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**Prikazovalniki s tekočimi kristali - 6-3. del: Merilne metode za module prikazovalnikov s tekočimi kristali - Merjenje artefaktov gibanja modulov aktivnih matičnih prikazovalnikov s tekočimi kristali**

Liquid crystal display devices - Part 6-3: Measuring methods for liquid crystal display modules - Motion artifact measurement of active matrix liquid crystal display modules

Flüssigkristall-Anzeige-Bauelemente -- Teil 6-3: Messverfahren für Bewegungsartefakte bei Aktiv-Matrix-LCD-Modulen

Dispositifs d'affichage à cristaux liquides - Partie 6-3: Méthodes de mesure pour les modules d'affichage à cristaux liquides - Mesure de l'artefact de mouvement dans les modules d'affichage à cristaux liquides à matrice active

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**EN 61747-6-3**

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**Liquid crystal display devices -  
Part 6-3: Measuring methods for liquid crystal display modules -  
Motion artifact measurement of active matrix liquid  
crystal display modules  
(IEC 61747-6-3:2011)**

Dispositifs d'affichage à cristaux liquides -  
Partie 6-3: Méthodes de mesure pour les  
modules d'affichage à cristaux liquides -  
Mesure de l'artefact de mouvement dans  
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Flüssigkristall-Anzeige-Bauelemente -  
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Bewegungsartefakte bei Aktiv-Matrix-  
LCD-Modulen  
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Comité Européen de Normalisation Electrotechnique  
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## Foreword

The text of document 110/296/FDIS, future edition 1 of IEC 61747-6-3, prepared by IEC TC 110, Flat panel display devices, was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61747-6-3:2011.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2012-05-17
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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61747-1:2003	NOTE	Harmonized as EN 61747-1:1999 + A1:2003 (not modified).
IEC 61747-5:1998	NOTE	Harmonized as EN 61747-5:1998 (not modified).
ISO 9241-307	NOTE	Harmonized as EN ISO 9241-307.
ISO 11664-4:2008	NOTE	Harmonized as EN ISO 11664-4:2011 (not modified).

## 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 61747-6	-	Liquid crystal and solid-state display devices - Part 6: Measuring methods for liquid crystal modules - Transmissive type	EN 61747-6	-

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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Liquid crystal display devices –**  
**Part 6-3: Measuring methods for liquid crystal display modules – Motion artifact**  
**measurement of active matrix liquid crystal display modules**

**Dispositifs d'affichage à cristaux liquides –**  
**Partie 6-3: Méthodes de mesure pour les modules d'affichage à cristaux**  
**liquides – Mesure de l'artefact de mouvement dans les modules d'affichage**  
**à cristaux liquides à matrice active**

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## CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Abbreviations .....	7
5 Standard measuring conditions.....	7
5.1 Temperature, humidity and pressure conditions.....	7
5.2 Illumination condition.....	7
6 Standard motion-blur measuring methods.....	8
6.1 General.....	8
6.2 Direct measurement method.....	8
6.2.1 Standard measuring process .....	8
6.2.2 Test patterns .....	8
6.2.3 Analysis method .....	10
6.3 Indirect measurement method .....	12
6.3.1 Temporal step response .....	12
6.3.2 High speed camera.....	15
7 Test report.....	16
7.1 General.....	16
7.2 Items to be reported.....	16
7.2.1 Environmental conditions.....	16
7.2.2 Display parameters.....	16
7.2.3 Measuring method and conditions.....	16
7.2.4 Analysis method .....	16
Annex A (informative) Subjective test method .....	18
Annex B (informative) Motion contrast degradation .....	19
Annex C (informative) Dynamic modulation transfer function.....	21
Bibliography.....	23
Figure 1 – Examples of edge blur test pattern.....	8
Figure 2 – Example of a pivoting pursuit camera system.....	9
Figure 3 – Example of a linear pursuit camera system .....	9
Figure 4 – Example of luminance cross section profile of blurred edge .....	11
Figure 5 – Example of luminance cross section profile of blurred edge .....	11
Figure 6 – PBET calculation.....	12
Figure 7 – Set-up to measure the temporal step response .....	13
Figure 8 – Example of a LC response time measurement.....	14
Figure 9 – Example of a motion picture response curve derived from the response measurement presented in Figure 8, and a convolution with a one frame wide window function.....	15
Figure 10 – Example of measurement data reporting .....	17
Figure B.1 – Example of motion contrast degradation test pattern.....	19
Figure B.2 – Example of motion contrast degradation due to line spreading.....	20
Figure C.1 – Example of motion contrast degradation .....	21



Figure C.2 – Example of DMTF properties for different motion speeds (V) ..... 22

Table 1 – Step response data for different luminance transitions ..... 10

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## LIQUID CRYSTAL DISPLAY DEVICES –

**Part 6-3: Measuring methods for liquid crystal display modules –  
Motion artifact measurement of  
active matrix liquid crystal display modules**

## FOREWORD

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International Standard IEC 61747-6-3 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
110/296/FDIS	110/313/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 parts of the IEC 61747 series, under the general title *Liquid crystal display devices*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this publication will remain unchanged until the stability 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

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## LIQUID CRYSTAL DISPLAY DEVICES –

### Part 6-3: Measuring methods for liquid crystal display modules – Motion artifact measurement of active matrix liquid crystal display modules

#### 1 Scope

This part of IEC 61747 applies to transmissive type active matrix liquid crystal displays.

This standard defines general procedures for quality assessment related to the motion performance of LCDs. It defines artifacts in the motion contents and methods for motion artifact measurement.

NOTE Motion blur measurement methods and analysis methods introduced in this standard could not be universal tools for all different LCD motion enhancement technologies due to its complexity. Users shall be notified of these circumstances.

#### 2 Normative references

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.

IEC 61747-6, *Liquid crystal and solid-state display devices – Part 6: Measuring methods for liquid crystal modules – Transmissive type*

#### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

##### 3.1

##### **motion picture response curve**

a curve, representing the convolution of the temporal step response with a moving window function of 1-frame wide. It shows how the luminance is integrated over time during smooth pursuit eye tracking and combines the effects of the LCD response time and the hold-type characteristics of the device under test

##### 3.2

##### **motion induced edge profile**

luminance profile of an intrinsically sharp moving luminance transition when this transition is followed with smooth pursuit eye tracking along its motion trajectory

NOTE The profile can be calculated from the motion picture response curve for any given motion speed.

##### 3.3

##### **edge blur**

blur that becomes visible on an intrinsically sharp transition between two adjacent areas, with a different luminance level, when the transition smoothly moves across the display as a function of time.

NOTE Preconditions for this type of edge blur are smooth pursuit eye tracking of the object, and no obvious flicker, indicating that luminance integration with a frame period is allowed. This blur phenomenon is mainly caused by a slow response time of the liquid crystal cell in combination with the hold-type characteristics.