

SLOVENSKI STANDARD

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Okoljski preskusi - 2-5. del: Preskusi - Preskus Sa: Simulacija prizemnega sončnega obsevanja in navodilo za preskušanje sočnega obsevanja (IEC 60068-2-5:2010 + popravek Dec. 2010)

Environmental testing - Part 2-5: Tests - Test Sa: Simulated solar radiation at ground level and guidance for solar radiation testing (IEC 60068-2-5:2010 + corrigendum Dec. 2010)

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Umgebungseinflüsse - Teil 2-5: Prüfverfahren - Prüfung Sa: Nachgebildete Sonnenbestrahlung in Bodennähe und Leitfaden zur Sonnenstrahlung (IEC 60068-2-5:2010 + corrigendum Dec. 2010)

Essais d'environnement - Partie 2-5: Essais - Essai Sa: Rayonnement solaire simulé au niveau du sol et guide pour les essais de rayonnement solaire (CEI 60068-2-5:2010 + corrigendum Dec. 2010)

Ta slovenski standard je istoveten z: EN 60068-2-5:2011

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60068-2-5

February 2011

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Supersedes EN 60068-2-5:1999, EN 60068-2-9:1999

English version

**Environmental testing -
Part 2-5: Tests -
Test Sa: Simulated solar radiation at ground level and guidance for solar
radiation testing**
(IEC 60068-2-5:2010 + corrigendum Dec. 2010)

Essais d'environnement -
Partie 2-5: Essais -
Essai Sa: Rayonnement solaire simulé au
niveau du sol et guide pour les essais de
rayonnement solaire
(CEI 60068-2-5:2010 + corrigendum Dec.
2010)

Umgebungseinflüsse -
Teil 2-5: Prüfverfahren -
Prüfung Sa: Nachgebildete
Sonnenbestrahlung in Bodennähe und
Leitfaden zur Sonnenstrahlung
(IEC 60068-2-5:2010 + corrigendum Dec.
2010)

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This European Standard was approved by CENELEC on 2011-01-02. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 104/500/FDIS, future edition 2 of IEC 60068-2-5, prepared by IEC TC 104, Environmental conditions, classification and methods of test, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60068-2-5 on 2011-01-02.

This European Standard supersedes EN 60068-2-5:1999 and EN 60068-2-9:1999.

The main changes with respect to EN 60068-2-5:1999 are listed below:

This EN 60068-2-5:2011 will make the reading much easier, partly because it includes guidance for solar radiation testing, previously published in a separate publication, EN 60068-2-9, and partly because it now allows the use of all lamps specified in CIE 85 and published in 1985 by the International commission on Illumination.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2011-10-02
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2014-01-02

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60068-2-5:2010 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

ISO 4892-1	NOTE	Harmonized as EN ISO 4892-1.
ISO 4892-2	NOTE	Harmonized as EN ISO 4892-2.
ISO 4892-3	NOTE	Harmonized as EN ISO 4892-3.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1	-	Environmental testing - Part 1: General and guidance	EN 60068-1	-
IEC 60068-2-1	-	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	-
IEC 60068-2-2	-	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	-
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
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	-	-

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IEC 60068-2-5

Edition 2.0 2010-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Environmental testing –

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

Essais d'environnement –

Partie 2-5: Essais – Essai Sa: Rayonnement solaire simulé au niveau du sol et guide pour les essais de rayonnement solaire

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CONTENTS

FOREWORD.....	3
INTRODUCTION	5
1 Scope and object.....	6
2 Normative references.....	6
3 Terms and definitions.....	6
4 General	7
4.1 Irradiance.....	7
4.2 Spectral distribution	7
5 Conditioning.....	8
5.1 General.....	8
5.2 Temperature.....	8
5.3 Humidity.....	9
5.4 Ozone and other contaminating gases.....	9
5.5 Surface contamination	9
5.6 Mounting of specimen.....	9
5.7 Test facility.....	9
5.8 Test apparatus.....	9
6 Initial measurement.....	10
7 Testing	10
7.1 General.....	10
7.2 Procedure A – 24 h cycle, 8 h irradiation and 16 h darkness, repeated as required	10
7.3 Procedure B – 24 h cycle, 20 h irradiation and 4 h darkness, repeated as required	10
7.4 Procedure C – Continuous irradiation as required.....	11
8 Final measurements.....	12
9 Information to be given in the relevant specification	12
10 Information to be given in the test report	13
Annex A (informative) Interpretation of results	14
Annex B (informative) Radiation source	16
Annex C (informative) Instrumentation	17
Bibliography.....	19
Figure 1 – Global solar spectral irradiance at the earth’s surface for relative air mass	8
Figure 2 – Test procedures A, B and C	11
Table 1 – Spectral energy distribution.....	8
Table C.1 – Calculated spectral distribution values.....	18

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ENVIRONMENTAL TESTING –

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

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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International Standard IEC 60068-2-5 has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test.

This second edition cancels and replaces the first edition of IEC 60068-2-5, published in 1975, and IEC 60068-2-9, published in 1975, and constitutes a technical revision.

The main changes with respect to the previous edition are listed below:

This second edition of IEC 60068-2-5 will make the reading much easier, partly because it includes guidance for solar radiation testing, previously published in a separate publication, IEC 60068-2-9, and partly because it now allows the use of all lamps specified in CIE 85 and published in 1985 by the International commission on Illumination.

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

FDIS	Report on voting
104/500/FDIS	104/515/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 in the IEC 60068 series, under the general title *Environmental testing*, 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.

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The contents of the corrigendum of December 2010 have been included in this copy.

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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, 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 a combination of solar radiation with other environments, e.g. temperature, humidity, air velocity, etc.

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ENVIRONMENTAL TESTING –

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

1 Scope and object

This part of IEC 60068 provides guidance for testing equipment or components under solar radiation conditions.

The purpose of testing is to investigate to what extent the equipment or components are affected by solar radiation.

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

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 60068-1, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-1, *Environmental testing – Part 2-1: Tests – Test A: Cold*
<https://standards.iteh.ai/catalog/standards/sist/37642604-372f-456a-8c1b-d6d5a79718a1/sist-en-60068-2-5-2011>

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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60068-1, as well as the following, apply.

3.1

air mass

path length that light from a celestial object takes through the earth's atmosphere relative to the length where air mass = 1

NOTE The air mass is $1/\sin(\gamma)$, where γ is the elevation angle of the sun.

3.2

black standard temperature

BST

characteristic value of the specimen surface temperature

NOTE Black standard temperature as measured by a black standard thermometer (see ISO 4892-1).