
Povezovalne naprave in pasivne komponente optičnih vlaken – Osnovno preskušanje in merilni postopki – 2-14. del: Preskusi – Ravnanje z optično močjo in značilnosti praga poškodb (IEC 61300-2-14:2005)

Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-14: Tests – Optical power handling and damage threshold characterization (IEC 61300-2-14:2005)

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English version

**Fibre optic interconnecting devices and passive components -
Basic test and measurement procedures
Part 2-14: Tests - Optical power handling and
damage threshold characterization
(IEC 61300-2-14:2005)**

Dispositifs d'interconnexion et
composants passifs à fibres optiques -
Méthodes fondamentales d'essais
et de mesures
Partie 2-14: Essais -
Traitement de la puissance optique et
caractérisation du seuil de dommage
(CEI 61300-2-14:2005)

Lichtwellenleiter -
Verbindungselemente und passive
Bauteile
Teil 2-14: Prüfungen -
Ermittlung von Kennwerten
der optischen Leistung
(IEC 61300-2-14:2005)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 86B/2204/FDIS, future edition 2 of IEC 61300-2-14, prepared by SC 86B, Fibre optic interconnecting devices and passive components, of IEC TC 86, Fibre optics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61300-2-14 on 2006-03-01.

This European Standard supersedes EN 61300-2-14:1997.

Specific technical changes from EN 61300-2-14:1997 include a fundamental change of the measurement method to introduce various measurement environments such as limited testing resources.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2006-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2009-03-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 61300-2-14:2006 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60825-1 + corr. December -	- ¹⁾	Safety of laser products Part 1: Equipment classification, requirements and user's guide	EN 60825-1 + corr. February + A11	1994 ²⁾ 1995 1996
IEC 61300-1	- ¹⁾	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures Part 1: General and guidance	EN 61300-1	2003 ²⁾
IEC 61300-3-1	- ¹⁾	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures Part 3-1: Examinations and measurements - Visual examination	EN 61300-3-1	2005 ²⁾

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¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

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61300-2-14

Deuxième édition
Second edition
2005-10

**Dispositifs d'interconnexion et
composants passifs à fibres optiques –
Méthodes fondamentales d'essais
et de mesures –**

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**Fibre optic interconnecting devices
and passive components –
Basic test and measurement procedures –**

**Part 2-14:
Tests – Optical power handling
and damage threshold characterization**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC INTERCONNECTING DEVICES
AND PASSIVE COMPONENTS –
BASIC TEST AND MEASUREMENT PROCEDURES –****Part 2-14: Tests – Optical power handling
and damage threshold characterization**

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 second edition cancels and replaces the first edition published in 1997. It constitutes a technical revision. Specific technical changes from the previous edition include 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/2204/FDIS	86B/2234/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.

IEC 61300 consists of the following parts, under the general title *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures*:

Part 1: General and guidance

Part 2: Tests

Part 3: Examinations and measurements

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.

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

Part 2-14: Tests – Optical power handling and damage threshold characterization

1 Scope

The purpose of this part of IEC 61300 is to characterize the robustness of a fibre optic passive component or interconnecting device against damage from exposure to optical power.

Specifically, the objectives are to:

- characterize both the short term and the long term robustness of components from damage due to optical power induced degradation or failure mechanisms;
- provide data necessary to ensure that components are exposed to appropriate optical power levels that will not degrade their performance;
- identify components prone to irreversible degradation.

The test procedure described in this standard is structured such that, if the 'full characterization' option is performed, the component will be characterized without the need for re-testing should future applications change.

For example, one way to approach the issue of optical power characterization is to test a component at a specific power level and wavelength to which the component will be exposed in a specific application. While testing of the component at that power/wavelength may indicate the robustness of the component in that specific application, if the component is considered for another application, the tests will need to be performed again at other powers/wavelengths. However, if the component is fully characterized at all relevant wavelengths, and the maximum power handling level at those wavelengths is identified, then all the information required to assess the suitability of the component in any application is available.

The results of the full characterization test method in this standard will be a rating of the component under test. This rating forms the basis of determining the power levels to which the component can be exposed in a reliable manner. It essentially defines the "operating region envelope" for the component.

Since there will often be constraints (that is, time, cost, equipment availability) that limit the ability to perform the full characterization, alternative test methods are outlined in this standard that perform only a subset of the full test.

The test methods contained in this standard are intended to assess the robustness of components in their normal use conditions for which they were designed.