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INTERNATIONAL STANDARD

Fibre optic interconnecting devices and passive components – Basic test and measurement procedures –
Part 2-21: Tests – Composite temperature/humidity cyclic test

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

FOREWORD

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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.

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- withdrawn,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.