SLOVENSKI STANDARD
SIST EN 61300-3-36:2002

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Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-36: Examination and measurements - Measurement methods of the inside and outside diameters of fibre optic connector ferrules (IEC 61300-3-36:2000)

Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 3-36: Examinations and measurements - Measurement methods for the inside and outside diameters of fibre optic connector ferrules

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Grundlegende Prüf- und Messverfahren -- Teil 3-36: Untersuchungen und Messungen - Messverfahren für den Innen- und Aussendurchmesser von Stiften für LWL-Steckverbinder

Dispositifs d'interconnexion et composants passifs à fibres optiques - Méthodes fondamentales d'essais et de mesures -- Partie 3-36: Examens et mesures - Méthodes de mesure des diamètres intérieurs et extérieurs des embouts de connecteurs pour fibres optiques

Ta slovenski standard je istoveten z: **EN 61300-3-36:2000**

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Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 3-36: Examinations and measurements - Measurement methods for the inside and outside diameters of fibre optic connector ferrules

(IEC 61300-3-36:2000)

Dispositifs d'interconnexion et composants passifs à fibres optiques Méthodes fondamentales d'essais et de mesures
Partie 3-36: Examens et mesures
Méthodes de mesure des diamètres intérieurs et extérieurs des embouts de connecteurs pour fibres optiques
(CEI 61300-3-36:2000)

Lichtwellenleiter-Verbindungselemente und passive Bauteile Grundlegende Prüf- und Messverfahren
Teil 3-36: Untersuchungen und Messungen - Messverfahren für den Innen- und Aussendurchmesser von Stiften für LWL-Steckverbinder
(IEC 61300-3-36:2000)

This European Standard was approved by CENELEC on 2000-04-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
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Foreword

The text of document 86B/1282/FDIS, future edition 1 of IEC 61300-3-36, prepared by SC 86B, Fibre optic interconnecting devices and passive components, of IEC TC 86, Fibre optics, was submittted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61300-3-36 on 2000-04-01.

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)	2001-01-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2003-04-01

Endorsement notice

The text of the International Standard IEC 61300-3-36:2000 was approved by CENELEC as a European Standard without any modification.

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Partie 3-36: Examens et mesures – Méthodes de mesure des diamètres intérieurs et extérieurs des embouts de connecteurs pour fibres optiques

Fibre optic interconnecting devices and passive components – Basic test and measurement procedures –

Part 3-36: Examinations and measurements – Measurement methods for the inside and outside diameters of fibre optic connector ferrules

International Electrotechnical Commission 3, rue de Varembé Geneva, Switzerland
Telefax: +41 22 919 0300 e-mail: inmail@iec.ch IEC web site http://www.iec.ch

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

Part 3-36: Examinations and measurements – Measurement methods for the inside and outside diameters of fibre optic connector ferrules

FOREWORD

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International Standard IEC 61300-3-36 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/1282/FDIS	86B/1307/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 3.

The committee has decided that the contents of this publication will remain unchanged until 2003. At this date, the publication will be

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

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

Part 3-36: Examinations and measurements – Measurement methods for the inside and outside diameters of fibre optic connector ferrules

1 Scope

This International Standard describes the measurement methods of the inside diameter of fibre optic connector ferrules.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

None.

3 Measurement methods for the inside diameter of fibre optic connector ferrules

3.1 Purpose

The purpose of this procedure is to inspect and measure the inside diameter of the precision hole of fibre optic connector ferrules. The precision hole aligns and positions the optical fibre inside the ferrule. The procedure described here uses the "GO" and "NO-GO" gauging technique.

3.2 General description

The most commonly used inspection method for the inside diameter is the GO and NO-GO pin gauging technique.

Due to the very small inside diameters of the connector ferrules for commonly used single mode and multimode ferrules, accurate direct measurement is difficult to achieve. One technique is the direct measurement of the inside diameter of a ferrule precision alignment hole. This can be carried out either by projecting the ferrule hole using a projection optical microscope or by using an imaging and digitizing system to measure the bore diameter. These techniques tend to suffer from inaccuracy in determining the inside edges of a precision hole.

Thus, the use of "pin gauges" became the most common method for determining the inside diameter of a ferrule manufactured to specified dimensional limits.

3.3 Inspection method: pin gauging technique

The pin gauges shall be made from hard-wearing material, such as tungsten carbide, ruby or hard ceramic and shall be rigid.

3.3.1 Gauging of ferrules (see figure 1)

GO pin gauge:

The diameter of the pin gauge shall be equal to or larger than the lower limit of the specified inside diameter of the ferrule. It shall be capable of gauging the entire length of the hole.

NO-GO pin gauge:

The diameter of the pin gauge shall be equal to or larger than the upper limit of the specified diameter of the ferrule.

3.3.2 Inspection conditions

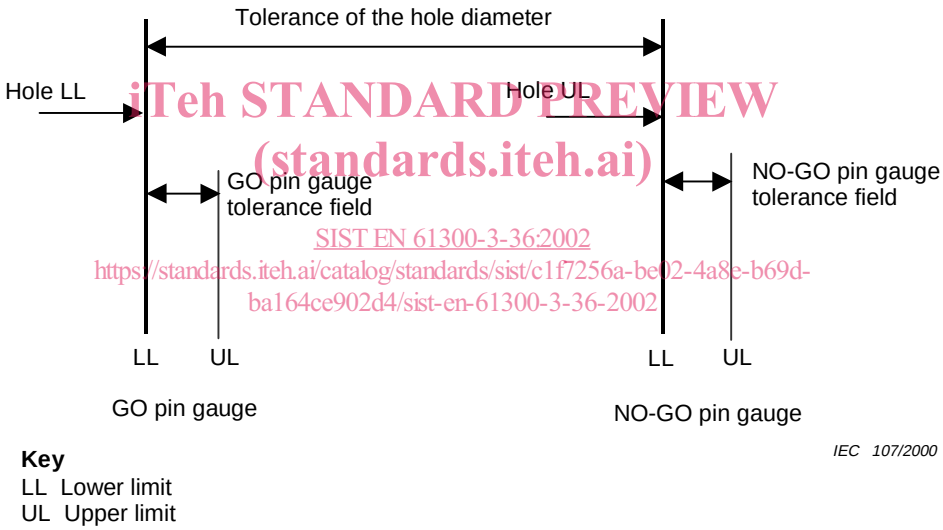

Figure 1 – Pin gauging tolerance field of ferrule hole

a) The inspection shall be carried out in an environmentally controlled location. The environmental temperature shall be within limits determined by the tolerance of the measurement and the thermal expansion values of the pin gauge and the ferrule material under inspection.

b) The pin gauges shall be kept free from contamination and shall be thoroughly cleaned before use.

c) Measure the diameter of the pin gauge before inserting into the ferrules, using a suitably calibrated instrument having sufficient accuracy.

d) The diameter of the pin gauges or the instrument used for their calibration shall be certified and periodically verified by an accredited laboratory.