IEC 60747-18-5

Edition 1.0 2023-03

INTERNATIONAL STANDARD

colour inside

Semiconductor devices – Part 18-5: Semiconductor bio sensors – Evaluation method for light responsivity characteristics of lens-free CMOS photonic array sensor package modules by incident angle of light



IEC 60747-18-5:2023-03(en)



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 31.080.99

ISBN 978-2-8322-6644-1

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SEMICONDUCTOR DEVICES –

Part 18-5: Semiconductor bio sensors – Evaluation method for light responsivity characteristics of lens-free CMOS photonic array sensor package modules by incident angle of light

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

Draft	Report on voting
47E/779/CDV	47E/791/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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

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

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- amended.

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INTRODUCTION

The IEC 60747-18 series on semiconductor bio sensors is composed of the following parts:

- IEC 60747-18-1 defines the test method and data analysis for calibration of lens-free CMOS photonic array sensors;
- IEC 60747-18-2 [1][1] defines the evaluation process of lens-free CMOS photonic array sensor package modules;
- IEC 60747-18-3 [2] defines the fluid flow characteristics of lens-free CMOS photonic array sensor package modules with fluidic system;
- IEC 60747-18-4 [3] defines the evaluation method of noise characteristics of lens-free CMOS photonic array sensors;
- IEC 60747-18-5 defines the evaluation method for light responsivity characteristics of lens-free CMOS photonic array sensor package modules by incident angle of light.

The IEC 60747-18 series [4] includes subjects such as noise analysis, long-term reliability tests, test methods for lens-free CMOS photonic array sensor package modules under patchable environments, test methods under implantable environments, etc.

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1 Numbers in square brackets refer to the Bibliography.

SEMICONDUCTOR DEVICES –

Part 18-5: Semiconductor bio sensors – Evaluation method for light responsivity characteristics of lens-free CMOS photonic array sensor package modules by incident angle of light

1 Scope

This part of IEC 60747 specifies the evaluation method for light responsivity characteristics of lens-free CMOS photonic array sensor package modules by incident angle of light. This document includes the test setup, test procedure, test item, and test report for lens-free CMOS photonic array sensor package modules.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes the 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 60747-18-1:2019, *Semiconductor devices – Part 18-1: Semiconductor bio sensors – Test method and data analysis for calibration of lens-free CMOS photonic array sensors*

3 Terms and definitions

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

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

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

3.1
angular response
light response characteristic of a photonic array sensor depending on the incident angle of light source

Note 1 to entry: The characteristic of angular response should be defined as the wavelength of light because the optical penetrating path into the lens-free CMOS photonic array sensor is different for each wavelength.

3.2
spectral responsivity
responsivity per unit wavelength interval at a given wavelength

[SOURCE: IEC 60050-731:1991 [5], 731-06-37]