ICS 33.180.30 SLOVENSKÁ TECHNICKÁ NORMA Február 2019

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

Optical amplifiers - Test methods - Part 4-4: Gain transient parameters - Single channel optical amplifiers with gain 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. 01/19

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

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61290-4-4

September 2018

ICS 33.180.30

English Version

Optical amplifiers - Test methods - Part 4-4: Gain transient parameters - Single channel optical amplifiers with gain control (IEC 61290-4-4:2018)

Amplificateurs optiques - Méthodes d'essai - Partie 4-4: Paramètres de gain transitoire - Amplificateurs optiques monocanaux avec commande de gain (IEC 61290-4-4:2018)

Optische Verstärker - Prüfverfahren - Teil 4-4: Transiente Verstärkerparameter - Einkanal-LWL-Verstärker mit Ausgangsleistungsregelung (IEC 61290-4-4:2018)

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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 61290-4-4:2018 E

European foreword

The text of document 86C/1507/FDIS, future edition 1 of IEC 61290-4-4, 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 61290-4-4:2018.

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)	2019-04-03
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2021-07-03

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.

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The text of the International Standard IEC 61290-4-4:2018 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 61290-4-1	NOTE	Harmonized as EN 61290-4-1.
IEC 61290-4-2	NOTE	Harmonized as EN 61290-4-2.
IEC 61290-4-3	NOTE	Harmonized as EN IEC 61290-4-3.

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 60050-731	-	International Electrotechnical Vocabulary - Chapter 731: Optical fibre communication	-	-
IEC 61291-1	-		EN IEC 61291-1	-
IEC/TR 61931	-	Fibre optic - Terminology	-	-

IEC 61290-4-4

Edition 1.0 2018-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Optical amplifiers – Test methods – Part 4-4: Gain transient parameters – Single channel optical amplifiers with gain control

Amplificateurs optiques – Méthodes d'essai – Partie 4-4: Paramètres de gain transitoire – Amplificateurs optiques monocanaux avec commande de gain

IEC 61290-4-4:2018-05(en-fr)

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

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

FDIS	Report on voting
86C/1507/FDIS	86C/1525/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.

A list of all parts in the 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.

INTRODUCTION

This document is based on standard OITDA AM 01 published by the optoelectronic industry and technology development association (OITDA).

OPTICAL AMPLIFIERS – TEST METHODS –

Part 4-4: Gain transient parameters – Single channel optical amplifiers with gain control

1 Scope

This part of IEC 61290-4 applies to optical amplifiers (OAs) and optically amplified elementary sub-systems. More specifically, it applies to OAs using active fibres (optical fibre amplifiers, OFAs) containing rare-earth dopants, such as erbium doped fibre amplifiers (EDFAs), presently commercially available, as indicated in IEC 61291-1.

This document provides the general background for optical amplifier gain transients and their measurements and indicates those IEC standard test methods for accurate and reliable measurements of the following transient parameters:

a) optical input power increase/decrease transient gain overshoot and transient net gain overshoot;

b) optical input power increase/decrease transient gain undershoot and transient net gain undershoot;

c) optical input power increase/decrease gain offset;

d) optical input power increase/decrease transient gain response constant (settling time).

These parameters have been included to provide a complete description of the transient behaviour of gain controlled OA. The parameters defined here are applicable if the amplifier is an OFA or an alternative type of OA.

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 60050-731, *International Electrotechnical Vocabulary – Chapter 731: Optical fibre communication* (available at www.electropedia.org)

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

IEC TR 61931, *Fibre optic – Terminology*