SVENSK STANDARD SS-EN 61291-2

Fastställd	Utgåva	Sida	Ansvarig kommitté
2016-08-24	4	1 (1+22)	SEK TK 86

Fiberoptiska förstärkare – Del 2: Digitala tillämpningar – Mall för angivande av prestanda

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

Som svensk standard gäller europastandarden EN 61291-2:2016. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61291-2:2016.

Nationellt förord

Europastandarden EN 61291-2:2016

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 61291-2, Fourth edition, 2016 - Optical amplifiers - Part 2: Single channel applications - Performance specification template**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 61291-2, utgåva 3, 2012, gäller ej fr o m 2019-03-24.

ICS 33.180.30

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61291-2

June 2016

ICS 33.180.30

Supersedes EN 61291-2:2012

English Version

Optical amplifiers - Part 2: Single channel applications - Performance specification template (IEC 61291-2:2016)

Amplificateurs optiques - Partie 2: Applications numériques - Modèles de spécifications de performances (IEC 61291-2:2016)

Lichtwellenleiter-Verstärker - Teil 2: Einzelkanal-Anwendungen - Vorlage für Betriebsverhaltensspezifikationen (IEC 61291-2:2016)

This European Standard was approved by CENELEC on 2016-03-24. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 61291-2:2016 E

SEK Svensk Elstandard

European foreword

The text of document 86C/1318/CDV, future edition 4 of IEC 61291-2, 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 61291-2:2016.

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)	2016-12-24
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2019-03-24

This document supersedes EN 61291-2:2012.

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 application to single channel application.
b) The scope has been changed. Reflecting the scope change, 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.".

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

Endorsement notice

The text of the International Standard IEC 61291-2:2016 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 61280 (series)	NOTE	Harmonized as EN 61280 (series).
IEC 61291-4	NOTE	Harmonized as EN 61291-4.
IEC 62148-11	NOTE	Harmonized as EN 62148-11.
IEC 62149-1	NOTE	Harmonized as EN 62149-1.
IEC 62149-3	NOTE	Harmonized as EN 62149-3.
IEC 62572-3	NOTE	Harmonized as EN 62572-3.

Annex ZA
(normative)
Normative references to international publications with their corresponding European publications

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.

NOTE 1 When 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.

Publication	Year	Title	EN/HD	Year
IEC 60825-1	-	Safety of laser products -- Part 1: Equipment classification and requirements	EN 60825-1	-
IEC 61000	series	Electromagnetic compatibility (EMC) Electromagnetic compatibility (EMC)	EN 61000	series
IEC 61290-1	series	Optical amplifiers - Test methods - Part 1: Power and gain parameters	EN 61290-1	series
IEC 61290-3	series	Optical amplifiers - Test methods - Part 3: Noise figure parameters	EN 61290-3	series
IEC 61290-4-3		Optical amplifiers - Test methods – Part 4-3: Power transient parameters – Single channel optical amplifiers in output power control	EN 61290-4-3	
IEC 61290-5	series	Optical amplifiers - Test methods -Part 5: Reflectance Parameters	EN 61290-5	series
IEC 61290-6-1	-	Optical fibre amplifiers - Basic specification -- Part 6-1: Test methods for pump leakage parameters - Optical demultiplexer	EN 61290-6-1	-
IEC 61290-11	series	Optical amplifier - Test methods - Part 11: Polarization mode dispersion parameter	EN 61290-11	series
IEC 61291-1	-	Optical amplifiers -- Part 1: Generic specification	EN 61291-1	-
IEC 61291-5-2	-	Optical amplifiers -- Part 5-2: Qualification specifications - Reliability qualification for optical fibre amplifiers	EN 61291-5-2	-
IEC/TS 62538	2008	Categorization of optical devices	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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OPTICAL AMPLIFIERS –

Part 2: Single channel applications – Performance specification template

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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.

A bilingual version of this publication may be issued at a later date.

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*

IEC TS 62538:2008, *Categorization of optical devices*