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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61300-1

July 1997

ICS 33.180.20

English version

**Fibre optic interconnecting devices and passive components
Basic test and measurement procedures
Part 1: General and guidance
(IEC 61300-1:1995)**

Dispositifs d'interconnexion et
composants passifs à fibres optiques
Méthodes fondamentales d'essais et
de mesures
Partie 1: Généralités et guide
(CEI 61300-1:1995 +
corrigendum 1995)

Lichtwellenleiter - Verbindungselemente
und passive Bauteile - Grundlegende
Prüf- und Meßverfahren
Teil 1: Allgemeines und Leitfaden
(IEC 61300-1:1995)

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This European Standard was approved by CENELEC on 1997-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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 the International Standard IEC 61300-1:1995, prepared by SC 86B, Fibre optic interconnecting devices and passive components, of IEC TC 86, Fibre optics, was submitted to the formal vote and was approved by CENELEC as EN 61300-1 on 1997-07-01 without any modification.

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) 1998-06-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1998-06-01

For products which have complied with the relevant national standard before 1998-06-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2003-06-01.

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes A, B and ZA are normative and annex C is informative.

Annex ZA has been added by CENELEC.

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Endorsement notice

SIST EN 61300-1:1999

The text of the International Standard IEC 61300-1:1995 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 60050(731)	1991	International Electrotechnical Vocabulary (IEV) Chapter 731: Optical fibre communication	-	-
IEC 60068-2-1	1990	Environmental testing Part 2: Tests - Tests A: Cold	EN 60068-2-1	1993
IEC 60825-1	1993	Safety of laser products Part 1: Equipment classification, requirements and user's guide	EN 60825-1 + corr. February	1994 1995
IEC 60825-2	1993	Part 2: Safety of optical fibre communication systems	EN 60825-2 + corr. March	1994 1994
IEC 61218	1993	Fibre optics - Safety guide	-	-
IEC 61315	1995	Calibration of fibre optic power meters	EN 61315	1997
ISO 468	1982	Surface roughness - Parameters, their values and general rules for specifying requirements	-	-

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NORME
INTERNATIONALE
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STANDARD

CEI
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Première édition
First edition
1995-02

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

iTeh STANDARD PREVIEW
Partie 1:
Généralités et guide
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Fibre optic interconnecting devices
and passive components –
Basic test and measurement procedures –

Part 1:
General and guidance

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

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Pour prix, voir catalogue en vigueur
For price, see current catalogue

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 1: General and guidance

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 cooperation 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.
- 2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

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International Standard IEC 1300-1 has been prepared by sub-committee 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:

DIS	Report on voting
86B(CO)183	86B/562/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

Annexes A and B form an integral part of this standard.

Annex C is for information only.

INTRODUCTION

The publications of the IEC series 1300 contain fundamental information on environmental testing procedures and measurement procedures relating to fibre optic interconnecting devices and passive components. They are intended to be used to achieve uniformity and reproducibility in environmental testing procedures and measurement procedures.

The term "test procedure" refers to procedures commonly known as environmental tests. The expressions "environmental conditioning" and "environmental testing" refer to the environments to which components or equipment may be exposed so that an assessment may be made of their performance under the conditions of use, transport and storage.

The term "measurement procedure" refers to those measurements which are necessary to assess the physical and optical characteristics of a component and may also be used before, during or after a test procedure to measure the effects of environmental conditioning or testing. The return loss and attenuation tests are examples of measurement procedures.

The requirements for the performance of components or equipment subjected to the test and measurement procedures described in this standard are not included. The detail specification for the device under test defines the allowed performance limits.

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When drafting a detail specification or purchase contract, only those tests should be specified which are necessary for the relevant components or equipment taking into account the technical and economic aspects.

The environmental test procedures are contained in the IEC 1300-2 series and the measurement procedures in the IEC 1300-3 series. Each test or measurement procedure is published as a stand-alone publication so that it may be modified, expanded or cancelled without having an effect on any other test or measurement procedure. However, it should be noted that, where practical, reference is made to other standards as opposed to repeating all or part of already existing standards. As an example, the cold test for fibre optic apparatus refers to IEC 68-2-1, but it also provides other needed information such as purpose, recommended severities and a list of items to be specified.

Multiple methods may be contained in a test or measurement procedure. As an example, several methods of measuring attenuation are contained in the attenuation measurement procedure.

If more than one method is contained in a test or measurement procedure, the referee (often called "reference") method shall be identified.

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

Part 1: General and guidance

1 Scope and object

This part of IEC 1300 contains a series of environmental test and measurement procedures and, in some cases, preferred severities designed to assess the ability of fibre optic interconnecting devices and passive components to perform under expected service conditions. Although primarily intended for such applications, the present part may be used in other fields where desired.

The object of this standard is to provide uniform and reproducible environmental test procedures and measurement procedures, for those preparing specifications for fibre optic interconnecting devices and passive components.

These test and measurement procedures are based on available international engineering experience and judgment, and are designed to provide information on the following properties of components and equipment, such as connectors, splices, switches, attenuators, etc.:

- a) ability to operate within specified limits of temperature, pressure, humidity, mechanical stress or other environmental conditions and certain combinations of these conditions;
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- b) ability to withstand storage and transport;
- c) ability to meet the specified levels of optical performance.

The tests in this standard permit the performance of sample components or equipment to be compared. To assess the overall quality of a production lot, the test procedures should be applied in accordance with a suitable sampling plan and may be supplemented by appropriate additional tests, if necessary.

To provide tests appropriate to the different intensities of an environmental condition, some of the test procedures have a number of degrees of severity. These different degrees of severity are obtained by varying the time, temperature or some other determining factor separately or in combination.

This standard should be used in combination with the detail specification which will define the tests to be used, the required degree of severity for each of them, their sequence, if relevant, and the permissible performance limits. In the event of conflict between this basic standard and the detail specification, the latter will apply.