

INTERNATIONAL STANDARD

IEC
61300-3-7

First edition
2000-11

**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**

*Dispositifs d'interconnexion et composants passifs
à fibres optiques –
Méthodes fondamentales d'essais et de mesures –*

*Partie 3-7:
Examens et mesures –
Affaiblissement et pertes par réflexion
en fonction de la longueur d'onde*



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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**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61300-3-7 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

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

FDIS	Report on voting
86B/1386/FDIS	86B/1422/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 3.

IEC 61300 consists of the following parts, under the general title: *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures*:

- Part 1: General and guidance
- Part 2: Tests
- Part 3: Examinations and measurements.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

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- withdrawn;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

Withdrawing

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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

1 Scope

The purpose of this part of IEC 61300 is to measure the wavelength dependence of attenuation and return loss at the same time, in a single mode fibre optic device under test, DUT, except for dense wavelength division multiplexing (DWDM) components, when it is inserted into a fibre optic cable.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61300. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61300 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 60874-14-9, *Connectors for optical fibres and cables – Part 14-9: Fibre optic connector type SC-APC tuned 8° terminated on single mode fibre type B1 – Detail specification*

IEC 60874-14-10, *Connectors for optical fibres and cables – Part 14-10: Fibre optic pigtail or patch cord connector type SC-APC untuned 8° terminated on single mode fibre type B1 – Detail specification*

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

IEC 61300-3-4, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-4: Examinations and measurements – Attenuation*

IEC 61300-3-6, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-6: Examinations and measurements – Return loss*¹⁾

3 General description

The measurement is made by comparing the incident optical power transmitted through the component with the output optical power and the optical power reflected along the input path over the specified wavelength range.

Return loss is the ratio of the power incident on, or entering the DUT, to the total power reflected by the DUT, expressed in dB. Return loss is a positive number.

¹⁾ "A consolidated edition 1.2 exists (1999) that includes IEC 61300-3-6 (1997), its amendment 1 (1998) and its amendment 2 (1999).