

# 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  
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## CONTENTS

FOREWORD.....	7
1 Scope.....	9
2 Normative references .....	9
3 Terms, definitions, graphical symbols and abbreviated terms.....	10
3.1 Terms and definitions.....	10
3.2 Graphical symbols .....	12
3.3 Abbreviated terms.....	14
4 Test methods.....	14
4.1 General.....	14
4.2 Cabling configurations and applicable test methods .....	15
5 Overview of uncertainties .....	16
5.1 General.....	16
5.2 Sources of significant uncertainties.....	16
5.3 Consideration of the PM.....	17
5.4 Consideration of test cord connector grade .....	17
5.5 Typical uncertainty values for multimode testing .....	17
5.6 Typical uncertainty values for single-mode testing .....	19
6 Apparatus.....	20
6.1 General.....	20
6.2 Light source .....	20
6.2.1 General .....	20
6.2.2 Stability .....	20
6.2.3 Spectral characteristics (LSPM measurement).....	21
6.3 Launch cord .....	21
6.4 Receive or tail cord.....	22
6.5 Substitution cord.....	22
6.6 Adapter cord .....	23
6.7 Power meter – LSPM methods only.....	23
6.8 OTDR apparatus.....	24
6.9 Connector end face cleaning and inspection equipment .....	24
6.10 Adapters .....	24
7 Procedures.....	24
7.1 General.....	24
7.2 Common procedures.....	25
7.2.1 Care of the test cords .....	25
7.2.2 Take reference measurements.....	25
7.2.3 Inspect and clean the ends of the optical fibres in the cabling.....	25
7.2.4 Take the measurements .....	25
7.2.5 Make the calculations .....	25
7.2.6 Multi-fibre and bi-directional testing .....	25
7.3 Calibration .....	26
7.4 Safety .....	26
8 Calculations.....	26
9 Documentation .....	26
9.1 Information for each test .....	26
9.2 Information to be available .....	26

Annex A (normative) One-cord method .....	27
A.1 Applicability of the test method .....	27
A.2 Apparatus .....	27
A.3 Procedure for unpinned to unpinned cabling with unpinned power meter.....	27
A.4 Procedure for unpinned to pinned cabling with unpinned power meter .....	28
A.5 Procedure for pinned to pinned cabling with pinned power meter .....	29
A.6 Procedure for unpinned to unpinned cabling with pinned power meter and gender-neutral test cord .....	30
A.7 Calculation.....	31
A.8 Components of reported attenuation .....	31
Annex B (normative) Three-cord method.....	32
B.1 Applicability of the test method .....	32
B.2 Apparatus .....	32
B.3 Procedure for unpinned to unpinned cabling .....	32
B.4 Procedure for unpinned to pinned cabling .....	33
B.5 Procedure for pinned to pinned cabling .....	34
B.6 Procedure, channel test (general) .....	35
B.7 Calculations .....	36
B.8 Components of reported attenuation .....	36
Annex C (normative) Adapter-cord method .....	37
C.1 Applicability of the test method .....	37
C.2 Apparatus .....	37
C.3 Procedure for unpinned to unpinned cabling with pinned power meter .....	37
C.4 Procedure for unpinned to pinned cabling with pinned power meter .....	38
C.5 Procedure for pinned to unpinned cabling with unpinned power meter .....	39
C.6 Procedure for pinned to pinned cabling with unpinned power meter .....	40
C.7 Calculations .....	41
C.8 Components of reported attenuation .....	42
Annex D (normative) Equipment cord method .....	43
D.1 Applicability of the test method .....	43
D.2 Apparatus .....	43
D.3 Procedure .....	43
D.4 Calculation.....	44
D.5 Components of reported attenuation .....	44
D.6 Typical uncertainty values.....	45
Annex E (normative) Optical time domain reflectometer .....	46
E.1 Applicability of the test method .....	46
E.2 Apparatus .....	46
E.2.1 General .....	46
E.2.2 OTDR .....	46
E.2.3 Test cords .....	47
E.3 Procedure (test method) .....	47
E.4 Calculation.....	48
E.4.1 General .....	48
E.4.2 Connection location .....	48
E.4.3 Definition of the power levels $F_1$ and $F_2$ .....	49
E.4.4 Alternative calculation.....	50
E.5 OTDR uncertainties .....	52

Annex F (normative) Requirements for the multimode source characteristics .....	53
Annex G (informative) OTDR configuration information .....	54
G.1 General.....	54
G.2 Other measurement configurations .....	54
G.2.1 General .....	54
G.2.2 Measurement with low return loss connectors or short length cabling .....	54
G.2.3 Measurement with APC connectors .....	56
Annex H (informative) Test cord, breakout cord, and cassette attenuation verification .....	58
H.1 General.....	58
H.2 Apparatus .....	58
H.3 General procedure .....	58
H.3.1 Overview .....	58
H.3.2 Test cord verification .....	59
H.3.3 Cassette and breakout cord verification .....	60
H.4 Test cord verification prior to cabling measurement .....	61
H.4.1 General .....	61
H.4.2 Procedure for unpinned to unpinned cabling measurement .....	61
H.4.3 Procedure for unpinned to pinned cabling measurement.....	62
H.4.4 Procedure for pinned to pinned cabling measurement.....	63
Annex I (normative) On the use of low attenuation grade test cords .....	66
I.1 General.....	66
I.2 Practical configurations and assumptions.....	66
I.2.1 Component specifications .....	66
I.2.2 Conventions .....	67
I.2.3 Reference planes .....	67
I.3 Impact of using low attenuation grade test cords for recommended LSPM methods.....	68
I.4 Examples for LSPM measurements.....	68
I.4.1 Example 1: Configuration Au-u, 1-C method (Annex A).....	68
I.4.2 Example 2: Configuration Du-u, EC method (Annex D) .....	69
I.5 Impact of using reference grade test cords for different configurations using the OTDR test method .....	69
I.5.1 Cabling configurations Au-u, Ap-u and Ap-p .....	69
I.5.2 Cabling configuration Du-u .....	70
Bibliography.....	72
Figure 1 – Connector and apparatus symbols .....	13
Figure 2 – Symbol for cabling under test.....	14
Figure 3 – OTDR schematic with external optical switch .....	24
Figure A.1 – Reference measurement for unpinned to unpinned cabling using unpinned power meter.....	28
Figure A.2 – Test measurement for unpinned to unpinned cabling using unpinned power meter.....	28
Figure A.3 – Reference measurement for unpinned to pinned cabling using unpinned power meter.....	29
Figure A.4 – Test measurement for unpinned to pinned cabling using unpinned power meter.....	29
Figure A.5 – Reference measurement for pinned to pinned cabling using pinned power meter.....	30

Figure A.6 – Test measurement for pinned to pinned cabling using pinned power meter .....	30
Figure A.7 – Reference measurement for unpinned to unpinned cabling using pinned power meter.....	31
Figure A.8 – Test measurement for unpinned to unpinned cabling (gender-neutral TC1) using pinned power meter.....	31
Figure B.1 – Reference measurement for unpinned to unpinned cabling using pinned power meter.....	33
Figure B.2 – Test measurement for unpinned to unpinned cabling using pinned power meter.....	33
Figure B.3 – Reference measurement for unpinned to pinned cabling using pinned power meter.....	34
Figure B.4 – Test measurement for unpinned to pinned cabling using pinned power meter.....	34
Figure B.5 – Reference measurement for pinned to pinned cabling using unpinned power meter.....	35
Figure B.6 – Test measurement for pinned to pinned cabling using unpinned power meter.....	35
Figure B.7 – Reference measurement for channel test using unpinned power meter .....	36
Figure B.8 – Test measurement for channel test using unpinned power meter .....	36
Figure C.1 – Reference measurement for unpinned to unpinned cabling using pinned power meter.....	38
Figure C.2 – Test measurement for unpinned to unpinned cabling using pinned power meter.....	38
Figure C.3 – Reference measurement for unpinned to pinned cabling using pinned power meter.....	39
Figure C.4 – Test measurement for unpinned to pinned cabling using pinned power meter.....	39
Figure C.5 – Reference measurement for unpinned to pinned cabling using unpinned power meter.....	40
Figure C.6 – Test measurement for unpinned to pinned cabling using unpinned power meter.....	40
Figure C.7 – Reference measurement for unpinned to pinned cabling using unpinned power meter.....	41
Figure C.8 – Test measurement for unpinned to pinned cabling using unpinned power meter.....	41
Figure D.1 – Reference measurement using pinned power meter.....	44
Figure D.2 – Test measurement using pinned power meter.....	44
Figure E.1 – OTDR method.....	48
Figure E.2 – Location of the ports of the cabling under test.....	49
Figure E.3 – Graphic construction of $F_1$ and $F_2$ .....	50
Figure E.4 – Graphic construction of $F_1$ , $F_{11}$ , $F_{12}$ and $F_2$ .....	51
Figure G.1 – Attenuation measurement with low return loss connectors .....	55
Figure G.2 – Attenuation measurement of a short length cabling.....	56
Figure G.3 – Attenuation measurement with APC MPO connections .....	57
Figure H.1 – Obtaining reference power level $P_1$ .....	59
Figure H.2 – Obtaining power level $P_2$ .....	59
Figure H.3 – Obtaining reference power level $P_1$ .....	60

Figure H.4 – Obtaining power level $P_2$ .....	60
Figure H.5 – Test measurement for unpinned to unpinned cabling .....	61
Figure H.6 – Step 1: obtaining reference power level $P_1$ .....	61
Figure H.7 – Step 2: verification cords, obtaining power level $P_2$ .....	62
Figure H.8 – Test measurement for unpinned to pinned cabling .....	62
Figure H.9 – Step 1: obtaining reference power level $P_1$ .....	63
Figure H.10 – Step 2: obtaining power level $P_2$ .....	63
Figure H.11 – Test measurement for pinned to pinned cabling .....	63
Figure H.12 – Step 1: obtaining reference power level $P_1$ .....	64
Figure H.13 – Step 2: verification of cords, obtaining power level $P_2$ .....	64
Figure H.14 – Step 3: verification of receive cord, obtaining power level $P_3$ .....	65
Figure I.1 – Cabling configurations Au-u, Ap-u and Ap-p tested with OTDR method .....	70
Figure I.2 – Cabling configuration Du-u tested with OTDR method .....	71
Table 1 – Cabling configurations .....	16
Table 2 – Test methods and configurations .....	16
Table 3 – Measurements bias related to test cord connector grade .....	17
Table 4 – Uncertainty for a given attenuation at 850 nm using same photodetector .....	18
Table 5 – Uncertainty for a given attenuation at 850 nm using different photodetectors .....	19
Table 6 – Uncertainty for a given attenuation at 1 310 nm using same photodetector .....	19
Table 7 – Uncertainty for a given attenuation at 1 310 nm using different photodetectors .....	20
Table 8 – Spectral requirements .....	21
Table D.1 – Uncertainty for a given attenuation when equipment cord method is used .....	45
Table I.1 – Measurement bias adjustment when using low attenuation grade test cords .....	68
Table I.2 – Acceptance figure adjustment using low attenuation grade test cords – OTDR method .....	70

## 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-OM<sub>x</sub>, 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*