

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**

The European Standard EN 61300-3-30:2003 has the status of a
British Standard

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National foreword

This British Standard is the official English language version of EN 61300-3-30:2003. It is identical with IEC 61300-3-30:2003.

The UK participation in its preparation was entrusted by Technical Committee GEL/86, Fibre optics, to Subcommittee GEL/86/2, Fibre optic interconnecting devices and passive components, which has the responsibility to:

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**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

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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.

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with the EN have to be withdrawn (dow) 2005-12-01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.

CONTENTS

1	Scope	4
2	Normative references	4
3	General description	4
4	Apparatus	5
4.1	Ferrule holder	5
4.2	Positioning stage.....	5
4.3	Three-dimensional interferometry	5
5	Procedure	6
5.1	Measurement regions.....	6
5.2	Method for analysis	8
6	Details to be specified	10
Annex A (informative) Formula for calculating end face geometry.....		12
Annex B (normative) Surface angle sign convention (shown graphically)		13
Annex C (normative) Fibre counting convention (shown graphically).....		14
Bibliography		15
Figure 1 – Three-dimensional interferometry analyser		6
Figure 2 – Measurement regions on ferrule		7
Figure 3 – Multimode fibre core dip regions.....		7
Table 1 – Ferrule measurement areas		11
Table 2 – Multimode core dip areas		11

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.