

Fibre optic interconnecting devices and passive components performance standard —

**Part 021-6: Grade B/2 single-mode fibre
optic connectors for category O —
Uncontrolled environment**

ICS 33.180.20

National foreword

This British Standard is the UK implementation of EN 61753-021-6:2008. It is identical to IEC 61753-021-6:2007.

The UK participation in its preparation was entrusted by Technical Committee GEL/86, Fibre optics, to Subcommittee GEL/86/2, Fibre optic interconnecting devices and passive components.

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

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**Fibre optic interconnecting devices and passive components
performance standard -
Part 021-6: Grade B/2 single-mode fibre optic connectors for category O -
Uncontrolled environment
(IEC 61753-021-6:2007)**

Norme de qualité de fonctionnement
des dispositifs d'interconnexion
et composants passifs à fibres optiques -
Partie 021-6: Connecteurs à fibres
optiques unimodales de classe B/2
pour la catégorie O -
Environnement non contrôlé
(CEI 61753-021-6:2007)

Lichtwellenleiter -
Verbindungselemente
und passive Bauteile -
Betriebsverhalten -
Teil 021-6: Lichtwellenleiter-
Steckverbinder der Stufe B/2
für Einmodenfasern für die Kategorie O -
Unkontrollierte Umgebung
(IEC 61753-021-6:2007)

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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/2592/FDIS, future edition 1 of IEC 61753-021-6, 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 61753-021-6 on 2007-12-01.

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) 2008-09-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) 2010-12-01 |

Annex ZA has been added by CENELEC.

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INTRODUCTION

Performance standards define the requirements for standard optical performance under a set of specified conditions. Each standard contains a series or a set of tests and measurements with clearly stated conditions, severities and pass/fail criteria. The series of tests, commonly referred to as an operating service environment or performance category, is intended to be run on a 'one-off' basis to prove the product's ability to satisfy the requirements of a specific application, market sector or user group.

The subsequent parts of this document define those sets of tests which form each operating service environment or performance category and which have been standardized for international use. A product that has been shown to meet all the requirements of a performance standard may be declared as complying with that performance standard.

Products having the same classification from one manufacturer that satisfy a performance standard will operate within the boundaries set by the performance standard. Interchangeability or interchangeability of products from different suppliers (having the same classification and conforming to the same performance standard) can only be guaranteed when these products also meet the interface standards. Only in this condition will an equivalent level of performance be provided when they are used together (for example, in the case of optical connectors).

Conformance to a performance standard is not a guarantee of lifetime assured performance or reliability.

Reliability testing must be the subject of a separate test schedule, where the tests and severities selected are truly representative of the requirements of this reliability test programme. Consistency of manufacture should be maintained using a recognized Quality Assurance programme whilst the reliability of the product should be evaluated using the procedures recommended in IEC 62005.

Tests and measurements should be selected from the IEC 61300 series. Where this is not possible, the required test method should be attached as an annex to the performance standard.

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS PERFORMANCE STANDARD –

Part 021-6: Grade B/2 single-mode fibre optic connectors for category O – Uncontrolled environment

1 Scope

This part of IEC 61753 defines B/2 performance levels which a singlemode connector/cable assembly must satisfy in order to be categorised as meeting the IEC standard, Category O – Uncontrolled environment, as defined in Table A.4b of IEC 61753-1.

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

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

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

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

IEC 61300-2-26, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-26: Tests – Salt mist*

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 61300-2-48, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-48: Tests – Temperature-humidity cycling*

IEC 61300-2-49, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-49: Tests – Connector installation test*

IEC 61300-2-50, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-50: Tests – Fibre optic connector proof test with static load – Singlemode and multimode*

IEC 61300-2-51 *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-51: Tests – Fibre optic connector test for transmission with applied tensile load – singlemode and multimode*

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 61300-3-4, *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*

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 61753-1:2007, *Fibre optic interconnecting devices and passive components performance standard – Part 1: General and guidance for performance standards*

IEC 61754 (all parts), *Fibre optic connector interfaces*

IEC 61755 (all parts), *Fibre optic connector optical interfaces*

IEC 61755-3 (all parts), *Fibre optic connector optical interfaces – Part 3: Optical interface*

3 Terms and definitions

For the purposes of this document, the following definitions apply.

3.1

small form factor (SFF) connector

optical fibre connector with a ferrule with an outside diameter of less than 2,0 mm or a connector designed to accommodate two or more optical fibres with at least the same mounting density as the RJ-45 connector. SFF connectors have a smaller cross-sectional area, about one-half that of traditional connectors

3.2

change in attenuation

peak-to-peak variation

3.3

sample

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