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Optical fibres - Part 1-40: Attenuation measurement methods

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/25

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English Version

**Optical fibres - Part 1-40: Attenuation measurement methods
(IEC 60793-1-40:2024)**

Fibres optiques - Partie 1-40: Méthodes de mesure de
l'affaiblissement
(IEC 60793-1-40:2024)

Lichtwellenleiter - Teil 1-40: Dämpfungsmessverfahren
(IEC 60793-1-40:2024)

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EN IEC 60793-1-40:2025 (E)**European foreword**

The text of document 86A/2355/CDV, future edition 3 of IEC 60793-1-40, prepared by SC 86A "Fibres and cables" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60793-1-40:2025.

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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.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cencenelec.eu.

<u>Publication</u>	<u>Année</u>	<u>Titre</u>	<u>EN/HD</u>	<u>Année</u>
IEC 60793-1-1	-	Optical fibres - Part 1-1: Measurement methods and test procedures - General and guidance	EN IEC 60793-1-1	-
IEC 60793-1-22	-	Optical fibres - Part 1-22: Measurement methods and test procedures - Length measurement	EN IEC 60793-1-22	-
IEC 60793-1-43	-	Optical fibres - Part 1-43: Measurement methods and test procedures - Numerical aperture measurement	EN 60793-1-43	-
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	-



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INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

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

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Edition 3.0 2024-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

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

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRES –

Part 1-40: Attenuation measurement methods

FOREWORD

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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](https://www.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.

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

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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*

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