

This is a preview - click here to buy the full publication



IEC 62715-6-2

Edition 1.0 2017-05

INTERNATIONAL STANDARD

**Flexible display devices –
Part 6-2: Environmental testing methods**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 31.120

ISBN 978-2-8322-4370-1

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	7
4 Structure of measuring equipment	7
5 Standard conditions.....	7
5.1 Standard reference atmosphere.....	7
5.2 Standard atmospheric conditions for referee measurements and tests	7
5.3 Standard atmospheric conditions for measurements and tests	8
5.4 Recovery conditions.....	8
5.5 Standard atmospheric conditions for assisted drying.....	8
5.6 Operating conditions.....	8
5.7 Standard flexible display test configuration	8
6 Measurements and analysis	9
7 Environmental testing methods.....	9
7.1 General.....	9
7.2 Storage at high temperature.....	9
7.2.1 Purpose.....	9
7.2.2 Test conditions	9
7.3 Storage at low temperature	10
7.3.1 Purpose.....	10
7.3.2 Test conditions	10
7.4 Temperature change, storage	10
7.4.1 Purpose.....	10
7.4.2 Rapid change of temperature.....	10
7.4.3 Specified change rate of temperature	10
7.5 Damp heat, steady state, storage.....	11
7.5.1 Purpose.....	11
7.5.2 Test conditions	11
7.6 Damp heat, cyclic, storage.....	11
7.6.1 Purpose.....	11
7.6.2 Test conditions	11
7.7 Operation at high temperature	12
7.7.1 Purpose.....	12
7.7.2 Test conditions	12
7.8 Operation at low temperature.....	12
7.8.1 Purpose.....	12
7.8.2 Test conditions	12
7.9 Damp heat, steady state, operational.....	13
7.9.1 Purpose.....	13
7.9.2 Test conditions	13
Bibliography.....	14

Table 1 – Standard conditions for referee measurements and tests	7
Table 2 – Assisted drying condition.....	8
Table 3 – Examples of the damp heat, steady state test conditions.....	11

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FLEXIBLE DISPLAY DEVICES –

Part 6-2: Environmental testing methods

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62715-6-2 has been prepared by IEC technical committee 110: Electronic display devices.

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

FDIS	Report on voting
110/860/FDIS	110/871/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 62715 series, published under the general title *Flexible display devices*, 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.

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

FLEXIBLE DISPLAY DEVICES –

Part 6-2: Environmental testing methods

1 Scope

This part of IEC 62715 specifies testing methods for evaluating the environmental endurance of flexible display panels and modules for use, storage and transport under assumed usage environment. This part of IEC 62715 is applicable to flexible display panels and modules such as liquid crystal display devices (LCDs), electric paper display devices (EPDs), and organic light emitting diode display devices (OLEDs). This part of IEC 62715 will also be suitable for flexible panel or module with mechanical operation.

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 60068-1:2013, *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 60068-2-14, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-30, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

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

IEC 62341-6-2, *Organic light emitting diode (OLED) displays – Part 6-2: Measuring methods of visual quality and ambient performance*

IEC 62341-6-3, *Organic light emitting diode (OLED) displays – Part 6-3: Measuring methods of image quality*

IEC 62715-1-1, *Flexible display devices – Part 1-1: Terminology and letter symbols*

IEC 62715-5-1¹, *Flexible display devices – Part 5-1: Measuring methods of optical performance*

IEC 62715-5-3², *Flexible display devices – Part 5-3: Visual assessment*

¹ Under preparation. Stage at the time of publication: IEC/FDIS IEC 62715-5-1:2017.

² Under preparation. Stage at the time of publication: IEC/FDIS IEC 62715-5-3:2017.

IEC 62715-6-1, *Flexible display devices – Part 6-1: Mechanical stress test methods*

IEC 62679-3-2, *Electronic paper display – Part 3-2: Measuring method – Electro-optical*