



NSAI
Standards

Irish Standard
I.S. EN 61753-121-2:2017

Fibre optic interconnecting devices and passive components - Performance standard - Part 121-2: Simplex and duplex cords with single-mode fibre and cylindrical ferrule connectors for category C - Controlled environment

I.S. EN 61753-121-2:2017

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN 61753-121-2:2017 is the adopted Irish version of the European Document EN 61753-121-2:2017, Fibre optic interconnecting devices and passive components - Performance standard - Part 121-2: Simplex and duplex cords with single-mode fibre and cylindrical ferrule connectors for category C - Controlled environment

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EUROPEAN STANDARD

EN 61753-121-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2017

ICS 33.180.20

Supersedes EN 61753-121-2:2010

English Version

**Fibre optic interconnecting devices and passive components -
Performance standard - Part 121-2: Simplex and duplex cords
with single-mode fibre and cylindrical ferrule connectors for
category C - Controlled environment
(IEC 61753-121-2:2017)**

Dispositifs d'interconnexion et composants passifs
fibroniques - Norme de performance -
Partie 121-2: Cordons simplex et duplex avec fibres
unimodales, munis de connecteurs à ferrule cylindrique pour
catégorie C - Environnement contrôlé
(IEC 61753-121-2:2017)

Lichtwellenleiter - Verbindungselemente und passive
Bauteile - Betriebsverhalten - Teil 121-2: Simplex- und
Duplexkabel mit Einmoden-Lichtwellenleiter-
Steckverbindern mit zylindrischen Ferrulen für die Kategorie
C - Kontrollierte Umgebung
(IEC 61753-121-2:2017)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

EN 61753-121-2:2017

European foreword

The text of document 86B/4076/FDIS, future edition 2 of IEC 61753-121-2, 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 61753-121-2:2017.

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) 2018-04-20
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-10-20

This document supersedes EN 61753-121-2:2010.

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

IEC 60794-1-2:2017	NOTE	Harmonized as EN 60794-1-2:2017 (not modified).
IEC 60794-2	NOTE	Harmonized as EN 60794-2.
IEC 61300 Series	NOTE	Harmonized as EN 61300 Series.
IEC 61753 Series	NOTE	Harmonized as EN 61753 Series.
IEC 61756-1	NOTE	Harmonized as EN 61756-1.

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 60793-2-50	-	Optical fibres - Part 2-50: Product specifications - Sectional specification for class B single- mode fibres	EN 60793-2-50	-
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	EN 60794-2-50	-
IEC 60794-2-51	-	Optical fibre cables - Part 2-51: Indoor cables - Detail specification for simplex and duplex cables for use in cords for controlled environment	EN 60794-2-51	-
IEC 61300-1	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 1: General and guidance	EN 61300-1	-
IEC 61300-2-4	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-4: Tests - Fibre/cable retention	EN 61300-2-4	-
IEC 61300-2-22	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-22: Tests - Change of temperature	EN 61300-2-22	-
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	EN 61300-2-42	-
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	EN 61300-2-44	-

EN 61753-121-2:2017

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61300-3-1	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-1: Examinations and measurements - Visual examination	EN 61300-3-1	-
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	EN 61300-3-3	-
IEC 61300-3-6	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-6: Examinations and measurements - Return loss	EN 61300-3-6	-
IEC 61300-3-22	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-22: Examinations and measurements - Ferrule compression force	EN 61300-3-22	-
IEC 61300-3-25	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-25: Examinations and measurements - Concentricity of non-angled ferrules and non-angled ferrules with fibre installed	EN 61300-3-25	-
IEC 61300-3-26	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-26: Examinations and measurements - Measurement of the angular misalignment between fibre and ferrule axes	EN 61300-3-26	-
IEC 61300-3-28	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-28: Examinations and measurements - Transient loss	EN 61300-3-28	-
IEC 61300-3-34	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-34: Examinations and measurements - Attenuation of random mated connectors	EN 61300-3-34	-
IEC 61300-3-35	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-35: Examinations and measurements - Visual inspection of fibre optic connectors and fibre-stub transceivers	EN 61300-3-35	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61300-3-47	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-47: Examinations and measurements - Endface geometry of PC/APC spherically polished ferrules using interferometry	EN 61300-3-47	-
IEC 61753-1	-	Fibre optic interconnecting devices and passive components performance standard - Part 1: General and guidance for performance standards	EN 61753-1	-
IEC 61753-021-2	-	Fibre optic interconnecting devices and passive components performance standard - Part 021-2: Grade C/3 single-mode fibre optic connectors for category C - Controlled environment	EN 61753-021-2	-
IEC 61754	Series	Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces	EN 61754	Series
IEC 61755	Series	Fibre optic interconnecting devices and passive components - connector optical interfaces	EN 61755	Series
IEC/TR 61931	-	Fibre optic - Terminology	-	-

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IEC 61753-121-2

Edition 2.0 2017-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic interconnecting devices and passive components – Performance standard –

Part 121-2: Simplex and duplex cords with single-mode fibre and cylindrical ferrule connectors for category C – Controlled environment

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

Partie 121-2: Cordons simplex et duplex avec fibres unimodales, munis de connecteurs à férule cylindrique pour catégorie C – Environnement contrôlé



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IEC 61753-121-2

Edition 2.0 2017-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic interconnecting devices and passive components – Performance standard –

Part 121-2: Simplex and duplex cords with single-mode fibre and cylindrical ferrule connectors for category C – Controlled environment

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

Partie 121-2: Cordons simplex et duplex avec fibres unimodales, munis de connecteurs à fêrûle cylindrique pour catégorie C – Environnement contrôlé

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –

Part 121-2: Simplex and duplex cords with single-mode fibre and cylindrical ferrule connectors 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.
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International Standard IEC 61753-121-2 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 2010. This edition constitutes a technical revision.

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

- a) merge an optical performance requirement of a reference cord;
- b) delete Annexes D and E due to updated relevant standard document;

c) modify the whole document structure according to the latest ISO/IEC Directives.

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

FDIS	Report on voting
86B/4076/FDIS	86B/4084/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 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 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.

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –

Part 121-2: Simplex and duplex cords with single-mode fibre and cylindrical ferrule connectors for category C – Controlled environment

1 Scope

This part of IEC 61753 specifies the test requirements for cords including reference cords used in a controlled (Category C) environment according to IEC 61753-1, where the connectors already comply with the Category C requirements of IEC 61753-1. The tests selected are a subset of the connector tests from IEC 61753-1 appropriate for requalification with additional requirements relevant to cords and the connector/cable interface.

The cords consist of simplex or duplex fibre optic cable terminated at each end of the cable with single-mode fibre optic connector plugs with cylindrical ferrules. The operational wavelength range is between 1 260 nm and 1 625 nm. Short length cords are used as test samples as the attenuation of the cord and the temperature cycling performance will be affected by longer lengths of cable. It is important that any qualification of a cord whose length is greater than 5 m takes these factors into account.

The relevant requirements for the mechanical interface of connector sets are covered by the IEC 61754 all parts. The relevant requirements for the optical interface of connector sets are covered by IEC 61755 (all parts). The relevant requirements for performance of connector sets are covered by IEC 61753 (all parts). The relevant requirements for fibres are covered by IEC 60793-2-50. The relevant requirements for cables for cords are covered by IEC 60794-2-50.

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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 60794-2-51, *Optical fibre cables – Part 2-51: Indoor cables – Detail specification for simplex and duplex cables for use in cords for controlled environment*

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

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

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