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**Optical fibres –
Part 1-40: Attenuation measurement methods**

**Fibres optiques –
Partie 1-40: Méthodes de mesure de l'affaiblissement**



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CONTENTS

FOREWORD.....	5
1 Scope.....	7
2 Normative references	7
3 Terms, definitions and abbreviated terms	8
3.1 Terms and definitions.....	8
3.2 Abbreviated terms.....	9
4 Calibration requirements.....	9
5 Reference test method	9
6 Apparatus.....	
7 Sample preparation	9
7.1 Sample length.....	9
7.2 Sample end face.....	9
8 Procedure.....	9
9 Calculations.....	9
9.1 Methods A and B	9
9.2 Method C	10
9.3 Method D	10
10 Results.....	10
10.1 Information available with each measurement	10
10.2 Information available upon request	10
10.3 Method-specific additional information	10
11 Specification information	10
Annex A (normative) Requirements specific to method A – Cut-back	11
A.1 General.....	11
A.2 Apparatus	11
A.2.1 General apparatus for all fibres.....	11
A.2.2 Launch apparatus for all single-mode fibres.....	13
A.2.3 Launch apparatus for A1 multimode fibres	14
A.2.4 Launch apparatus for A2 to A4 multimode fibres	16
A.2.5 Calibration requirements.....	17
A.3 Procedure.....	18
A.4 Calculations.....	18
Annex B (normative) Requirements specific to method B – Insertion loss.....	19
B.1 General.....	19
B.2 Apparatus	19
B.2.1 General set-ups	19
B.2.2 Apparatus common to method A (cut-back).....	19
B.2.3 Additional apparatus specific to method B (insertion-loss)	19
B.2.4 Calibration requirements.....	19
B.3 Procedure	19
B.4 Calculations	20
Annex C (normative) Requirements specific to method C – Backscattering	21
C.1 General.....	21
C.2 Apparatus	21
C.2.1 General	21

C.2.2	Optical transmitter	21
C.2.3	Launch conditions	22
C.2.4	Optical splitter	22
C.2.5	Optical receiver	22
C.2.6	Pulse duration and repetition rate	22
C.2.7	Signal processor	22
C.2.8	Display	22
C.2.9	Data interface (optional)	23
C.2.10	Reflection controller (optional)	23
C.2.11	Splices and connectors	23
C.3	Sampling and specimens	23
C.4	Procedure	23
C.4.1	General measurement steps	23
C.4.2	Further steps for measuring attenuation	24
C.4.3	Further steps for measuring point discontinuities	25
C.4.4	Calibration	26
C.5	Calculations	27
C.6	Results	27
Annex D (normative)	Requirements specific to method D – Spectral attenuation modelling	28
D.1	General	28
D.2	Apparatus	28
D.3	Sampling and specimens	28
D.4	Procedure	28
D.5	Calculations	29
D.6	Results	30
Annex E (informative)	Examples of short cable test results on A1 multimode fibres	31
Bibliography	33
Figure A.1	– Arrangement of equipment for loss measurement at a specified wavelength	11
Figure A.2	– Arrangement of equipment used to obtain loss spectrum	12
Figure A.3	– General launch arrangement	12
Figure A.4	– Limited phase space launch optics	15
Figure A.5	– Two examples of optical fibre scramblers	16
Figure A.6	– Lens system	16
Figure A.7	– Launch fibre	17
Figure A.8	– Mode scrambler (for A.4 fibre)	17
Figure A.9	– A wide-spectrum source (line "b") could lead to attenuation measurement errors due to sharp variations on spectral attenuation of polymer-core fibres (line "a")	18
Figure B.1	– Calibration of insertion loss measurement set	20
Figure B.2	– Measurement of insertion loss	20
Figure C.1	– Block diagram of an OTDR	21
Figure C.2	– Schematic OTDR trace for a "uniform" specimen preceded by a dead-zone fibre	24
Figure C.3	– Schematic OTDR trace for a "uniform" specimen not preceded by a dead-zone fibre	24

Figure C.4 – Schematic OTDR trace showing apparent loss due to point discontinuities, one reflective and one non-reflective 26

Figure C.5 – Schematic of an expanded OTDR trace showing two point discontinuities, one with apparent gain, and another with no apparent loss or gain 26

Figure E.1 – Example of attenuation coefficient tests on A1-OM2 fibre 31

Figure E.2 – Example of attenuation coefficient tests on A1-OM4 fibre 31

Figure E.3 – Example of attenuation coefficient tests on A1-OM1 fibre 32

Table A.1 – Size examples 15

Table A.2 – Launch conditions for A2 to A4 fibres 16

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRES –

Part 1-40: Attenuation measurement methods

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IEC 60793-1-40 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics. It is an International Standard.

This third edition cancels and replaces the second edition published in 2019. This edition constitutes a technical revision.

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

- a) modifying the definition of attenuation to be compatible with the definition in electropedia.org

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

Draft	Report on voting
86A/2355/CDV	86A/2446/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/publications.

A list of all parts in the IEC 60793 series, published under the general title *Optical fibres*, can be found on the IEC website.

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OPTICAL FIBRES –

Part 1-40: Attenuation measurement methods

1 Scope

This part of IEC 60793 establishes uniform requirements for measuring the attenuation of optical fibre, thereby assisting in the inspection of fibres and cables for commercial purposes.

Four methods are described for measuring attenuation, one being that for modelling spectral attenuation:

- method A: cut-back;
- method B: insertion loss;
- method C: backscattering;
- method D: modelling spectral attenuation.

Methods A to C apply to the measurement of attenuation for all categories of the following fibres:

- class A multimode fibres;
- class B single-mode fibres.

Method C, backscattering, also covers the location, losses and characterization of point discontinuities.

Method D is applicable only to class B fibres.

Information common to all four methods appears in Clause 1 to Clause 11, and information pertaining to each individual method appears in Annex A, Annex B, Annex C, and Annex D, respectively.

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 60793-1-1, *Optical fibres – Part 1-1: Measurement methods and test procedures – General and guidance*

IEC 60793-1-22, *Optical fibres – Part 1-22: Measurement methods and test procedures – Length measurement*

IEC 60793-1-43, *Optical fibres – Part 1-43: Measurement methods and test procedures – Numerical aperture measurement*

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

IEC 61746-2, *Calibration of optical time-domain reflectometers (OTDR) – Part 2: OTDR for multimode fibres*