

# SLOVENSKI STANDARD

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**Optična vlakna - 2-10. del: Specifikacije izdelka - Področna specifikacija za večrodovna vlakna kategorije A1 (IEC 60793-2-10:2019)**

Optical fibres - Part 2-10: Product specifications - Sectional specification for category A1 multimode fibres (IEC 60793-2-10:2019)

Lichtwellenleiter - Teil 2-10: Produktspezifikationen - Rahmenspezifikation für Mehrmodenfasern der Kategorie A1 (IEC 60793-2-10:2019)

Fibres optiques - Partie 2-10: Spécifications de produits - Spécification intermédiaire pour les fibres multimodales de catégorie A1 (IEC 60793-2-10:2019)

**Ta slovenski standard je istoveten z: EN IEC 60793-2-10:2019**

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Full standard:  
<https://standards.iteh.ai/catalog/standards/sist/ff3a78b8-80bf-484b-9d01-5485a1cc6a79/sist-en-iec-60793-2-10-2019>

EUROPEAN STANDARD

**EN IEC 60793-2-10**

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2019

ICS 33.180.10

Supersedes EN 60793-2-10:2017 and all of its  
amendments and corrigenda (if any)

English Version

**Optical fibres - Part 2-10: Product specifications - Sectional  
specification for category A1 multimode fibres  
(IEC 60793-2-10:2019)**

Fibres optiques - Partie 2-10: Spécifications de produits -  
Spécification intermédiaire pour les fibres multimodales de  
catégorie A1  
(IEC 60793-2-10:2019)

Lichtwellenleiter - Teil 2-10: Produktspezifikationen -  
Rahmenspezifikation für Mehrmodenfasern der Kategorie  
A1  
(IEC 60793-2-10:2019)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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

**EN IEC 60793-2-10:2019 (E)****European foreword**

The text of document 86A/1932/FDIS, future edition 7 of IEC 60793-2-10, 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 60793-2-10:2019.

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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-06-26

This document supersedes EN 60793-2-10:2017 and all of its amendments and corrigenda (if any).

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The text of the International Standard IEC 60793-2-10:2019 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61280-1-3	NOTE	Harmonized as EN 61280-1-3
IEC 61280-1-4	NOTE	Harmonized as EN 61280-1-4
IEC 60793-2-10:2017	NOTE	Harmonized as EN 60793-2-10:2017 (not modified)
IEC 60794-1-1	NOTE	Harmonized as EN 60794-1-1

## 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 60793-1-20	-	Optical fibres - Part 1-20: Measurement methods and test procedures - Fibre geometry	EN 60793-1-20	-
IEC 60793-1-21	-	Optical fibres - Part 1-21: Measurement methods and test procedures - Coating geometry	EN 60793-1-21	-
IEC 60793-1-22	-	Optical fibres - Part 1-22: Measurement methods and test procedures - Length measurement	EN 60793-1-22	-
IEC 60793-1-30	-	Optical fibres - Part 1-30: Measurement methods and test procedures - Fibre proof test	EN 60793-1-30	-
IEC 60793-1-31	-	Optical fibres - Part 1-31: Measurement methods and test procedures - Tensile strength	EN IEC 60793-1-31	-
IEC 60793-1-32	-	Optical fibres - Part 1-32: Measurement methods and test procedures - Coating strippability	EN IEC 60793-1-32	-
IEC 60793-1-33	-	Optical fibres - Part 1-33: Measurement methods and test procedures - Stress corrosion susceptibility	EN 60793-1-33	-
IEC 60793-1-40	-	Optical fibres - Part 1-40: Attenuation measurement methods	EN IEC 60793-1-40	-
IEC 60793-1-41	-	Optical fibres - Part 1-41: Measurement methods and test procedures - Bandwidth	EN 60793-1-41	-
IEC 60793-1-42	-	Optical fibres - Part 1-42: Measurement methods and test procedures - Chromatic dispersion	EN 60793-1-42	-
IEC 60793-1-43	-	Optical fibres - Part 1-43: Measurement methods and test procedures - Numerical aperture measurement	EN 60793-1-43	-
IEC 60793-1-46	-	Optical fibres - Part 1-46: Measurement methods and test procedures - Monitoring of changes in optical transmittance	EN 60793-1-46	-
IEC 60793-1-47	-	Optical fibres - Part 1-47: Measurement methods and test procedures - Macrobending loss	EN IEC 60793-1-47	-

**EN IEC 60793-2-10:2019 (E)**

IEC 60793-1-49	-	Optical fibres - Part 1-49: Measurement methods and test procedures - Differential mode delay	EN IEC 60793-1-49	-
IEC 60793-1-50	-	Optical fibres - Part 1-50: Measurement methods and test procedures - Damp heat (steady state) tests	EN 60793-1-50	-
IEC 60793-1-51	-	Optical fibres - Part 1-51: Measurement methods and test procedures - Dry heat (steady state) tests	EN 60793-1-51	-
IEC 60793-1-52	-	Optical fibres - Part 1-52: Measurement methods and test procedures - Change of temperature tests	EN 60793-1-52	-
IEC 60793-1-53	-	Optical fibres - Part 1-53: Measurement methods and test procedures - Water immersion tests	EN 60793-1-53	-
IEC 60793-2	-	Optical fibres - Part 2: Product specifications - General	EN 60793-2	-
IEC 61280-4-1	2009	Fibre-optic communication subsystem test procedures - Part 4-1: Installed cable plant - Multimode attenuation measurement	EN 61280-4-1	2009

**TECH STANDARD PREVIEW**  
 (standards.iteh.ai)  
 Full standard:  
<https://standards.iteh.ai/catalog/standards/sist/ff3a78b8-8f6f-484b-9d01-5485a1cc6a79/sist-en-iec-60793-2-10-2019>



# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Optical fibres –  
Part 2-10: Product specifications – Sectional specification for category A1  
multimode fibres**

**Fibres optiques –  
Partie 2-10: Spécifications de produits – Spécification intermédiaire pour les  
fibres multimodales de catégorie A1**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## OPTICAL FIBRES –

**Part 2-10: Product specifications –  
Sectional specification for category A1 multimode fibres**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60793-2-10 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This seventh edition cancels and replaces the sixth edition published in 2017. This edition constitutes a technical revision.

This edition includes the following significant change with respect to the previous edition: revision of the naming convention for A1 multimode fibres, which better matches with those found in ISO/IEC standards. These changes are outlined in the scope of this document along with a cross reference table for the new names.

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

FDIS	Report on voting
86A/1932/FDIS	86A/1939/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.

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

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 "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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## OPTICAL FIBRES –

### Part 2-10: Product specifications – Sectional specification for category A1 multimode fibres

#### 1 Scope

This part of IEC 60793 is applicable to optical fibre sub-categories A1-OM1, A1-OM2, A1-OM3, A1-OM4, A1-OM5, and A1d. These fibres are used or can be incorporated in information transmission equipment and optical fibre cables.

Sub-categories A1-OM2, A1-OM3, A1-OM4 and A1-OM5 apply to 50/125  $\mu\text{m}$  graded index fibre in four bandwidth grades. Each of these bandwidth grades is defined for two levels of macrobend loss performance that are distinguished by "a" or "b" suffix. Those sub-categories with suffix "a" are specified to meet traditional macrobend loss performance levels. Those sub-categories with suffix "b" are specified to meet enhanced macrobend loss (i.e. lower loss) performance levels.

Sub-category A1-OM5 is specified to support single wavelength or multi-wavelength transmission systems in the vicinity of 850 nm to 950 nm. Although not normatively specified, bandwidth information covering this wavelength range is also included for A1-OM3 and A1-OM4.

Sub-category A1-OM1 applies to 62,5/125  $\mu\text{m}$  graded index fibre and sub-category A1d applies to 100/140  $\mu\text{m}$  graded index fibre.

Other applications include, but are not restricted to, the following: short reach, high bit-rate systems in telephony, distribution and local networks carrying data, voice and/or video services; on-premises intra-building and inter-building fibre installations including data centres, local area networks (LANs), storage area networks (SANs), private branch exchanges (PBXs), video, various multiplexing uses, outside telephone cable plant use, and miscellaneous related uses.

Three types of requirements apply to these fibres:

- general requirements, as defined in IEC 60793-2;
- specific requirements common to the category A1 multimode fibres covered in this document and which are given in Clause 5;
- particular requirements applicable to individual fibre sub-categories and models, or specific applications, which are defined in the normative specification Annexes A to D.

Table 1 shows the cross reference between the IEC A1 multimode optical fibre designations used in this document compared to those used in IEC 60793-2-10:2017. The table also refers to the normative annexes A, B and C for the A1 sub-category multimode fibres in this document that contains the detailed specification.