SLOVENSKI STANDARD
SIST EN 61755-3-31:2016

01-februar-2016

Optični spojni elementi in pasivne komponente - Optični vmesniki optičnih konektorjev - 3-31. del: Optični vmesnik, PC pod kotom 8 stopinj, pravokotna tulka iz polifenilen sulfida, enorodovna optična vlakna (IEC 61755-3-31:2015)

Fibre optic interconnecting devices and passive components - Fibre optic connector optical interfaces - Part 3-31: Optical interface, 8 degrees angled PC, Polyphenylene sulphide rectangular ferrule, single mode fibres (IEC 61755-3-31:2015)

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Optische Schnittstellen für Lichtwellenleiter-Steckverbinder - Teil 3-31: Optische Schnittstelle rechteckige Polyphenylensulfid-Ferrule 8 Grad abgewinkelt physikalischer Kontakt für Einmodenfasern (IEC 61755-3-31:2015)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Interfaces optiques de connecteurs - Partie 3-31: Paramètres de connecteurs pour fibres unimodales à dispersion non décalée, en contact physique - Férules rectangulaires avec angle en poly (sulfure de phénylène) (IEC 61755-3-31:2015)

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN 61755-3-31

September 2015

ICS 33.180.20

English Version

Fibre optic interconnecting devices and passive components - Connector optical interfaces - Part 3-31: Connector parameters of non-dispersion shifted single mode physically contacting fibres - Angled polyphenylene sulphide rectangular ferrules (IEC 61755-3-31:2015)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Interfaces optiques de connecteurs - Partie 3-31: Paramètres de connecteurs pour fibres unimodales à dispersion non décalée, en contact physique - Férules rectangulaires avec angle en poly(sulfure de phénylène)
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(IEC 61755-3-31:2015)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

The text of document 86B/3888/FDIS, future edition 1 of IEC 61755-3-31, 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 approved by CENELEC as EN 61755-3-31:2015.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2016-04-17
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-07-17

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Endorsement notice

The text of the International Standard IEC 61755-3-31:2015 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.
IEC 61755-2-1	NOTE	Harmonized as EN 61755-2-1.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

Publication	Year	Title	EN/HD	Year
IEC 60793-2-50	-	Optical fibres - Part 2-50: Product specifications - Sectional specification for class B single-mode fibres	EN 60793-2-50	-
IEC 61300-3-30	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-30: Examinations and measurements - Polish angle and fibre position on single ferrule multifibre connectors	EN 61300-3-30	-
IEC 61300-3-52	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-52: Examinations and measurements - Guide hole and alignment pin deformation constant, CD for 8 degree angled PC rectangular ferrule, single mode fibres	EN 61300-3-52	-
IEC 61754	Series	Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces	EN 61754	Series
IEC 61754-5	2005	Fibre optic connector interfaces - Part 5: Type MT connector family	EN 61754-5	2005
IEC 61754-7	2008	Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces - Part 7: Type MPO connector family	EN 61754-7	2008
IEC 61754-7-1	2014	Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces - Part 7-1: Type MPO connector family - One fibre row	EN 61754-7-1	2014
IEC 61754-10	2005	Fibre optic connector interfaces - Part 10: Type Mini-MPO connector family	EN 61754-10	2005
IEC 61754-18	2001	Fibre optic connector interfaces - Part 18: Type MT-RJ connector family	EN 61754-18 + corr. April	2002 2002
IEC 61755-1	-	Fibre optic connector optical interfaces - Part 1: Optical interfaces for single mode non-dispersion shifted fibres - General and guidance	EN 61755-1	-

IEC 61755-3-31

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Fibre optic interconnecting devices and passive components – Connector optical interfaces – Part 3-31: Connector parameters of non-dispersion shifted single mode physically contacting fibres – Angled polyphenylene sulphide rectangular ferrules

Dispositifs d'interconnexion et composants passifs à fibres optiques – Interfaces optiques de connecteurs – Partie 3-31: Paramètres de connecteurs pour fibres unimodales à dispersion non décalée, en contact physique – Férules rectangulaires avec angle en poly(sulfure de phénylène)

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FOREWORD

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International Standard IEC 61755-3-31 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/3888FDIS	86B/3914/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 in the IEC 61755 series, published under the general title *Fibre optic interconnecting devices and passive components –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 stability 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

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

Part 3-31: Connector parameters of non-dispersion shifted single mode physically contacting fibres – Angled polyphenylene sulphide rectangular ferrules

1 Scope

This part of IEC 61755 defines certain dimensional limits of an angled PC rectangular polyphenylene sulphide (PPS) ferrule optical interface in order to meet specific requirements for fibre-to-fibre interconnection. 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.

Ferrule interface dimensions and features are contained in the IEC 61754 series, which deals with fibre optic connector interfaces.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 61300-3-30, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-30: Examinations and measurements – Polish angle and fibre position on single ferrule multifibre connectors*

IEC 61300-3-52, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-52: Examinations and measurements – Guide hole and alignment pin deformation constant, CD for 8 degree angled PC rectangular ferrule, single mode fibres*

IEC 61754 (all parts), *Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces*

IEC 61754-5:2005, *Fibre optic connector interfaces – Part 5: Type MT connector family*

IEC 61754-7:2008, *Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 7: Type MPO connector family*

IEC 61754-7-1:2014, *Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 7-1: Type MPO connector family – One fibre row*

IEC 61754-10:2005, *Fibre optic connector interfaces – Part 10: Type Mini-MPO connector family*

IEC 61754-18:2001, *Fibre optic connector interfaces – Part 18: Type MT-RJ connector family*

IEC 61755-1, *Fibre optic connector optical interfaces – Part 1: Optical interfaces for single mode non-dispersion shifted fibres – General and guidance*

3 Description

The performance of a single mode angled PC rectangular 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 the 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:

– fibre hole deviation from designated location;
– fibre cladding diameter relative to fibre hole clearance;
– fibre hole angular misalignment;
– fibre core concentricity relative to the cladding diameter;
– alignment pin diameter relative to the guide hole clearance.

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

– fibre protrusion;
– fibre array minus coplanarity;
– adjacent fibre height differential;
– end face angle in the x-axis;
– end face angle in the y-axis;
– end face radius in the x-axis;
– end face radius in the y-axis;
– fibre tip spherical radii;
– axial force on ferrule end face;
– ferrule and fibre material constants;
– frictional force of alignment pins in ferrule guide holes.

4 Interface parameters

This standard defines the dimensional limits of angled PC rectangular ferrules with a single row of up to 12 fibres. The fibre centres are spaced with a nominal alignment pitch of 0,25 mm. Interface variants, which identify nominal ferrule cross-sections and applicable fibre counts, are given in Table 1. The fibre numbering conventions are illustrated in Figure 1.

Optical interface dimensions related to lateral and angular offset are defined in Figure 2 and the alignment pin geometry is shown in Figure 3. The end face geometry parameters that influence longitudinal offset are outlined in Figure 4.

The parameter values related to lateral and angular offset are given in Table 2 and Table 3. End face geometry limits associated with longitudinal offset are specified in Table 4 to Table 7.