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Optical fibres - Part 2-40: Product specifications - Sectional specification for category A4 multimode fibres

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. 08/16

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English Version

**Optical fibres - Part 2-40: Product specifications - Sectional
specification for category A4 multimode fibres
(IEC 60793-2-40:2015)**

Fibres optiques - Partie 2-40: Spécifications de produits -
Spécification intermédiaire pour les fibres multimodales de
catégorie A4
(IEC 60793-2-40:2015)

Lichtwellenleiter - Teil 2-40: Produktspezifikation -
Rahmenspezifikation für Mehrmodenfasern der
Kategorie A4
(IEC 60793-2-40:2015)

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Europäisches Komitee für Elektrotechnische Normung

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European foreword

The text of document 86A/1587/CDV, future edition 4 of IEC 60793-2-40, 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 60793-2-40:2016.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-09-24
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-12-24

This document supersedes EN 60793-2-40:2011.

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Endorsement notice

The text of the International Standard IEC 60793-2-40:2015 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 60793-1-1	NOTE	Harmonized as EN 60793-1-1.
IEC 60793-2	NOTE	Harmonized as EN 60793-2.
IEC 60793-2-40:2006	NOTE	Harmonized as EN 60793-2-40:2006 (not modified).
IEC 60793-2-41	NOTE	Harmonized as EN 60793-2-41.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1	-	Environmental testing - Part 1: General and guidance	EN 60068-1	-
IEC 60793-1-20	2001	Optical fibres - Part 1-20: Measurement methods and test procedures - Fibre geometry	EN 60793-1-20	2002
IEC 60793-1-22	-	Optical fibres - Part 1-22: Measurement methods and test procedures - Length measurement	EN 60793-1-22	-
IEC 60793-1-40 (mod)	2001	Optical fibres - Part 1-40: Measurement methods and test procedures - Attenuation	EN 60793-1-40	2003
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	2009	Optical fibres - Part 1-47: Measurement methods and test procedures - Macrobending loss	EN 60793-1-47	2009
IEC 60793-1-50	-	Optical fibres - Part 1-50: Measurement methods and test procedures - Damp heat (steady state) tests	EN 60793-1-50	-

EN 60793-2-40:2016

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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	-



INTERNATIONAL STANDARD



**Optical fibres –
Part 2-40: Product specifications – Sectional specification for category A4
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**Optical fibres –
Part 2-40: Product specifications – Sectional specification for category A4
multimode fibres**

INTERNATIONAL
ELECTROTECHNICAL
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OPTICAL FIBRES –

**Part 2-40: Product specifications –
Sectional specification for category A4 multimode fibres**

FOREWORD

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International Standard IEC 60793-2-40 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This fourth edition cancels and replaces the third edition published in 2009. This edition constitutes a technical revision.

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

- a) harmonization of terminology within the IEC 60793-2 series;
- b) added measurement parameters for numerical aperture and fibre geometry.

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

CDV	Report on voting
86A/1587/CDV	86A/1618/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 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 publication will remain unchanged until the stability 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,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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OPTICAL FIBRES –

Part 2-40: Product specifications – Sectional specification for category A4 multimode fibres

1 Scope

This part of IEC 60793-2 is applicable to category A4 optical multimode fibres and the related sub-categories A4a, A4b, A4c, A4d, A4e, A4f, A4g and A4h. These fibres have a plastic core and plastic cladding and may have step-index, multi-step index or graded-index profiles. The fibres are used in information transmission equipment and other applications employing similar light transmitting techniques, and finally in fibre optic cables. Table 1 summarizes some of the salient characteristics and applications of these fibres.

Table 1 – Characteristics and applications of category A4 fibres

Sub-category	A4a	A4b	A4c	A4d	A4e	A4f	A4g	A4h
Core diameter (µm)	See Note 1	See Note 1	See Note 1	See Note 1	≥ 500	200	120	62,5
Cladding diameter (µm)	1 000	750	500	1 000	750	490	490	245
Numerical aperture Na_{ff}	0,50	0,50	0,50	0,30	0,25	0,190	0,190	0,190
Operating wavelength (s) (nm)	650 See Note 2	650	650	650	650	650 850 1 300	650 850 1 300	850 1 300
Applications	Digital audio interface, automobile, industrial, sensor and data transmission	Industrial and sensor	Sensor	Digital audiovisual interface and data transmission	Digital audiovisual interface and data transmission	Industrial and mobile; compatible with A3 transmission equipment	Data transmission	Data transmission; primarily used in ribbon structures
NOTE 1 Typically 15 µm to 35 µm smaller than the cladding diameter.								
NOTE 2 Other potential wavelengths for A4a fibre are described in Annex J.								

In addition to the applications shown in Table 1, other applications for A4 fibres include, but are not restricted to, the following: support for short reach, high bit-rate systems in telephony, distribution and local networks, carrying data, voice and/or video services and on-premises intrabuilding and interbuilding fibre installations, including LANs, PBXs, video, various multiplexing uses and miscellaneous related uses, such as consumer electronics and industrial and mobile networks.

Three types of requirements apply to A4 fibres:

- general requirements, as defined in IEC 60793-2;
- specific requirements common to category A4 multimode fibres covered in this standard and which are given in Clause 3;

- particular requirements applicable to individual fibre sub-categories and implementations or specific applications which are defined in this standard, in the normative family specification annexes.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-1, *Environmental testing – Part 1: General and guidance*

IEC 60793-1-20:2001, *Optical fibres – Part 1-20: Measurement methods and test procedures – Fibre geometry*

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

IEC 60793-1-40:2001, *Optical fibres – Part 1-40: Measurement methods and test procedures – Attenuation*

IEC 60793-1-41, *Optical fibres – Part 1-41: Measurement methods and test procedures – Bandwidth*

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

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

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

IEC 60793-1-47:2009, *Optical fibres – Part 1-47: Measurement methods and test procedures – Macrobending loss*

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

IEC 60793-1-51, *Optical fibres – Part 1-51: Measurement methods and test procedures – Dry heat (steady state) tests*

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

koniec náhľadu – text ďalej pokračuje v platenej verzii STN