

# INTERNATIONAL STANDARD



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## Electronic paper displays – Part 4-2: Environmental test methods





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**Electronic paper displays –  
Part 4-2: Environmental test methods**

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

|             |                  |
|-------------|------------------|
| CDV         | Report on voting |
| 110/730/CDV | 110/773A/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 62679 series, published under the general title *Electronic paper displays*, can be found on the IEC website.

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# ELECTRONIC PAPER DISPLAYS –

## Part 4-2: Environmental test methods

### 1 Scope

This part of IEC 62679 specifies the environmental conditions to determine the environmental reliability of electronic paper display (EPD) panels and/or modules for storage under the assumed usage environment. The scope of this document is restricted to EPDs using either segment, passive, or active matrix with either monochromatic or colour type displays. The measuring methods are intended for EPDs operated in a reflective mode.

### 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 62679-1-1, *Electronic paper displays – Part 1-1: Terminology*

IEC 62679-3-1, *Electronic paper displays – Part 3-1: Optical measuring methods*

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

IEC 60068-2-38:2009, *Environmental testing – Part 2: Tests – Test Z/AD: Composite temperature/humidity cyclic test*

CIE 085-1989, *Solar spectral irradiance*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62679-1-1, IEC 60068-1 and the following 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>

#### 3.1

##### **air mass**

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

Note 1 to entry: The air mass is  $1/\sin(\gamma)$ , where  $\gamma$  is the elevation angle of the sun.

#### 3.2

##### **black standard temperature**

temperature of an insulated stainless-steel plate, having a black coating