IEC 61753-121-3

Edition 1.0 2010-04

INTERNATIONAL STANDARD

colour inside

Fibre optic interconnecting devices and passive components – Performance standard –
Part 121-3: Simplex and duplex cords with single-mode fibre and cylindrical ferrule connectors for category U – Uncontrolled environment

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –

Part 121-3: Simplex and duplex cords with single-mode fibre and cylindrical ferrule connectors for category U – Uncontrolled environment

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International Standard IEC 61753-121-3 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

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

FDIS	Report on voting
86B/2989/FDIS	86B/3025/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 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 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- withdrawn,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
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FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –

Part 121-3: Simplex and duplex cords with single-mode fibre and cylindrical ferrule connectors for category U – Uncontrolled environment

1 Scope

This part of IEC 61753 specifies the test requirements for finished cable assemblies for use as patchcords, work area cords and equipment cords for applications in a uncontrolled (U) environment according to IEC 61753-1, where the connectors already comply with the Category U requirements of IEC 61753-1. The assemblies consist of simplex or duplex fibre optic cable terminated at each end of the cable with non-angled (PC) or angled (APC) polished single-mode fibre optic connectors with cylindrical ferrules. The wavelength of operation is between 1 260 nm [1] and 1 625 nm.

The relevant requirements for mechanical and optical connectivity systems are covered by mechanical and optical interface standards IEC 61754 series and IEC 61755 series respectively. The relevant requirements for connector sets are covered by IEC 61753 series. The relevant requirements for cable are covered by IEC 60794-2-50.

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2 Normative references

The following referenced documents are indispensable for the application 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.

https://standards.iteh.ai/catalog/standards/iec/1215f6e5-f1c8-41aa-ad7a-2ff51b297af5/iec-61753-121-3-2010

IEC 60793-2-50, *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres*

IEC 60794-1-2, *Optical fibre cables – Part 1-2: Generic specification – Basic optical cable test procedures*

IEC 60794-2-50, *Optical fibre cables – Part 2-50: Indoor optical fibre cables – Family specification for simplex and duplex cables for use in patchcords*

IEC 61300 series, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures*

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*

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

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[1] Low wavelength limit depends on maximum cabled fibre cut-off wavelength specification.

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 61300-3-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-1: Examinations and measurements – Visual examination*

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 61300-3-6, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-6: Examinations and measurements – Return loss*

IEC 61300-3-15, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-15: Examinations and measurements – Dome eccentricity of a convex polished ferrule endface*

IEC 61300-3-16, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-16: Examinations and measurements – Endface radius of spherically polished ferrules*

IEC 61300-3-17, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-17: Examinations and measurements – Endface angle of angle-polished ferrules*

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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*

IEC 61300-3-23, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-23: Examination and measurements – Fibre position relative to ferrule endface*

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*

IEC 61300-3-35, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedure – Part 3-35: Examinations and measurements – Fibre optic connector endface visual and automated inspection*

IEC 61753 series, *Fibre optic interconnecting devices and passive components – Performance standard*

IEC 61753-1, *Fibre optic interconnecting devices and passive components – Performance standard – Part 1: General and guidance for performance standards*

IEC 61754 series, *Fibre optic connector interfaces*

IEC 61755 series, *Fibre optic connector optical interfaces*

IEC 61755-2-1*, Fibre optic connector optical interfaces – Part 2-1: Optical interface standard single mode non-angled physically contacting fibres*

IEC 61755-2-2, *Fibre optic connector optical interfaces – Part 2-2: Optical interface standard single mode angled physically contacting fibres*

IEC/TR 61931, *Fibre optic – Terminology*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in IEC/TR 61931 and the following apply.

3.1
change in attenuation
defined as peak to peak variation

3.2
connector set
complete assembly of components (plug-adaptor-plug) required to provide demountable coupling between two or more optical fibres

3.3
cord
general term for terminated cable assembly, whatever the expected use is

Examples :equipment cord, work area cord or patchcord.

3.4
equipment cord
cord connecting equipment to a distributor

3.5
patchcord
cord used within cross-connect implementations at distributors

3.6
terminated cable assembly
product defined as a fibre optic cable terminated with any passive fibre optic component on both ends

3.7
work area cord
cord connecting the telecommunications outlet to the terminal equipment

4 Description

4.1 General

Patchcords, work area cords and equipment cords (called cords in subsequent text) defined according to this specification are terminated cable assemblies with optical connectors. The cord comprises cable and terminated fibre optic connectors on each end.

The length, unless otherwise specified, is defined as between the end faces of the connectors.

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