SLOVENSKI STANDARD
SIST EN 61753-121-3:2010

01-september-2010

Tehnični standardi za optične spojne elemente in pasivne komponente - 121-3. del: Simpleksne in dupleksne vrvice z enorodnim optičnim vlaknom ter cilindričnimi tulčastimi konektorji za kategorijo C - Nenadzorovano okolje (IEC 61753-121-3:2010)

Fibre optic interconnecting devices and passive components performance standards - Part 121-3: Simplex and duplex cords with singlemode fibre and cylindrical ferrule connectors for Category U - Uncontrolled environment (IEC 61753-121-3:2010)

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Betriebsverhalten - Teil 121-3: Simplex- und Duplexkabel mit zylindrischen Einmoden-Lichtwellenleiter-Stiftsteckverbindern für die Kategorie U - Unkontrollierte Umgebung (IEC 61753-121-3:2010)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Norme de qualité de fonctionnement - Partie 121-3: Cordons simplex et duplex avec fibres unimodales, munis de connecteurs à férule cylindrique pour catégorie U - Environnement non contrôlé (CEI 61753-121-3:2010)

Ta slovenski standard je istoveten z: **EN 61753-121-3:2010**

ICS:

33.180.20	Povezovalne naprave za optična vlakna	Fibre optic interconnecting devices

SIST EN 61753-121-3:2010 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61753-121-3

July 2010

ICS 33.180.20

English version

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

(IEC 61753-121-3:2010)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Norme de qualité de fonctionnement - Partie 121-3: Cordons simplex et duplex avec fibres unimodales, munis de connecteurs à férule cylindrique pour catégorie U - Environnement non contrôlé (CEI 61753-121-3:2010)

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Betriebsverhalten - Teil 121-3: Simplex- und Duplexkabel mit Einmoden-Lichtwellenleiter-Steckverbindern mit zylindrischen Ferrulen für die Kategorie U - Unkontrollierte Umgebung (IEC 61753-121-3:2010)

This European Standard was approved by CENELEC on 2010-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 61753-121-3:2010 E

Foreword

The text of document 86B/2989/FDIS, future edition 1 of IEC 61753-121-3, 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 was approved by CENELEC as EN 61753-121-3 on 2010-07-01.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2011-04-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2013-07-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61753-121-3:2010 was approved by CENELEC as a European Standard without any modification.

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

IEC 60794-2	NOTE	Harmonized as EN 60794-2.
IEC 61300-3-28	NOTE	Harmonized as EN 61300-3-28.
IEC 61756-1	NOTE	Harmonized as EN 61756-1.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60793-2-50	-	Optical fibres - Part 2-50: Product specifications - Sectional specification for class B single-mode fibres	EN 60793-2-50	-
IEC 60794-1-2	-	Optical fibre cables - Part 1-2: Generic specification - Basic optical cable test procedures	EN 60794-1-2	-
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 61300	Series	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures	EN 61300	Series
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 61300-2-5	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-5: Tests - Torsion	EN 61300-2-5	-
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 connectors	EN 61300-2-42	-

Publication	Year	Title	EN/HD	Year
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	-
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 61300-3-15	-	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	EN 61300-3-15	-
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	EN 61300-3-16	-
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	EN 61300-3-17	-
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 61300-3-23	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-23: Examination and measurements - Fibre position relative to ferrule endface	EN 61300-3-23	-
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	-

Publication	Year	Title	EN/HD	Year
IEC 61300-3-35	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-35: Examinations and measurements - Fibre optic cylindrical connector endface visual and automated inspection	EN 61300-3-35	-
IEC 61753	Series	Fibre optic interconnecting devices and passive components performance standard	EN 61753	Series
IEC 61753-1	-	Fibre optic interconnecting devices and passive components performance standard - Part 1: General and guidance for performance standards	EN 61753-1	-
IEC 61754	Series	Fibre optic connector interfaces	EN 61754	Series
IEC 61755	Series	Fibre optic connector optical interfaces	EN 61755	Series
IEC 61755-2-1	-	Fibre optic connector optical interfaces - Part 2-1: Optical interface standard single mode non-angled physically contacting fibres	EN 61755-2-1	-
IEC 61755-2-2	-	Fibre optic connector optical interfaces - Part 2-2: Optical interface standard single mode 8 degrees angled physically contacting fibres	EN 61755-2-2	-
IEC/TR 61931	-	Fibre optic - Terminology	-	-

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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PRICE CODE S

ICS 33.180.20

ISBN 978-2-88910-563-2

CONTENTS

FOREWORD 4
1 Scope 6
2 Normative references 6
3 Terms and definitions 8
4 Description 8
4.1 General 8
4.2 Optical fibres 9
4.3 Cable design and construction 9
4.4 Optical connectors 9
4.4.1 Mechanical connectivity 9
4.4.2 Optical performance requirements 9
4.4.3 Connector set performance requirements 9
4.5 Cable bend radius 9
4.6 Identification 9
5 Tests 9
5.1 General 9
5.2 Measuring wavelengths 9
5.3 Test specimen 10
6 Test procedure 10
6.1 General 10
6.2 Visual examination 10
6.3 Fibre optic connector end face 10
6.4 Optical performance requirements 11
6.5 Climatic performance requirements 13
6.6 Mechanical performance requirements 14
7 Test report 16
Annex A (normative) Sample size and product sourcing requirements 17
Annex B (normative) Visual examination of outer cable sheath movement 18
Annex C (normative) Change of temperature 19
Annex D (normative) Static side load 20
Annex E (normative) Flexing strain relief of fibre optic devices 21
Bibliography 22

Figure B.1 – Initial marking of the cable sheath 18
Figure B.2 – Final visual examination 18
Figure C.1 – Change of temperature test configuration 19
Figure D.1 – Test apparatus for transmission with applied side load 20
Figure E.1 – Flexing test apparatus 21

Table 1 – Wavelengths for attenuation and return loss measurements 9
Table 2 – Visual examination requirements 10
Table 3 – End face requirements 11
Table 4 – Optical performance requirements 12
Table 5 – Climatic performance requirements 13

Table 6 – Mechanical performance requirements 14
Table A.1 – Sample size requirements 17

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

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.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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.