



NSAI
Standards

Irish Standard
I.S. EN IEC 61290-1-1:2020

Optical amplifiers - Test methods - Part 1-1: Power and gain parameters - Optical spectrum analyzer method

I.S. EN IEC 61290-1-1:2020

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN IEC 61290-1-1:2020 is the adopted Irish version of the European Document EN IEC 61290-1-1:2020, Optical amplifiers - Test methods - Part 1-1: Power and gain parameters - Optical spectrum analyzer method

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EUROPEAN STANDARD

EN IEC 61290-1-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2020

ICS 33.180.30

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

English Version

**Optical amplifiers - Test methods - Part 1-1: Power and gain
parameters - Optical spectrum analyzer method
(IEC 61290-1-1:2020)**

Amplificateurs optiques - Méthodes d'essai - Partie 1-1:
Paramètres de puissance et de gain - Méthode de
l'analyseur de spectre optique
(IEC 61290-1-1:2020)

Prüfverfahren für Lichtwellenleiter-Verstärker - Teil 1-1:
Optische Leistungs- und Verstärkungsparameter -
Verfahren mit optischem Spektralanalysator
(IEC 61290-1-1:2020)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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

EN IEC 61290-1-1:2020 (E)

European foreword

The text of document 86C/1673(F)/FDIS, future edition 4 of IEC 61290-1-1, 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 61290-1-1:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2021-07-08 level by publication of an identical national standard or by endorsement
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IEC 61290-10 series NOTE Harmonized as EN 61290-10 series

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60793-2-50	-	Optical fibres - Part 2-50: Product specifications - Sectional specification for class B single-mode fibres	EN IEC 60793-2-50	-
IEC 61290-1	-	Optical amplifiers - Test methods - Part 1: Power and gain parameters	EN 61290-1	-
IEC 61291-1	-	Optical amplifiers - Part 1: Generic specification	EN IEC 61291-1	-

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IEC 61290-1-1

Edition 4.0 2020-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Optical amplifiers – Test methods –
Part 1-1: Power and gain parameters – Optical spectrum analyzer method**

**Amplificateurs optiques – Méthodes d'essai –
Partie 1-1: Paramètres de puissance et de gain – Méthode de l'analyseur de
spectre optique**





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IEC 61290-1-1

Edition 4.0 2020-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Optical amplifiers – Test methods –
Part 1-1: Power and gain parameters – Optical spectrum analyzer method**

**Amplificateurs optiques – Méthodes d'essai –
Partie 1-1: Paramètres de puissance et de gain – Méthode de l'analyseur de
spectre optique**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL AMPLIFIERS – TEST METHODS –**Part 1-1: Power and gain parameters –
Optical spectrum analyzer method**

FOREWORD

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

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

This edition includes the following significant technical change with respect to the previous edition: addition of techniques to test gain ripple of SOAs.

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

FDIS	Report on voting
86C/1673/FDIS	86C/1687/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This document is to be used in conjunction with IEC 61290-1 and IEC 61291-1.

A list of all parts of 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 1-1: Power and gain parameters – Optical spectrum analyzer method

1 Scope

This part of IEC 61290 applies to all commercially available optical amplifiers (OAs) and optically amplified modules. It applies to OAs using optical fibre amplifiers (OFAs) based on either rare-earth doped fibres or on the Raman effect, semiconductor OAs (SOAs) and planar optical waveguide amplifiers (POWAs).

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

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

In addition, this document provides the test method of:

- f) gain ripple (for SOAs).

NOTE All numerical values followed by (±) are suggested values for which the measurement is assured.

The object of this document is specifically directed to single-channel amplifiers. Test methods for multichannel amplifiers are standardized in IEC 61290-10 (all parts) [1]¹.

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 61290-1, *Optical amplifiers – Test methods – Part 1: Power and gain parameters*

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

¹ Numbers in square brackets refer to the Bibliography.

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