

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Fibre optic interconnecting devices and passive components – Basic test and measurement procedures –
Part 3-34: Examinations and measurements – Attenuation of random mated connectors**

**Dispositifs d'interconnexion et composants passifs à fibres optiques –
Méthodes fondamentales d'essais et de mesures –
Partie 3-34: Examens et mesures – Affaiblissement dû à l'accouplement
de connecteurs quelconques**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

**Part 3-34: Examinations and measurements –
Attenuation of random mated connectors**

FOREWORD

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International Standard IEC 61300-3-34 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components of IEC technical committee 86: Fibre optics.

This third edition cancels and replaces the second edition published in 2001. It constitutes a technical revision. Changes from the previous edition of the document are to reconsider launch conditions for multimode fibres.

The text of this standard is based on the following documents:

FDIS	Report on voting
86B/2767/FDIS	86B/2800/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 2.

A list of all parts of 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 publication will remain unchanged until the maintenance result 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

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

Part 3-34: Examinations and measurements – Attenuation of random mated connectors

1 Scope

This part of IEC 61300 describes the procedure required to measure the statistical distribution and mean attenuation for random mated optical connectors.

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: Examination and measurements – Visual examination*

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 patchcords (including adaptors, if applicable) selected from a batch will exhibit when utilised in an optical system. The patchcords, and any adaptors, must be chosen at random to ensure that the measurements provide a statistically unbiased estimate.

Method 1 describes the procedure based on the use of 10 patchcords (20 optical connectors) and 10 adaptors. In this case all of the plugs are sequentially used as “reference” plugs and all of the remaining plugs are tested against them. The result is based on 360 measurements as indicated in the test matrix shown in Figure 3.

Method 2 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.

Method 2 describes a procedure based on the measurement of 15 patchcords.

Five patchcords are selected as “reference” patchcords, with one plug on each of the patchcords being nominated as a “reference” plug. All plugs of the remaining 10 patchcords are then tested against each of the five “reference” plugs. This produces 100 measurements as indicated in the test matrix shown in Figure 6.