IEC 61300-3-35

Edition 3.0 2022-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

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

Dispositifs d'interconnexion et composants passifs fibroniques – Procédures fondamentales d'essais et de mesures –
Partie 3-35: Examens et mesures - Examen visuel des connecteurs fibroniques et des émetteurs-récepteurs à embase fibrée

IEC 61300-3-35:2022 (en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 33.180.20

ISBN 978-2-8322-5713-5

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

This third edition cancels and replaces the second edition published in 2015. This edition constitutes a technical revision.

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

a) adding of a statement that visual inspection is not a substitute for optical qualification such as attenuation and return loss measurement;
b) adding of some terms and definitions;
c) adding requirements for SM 35 dB connectors;

d) adding of a sentence in Clause 5 concerning the susceptibility of the methods to system variability and variability within systems from same supplier;

e) removal of inspection requirements for zones C and D;

f) insertion of a generic cleanliness specification for whole rectangular ferrule and 250 µm area around every fibre;

g) adding a cleaning recommendation for rectangular and cylindrical ferrules;

h) outer edge of inspection zone B has changed from 115 µm to 110 µm to meet manufacturing tolerances of fixture for microscopes;

i) change that defects that are partly in core are only to be judged for the part they are in the core. The remainder of the defect is considered to be located in the cladding.

j) adding a statement that a connector cannot be rejected by just failing visual inspection. Meeting the specified optical performance determines the use of this connector.

The text of this International Standard is based on the following documents:

Draft	Report on voting
86B/4643/FDIS	86B/4665/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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 document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

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

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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

1 Scope

This part of IEC 61300 is concerned with the observation and classification of debris, scratches and defects. The inspection requirements are based on IEC TR 62627-05. Advice for cleaning of contamination from fibres/ferrule is found in IEC TR 62627-01 and a recommendation is given in Annex D. IEC TR 62572-4 provides the cleaning method for a stub for optical transceivers. Visual inspection is in addition to, and does not replace measurement of performance parameters such as attenuation and return loss, or end face parameters. The dimensions specified are chosen such that they can be easily estimated. Not only the zones A and B on the fibre are inspected for defects and scratches but the whole contact area (where the two fibres/ferrules meet when mated) needs to be inspected for contamination (this is up to 250 µm diameter for cylindrical ferrules and the whole ferrule surface for rectangular ferrules).

The objectives of this document are the following:

- specify the minimum criteria for a microscope to be compliant to this document;
- specify the procedure and criteria for inspecting fibre optic end faces for cleanliness to determine if the end faces are fit for use. All connector optical interfaces (IEC 61755 series and IEC 63267 series) are based on physical contact between fibre cores;
- provide quantitative criteria for the analysis of end face images.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IEC 60825-2, *Safety of laser products – Part 2 Safety of optical fibre communication systems (OFCSs)*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

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

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