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Irish Standard
I.S. EN 61300-3-45:2011

# Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 3-45: Examinations and measurements - Attenuation of random mated multi-fibre connectors (IEC 61300-3-45:2011 (EQV))

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 61300-3-45

June 2011

ICS 33.180.20

English version

# Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-45: Examinations and measurements - Attenuation of random mated multi-fibre connectors

(IEC 61300-3-45:2011)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Méthodes fondamentales d'essais et de mesures - Partie 3-45: Examens et mesures - Affaiblissement dû à l'accouplement de connecteurs quelconques multifibres (CEI 61300-3-45:2011)

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Grundlegende Prüf- und Messverfahren - Teil 3-45: Untersuchungen und Messungen - Dämpfung von zufällig gesteckten Mehrfasersteckverbindern (IEC 61300-3-45:2011)

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## Foreword

The text of document 86B/3177/FDIS, future edition 1 of IEC 61300-3-45, 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 61300-3-45 on 2011-06-16.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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) | 2012-03-16 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2014-06-16 |

Annex ZA has been added by CENELEC.

## Endorsement notice

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# Annex ZA
(normative)

## Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| IEC 61300-1 | - | Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 1: General and guidance | EN 61300-1 | - |
| IEC 61300-3-1 | - | Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-1: Examinations and measurements - Visual examination | EN 61300-3-1 | - |
| IEC 61300-3-35 | - | 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 | EN 61300-3-35 | - |
| IEC 61754 | Series | Fibre optic connector interfaces | EN 61754 | Series |

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

## Part 3-45: Examinations and measurements – Attenuation of random mated multi-fibre connectors

## FOREWORD

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International Standard IEC 61300-3-45 Ed.1.0 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/3177/FDIS | 86B/3215/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.

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This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The list of all parts of IEC 61300 series, published under the general title, *Fibre optic interconnecting 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.

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

## Part 3-45: Examinations and measurements – Attenuation of random mated multi-fibre connectors

## 1 Scope

The purpose of this part of IEC 61300 is to describe the procedure required to measure the statistical distribution and mean attenuation for random mated optical connectors with physical contact (PC) and angled physical contact (APC) polished 1-row multi-fibre rectangular ferrules as defined in the IEC 61754 series. This measurement method is applicable to cable assemblies.

## 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.

IEC 61300-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 1: General and guidance*

IEC 61300-3-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-1: Examinations and measurements – Visual examination*

IEC 61300-3-35, *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 61754 (all parts), *Fibre optic connector interfaces*

## 3 General description

### 3.1 Test methods

Two test methods are described for measuring the attenuation of random mated optical connectors. Both provide an estimate of the expected average performance that a group of cable assemblies (including an adaptor, if applicable) selected from a batch will exhibit when used in an optical system. The cable assemblies, and any adaptors, must be chosen at random to ensure that the measurements provide a statistically unbiased estimate.

Method 1 describes the procedure using a sample of cable assemblies and adaptors specified in Table 1. In this case the plugs (with pins) are used as “reference” plugs and the plugs (without pins) are tested against them sequentially. The results, based on the number of measurements specified in Table 1, are recorded in the test matrix shown in Figures 3 to 5.

Method 1 is intended to be part of a design approval exercise that may involve one or more suppliers. Once approval is achieved, Method 2 would be relied on to maintain process control. However, in the event of a dispute, Method 1 shall act as the reference measurement method.

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