



Irish Standard  
I.S. EN 61300-2-21:2010

Fibre optic interconnecting devices and  
passive components - Basic test and  
measurement procedures -- Part 2-21:  
Tests - Composite  
temperature/humidity cyclic test (IEC  
61300-2-21:2009 (EQV))

## I.S. EN 61300-2-21:2010

*Incorporating amendments/corrigenda issued since publication:*

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 61300-2-21**

February 2010

ICS 33.180.20

Supersedes EN 61300-2-21:1997

English version

**Fibre optic interconnecting devices and passive components -  
Basic test and measurement procedures -  
Part 2-21: Tests -  
Composite temperature/humidity cyclic test  
(IEC 61300-2-21:2009)**

Dispositifs d'interconnexion et composants  
passifs à fibres optiques – Méthodes  
fondamentales d'essais et de mesures –  
Partie 2-21: Essais – Essai cyclique  
composite température/humidité  
(CEI 61300-2-21:2009)

Lichtwellenleiter -  
Verbindungselemente und passive  
Bauteile -  
Grundlegende Prüf- und Messverfahren -  
Teil 2-21: Prüfungen -  
kombinierte Temperatur/Feuchte, zyklisch  
(IEC 61300-2-21:2009)

This European Standard was approved by CENELEC on 2010-02-01. 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.

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**CENELEC**

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

**Central Secretariat: Avenue Marnix 17, B - 1000 Brussels**

**I.S. EN 61300-2-21:2010**

EN 61300-2-21:2010

- 2 -

## **Foreword**

The text of document 86B/2924/FDIS, future edition 2 of IEC 61300-2-21, 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 61300-2-21 on 2010-02-01.

This European Standard supersedes EN 61300-2-21:1997.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The changes with respect to EN 61300-2-21:1997 are:

- to reconsider the whole parts of the standard;
- to describe the apparatus and procedure in greater details;
- to define with precision the number of 24 cycles in the severity.

The following dates were fixed:

- |  |       |            |
|--|-------|------------|
| – latest date by which the EN has to be implemented<br>at national level by publication of an identical<br>national standard or by endorsement | (dop) | 2010-11-01 |
| – latest date by which the national standards conflicting<br>with the EN have to be withdrawn  | (dow) | 2011-02-01 |

Annex ZA has been added by CENELEC.

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## **Endorsement notice**

The text of the International Standard IEC 61300-2-21:2009 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61300-1	NOTE	Harmonized as EN 61300-1.
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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 60068-2-38	-	Environmental testing - Part 2-38: Tests - Test Z/AD: Composite temperature/humidity cyclic test	EN 60068-2-38	-
IEC 61300-3-1	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-1: Examinations and measurements - Visual examination	EN 61300-3-1	-
IEC 61300-3-4	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-4: Examinations and measurements - Attenuation	EN 61300-3-4	-

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

#### **Part 2-21: Tests – Composite temperature/humidity cyclic test**

### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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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International Standard IEC 61300-2-21 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 1995. It constitutes a technical revision. The changes with respect to the previous edition are:

- to reconsider the whole parts of the standard;
- to describe the apparatus and procedure in greater details;
- to define with precision the number of 24 cycles in the severity.

**I.S. EN 61300-2-21:2010**

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– 3 –

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

FDIS	Report on voting
86B/2924/FDIS	86B/2961/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 the parts of IEC 61300 series, 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 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 publication may be issued at a later date.



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

## **Part 2-21: Tests – Composite temperature/humidity cyclic test**

### **1 Scope**

The purpose of this part of IEC 61300 is to determine the resistance of a fibre optic device to the deteriorative effects of high temperature, humidity and cold conditions.

It is intended to reveal defects in a device under test (DUT) caused by breathing as opposed to absorption of moisture. The test covers the effect of the freezing of trapped water in cracks and fissures as well as condensation. However, the degree of condensation will vary depending on the size and thermal mass of the DUT.

This test differs from other cyclic damp heat tests in that it derives its increased severity from:

- a) a greater number of temperature variations leading to pumping actions in a given time;
- b) a greater cyclic temperature range;
- c) a higher rate of change of temperature;
- d) the inclusion of a number of excursions to sub-zero temperature.

This type of test is particularly important for fibre optic devices made of a variety of different materials.

### **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 60068-2-38 *Environmental testing – Part 2-38: Tests – Test Z/AD: Composite temperature/humidity cyclic test*

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 61300-3-4, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-4: Examinations and measurements – Attenuation*

### **3 General description**

This procedure is conducted in accordance with IEC 60068-2-38, test Z/AD. The DUT is placed in a humidity chamber and subjected to 10 temperature-humidity cycles, each of 24 h duration. During any five of the first nine cycles after exposure to the humidity subcycle, the DUT shall be subjected to cold.

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