SLOVENSKI STANDARD
SIST EN 61300-3-35:2016

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Optični spojni elementi in pasivne komponente - Osnovni preskusni in merilni postopki - 3-35. del: Preiskave in meritve - Vizualno pregledovanje optičnih konektorjev in sprejemnikov-oddajnikov z vlakenskimi tulkami (IEC 61300-3-35:2015)

Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-35: Examinations and measurements - Visual inspection of fibre optic connectors and fibre-stub transceivers (IEC 61300-3-35:2015)

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Grundlegende Prüf- und Messverfahren - Teil 3-35: Untersuchungen und Messungen - Visuelle Inspektion von Lichtwellenleiter-Steckverbindern und Faser Stub-Transceivern (IEC 61300-3-35:2015)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Procédures fondamentales d'essais et de mesures - Partie 3-35: Examens et mesures - Examen visuel des connecteurs à fibres optiques et des émetteurs-récepteurs à embase fibrée (IEC 61300-3-35:2015)

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Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-35: Examinations and measurements - Visual inspection of fibre optic connectors and fibre-stub transceivers (IEC 61300-3-35:2015)

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(IEC 61300-3-35:2015)

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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/3886/FDIS, future edition 2 of IEC 61300-3-35, 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 61300-3-35:2015.

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)	2016-04-30
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-07-30

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The text of the International Standard IEC 61300-3-35:2015 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 60825-2	NOTE	Harmonized as EN 60825-2
IEC 61300-1	NOTE	Harmonized as EN 61300-1
IEC 61755 (Series)	NOTE	Harmonized as EN 61755 (Series)

IEC 61300-3-35

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

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International Standard IEC 61300-3-35 has been prepared by subcommittee SC86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This second edition cancels and replaces the first edition published in 2009 and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) modification to the title;
b) addition of some terms and definitions;

c) reconsideration of the specific values of Tables 1 to 4 to reflect the current market situation;

d) addition of visual requirements for single-mode transceivers using a fibre-stub interface in Table 3;

e) addition of a sentence in 4.1 concerning the susceptibilty of the methods to system variability.

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

FDIS	Report on voting
86B/3886/FDIS	86B/3912/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 61300 series, published under the general title *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures,* can be found on the IEC website.

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 – BASIC TEST AND MEASUREMENT PROCEDURES –

Part 3-35: Examinations and measurements – Visual inspection of fibre optic connectors and fibre-stub transceivers

1 Scope

This part of IEC 61300 describes methods for quantitatively assessing the end face quality of a polished fibre optic connector or of a fibre optic transceiver using a fibre-stub type interface. Sub-surface cracks and fractures are not considered in this standard. In general, the methods described in this standard apply to 125 μm cladding fibres contained within a ferrule and intended for use with sources of ≤ 2 W of input power. However, portions are applicable to non-ferruled connectors and other fibre types. Those portions are identified where appropriate. It is not the intention of this standard that the size of scratches should be measured, the dimensions and requirements are selected such that they can be estimated. There is no need to measure for example if a scratch is 2,3 μm wide.

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.

Void.

3 Terms, definitions and abbreviations

3.1 Terms and definitions

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

3.1.1
defect
non-linear surface feature detectable on the end face of ferrule including particulates, other debris, fluid contamination, pits, chips, edge chipping, etc.

Note 1 to entry: Some fibre types have structural features potentially visible on the fibre end face. Fibres that use microstructures to contain the light signal, such as photonic band-gap and hole-assisted fibres, can have an engineered or random pattern of structures surrounding the core. These features are not defects.

3.1.2
defect size
smallest circle that can encompass the entire defect

3.1.3
loose debris
particulate and debris that can be removed by cleaning

Note 1 to entry: Loose debris are classified as defects.

3.1.4
scratch
a permanent linear surface feature where the fiber or ferrule end face has been damaged or removed, and where the width of the damaged area is small compared to its length

3.1.5
reliably detectable
sufficiently clear and visible so that a typical technician of average training would recognize the feature at least 98 % of the time.

3.2 Abbreviations

Term	Description
DUT	Device under test
FOV	Field of view

4 Measurement

4.1 General

The objective of this standard is to prescribe methods for quantitatively inspecting fibre optic end faces to determine if they are suitable for use. Three methods are described:

A. direct view optical microscopy as described in 5.1;

B. video microscopy as described in 5.2;

C. automated analysis microscopy as described in 5.3.

Within each method, there are hardware requirements and procedures for both low resolution and high resolution systems. Low resolution systems should be used for examination of single-mode and multi-mode connectors prior to mating and after polishing. High resolution systems may be used for end face inspection in the factory after polishing of single-mode connectors. High resolution systems are not required for inspection in the field nor for inspection of multi-mode connectors nor for field polished connectors.

For Methods A and B, it is recommended that visual gauge tools be developed to facilitate the measurement procedure. For Method A, an eyepiece reticule is recommended. For Method B, an overlay is recommended.

All methods are susceptible to system variability: Methods A and B are operator dependent; Method C is operator independent.

4.2 Measurement conditions

No restrictions are placed on the range of atmospheric conditions under which the test can be conducted. It may be performed in controlled or uncontrolled environments provided that the end faces are carefully cleaned before the test.

4.3 Pre-conditioning

No pre-conditioning time is required.

4.4 Recovery

No minimum recovery time is required.