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IEC 60068-3-6

Edition 2.0 2018-01

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 19.040

ISBN 978-2-8322-5208-6

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ENVIRONMENTAL TESTING –**Part 3-6: Supporting documentation and guidance –
Confirmation of the performance of temperature/humidity chambers****FOREWORD**

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International Standard IEC 60068-3-6 has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test.

This second edition cancels and replaces the first edition published in 2001. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Confirmation procedures are clarified.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
104/760/FDIS	104/779/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

IEC 60068-3-6 is to be read in conjunction with IEC 60068-3-5:2001 and IEC 60068-3-7:2001.

A list of all parts in the IEC 60068 series, published under the general title *Environmental testing*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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INTRODUCTION

IEC 60068 (all parts) contains fundamental information on environmental testing procedures and severities.

The expression "environmental conditioning" or "environmental testing" covers the natural and artificial environments to which components or equipment may be exposed so that an assessment can be made of their performance under conditions of use, transport and storage to which they may be exposed in practice.

Temperature and humidity chambers used for "environmental conditioning" or "environmental testing" are not described in any publication, although the method of maintaining and measuring temperature and/or humidity has a great influence on test results. The physical characteristics of temperature and humidity chambers can also influence test results.

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ENVIRONMENTAL TESTING –

Part 3-6: Supporting documentation and guidance – Confirmation of the performance of temperature/humidity chambers

1 Scope

This part of IEC 60068 provides a uniform and reproducible method of confirming that temperature and humidity test chambers, without specimens, conform to the requirements specified in climatic test procedures of IEC 60068-2 (all parts). This document is intended for users when conducting regular chamber performance monitoring.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60068-3-5:2001, *Environmental testing – Part 3-5: Supporting documentation and guidance – Confirmation of the performance of temperature chambers*

IEC 60068-3-7:2001, *Environmental testing – Part 3-7: Supporting documentation and guidance – Measurements in temperature chambers for tests A and B (with load)*

IEC 60068-3-11, *Environmental testing – Part 3-11: Supporting documentation and guidance – Calculation of uncertainty of conditions in climatic test chambers*

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3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

NOTE 1 For terms and definitions regarding temperature testing, refer to IEC 60068-3-5.

NOTE 2 Unless otherwise specified, "humidity" is relative humidity (RH).

3.1 temperature/humidity chamber

enclosure or space in some parts of which the temperature/humidity conditions specified in IEC 60068-2 (all parts) can be achieved

Note 1 to entry: See IEC 60068-3-4.

3.2 absolute humidity

mass of water vapour present in a unit volume of moist air

Note 1 to entry: Typical units of measure are g/m³.

3.3**dewpoint** T_d

temperature at which the saturation vapour pressure over water is equal to the partial pressure of the water vapour in the air

3.4**saturation vapour pressure**

maximum possible pressure exerted by a water vapour in equilibrium with its solid or liquid phase, such that any increase will initiate within the vapour a change to a more condensed state

3.5**partial vapour pressure**

contribution of water vapour in a given volume of air at a constant pressure and temperature of the atmosphere

3.6**relative humidity****RH**

ratio of the partial vapour pressure, divided by the saturation vapour pressure of a given volume of air at a constant temperature, expressed as percentage

Note 1 to entry: The most popular method to express the water vapour content in air is relative humidity.

3.7**temperature/humidity stabilization**

state of maintaining temperature/humidity within specified tolerance for a specified time at specified points in the working space

3.8**achieved humidity**

stabilized humidity which desired humidity at the centre of the working space achieves within specified tolerance

3.9**climatogram**

graphic display of combined temperature with relative humidity

Note 1 to entry: See Figure 9.

3.10**relative humidity fluctuation**

difference, after stabilization, between the maximum and minimum humidity at specified points in the working space during a specified interval of time

Note 1 to entry: For calibration, the centre point of working space may be used.

3.11**relative humidity gradient**

maximum difference in mean humidity value, after stabilization, at any moment in time between two separate points in the working space

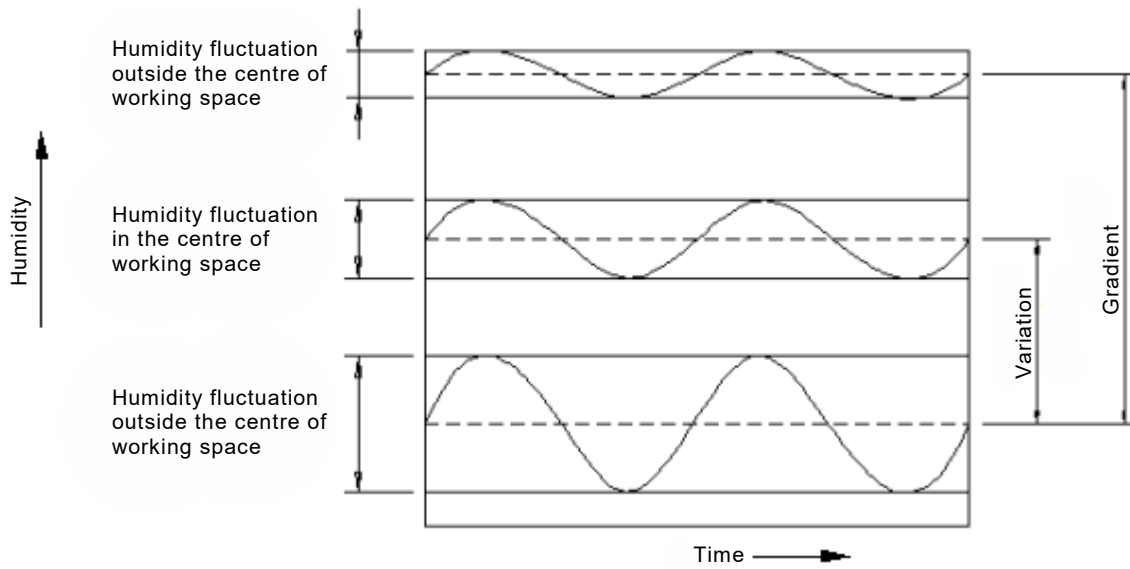
Note 1 to entry: The absolute humidity of the air can be considered to be the same throughout the working space.

Note 2 to entry: See Figure 1.

3.12**relative humidity variation in space**

difference in mean value, after stabilization, at any moment in time between the humidity at the centre of the working space and at any other point in the working space

Note 1 to entry: See Figure 1.



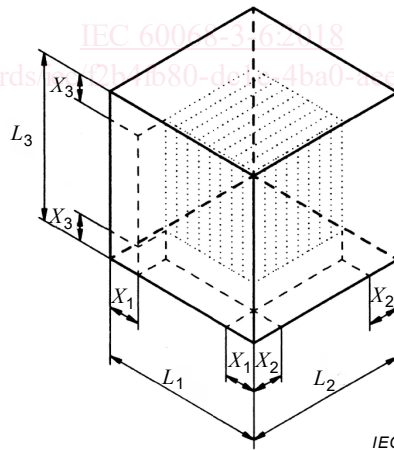
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Figure 1 – Example of humidity differences

3.13 working space

part of the chamber (in which the specified conditions can be maintained within the specified tolerances

Note 1 to entry: See Figure 2 and Table 1.



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NOTE Practical dimensions of working space see Table 1.

Figure 2 – Working space