3 The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

IEC 62560:2011 *Self-ballasted LED-lamps for general lighting services by voltage > 50 V—Safety specifications* and Amendment 1:2015 (MOD)

In addition, 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**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. For standards with the year indication, only the editions of the indicated year shall be applied and the revisions (including amendments) made thereafter shall not be applied. For those without the indication of the year, the most recent edition (including amendments) shall be applied.

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

NOTE : Corresponding International Standard: IEC 60529:1989 *Degrees of protection provided by enclosures (IP Code)*

JIS C 7550 *Photobiological safety of lamps and lamp systems*

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

JIS C 7620-1 *Self-ballasted fluorescent lamps for general lighting service—Part 1: Safety specifications*

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

NOTE : Corresponding International Standard: IEC 60061-1 *Lamp caps and holders together with gauges for the control of interchangeability and safety—Part 1: Lamp caps (MOD)*

JIS C 7709-2 *Lamp caps and holders together with gauges for the control of interchangeability and safety Part 2: Lamp holders*

JIS C 7709-3 *Lamp caps and holders together with gauges for the control of interchangeability and safety Part 3: Gauges*

NOTE : Corresponding International Standard: IEC 60061-3 *Lamp caps and holders together with gauges for the control of interchangeability and safety—Part 3: Gauges (MOD)*

JIS C 8105-1 *Luminaires—Part 1: General requirements for safety*

NOTE : Corresponding International Standard: IEC 60598-1 *Luminaires—Part 1: General requirements and tests (MOD)*

JIS C 8147-1 *Lamp controlgear—Part 1: General and safety requirements*

NOTE : Corresponding International Standard: IEC 61347-1 *Lamp controlgear—Part 1: General and safety requirements (MOD)*

JIS C 8154 *LED modules for general lighting—Safety specifications*

NOTE : Corresponding International Standard: IEC 62031 *LED modules for general lighting—Safety specifications (MOD)*

JIS C 8280 *Edison screw lampholders*

JIS C 8324 *Lampholders and starterholders for fluorescent lamps*

JIS C 60695-2-10:2015 *Fire hazard testing—Part 2-10: Glowing/hot-wire based test methods—Glow-wire apparatus and common test procedure*

NOTE : Corresponding International Standard: IEC 60695-2-10:2013 *Fire hazard testing—Part 2-10: Glowing/hot-wire based test methods—Glow-wire apparatus and common test procedure (IDT)*

JIS C 60695-2-11:2004 *Fire hazard testing—Glow-wire flammability test method for end-products*

NOTE : Corresponding International Standard: IEC 60695-2-11:2000 *Fire hazard testing—Part 2-11: Glowing/hot-wire based test methods—Glow-wire flammability test method for end-products (IDT)*

JIS C 60695-2-12:2013 *Fire hazard testing—Part 2-12: Glowing/hot-wire based test methods—Glow-wire flammability index (GWFI) test method for materials*

NOTE : Corresponding International Standard: IEC 60695-2-12:2010 *Fire hazard testing—Part 2-12: Glowing/hot-wire based test methods—Glow-wire flammability index (GWFI) test method for materials* (IDT)

JIS C 60695-2-13:2013 *Fire hazard testing—Part 2-13: Glowing/hot-wire based test methods—Glow-wire ignition temperature (GWIT) test method for materials*

NOTE : Corresponding International Standard: IEC 60695-2-13:2010 *Fire hazard testing—Part 2-13: Glowing/hot-wire based test methods—Glow-wire ignition temperature (GWIT) test method for materials* (IDT)

JIS C 62504 *General lighting—Light emitting diode (LED) products and related equipment—Terms and definitions*

NOTE : Corresponding International Standard: IEC 62504 *General lighting—Light emitting diode (LED) products and related equipment—Terms and definitions* (MOD)

JIS P 0001:1998 *Paper, board and pulp—Vocabulary*

JIS Z 8113 *Lighting vocabulary*

3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS C 8154**, **JIS C 62504** and **JIS Z 8113**, and the following apply.

3.1 self-ballasted LED-lamp

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

NOTE 1 Lamp caps are given in **JIS C 7709-1**.

NOTE 2 Self-ballasted LED-lamp are designed assuming the replacement by consumers.

3.2 rated voltage

voltage or voltage range specified by the manufacturer or responsible vendor (hereafter referred to as manufacturer, etc.)

3.3 rated wattage

wattage specified by the manufacturer, etc.

3.4 rated frequency

frequency specified by the manufacturer, etc.

3.5 cap temperature rise, Δt_s

surface temperature rise (above ambient) of a standard test lamp holder fitted to the lamp, when measured in accordance with the relevant standard method, expressed in kelvin (K)

NOTE : The measuring method of cap temperature rise is as given in JIS C 7551-1 and JIS C 7620-1.

3.6 live part

conductive part which may cause an electric shock in normal use

3.7 type

lamps in the group having the same requirements of test methods and test results specified in this Standard

NOTE : Lamps that have different risk groups such as cap, electrical characteristics and photobiological safety are regarded different type.

3.8 type test

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

3.9 type test sample

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

3.10 ultraviolet hazard efficacy of luminous radiation, $K_{s,v}$

quotient of an ultraviolet hazard quantity to the corresponding photometric quantity

NOTE 1 Ultraviolet hazard efficacy of luminous radiation is expressed in mW/klm.

NOTE 2 The ultraviolet hazard efficacy of luminous radiation is obtained by weighting the spectral power distribution of the lamp or LED module with the UV hazard function $S_{UV}(\lambda)$. Information about the relevant UV hazard function is given in **JIS C 7550**. It only relates to possible hazards regarding UV exposure of human beings. It does not deal with the possible influence of optical radiation on materials, such as mechanical damage or discoloration.

NOTE 3 This term corresponds to **5.1** of **JIS C 7550**. For other relevant matter regarding ultraviolet hazard, see **5.2** of **JIS C 7550**.

4 General requirements and general test requirements

4.1 The 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.

4.2 Self-ballasted LED-lamps shall be non-repairable, factory-sealed units because disassembling the lamp may impair safety and performance. They shall normally not be opened for any tests. If lamps prepared so that a fault condition can be simulated

for testing of clause 13 are required, test lamps specially prepared by the manufacturer, etc. shall be submitted.

4.3 In general, all tests are carried out on each type of lamp or, where a range of similar lamps is involved, for each wattage in the range or on a representative selection from the range, as agreed with the manufacturer.

4.4 When the lamp fails safely during one of the tests, it is replaced, provided that no fire, smoke or flammable gas is produced. Further requirements on failing safe are given in clause 12.

5 Marking

5.1 Marking on product

Lamps shall be clearly and durably marked with the following mandatory markings:

- a) mark of origin (this may take the form of a trademark, the manufacturer's name or the name of the responsible vendor);
- b) rated voltage or voltage range (marked "V" or "volts");
- c) rated wattage (marked "W" or "watts");
- d) rated frequency (marked in "Hz");
- dA) type, which can include other elements like performance.

5.2 Marking on packaging

The items of 5.1 and the following information shall be given by the lamp manufacturer on immediate lamp wrapping or container or in installation instructions. The marking may be made on the lamp.

- b) rated wattage or rated current (marked "A" or "ampere");
- c) (deleted);
- d) special conditions or restrictions which shall be observed for lamp operation (including lighting direction) (the height of pictogram shall be at least 5 mm).

Where lamps are not suitable for dimming (dimming is not allowed), the following symbol in Figure 1 may be used or the warning message is given.

NOTE : Lamps not suitable for dimming are those not having dimming control function by adjusting input voltage or input current intentionally, or those not having durability for adjustment.

Lamps which have durability against intentional input voltage or input current and cause no abnormal operations are categorized as lamps suitable for dimming.