

Fibre-optic communication subsystem test procedures -  
Part 4-5: Installed cabling plant - Attenuation  
measurement of MPO terminated fibre optic cabling  
plant using test equipment with MPO interfaces

## EESTI STANDARDI EESSÕNA

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See Eesti standard EVS-EN IEC 61280-4-5:2020 sisaldab Euroopa standardi EN IEC 61280-4-5:2020 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 61280-4-5:2020 consists of the English text of the European standard EN IEC 61280-4-5:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 11.09.2020.	Date of Availability of the European standard is 11.09.2020.
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ICS 33.180.01

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English Version

**Fibre-optic communication subsystem test procedures - Part 4-5:  
Installed cabling plant - Attenuation measurement of MPO  
terminated fibre optic cabling plant using test equipment with  
MPO interfaces  
(IEC 61280-4-5:2020)**

Procédures d'essai des sous-systèmes de  
télécommunication fibroniques - Partie 4-5: Installation  
câblée - Mesure de l'affaiblissement de l'installation câblée  
fibronique à terminaisons MPO utilisant un équipement  
d'essai avec interfaces MPO  
(IEC 61280-4-5:2020)

Prüfverfahren für Lichtwellenleiter-  
Kommunikationsuntersysteme - Teil 4-5: Installierte  
Kabelanlagen - Dämpfungsmessung an Lichtwellenleiter-  
Kabelanlagen mit MPO-Abschlüssen mittels  
Prüfeinrichtungen mit MPO-Steckgesichtern  
(IEC 61280-4-5:2020)

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## European foreword

The text of document 86C/1669/FDIS, future edition 1 of IEC 61280-4-5, 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 61280-4-5:2020.

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) 2021-05-26
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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60793-1-40	NOTE	Harmonized as EN IEC 60793-1-40
IEC 60793-2	NOTE	Harmonized as EN 60793-2
IEC 60793-2-10	NOTE	Harmonized as EN IEC 60793-2-10
IEC 60793-2-50	NOTE	Harmonized as EN IEC 60793-2-50
IEC 60876-1:2014	NOTE	Harmonized as EN 60876-1:2014 (not modified)
IEC 61280-4-2	NOTE	Harmonized as EN 61280-4-2
IEC 61300-3-6	NOTE	Harmonized as EN 61300-3-6
IEC 61300-3-45	NOTE	Harmonized as EN 61300-3-45
IEC 61745	NOTE	Harmonized as EN 61745
IEC 61754-7 (series)	NOTE	Harmonized as EN IEC 61754-7 (series)
IEC 61755-3-31	NOTE	Harmonized as EN 61755-3-31

## 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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60825	series	Safety of laser products	EN 60825	series
IEC 61280-1-3	-	Fibre optic communication subsystem test procedures - Part 1-3: General communication subsystems - Central wavelength and spectral width measurement	EN 61280-1-3	-
IEC 61280-4-1	2019	Fibre-optic communication subsystem test procedures - Part 4-1: Installed cabling plant - Multimode attenuation measurement	EN IEC 61280-4-1	2019
IEC 61300-3-35	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-35: Examinations and measurements - Visual inspection of fibre optic connectors and fibre-stub transceivers	EN 61300-3-35	-
IEC 61315	-	Calibration of fibre-optic power meters	EN IEC 61315	-
IEC 61746-1	-	Calibration of optical time-domain reflectometers (OTDR) - Part 1: OTDR for single mode fibres	EN 61746-1	-
IEC 61746-2	-	Calibration of optical time-domain reflectometers (OTDR) - Part 2: OTDR for multimode fibres	EN 61746-2	-

# INTERNATIONAL STANDARD



**Fibre-optic communication subsystem test procedures –  
Part 4-5: Installed cabling plant – Attenuation measurement of MPO terminated  
fibre optic cabling plant using test equipment with MPO interfaces**



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#### IEC Glossary - [std.iec.ch/glossary](http://std.iec.ch/glossary)

67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

# INTERNATIONAL STANDARD



**Fibre-optic communication subsystem test procedures –  
Part 4-5: Installed cabling plant – Attenuation measurement of MPO terminated  
fibre optic cabling plant using test equipment with MPO interfaces**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE-OPTIC COMMUNICATION SUBSYSTEM TEST PROCEDURES –****Part 4-5: Installed cabling plant –  
Attenuation measurement of MPO terminated fibre  
optic cabling plant using test equipment with MPO interfaces**

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International Standard IEC 61280-4-5 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

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

FDIS	Report on voting
86C/1669/FDIS	86C/1679/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.

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

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

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

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## FIBRE-OPTIC COMMUNICATION SUBSYSTEM TEST PROCEDURES –

### Part 4-5: Installed cabling plant – Attenuation measurement of MPO terminated fibre optic cabling plant using test equipment with MPO interfaces

#### 1 Scope

This part of IEC 61280 is applicable to the measurement of attenuation and determination of polarity and length of installed multimode and single-mode optical fibre cabling plant, terminated with MPO connectors, using test equipment having an MPO interface. This cabling plant can include multimode or single-mode optical fibres, connectors, adapters, splices, and other passive devices. The cabling can be installed in a variety of environments including residential, commercial, industrial, and data centre premises, as well as outside plant environments.

In this document, the optical fibres that are addressed include sub-categories A1-OMx, where  $x = 2, 3, 4$  and  $5$  (50/125  $\mu\text{m}$ ) multimode optical fibres, as specified in IEC 60793-2-10, and category B-652 and B-657 (9/125  $\mu\text{m}$ ) single-mode optical fibres, as specified in IEC 60793-2-50. The attenuation measurements of the other multimode and single-mode categories can also be made using a light source and power meter (LSPM) or optical time domain reflectometer (OTDR) utilising an internal or external optical switch having one MPO interface. Multimode measurements are made with an 850 nm source because transceivers used for parallel optics applications having an MPO interface only operate at 850 nm; 1 300 nm measurements are optional. Single-mode measurements are made with a 1 310 nm and/or 1 550 nm source because transceivers used for parallel optics applications having an MPO interface operate at these wavelengths. This document does not include descriptions of cabling that is not exclusively MPO to MPO.

#### 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 (all parts), *Safety of laser products*

IEC 61280-1-3, *Fibre optic communication subsystem test procedures – Part 1-3: General communication subsystems – Central wavelength and spectral width measurement*

IEC 61280-4-1:2019, *Fibre-optic communication subsystem test procedures – Part 4-1: Installed cabling plant – Multimode attenuation measurement*

IEC 61300-3-35, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-35: Examinations and measurements – Visual inspection of fibre optic connectors and fibre-stub transceivers*

IEC 61315, *Calibration of fibre-optic power meters*

IEC 61746-1, *Calibration of optical time-domain reflectometers (OTDR) – Part 1: OTDR for single mode fibres*