
Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-14: Tests - Maximum input power (IEC 61300-2-14:1997)

Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-14: Tests - Maximum input power

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Grundlegende Prüf- und Meßverfahren -- Teil 2-14: Prüfungen: Höchste Eingangsleistung

Dispositifs d'interconnexion et composants passifs à fibres optiques - Méthodes fondamentales d'essais et de mesures -- Partie 2-14: Essais - Puissance d'entrée maximale

Ta slovenski standard je istoveten z: EN 61300-2-14:1997

ICS:

33.180.20 Ú[ç^: [çæ] ^ Á æ | æ ^ Á æ Fibre optic interconnecting devices
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SIST EN 61300-2-14:1997**en**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61300-2-14

April 1997

ICS 33.180.20

English version

**Fibre optic interconnecting devices and passive components
Basic test and measurement procedures
Part 2-14: Tests - Maximum input power
(IEC 61300-2-14:1997)**

Dispositifs d'interconnexion et
composants passifs à fibres optiques
Méthodes fondamentales d'essais et
de mesures
Partie 2-14: Essais - Puissance d'entrée
maximale
(CEI 61300-2-14:1997)

Lichtwellenleiter - Verbindungselemente
und passive Bauteile - Grundlegende
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(IEC 61300-2-14:1997)

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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/841/FDIS, future edition 1 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 1997-03-11.

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) 1997-12-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 1997-12-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61300-2-14:1997 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**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 825	series	Safety of laser products	EN 60825	series
IEC 1300-1	1995	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures Part 1: General and guidance	-	-

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61300-2-14

Première édition
First edition
1997-03

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

Partie 2-14:
Essais – Puissance d'entrée maximale

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Fibre (optic interconnecting) devices
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Part 2-14:
Tests – Maximum input power

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 2-14: Tests – Maximum input power

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
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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.

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

FDIS	Report on voting
86B/841/FDIS	86B/942/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.

IEC 1300 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

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

Part 2-14: Tests – Maximum input power

1 General

1.1 Scope and object

This part of IEC 1300 describes the test which estimates the level of optical power that a fibre optic component can transmit without sustaining permanent damage or without sustaining temporary performance degradation due to non-linear optical effects.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 1300. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 1300 are encouraged to investigate the possibility of applying the most recent edition of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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IEC 825: *Safety of laser products*

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IEC 1300-1: 1995, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 1: General and guidance*

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2 General description

There are various forms and degrees of optical damage that high optical power can cause in a fibre optic component. Optical damage can occur suddenly on exposure to high light levels or may result from long-term exposure to light through chemical changes in some materials of optical components. Factors which can affect the degree to which a component is susceptible to damage by optical power include:

- the average and peak power densities in the waveguides of the optical component. These can cause damage through local heating;
- the peak power. This can result in self-focusing with resultant high levels of power density;
- the material optical absorption (attenuation). In optical elements containing optical attenuating layers, light energy may be absorbed in localized regions and can thus potentially lead to optical damage through heating;
- the material contamination. Particles of light absorbing material on optical surfaces or embedded in materials in the optical path in a component can result in local heating when exposed to high light levels;