PD IEC TR 61292-8:2019

BSI Standards Publication

Optical amplifiers

Part 8: High-power amplifiers

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee GEL/86/3, Fibre optic systems and active devices.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Published by BSI Standards Limited 2019

ISBN 978 0 580 99315 2

ICS 33.160.10; 33.180.30

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 January 2019.

Amendments/corrigenda issued since publication

Date	Text affected

IEC TR 61292-8

Edition 1.0 2019-01

TECHNICAL REPORT

colour inside

Optical amplifiers –
Part 8: High-power amplifiers

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.160.10, 33.180.30

ISBN 978-2-8322-6421-8

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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IEC TR 61292-8, which is a technical report, has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

Optoelectronics Industry and Technology Development Association (OITDA), Technical Paper OITDA/TP 26/AM, *General information for high power optical amplifier* has served as the basis for the elaboration of this Technical Report.

The text of this Technical Report is based on the following documents:

Draft TR	Report on voting
86C/1534/DTR	86C/1549/RVDTR

Full information on the voting for the approval of this Technical Report 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 IEC 61292 series, published under the general title *Optical amplifiers*, 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- withdrawn,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.

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

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.

INTRODUCTION

Optical amplifiers (OAs) are necessary components as booster, line and pre-amplifiers for current optical network systems. IEC TC 86/SC 86C, therefore, has published many standards for OAs. Since the mid-2000s, high optical output power amplifiers have been used for applications in passive optical network (PON) and community access television (CATV) systems.

Although OAs with optical power greater than 500 mW are deployed in the field, there are very few documents addressing high optical power applications.

This document provides a better understanding of high-power amplifiers, especially those based on cladding pump technology, and addresses the handling of high optical power.

OPTICAL AMPLIFIERS –

Part 8: High-power amplifiers

1 Scope

This document deals with high-power optical amplifiers. It provides general information relating to high-power optical amplifiers with an output power greater than 500 mW for the fibre communication field. It covers the following aspects:

– general information;
– example of the optical amplifier's configuration realizing high optical output power;
– test method for optical output power and gain;
– considerations on high-power optical amplifiers.

Potential applications of high-power optical amplifiers are briefly reviewed in Annex A.

Informative IEC documents related to high optical power are listed in Annex B.

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*

3 Terms, definitions, and abbreviated terms

3.1 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.2 Abbreviated terms

For the purposes of this document, the abbreviated terms given in IEC 61291-1 and the following apply.

ASE	amplified spontaneous emission
CO	central office
DC	double-clad
DWDM	dense wavelength division multiplexing
EDF	erbium-doped fibre
EDFA	erbium-doped fibre amplifier