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**NATIONAL STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

**GB/T 18910.61-2021**

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**Liquid crystal display devices - Part 6-1: Measuring methods for  
liquid crystal display devices - Photoelectric parameter**

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## Foreword

GB/T 18910 "Liquid Crystal Display Devices" has or plans to publish the following parts.

- Part 1-1.General Specification;
- Part 1-2.Terms and symbols;
- Part 2.Sub-specification of liquid crystal display modules;
- Part 2-1.Blank detail specifications for passive matrix monochrome liquid crystal display modules;
- Part 2-2.Blank detailed specifications for color matrix liquid crystal display modules;
- Part 3.Sub-specification of LCD screens;
- Part 3-1.Detailed specifications for LCD blanks;
- Part 4.Basic ratings and characteristics of liquid crystal display modules and screens;
- Part 4-1.Basic ratings and characteristics of color matrix liquid crystal display modules;
- Part 5.Environmental, durability and mechanical test methods;
- Part 6-1.Photoelectric parameters of liquid crystal display device test methods;
- Part 6-2.Liquid crystal display module test method reflective type;
- Part 6-3.Liquid crystal display module test method active liquid crystal display module motion artifacts;
- Part 6-4.Liquid crystal display device test method liquid crystal display module with dynamic backlight;
- Part 10-1.Environmental, durability and mechanical test methods machinery;
- Part 10-2.Environment, durability and mechanical test methods environment and durability;
- Part 20-1.Visual inspection of monochrome LCD screen;
- Part 20-2.Visual inspection of monochromatic matrix liquid crystal display module;
- Part 20-3.Visual inspection of active matrix color liquid crystal display modules.

This part is part 6-1 of GB/T 18910.

This section was drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 18910.61-2012 "Liquid Crystal Display Devices Part 6-1. Test Methods for Liquid Crystal Display Devices, Photoelectric Parameters

number". Compared with GB/T 18910.61-2012, the main technical changes are as follows.

---Modified the division of the tested display device, modified the high-resolution matrix display to the matrix display (see 4.1.1., 2012 edition

4.1.1), low resolution and field display are modified to field display (see 4.1.2, 4.1.2 of the 2012 edition);

---Modified the viewing angle range test items, and added.

\* The viewing angle range based on brightness (see 5.6.3);

\* Based on the viewing angle range without gray inversion (see 5.6.4);

\* Chromaticity-based viewing angle range (see 5.6.5);

\* Viewing angle range based on visual quality (see 5.6.6);

---Modify the crosstalk, horizontal crosstalk and vertical crosstalk will test one point separately to test two symmetrical points separately (see 5.12,

#### **5.12 in the 2012 edition);**

--- Incorporate the relevant test methods displayed in the fields into the text of this part (see Chapter 6, Appendix B of the 2012 edition).

This part uses the redrafting method with reference to IEC 61747-30-1:2012 "Liquid Crystal Display Device Part 30-1. Liquid Crystal Display Module Test

The test method through characteristics" is compiled, and the degree of consistency with IEC 61747-30-1:2012 is not equivalent.

## **1 Scope**

This part of GB/T 18910 specifies the standard test conditions and test methods for the photoelectric parameters of liquid crystal display devices.

This part is applicable to transmissive liquid crystal display devices with field display, active or passive matrix display (hereinafter referred to as "display devices").

It is a monochrome, multi-color or color display, including display devices with and without built-in light sources. Reflective liquid crystal display device can refer to

use.

This section does not apply to projection display mode.

## 2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 18910.11-2012 Liquid crystal display devices Part 1-1. Terms and symbols

CIE015.2004 Colorimetry, 3rd Edition (Colorimetry, 3rd Edition)

## 3 Terms and definitions

The terms and definitions defined in GB/T 18910.11-2012 apply to this document.

### 4.1.1 Matrix display

A photometer, colorimeter or spectroradiometer can be used to test the transmission and/or reflected light characteristics of the tested display device; the test instrument and the tested

The schematic diagram of the test system composed of display devices is shown in Figure 1.