



# INTERNATIONAL STANDARD



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**Semiconductor devices –  
Part 18-3: Semiconductor bio sensors – Fluid flow characteristics of lens-free  
CMOS photonic array sensor package modules with fluidic system**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SEMICONDUCTOR DEVICES –**

**Part 18-3: Semiconductor bio sensors – Fluid flow characteristics  
of lens-free CMOS photonic array sensor package modules  
with fluidic system**

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

FDIS	Report on voting
47E/682/FDIS	47E/690/RVD

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 of 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 "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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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 defines the evaluation process of lens-free CMOS photonic array sensor package modules
- IEC 60747-18-3 defines the fluid flow characteristics of lens-free CMOS photonic array sensor package modules with fluidic system

The IEC 60747-18 series 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.

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of patents given in several subclauses as indicated in the table below. These patents are held by their respective inventors under license to SOL Inc.:

KR1020170125673	[SOL]	METHOD FOR EVALUATING FLUID FLOW CHARACTERISTICS OF LENS-FREE CMOS PHOTONIC ARRAY SENSOR PACKAGE MODULE WITH FLUIDIC SYSTEM	Subclause 4.4 Clause 5, 6
PCT/KR2017/011031	[SOL]	METHOD FOR EVALUATING FLUID FLOW CHARACTERISTICS OF LENS-FREE CMOS OPTICAL ARRAY SENSOR PACKAGE MODULE HAVING FLOW CHANNEL	Subclause 4.4 Clause 5, 6
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## SEMICONDUCTOR DEVICES –

### **Part 18-3: Semiconductor bio sensors – Fluid flow characteristics of lens-free CMOS photonic array sensor package modules with fluidic system**

#### **1 Scope**

This part of IEC 60747 specifies the fluid flow characteristics of lens-free CMOS photonic array sensor package modules with fluidic system for bio analysis. This document includes the measurement set-up, measurement and calculation at initial state flow, criteria of the fluidic system for quality assurance, measurement and calculation at steady-state flow, and test report.

#### **2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes 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*

IEC 60747-18-2<sup>1</sup>:-, *Semiconductor devices – Part 18-2: Semiconductor bio sensors – Evaluation process of lens-free CMOS photonic array sensor package modules*

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<sup>1</sup> Under preparation. Stage at the time of publication: IEC/RFDIS 60747-18-2:2019.