

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Optical amplifiers –  
Part 2: Single channel applications – Performance specification template**

**Amplificateurs optiques –  
Partie 2: Applications à un seul canal – Modèle de spécifications de  
performances**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**OPTICAL AMPLIFIERS –****Part 2: Single channel applications –  
Performance specification template**

## FOREWORD

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International Standard IEC 61291-2 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 2012. This edition constitutes a technical revision.

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

- a) the title of this standard has been changed from digital applications to single channel applications;
- b) the scope has been changed and, as a result, the titles of tables have been changed;
- c) Terms and definitions have been revised;

- d) three tables regarding the minimum list of relevant parameters of power amplifiers, pre-amplifiers and line amplifiers based on semiconductor optical amplifier (SOA) components have been added;
- e) transient parameters have been added in the minimum list of relevant parameters of pre-amplifiers and line amplifiers based on optical fibre amplifier (OFA) module.

The text of this standard is based on the following documents:

CDV	Report on voting
86C/1318/CDV	86C/1365/RVC

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

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

A list of all parts in the IEC 61291 series, published under the general title *Optical amplifiers*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

## 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 additions to this standard can be expected. Each abbreviation introduced in this standard is generally explained in the text the first time it appears. However, for an easier understanding of the whole text, a list of all abbreviations used in this standard is given in Clause 3.

## OPTICAL AMPLIFIERS –

### Part 2: Single channel applications – Performance specification template

#### 1 Scope

This part of IEC 61291 provides a performance specification template which applies to optical amplifiers (OAs) to be used in single channel applications. Multichannel applications are covered in IEC 61291-4.

The object of this performance specification template is to provide a frame for the preparation of performance standards and/or product specifications on the performance of OA devices to be used in single channel applications. In the performance standards or product specifications, other specifications such as ratings, operating conditions, tests and pass/fail criteria could be included in addition to the requirements based on this performance specification template.

Product specification writers may add specification parameters and/or groups of specification parameters for particular applications. However, product specification writers should not remove specification parameters specified in this standard.

#### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*

IEC 61000 (all parts), *Electromagnetic compatibility (EMC)*

IEC 61290-1 (all parts), *Optical amplifiers – Test methods – Part 1: Power and gain parameters*

IEC 61290-3 (all parts), *Optical amplifiers – Test methods – Part 3: Noise figure parameters*

IEC 61290-4-3, *Optical amplifiers – Test methods – Part 4-3: Power transient parameters – Single channel optical amplifiers in output power control*

IEC 61290-5 (all parts), *Optical amplifiers – Test methods – Part 5: Reflectance parameters*

IEC 61290-6-1, *Optical fibre amplifiers – Basic specification – Part 6-1: Test methods for pump leakage parameters – Optical demultiplexer*

IEC 61290-11 (all parts), *Optical amplifiers – Test methods – Part 11-1: Polarization mode dispersion parameter*

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

IEC 61291-5-2, *Optical amplifiers – Part 5-2: Qualification specifications – Reliability qualification for optical fibre amplifiers*