

TECHNICAL REPORT

Optical amplifiers – Part 1: Parameters of amplifier components



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Part 1: Parameters of amplifier components**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL AMPLIFIERS –**Part 1: Parameters of amplifier components**

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IEC 61292-1, which is a technical report, 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 1998. It is a technical revision with updates reflecting new technology.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
86C/853/DTR	86C/871/RVC

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.

A list of all parts of the IEC 61292 series, published under the general title *Optical amplifiers*, can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site 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- withdrawn,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 technical report may be published later.

OPTICAL AMPLIFIERS –

Part 1: Parameters of amplifier components

1 Scope and object

This part of IEC 61292, which is a technical report, applies to optical components of rare-earth doped fibre amplifiers. It provides information about the most relevant parameters of optical components especially for erbium doped fibre amplifiers (EDFAs).

The object of this technical report is to provide introductory information for a better understanding of EDFA operation and applications.

2 Normative references

The following referenced documents are indispensable for the application 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/TR 61931, *Fibre optic – Terminology*

ITU-T Recommendation G. 650.1, *Definition and test methods for linear, deterministic attributes of single-mode fibre and cable*

NOTE A list of informative references is given in the Bibliography.

3 Abbreviations

For the purposes of this document, the following abbreviations apply.

ASE	amplified spontaneous emission
EDFA	erbium-doped fibre amplifier
EDF	erbium-doped fibre
OFA	optical fibre amplifier
OA	optical amplifier
RMS(r.m.s)	root mean square
LD	laser diode
TEC	thermo-electric cooler
FBG	fibre Bragg grating
FWHM	full-width at half maximum
WDM	wavelength division multiplexing
GFF	gain flattening filter
PIN-PD	PIN-photodiode
VOA	variable optical attenuator
EDF	erbium doped fibre
PDL	polarization dependent loss (variation)
PMD	polarization mode dispersion
MTBF	mean time between failure