



NSAI
Standards

Irish Standard
I.S. EN IEC 61280-1-3:2021

Fibre optic communication subsystem test procedures - Part 1-3: General communication subsystems - Measurement of central wavelength, spectral width and additional spectral characteristics

I.S. EN IEC 61280-1-3:2021

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National Foreword

I.S. EN IEC 61280-1-3:2021 is the adopted Irish version of the European Document EN IEC 61280-1-3:2021, Fibre optic communication subsystem test procedures - Part 1-3: General communication subsystems - Measurement of central wavelength, spectral width and additional spectral characteristics

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EUROPEAN STANDARD

EN IEC 61280-1-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2021

ICS 33.180.01

Supersedes EN 61280-1-3:2010 and all of its
amendments and corrigenda (if any)

English Version

**Fibre optic communication subsystem test procedures - Part 1-3:
General communication subsystems - Measurement of central
wavelength, spectral width and additional spectral characteristics
(IEC 61280-1-3:2021)**

Procédures d'essai des sous-systèmes de
télécommunication à fibres optiques - Partie 1-3: Sous-
systèmes généraux de télécommunication - Mesure de la
longueur d'onde centrale, de la largeur spectrale et des
caractéristiques spectrales supplémentaires
(IEC 61280-1-3:2021)

Lichtwellenleiter-Kommunikationsuntersysteme -
Grundlegende Prüfverfahren - Teil 1-3: Prüfverfahren für
allgemeine Kommunikationsuntersysteme - Messung von
Mittelwellenlänge und Spektralbreite
(IEC 61280-1-3:2021)

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CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 61280-1-3:2021 (E)

European foreword

The text of document 86C/1701/CDV, future edition 3 of IEC 61280-1-3, 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 IEC 61280-1-3:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2022-05-09
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-08-09

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Endorsement notice

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In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 62522 NOTE Harmonized as EN 62522

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60825-1	-	Safety of laser products - Part 1: Equipment classification and requirements	EN 60825-1	-
IEC 62129-1	-	Calibration of wavelength/optical frequency measurement instruments - Part 1: Optical spectrum analyzers	EN 62129-1	-
IEC 62129-2	-	Calibration of wavelength/optical frequency measurement instruments - Part 2: Michelson interferometer single wavelength meters	EN 62129-2	-

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IEC 61280-1-3

Edition 3.0 2021-07

INTERNATIONAL STANDARD



**Fibre optic communication subsystem test procedures –
Part 1-3: General communication subsystems – Measurement of central
wavelength, spectral width and additional spectral characteristics**





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IEC 61280-1-3

Edition 3.0 2021-07

INTERNATIONAL STANDARD



**Fibre optic communication subsystem test procedures –
Part 1-3: General communication subsystems – Measurement of central
wavelength, spectral width and additional spectral characteristics**

INTERNATIONAL
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC COMMUNICATION SUBSYSTEM TEST PROCEDURES –

Part 1-3: General communication subsystems – Measurement of central wavelength, spectral width and additional spectral characteristics

FOREWORD

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IEC 61280-1-3 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics. It is an International Standard.

This third edition cancels and replaces the second edition published in 2010. This edition constitutes a technical revision.

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

- a) addition of measurement of signal-to-source spontaneous emission ratio in 8.9;
- b) change of document title to reflect the additional measurement;
- c) additional information on the resolution bandwidth used in the measurement of the side-mode suppression ratio in 8.8;
- d) use of a calibrated optical wavelength meter for accurate wavelength measurements of single-longitudinal mode lasers.

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

Draft	Report on voting
86C/1701/CDV	86C/1717/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/standardsdev/publications.

A list of all parts in the IEC 61280 series, published under the general title *Fibre optic communication subsystem test procedures*, 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

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

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FIBRE OPTIC COMMUNICATION SUBSYSTEM TEST PROCEDURES –

Part 1-3: General communication subsystems – Measurement of central wavelength, spectral width and additional spectral characteristics

1 Scope

This part of IEC 61280 provides definitions and measurement procedures for several wavelength and spectral width properties of an optical spectrum associated with a fibre optic communication subsystem, an optical transmitter, or other light sources used in the operation or test of communication subsystems. This document also provides definitions and measurement procedures for side-mode suppression ratio and signal-to-source spontaneous emission ratio.

The measurement is done for the purpose of system construction and/or maintenance. In the case of communication subsystem signals, the optical transmitter is typically under modulation.

NOTE Different properties can be appropriate to different spectral types, such as continuous spectra characteristics of light-emitting diodes (LEDs), as well as multilongitudinal-mode (MLM), multitransverse-mode (MTM) and single-longitudinal mode (SLM) spectra, which are characteristic of laser diodes (LDs).

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 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*

IEC 62129-1, *Calibration of wavelength/optical frequency measurement instruments – Part 1: Optical spectrum analyzers*

IEC 62129-2, *Calibration of wavelength/optical frequency measurement instruments – Part 2: Michelson interferometer single wavelength meters*

3 Terms, definitions and abbreviated terms

For the purposes of this document, the following terms, definitions and abbreviated terms 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 Wavelength

NOTE The following wavelength terms provide quantitative definitions for the description of the central wavelength of a spectrum. In this document, "central wavelength" is a general category label for these terms.

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