

# REDLINE VERSION



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**Environmental testing –**

**Part 2-5: Tests – Test Sa: Simulated solar radiation at ground level and  
guidance for solar radiation testing and weathering**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## ENVIRONMENTAL TESTING –

**Part 2-5: Tests – Test Sa: Simulated solar radiation at ground level and guidance for solar radiation testing and weathering**

## 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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**DISCLAIMER**

**This Redline version is not an official IEC Standard and is intended only to provide the user with an indication of what changes have been made to the previous version. Only the current version of the standard is to be considered the official document.**

**This Redline version provides you with a quick and easy way to compare all the changes between this standard and its 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 60068-2-5 has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test.

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

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

- a) the title of this document has been modified;
- b) the current thermal effect test method, specified as "Test method Sa" has been retained and the weathering test method specified as "Test method Sb" has been added.

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

CDV	Report on voting
104/735/CDV	104/789/RVC

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

This part of IEC 60068 describes methods of simulation designed to examine the effect of solar radiation on equipment and components at the surface of the earth. The main characteristics of the environment to be simulated are the spectral ~~energy distribution of the sun~~ irradiance of solar radiation, as observed at the earth's surface, and the intensity of received energy, in combination with controlled temperature conditions. However, ~~it may be necessary to consider~~ the combination of solar radiation with other environments, for example temperature, humidity, water spray (to simulate wetting) and air velocity, should be considered. Two different methods are described, one aiming at the thermal effects, a second aiming at the weathering effects.

## ENVIRONMENTAL TESTING –

### Part 2-5: Tests – Test Sa: Simulated solar radiation at ground level and guidance for solar radiation testing and weathering

#### 1 ~~Scope and object~~

This part of IEC 60068-2 ~~provides guidance~~ specifies the methods for testing equipment or components under simulated solar radiation conditions.

This document is applicable to the equipment and components at the surface of the earth.

The purpose of testing is to investigate to what extent the equipment or components are affected by simulated solar radiation in the presence of moisture to reproduce the weathering effects (temperature, humidity and/or wetting) that occur when they are exposed in actual end-use environments to daylight or to daylight filtered through window glass. This document specifies two test methods, test method Sa: thermal effect test, and test method Sb: weathering test.

~~The method of combined tests detects electrical, mechanical or other physical variations.~~

#### 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 60068-2-1, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-2, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

~~IEC 60068-2-78, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*~~

~~CIE 20:1972, *Recommendation for the integrated irradiance and the spectral distribution of simulated solar radiation for testing purposes*~~

~~CIE 85:1985, *Solar spectral irradiance*~~

# INTERNATIONAL STANDARD

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**Environmental testing –  
Part 2-5: Tests – Test S: Simulated solar radiation at ground level and guidance  
for solar radiation testing and weathering**



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

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