

Optical amplifiers — Test methods —

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

ICS 33.180.30

National foreword

This British Standard is the UK implementation of EN 61290-1-3:2005. It is identical to IEC 61290-1-3:2005. It supersedes BS EN 61290-1-3:1998 and BS EN 61290-2-3:1998 which are withdrawn.

The CENELEC common modifications have been implemented at the appropriate places in the text and are indicated by tags (e.g. [C] [C]).

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

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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Date	Comments
31 January 2010	Supersession text added

English version

**Optical amplifiers -
Test methods
Part 1-3: Power and gain parameters -
Optical power meter method
(IEC 61290-1-3:2005)**

Amplificateurs optiques -
Méthodes d'essai
Partie 1-3: Paramètres de puissance
optique et de gain -
Méthode du wattmètre optique
(CEI 61290-1-3:2005)

Prüfverfahren
für Lichtwellenleiter-Verstärker
Teil 1-3: Optische Leistungs-
und Verstärkerparameter -
Verfahren mit optischem
Leistungsmesser
(IEC 61290-1-3:2005)

This European Standard was approved by CENELEC on 2005-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

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Foreword

The text of document 86C/673/FDIS, future edition 2 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 was approved by CENELEC as EN 61290-1-3 on 2005-10-01.

This European Standard supersedes EN 61290-1-3:1998.

It includes the following significant changes:

- a) optical power and gain parameters are both included;
- b) the applicability has been extended to all commercially available optical amplifiers – not just optical fibre amplifiers.

This standard is to be read in conjunction with EN 61291-1.

The following dates were fixed:

- | | | |
|--|-------|------------|
| – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2006-08-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2008-10-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61290-1-3:2005 was approved by CENELEC as a European Standard without any modification.

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INTRODUCTION

This International Standard is devoted to the subject of optical amplifiers. The technology of optical amplifiers is still rapidly evolving, hence amendments and new editions to this standard can be expected.

Each abbreviation introduced in this International Standard is explained in the text at least the first time it appears. However, for an easier understanding of the whole text, a list of all abbreviations used in this International Standard is given in Clause 3.

OPTICAL AMPLIFIERS – TEST METHODS –

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

1 Scope and object

This International Standard 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 (POWA).

NOTE The applicability of the test methods described in the present standard to distributed Raman amplifiers is for further study.

The object of this standard 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 Clause 3 of IEC 61291-1:

- a) nominal output signal power;
- b) gain;
- c) reverse gain;
- d) maximum gain;
- e) polarization-dependent gain;
- f) large-signal output stability;
- g) saturation output power;
- h) maximum input signal power;
- i) maximum output signal power;
- j) input power range;
- k) output power range;
- l) maximum total output power.

In addition this test method provides a means for measuring the following parameters:

- maximum gain wavelength;
- gain wavelength band.

NOTE All numerical values followed by (±) are suggested values for which the measurement is assured. Other values may be acceptable but should be verified.

The object of this standard is specifically directed to single-channel amplifiers. For multichannel amplifiers, one should refer to the IEC 61290-10 series¹.

¹ See Bibliography.