SLOVENSKI STANDARD

SIST EN 61300-3-30:2004

september 2004

Povezovalne naprave in pasivne komponente optičnih vlaken – Postopki osnovnega preskušanja in merjenja – 3-30. del: Preiskovanje in meritve; polirni kot in pozicija vlakna na več-vlaknenem spojniku z enojnim čepom (IEC 61300-3-30:2003)*

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 61300-3-30:2003)

ICS 33.180.20

Referenčna številka
SIST EN 61300-3-30:2004(en)

EUROPEAN STANDARD **EN 61300-3-30**

NORME EUROPÉENNE

EUROPÄISCHE NORM January 2003

ICS 33.180.20

English version

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 61300-3-30:2003)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Méthodes fondamentales d'essais et de mesures Partie 3-30: Examens et mesures - Angle de la face polie et position de la fibre sur l'embout des connecteurs multifibres (CEI 61300-3-30:2003)

Lichtwellenleiter-Verbindungselemente und passive Bauteile - Grundlegende Prüf- und Messverfahren Teil 3-30: Untersuchungen und Messungen - Polierwinkel und Faserposition von Mehrfaser-Steckverbindern mit einer Ferrule (IEC 61300-3-30:2003)

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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

Ref. No. EN 61300-3-30:2003 E

Foreword

The text of document 86B/1747/FDIS, future edition 1 of IEC 61300-3-30, 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 61300-3-30 on 2002-12-01.

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)	2003-10-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2005-12-01

Endorsement notice

The text of the International Standard IEC 61300-3-30:2003 was approved by CENELEC as a European Standard without any modification.

NORME INTERNATIONALE

CEI IEC 61300-3-30

INTERNATIONAL STANDARD

Première édition
First edition
2003-01

Dispositifs d'interconnexion et composants passifs à fibres optiques – Méthodes fondamentales d'essais et de mesures –

Partie 3-30: Examens et mesures – Angle de la face polie et position de la fibre sur la ferrule unique des connecteurs multifibres

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

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International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE N

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – BASIC TEST AND MEASUREMENT PROCEDURES –

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FOREWORD

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International Standard IEC 61300-3-30 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This bilingual version (2004-01) replaces the English version.

The text of this standard is based on the following documents:

FDIS	Report on voting
86B/1747/FDIS	86B/1773/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.

IEC 61300 consists of the following parts, under the general title *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures:*

– Part 1: General and guidance

– Part 2: Tests

– Part 3: Examinations and measurements

The committee has decided that the contents of this publication will remain unchanged until 2007. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

The French version of this standard has not been voted upon.

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

1 Scope

This part of IEC 61300 describes a procedure to assess end face geometry in guide pin based multifibre ferrules and connectors. The primary attributes are fibre position relative to the end face, either undercut or protrusion, end face angle relative to the guide pin bores, and core dip for multimode fibres.

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.

None.

3 General description

Guide pin based multifibre connectors typically have a rectangular end face with a long axis and a short axis. Ideally a flat polish is desired on the end face with the fibres protruding slightly and all in the same plane to assure physical contact of the fibre cores when two connectors are intermated. In practice, the end face typically has two different curvatures across the surface along the long and short axis. Since mated ferrules are aligned by pins in the guide holes, the end face of the ferrule must be properly oriented (X and Y angle) with respect to the guide holes to achieve positive contact. The end face angle in the X-axis and the end face angle in the Y-axis are measured by finding the best fit plane based on a percentage of the highest points in a specified region of interest. The highest points typically show the greatest modulation from an interferometric standpoint. This allows for more robust measurements and greater repeatability between different interferometers.

The angle of the best fit plane is calculated by comparing it to the reference plane which is perpendicular to the axis of each guide hole. The fibre protrusion, *(+p)*, or undercut, *(–p),* of the fibres is a planar height defined as the distance between the fibre end face and the best fit planar surface previously described. Core dip is specific to multimode fibres because the large core is softer than the edge of the fibre and tends to polish away faster. Core dip is calculated by subtracting the average height of the core area from the average height of an annular area near the edge of the fibre.

One method is described for this procedure. Analysing the endface with a three-dimensional interferometry type surface analyser.