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# INTERNATIONAL STANDARD

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**Fibre optic communication subsystem test procedures –  
Part 1-3: General communication subsystems – Central wavelength and spectral  
width measurement**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

PRICE CODE

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### FIBRE OPTIC COMMUNICATION SUBSYSTEM TEST PROCEDURES –

#### Part 1-3: General communication subsystems – Central wavelength and spectral width measurement

#### FOREWORD

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

This second edition cancels and replaces the first edition published in 1998. This edition constitutes a technical revision with changes reflecting new laser technology and includes a second method modified for state of the art instrumentation.

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

CDV	Report on voting
86C/ 887/CDV	86C/ 937/RVC

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

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

A list of all parts of the IEC 61280 series can be found, under the general title *Fibre optic communication subsystem test procedures*, on the IEC website.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability 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- withdrawn,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.

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

## FIBRE OPTIC COMMUNICATION SUBSYSTEM TEST PROCEDURES –

### Part 1-3: General communication subsystems – Central wavelength and spectral width measurement

#### 1 Scope

This part of IEC 61280 provides definitions and measure 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.

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 may be appropriate to different spectral types, such as continuous spectra characteristic of light-emitting diodes (LEDs), and multilongitudinal-mode (MLM), multitransverse-mode (MTM) and single-longitudinal mode (SLM) spectra, characteristic of laser diodes (LDs).

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

IEC 62129, *Calibration of optical spectrum analyzers*

#### 3 Terms and definitions

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

##### 3.1 Wavelength

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

##### 3.1.1 centre wavelength

$\lambda_0$

also called "half-power mid-point", the mean of the closest spaced half-power wavelengths in an optical spectrum, one above and one below the peak wavelength

##### 3.1.2 half-power wavelength

$\lambda_{3dB}$

a wavelength corresponding to a half peak power value of the optical spectrum