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Teckenfönster med flytande kristaller – Del 30-1: Mätningar på moduler med flytande kristaller av transmissiv typ

Liquid crystal display devices –

Part 30-1: Measuring methods for liquid crystal display modules –

Transmissive type

Som svensk standard gäller europastandarden EN 61747-30-1:2012. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61747-30-1:2012.

Nationellt förord

Europastandarden EN 61747-30-1:2012

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- **IEC 61747-30-1, First edition, 2012 - Liquid crystal display devices - Part 30-1: Measuring methods for liquid crystal display modules - Transmissive type**

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Standarden ska användas tillsammans med SS-EN 61747-1, utgåva 1, 1999.

Tidigare fastställd svensk standard SS-EN 61747-6, utgåva 1, 2004, gäller ej fr o m 2015-07-30.

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English version

**Liquid crystal display devices -
Part 30-1: Measuring methods for liquid crystal display modules -
Transmissive type
(IEC 61747-30-1:2012)**

Dispositifs d'affichage à cristaux liquides -
Partie 30-1: Méthodes de mesure pour les
modules d'affichage à cristaux liquides -
Type transmissif
(CEI 61747-30-1:2012)

Flüssigkristall-Anzeige-Bauelemente -
Teil 30-1 Messverfahren für Flüssigkristall-
Anzeigemodule -
Transmissive Ausführung
(IEC 61747-30-1:2012)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 110/364/FDIS, future edition 1 of IEC 61747-30-1, prepared by IEC/TC 110 "Electronic display devices" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61747-30-1:2012.

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) 2013-04-30
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-07-30

This document supersedes EN 61747-6:2004.

EN 61747-30-1:2012 includes the following significant technical changes with respect to EN 61747-6:2004:

- a) the document structure was brought in line with EN 61747-6-2; and
- b) various technical and editorial changes were made.

This standard is to be read in conjunction with EN 61747-1:1999, to which it refers, which gives details of the quality assessment procedures, the inspection requirements, screening sequences, sampling requirements, and the test and measurement procedures required for the assessment of liquid crystal display modules.

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

Endorsement notice

The text of the International Standard IEC 61747-30-1:2012 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

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 60050	Series	International electrotechnical vocabulary	-	-
IEC 61747-1	-	Liquid crystal and solid-state display devices - Part 1: Generic specification	EN 61747-1	-
IEC 61747-6-2	-	Liquid crystal display devices - Part 6-2: Measuring methods for liquid crystal display modules - Reflective type	EN 61747-6-2	-
ISO 9241-307	-	Ergonomics of human-system interaction - Part 307: Analysis and compliance test methods for electronic visual displays	EN ISO 9241-307	-
ISO 11664-2	-	Colorimetry - Part 2: CIE standard illuminants	EN ISO 11664-2	-
CIE 15	2004	Colorimetry	-	-

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INTRODUCTION

In order to achieve a useful and uniform description of the performance of liquid crystal display (LCD) devices, specifications for commonly accepted relevant parameters are put forward. These fall into the following categories:

- a) general type specification (e.g. pixel resolution, diagonal, pixel layout);
- b) optical specification (e.g. contrast ratio, response time, viewing-direction, crosstalk, etc.);
- c) electrical specification (e.g. power consumption, electromagnetic compatibility);
- d) mechanical specification (e.g. module geometry, weight);
- e) specification of passed environmental endurance test;
- f) specification of reliability and hazard / safety.

In most of the cases a) to f), the specification is self-explanatory. For some specification points however, notably in the area of optical and electrical performance, the specified value may depend on the measuring method.

The purpose of this standard is to indicate and list the procedure-dependent parameters and to prescribe the specific methods and conditions that are to be used for their uniform numerical determination. It is assumed that all measurements are performed by personnel skilled in the general art of radiometric and electrical measurements as the purpose of this standard is not to give a detailed account of good practice in electrical and optical experimental physics. Furthermore, it shall be assured that all equipment is suitably calibrated as is known to people skilled in the art and records of the calibration data and traceability are kept.

LIQUID CRYSTAL DISPLAY DEVICES –

Part 30-1: Measuring methods for liquid crystal display modules – Transmissive type

1 Scope

This part of IEC 61747 is restricted to transmissive liquid crystal display-modules using either segment, passive or active matrix and achromatic or colour type LCDs. Furthermore, the transmissive modes of transreflective LCD modules with backlights ON are comprised in this document. An LCD module in combination with a touch-panel or a front-light-unit is excluded from the scope because measurements are frequently inaccurate. Touch-panels or front-light-units are removed before measurement. Throughout the main body of this standard, an integrated backlight is assumed to provide the illumination for the measurements. Deviations from this (e.g. segmented displays without integrated backlights) may usually be handled in the same way as display modules with integrated backlight, if an external backlight is provided. However, in the case where one of the two situations should be handled differently, this will be specifically stated.

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 61747-1, *Liquid crystal and solid-state display devices – Part 1: Generic specification*

IEC 61747-6-2, *Liquid crystal display devices – Part 6-2: Measuring methods for liquid crystal display modules – Reflective type*

ISO 9241-307, *Ergonomics of human-system interaction – Part 307: Analysis and compliance test methods for electronic visual displays*

ISO 11664-2 (CIE S 014-2/E:2006), *Colorimetry – Part 2: CIE Standard illuminants*

CIE 15-2004, *Colorimetry*