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## **Fiberoptik – Funktionsfordringar på anslutningsdon och passiva komponenter – Del 2-1: Fiberoptiska anslutningsdon avslutade för enkelmodfiber kategori U – Okontrollerad miljö**

*Fibre optic interconnecting devices and passive components performance standard –  
Part 2-1: Fibre optic connectors terminated on single mode fibres for category U –  
Uncontrolled environment*

Som svensk standard gäller europastandarden EN 61753-2-1:2000. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61753-2-1:2000.

### **Nationellt förord**

Europastandarden EN 61753-2-1:2000<sup>\*)</sup>

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 61753-2-1, First edition, 2000 - Fibre optic interconnecting devices and passive components performance standard - Part 2-1: Fibre optic connectors terminated on single mode fibres for category U - Uncontrolled environment**

utarbetad inom International Electrotechnical Commission, IEC.

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<sup>\*)</sup> EN 61753-2-1:2000 ikraftsattes 2001-12-19 som SS-EN 61753-2-1 genom offentliggörande, d v s utan utgivning av något svenskt dokument.

### *Standarder underlättar utvecklingen och höjer elsäkerheten*

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

### *SEK är Sveriges röst i standardiseringsarbetet inom elområdet*

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

### *Stora delar av arbetet sker internationellt*

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

### *Var med och påverka!*

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

### **SEK Svensk Elstandard**

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English version

**Fibre optic interconnecting devices and passive components  
performance standard**  
**Part 2-1: Fibre optic connectors terminated on single-mode fibre  
for category U - Uncontrolled environment**  
(IEC 61753-2-1:2000)

Norme de qualité de fonctionnement des  
dispositifs d'interconnexion et composants  
passifs à fibres optiques  
Partie 2-1: Connecteurs à fibres optiques  
raccordés à une fibre monomode pour  
la catégorie U -  
Environnement non contrôlé  
(CEI 61753-2-1:2000)

Lichtwellenleiter-Verbindungselemente  
und passive Bauteile -  
Betriebsverhalten  
Teil 2-1: Einmoden-Lichtwellenleiter-  
Steckverbinder für die Kategorie U -  
Unkontrollierte Umgebung  
(IEC 61753-2-1:2000)

This European Standard was approved by CENELEC on 2000-08-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## CENELEC

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

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

The text of document 86B/1314/FDIS, future edition 1 of IEC 61753-2-1, 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 61753-2-1 on 2000-08-01.

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) 2001-05-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2003-08-01

Annexes designated "normative" are part of the body of the standard.  
In this standard, annexes A, B and ZA are normative.  
Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 61753-2-1:2000 was approved by CENELEC as a European Standard without any modification.

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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60793-1-1	1995	Optical fibres Part 1: Generic specification -- Section 1: General	-	-
IEC 61300-2-1	1995	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures Part 2-1: Tests - Vibration (sinusoidal)	EN 61300-2-1	1997
IEC 61300-2-2	1995	Part 2-2: Tests - Mating durability	EN 61300-2-2	1997
IEC 61300-2-4	1995	Part 2-4: Tests - Fibre/cable retention	EN 61300-2-4	1997
IEC 61300-2-5	1995	Part 2-5: Tests - Torsion/twist	EN 61300-2-5	1997
IEC 61300-2-6	1995	Part 2-6: Tests - Tensile strength of coupling mechanism	EN 61300-2-6	1997
IEC 61300-2-7	1995	Part 2-7: Tests - Bending moment	EN 61300-2-7	1997
IEC 61300-2-12	1995	Part 2-12: Tests - Impact	EN 61300-2-12	1997
IEC 61300-2-17	1995	Part 2-17: Tests - Cold	EN 61300-2-17	1997
IEC 61300-2-18	1995	Part 2-18: Tests - Dry heat - High temperature endurance	EN 61300-2-18	1997
IEC 61300-2-19	1995	Part 2-19: Tests - Damp heat (steady state)	EN 61300-2-19	1997
IEC 61300-2-21	1995	Part 2-21: Tests - Composite temperature- humidity cyclic test	EN 61300-2-21	1997
IEC 61300-2-22	1995	Part 2-22: Tests - Change of temperature	EN 61300-2-22	1997
IEC 61300-2-27	1995	Part 2-27: Tests - Dust - Laminar flow	EN 61300-2-27	1997
IEC 61300-2-42	1998	Part 2-42: Tests - Static side load for connectors	EN 61300-2-42	1998
IEC 61300-3-4	1998	Part 3-4: Examination and measurements - Attenuation	EN 61300-3-4	1998

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61300-3-6	1997	Part 3-6: Examinations and measurements - Return loss	EN 61300-3-6	1997
IEC 61300-3-34	1997	Part 3-34: Examinations and measurements - Attenuation of random mated connectors	EN 61300-3-34	1997

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**FIBRE OPTIC INTERCONNECTING DEVICES  
AND PASSIVE COMPONENTS PERFORMANCE STANDARD –**
**Part 2-1: Fibre optic connectors terminated  
on single-mode fibre for category U –  
Uncontrolled environment**

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61753-2-1 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/1314/FDIS	86B/1335/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 3.

Annexes A and B form an integral part of this standard.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

# FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS PERFORMANCE STANDARD –

## Part 2-1: Fibre optic connectors terminated on single-mode fibre for category U – Uncontrolled environment

### 1 Scope

This part of IEC 61753 contains the minimum requirements and severities which a single-mode connector/cable assembly must satisfy in order to be considered as meeting category U (uncontrolled environment) of IEC 61753-1, as defined in annex A of IEC 61753-1.

This standard contains optional grades of optical performance for the attenuation random mate and return loss tests.

### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61753. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61753 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60793-1-1, *Optical fibres – Part 1: Generic specification – Section 1: General*

IEC 61300-2-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-1: Tests – Vibration (sinusoidal)*

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

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/twist*

IEC 61300-2-6, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-6: Tests – Tensile strength of coupling mechanism*

IEC 61300-2-7, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-7: Tests – Bending moment*

IEC 61300-2-12, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-12: Tests – Impact*

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 61300-2-19, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-19: Tests – Damp heat (steady state)*

IEC 61300-2-21, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-21: Tests – Composite temperature-humidity cyclic test*

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

IEC 61300-2-27, *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 connectors*

IEC 61300-3-4, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-4: Examination and measurements – Attenuation*

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 61300-3-34, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-34: Examinations and measurements – Attenuation of random mated connectors*