

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Optical amplifiers – Test methods –
Part 1-3: Power and gain parameters – Optical power meter method**

**Amplificateurs optiques – Méthodes d'essai –
Partie 1-3: Paramètres de puissance et de gain – Méthode par appareil de
mesure de la puissance optique**



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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 33.180.30

ISBN 978-2-8322-9475-8

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL AMPLIFIERS – TEST METHODS –

Part 1-3: Power and gain parameters – Optical power meter method

FOREWORD

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IEC 61290-1-3 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2015. This edition constitutes a technical revision.

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

- a) harmonization with IEC 61290-1-1;
- b) use of the term "measurement uncertainty" instead of "measurement accuracy".

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

Draft	Report on voting
86C/1671/CDV	86C/1698/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 61290 series, published under the general title *Optical amplifiers – Test methods*, 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- withdrawn,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.

OPTICAL AMPLIFIERS – TEST METHODS –

Part 1-3: Power and gain parameters – Optical power meter method

1 Scope

This part of IEC 61290 applies to all commercially available optical amplifiers (OA) and optically amplified subsystems. It applies to OA using optically pumped fibres (OPA based on either rare-earth doped fibres or on the Raman effect), semiconductors (SOA), and waveguides (PCW).

NOTE 1 The applicability of the test methods described in this document to distributed Raman amplifiers is for further study.

The object of this document is to establish uniform requirements for accurate and reliable measurements, by means of the optical power meter test method, of the following OA parameters, as defined in IEC 61291-1:

- a) nominal output signal power;
- b) gain;
- c) polarization-dependent gain;
- d) maximum output signal power;
- e) maximum total output power.

NOTE 2 All numerical values followed by ($\pm$) are suggested values for which the measurement is assured. Other values can be acceptable upon verification.

This document applies to single-channel amplifiers. For multichannel amplifiers, IEC 61290-10 (all parts) applies.

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

IEC 61291-1, *Optical amplifiers – Part 1: Generic specification*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61291-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

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