

SLOVENSKI STANDARD

SIST EN IEC 61300-1:2022

01-julij-2022

Nadomešča:
SIST EN 61300-1:2017

Optični spojni elementi in pasivne komponente - Osnovni preskusni in merilni postopki - 1. del: Splošno in smernice (IEC 61300-1:2022)

Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 1: General and guidance (IEC 61300-1:2022)

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Grundlegende Prüf- und Messverfahren - Teil 1: Allgemeines und Leitfaden (IEC 61300-1:2022)

Dispositifs d'interconnexion et composants passifs fibroniques - Procédures fondamentales d'essais et de mesures - Partie 1: Généralités et recommandations (IEC 61300-1:2022)

<https://standards.iteh.ai/catalog/standards/sist/b4d8683f-191a-4492-89eb-0b2ba7002d41/sist-en-iec-61300-1-2022>

Ta slovenski standard je istoveten z: EN IEC 61300-1:2022

ICS:

33.180.20

Povezovalne naprave za
optična vlakna

Fibre optic interconnecting
devices

SIST EN IEC 61300-1:2022

en

**iTeh STANDARD
PREVIEW
(standards.iteh.ai)**

SIST EN IEC 61300-1:2022

<https://standards.iteh.ai/catalog/standards/sist/b4d8683f-191a-4492-89eb-0b2ba7002d41/sist-en-iec-61300-1-2022>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 61300-1

May 2022

ICS 33.180.20

Supersedes EN 61300-1:2016

English Version

**Fibre optic interconnecting devices and passive components -
Basic test and measurement procedures - Part 1: General and
guidance
(IEC 61300-1:2022)**

Dispositifs d'interconnexion et composants passifs
fibroniques - Procédures fondamentales d'essais et de
mesures - Partie 1: Généralités et recommandations
(IEC 61300-1:2022)

Lichtwellenleiter - Verbindungselemente und passive
Bauteile - Grundlegende Prüf- und Messverfahren - Teil 1:
Allgemeines und Leitfaden
(IEC 61300-1:2022)

This European Standard was approved by CENELEC on 2022-05-09. 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

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

EN IEC 61300-1:2022 (E)**European foreword**

The text of document 86B/4582/FDIS, future edition 5 of IEC 61300-1, prepared by SC 86B "Fibre optic interconnecting devices and passive components" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61300-1:2022.

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) 2023-02-09
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-05-09

This document supersedes EN 61300-1:2016 and all of its amendments and corrigenda (if any).

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

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

**iteh STANDARD
PREVIEW
Endorsement notice
(standards.iteh.ai)**

The text of the International Standard IEC 61300-1:2022 was approved by CENELEC as a European Standard without any modification. [SIST EN IEC 61300-1:2022](https://standards.iteh.ai/catalog/standards/sist/b4d8683f-191a-4722-b9c9-092ba7002041/sist-en-iec-61300-1-2022)

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

IEC 61300 (series) NOTE Harmonized as EN 61300 (series)

IEC 60068-2-1 NOTE Harmonized as EN 60068-2-1

ISO 1 NOTE Harmonized as EN ISO 1

IEC 61315 NOTE Harmonized as EN IEC 61315

IEC 62614-1 NOTE Harmonized as EN IEC 62614-1

IEC 63267 (series) NOTE Harmonized as EN IEC 63267 (series)¹

IEC 60793-2-40 NOTE Harmonized as EN IEC 60793-2-40

¹ In preparation.

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-731	-	International Electrotechnical Vocabulary - Chapter 731: Optical fibre communication	-	-
IEC 60617	-	Graphical symbols for diagrams	-	-
IEC 60793-2-10	-	Optical fibres - Part 2-10: Product specifications - Sectional specification for category A1 multimode fibres	EN IEC 60793-2-10	-
IEC 60793-2-30	-	Optical fibres - Part 2-30: Product specifications - Sectional specification for category A3 multimode fibres	EN 60793-2-30	-
IEC 60825-1	-	Safety of laser products - Part 1: Equipment classification and requirements	EN 60825-1	-
IEC 60825-2	-	Safety of laser products - Part 2: Safety of optical fibre communication systems (OFCSS)	-	-
IEC 61280-1-4	-	Fibre optic communication subsystem test procedures - Part 1-4: General communication subsystems - Light source encircled flux measurement method	EN 61280-1-4	-
IEC 61280-4-1	-	Fibre-optic communication subsystem test procedures - Part 4-1: Installed cabling plant - Multimode attenuation measurement	EN IEC 61280-4-1	-
IEC 61300-2	series	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2: Tests	EN 61300-2	series
IEC 61300-3	series	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3: Examinations and measurements	EN 61300-3	series

EN IEC 61300-1:2022 (E)

IEC 61300-3-1	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-1: Examinations and measurements - Visual examination	EN 61300-3-1	-
IEC 61300-3-35	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-35: Examinations and measurements - Visual inspection of fibre optic connectors and fibre-stub transceivers	EN 61300-3-35	-

**iTeh STANDARD
PREVIEW
(standards.iteh.ai)**

SIST EN IEC 61300-1:2022

<https://standards.iteh.ai/catalog/standards/sist/b4d8683f-191a-4492-89eb-0b2ba7002d41/sist-en-iec-61300-1-2022>



IEC 61300-1

Edition 5.0 2022-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

iTeh STANDARD

**Fibre optic interconnecting devices and passive components – Basic test and measurement procedures –
Part 1: General and guidance**

**Dispositifs d'interconnexion et composants passifs fibroniques – Procédures fondamentales d'essais et de mesures –
Partie 1: Généralités et recommandations**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 33.180.20

ISBN 978-2-8322-1093-9

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD	4
INTRODUCTION	6
1 Scope	7
2 Normative references	7
3 Terms, definitions and abbreviated terms	8
3.1 Terms and definitions	8
3.2 Abbreviated terms	11
4 Requirements for IEC 61300-2 (all parts) and IEC 61300-3 (all parts)	11
4.1 Requirements for IEC 61300-2 (all parts) (tests)	11
4.2 Requirements for IEC 61300-3 (all parts) (examinations and measurement procedures)	11
4.2.1 General requirements	11
4.2.2 Requirements for attenuation variation	11
5 Standard atmospheric conditions	12
6 Significance of the numerical value of a quantity	12
6.1 General	12
6.2 Quantity expressed as nominal value with tolerance	12
6.3 Quantity expressed as a range of values	13
7 Graphical symbols and terminology	13
8 Safety	14
9 Calibration	14
9.1 General	14
9.2 Round robin calibration procedure	14
10 Launch conditions	14
10.1 General	14
10.2 Multimode launch conditions for A1 fibres	15
10.3 Multimode launch conditions for A3e fibre	15
10.4 Multimode launch conditions for the other multimode fibres	16
10.5 Single-mode launch conditions	16
10.6 Multimode planar waveguide launch conditions	16
Annex A (normative) Multimode launch condition requirement for measuring attenuation of components terminated on IEC 60793-2-10 type A1 fibres	17
A.1 General	17
A.2 Technical background	17
A.3 EF template	17
A.3.1 Applicable types of optical fibres	17
A.3.2 Encircled flux	17
A.3.3 EF template example	17
A.4 Target launch and upper and lower tolerance bands for attenuation measurements of A1-OM2 to A1-OM5 and A1-OM1 optical fibre connections	18
A.4.1 General	18
A.4.2 Limits on EF	18
Annex B (normative) Multimode launch condition requirement for measuring attenuation of components terminated on IEC 60793-2-30 type A3e fibres	20
B.1 EAF template	20
B.1.1 Applicable types of optical fibres	20

B.1.2	Encircled angular flux	20
B.1.3	EAF template example.....	20
B.2	Target launch and upper and lower tolerance bands for attenuation measurements of A3e optical fibre connections.....	20
B.2.1	General	20
B.2.2	Limits on EAF	21
Bibliography	22
Figure A.1	– Encircled flux template example.....	18
Figure B.1	– Encircled angular flux template example	20
Table 1	– Standard atmospheric conditions.....	12
Table 2	– Expected variation of attenuation due to mode variation of single connections for A1-OM2, A1-OM3, A1-OM4 and A1-OM5 fibres	15
Table 3	– Expected variation of attenuation due to mode variation of single connections for A3e fibre	16
Table A.1	– EF requirements for 50 µm core fibre at 850 nm	18
Table A.2	– EF requirements for 50 µm core fibre at 1 300 nm.....	19
Table A.3	– EF requirements for 62,5 µm fibre at 850 nm	19
Table A.4	– EF requirements for 62,5 µm fibre at 1 300 nm	19
Table B.1	– EAF requirements for NA of 0,37 and 200 µm core fibre at 850 nm	21

(standards.iteh.ai)

SIST EN IEC 61300-1:2022

<https://standards.iteh.ai/catalog/standards/sist/b4d8683f-191a-4492-89eb-0b2ba7002d41/sist-en-iec-61300-1-2022>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – BASIC TEST AND MEASUREMENT PROCEDURES –

Part 1: General and guidance

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.

IEC 61300-1 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2016. This edition constitutes a technical revision.

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

- a) addition of the information of measurement uncertainties in 4.2.1;
- b) change of the requirements for attenuation variation in 4.2.2;
- c) addition of the multimode launch conditions of other fibres than A1-OM2, A1-OM3, A1-OM4, A1-OM5 and A3e in 10.4;
- d) addition of the multimode launch conditions of the planar waveguide in 10.6;

- e) splitting Annex A for EF and Annex B for EAF;
- f) correction of errors in the definitions of encircled flux and encircled angular flux.

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

Draft	Report on voting
86B/4582/FDIS	86B/4602/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. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 61300 series, published under the general title, *Fibre optic interconnecting and passive components – Basic test and measurement procedures*, 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 in the data related to the specific document. At this date, the document will be

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

iTeh STANDARD
PREVIEW
(standards.iteh.ai)

[SIST EN IEC 61300-1:2022](https://standards.iteh.ai/catalog/standards/sist/b4d8683f-191a-4492-89eb-0b2ba7002d41/sist-en-iec-61300-1-2022)
<https://standards.iteh.ai/catalog/standards/sist/b4d8683f-191a-4492-89eb-0b2ba7002d41/sist-en-iec-61300-1-2022>