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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-47: Tests – Thermal shocks

Dispositifs d'interconnexion et composants passifs fibroniques – Procédures fondamentales d'essais et de mesures – Partie 2-47: Essais – Chocs thermiques

IEC 61300-2-47:2016-05(en-fr)

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

Part 2-47: Tests – Thermal shocks

FOREWORD

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International Standard IEC 61300-2-47 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This fourth edition cancels and replaces the third edition published in 2010. This edition constitutes a technical revision.

This edition includes the following significant technical change with respect to the previous edition: review of temperature limit in the test severity.

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

CDV	Report on voting
86B/3879/CDV	86B/3937A/RVC

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.

The reader's attention is drawn to the fact that Annex A lists an "in some-country" clause on differing practices of a less permanent nature relating to the subject of this standard.

A list of all parts in the IEC 61300 series, published 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 stability 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- withdrawn,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.

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

Part 2-47: Tests – Thermal shocks

1 Scope

This part of IEC 61300 details a procedure for determining the suitability of a fibre optic device to withstand the effects of thermal shock. In practice, this means a very short change over time between extreme temperatures.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-14, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 61300-3-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-1: Examinations and measurements – Visual examination*

3 General description

The procedure described in this standard is conducted in accordance with IEC 60068-2-14, test Na. The device under test (DUT) is first subjected to one extreme of temperature for a given period of time. It is then subjected to the other extreme of temperature for an equal period of time.

Two test methods are considered: manual or automatic. Both methods are considered as equivalent. The reference method is the automatic one.

4 Apparatus

4.1 Testing chambers

a) Two separate chambers or one rapid temperature change rate may be used. If two chambers are used, one for the low temperature and one for the high temperature, they are located such as to allow transfer of the DUT from one chamber to the other within the prescribed time. Either manual or automatic transfer methods may be used.

b) The chambers shall be capable of maintaining the atmosphere at the appropriate temperature for the test in any region where the DUT is placed.

c) The absolute humidity of the atmosphere inside the chambers should not exceed 20 g/m^3.

   At the temperature of 60 °C and standard air pressure, the relative humidity should be less than 16 %.

d) The temperature of the walls of the hot and cold chambers shall not differ by more than 3 % and 8 % respectively from the specified ambient temperature of the test, expressed in Kelvin (tolerance of 3 % for high temperature, and 8 % for low temperature).