

Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-35: Examinations and measurements - Fibre optic cylindrical connector endface visual and automated inspection

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 61300-3-35:2010 sisaldab Euroopa standardi EN 61300-3-35:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 28.02.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 08.01.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 61300-3-35:2010 consists of the English text of the European standard EN 61300-3-35:2010.

This standard is ratified with the order of Estonian Centre for Standardisation dated 28.02.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 08.01.2010.

The standard is available from Estonian standardisation organisation.

ICS 33.180.20

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**Fibre optic interconnecting devices and passive components -
Basic test and measurement procedures -
Part 3-35: Examinations and measurements -
Fibre optic connector endface visual and automated inspection
(IEC 61300-3-35:2009)**

Dispositifs d'interconnexion et composants
passifs à fibres optiques -
Méthodes fondamentales d'essais
et de mesure -
Partie 3-35 : Examens et mesures -
Inspection automatique et visuelle
de la face terminale des connecteurs
à fibres optiques
(CEI 61300-3-35:2009)

Lichtwellenleiter -
Verbindungselemente
und passive Bauteile -
Grundlegende Prüf- und Messverfahren -
Teil 3-35: Untersuchungen
und Messungen -
Visuelle und automatisierte Inspektion
der Endflächen von zylindrischen
Lichtwellenleiter-Steckverbindern
(IEC 61300-3-35:2009)

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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/2909/FDIS, future edition 1 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 was approved by CENELEC as EN 61300-3-35 on 2009-12-01.

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) 2010-09-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2012-12-01

Endorsement notice

The text of the International Standard IEC 61300-3-35:2009 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

ISO 14577-2 NOTE Harmonized as EN ISO 14577-2 (not modified).

CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references.....	5
3 Measurement.....	5
3.1 General.....	5
3.2 Measurement conditions.....	6
3.3 Pre-conditioning.....	6
3.4 Recovery.....	6
4 Apparatus.....	6
4.1 Method A: direct view optical microscopy.....	6
4.2 Method B: video microscopy.....	6
4.3 Method C: automated analysis microscopy.....	7
4.4 Calibration requirements for low and high resolution systems.....	7
5 Procedure.....	8
5.1 Measurement regions.....	8
5.2 Calibration procedure.....	8
5.3 Inspection procedure.....	9
5.4 Visual requirements.....	10
Annex A (informative) Examples of inspected end-faces with defects.....	12
Annex B (normative) Diagram of calibration artefact and method of manufacture.....	18
Bibliography.....	21
Figure 1 – Inspection procedure flow.....	9
Table 1 – Measurement regions for single fibre connectors.....	8
Table 2 – Measurement regions for multiple fibre rectangular ferruled connectors.....	8
Table 3 – Visual requirements for PC polished connectors, single mode fibre, RL 45 dB.....	10
Table 4 – Visual requirements for angle polished connectors (APC), single mode fibre.....	10
Table 5 – Visual requirements for PC polished connectors, single mode fibre, RL ≥ 26 dB.....	11
Table 6 – Visual requirements for PC polished connectors, multimode fibres.....	11

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

Part 3-35: Examinations and measurements – Fibre optic connector endface visual and automated inspection

1 Scope

This part of IEC 61300 describes methods for quantitatively assessing the endface quality of a polished fibre optic connector. The information is intended for use with other standards which set requirements for allowable surface defects such as scratches, pits and debris which may affect optical performance. 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.

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 Measurement

3.1 General

The objective of this standard is to prescribe methods for quantitatively inspecting fibre optic endfaces to determine if they are suitable for use. Three methods are described: A: direct view optical microscopy, B: video microscopy, C: automated analysis microscopy. Within each method, there are hardware requirements and procedures for both low resolution and high resolution systems. High resolution systems are to be utilized for critical examination of the glass fibre after polishing and upon incoming quality assurance. High resolution systems are typically not used during field polishing or in conjunction with multimode connectors. Low resolution systems are to be utilized prior to mating connectors for any purpose. All methods require a means for measuring and quantifying defects.

There are many types of defects. Commonly used terminology would include: particles, pits, chips, scratches, embedded debris, loose debris, cracks, etc. For practical purposes, all defects will be categorized in one of two groups. They are defined as follows:

scratches: permanent linear surface features;

defects: all non-linear features detectable on the fibre. This includes particulates, other debris, pits, chips, edge chipping, etc.

All defects and scratches are surface anomalies. Sub-surface cracks and fractures are not reliably detectable with a light microscope in all situations and are therefore not covered within this standard. Cracks and fractures to the fibre may be detected with a light microscope and are generally considered a catastrophic failure.