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Flexible display devices –
Part 5-1: Measuring methods of optical performance

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International Standard IEC 62715-5-1 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
110/859/FDIS	110/870/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 of 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- withdrawn,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.

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INTRODUCTION

This part of IEC 62715 was designed for the standardization of measuring methods and detailed setup conditions that are used to characterize the optical performance of flexible display devices.

The surface conditions and shape of flexible displays can change depending on the application. For example, a smart watch may have a fixed convex display, a cell phone or TV a fixed concave display, and a bendable display may have either a concave or convex shape with a variable radius of curvature. Up to now, all of these displays would usually be characterized in their flat state. However, since it is possible that mechanical stress induced by bending the display can change its optical characteristics, the display should be measured in its designed bent state. This ensures that the display's optical performance is representative of its intended application. This document specifies the necessary conditions and methods to measure the optical performance of a display in a bent state.

FLEXIBLE DISPLAY DEVICES –

Part 5-1: Measuring methods of optical performance

1 Scope

This part of IEC 62715 specifies the standard measuring conditions and measuring methods for determining the optical performance of flexible displays in the dark or under ambient illumination. This document mainly applies to display modules that are bendable about one axis. The display is measured in a static mechanical state. The measuring methods apply to monochrome or colour displays with a single radius of curvature of 35 mm or greater.

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 60050-845, *International Electrotechnical Vocabulary – Part 845: Lighting* (available at <http://www.electropedia.org>)

IEC 61966-2-1, *Multimedia systems and equipment – Colour measurement and management – Part 2-1: Colour management – Default RGB colour space – sRGB*

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

IEC 62341-6-2:2015, *Organic light emitting diode (OLED) displays – Part 6-2: Measuring methods of visual quality and ambient performance*

IEC 62679-3-1:2014, *Electronic paper displays – Part 3-1: Optical measuring methods*

IEC TR 62728, *Display technologies – LCD, PDP and OLED – Overview and explanation of differences in terminology*

CIE 15:2004, *Colorimetry*