



Irish Standard
I.S. EN 62341-6-1:2011

Organic light emitting diode (OLED) displays -- Part 6-1: Measuring methods of optical and electro-optical parameters (IEC 62341-6-1:2009 (EQV))

I.S. EN 62341-6-1:2011

Incorporating amendments/corrigenda issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

<i>This document replaces:</i>	<i>This document is based on:</i> EN 62341-6-1:2011	<i>Published:</i> 4 February, 2011
This document was published under the authority of the NSAI and comes into effect on: 15 February, 2011		ICS number: 31.260
NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
Údarás um Chaighdeáin Náisiúnta na hÉireann		

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 62341-6-1

February 2011

ICS 31.260

English version

**Organic light emitting diode (OLED) displays -
Part 6-1: Measuring methods of optical and electro-optical parameters
(IEC 62341-6-1:2009)**

Afficheurs à diodes électroluminescentes
organiques (OLED) -
Partie 6-1: Méthodes de mesure des
paramètres optiques et électro-optiques
(CEI 62341-6-1:2009)

Anzeigen mit organischen
lichtemittierenden Dioden -
Teil 6-1: Messmethoden für optische und
elektro-optische Parameter
(IEC 62341-6-1:2009)

This European Standard was approved by CENELEC on 2011-01-02. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

I.S. EN 62341-6-1:2011

EN 62341-6-1:2011

- 2 -

Foreword

The text of document 110/170/FDIS, future edition 1 of IEC 62341-6-1, prepared by IEC/TC 110, Flat panel display devices, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62341-6-1 on 2011-01-02.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2011-10-02
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2014-01-02

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62341-6-1:2009 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60068-1	NOTE	Harmonized as EN 60068-1.
IEC 61747-6	NOTE	Harmonized as EN 61747-6.
IEC 61988-2-1	NOTE	Harmonized as EN 61988-2-1.
IEC 62087	NOTE	Harmonized as EN 62087.
IEC 62341-1-1	NOTE	Harmonized as EN 62341-1-1.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62341-1-2	-	Organic light emitting diode displays - Part 1-2: Terminology and letter symbols	EN 62341-1-2	-
CIE 15.2	1986	Colorimetry	-	-
CIE S 014-1/E	2006	Colorimetry - Part 1: Standard Colorimetric Observers	-	-

This page is intentionally left BLANK.

CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Terms, definitions and units	6
4 Structure of measuring equipment	6
5 Standard measuring conditions.....	6
5.1 Standard measuring environmental conditions.....	6
5.2 Standard measuring dark-room conditions.....	6
5.3 Standard setup conditions	7
5.3.1 Adjustment of OLED display modules	7
5.3.2 Starting conditions of measurements	7
5.3.3 Conditions of measuring equipment.....	7
6 Measuring methods for optical parameters	8
6.1 Luminance and its uniformity	8
6.1.1 Purpose.....	8
6.1.2 Measuring conditions.....	9
6.1.3 Measuring methods	9
6.2 Dark room contrast ratio	12
6.2.1 Purpose.....	12
6.2.2 Measuring conditions.....	12
6.2.3 Measuring method	12
6.3 Chromaticity, colour uniformity, colour gamut and white field correlated colour temperature	13
6.3.1 Purpose.....	13
6.3.2 Measuring conditions.....	13
6.3.3 Measuring method	13
7 Measuring methods for power consumption	16
7.1 Purpose	16
7.2 Measuring conditions	16
7.3 Measuring method.....	17
7.3.1 Measuring the power consumption of the OLED display module	17
Annex A (normative) Response time of passive matrix display panels.....	19
Annex B (normative) Luminance current efficiency.....	21
Annex C (informative) Veiling glare frustum	23
Annex D (informative) Methods to obtain the correlated colour temperature (CCT) from chromaticity coordinates	24
Bibliography.....	27
Figure 1 – Layout diagram of measurement setup.....	8
Figure 2 – Luminance measuring pattern	10
Figure 3 – Measurement points.....	11
Figure 4 – Example of the colour gamut.....	14
Figure 5 – Colour of blackbody source at various temperatures	16
Figure 6 – Example of measurement setup of power consumption	17
Figure A.1 – Relationship between driving signal and optical response times.....	20

Figure B.1 – Example of a measurement configuration for measuring luminance current efficiency	22
Figure C.1 – Pattern for veiling glare frustum	23
Figure D.1 – CIE 1931 XYZ chromaticity diagram	25
Figure D.2 – Blackbody locus (Planckian locus) and isothermperature lines in CIE 1931 XYZ	26
Table 1 – Example of luminance non-uniformity	12
Table 2 – Example of chromaticity non-uniformity	15
Table 3 – Example of a module power consumption measurements summary sheet	18
Table D.1 – x_e , y_e , A_i and t_i for equation (D.3) and equation (D.4).....	24

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ORGANIC LIGHT EMITTING DIODE (OLED) DISPLAYS –**Part 6-1: Measuring methods of optical and electro-optical parameters**

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 provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 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 62341-6-1 has been prepared by IEC technical committee 110: Flat panel display devices.

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

FDIS	Report on voting
110/170/FDIS	110/179/RVD

Full information on the voting for the approval on 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.

A list of all the parts in the IEC 62341 series, under the general title *Organic Light Emitting Diode (OLED) Displays*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-