



SLOVENSKI STANDARD SIST EN 60793-2-50:2009

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Optical fibres - Part 2-50: Product specifications - Sectional specification for class B single-mode fibres (IEC 60793-2-50:2008)

Lichtwellenleiter - Teil 2-50: Produktspezifikationen - Rahmenspezifikation für Einmodenfasern der Kategorie B (IEC 60793-2-50:2008)

Fibres optiques - Partie 2-50: Spécifications de produits - Spécification intermédiaire pour les fibres unimodales de classe B (CEI 60793-2-50:2008)

Ta slovenski standard je istoveten z: EN 60793-2-50:2008

ICS:

33.180.10 QJ]ã}æÄ|æ}æÁæ|ã Fibres and cables

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EUROPEAN STANDARD
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English version

**Optical fibres -
Part 2-50: Product specifications -
Sectional specification for class B single-mode fibres
(IEC 60793-2-50:2008)**

Fibres optiques -
Partie 2-50: Spécifications de produits -
Spécification intermédiaire
pour les fibres unimodales de classe B
(CEI 60793-2-50:2008)

Lichtwellenleiter -
Teil 2-50: Produktspezifikationen -
Rahmenspezifikation
für Einmodenfasern der Kategorie B
(IEC 60793-2-50:2008)

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This European Standard was approved by CENELEC on 2008-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 86A/1164/CDV, future edition 3 of IEC 60793-2-50, prepared by SC 86A, Fibres and cables, of IEC TC 86, Fibre optics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60793-2-50 on 2008-10-01.

This European Standard supersedes EN 60793-2-50:2004 + corrigendum July 2004.

Compared to EN 60793-2-50:2004, this EN 60793-2-50:2008

- aligns the requirements with the relevant ITU-T Recommendations, including tightening the tolerances of many parameters;
- provides a means for defining the requirements of sub-categories;
- now includes two sub-categories for B1.2 fibres;
- now includes three sub-categories for B4 fibres;
- replaces the traditional method of specifying chromatic dispersion coefficient by limiting curves vs. wavelength for two of the sub-categories for B4 fibres;
- adds a new category, B5, which corresponds to the fibres defined in ITU-T Recommendation G.656;
- adds a new category, B6, which corresponds to the fibres defined in ITU-T Recommendation G.657;
- adds an informative annex that maps the nomenclature of the IEC fibre specifications to that of the ITU-T fibre recommendations;
- adds a clause for definitions;
- adds a clause for abbreviations;
- removes the dates from the normative references;

The following dates were fixed:

- | | | |
|--|-------|------------|
| – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2009-07-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2011-10-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60793-2-50:2008 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60793-1-1	- ¹⁾	Optical fibres - Part 1-1: Measurement methods and test procedures - General and guidance	EN 60793-1-1	2008 ²⁾
IEC 60793-1-20	- ¹⁾	Optical fibres - Part 1-20: Measurement methods and test procedures - Fibre geometry	EN 60793-1-20	2002 ²⁾
IEC 60793-1-21	- ¹⁾	Optical fibres - Part 1-21: Measurement methods and test procedures - Coating geometry	EN 60793-1-21	2002 ²⁾
IEC 60793-1-22	- ¹⁾	Optical fibres - Part 1-22: Measurement methods and test procedures - Length measurement	EN 60793-1-22	2002 ²⁾
IEC 60793-1-30	- ¹⁾	Optical fibres - Part 1-30: Measurement methods and test procedures - Fibre proof test	EN 60793-1-30	2002 ²⁾
IEC 60793-1-31	- ¹⁾	Optical fibres - Part 1-31: Measurement methods and test procedures - Tensile strength	EN 60793-1-31	2002 ²⁾
IEC 60793-1-32 (mod)	- ¹⁾	Optical fibres - Part 1-32: Measurement methods and test procedures - Coating strippability	EN 60793-1-32	2003 ²⁾
IEC 60793-1-33	- ¹⁾	Optical fibres - Part 1-33: Measurement methods and test procedures - Stress corrosion susceptibility	EN 60793-1-33	2002 ²⁾
IEC 60793-1-34	- ¹⁾	Optical fibres - Part 1-34: Measurement methods and test procedures - Fibre curl	EN 60793-1-34	2006 ²⁾
IEC 60793-1-40 (mod)	- ¹⁾	Optical fibres - Part 1-40: Measurement methods and test procedures - Attenuation	EN 60793-1-40	2003 ²⁾
IEC 60793-1-42	- ¹⁾	Optical fibres - Part 1-42: Measurement methods and test procedures - Chromatic dispersion	EN 60793-1-42	2007 ²⁾
IEC 60793-1-44	- ¹⁾	Optical fibres - Part 1-44: Measurement methods and test procedures - Cut-off wavelength	EN 60793-1-44	2002 ²⁾

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60793-1-45 (mod)	- ¹⁾	Optical fibres - Part 1-45: Measurement methods and test procedures - Mode field diameter	EN 60793-1-45 + corr. April	2003 ²⁾ 2004
IEC 60793-1-46	- ¹⁾	Optical fibres - Part 1-46: Measurement methods and test procedures - Monitoring of changes in optical transmittance	EN 60793-1-46	2002 ²⁾
IEC 60793-1-47	- ¹⁾	Optical fibres - Part 1-47: Measurement methods and test procedures - Macrobending loss	EN 60793-1-47	2007 ²⁾
IEC 60793-1-48	- ¹⁾	Optical fibres - Part 1-48: Measurement methods and test procedures - Polarization mode dispersion	EN 60793-1-48	2007 ²⁾
IEC 60793-1-50	- ¹⁾	Optical fibres - Part 1-50: Measurement methods and test procedures - Damp heat (steady state)	EN 60793-1-50	2002 ²⁾
IEC 60793-1-51	- ¹⁾	Optical fibres - Part 1-51: Measurement methods and test procedures - Dry heat	EN 60793-1-51	2002 ²⁾
IEC 60793-1-52	- ¹⁾	Optical fibres - Part 1-52: Measurement methods and test procedures - Change of temperature	EN 60793-1-52	2002 ²⁾
IEC 60793-1-53	- ¹⁾	Optical fibres - Part 1-53: Measurement methods and test procedures - Water immersion	EN 60793-1-53	2002 ²⁾
IEC 60793-2	- ¹⁾	Optical fibres - Part 2: Product specifications - General	EN 60793-2	2008 ²⁾
IEC 60794-2	- ¹⁾	Optical fibre cables - Part 2: Indoor cables - Sectional specification	EN 60794-2	2003 ²⁾



IEC 60793-2-50

Edition 3.0 2008-05

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Optical fibres – **iTeh STANDARD PREVIEW**
Part 2-50: Product specifications – Sectional specification for class B single-
mode fibres
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[SIST EN 60793-2-50:2009](https://standards.iteh.ai/catalog/standards/sist/3be9c449-61fb-4147-9c7d-5f0e790011e5-en-2008-05-iec-60793-2-50)

Fibres optiques – <https://standards.iteh.ai/catalog/standards/sist/3be9c449-61fb-4147-9c7d-5f0e790011e5-en-2008-05-iec-60793-2-50>
Partie 2-50: Spécifications de produits – Spécification intermédiaire pour les
fibres unimodales de classe B

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRES –

**Part 2-50: Product specifications –
Sectional specification for class B single-mode 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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- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60793-2-50 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This third edition cancels and replaces the second edition published in 2004 and constitutes a technical revision which:

- aligns the requirements with the relevant ITU-T Recommendations, including tightening the tolerances of many parameters;
- provides a means for defining the requirements of sub-categories;
- for B1.2 fibres now includes two sub-categories;
- for B4 fibres now includes three sub-categories ;
- for B4 fibres, replaces the traditional method of specifying chromatic dispersion coefficient by limiting curves vs. wavelength for two of the sub-categories;
- adds a new category, B5, which corresponds to the fibres defined in ITU-T Recommendation G.656;

- adds a new category, B6, which corresponds to the fibres defined in ITU-T Recommendation G.657;
- adds an informative annex that maps the nomenclature of the IEC fibre specifications to that of the ITU-T fibre recommendations;
- adds a clause for definitions;
- adds a clause for abbreviations;
- removes the dates from the normative references.

The text of this standard is based on the following documents:

CDV	Report on voting
86A/1164/CDV	86A/1170/RVC

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

A list of all parts of 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 publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn, <https://standards.iteh.ai/catalog/standards/sist/3be9c449-61fb-4147-9c7d-5965e73a6b29/sist-en-60793-2-50-2009>
- replaced by a revised edition, or
- amended.

OPTICAL FIBRES –

Part 2-50: Product specifications – Sectional specification for class B single-mode fibres

1 Scope

This part of IEC 60793 is applicable to optical fibre types B1.1, B1.2, B1.3, and categories B2, B4, B5 and B6. A map illustrating the connection of IEC designations to ITU-T designations is shown in Annex I. These fibres are used or can be incorporated in information transmission equipment and optical fibre cables.

Three types of requirements apply to these fibres:

- general requirements, as defined in IEC 60793-2;
- specific requirements common to the class B single-mode fibres covered in this standard and which are given in Clause 3;
- particular requirements applicable to individual fibre types or specific applications, which are defined in Annexes A to G.
- For some family specifications, there are sub-categories that are distinguished on the basis of difference in transmission attribute specifications. The designations for these sub-categories are documented in the individual family specifications.

2 Normative references

[SIST EN 60793-2-50:2009](https://standards.iteh.ai/catalog/standards/sist/3be9c449-61fb-4147-9c7d-5963a73a6b29/sist-en-60793-2-50-2009)

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The following referenced documents are indispensable for the application 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 – Measurement methods and test procedures – Part 1-1: General and guidance*

IEC 60793-1-20, *Optical fibres – Part 1-20: Measurement methods and test procedures – Fibre geometry*

IEC 60793-1-21, *Optical fibres – Part 1-21: Measurement methods and test procedures – Coating geometry*

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

IEC 60793-1-30, *Optical fibres – Part 1-30: Measurement methods and test procedures – Fibre proof test*

IEC 60793-1-31, *Optical fibres – Part 1-31: Measurement methods and test procedures – Tensile strength*

IEC 60793-1-32, *Optical fibres – Part 1-32: Measurement methods and test procedures – Coating strippability*

IEC 60793-1-33, *Optical fibres – Part 1-33: Measurement methods and test procedures – Stress corrosion susceptibility*

IEC 60793-1-34, *Optical fibres – Part 1-34: Measurement methods and test procedures – Fibre curl*

IEC 60793-1-40, *Optical fibres – Part 1-40: Measurement methods and test procedures – Attenuation*

IEC 60793-1-42, *Optical fibres – Part 1-42: Measurement methods and test procedures – Chromatic dispersion*

IEC 60793-1-44, *Optical fibres – Part 1-44: Measurement methods and test procedures – Cut-off wavelength*

IEC 60793-1-45, *Optical fibres – Part 1-45: Measurement methods and test procedures – Mode field diameter*

IEC 60793-1-46, *Optical fibres – Part 1-46: Measurement methods and test procedures – Monitoring of changes in optical transmittance*

IEC 60793-1-47, *Optical fibres – Part 1-47: Measurement methods and test procedures – Macrobending loss*

IEC 60793-1-48, *Optical fibres – Part 1-48: Measurement methods and test procedures – Polarization mode dispersion*

IEC 60793-1-50, *Optical fibres – Part 1-50: Measurement methods and test procedures – Damp heat (steady state)*

IEC 60793-1-51, *Optical fibres – Part 1-51: Measurement methods and test procedures – Dry heat*

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IEC 60793-1-52, *Optical fibres – Part 1-52: Measurement methods and test procedures – Change of temperature*

IEC 60793-1-53, *Optical fibres – Part 1-53: Measurement methods and test procedures – Water immersion*

IEC 60793-2:, *Optical fibres – Part 2: Product specifications – General*

IEC 60794-2, *Optical fibre cables – Part 2: Indoor cables – Sectional specification*

3 Terms and definitions

For the purposes of this document, the terms and definitions of the specified attributes are contained in the test methods. IEC 60793-1-1 provides general definitions for testing. IEC 60793-2 provides general definitions for fibres.

4 Abbreviations and symbols

The following abbreviations and symbols are used in this document:

λ_0	zero dispersion wavelength
F_{avg}	average strip force
F_{peak}	peak strip force
MFD	mode field diameter