



# SLOVENSKI STANDARD SIST EN 61755-3-1:2009

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Fibre optic connector optical interfaces - Part 3-1: Optical interface, 2,5 mm and 1,25 mm diameter cylindrical full zirconia PC ferrule, single mode fibre (IEC 61755-3-1:2006 (MOD) + corrigendum Jan. 2009)

**iTeh STANDARD PREVIEW**

Optische Schnittstellen für Lichtwellenleiter-Steckverbinder - Teil 3-1: Optische Schnittstellen von Zirkonium-Stiften mit 2,5 mm und 1,25 mm Durchmesser für nicht abgeschrägte Einmodenfasern mit physikalischem Kontakt (IEC 61755-3-1:2006 (MOD) + corrigendum Jan. 2009)

<https://standards.iteh.ai/catalog/standards/sist/a1403885-68b0-4c55-98f1-62cc982134b6/sist-en-61755-3-1-2009>

Interfaces optiques de connecteurs pour fibres optiques -- Partie 3-1: Interfaces optiques, férules PC en zircone plein cylindrique de diamètre 2,5 mm et 1,25 mm, fibres unimodales (CEI 61755-3-1:2006 (MOD) + corrigendum Jan. 2009)

**Ta slovenski standard je istoveten z: EN 61755-3-1:2009**

**ICS:**

33.180.20 Ú[ ç^: [ çæ) ^Á æ |æ^Á æ Fibre optic interconnecting devices  
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**SIST EN 61755-3-1:2009 en,fr**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 61755-3-1**

February 2009

ICS 33.180.20

English version

**Fibre optic connector optical interfaces -  
Part 3-1: Optical interface, 2,5 mm and 1,25 mm diameter  
cylindrical full zirconia PC ferrule, single mode fibre  
(IEC 61755-3-1:2006, modified + corrigendum 2009)**

Interfaces optiques de connecteurs  
pour fibres optiques -  
Partie 3-1: Interfaces optiques,  
ferrules PC en zircone plein cylindrique  
de diamètre 2,5 mm et 1,25 mm,  
fibres unimodales  
(CEI 61755-3-1:2006, modifiée +  
corrigendum 2009)

Optische Schnittstellen  
für Lichtwellenleiter-Steckverbinder -  
Teil 3-1: Optische Schnittstellen mit  
nicht abgeschrägten Zirkonium-Ferrulen  
mit 2,5 mm und 1,25 mm Durchmesser  
für Einmodenfasern mit  
physikalischem Kontakt  
(IEC 61755-3-1:2006, modifiziert +  
Corrigendum 2009)

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[SIST EN 61755-3-1:2009](https://standards.iteh.ai/catalog/standards/sist/a1403885-68b0-4c55-98f1-62cc982134b6/sist-en-61755-3-1-2009)

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This European Standard was approved by CENELEC on 2008-12-01. 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.

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CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, 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

**Central Secretariat: avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of the International Standard IEC 61755-3-1:2006, prepared by SC 86B, Fibre optic interconnecting devices and passive components, of IEC TC 86, Fibre optics, together with the common modifications prepared by the Technical Committee CENELEC TC 86BXA, Fibre optic interconnect, passive and connectorised components, was submitted to the formal vote and was approved by CENELEC as EN 61755-3-1 on 2008-12-01.

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) 2009-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2011-12-01

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## Endorsement notice

The text of the International Standard IEC 61755-3-1:2006 + corrigendum January 2009 was approved by CENELEC as a European Standard with agreed common modifications as given below.

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COMMON MODIFICATIONS  
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Table 1 – Optical interface parameter values for 2,5 mm diameter ferrule

In row C, **replace** the 3 maximum values '70' with '50' (µm).

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Table 2 – Optical interface parameter values for 1,25 mm diameter ferrule

In row C, **replace** the 3 maximum values '70' with '50' (µm).

## 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 61754	NOTE	Harmonized in EN 61754 series (partially modified).
IEC 61755-2-1	NOTE	Harmonized as EN 61755-2-1:2006 (not modified).

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**NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD**

**CEI  
IEC**

**61755-3-1**

Première édition  
First edition  
2006-07

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**Interfaces optiques de connecteurs  
pour fibres optiques –**

**Partie 3-1:  
Interfaces optiques, férules PC en zircon  
plein cylindrique de diamètre 2,5 mm  
et 1,25 mm, fibres unimodales**

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**Fibre optic connector optical interfaces –**

**Part 3-1:  
Optical interface, 2,5 mm and 1,25 mm  
diameter cylindrical full zirconia PC ferrule,  
single mode fibre**

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International Electrotechnical Commission  
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For price, see current catalogue

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## FIBRE OPTIC CONNECTOR OPTICAL INTERFACES –

**Part 3-1: Optical interface, 2,5 mm and 1,25 mm diameter  
cylindrical full zirconia PC ferrule, single mode fibre**

## FOREWORD

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International Standard IEC 61755-3-1 has been prepared by sub-committee 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/2306/FDIS	86B/2360/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.

A list of all parts of the IEC 61755 series, under the general title *Fibre optic connector optical interfaces*, can be found on the IEC website.

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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[SIST EN 61755-3-1:2009](https://standards.iteh.ai/catalog/standards/sist/a1403885-68b0-4c55-98f1-62cc982134b6/sist-en-61755-3-1-2009)

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## FIBRE OPTIC CONNECTOR OPTICAL INTERFACES –

### Part 3-1: Optical interface, 2,5 mm and 1,25 mm diameter cylindrical full zirconia PC ferrule, single mode fibre

#### 1 Scope

This part of IEC 61755 defines certain dimensional limits of a 2,5 mm and a 1,25 mm diameter cylindrical zirconia ( $ZrO_2$ ) PC ferrule optical interface to meet specific requirements for fibre-to-fibre interconnection. Ferrules made from the material specified in this document are suitable for use in categories C, U, E, and O as defined in IEC 61753-1.

Ferrule dimensions and features are contained in the IEC 61754 series of fibre optic connector interface documents.

#### 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; [SIST EN 61755-3-1:2009](https://standards.iteh.ai/catalog/standards/sist/a1403885-68b0-4c55-98f1-62cc982134b6/sist-en-61755-3-1-2009)
- fibre hole concentricity relative to the ferrule outside diameter;
- fibre hole angle relative to outside diameter axis;
- fibre cladding diameter relative 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.



### 3 Interface parameters

The optical interface dimensions are shown in Figure 1, the ferrule dimensions in Figure 3, while Figure 2 underlines fibre core location.

The parameter values are detailed in Tables 1, 2 and 3.

