IEC 60068-3-5

Edition 2.0 2018-01
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Environmental testing –
Part 3-5: Supporting documentation and guidance – Confirmation of the performance of temperature chambers

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 19.040

ISBN 978-2-8322-5318-2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ENVIRONMENTAL TESTING –

Part 3-5: Supporting documentation and guidance – Confirmation of the performance of temperature chambers

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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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

International Standard IEC 60068-3-5 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
104/759/FDIS	104/778/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.

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.

IMPORTANT – The "colour inside" logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.

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 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 chambers can also influence test results.

ENVIRONMENTAL TESTING –

Part 3-5: Supporting documentation and guidance – Confirmation of the performance of temperature chambers

1 Scope

This part of IEC 60068 provides a uniform and reproducible method of confirming that temperature test chambers, without ~~load~~ specimens, conform to the requirements specified in climatic test procedures of IEC 60068-2 (all parts) and other standards. 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 60068-1, *Environmental testing – Part 1: General and guidance*~~

IEC 60068-2 (all parts), *Environmental testing – Part 2: Tests*

~~IEC 60068-3-6, *Environmental testing – Part 3-6: Supporting documentation and guidance – Confirmation of the performance of temperature/humidity chambers*~~

IEC 60068-3-7, *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*

~~IEC 60584-1, *Thermocouples – Part 1: Reference tables*~~

~~IEC 60751, *Industrial platinum resistance thermometer sensors*~~

~~ISO 10012-1, *Quality assurance requirements for measuring equipment – Part 1: Metrological confirmation system for measuring equipment*~~

~~ISO 10012-2, *Quality assurance for measuring equipment – Part 2: Guidelines for control of measurement processes*~~

IEC 60068-3-5

Edition 2.0 2018-01

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Environmental testing – Part 3-5: Supporting documentation and guidance – Confirmation of the performance of temperature chambers

Essais d'environnement – Partie 3-5: Documentation d'accompagnement et guide – Confirmation des performances des chambres d'essai en température

IEC 60068-3-5:2018-01(en-fr)

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ENVIRONMENTAL TESTING –

Part 3-5: Supporting documentation and guidance – Confirmation of the performance of temperature chambers

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International Standard IEC 60068-3-5 has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test.

This bilingual version (2019-05) corresponds to the monolingual English version, published in 2018-01.

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

a) Confirmation procedures are clarified.

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FDIS	Report on voting
104/759/FDIS	104/778/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.

The French version of this standard has not been voted upon.

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

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ENVIRONMENTAL TESTING –

Part 3-5: Supporting documentation and guidance – Confirmation of the performance of temperature chambers

1 Scope

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IEC 60068-2 (all parts), *Environmental testing – Part 2: Tests*

IEC 60068-3-7, *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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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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ESSAIS D'ENVIRONNEMENT –

Partie 3-5: Documentation d'accompagnement et guide – Confirmation des performances des chambres d'essai en température

AVANT-PROPOS

1) La Commission Electrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. A cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
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La Norme internationale IEC 60068-3-5 a été établie par le comité d'études 104 de l'IEC: Conditions, classification et essais d'environnement.

La présente version bilingue (2019-05) correspond à la version anglaise monolingue publiée en 2018-01.

Cette deuxième édition annule et remplace la première édition, parue en 2001. Elle constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) Les procédures de confirmation sont clarifiées.

Le texte anglais de cette norme est issu des documents 104/759/FDIS et 104/778/RVD.

Le rapport de vote 104/778/RVD donne toute information sur le vote ayant abouti à l'approbation de cette norme.

La version française de cette norme n'a pas été soumise au vote.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

Une liste de toutes les parties de la série IEC 60068, publiées sous le titre général *Essais d'environnement*, peut être consultée sur le site web de l'IEC.

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INTRODUCTION

L'IEC 60068 (toutes les parties) contient des informations fondamentales sur les méthodes d'essai d'environnement et les sévérités d'essai.

L'expression «conditionnement climatique» ou «essai d'environnement» couvre les environnements naturels et artificiels auxquels les composants ou les matériels peuvent être exposés dans le but qu'une évaluation de leurs performances puisse être réalisée dans les conditions d'utilisation, de transport et de stockage qu'ils peuvent rencontrer dans la pratique.

Les chambres d'essai en température utilisées pour les «conditionnements climatiques» ou les «essais d'environnement» ne sont décrites dans aucune publication, alors que les méthodes pour maintenir et mesurer la température et/ou l'humidité ont une grande importance sur les résultats d'essai. Les caractéristiques physiques des chambres d'essai en température peuvent également influencer les résultats d'essai.

ESSAIS D'ENVIRONNEMENT –

Partie 3-5: Documentation d'accompagnement et recommandations – Confirmation des performances des chambres d'essai en température

1 Domaine d'application

La présente partie de l'IEC 60068 fournit une méthode uniforme et reproductible pour confirmer que les chambres d'essai en température, sans spécimens, sont conformes aux exigences spécifiées dans les méthodes d'essai climatique de l'IEC 60068-2 (toutes les parties) et d'autres normes. Ce document est destiné à aider les utilisateurs lorsqu'ils réalisent des contrôles réguliers des performances de leur chambre d'essai.

2 Références normatives

Les documents suivants cités dans le texte constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60068-2 (toutes les parties), *Essais d'environnement – Part 2: Essais*

IEC 60068-3-7, *Essais d'environnement – Partie 3-7: Documentation d'accompagnement et guide – Mesures dans les chambres d'essai en température pour les essais A et B (avec charge)*

IEC 60068-3-11, *Essais d'environnement – Partie 3-11: Documentation d'accompagnement et guide – Calcul de l'incertitude des conditions en chambres d'essais climatiques*