



BSI Standards Publication

Semiconductor optoelectronic devices for fibre optic system applications

Part 1: Specification template for essential ratings and characteristics

National foreword

This British Standard is the UK implementation of EN 62007-1:2015+A1:2022. It is identical to IEC 62007-1:2015 incorporating amendment 1:2022. It supersedes BS EN 62007-1:2015, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by **A1** **A1**.

The UK participation in its preparation was entrusted to Technical Committee GEL/86/3, Fibre optic systems and active devices.

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Date	Text affected
30 November 2022	Implementation of IEC amendment 1:2022 with CENELEC endorsement A1:2022

English Version

Semiconductor optoelectronic devices for fibre optic system
applications - Part 1: Specification template for essential ratings
and characteristics
(IEC 62007-1:2015)

Dispositifs optoélectroniques à semiconducteurs pour
application dans les systèmes à fibres optiques - Partie 1:
Modèle de spécification relatif aux valeurs et
caractéristiques essentielles
(IEC 62007-1:2015)

Optoelektronische Halbleiterbauelemente für Anwendungen
in Lichtwellenleitsystemen - Teil 1: Vorlage für
Leistungsspezifikationen für wesentliche Grenz- und
Kennwerte
(IEC 62007-1:2015)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of document 86C/1256/CDV, future edition 3 of IEC 62007-1, prepared by SC 86C "Fibre optic systems and active devices" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62007-1:2015.

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- latest date by which the national (dow) 2018-05-04
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This document supersedes EN 62007-1:2009.

EN 62007-1:2015 includes the following significant technical changes with respect to EN 62007-1:2009:

- 1) The definitions of some symbols and terms are revised in order to harmonize them with those in other SR 86C documents;
- 2) A clause on APD-TIA has been added.

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European foreword to amendment A1

The text of document 86C/1785/CDV, future IEC 62007-1/AMD1, prepared by SC 86C "Fibre optic systems and active devices" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62007-1:2015/A1:2022.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

The Annex ZA of EN 62007-1:2015 applies with the following changes:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
<i>Delete the following reference:</i>				
IEC 60747-5-1	-	Discrete semiconductor devices and integrated circuits - Part 5-1: Optoelectronic devices - General	EN 60747-5-1	-
<i>Add the following references:</i>				
IEC 60747-5-4	-	Semiconductor devices - Part 5-4: Optoelectronic devices - Semiconductor lasers	-	-
IEC 60747-5-6	-	Semiconductor devices - Part 5-6: Optoelectronic devices - Light emitting diodes	-	-
IEC 60747-5-7	-	Semiconductor devices - Part 5-7: Optoelectronic devices - Photodiodes and phototransistors	-	-

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

**SEMICONDUCTOR OPTOELECTRONIC DEVICES
FOR FIBRE OPTIC SYSTEM APPLICATIONS –****Part 1: Specification template for essential ratings and characteristics**

FOREWORD

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International Standard IEC 62007-1 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

This third edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition.

- 1) The definitions of some symbols and terms are revised in order to harmonize them with those in other SC 86C documents.
- 2) A clause on APD-TIA has been added.

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

A list of all parts in the IEC 62007 series, published under the general title *Semiconductor optoelectronic devices for fibre optic system applications*, can be found on the IEC website.

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site under webstore.iec.ch in the data related to the specific publication. At this date, the publication will be

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

SEMICONDUCTOR OPTOELECTRONIC DEVICES FOR FIBRE OPTIC SYSTEM APPLICATIONS –

Part 1: Specification template for essential ratings and characteristics

1 Scope

This part of IEC 62007 is a specification template for essential ratings and characteristics of the following categories of semiconductor optoelectronic devices to be used in the field of fibre optic systems and subsystems:

- semiconductor photoemitters;
- semiconductor photoelectric detectors;
- monolithic or hybrid integrated optoelectronic devices and their modules.

This part of IEC 62007 provides a frame for the preparation of detail specifications for the essential ratings and characteristics.

In using this part of IEC 62007, detail specification writers add but do not delete specification parameters and/or groups of specification parameters for particular applications.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60825 (all parts), *Safety of laser products*

IEC 60747-5-4, *Semiconductor devices – Part 5-4: Optoelectronic devices – Semiconductor lasers*

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

IEC 60747-5-7, *Semiconductor devices – Part 5-7: Optoelectronic devices – Photodiodes and phototransistors*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions concerning physical concepts, types of devices, general terms, and ratings and characteristics given in IEC 60747-5-4, IEC 60747-5-6 and IEC 60747-5-7 and the following apply.

3.1.1

PIN photodiode

photodiode with a large intrinsic region sandwiched between P- and N-doped semiconducting regions used for the detection of optical radiation