

<b>STN</b>	<b>Optické vlákna</b> <b>Časť 1-46: Metódy merania a skúšobné postupy</b> <b>Sledovanie zmeny tlmenia</b>	<b>STN</b> <b>EN IEC</b> <b>60793-1-46</b>  35 9213
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Optical fibres - Part 1-46: Measurement methods and test procedures - Monitoring of changes in attenuation

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. 10/24

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NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN IEC 60793-1-46**

August 2024

ICS 33.180.10

Supersedes EN 60793-1-46:2002

English Version

**Optical fibres - Part 1-46: Measurement methods and test  
procedures - Monitoring of changes in attenuation  
(IEC 60793-1-46:2024)**

Fibres optiques - Partie 1-46: Méthodes de mesure et  
procédures d'essai - Contrôle des variations de  
l'affaiblissement  
(IEC 60793-1-46:2024)

Lichtwellenleiter - Teil 1-46: Messmethoden und  
Prüfverfahren - Überwachung von Änderungen der  
optischen Dämpfung  
(IEC 60793-1-46:2024)

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN IEC 60793-1-46:2024 (E)****European foreword**

The text of document 86A/2442/FDIS, future edition 2 of IEC 60793-1-46, 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 60793-1-46:2024.

The following dates are fixed:

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60793-1-40	-	Optical fibres - Part 1-40: Attenuation measurement methods	EN IEC 60793-1-40	-



IEC 60793-1-46

Edition 2.0 2024-06

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Optical fibres –  
Part 1-46: Measurement methods and test procedures – Monitoring of changes  
in attenuation**

**Fibres optiques –  
Partie 1-46: Méthodes de mesure et procédures d’essai – Contrôle des variations  
de l’affaiblissement**



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IEC 60793-1-46

Edition 2.0 2024-06

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Optical fibres –**

**Part 1-46: Measurement methods and test procedures – Monitoring of changes in attenuation**

**Fibres optiques –**

**Partie 1-46: Méthodes de mesure et procédures d'essai – Contrôle des variations de l'affaiblissement**

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## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Reference test method .....	6
5 Apparatus.....	7
6 Sampling .....	7
6.1 Sample length.....	7
6.2 Sample end face.....	7
6.3 Sample preparation.....	7
6.4 Reference sample.....	7
7 Procedure.....	7
8 Calculations.....	7
9 Results .....	7
9.1 Information to be provided with each measurement.....	7
9.2 Information available upon request .....	8
10 Specification information .....	8
Annex A (normative) Requirements specific to method A – Change in attenuation by transmitted power .....	9
A.1 Apparatus .....	9
A.1.1 General .....	9
A.1.2 Optical source .....	9
A.1.3 Optical divider .....	9
A.1.4 Optical detector .....	9
A.1.5 Launch apparatus .....	10
A.2 Procedure .....	10
A.3 Calculations .....	11
Annex B (normative) Requirements specific to method B – Change in attenuation by backscattering .....	12
B.1 Apparatus .....	12
B.2 Procedure .....	12
B.3 Calculations .....	12
 Figure A.1 – Measurement of change in attenuation using reference sample .....	 10
Figure A.2 – Measurement of change in attenuation using stabilized source .....	10



## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## OPTICAL FIBRES –

**Part 1-46: Measurement methods and test procedures –  
Monitoring of changes in attenuation**

## FOREWORD

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IEC 60793-1-46 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics. It is an International Standard.

This second edition cancels and replaces the first edition published in 2001. This edition constitutes a technical revision.

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

- a) inclusion of class C single mode intraconnection fibre;
- b) replacement of 'optical transmittance' by 'attenuation'.

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

Draft	Report on voting
86A/2442/FDIS	86A/2475/RVD

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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

IEC 60793-1-1 and IEC 60793-1-2 cover generic specifications.

IEC 60793-1-4X consists of the following parts, under the general title: *Optical fibres*:

- *Part 1-40: Measurement methods and test procedures – Attenuation*
- *Part 1-41: Measurement methods and test procedures – Bandwidth*
- *Part 1-42: Measurement methods and test procedures – Chromatic dispersion*
- *Part 1-43: Measurement methods and test procedures – Numerical aperture*
- *Part 1-44: Measurement methods and test procedures – Cut-off wavelength*
- *Part 1-45: Measurement methods and test procedures – Mode field diameter*
- *Part 1-46: Measurement methods and test procedures – Monitoring of changes in attenuation*
- *Part 1-47: Measurement methods and test procedures – Macrobending loss*
- *Part 1-48: Measurement methods and test procedures – Polarization mode dispersion*
- *Part 1-49: Measurement methods and test procedures – Differential mode delay*

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](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

## INTRODUCTION

Publications in the IEC 60793-1 series concern measurement methods and test procedures as they apply to optical fibres.

Within the same series several different areas are grouped, as follows:

- IEC 60793-1-20 to IEC 60793-1-29: *Measurement methods and test procedures for dimensions*
- IEC 60793-1-30 to IEC 60793-1-39: *Measurement methods and test procedures for mechanical characteristics*
- IEC 60793-1-40 to IEC 60793-1-49: *Measurement methods and test procedures for transmission and optical characteristics*
- IEC 60793-1-50 to IEC 60793-1-59: *Measurement methods and test procedures for environmental characteristics*
- IEC 60793-1-60 to IEC 60793-1-69: *Measurement methods and test procedures for polarization-maintaining fibres*

## OPTICAL FIBRES –

### Part 1-46: Measurement methods and test procedures – Monitoring of changes in attenuation

#### 1 Scope

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

This document gives two methods for monitoring the changes in attenuation of optical fibres and cables that occur during mechanical or environmental testing, or both. It provides a monitor in the change of attenuation characteristics arising from optical discontinuity, physical defects and modifications of the attenuation slope:

- method A: change in attenuation by transmitted power;
- method B: change in attenuation by backscattering.

Methods A and B apply to the monitoring of all categories of the following fibres:

- class A: multimode fibres;
- class B: single-mode fibres;
- class C: single-mode intraconnection fibres.

Information common to both measurements is contained in Clause 1 to Clause 10, and information pertaining to each individual method appears in Annex A, and Annex B 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 60793-1-40, *Optical fibres – Part 1-40: Attenuation measurement methods*

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