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Part 3-14: Examinations and measurements - Error and repeatability of the attenuation settings of a variable optical attenuator

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Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-14: Examinations and measurements - Error and repeatability of the attenuation settings of a variable optical attenuator

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IEC 61300-3-14 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 fourth edition cancels and replaces the third edition published in 2014. This edition constitutes a technical revision

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

a) addition of IEC 61315, *Calibration of fibre-optic power meters* as normative reference;
b) addition of Clause 3 containing terms, definitions and abbreviated terms;
c) addition of notes for permission of repeatability definition with 2σ;

d) correction of error in Figure 1 a) and Figure 1 b);

e) addition of a clear statement on EF launch condition requirement for MM source;

f) change of “Detector” to “Power meter”;

g) combination of Clause 7 and Clause 8 into a new Clause 8 titled “Details to be specified and reported”;

h) addition of uncertainty considerations in Clause 7;

i) correction of error in Formula (B.3).

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

Draft	Report on voting
86B/5123/FDIS	86B/5151/RVD

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/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 webstore.iec.ch in the data related to the specific document. At this date, the document will be

– reconfirmed,

– withdrawn, or

– revised.

1 Scope

This part of IEC 61300 provides a method to measure the error and repeatability of the attenuation value settings of a variable optical attenuator (VOA). There are two control technologies for VOAs: manually controlled and electrically controlled. This document covers both VOA control technologies and also both single-mode fibres and multimode fibres VOAs. For electrically controlled VOAs, the hysteresis characteristics of attenuation are sometimes important. The hysteresis characteristics can be measured as stated in Annex B.

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 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 61315*, Calibration of fibre-optic power meters*

Bibliography

IEC 60869-1:2018, *Fibre optic interconnecting devices and passive components - Fibre optic passive power control devices - Part 1: Generic specification*

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