

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

Part 3-4: Examinations and measurements — Attenuation

The European Standard EN 61300-3-4:2001 has the status of a British Standard

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National foreword

This British Standard is the official English language version of EN 61300-3-4:2001. It is identical with IEC 61300-3-4:2001. It supersedes BS EN 61300-3-4:1999 which is withdrawn.

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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- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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Summary of pages

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English version

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Basic test and measurement procedures
Part 3-4: Examinations and measurements -
Attenuation
(IEC 61300-3-4:2001)**

Dispositifs d'interconnexion et
composants passifs à fibres optiques -
Méthodes fondamentales d'essais
et de mesures
Partie 3-4: Examens et mesures -
Affaiblissement
(CEI 61300-3-4:2001)

Lichtwellenleiter -
Verbindungselemente und passive Bauteile -
Grundlegende Prüf- und Meßverfahren
Teil 3-4: Untersuchungen und Messungen -
Dämpfung
(IEC 61300-3-4:2001)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 86B/1418/FDIS, future edition 2 of IEC 61300-3-4, 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 61300-3-4 on 2001-07-01.

This European Standard supersedes EN 61300-3-4:1998.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
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- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2004-07-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61300-3-4:2001 was approved by CENELEC as a European Standard without any modification.

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FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – BASIC TEST AND MEASUREMENT PROCEDURES – Part 3-4: Examinations and measurements – Attenuation

1 Scope

This part of IEC 61300 describes the various methods available to measure the attenuation of optical components. It is not, however, applicable to dense wavelength division multiplexing (DWDM) components.

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 IEC and ISO maintain registers of currently valid International Standards.

IEC 60793-1 (all parts), *Optical fibres – Part 1: Generic specification*

IEC 61300-1:1995, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 1: General and guidance*

IEC 61300-3-1:1995, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-1: Examinations and measurements – Visual examination*

3 General description

Attenuation is intended to give a value for the decrease of useful power, expressed in decibels, resulting from the insertion of a device under test (DUT), within a length of optical fibre cable. The term insertion loss is sometimes used in place of attenuation.

The DUT may have more than two optical ports. However, since an attenuation measurement is made across only two ports, the DUTs in this standard shall be described as having two ports. Seven different DUT configurations are described. The differences between these configurations are primarily in the terminations of the optical ports. Terminations may consist of bare fibre, a connector plug, or a receptacle.

The reference method for measuring attenuation is with an optical power meter. Optical time domain reflectometry (OTDR) measurements are presented as an alternative method. Three variations in the measurement of attenuation with a power meter are presented. The reference and alternative methods to be used for each DUT configuration are defined in table 5.

NOTE 1 Different test configurations and methods will result in different accuracies of the attenuation being measured. In cases of dispute, the reference test method should be used.

NOTE 2 In multi-mode measurements, a change in modal distribution in the measurement system due to fibre disturbance, will affect the attenuation measurement.