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EN 62007-2:2009

Semiconductor optoelectronic devices for fibre optic system applications -- Part 2: Measuring methods (IEC 62007-2:2009 (EQV))

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EUROPEAN STANDARD

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EN 62007-2

March 2009

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Supersedes EN 62007-2:2000

English version

Semiconductor optoelectronic devices for fibre optic system applications - Part 2: Measuring methods

(IEC 62007-2:2009)

Dispositifs optoélectroniques à semiconducteurs pour application dans les systèmes à fibres optiques - Partie 2: Méthodes de mesure (CEI 62007-2:2009)

Optoelektronische Halbleiterbauelemente für Anwendungen in Lichtwellenleitersystemen - Teil 2: Messverfahren (IEC 62007-2:2009)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 62007-2:2009 E

Foreword

The text of document 86C/868/FDIS, future edition 2 of IEC 62007-2, 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 was approved by CENELEC as EN 62007-2 on 2009-02-01.

This European Standard supersedes EN 62007-2:2000.

EN 62007-2:2009 includes the following significant technical changes with respect to EN 62007-2:2000:

– descriptions related to analogue characteristics have been removed;

– some definitions and terms have been revised for harmonisation with other standards originating from SC 86C.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2009-11-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2012-02-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62007-2:2009 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61300	NOTE	Harmonized in EN 61300 series (not modified).
IEC 61315	NOTE	Harmonized as EN 61315:2006 (not modified).
ISO 1101	NOTE	Harmonized as EN ISO 1101:2005 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-731	1991	International Electrotechnical Vocabulary (IEV) - Chapter 731: Optical fibre communication	-	-
IEC 60793 (mod)	Series	Optical fibres	EN 60793	Series
IEC 60794	Series	Optical fibre cables	EN 60794	Series
IEC 60874	Series	Connectors for optical fibres and cables	EN 60874	Series

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Semiconductor optoelectronic devices for fibre optic system applications – Part 2: Measuring methods

Dispositifs optoélectroniques à semiconducteurs pour application dans les systèmes à fibres optiques – Partie 2: Méthodes de mesure

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Le premier dictionnaire en ligne au monde de termes électroniques et électriques. Il contient plus de 20 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans les langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International en ligne.
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NORME INTERNATIONALE

Semiconductor optoelectronic devices for fibre optic system applications – Part 2: Measuring methods

Dispositifs optoélectroniques à semiconducteurs pour application dans les systèmes à fibres optiques – Partie 2: Méthodes de mesure

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SEMICONDUCTOR OPTOELECTRONIC DEVICES FOR FIBRE OPTIC SYSTEM APPLICATIONS –

Part 2: Measuring methods

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62007-2 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

This second edition cancels and replaces the first edition published in 1997, and its amendment 1(1998). It is a technical revision.

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

a) descriptions related to analogue characteristics have been removed;
b) some definitions and terms have been revised for harmonisation with other standards originating from SC 86C.

The text of this standard is based on the following documents:

FDIS	Report on voting
86C/868/FDIS	86C/870/RVD

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

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

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

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://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.

INTRODUCTION

Semiconductor optical signal transmitters and receivers play important roles in optical information networks. This standard covers the measurement procedures for their optical and electrical properties that are intended for digital communication systems. These properties are essential to specify their performance.

SEMICONDUCTOR OPTOELECTRONIC DEVICES FOR FIBRE OPTIC SYSTEM APPLICATIONS –

Part 2: Measuring methods

1 Scope

This part of IEC 62007 describes the measuring methods applicable to the semiconductor optoelectronic devices to be used in the field of fibre optic digital communication systems and subsystems.

All optical fibres and cables that are defined in IEC 60793 series, IEC 60794 series are applicable. All optical connectors that are defined in IEC 60874 series are applicable, if a pigtail is to be terminated with an optical connector.

2 Normative references

The following referenced documents are indispensable for the application 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 60050-731:1991, *International Electrotechnical Vocabulary – Chapter 731: Optical fibre communication*

IEC 60793 (all parts), *Optical fibres*

IEC 60794 (all parts), *Optical fibre cables*

IEC 60874 (all parts), *Connectors for optical fibres and cables*

3 Terms, definitions and abbreviations

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

3.1 Terms and definitions

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

[IEV 731-06-29]

3.1.2
avalanche photodiode
photodiode operating with a bias voltage such that the primary photocurrent undergoes amplification by cumulative multiplication of charge carriers

[IEV 731-06-30]

3.1.3
pigtail
short optical fibre or optical fibre cable that is attached to a device being measured