

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

Part 3-3: Examinations and measurements — Active monitoring of changes in attenuation and return loss

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

ICS 33.180.20

National foreword

This British Standard is the official English language version of EN 61300-3-3:2003. It is identical with IEC 61300-3-3:2003. It supersedes BS EN 61300-3-3:1997 which is withdrawn.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:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 19 and a back cover.

The BSI copyright date displayed in this document indicates when the document was last issued.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 19 May 2003

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ISBN 0 580 41871 5

Amendments issued since publication

Amd. No.	Date	Comments

English version

**Fibre optic interconnecting devices and passive components -
Basic test and measurement procedures
Part 3-3: Examinations and measurements -
Active monitoring of changes in attenuation and return loss
(IEC 61300-3-3:2003)**

Dispositifs d'interconnexion et
composants passifs à fibres optiques -
Méthodes fondamentales d'essais
et de mesures
Partie 3-3: Examens et mesures -
Contrôle de la variation
de l'affaiblissement et de la puissance
réfléchie
(CEI 61300-3-3:2003)

Lichtwellenleiter-Verbindungselemente
und passive Bauteile -
Grundlegende Prüf- und Messverfahren
Teil 3-3: Untersuchungen und Messungen -
Aufzeichnung der Änderung
von Dämpfung und Rückflusssdämpfung
(IEC 61300-3-3:2003)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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CENELEC

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/1781/FDIS, future edition 2 of IEC 61300-3-3, 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 61300-3-3 on 2003-03-01.

This European Standard supersedes EN 61300-3-3:1997.

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) 2003-12-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2006-03-01

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 61300-3-3:2003 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 3-3: Examinations and measurements – Active monitoring of changes in attenuation and return loss

1 Scope

This part of IEC 61300 describes the procedure to monitor changes in attenuation and/or return loss of a component or an interconnecting device, when subjected to an environmental or mechanical test. Such a procedure is commonly referred to as active monitoring. In many instances, it is more efficient to monitor attenuation and return loss at the same time.

The procedure may be applied to measurements on single samples or to simultaneous measurements on multiple samples, both at single wavelengths and multiple wavelengths, by using branching devices and/or switches as appropriate.

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 61300-3-6, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-6: Examinations and measurements – Return loss*

IEC/PAS 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 inspection*

3 General description

The procedure describes a number of active monitoring measurement methods. Method 1 describes the situation where a single sample is subject to mechanical or environmental stress testing. Methods 2 and 3 describe methods for monitoring changes in the optical performance of multiple samples. Methods 4 and 5 measure changes in the optical performance of samples using an OTDR. Methods 4 and 5 may be used only when the OTDR averaging time is much less than the variation time of the test conditions. Where there is any form of uncertainty over the measurement method used, method 1 shall be considered to be the reference method.

All methods are capable of being configured to monitor changes in attenuation and return loss at the same time. The required optical test parameters shall be defined in the relevant specification.

Where a group of samples are being monitored over a period of time, say several days or weeks, it is usual to employ some form of automated data acquisition. Also, since the changes in optical performance can be very small, it is important to ensure high measurement stability over time.