IEC 60747-5-8

Edition 1.0 2019-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Semiconductor devices – Part 5-8: Optoelectronic devices – Light emitting diodes – Test method of optoelectronic efficiencies of light emitting diodes

Dispositifs à semiconducteurs – Partie 5-8: Dispositifs optoélectroniques – Diodes électroluminescentes – Méthode d'essai des efficacités optoélectroniques des diodes électroluminescentes

IEC 60747-5-8:2019-11(en-fr)

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FOREWORD

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International Standard IEC 60747-5-8 has been prepared by subcommittee 47E: Discrete semiconductor devices, of IEC technical committee 47: Semiconductor devices.

The text of this International Standard is based on the following documents:

CDV	Report on voting
47E/637/CDV	47E/658/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60747 series, published under the general title *Semiconductor devices*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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SEMICONDUCTOR DEVICES –

Part 5-8: Optoelectronic devices – Light emitting diodes – Test method of optoelectronic efficiencies of light emitting diodes

1 Scope

This part of IEC 60747 specifies the terminology and the measuring methods of various efficiencies of single light emitting diode (LED) chips or packages without phosphor. White LEDs for lighting applications are out of the scope of this part of IEC 60747. The efficiencies whose measuring methods are defined in this part are the power efficiency (PE), the external quantum efficiency (EQE), the voltage efficiency (VE), and the light extraction efficiency (LEE). To measure the LEE, the measurement data of the internal quantum efficiency (IQE) is used, whose measuring method is discussed in IEC 60747-5-9[1] and IEC 60747-5-10[2]. The injection efficiency (IE) and the radiative efficiency (RE) are given definitions only.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content shall constitute requirements 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.

IEC 60747-5-6:2016, *Semiconductor devices – Part 5-6: Optoelectronic devices – Light emitting diodes*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1 General terms and definitions

3.1.1
radiant power
Φ_e
power emitted, transmitted or received in the form of radiation

Note 1 to entry: The unit used is: W. Radiant power is also known as the “radiant flux”.

[SOURCE: IEC 60050-845:1987, 845-01-24, modified – The symbol has been added to the term and Note 1 has been expanded.]

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[1] Under preparation. Stage at the time of publication IEC RPUB 60747-5-9:2019.

[2] Under preparation. Stage at the time of publication IEC RPUB 60747-5-10:2019.