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INTERNATIONAL STANDARD



Fibre optic interconnecting devices and passive components – Performance standard –

Part 061-2: **Non-connectorized** Single-mode fibre optic pigtailed **style polarization independent** isolators for category C – Controlled environments

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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CONTENTS

FOREWORD	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Test	6
5 Test report	7
6 Performance requirements	7
6.1 Sample size	7
6.2 Test details and requirements	7
Annex A (normative) Sample size	18
Annex B (normative) High power test procedure of fibre optic isolators	19
B.1 General	19
B.2 Forward input test	19
B.2.1 Forward input test set-up	19
B.2.2 Forward input test procedure	19
B.3 Backward input test	20
B.3.1 Backward input test set-up	20
B.3.2 Backward input test procedure	20
B.4 Both direction input test	20
B.4.1 Both direction input test set-up	20
B.4.2 Both direction input test procedure	21
Annex C (informative) Example of detailed measurement conditions including test details and requirements	22
Bibliography	24
Figure B.1 – Test set-up of forward input test	19
Figure B.2 – Test set-up of the backward input test	20
Figure B.3 – Test set-up of both direction input test	21
Table 1 – Single-mode spectral bands	7
Table – Test details and requirements	7
Table 2 – Test details and requirements for category C	11
Table 3 – Test details and requirements for category C ^{HD}	14
Table A.1 – Sample size	18
Table C.1 – Example of detailed measurement conditions	22
Table C.2 – Example of detailed measurement conditions for before, during (if required) and after the environmental tests	23

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –

Part 061-2: ~~Non-connectorized~~ Single-mode fibre optic pigtailed **polarization independent** isolators for category C – Controlled environments

FOREWORD

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International Standard IEC 61753-061-2 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 2012 and constitutes a technical revision.

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

- a) addition of the detail high optical power test procedures and the condition in Annex B;
- b) change of test conditions harmonizing with IEC 61753-1:2018;
- c) addition of category C^{HD};
- d) addition of the detailed measurements conditions in Annex C;
- e) change of clause structure accordance with the latest ISO/IEC Directives, Part 2.

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

FDIS	Report on voting
86B/4270/FDIS	86B/4284/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.

A list of all parts of 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 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 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

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- amended.

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The content of the corrigendum 1 (2025-05) has been included in this copy.

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –

Part 061-2: ~~Non-connectorized~~ Single-mode fibre optic pigtailed **style polarization independent** isolators for category C – Controlled environments

1 Scope

This part of IEC 61753 contains the minimum test and measurement requirements and severities which a fibre optic isolator as specified by IEC 61202-1 ~~should satisfy~~ **satisfies** in order to be categorized as meeting the requirements of isolators used in controlled environments as specified in IEC 61753-1. The requirements cover ~~non-connectorized single-mode fibre-optic~~ pigtailed **style polarization independent** isolators for category C used in controlled environments.

2 Normative references

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.

IEC 60793-2-50:~~2008~~, *Optical fibres – Part 2-50: Product specifications – Sectional specification 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 61202-1, *Fibre optic interconnecting devices and passive components – Fibre optic isolators – Part 1: Generic specification*

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 ~~or~~ 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 61300-2-14¹, *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*

¹ ~~A new third edition is due to be published.~~

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 61300-2-19, *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~~ 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 61300-3-2, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-2: Examinations and measurements – Polarization dependence 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*

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*

IEC TS 62627-09, *Fibre optic interconnecting devices and passive components – Vocabulary for passive optical devices*

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic interconnecting devices and passive components – Performance standard –

Part 061-2: Single-mode fibre optic pigtailed style polarization independent isolators for category C – Controlled environments

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

Partie 061-2: Isolateurs fibroniques à fibres unimodales munis de fibres amorfes non connectorisées pour la catégorie C – Environnements contrôlés

CONTENTS

FOREWORD	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Test	6
5 Test report	7
6 Performance requirements	7
6.1 Sample size	7
6.2 Test details and requirements	7
Annex A (normative) Sample size	15
Annex B (normative) High power test procedure of fibre optic isolators	16
B.1 General	16
B.2 Forward input test	16
B.2.1 Forward input test set-up	16
B.2.2 Forward input test procedure	16
B.3 Backward input test	17
B.3.1 Backward input test set-up	17
B.3.2 Backward input test procedure	17
B.4 Both direction input test	17
B.4.1 Both direction input test set-up	17
B.4.2 Both direction input test procedure	18
Annex C (informative) Example of detailed measurement conditions including test details and requirements	19
Bibliography	21
Figure B.1 – Test set-up of forward input test	16
Figure B.2 – Test set-up of the backward input test	17
Figure B.3 – Test set-up of both direction input test	18
Table 1 – Single-mode spectral bands	7
Table 2 – Test details and requirements for category C	8
Table 3 – Test details and requirements for category C ^{HD}	11
Table A.1 – Sample size	15
Table C.1 – Example of detailed measurement conditions	19
Table C.2 – Example of detailed measurement conditions for before, during (if required) and after the environmental tests	20

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC INTERCONNECTING DEVICES AND
PASSIVE COMPONENTS – PERFORMANCE STANDARD –****Part 061-2: Single-mode fibre optic pigtailed style
polarization independent isolators for category C –
Controlled environments**

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Part 061-2: Single-mode fibre optic pigtailed style polarization independent isolators for category C – Controlled environments

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SOMMAIRE

AVANT-PROPOS	23
1 Domaine d'application	25
2 Références normatives	25
3 Termes et définitions	26
4 Essai	27
5 Rapport d'essai	27
6 Exigences relatives au fonctionnement	27
6.1 Nombre d'échantillons	27
6.2 Détails et exigences des essais	27
Annexe A (normative) Nombre d'échantillons	36
Annexe B (normative) Procédure d'essai à puissance élevée des isolateurs fibroniques	37
B.1 Généralités	37
B.2 Essai d'entrée par l'avant	37
B.2.1 Montage de l'essai d'entrée par l'avant	37
B.2.2 Procédure d'essai d'entrée par l'avant	37
B.3 Essai d'entrée en arrière	38
B.3.1 Montage de l'essai d'entrée en arrière	38
B.3.2 Procédure d'essai d'entrée en arrière	38
B.4 Essai d'entrée dans chaque direction	38
B.4.1 Installation de l'essai d'entrée dans chaque direction	38
B.4.2 Procédure de l'essai d'entrée dans chaque direction	39
Annexe C (informative) Exemples de conditions de mesure détaillées comprenant les détails et exigences des essais	40
Bibliographie	42
 Figure B.1 – Montage pour l'essai d'entrée par l'avant	37
Figure B.2 – Montage pour l'essai d'entrée en arrière	38
Figure B.3 – Montage pour l'essai d'entrée dans chaque direction	39
 Tableau 1 – Bandes spectrales en unimodal	27
Tableau 2 – Détails et exigences des essais pour la catégorie C	28
Tableau 3 – Détails et exigences des essais pour la catégorie C ^{HD}	32
Tableau A.1 – Nombre d'échantillons	36
Tableau C.1 – Exemples de conditions de mesure détaillées	40
Tableau C.2 – Exemples de conditions de mesure détaillées avant, durant (si cela est exigé) et après les essais d'environnement	41

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

**DISPOSITIFS D'INTERCONNEXION ET COMPOSANTS
PASSIFS FIBRONIQUES – NORME DE PERFORMANCE –****Partie 061-2: Isolateurs fibroniques à fibres unimodales munis
de fibres amorces non connectorisées pour la catégorie C –
Environnements contrôlés**

AVANT-PROPOS

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La Norme internationale IEC 61753-061-2 a été établie par le sous-comité 86B: Dispositifs d'interconnexion et composants passifs à fibres optiques, du comité d'études 86 de l'IEC: Fibres optiques.

Cette deuxième édition annule et remplace la première édition parue en 2012 et constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- a) ajout des détails et des conditions des procédures d'essai à puissance optique élevée dans l'Annexe B;
- b) modification des conditions d'essai en harmonisation avec l'IEC 61753-1:2018;
- c) ajout de la catégorie C^{HD};
- d) ajout des conditions de mesure détaillées dans l'Annexe C;
- e) modification de la structure des articles conformément aux dernières Directives ISO/IEC, Partie 2.

Le texte de cette Norme internationale est issu des documents suivants:

FDIS	Rapport de vote
86B/4270/FDIS	86B/4284/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de la présente Norme internationale.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

Une liste de toutes les parties de la série IEC 61753, publiées sous le titre général *Dispositifs d'interconnexion et composants passifs fibroniques – Norme de performance*, peut être consultée sur le site web de l'IEC.

Les futures normes porteront dorénavant le nouveau titre général cité ci-dessus. Le titre des normes existant déjà dans cette série sera mis à jour lors de la prochaine édition.

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Le contenu du corrigendum 1 (2025-05) a été pris en considération dans cet exemplaire.

DISPOSITIFS D'INTERCONNEXION ET COMPOSANTS PASSIFS FIBRONIQUES – NORME DE PERFORMANCE –

Partie 061-2: Isolateurs fibroniques à fibres unimodales munis de fibres amorces non connectorisées pour la catégorie C – Environnements contrôlés

1 Domaine d'application

La présente partie de l'IEC 61753 contient les sévérités et les exigences minimales de mesure et d'essai auxquelles un isolateur fibronique tel que spécifié dans l'IEC 61202-1 est tenu de satisfaire afin d'être considéré comme conforme aux exigences des isolateurs utilisés dans des environnements contrôlés tel que spécifié dans l'IEC 61753-1. Les exigences couvrent les isolateurs à fibres unimodales munis de fibres amorces non connectorisées pour la catégorie C utilisés dans des environnements contrôlés.

2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60793-2-50, *Fibres optiques – Partie 2-50: Spécifications de produits – Spécification intermédiaire pour les fibres unimodales de classe B*

IEC 60794-2-50, *Câbles à fibres optiques – Partie 2-50: Câbles intérieurs – Spécification de famille pour les câbles simplex et duplex utilisés dans les ensembles de câbles équipés*

IEC 61202-1, *Dispositifs d'interconnexion et composants passifs fibroniques – Isolateurs fibroniques – Partie 1: Spécification générique*

IEC 61300-2-1, *Dispositifs d'interconnexion et composants passifs à fibres optiques – Méthodes fondamentales d'essais et de mesures – Partie 2-1: Essais – Vibrations (sinusoïdales)*

IEC 61300-2-4, *Dispositifs d'interconnexion et composants passifs fibroniques – Procédures fondamentales d'essais et de mesures – Partie 2-4: Essais – Rétention de la fibre ou du câble*

IEC 61300-2-5, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-5: Tests – Torsion* (disponible en anglais seulement)

IEC 61300-2-9, *Dispositifs d'interconnexion et composants passifs fibroniques – Procédures fondamentales d'essais et de mesures – Partie 2-9: Essais – Chocs*

IEC 61300-2-14, *Dispositifs d'interconnexion et composants passifs à fibres optiques – Méthodes fondamentales d'essais et de mesures – Partie 2-14: Essais – Puissance optique élevée*

IEC 61300-2-17, *Dispositifs d'interconnexion et composants passifs à fibres optiques – Méthodes fondamentales d'essais et de mesures – Partie 2-17: Essais – Froid*

IEC 61300-2-18, *Dispositifs d'interconnexion et composants passifs à fibres optiques – Méthodes fondamentales d'essais et de mesures – Partie 2-18: Essais – Chaleur sèche – Résistance à haute température*

IEC 61300-2-19, *Dispositifs d'interconnexion et composants passifs à fibres optiques – Méthodes fondamentales d'essais et de mesures – Partie 2-19: Essais – Chaleur humide (état continu)*

IEC 61300-2-22, *Dispositifs d'interconnexion et composants passifs à fibres optiques – Méthodes fondamentales d'essais et de mesures – Partie 2-22: Essais – Variations de température*

IEC 61300-2-42, *Dispositifs d'interconnexion et composants passifs à fibres optiques – Procédures fondamentales d'essais et de mesures – Partie 2-42: Essais – Charge latérale statique pour serre-câble*

IEC 61300-2-44, *Dispositifs d'interconnexion et composants passifs à fibres optiques – Procédures fondamentales d'essais et de mesures – Partie 2-44: Essais – Flexion du serre-câble des dispositifs à fibres optiques*

IEC 61300-3-2, *Dispositifs d'interconnexion et composants passifs à fibres optiques – Méthodes fondamentales d'essais et de mesures – Partie 3-2: Examens et mesures – Pertes en fonction de la polarisation dans un dispositif pour fibres optiques unimodales*

IEC 61300-3-3, *Dispositifs d'interconnexion et composants passifs à fibres optiques – Méthodes fondamentales d'essais et de mesures – Partie 3-3: Examens et mesures – Contrôle actif des variations de l'affaiblissement et de l'affaiblissement de réflexion*

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, *Dispositifs d'interconnexion et composants passifs à fibres optiques – Méthodes fondamentales d'essais et de mesures – Partie 3-28: Examens et mesures – Perte transitoire*

IEC 61300-3-32, *Dispositifs d'interconnexion et composants passifs à fibres optiques – Méthodes fondamentales d'essais et de mesures – Partie 3-32: Examens et mesures – Mesures de la dispersion de mode de polarisation pour composants optiques passifs*

IEC TS 62627-09, *Fibre optic interconnecting devices and passive components – Vocabulary for passive optical devices* (disponible en anglais seulement)