

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Fibre optic interconnecting devices and passive components – Basic test and measurement procedures –
Part 2-14: Tests – High optical power**

**Dispositifs d'interconnexion et composants passifs à fibres optiques –
Méthodes fondamentales d'essais et de mesures –
Partie 2-14: Essais – Puissance optique élevée**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC INTERCONNECTING DEVICES
AND PASSIVE COMPONENTS –
BASIC TEST AND MEASUREMENT PROCEDURES –****Part 2-14: Tests – High optical power**

FOREWORD

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International Standard IEC 61300-2-14 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This third edition cancels and replaces the second edition published in 2005 and constitutes a technical revision.

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

- fundamental change of the measurement method to introduce various measurement environments such as limited testing resources.

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

FDIS	Report on voting
86B/3488/FDIS	86B/3533/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

A list of all parts in the IEC 61300 series, published under the general title *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability 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- withdrawn,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.

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – BASIC TEST AND MEASUREMENT PROCEDURES –

Part 2-14: Tests – High optical power

1 Scope

This part of IEC 61300 describes a procedure for determining the suitability of a fibre optic interconnecting device or a passive component to withstand the exposure to optical power that may occur during operation.

NOTE General information and guidance concerning relevant test and measurement procedures is contained in IEC 61300-1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*

IEC 61300-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 1: General and guidance*

IEC 61300-3-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-1: Examinations and measurements – Visual examination*

IEC 61300-3-3, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-3: Examinations and measurements – Active monitoring of changes in attenuation and return loss*

IEC 61300-3-35, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-35: Examinations and measurements – Fibre optic connector endface visual and automated inspection*

3 Apparatus

3.1 Source (S)

The source unit consists of an optical emitter, the means to connect to it and the associated drive electronics. A tunable light source (TLS) in which a specific output wavelength can be tuned may be chosen as the optical emitter. A TLS may consist of a tunable LD and an optical amplifier, or be a fibre ring laser in order to get an efficient power to test. Generally, the power and stability requirements of a test will necessitate that the means to connect to the optical emitter be a fibre pigtail. It shall be stable in output power and wavelength/frequency over the measurement period. For DWDM devices, the frequency uncertainty (instead of the wavelength uncertainty) shall be less than half of the channel bandwidth. Unless otherwise stated in the relevant specification, the source shall have the following characteristics:

- a) Centre wavelength uncertainty including stability: