ICS 33.180.30 SLOVENSKÁ TECHNICKÁ NORMA Január 2019

STN	**Optické zosilňovače Skúšobné metódy Časť 4-3: Parametre prechodného výkonu Jednokanálový optický zosilňovač s riadením výstupného výkonu**	**STN EN IEC 61290-4-3 35 9271**

Optical amplifiers - Test methods - Part 4-3: Power transient parameters - Single channel optical amplifiers in output power control

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/18

Obsahuje: EN IEC 61290-4-3:2018, IEC 61290-4-3:2018

Oznámením tejto normy sa od 01.06.2021 ruší
STN EN 61290-4-3 (35 9271) z júla 2016

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61290-4-3

July 2018

ICS 33.180.30

Supersedes EN 61290-4-3:2015

English Version

Optical amplifiers - Test methods - Part 4-3: Power transient parameters - Single channel optical amplifiers in output power control (IEC 61290-4-3:2018)

Amplificateurs optiques - Méthodes d'essai - Partie 4-3: Paramètres de puissance transitoire - Amplificateurs optiques monocanaux commandés par la puissance de sortie (IEC 61290-4-3:2018)

Optische Verstärker - Prüfverfahren - Teil 4-3: Leistungs-Transientenkenngrößen von Ein-Kanal-LWL-Verstärkern mit Ausgangs-Leistungskontrolle (IEC 61290-4-3:2018)

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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

Ref. No. EN IEC 61290-4-3:2018 E

European foreword

The text of document 86C/1505/FDIS, future edition 2 of IEC 61290-4-3, prepared by subcommittee 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 61290-4-3:2018.

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)	2019-03-01
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2021-06-01

This document supersedes EN 61290-4-3:2015.

This edition constitutes a technical revision, including the following technical change with respect to the previous 2015 edition: alignment of the measurement of amplified spontaneous emission (ASE) relative to signal power with definition given in EN 61290-3-3.

This European Standard is to be used in conjunction with EN 61291-1:2012.

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 61290-4-3:2018 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 61290-3-3	NOTE	Harmonized as EN 61290-3-3.
IEC 61290-4-1	NOTE	Harmonized as EN 61290-4-1.

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.

Publication	Year	Title	EN/HD	Year
IEC 61291-1	-	Optical amplifiers - Part 1: Generic specification	EN IEC 61291-1	-

IEC 61290-4-3

Edition 2.0 2018-04

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IEC 61290-4-3:2018-04(en-fr)

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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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International Standard IEC 61290-4-3 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

This second edition cancels and replaces the first edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical change with respect to the previous edition: alignment of the measure of amplified spontaneous emission (ASE) relative to signal power with the definition in IEC 61290-3-3.

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

FDIS	Report on voting
86C/1505/FDIS	86C/1512/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 International Standard is to be used in conjunction with IEC 61291-1:2012.

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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

OPTICAL AMPLIFIERS – TEST METHODS –

Part 4-3: Power transient parameters – Single channel optical amplifiers in output power control

1 Scope

This part of IEC 61290 applies to output power controlled optically amplified, elementary sub-systems. It applies to optical fibre amplifiers (OFAs) using active fibres containing rare-earth dopants, presently commercially available, as indicated in IEC 61291-1, as well as alternative optical amplifiers that can be used for single channel output power controlled operation, such as semiconductor optical amplifiers (SOAs).

The object of this document is to provide the general background for optical amplifiers (OAs) power transients and their measurements and to indicate those IEC standard test methods for accurate and reliable measurements of the following transient parameters:

a) transient power response;

b) transient power overcompensation response;

c) steady-state power offset;

d) transient power response time.

The stimulus and responses behaviours under consideration include the following:

1) channel power increase (step transient);

2) channel power reduction (inverse step transient);

3) channel power increase/reduction (pulse transient);

4) channel power reduction/increase (inverse pulse transient);

5) channel power increase/reduction/increase (lightning bolt transient);

6) channel power reduction/increase/reduction (inverse lightning bolt transient).

These parameters have been included to provide a complete description of the transient behaviour of an output power transient controlled OA. The test definitions defined here are applicable if the amplifier is an OFA or an alternative OA. However, the description in Annex A concentrates on the physical performance of an OFA and provides a detailed description of the behaviour of an OFA; it does not give a similar description of other OA types. Annex B provides a detailed description background of the dynamic phenomenon in output power controlled amplifiers under transient conditions and Annex C details the impact of speed of transient inputs.

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