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Optical amplifiers - Test methods - Part 4-1: Gain transient parameters - Two-wavelength method

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. 05/17

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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 61290-4-1

December 2016

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Supersedes EN 61290-4-1:2011

English Version

Optical amplifiers - Test methods -
Part 4-1: Gain transient parameters - Two-wavelength method
(IEC 61290-4-1:2016)

Amplificateurs optiques - Méthodes d'essai -
Partie 4-1: Paramètres de gain transitoire - Méthode à deux
longueurs d'onde
(IEC 61290-4-1:2016)

Lichtwellenleiter-Verstärker - Prüfverfahren -
Teil 4-1: Transiente Verstärkerparameter - Zwei-
Wellenlängen-Verfahren
(IEC 61290-4-1:2016)

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European foreword

The text of document 86C/1347/CDV, future edition 2 of IEC 61290-4-1, 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 61290-4-1:2016.

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This document supersedes EN 61290-4-1:2011.

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- a) Extended the applicability from only EDFAs to all OFAs;
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IEC 61290-1 Series	NOTE	Harmonized as EN 61290-1 Series.
IEC 61290-3-1	NOTE	Harmonized as EN 61290-3-1.
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IEC 61290-4-2	NOTE	Harmonized as EN 61290-4-2.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

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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

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



IEC 61290-4-1

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INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Optical amplifiers – Test methods –
Part 4-1: Gain transient parameters – Two-wavelength method**

**Amplificateurs optiques – Méthodes d'essai –
Partie 4-1: Paramètres de gain transitoire – Méthode à deux longueurs d'onde**



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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INTERNATIONAL STANDARD

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**Optical amplifiers – Test methods –
Part 4-1: Gain transient parameters – Two-wavelength method**

**Amplificateurs optiques – Méthodes d'essai –
Partie 4-1: Paramètres de gain transitoire – Méthode à deux longueurs d'onde**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**OPTICAL AMPLIFIERS –
TEST METHODS –****Part 4-1: Gain transient parameters –
Two-wavelength method**

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International Standard IEC 61290-4-1 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 2011. This edition constitutes a technical revision.

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

- a) extended the applicability from only EDFAs to all OFAs;
- b) updated definitions for consistency with other documents in the IEC 61290-4 series.

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

CDV	Report on voting
86C/1347/CDV	86C/1397/RVC

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 of the IEC 61290 series, published under the general title *Optical amplifiers – Test methods* can be found on the IEC website.

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INTRODUCTION

This part of IEC 61290-4 is devoted to optical amplifiers (OAs). The technology of OAs is quite new and still emerging; hence amendments and new editions to this document can be expected.

Background information on the transient phenomenon in erbium-doped fibre amplifiers and the consequences on fibre optic systems is provided in Annex A and on slew rate effects in Annex B.

OPTICAL AMPLIFIERS – TEST METHODS –

Part 4-1: Gain transient parameters – Two-wavelength method

1 Scope

This part of IEC 61290-4 applies to optical amplifiers (OAs) using active fibres (optical fibre amplifiers (OFAs)) containing rare-earth dopants including erbium-doped fibre amplifiers (EDFAs) and optically amplified elementary sub-systems. These amplifiers are commercially available and widely deployed in service provider networks.

The object of document is to provide the general background for OFA transients and related parameters, and to describe a standard test method for accurate and reliable measurement of the following transient parameters:

- a) channel addition or removal transient gain overshoot and transient net gain overshoot;
- b) channel addition or removal transient gain undershoot and transient net gain undershoot;
- c) channel addition or removal gain offset;
- d) channel addition or removal transient gain response time constant (settling time).

2 Normative references

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

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