

SLOVENSKI STANDARD

SIST EN 61977:2010

01-september-2010

Nadomešča:
SIST EN 61977:2004

Optični spojni elementi in pasivne komponente - Filtri za optična vlakna - Rodovne specifikacije (IEC 61977:2010)

Fibre optic interconnecting devices and passive components - Fibre optic filters - Generic specification (IEC 61977:2010)

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Lichtwellenleiterfilter - Fachgrundspezifikation (IEC 61977:2010)

Dispositifs d'interconnexion et composants passives à fibres optiques - Filtres pour fibres optiques - Spécification générique (IEC 61977:2010)

Ta slovenski standard je istoveten z: **EN 61977:2010**

ICS:

33.180.20	Povezovalne naprave za optična vlakna	Fibre optic interconnecting devices
-----------	---------------------------------------	-------------------------------------

SIST EN 61977:2010

en,fr

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61977:2010

<https://standards.iteh.ai/catalog/standards/sist/7e67036a-bc92-4871-b521-6ccbda268bd9/sist-en-61977-2010>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61977

May 2010

ICS 33.180.20

Supersedes EN 61977:2002

English version

**Fibre optic interconnecting devices and passive components -
Fibre optic filters -
Generic specification
(IEC 61977:2010)**

Dispositifs d'interconnexion
et composants passives
à fibres optiques -
Filtres pour fibres optiques -
Spécification générique
(CEI 61977:2010)

Lichtwellenleiter -
Verbindungselemente und passive
Bauteile -
Lichtwellenleiterfilter -
Fachgrundspezifikation
(IEC 61977:2010)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

This European Standard was approved by CENELEC on 2010-05-01. 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, 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 86B/2982/FDIS, future edition 2 of IEC 61977, 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 was approved by CENELEC as EN 61977 on 2010-05-01.

This European Standard supersedes EN 61977:2002.

EN 61977:2010 constitutes a technical revision. The changes with respect to EN 61977:2002 include having substantially increased the number of terms, added an informative annex for example of filtering technologies and deleted quality assessment procedures.

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

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) 2011-02-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2011-05-01

Annex ZA has been added by CENELEC.

ITEH STANDARD PREVIEW
(standards.iteh.ai)

Endorsement notice

[SIST EN 61977:2010](#)

The text of the International Standard IEC 61977:2010 was approved by CENELEC as a European Standard without any modification. [6ccbda268bd9/sist-en-61977-2010](#)

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 60027	Series	Letter symbols to be used in electrical technology	EN 60027	Series
IEC 60050-731	-	International Electrotechnical Vocabulary (IEV) - Chapter 731: Optical fibre communication	-	-
IEC 61300	Series	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures	EN 61300-1	Series
IEC 60617-SN	-	Graphical symbols for diagrams	-	-
IEC 60695-11-5	-	Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	-
IEC 60825-1	-	Safety of laser products - Part 1: Equipment classification and requirements	EN 60825-1	-
IEC/TR 61930	-	Fibre optic graphical symbology	-	-
IEC Guide 102	-	Electronic components - Specification structures for quality assessment (Qualification approval and capability approval)	-	-
IECQ 01	-	IEC Quality Assessment System for Electronic Components (IECQ) - Basic Rules	-	-
IECQ 001002-3	-	IEC Quality Assessment System for Electronic Components (IECQ) - Rules of Procedure - Part 3: Approval procedures	-	-
ISO 129-1	-	Technical drawings - Indication of dimensions and tolerances - Part 1: General principles	-	-
ISO 286-1	-	ISO system of limits and fits - Part 1: Bases of tolerances, deviations and fits	-	-
ISO 1101	-	Geometrical Product Specifications (GPS) - Geometrical tolerancing - Tolerances of form, orientation, location and run-out	-	-
ISO 8601	-	Data elements and interchange formats - Information interchange - Representation of dates and times	-	-

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61977:2010

<https://standards.iteh.ai/catalog/standards/sist/7e67036a-bc92-4871-b521-6ccbda268bd9/sist-en-61977-2010>



IEC 61977

Edition 2.0 2010-04

INTERNATIONAL STANDARD

**Fibre optic interconnecting devices and passive components –
Fibre optic filters – Generic specification**

STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61977:2010
<https://standards.iteh.ai/catalog/standards/sist/7e67036a-bc92-4871-b521-6ccbda268bd9/sist-en-61977-2010>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE

T

ICS 33.180.20

ISBN 978-2-88910-594-6

CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	7
3.1 Basic terms	7
3.2 Component terms	7
3.3 Performance terms	8
4 Requirements	11
4.1 Classification	11
4.1.1 General	11
4.1.2 Type	12
4.1.3 Style	12
4.1.4 Variant	13
4.1.5 Assessment level.....	13
4.1.6 Normative reference extensions	13
4.2 Documentation	14
4.2.1 Symbols	14
4.2.2 Specification system	14
4.2.3 Drawings	15
4.2.4 Test and measurements	15
4.2.5 Test report.....	15
4.2.6 Instructions for use	16
4.3 Standardisation system	16
4.3.1 Interface standards	16
4.3.2 Performance standard	16
4.3.3 Reliability standard	17
4.3.4 Interlinking	17
4.4 Design and construction	18
4.4.1 Materials	18
4.4.2 Workmanship.....	18
4.5 Performance requirements	18
4.6 Identification and marking	19
4.6.1 General	19
4.6.2 Variant identification number	19
4.6.3 Component marking	19
4.6.4 Package marking	19
4.7 Packaging	19
4.8 Storage conditions	20
4.9 Safety	20
Annex A (informative) Example of filtering technologies	21
Bibliography.....	25
Figure 1 – Illustration of maximum insertion loss within pass band.....	9
Figure 2 – Illustration of minimum insertion loss within pass band.....	10
Figure A.1 – Schematic diagram of etalon.....	21

Figure A.2 – Transmission characteristic of etalon	22
Figure A.3 – Usage of fibre Bragg grating	22
Figure A.3 – Fibre Bragg grating	23
Figure A.4 – Structure of multilayer thin-film	24
Table 1 – The IEC specification structure	14
Table 2 – Standards interlink matrix	18
Table 3 – Quality assurance options	18

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

SIST EN 61977:2010

<https://standards.iteh.ai/catalog/standards/sist/7e67036a-bc92-4871-b521-6ccbda268bd9/sist-en-61977-2010>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC INTERCONNECTING
DEVICES AND PASSIVE COMPONENTS –
FIBRE OPTIC FILTERS – GENERIC SPECIFICATION**

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 61977 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This second edition cancels and replaces the first edition published in 2001. It constitutes a technical revision. The changes with respect to the previous edition include having substantially increased the number of terms, added an informative annex for example of filtering technologies and deleted quality assessment procedures.

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

FDIS	Report on voting
86B/2982/FDIS	86B/3015/RVD

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.

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.

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 61977:2010

<https://standards.iteh.ai/catalog/standards/sist/7e67036a-bc92-4871-b521-6ccbda268bd9/sist-en-61977-2010>

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – FIBRE OPTIC FILTERS – GENERIC SPECIFICATION

1 Scope

This International Standard applies to the family of fibre optic filters. These components have all of the following general features:

- they are passive for the reason that they contain no optoelectronic or other transducing elements which can process the optical signal launched into the input port;
- they modify the spectral intensity distribution in order to select some wavelengths and inhibit others;
- they are fixed, i.e. the modification of the spectral intensity distribution is fixed and can not be tuned;
- they have input and output ports or a common port (having both functions of input and output) for the transmission of optical power; the ports are optical fibre or optical fibre connectors;
- they differ according to their characteristics. They can be divided into the following categories:
 - short-wave pass (only wavelengths lower than or equal to a specified value are passed);
 - long-wave pass (only wavelengths greater than or equal to a specified value are passed);
 - band-pass (only an optical window is allowed);
 - notch (only an optical window is inhibited).

It is also possible to have a combination of the above categories.

This standard establishes uniform requirements for optical, mechanical and environmental properties.

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 60027 (all parts), *Letter symbols to be used in electrical technology*

IEC 60050(731), *International Electrotechnical Vocabulary – Chapter 731: Optical fibre communication*

IEC 61300 (all parts), *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures*

IEC 60617-SN, *Graphical symbols for diagrams*

IEC 60695-11-5, *Fire hazard testing – Part 11-5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance*