

# INTERNATIONAL STANDARD

**Fibre optic interconnecting devices and passive components – Performance standard –**

**Part 052-3: Single-mode fibre non-connectorized fixed attenuator – Category U in uncontrolled environment**



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## CONTENTS

FOREWORD .....	3
1 Scope .....	5
2 Normative references .....	5
3 Test .....	6
4 Test report .....	6
5 Performance requirements.....	6
5.1 Sample size, sequencing and grouping.....	6
5.2 Dimensions .....	6
5.3 Test details and requirements .....	7
Annexe A (normative) Test sequencing for single-mode non-connectorized fixed attenuators, category U .....	12
Bibliography .....	13
Table 1 – Test details and requirements.....	7
Table A.1 – Test sequence for single-mode non-connectorized fixed attenuators, category U.....	12

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC INTERCONNECTING DEVICES  
AND PASSIVE COMPONENTS –  
PERFORMANCE STANDARD –****Part 052-3: Single-mode fibre non-connectorized fixed  
attenuator – Category U in uncontrolled environment**

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International Standard IEC 61753-052-3 has been prepared by subcommittee SC86B: 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. This edition constitutes a technical revision.

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

- reconsideration of performance requirements.

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

FDIS	Report on voting
86B/3994/FDIS	86B/4009/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.

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.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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- replaced by a revised edition, or
- amended.

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

### **Part 052-3: Single-mode fibre non-connectorized fixed attenuator – Category U in uncontrolled environment**

#### **1 Scope**

This part of IEC 61753 contains the minimum initial test and measurement requirements and severities which a fibre optic attenuator satisfies in order to be categorised as meeting the requirements of single-mode fibre non-connectorized fixed attenuator devices used in uncontrolled environments. IEC 60869-1 contains the generic specification of the optical attenuator.

Optical performances specified in this document relate only to non-connectorized configurations optical attenuators.

#### **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 specifications for class B single mode fibres*

IEC 60794-2-50, *Optical fibre cables – Part 2.50: Indoor cables – Family specification for simplex and duplex cables for use in terminated cable assemblies*

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: Tests – Fibre/cable retention*

IEC 61300-2-5, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-5: Tests – Torsion*

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*

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*

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

IEC 61300-2-26, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-26: Tests – Salt mist*

IEC 61300-2-27, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-27: Tests – Dust – Laminar flow*

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

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 61300-2-46, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-46: Tests – Damp heat, cyclic*

IEC 61300-3-2, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-2: Examination 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 61300-3-28, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-28: Examinations and measurements – Transient loss*

### **3 Test**

All test methods are in accordance with the IEC 61300 series. Tests validate performance over the required operating wavelength and power range. The samples shall be terminated onto single-mode fibres as per IEC 60793-2-50, type B1.1 or B1.3 or B6 in either coated fibres (primary and secondary) or reinforced cable format as per IEC 60794-2-50.

### **4 Test report**

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**

The sample size to be used for the tests shall be as defined in Annex A.

#### **5.2 Dimensions**

Dimensions shall comply with those given in appropriate manufacturer's drawings.