

# Fibre optic interconnecting devices and passive components performance standard —

**Part 021-2: Fibre optic connectors  
terminated on single-mode fibre for  
category C — Controlled environment**

The European Standard EN 61753-021-2:2002 has the status of a  
British Standard

ICS 33.180.20

# National foreword

This British Standard is the official English language version of EN 61753-021-2:2002. It is identical with IEC 61753-021-2:2002.

The UK participation in its preparation was entrusted by Technical Committee GEL/86, Fibre optics, to Subcommittee GEL/86/2, Interconnecting devices and passive components, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

### Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

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This British Standard, having been prepared under the direction of the Electrotechnical Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 30 October 2002

### Summary of pages

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**Fibre optic interconnecting devices and passive  
component performance standard  
Part 021-2: Fibre optic connectors terminated  
on single-mode fibre for category C -  
Controlled environment  
(IEC 61753-021-2:2002)**

Norme de qualité de fonctionnement  
des dispositifs d'interconnexion  
et composants passifs à fibres optiques  
Partie 021-2: Connecteurs à fibres  
optiques raccordés à une fibre  
monomode pour la catégorie C -  
Environnement contrôlé  
(CEI 61753-021-2:2002)

Lichtwellenleiter -  
Verbindungselemente  
und passive Bauteile -  
Betriebsverhalten  
Teil 021-2: Lichtwellenleiter-  
Steckverbinder für Einmodenfasern  
für die Kategorie C -  
Geregelte Umgebung  
(IEC 61753-021-2:2002)

This European Standard was approved by CENELEC on 2002-09-01. 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.

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## 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/1669/FDIS, future edition 1 of IEC 61753-021-2, 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 was approved by CENELEC as EN 61753-021-2 on 2002-09-01.

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) 2003-06-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2005-09-01

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 61753-021-2:2002 was approved by CENELEC as a European Standard without any modification.

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## FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENT PERFORMANCE STANDARD –

### Part 021-2: Fibre optic connectors terminated on single-mode fibre for category C – Controlled 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 categorized as meeting the IEC standard category C (controlled environment), as defined in annex A of IEC 61753-1-11.

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

#### 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.

IEC 60793-1-1, *Optical fibres – Part 1-1: Generic specification – 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 61300-2-6, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-6: Tests – Tensile strength of coupling mechanism*

IEC 61300-2-12, *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)*

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<sup>1</sup> IEC 61753-1-1 *Fibre optic interconnecting devices and passive components performance standard – Part 1-1: General and guidance – Interconnecting devices (connectors)*

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 61300-3-3, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-3: Examinations and measurements – Monitoring change in attenuation and in return loss (multiple paths)*

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

CEI 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*

### 3 Definitions

For the purpose of this part of IEC 61753, the following definitions apply.

#### 3.1

##### **change in attenuation**

peak-to-peak variation

#### 3.2

##### **sample**

the complete set of connector components required to provide demountable coupling between one or more pairs of optical fibres

### 4 Tests

All test methods are in accordance with IEC 61300, of which the parts applicable to this standard are mentioned in 7.3.

The connectors under test shall be terminated onto single-mode fibre according to IEC 60793-1-1, type B.1.1, in either secondary coated or reinforced cable format.

Each test defines the number of samples to be evaluated.

The sample set used for each test is intended to be composed of randomly selected and previously unstressed new samples but may be selected from previously used samples if so desired.

The full set of tests shall be carried out for all fibre types for which the compliance to this standard is required. For different cable structures, only re-qualification to tests 3, 5, 8, 12 and 13 is required.

For the purpose of the test, change in attenuation (see 3.1) shall be measured according to IEC 61300-3-3.