



SLOVENSKI STANDARD

SIST EN 60794-1-1:2012

01-februar-2012

Nadomešča:

SIST EN 60794-1-1:2002

Optični kabli - 1-1. del: Rodovna specifikacija - Splošno (IEC 60794-1-1:2011)

Optical fibre cables - Part 1-1: Generic specification - General (IEC 60794-1-1:2011)

Lichtwellenleiterkabel - Teil 1-1: Fachgrundspezifikation - Allgemeines (IEC 60794-1-1:2011)

iTeh STANDARD PREVIEW

(standards.iteh.ai)

Câbles à fibres optiques - Partie 1-1: Spécification générique - Généralités (CEI 60794-1-1:2011)

[SIST EN 60794-1-1:2012](https://standards.iteh.ai/catalog/standards/sist/889e5e06-0eba-4e7b-8379-15e/sist-en-60794-1-1-2012)

<https://standards.iteh.ai/catalog/standards/sist/889e5e06-0eba-4e7b-8379-15e/sist-en-60794-1-1-2012>

Ta slovenski standard je istoveten z: EN 60794-1-1:2011

ICS:

33.180.10 (Optična) vlakna in kabli Fibres and cables

SIST EN 60794-1-1:2012

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60794-1-1:2012](#)

<https://standards.iteh.ai/catalog/standards/sist/889e5e06-0eba-4e7b-8379-cb0c26bc415e/sist-en-60794-1-1-2012>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60794-1-1

December 2011

ICS 33.180.10

Supersedes EN 60794-1-1:2002

English version

**Optical fibre cables -
Part 1-1: Generic specification -
General
(IEC 60794-1-1:2011)**

Câbles à fibres optiques -
Partie 1-1: Spécification générique -
Généralités
(CEI 60794-1-1:2011)

Lichtwellenleiterkabel -
Teil 1-1: Fachgrundspezifikation -
Allgemeines
(IEC 60794-1-1:2011)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

This European Standard was approved by CENELEC on 2011-10-18. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, 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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 86A/1355/CDV, future edition 3 of IEC 60794-1-1, 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 60794-1-1:2011.

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) 2012-07-18
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2014-10-18

This document supersedes EN 60794-1-1:2002¹⁾.

This standard shall be used in conjunction with EN 60794-1-2.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

iTeh STANDARD PREVIEW (standards.ihtei)

Endorsement notice

The text of the International Standard IEC 60794-1-1:2011 was approved by CENELEC as a European Standard without any modification.

[https://standards.ihtei.ai/catalog/standards/sist/889e5e06-0eba-4e7b-8379-](https://standards.ihtei.ai/catalog/standards/sist/889e5e06-0eba-4e7b-8379-ch0c26bc415e/sist-en-60794-1-1-2012)

[ch0c26bc415e/sist-en-60794-1-1-2012](https://standards.ihtei.ai/catalog/standards/sist/889e5e06-0eba-4e7b-8379-ch0c26bc415e/sist-en-60794-1-1-2012)

In the official version, for Bibliography, the following note has to be added for the standard indicated:

[1] IEC 60793-2-10 NOTE Harmonized as EN 60793-2-10.

¹⁾ For technical changes, see IEC foreword.

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 60189-1	-	Low-frequency cables and wires with PVC insulation and PVC sheath - Part 1: General test and measuring methods	-	-
IEC 60793-1-1	-	Optical fibres - Part 1-1: Measurement methods and test procedures - General and guidance	EN 60793-1-1	-
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 60793-1-40	-	Optical fibres - Part 1-40: Measurement methods and test procedures - Attenuation	EN 60793-1-40	-
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 60793-1-48	-	Optical fibres - Part 1-48: Measurement methods and test procedures - Polarization mode dispersion	EN 60793-1-48	-
IEC 60793-2	-	Optical fibres - Part 2: Product specifications - General	EN 60793-2	-
IEC 60794-1-2	2003	Optical fibre cables - Part 1-2: Generic specification - Basic optical cable test procedures	EN 60794-1-2	2003
IEC 60794-4-20	201X ¹⁾	Optical fibre cables - Part 4-20: Aerial optical cables along electrical power lines - Family specification for ADSS (All Dielectric Self Supported) Optical cables	EN 60794-4-20	201X ¹⁾
IEC 60811-201	-	Electric and optical fibre cables - Test methods for non-metallic materials - Part 201: General tests - Measurement of insulation thickness	EN 60811-201	-
IEC 60811-202	-	Electric and optical fibre cables - Test methods for non-metallic materials - Part 202: General tests - Measurement of thickness of non-metallic sheaths	EN 60811-202	-

¹⁾ At draft stage.

EN 60794-1-1:2011

- 4 -

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60811-203	-	Electric and optical fibre cables - Test methods for non-metallic materials - Part 203: General tests - Measurement of overall dimensions	EN 60811-203	-
ISO 14001	-	Environmental management systems - Requirements with guidance for use	EN ISO 14001	-
ISO 14064-1	-	Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals	EN ISO 14064-1	-

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 60794-1-1:2012](https://standards.iteh.ai/catalog/standards/sist/889e5e06-0eba-4e7b-8379-cb0c26bc415e/sist-en-60794-1-1-2012)

<https://standards.iteh.ai/catalog/standards/sist/889e5e06-0eba-4e7b-8379-cb0c26bc415e/sist-en-60794-1-1-2012>



IEC 60794-1-1

Edition 3.0 2011-09

INTERNATIONAL STANDARD



Optical fibre cables – **STANDARD PREVIEW**
Part 1-1: Generic specification – General
(standards.iteh.ai)

[SIST EN 60794-1-1:2012](https://standards.iteh.ai/catalog/standards/sist/889e5e06-0eba-4e7b-8379-cb0c26bc415e/sist-en-60794-1-1-2012)
<https://standards.iteh.ai/catalog/standards/sist/889e5e06-0eba-4e7b-8379-cb0c26bc415e/sist-en-60794-1-1-2012>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE

N

ICS 33.180.10

ISBN 978-2-88912-688-0

CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references	5
3 Definitions	6
4 Optical fibre cables.....	6
5 Materials	7
5.1 Optical fibre.....	7
5.2 Electrical conductors	7
5.3 Other materials	7
5.4 Environmental requirements	7
6 Cable construction.....	7
7 Measuring methods	7
7.1 General	7
7.2 Measuring methods for dimensions	8
7.3 Measuring methods for mechanical characteristics	8
7.4 Measuring methods for electrical characteristics	8
7.5 Measuring methods for transmission and optical characteristics	8
7.6 Measuring methods for environmental characteristics.....	9
7.7 Measuring methods for cable element characterisation.....	9
8 Related Technical Reports	9
Annex A (informative) Guide to specific defined applications and cabled fibre performance	11
Annex B (informative) Guide to qualification sampling.....	12
Bibliography.....	14
Table 1 – Measuring methods for dimensions	8
Table 2 – Measuring methods for electrical characteristics	8
Table 3 – Transmission and optical characteristics of cabled optical fibres	9

INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRE CABLES –

Part 1-1: Generic specification – General

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 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 60794-1-1 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 2002, and constitutes a technical revision.

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

- a) the contents are updated throughout;
- b) the informative Annexes C “Guide to the installation of optical fibre cables” and D “Guide to hydrogen effects in optical fibre cables” have been deleted from this standard and will be published as separate Technical Reports;
- c) the remaining Annexes are renamed accordingly.

This standard shall be used in conjunction with IEC 60794-1-2.

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

CDV	Report on voting
86A/1355/CDV	86A/1399/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 the parts in the IEC 61754 series, under the general title *Optical fibre cables*, 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.

IFU STANDARD PREVIEW
(standards.iteh.ai)

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

OPTICAL FIBRE CABLES –

Part 1-1: Generic specification – General

1 Scope

This part of IEC 60794 applies to optical fibre cables for use with communication equipment and devices employing similar techniques and to cables having a combination of both optical fibres and electrical conductors.

The object of this standard is to establish uniform generic requirements for the geometrical, transmission, material, mechanical, ageing (environmental exposure), climatic and electrical properties of optical fibre cables, where appropriate.

2 Normative references

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 60189-1, *Low-frequency cables and wires with PVC insulation and PVC sheath – Part 1: General test and measuring methods*

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

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

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

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

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

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

IEC 60794-1-2, *Optical fibre cables – Part 1-2: Generic specification – Basic optical cable test procedures*