

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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CONTENTS

FOREWORD	4
INTRODUCTION	6
1 Scope	7
2 Normative references	7
3 Terms and definitions	8
3.1 Component terms	8
3.2 Performance terms	10
4 Requirements	14
4.1 Classification	14
4.1.1 General	14
4.1.2 Technology and function type	15
4.1.3 Interface style	15
4.2 Documentation	15
4.2.1 Symbols	15
4.2.2 Drawings	15
4.2.3 Tests and measurements	16
4.2.4 Test report	16
4.2.5 Instructions for use	16
4.3 Standardisation system	16
4.3.1 Interface standards	16
4.3.2 Performance standards	16
4.3.3 Reliability standards	16
4.4 Design and construction	17
4.4.1 Materials	17
4.4.2 Workmanship	17
4.5 Quality	17
4.6 Performance requirements	17
4.7 Identification and marking	17
4.7.1 General	17
4.7.2 Component marking	17
4.7.3 Package marking	17
4.8 Packaging	18
4.9 Storage conditions	18
4.10 Safety	18
Annex A (informative) Example of etalon filter technology	19
A.1 Operating principle of etalon filter	19
A.2 Transmission characteristics of etalon filter	20
Annex B (informative) Example of fibre Bragg grating (FBG) filter technology	21
B.1 Operating principle of FBG	21
B.2 Example of usage of an FBG	22
Annex C (informative) Example of thin film filter technology	23
C.1 Example of thin film filter technology	23
C.2 Example of application of thin film filters	23
Annex D (informative) Examples of interface style	25
Bibliography	26

Figure 1 – Illustration of passband ripple 11

Figure 2 – Illustration of a stopband 12

Figure 3 – Illustration of maximum insertion loss within a passband 12

Figure 4 – Illustration of minimum insertion loss within a passband 13

Figure 5 – Illustration of X dB bandwidth 14

Figure A.1 – Schematic diagram of an etalon 19

Figure A.2 – Transmission characteristic of an etalon 20

Figure B.1 – Technology of a fibre Bragg grating 21

Figure B.2 – Application of an optical add/drop module 22

Figure B.3 – Application of an OTDR sensor 22

Figure B.4 – Application of the wavelength stabilizer for a 980 nm pump LD 22

Figure C.1 – Structure of a multilayer thin-film 23

Figure C.2 – Application for a GFF for an optical fibre amplifier 24

Figure C.3 – Application for a BPF for an optical fibre amplifier 24

Figure D.1 – Examples of interface style for fibre optic fixed filters 25

Table 1 – Example of a typical fibre optic fixed filter classification 14

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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.

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 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*