

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic interconnecting devices and passive components – Performance standard –

Part 056-2: Single mode fibre pigtailed style optical fuse for category C – Controlled environment

[IEC 61753-056-2:2012](https://standards.iteh.ai/catalog/standards/sist/d202729a-acfc-4b57-8e7b-100000000000/iec-61753-056-2-2012)

[https://standards.iteh.ai/catalog/standards/sist/d202729a-acfc-4b57-8e7b-](https://standards.iteh.ai/catalog/standards/sist/d202729a-acfc-4b57-8e7b-100000000000/iec-61753-056-2-2012)

Dispositifs d'interconnexion et composants passifs fibroniques – Norme de performance

Partie 056-2: Fusible optique du type fibre amorce à fibre unimodale pour catégorie C – Environnement contrôlé



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2012 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22,000 terminological entries in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

67,000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC -

webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 000 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

67 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Fibre optic interconnecting devices and passive components – Performance standard –
Part 056-2: Single mode fibre pigtailed style optical fuse for category C –
Controlled environment**

[IEC 61753-056-2:2012](https://standards.iteh.ai/catalog/standards/sist/d202729a-acfc-4b57-8e7b-833e68066357/iec-61753-056-2)

[https://standards.iteh.ai/catalog/standards/sist/d202729a-acfc-4b57-8e7b-](https://standards.iteh.ai/catalog/standards/sist/d202729a-acfc-4b57-8e7b-833e68066357/iec-61753-056-2)

**Dispositifs d'interconnexion et composants passifs fibroniques – Norme de performance
Partie 056-2: Fusible optique du type fibre amorce à fibre unimodale pour catégorie C – Environnement contrôlé**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 33.180.20

ISBN 978-2-8322-7221-3

**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.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Tests	7
4 Test reports	7
5 Performance requirements.....	7
5.1 Sample size, sequencing and grouping	7
5.2 Dimensions	7
5.3 Test details and requirements	8
Annex A (normative) Sample size and product sourcing requirements	14
Annex B (normative) Power thresholds for optical fuses.....	15
Annex C (informative) Example of dimensions for optical fuses.....	16
Annex D (normative) Testing of optical fuses	17
Figure C.1 – Optical fuse, in-line configuration, regularly without connectors	16
Figure D.1 – Test set-up schematics.....	17
Figure D.2 – Example of power threshold and blocking attenuation at threshold measurements for sample 1280A of an optical fuse	18
Figure D.3 – Response time curve of an optical fuse.....	19
Figure D.4 – Response time testing set-up.....	19
Table 1 – Performance requirements for optical fuses.....	8
Table A.1 – Sample size and product sourcing requirements	14
Table B.1 – Powers for optical fuses, single-mode	15

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC INTERCONNECTING DEVICES
AND PASSIVE COMPONENTS –
PERFORMANCE STANDARD –**

**Part 056-2: Single mode fibre pigtailed
style optical fuse for category C –
Controlled environment**

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.

International Standard IEC 61753-056-2 has been prepared by subcommittee SC86B: Fibre optic interconnecting devices and passive components, of IEC technical committee TC86: Fibre optics.

This bilingual version (2019-07) corresponds to the monolingual English version, published in 2012-12.

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

FDIS	Report on voting
86B/3500/FDIS	86B/3544/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.

The French version of this standard has not been voted upon.

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

A list of all parts in the IEC 61753 series, published under the general title *Fibre optic interconnecting devices and passive components – Performance standard*, 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.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[IEC 61753-056-2:2012](#)

<https://standards.iteh.ai/catalog/standards/sist/d202729a-acfc-4b57-8e7b-f43ae6e8c90c/iec-61753-056-2-2012>

INTRODUCTION

- 1) The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning optical fuse.

IEC takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured the IEC that he/she is willing to negotiate licences either free of charge or under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with IEC. Information may be obtained from:

KiloLambda technologies, Ltd.
22a Wallenberg street,
Tel-Aviv 69719,
Israel

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

ISO (www.iso.org/patents) and IEC (<http://patents.iec.ch>) maintain on-line data bases of patents relevant to their standards. Users are encouraged to consult these data bases for the most up-to-date information concerning patents.

US patent US-7162,114 B2, "Optical Energy switching device and method", granted January 9, 2007.

Japan patent 4376632, "Optical Energy switching device and method", granted September 18, 2009.

- 2) The optical fuse is a passive device, designed to protect equipment and fibre cables from damage due to optical overpower, spikes and surges. The optical fuse produces a controlled, permanent, signal blocking at a predetermined power threshold in an optical fibre transmission line. The optical fuse is wavelength independent over its entire specified spectral range. IEC 60869-1 contains generic information on optical fuses. The optical fuse has a maximum allowed power input $P_{in\ max}$. Beyond this power it is dysfunctional and can let light through. Numerical values for $P_{in\ max}$ are given in Annex B.

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –

Part 056-2: Single mode fibre pigtailed style optical fuse for category C – Controlled environment

1 Scope

This part of IEC 61753 contains the minimum initial test and measurement requirements and severities which a fibre optical fuse satisfies in order for it to be categorised as meeting the requirements of single mode fibre pigtailed style optical fuse used in controlled environments. Optical performance specified in this document relates to in-line type configurations fuses only.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60793-2-50, *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres* standards.iteh.ai/catalog/standards/sist/d202729a-acfc-4b57-8e7b-f43ae6e8c90c/iec-61753-056-2-2012

IEC 60869-1, *Fibre optic interconnecting devices and passive components – Fibre optic passive power control devices – Part 1: Generic specification*¹

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

IEC 61300-2-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-1: Tests – Vibration (sinusoidal)*

IEC 61300-2-4, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-4: Fibre/cable retention*

IEC 61300-2-9, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-9: Tests – Shock*

IEC 61300-2-14, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-14: Tests – High optical power*¹

IEC 61300-2-17, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-17: Tests – Cold*

IEC 61300-2-18, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-18: Tests – Dry heat – High temperature endurance*

¹ To be published.

IEC 61300-2-19, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-19: Tests – Damp heat (steady state)*

IEC 61300-2-22, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-22: Tests – Change of temperature*

IEC 61300-2-42, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-42: Tests – Static side load for connectors*

IEC 61300-2-44, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-44: Tests – Flexing of the strain relief of fibre optic devices*

IEC 61300-3-2, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-2: Examinations and measurements – Polarization dependent loss in a single-mode fibre optic device*

IEC 61300-3-3, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-3: Examinations and measurements – Active monitoring of changes in attenuation and return loss*

IEC 61300-3-7, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-7: Examinations and measurements – Wavelength dependence of attenuation and return loss of single mode components*

IEC 61300-3-32, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-32: Examinations and measurements – Polarization mode dispersion measurement for passive optical components*

<https://standards.iteh.ai/catalog/standards/sist/d202729a-acfc-4b57-8e7b-f43ae6e8c90c/iec-61753-056-2-2012>

3 Tests

All test methods are in accordance with the IEC 61300 series.

All tests are to be carried out to validate performance over the required operating wavelength and power range. As a result, single or multiple spectral bands may be chosen for the qualification in addition to threshold power.

4 Test reports

Fully documented test reports and supporting evidence shall be prepared and shall be available for inspection as evidence that the tests have been carried out and complied with.

5 Performance requirements

5.1 Sample size, sequencing and grouping

Sample sizes for the tests are defined in Annex A.

5.2 Dimensions

Dimensions shall comply with either an appropriate IEC interface standard or with those given in appropriate manufacturers' drawings, where the IEC interface standard does not exist or cannot be used.

5.3 Test details and requirements

Table 1 specifies the optical environmental and mechanical performance requirements and test methods for optical fuses pertaining to this standard.

Compliance to this standard requires demonstration of the ability to meet the performance requirement in Table 1.

Table 1 – Performance requirements for optical fuses (1 of 6)

No.	Tests	Requirements	Details	
1	Insertion loss	Operating wavelength range: 1 520 nm to 1 625 nm Insertion loss ≤ 1,5 dB Insertion loss is measured with input power ≤ -5 dBm	Method: Launch patchcord length: Launch conditions: Source power stability: Wavelength range: Total uncertainty	IEC 61300-3-7, test sample configuration according to Method B2.1 ≥ 2 m. Only the fundamental mode shall propagate at the fuse interface and at the detector. The wavelength of the source shall be longer than cut-off wavelength of the fibre. Less than or equal or equal ± 0,05 dB over the measuring period or at least 1 h 1 520 nm to 1 625 nm ≤ ± 0,05 dB
2	Return loss below power threshold	≥ 35 dB Grade T ≥ 40 dB Grade R ≥ 50 dB Grade U ≥ 60 dB Grade 0 V Return loss is measured with input power ≤ -5 dBm	Method: Source: Total uncertainty	IEC 61300-3-7 measurement, Method 1 OCWR for grades T,R, U IEC 61300-3-7, measurement method 1 OFDR for grade V LD 1 520 nm and 1 625 nm Test every sample with the two wavelengths. ≤ ± 2 dB
3	Return loss above power threshold, after fuse response	≥ 30 dB Return loss is measured with input power ≤ -5 dBm	Method: Source: Total uncertainty	IEC 61300-3-7, measurement method 1 OCWR LD 1 520 nm and 1 625 nm Test every sample with the two wavelengths. ≤ ± 2 dB
4	Polarization dependent loss	≤ 0,2 dB Over the specified operating wavelength range The samples shall be terminated onto single-mode fibres as per IEC 60793-2-50, Type B 1.1, in either coated fibres (primary and secondary) or reinforced cable format	Method: Optical source Wavelength: Total uncertainty:	IEC 61300-3-2, all polarization methods 1 550 nm ± 10 nm ≤ ± 0,05 dB over the dynamic range to be measured
5	Polarization mode dispersion	≤ 0,2 ps Over the specified operating wavelength range	Method: Optical source Wavelength: Total uncertainty:	IEC 61300-3-32, MPS method 1 550 nm ± 10 nm ≤ ± 0,05 dB over the dynamic range to be measured

Table 1 (2 of 6)

No.	Tests	Requirements	Details	
6	High optical power Below power threshold	The fuse will not change its insertion and return loss up to power threshold Before and after the test the Insertion loss shall meet the requirements of test 1 Before and after the test the return loss shall meet the requirements of test 2 The insertion loss change during the test shall be within $\pm 0,5$ dB of the initial value	Method: Optical source Wavelength: Test power: Test temperature: Test duration:	IEC 61300-2-14 1 550 nm \pm 10 nm 3 dB below power threshold 25 °C \pm 2 °C Long-term test: 96 h at test power
7	High optical power Above power threshold (destructive test)	The fuse will block the power from power threshold to ≥ 30 dBm input power or higher value specified in Annex B Before the test the Insertion loss shall meet the requirements of test 1 After and during the test the Insertion loss shall meet the requirements of test 9 Before and after the test the return loss shall meet the requirements of test 2	Method: Optical source Wavelength: Test power: Test temperature: Test duration:	IEC 61300-2-14 1 550 nm \pm 10 nm 3 dB above power threshold 25 °C \pm 2 °C Long-term test: 96 h at test power
8	Power threshold (destructive test)	The tolerance is ± 1 dB from the specified optical fuse power threshold The fuse will meet the power threshold requirements as specified when operated at the 3 specified temperatures	Method: Optical source Wavelength: Test temperature:	See Annex D for detailed test description. The test power input is 1 dB to 3 dB above power threshold and the blocking attenuation is measured accordingly. Samples from every batch will be destructively tested, all will comply. 1 550 nm 10 °C \pm 2 °C 25 °C \pm 2 °C 60 °C \pm 2 °C
9	Blocking attenuation at threshold (destructive test)	>30 dB The fuse will meet the requirement as specified, when operated at the 3 specified temperatures for the specified duration	Method: Optical source Wavelength: Test duration: Test temperature:	See Annex D for detailed test description. The test power input is 1 to 3 dB above power threshold and the blocking attenuation is measured accordingly. Samples from every batch will be destructively tested, all will comply. 1 550 nm 96 h at test power 10 °C \pm 2 °C 25 °C \pm 2 °C 60 °C \pm 2 °C

Table 1 (3 of 6)

No.	Tests	Requirements	Details	
10	Response time	<p><100 µs</p> <p>The fuse will meet the requirement as specified, when operated at the 3 specified temperatures</p>	<p>Method:</p> <p>Optical source Wavelength:</p> <p>Test temperature:</p>	<p>See Annex D for detailed test description.</p> <p>The test power input is 1 dB to 3 dB above power threshold and the blocking attenuation is measured accordingly.</p> <p>Samples from every batch will be destructively tested, all will comply.</p> <p>1 550 nm</p> <p>10 °C ± 2 °C</p> <p>25 °C ± 2 °C</p> <p>60 °C ± 2 °C</p>
11	Damp heat (steady state)	<p>By the end of the test the Insertion loss shall meet the requirements of test 1</p> <p>By the end of the test the return loss shall meet the requirements of test 2</p> <p>The insertion loss change during the test shall be within ± 0,5 dB of the initial value. Insertion loss is measured with input power ≤ -5 dBm</p> <p>After the test the power threshold shall meet the requirements of test 8</p>	<p>Method:</p> <p>Pre conditioning procedure:</p> <p>Temperature:</p> <p>Relative humidity:</p> <p>Duration of exposure:</p> <p>Specimen optically functioning:</p> <p>Optical source Wavelength:</p> <p>Optical power:</p> <p>Recovery procedure:</p>	<p>IEC 61300-2-19</p> <p>During the test the change in Insertion loss shall be measured by test method IEC 61300-3-3.</p> <p>Standard atmospheric conditions as defined in IEC 61300-1 for 2 h</p> <p>+ 40 ± 2 °C</p> <p>93 % ±2 RH -3</p> <p>96 h</p> <p>Yes</p> <p>1 550 nm</p> <p>3 dB lower than power threshold, as defined in Annex B</p> <p>Allow specimens to return to standard atmospheric conditions defined in IEC 61300-1 in 2 h.</p>

Table 1 (4 of 6)

No.	Tests	Requirements	Details	
12	Change of temperature	<p>By the end of the test the insertion loss shall meet the requirements of test 1</p> <p>By the end of the test the return loss shall meet the requirements of test 2</p> <p>The insertion loss change during the test shall be within $\pm 0,5$ dB of the initial value. Insertion loss is measured with input power ≤ -5 dBm</p> <p>After the test the power threshold shall meet the requirements of test 8</p>	<p>Method:</p> <p>Pre conditioning procedure:</p> <p>High temperature:</p> <p>Low temperature:</p> <p>Duration at extreme temperature:</p> <p>Temperature rate of change:</p> <p>Number of cycles:</p> <p>Specimen optically functioning:</p> <p>Maximum sampling interval during the test:</p> <p>Optical source Wavelength:</p> <p>Optical power:</p> <p>Recovery procedure:</p>	<p>IEC 61300-2-22</p> <p>During the test the change in Insertion loss shall be measured by test method IEC 61300-3-3.</p> <p>Standard atmospheric conditions as defined in IEC 61300-1 for 2 h</p> <p>$+ 60 \pm 2$ °C</p> <p>-10 ± 2 °C</p> <p>1 h</p> <p>1 °C/min</p> <p>5</p> <p>Yes</p> <p>15 min</p> <p>1 550 nm</p> <p>3 dB lower than power threshold, as defined in Annex B</p> <p>Allow specimens to return to standard atmospheric conditions defined in IEC 61300-1 in 2 h.</p>
13	Dry heat-high temperature endurance	<p>By the end of the test the insertion loss shall meet the requirements of test 1</p> <p>By the end of the test the return loss shall meet the requirements of test 2</p> <p>The insertion loss change during the test shall be within $\pm 0,5$ dB of the initial value. Insertion loss is measured with input power ≤ -5 dBm</p> <p>After the test the power threshold shall meet the requirements of test 8</p>	<p>Method:</p> <p>Pre conditioning procedure:</p> <p>High temperature:</p> <p>Duration at extreme temperature:</p> <p>Specimen optically functioning:</p> <p>Optical source Wavelength:</p> <p>Optical power:</p> <p>Recovery procedure:</p>	<p>IEC 61300-2-18</p> <p>During the test the change in insertion loss shall be measured by test method IEC 61300-3-3.</p> <p>Standard atmospheric conditions as defined in IEC 61300-1 for 2 h</p> <p>$+ 60 \pm 2$ °C</p> <p>96 h</p> <p>Yes</p> <p>1 550 nm</p> <p>3 dB lower than power threshold, as defined in Annex B</p> <p>Allow specimens to return to standard atmospheric conditions defined in IEC 61300-1 in 2 h.</p>