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(JSA)

**Organic light emitting diode (OLED) light
sources for general lighting — Safety —
Part 1: General requirements and tests**

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Foreword

This Japanese Industrial Standard has been established by the Minister of Economy, Trade and Industry based on the provision of Article 14, paragraph (1) of the Industrial Standardization Act in response to a proposal for establishment of Japanese Industrial Standard with a draft being attached, submitted by Japanese Standards Association (JSA), an accredited standards development organization.

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Organic light emitting diode (OLED) light sources for general lighting — Safety — Part 1 : General requirements and tests

Introduction

This Japanese Industrial Standard has been prepared based on **IEC 62868-1 : 2020**, Edition 1, with some modifications of the technical contents made in line with the condition of the spread of use of OLED lighting in Japan.

The 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 general safety requirements and test methods of organic light emitting diode (OLED) products for use on DC supplies up to 1 000 V or AC supplies up to 1 000 V at 50 Hz or 60 Hz for indoors and similar general lighting purposes.

Provisions for AC operated OLED products are under consideration.

This Standard applies to the following OLED products :

- OLED tiles;
- OLED panels;
- OLED modules.

This Standard also applies to any OLED light sources which are not covered by **IEC 62868-2** (all parts).

NOTE 1 (The content of NOTE 1 of the corresponding International Standard regarding AC light source has been moved to the body text of this clause).

NOTE 2 The construction of OLED tiles and panels is illustrated in Annex A.

NOTE 3 The OLED lighting system consisting of OLED panels or modules is illustrated in Annex D.

NOTE 4 This Standard applies to OLED light sources (tiles, panels, modules) which are composed of OLED luminaires or OLED lamps, and it is intended so that the OLED light source in accordance with this Standard fits in **JIS C 8105** (all parts) as a component of lighting equipment, in combination with other components.

NOTE 5 The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

IEC 62868-1 : 2020 *Organic light emitting diode (OLED) light sources for general lighting — Safety — Part 1 : General requirements and tests* (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

Part or all of the provisions of the following standards, 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 editions (including amendments) shall be applied.

JIS C 8105-1 : 2021 *Luminaires — Part 1 : General requirements for safety*

JIS C 60068-2-6 : 2010 *Environmental testing — Part 2-6 : Tests — Test Fc : Vibration (sinusoidal)*

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

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

IEC TR 62854 : 2014 *Sharp edge testing apparatus and test procedure for lighting equipment — Tests for sharpness of edge*

IEC TS 62972 *General lighting — Organic light emitting diode (OLED) products and related equipment — Terms and definitions*

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions, and those given in **JIS C 62504** and **IEC TS 62972** apply.

3.1

organic light emitting diode, OLED

light emitting semiconductor consisting of an electroluminescent zone made of organic compounds, situated between two electrodes

3.2

OLED tile

smallest functional OLED light source which cannot be separated into smaller OLED lighting elements containing at least one contact ledge with at least one positive and one negative pole for connection to the electrical power supply

3.3

OLED panel

independently operable unit OLED product containing an OLED tile and means of connection to the electrical supply

Note 1 to entry An OLED panel may have a connector, PCB (printed circuit board), passive electronic components and optionally a frame.

3.4

OLED module

assembly of one or more OLED panels and active electronic components

Note 1 to entry The classification of OLED modules is given in Annex E.

3.5

semi-integrated OLED module

OLED module which carries the control unit of the controlgear for lighting, and is operated by the separated power supply of the controlgear

Note 1 to entry This term has a shortened designation, “OLEDsi module”, in which “si” stands for “semi-integrated”.

3.6

integrated OLED module

OLED module incorporating controlgear and any additional elements necessary for stable operation of the light source, designed for direct connection to the supply voltage

Note 1 to entry This term has a shortened designation, “OLEDi module”, in which “i” stands for “integrated”.

3.7

integral OLED module

OLED module, designed to form a non-replaceable part of a luminaire

3.8

built-in OLED module

OLED module, designed to form a replaceable part to be built into a luminaire, a box, an enclosure or the like and not intended to be mounted outside a luminaire without a special protection

3.9

independent OLED module

OLED module, designed for being mounted or placed separately from a luminaire, from an additional box or enclosure or the like

Note 1 to entry The independent OLED module provides all the necessary protection with regard to safety according to its classification and marking.

Note 2 to entry An example of an independent OLED module is a system where the OLED module is connected via a glass fibre with the luminaire head.

3.10

rated value

quantity value for a characteristic of a product for specific operating conditions with the values and the conditions specified in the relevant standard, or assigned by the manufacturer or responsible vendor

Note 1 to entry A rated value is a quantity value used to define a product specification, determined by the standard test conditions declared by the manufacturer or the responsible vendor.

Note 2 to entry Rated values used in this Standard are rated current, rated voltage and rated power.

3.11**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

3.12**stabilization**

<of OLED products> keeping of an OLED product switched on under specified electrical input to obtain stable operation

Note 1 to entry The mentioned operation can be photometric or electrical under specified conditions in the relevant test clause.

3.13**dark spot**

small area remarkably darker than the surrounding light output area on the OLED product

3.14**internal short circuit, short**

unintentional conductive path between the OLED anode and OLED cathode localized on a small area

Note 1 to entry An internal short circuit can look like a dark spot. It can lead to a significant heat generation in that area.

4 General**4.1 General requirements**

An OLED product shall be designed and manufactured in such a way as to operate safely during its intended use and not to cause any danger to persons and the environment.

In case of a failure of an OLED product it shall fail safely.

4.2 General test requirements