AS 60068.2.5—2003
IEC 60068-2-5:1975

Australian Standard™

Environmental testing

Part 2.5: Tests—Test Sa: Simulated solar radiation at ground level

Standards Australia

This Australian Standard was prepared by Committee EL-026, Protective Enclosures and Environmental Testing for Electric/Electronic Equipment. It was approved on behalf of the Council of Standards Australia on 14 February 2003 and published on 20 March 2003.

The following are represented on Committee EL-026:

Australian Chamber of Commerce and Industry

Australian Electrical and Electronic Manufacturer's Association

Electrical Compliance Testing Association

Electrical Regulatory Authorities Council

Electricity Supply Association of Australia

Testing Interests (Australia)

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-026, Protective Enclosures and Environmental Testing for Electric/Electronic Equipment to supersede AS 1099.2.Sa—1980, *Basic environmental testing procedures for electrotechnology* Part 2Sa: *Tests—Test Sa—Simulated solar radiation*.

The objective of this Standard is to provide the electrotechnology industry with a complete set of environmental test procedures published as a series under AS 60068 *Environmental testing*. This Standard is Part 2.5 of that series.

This Standard is identical with, and has been reproduced, from IEC 60068-2-5:1975, *Environmental testing – Part 2: Tests – Test Sa: Simulated solar radiation at ground level*.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'this international standard' should read 'this Australian Standard'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

(d) Any French text on figures should be ignored.

In this Standard, the following print types are used:

– requirements proper: in arial type;

– *test specifications: in italic type;*

– explanatory matter: in smaller arial type.

Any international Standard referenced should be replaced by an equivalent Australian Standard when one is available. The availability of equivalent Australian Standards can be determined either from the Standards Australia catalogue or from the Standards Australia website (www.standards.com.au).

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Warning note

Intending users of this test are directed to the health hazards associated with tests of this nature and should therefore read clause 9 of IEC 60068-2-9.

1 Object

To determine the effects (thermal, mechanical, chemical, electrical, etc.), produced on equipment and components as a result of exposure to solar radiation under the conditions experienced at the surface of the earth.

2 Initial measurements

The specimen(s) shall be visually inspected and electrically and mechanically checked, as required by the relevant specification.

3 Test apparatus

3.1 The enclosure in which the tests are to be carried out shall be provided with means for obtaining, over the prescribed irradiation measurement plane, an irradiance of 1 120 kW/m^2 ± 10 % with the spectral distribution given in table I. The value of 1 120 kW/m^2 shall include any radiation *reflected* from the test enclosure and received by the specimen under test. It should not include long-wave infra-red radiation *emitted* by the test enclosure; see 6.1 of IEC 60068-2-9.

NOTE – Where only the thermal effects of solar radiation are of interest, see 2.2 and 2.3 of IEC 60068-2-9.

3.2 Means shall also be provided whereby the specified conditions of temperature, air flow and humidity can be maintained within the enclosure.

NOTE – Circulation of air can significantly reduce the temperature rise of specimens; see 4.5 of IEC 60068-2-9.

3.3 The temperature within the enclosure shall be measured (with adequate shielding from radiated heat) at a point or points in a horizontal plane 0 mm to 50 mm below the prescribed irradiation measurement plane, at half the distance between the specimen under test and the wall of the enclosure, or at 1 m from the specimen, whichever is the lesser.

4 Conditioning

4.1 The specimen to be tested shall be placed either on raised supports or on a specified substrate of known thermal conductivity and thermal capacity within the enclosure and so spaced from other specimens as to avoid shielding from the source of radiation or re-radiated heat; see 4.6 of IEC 60068-2-9.

4.2 During the entire test, the irradiation, the temperature within the enclosure, the humidity and any other specified environmental conditions shall be maintained at the levels appropriate to the particular test procedure as called for in the relevant specification.