

Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-7: Examinations and measurements - wavelength dependence of attenuation and return loss of single mode components

EESTI STANDARDI EESSÕNA

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**Fibre optic interconnecting devices and passive components -
Basic test and measurement procedures -
Part 3-7: Examinations and measurements -
Wavelength dependence of attenuation and return loss of single mode
components
(IEC 61300-3-7:2009, modified)**

Dispositifs d'interconnexion et
composants passives à fibres optiques -
Méthodes fondamentales d'essais et de
mesures -
Partie 3-7: Examens and mesures -
Affaiblissement et affaiblissement de
réflexion en fonction de la longueur d'onde
des composants en unimodal
(CEI 61300-3-7:2009, modifiée)

Lichtwellenleiter -
Verbindungselemente und passive
Bauteile -
Grundlegende Prüf- und Messverfahren -
Teil 3-7: Untersuchungen
und Messungen -
Wellenlängenabhängigkeit von Dämpfung
und Rückflusdämpfung von
Einmodenbauteilen
(IEC 61300-3-7:2009, modifiziert)

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

This document (EN 61300-3-7:2012) consists of the text of IEC 61300-3-7:2009 prepared by SC 86B, "Fibre optic interconnecting devices and passive components", of IEC/TC 86, "Fibre optics", together with the common modifications prepared by CLC/TC 86BXA "Fibre optic interconnect, passive and connectorised components".

The following dates are fixed:

- latest date by which this document has to be implemented (dop) 2012-09-07
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2012-12-07

This document supersedes EN 61300-3-7:2001 + EN 61300-3-5:2001.

Changes from EN 61300-3-7:2001 are to reflect changes made to EN 61300-1 and covers unidirectional and bi-directional methods of measurement.

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

Endorsement notice

The text of the International Standard IEC 61300-3-7:2009 was approved by CENELEC as a European Standard with common modifications.

COMMON MODIFICATIONS

1 Modification to 4.1, General description

Replace the 2nd paragraph with the following:

"Invert the DUT in order to perform a bidirectional measurement. The measurements taken in both directions shall be averaged. No averaging shall be done when the device is intentionally non-bidirectional."

2 Modification to 6.1.1.3, Bidirectional measurement

Replace the entire subclause with the following:

"Invert the DUT in order to perform a bidirectional measurement. The measurements taken in both directions shall be averaged. No averaging shall be done when the device is intentionally non-bidirectional."

3 Modification to 6.1.2.2, Return loss measurement

Add as last paragraph the following:

"Note that the optical output power and reference power must not be equal."

4 Modification to 6.1.2.3, Bidirectional measurement

Replace the entire subclause with the following:

"Invert the DUT in order to perform a bidirectional measurement. The measurements taken in both directions shall be averaged. No averaging shall be done when the device is intentionally non-bidirectional."

5 Modification to 6.1.3.3, Bidirectional measurement

Replace the entire subclause with the following:

"Invert the DUT in order to perform a bidirectional measurement. The measurements taken in both directions shall be averaged. No averaging shall be done when the device is intentionally non-bidirectional."

6 Modification to 6.3.1.3, Bidirectional measurement

Replace the entire subclause with the following:

"Invert the DUT in order to perform a bidirectional measurement. The measurements taken in both directions shall be averaged. No averaging shall be done when the device is intentionally non-bidirectional."

7 Modification to 6.3.2.3, Bidirectional measurement

Replace the entire subclause with the following:

"Invert the DUT in order to perform a bidirectional measurement. The measurements taken in both directions shall be averaged. No averaging shall be done when the device is intentionally non-bidirectional."

8 Modification to 6.3.3.2, Bidirectional measurement

Replace the entire subclause with the following:

"Invert the DUT in order to perform a bidirectional measurement. The measurements taken in both directions shall be averaged. No averaging shall be done when the device is intentionally non-bidirectional."

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61300-3-29	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-29: Examinations and measurements - Measurement techniques for characterising the amplitude of the spectral transfer function of DWDM components	EN 61300-3-29	-
IEC 62074-1	-	Fibre optic interconnecting devices and passive components - Fibre optic WDM devices - Part 1: Generic specification	EN 62074-1	-

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

Part 3-7: Examinations and measurements – Wavelength dependence of attenuation and return loss of single mode components

1 Scope

This part of IEC 61300-3 describes the various methods available to measure the wavelength dependence of attenuation $A(\lambda)$ and return loss $RL(\lambda)$, of single-mode passive optical components (POC) used in fibre-optic (FO) telecommunications. It is not, however, applicable to dense wavelength division multiplexing (DWDM) devices. Measurement methods of wavelength dependence of attenuation of DWDM devices are described in IEC 61300-3-29. Definition of WDM device types is given in IEC 62074-1.

Three measurement cases are herein considered:

- Measurement of $A(\lambda)$ only;
- Measurement of $RL(\lambda)$ only;
- Measurement of $A(\lambda)$ and $RL(\lambda)$ at the same time.

These measurements may be performed in one direction (unidirectional) or bi-directionally.

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 (including any amendments) applies.

IEC 61300-3-29, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-29: Examinations and measurements – Measurement techniques for characterising the amplitude of the spectral transfer function of DWDM components*

IEC 62074-1, *Fibre optic WDM devices – Part 1: Generic specification*

3 Abbreviations and acronyms

For the purposes of this document, the following abbreviations and acronyms apply:

A	attenuation
$A(\lambda)$	wavelength dependent attenuation
ASE	amplified spontaneous emission
BBD	broadband detection
BBS	broadband source