BS EN IEC 61290-1-3:2021

BSI Standards Publication

Optical amplifiers — Test methods

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

bsi.

National foreword

This British Standard is the UK implementation of EN IEC 61290-1-3:2021. It is identical to IEC 61290-1-3:2021. It supersedes BS EN 61290-1-3:2015, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/86/3, Fibre optic systems and active devices.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Published by BSI Standards Limited 2021

ISBN 978 0 539 12718 8

ICS 33.180.30

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2021.

Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61290-1-3

April 2021

ICS 33.180.30

Supersedes EN 61290-1-3:2015 and all of its amendments and corrigenda (if any)

English Version

Optical amplifiers - Test methods - Part 1-3: Power and gain parameters - Optical power meter method (IEC 61290-1-3:2021)

Amplificateurs optiques - Méthodes d'essai - Partie 1-3: Paramètres de puissance et de gain - Méthode par appareil de mesure de la puissance optique (IEC 61290-1-3:2021)

Prüfverfahren für Lichtwellenleiter-Verstärker - Teil 1-3: Leistungs- und Verstärkerparameter - Verfahren mit optischem Leistungsmessgerät (IEC 61290-1-3:2021)

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 86C/1671/CDV, future edition 4 of IEC 61290-1-3, prepared by SC 86C "Fibre optic systems and active devices" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61290-1-3:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2022-01-05
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-04-05

This document supersedes EN 61290-1-3:2015 and all of its amendments and corrigenda (if any).

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

Endorsement notice

The text of the International Standard IEC 61290-1-3:2021 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60793-1-1	NOTE	Harmonized as EN 60793-1-1
IEC 60793-1-40	NOTE	Harmonized as EN IEC 60793-1-40
IEC 60825-1	NOTE	Harmonized as EN 60825-1
IEC 60825-2	NOTE	Harmonized as EN 60825-2
IEC 61290-1	NOTE	Harmonized as EN 61290-1
IEC 61290-1-1	NOTE	Harmonized as EN IEC 61290-1-1
IEC 61290-10 (series)	NOTE	Harmonized as EN IEC 61290-10 (series)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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OPTICAL AMPLIFIERS – TEST METHODS –

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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 (OFA based on either rare-earth doped fibres or on the Raman effect), semiconductors (SOA), and waveguides (POWA).

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 (‡) 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:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp