

INTERNATIONAL STANDARD

**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**



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CONTENTS

FOREWORD.....	5
1 Scope.....	7
2 Normative references	7
3 Terms, definitions, abbreviated terms and quantity symbols	7
3.1 Terms and definitions.....	7
3.2 Abbreviated terms.....	8
3.3 Quantity symbols	9
4 General description	9
4.1 General.....	9
4.2 Light source and detector conditions.....	9
4.3 General explanation of attenuation and return loss	10
4.3.1 Attenuation	10
4.3.2 Return loss	10
4.4 Device under test (DUT)	11
4.5 Measurement methods.....	12
5 Apparatus.....	12
5.1 General.....	12
5.2 Optical source.....	13
5.2.1 Method A – Broadband light source (BBS).....	13
5.2.2 Method B – Tuneable narrowband light source (TNLS)	13
5.2.3 Method C – Set of multiple fixed narrowband light sources (NLS)	13
5.3 Depolarizer	13
5.4 Power detection systems	14
5.4.1 Method A – Tuneable narrowband detection (TND).....	14
5.4.2 Method B and C – Broadband detection (BBD)	14
5.5 Branching device (BD)	15
5.6 Termination.....	15
5.7 Temporary joint (TJ)	15
5.8 Test patch cord	15
5.9 Reference plugs (RP).....	16
5.10 Reference adapters (RA)	16
6 Procedure.....	16
6.1 Method A – Broadband light source	16
6.1.1 Method A1 – Attenuation only	16
6.1.2 Method A2 – Attenuation and return loss	17
6.2 Method B – Tuneable narrowband light source.....	20
6.2.1 General	20
6.2.2 Method B – Attenuation only	21
6.2.3 Method B – Attenuation and return loss	21
6.3 Method C – Set of multiple fixed narrowband light sources	22
6.3.1 General	22
6.3.2 Method C1 – Attenuation only.....	22
6.3.3 Method C2 – Attenuation and return loss	22
7 Test results	23

8	Details to be reported	23
8.1	General.....	23
8.2	Total measurement system	24
8.3	Source	24
8.3.1	Broadband light source	24
8.3.2	Tuneable or discrete narrowband light source.....	24
8.3.3	Depolarizer	24
8.4	Detection system	24
8.4.1	Optical power meter.....	24
8.4.2	Optical spectrum analyzer	24
8.4.3	Branching device	25
8.4.4	Termination	25
8.4.5	Temporary joint	25
8.4.6	Reference plug	25
8.4.7	Reference adapter	25
	Annex A (informative) Types of passive optical components	26
	Annex B (informative) Typical light source characteristics	27
B.1	General.....	27
B.2	Broadband light source	27
B.3	Tuneable laser source	27
	Annex C (informative) Terminations	29
	Bibliography.....	31
	Figure 1 – Generic explanation of attenuation and return loss	11
	Figure 2 – Method A1, attenuation-only, reference measurement set-up	16
	Figure 3 – Method A1, attenuation-only, DUT measurement set-up.....	17
	Figure 4 – Method A2, attenuation and return loss, reference branching device measurement set-up	18
	Figure 5 – Method A2, attenuation and return loss, reference measurement set-up.....	18
	Figure 6 – Method A2, system background measurement set-up.....	19
	Figure 7 – Method A2, attenuation and return loss, DUT measurement set-up	20
	Figure 8 – Method B, tuneable narrowband light source with and without depolarizer	21
	Figure 9 – Method C, multiple fixed narrowband sources set-up.....	22
	Figure 10 – Example wavelength dependent attenuation plot	23
	Table 1 – Device under test categories	11
	Table 2 – Measurement methods	12
	Table 3 – Reference test methods	12
	Table 4 – Preferred OPM parameters.....	15
	Table 5 – Steps of method A1, attenuation only	16
	Table 6 – Steps of method A2, attenuation and return loss	17
	Table 7 – Steps of method B, attenuation only	21
	Table 8 – Steps of method B, attenuation and return loss	21
	Table 9 – Steps of method C, attenuation only	22
	Table 10 – Steps of method C2, attenuation and return loss	22

Table 11 – Example report for wavelength dependent attenuation and return loss	23
Table A.1 – Functional summary of common passive optical components	26
Table B.1 – Types of broadband light source (BBS) and main characteristics	27
Table B.2 – Types of tuneable light source (TLS) and main characteristics	28
Table C.1 – Impact on termination values on measured return loss.....	29
Table C.2 – Impact on termination values on measured return loss uncertainty.....	30

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**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**

FOREWORD

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IEC 61300-3-7 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics. It is an International Standard.

This third edition cancels and replaces the second edition published in 2009. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) reduction of the number of alternative methods proposed to bring in-line with industry practice;
- b) re-statement of the equations for insertion loss and return loss using logarithmic forms more common in the industry;
- c) additional recommendations with respect to the creation of fibre terminations;

- d) additional discussion on the characterization of the optical sources used in this document;
- e) simplification of bi-directional testing;
- f) removal of separate return loss only measurement procedures.

The text of this International Standard is based on the following documents:

Draft	Report on voting
86B/4337/CDV	86B/4425A/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the 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 document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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 methods available to measure the wavelength dependence of attenuation and return loss of two-port, single mode passive optical components. 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.

There are two measurement cases described in this document:

- a) measurement of attenuation only;
- b) measurement of attenuation and return loss at the same time.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60050-731, *International Electrotechnical Vocabulary (IEV) – Part 731: Optical fibre communication* (available at www.electropedia.org)

IEC 60793-2-50, *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres*

IEC 61755-2-4, *Fibre optic interconnecting devices and passive components – Connector optical interfaces – Part 2-4: Connection parameters of non-dispersion shifted single-mode physically contacting fibres – Non-angled for reference connection applications*

IEC 61755-2-5, *Fibre optic interconnecting devices and passive components – Connector optical interfaces – Part 2-5: Connection parameters of non-dispersion shifted single-mode physically contacting fibres – Angled for reference connection applications*

IEC TR 61931, *Fibre optic – Terminology*

IEC 62074-1, *Fibre optic interconnecting devices and passive components – Fibre optic WDM devices – Part 1: Generic specification*

3 Terms, definitions, abbreviated terms and quantity symbols

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-731, IEC TR 61931 and IEC 62074-1 apply.