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

Afficheurs à diodes électroluminescentes organiques (OLED) – Partie 6-2: Méthodes de mesure de la qualité visuelle et des caractéristiques de fonctionnement sous conditions ambiantes

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ORGANIC LIGHT EMITTING DIODE (OLED) DISPLAYS –

Part 6-2: Measuring methods of visual quality and ambient performance

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

FDIS	Report on voting
110/338/FDIS	110/353/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.

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ORGANIC LIGHT EMITTING DIODE (OLED) DISPLAYS –

Part 6-2: Measuring methods of visual quality and ambient performance

1 Scope

This part of IEC 62341 specifies the standard measurement conditions and measurement methods for determining the visual quality and ambient performance of organic light-emitting diode (OLED) display modules and panels. This document mainly applies to colour display modules.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050 (all parts), *International Electrotechnical Vocabulary*
(available at <<http://www.electropedia.org>>)

IEC 60081, *Double-capped fluorescent lamps – Performance specifications*

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

IEC 62341-1-2, *Organic light-emitting diode displays – Part 1-2: Terminology and letter symbols*

CIE 15:2004, *Colorimetry*

3 Terms, definitions and abbreviations

For the purposes of this document, the terms, definitions and abbreviations given in IEC 62341-1-2 and IEC 60050-845:1987 as well as the following apply.

3.1 Terms and definitions

3.1.1

visual inspection

a means for checking image quality by human visual observation for classification and comparison against limit sample criteria

3.1.2

subpixel defect

for colour displays, all or part of a single subpixel, the minimum colour element, which is visibly brighter or darker than surrounding subpixels of the same colour. They are classified depending on the number and configuration of multiple subpixel defects within a region of the display

3.1.3**dot defect**

for monochromatic displays, all or part of a single subpixel, the minimum dot element, which is visibly brighter or darker than surrounding dots. They are classified depending on the number and configuration of multiple subpixel defects within a region of the display

3.1.4**bright subpixel defect**

subpixels or dots which are visibly brighter than surrounding subpixels of the same colour when addressed with a uniform dark or grey background

3.1.5**dark subpixel defect**

subpixels or dots are visibly darker than surrounding subpixels of the same colour when addressed with a uniform bright background (e.g. > 50 % full screen luminance)

3.1.6**partial subpixel defect**

subpixel or dot with part of the emission area obscured such that a visible difference in brightness is observed in comparison with neighbouring subpixels of the same colour

3.1.7**clustered subpixel defects**

subpixel or dot defects gathered in specified area or within a specified distance. Also known as "close subpixel defect"

3.1.8**unstable subpixel**

subpixel or dot that changes luminance in an uncontrollable way

3.1.9**pixel shrinkage**

reduction in the active emissive area of one or more subpixels (or dots) over time

3.1.10**panel edge shrinkage**

reduction in the active emissive area from the edges of the display area over time

3.1.11**line defect**

vertical or horizontal bright or dark line parallel to a row or column observed against a dark or bright background, respectively

3.1.12**bright line defect**

a line appearing bright on a screen displaying a uniform dark or grey pattern

3.1.13**dark line defect**

a line appearing dark when displayed with a uniform bright or grey pattern

3.1.14**mura**

region(s) of luminance and colour non-uniformity that generally vary more gradually than subpixel level defects. For classification, the maximum dimension should be less than one fourth of the display width or height

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