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Irish Standard
I.S. EN 61755-3-7:2009

Fibre optic interconnecting devices and passive components - Fibre optic connector optical interfaces -- Part 3-7: Optical interface, 2,5 mm and 1,25 mm diameter cylindrical PC composite ferrule using titanium as fibre surrounding material, single mode fibre (IEC 61755-3 -7:2009 (EQV))

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I.S. EN 61755-3-7:2009

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61755-3-7

April 2009

ICS 33.180.20

English version

Fibre optic interconnecting devices and passive components - Fibre optic connector optical interfaces - Part 3-7: Optical interface, 2,5 mm and 1,25 mm diameter cylindrical PC composite ferrule using titanium as fibre surrounding material, single mode fibre

(IEC 61755-3-7:2009)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Interfaces optiques de connecteurs pour fibres optiques - Partie 3-7: Interfaces optiques, férules composites cylindriques PC, de diamètre 2,5 mm et 1,25 mm, utilisant le titane comme matériau entourant la fibre, fibres unimodales (CEI 61755-3-7:2009)

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Optische Schnittstellen von Lichtwellenleiter-Steckverbindern - Teil 3-7: Optische Schnittstelle - Zylindrische PC-Composite-Ferrulen mit 2,5 mm und 1,25 mm Durchmesser für Einmodenfaser, mit Titan als Material für die Faserfassung, Einmoden LWL (IEC 61755-3-7:2009)

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CENELEC

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

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Foreword

The text of document 86B/2768/FDIS, future edition 1 of IEC 61755-3-7, 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 61755-3-7 on 2009-03-01.

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)	2009-12-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2012-03-01

Endorsement notice

The text of the International Standard IEC 61755-3-7:2009 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 61753-1	NOTE	Harmonized as EN 61753-1:2007 (not modified).
IEC 61755-3	NOTE	Harmonized in EN 61755-3 series (modified).

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – FIBRE OPTIC CONNECTOR OPTICAL INTERFACES –

Part 3-7: Optical interface, 2,5 mm and 1,25 mm diameter cylindrical PC composite ferrule using titanium as fibre surrounding material, single mode fibre

FOREWORD

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International Standard IEC 61755-3-7 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/2768/FDIS	86B/2801/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.

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A list of all parts of the IEC 61755 series, published under the general title *Fibre optic interconnecting devices and passive components – Fibre optic connector optical interfaces,* can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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
- amended.

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FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – FIBRE OPTIC CONNECTOR OPTICAL INTERFACES –

Part 3-7: Optical interface, 2,5 mm and 1,25 mm diameter cylindrical PC composite ferrule using titanium as fibre surrounding material, single mode fibre

1 Scope

This part of IEC 61755 defines dimensional limits and material properties of a 2,5 mm and a 1,25 mm diameter cylindrical composite ferrule optical interface to meet specific requirements for PC fibre-to-fibre interconnection. The composite ferrule uses different materials in the end face contact zone and in ferrule to sleeve contact zone. The specified materials for each zone are zirconia (ZrO_2) for the ferrule to sleeve contact zone and titanium for the end face contact zone. Ferrules made from the material specified in this standard are suitable for use in categories C, U, E and O as defined in IEC 61753-1.

NOTE If mated within the same family (cylindrical PC ferrule), the ferrules specified in this standard are intended to have the same optical attenuation performance grade for connections with all ferrules described in different parts of IEC 61775-3.

2 Description

The performance of a cylindrical ferrule optical interface is determined by the accuracy with which the optical datum targets of two mating ferrules are aligned with each other. There are three conditions affecting the alignment of two optical datum targets, lateral offset, angular offset and longitudinal offset.

Parameters influencing the lateral and angular offset of the optical fibre axes include the following:

- ferrule outside diameter;
- fibre hole concentricity relative to the ferrule outside diameter;
- fibre hole angle relative to outside diameter axis;
- fibre cladding diameter to fibre hole clearance;
- alignment sleeve inside diameter;
- fibre core concentricity relative to the cladding diameter;
- fibre core orientation relative to keying feature.

Parameters influencing the longitudinal offset of the optical fibre axes include the following:

- end face spherical radius;
- end face spherical radius apex offset;
- fibre undercut;
- axial force on ferrule end face;
- ferrule and fibre material physical constants;
- alignment sleeve frictional force.

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