

Fibre optic interconnecting devices and passive components - Fibre optic fixed filters - Generic specification

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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| See Eesti standard EVS-EN IEC 61977:2020 sisaldab Euroopa standardi EN IEC 61977:2020 ingliskeelset teksti. | This Estonian standard EVS-EN IEC 61977:2020 consists of the English text of the European standard EN IEC 61977:2020. |
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ICS 33.180.20

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English Version

Fibre optic interconnecting devices and passive components -
Fibre optic fixed filters - Generic specification
(IEC 61977:2020)

Dispositifs d'interconnexion et composants passifs
fibroniques - Filtres fibroniques fixes - Spécification
générique
(IEC 61977:2020)

Lichtwellenleiter - Verbindungselemente und passive
Bauteile - Feste Lichtwellenleiterfilter -
Fachgrundspezifikation
(IEC 61977:2020)

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European foreword

The text of document 86B/4267/FDIS, future edition 4 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 approved by CENELEC as EN IEC 61977:2020.

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) 2021-02-14
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-05-14

This document supersedes EN 61977:2015 and all of its amendments and corrigenda (if any).

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

| | | |
|--------------------|------|---------------------------------|
| IEC 60027 (series) | NOTE | Harmonized as EN 60027 (series) |
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| IEC 61300 (series) | NOTE | Harmonized as EN 61300 (series) |
| ISO 129-1 | NOTE | Harmonized as EN ISO 129-1 |
| ISO 286-1 | NOTE | Harmonized as EN ISO 286-1 |
| ISO 1101 | NOTE | Harmonized as EN ISO 1101 |

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 60027 | series | Letters symbols to be used in electrical technology | - | - |
| IEC 60050-731 | - | International Electrotechnical Vocabulary - Chapter 731: Optical fibre communication | - | - |
| IEC 60617 | - | Standard data element types with associated classification scheme for electric components - Part 4: IEC reference collection for standard data element types and component classes | - | - |
| IEC 60825 | series | Safety of laser products | - | - |
| IEC 61300 | series | Fibre optic interconnecting devices and passive components - Basic test and measurement procedures | - | - |
| IEC/TR 61930 | - | Fibre optic graphical symbology | - | - |
| IEC/TS 62627-09 | - | Fibre optic interconnecting devices and passive components - Vocabulary for passive optical devices | - | - |
| ISO 129-1 | - | Technical product documentation (TPD) - Presentation of dimensions and tolerances - Part 1: General principles | EN ISO 129-1 | - |
| ISO 286-1 | - | Geometrical product specifications (GPS) - ISO code system for tolerances on linear sizes - Part 1: Basis of tolerances, deviations and fits | EN ISO 286-1 | - |
| ISO 1101 | - | Geometrical product specifications (GPS) - Geometrical tolerancing - Tolerances of form, orientation, location and run-out | EN ISO 1101 | - |
| ISO 8601-1 | - | Date and time - Representations for information interchange - Part 1: Basic rules | - | - |

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

Dispositifs d'interconnexion et composants passifs fibroniques – Filtres fibroniques fixes – Spécification générique



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INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

Dispositifs d'interconnexion et composants passifs fibroniques – Filtres fibroniques fixes – Spécification générique

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

FOREWORD

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

This fourth edition cancels and replaces the third edition published in 2015. This edition constitutes a technical revision.

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

- a) change of the title and the scope for the limitation to fibre optic fixed filters;
- b) addition of new terms and definitions reflecting new title;
- c) removal of terms and definitions duplicated in IEC TS 62627-09;
- d) harmonization of the vertical axis of Figures 1 to 5;
- e) restructuration of Clause 4 reflecting the latest technical and market situation.

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

| FDIS | Report on voting |
|---------------|------------------|
| 86B/4267/FDIS | 86B/4286/RVD |

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

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://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.

INTRODUCTION

There are two generic specifications for fibre optic filters: fibre optic fixed filters and fibre optic tuneable filters. This document focuses on fibre optic fixed filters. Fibre optic tuneable bandpass filter is standardized in IEC 63032.

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

1 Scope

This document 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 cannot 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);
 - gain flattening (compensating the spectral profile of the device).

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

This document provides the generic information including terminology of IEC 61753-04x series documents. Published IEC 61753-04x series documents are listed in the Bibliography.

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

2 Normative references

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

IEC 60050-731, *International Electrotechnical Vocabulary (IEV) – Part 731: Optical fibre communication* (available at <http://www.electropedia.org>)

IEC 60617, *Graphical symbols for diagrams* (available at <http://std.iec.ch/iec60617>)

IEC 60825 (all parts), *Safety of laser products*