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

SH/T 1499.7-2012

**Pure adipic acid. Part 7: Determination of content of nitric acid.
Spectrophotometric method
(English Translation)**

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1 Scope

This standard specifies the test methods for the mechanical, optical, electrical and other main technical performance parameters of light-emitting diode (LED) display.

This standard applies to the test of light-emitting diode (LED) display (hereinafter referred to as display).

2 Normative references

GB 4208 Degrees of protection provided by enclosure (IP code)

SJ/T 11141-2017 Generic specification for LED displays

CIE 1931 Chromaticity diagram

3 Terms, definitions, symbols

The terms, definitions, symbols as established in SJ/T 11141-2017 apply to this standard.

4.1.1 Atmospheric conditions

Unless otherwise specified, the test conditions are as follows.

4.1.2 Standard atmospheric conditions for arbitration test

Unless otherwise specified, the standard atmospheric conditions for arbitration test are as follows.

4.1.3 Other environmental conditions

Unless otherwise specified, other environmental conditions shall comply with the following provisions.

4.2 Test instruments and software

Unless otherwise specified, the performance of all test instruments shall meet the specific requirements of the test.

5.1.1 Degree of protection of shell

Perform according to the method specified in GB 4208.

5.1.2.2 Relative deviation of pixel center distance

5.1.2.2.1

Purpose

Measure the center distance between any phase parts; calculate the phase error between the measured center distance and the nominal value by formula.

5.1.2.2.2

Measurement principle

The measurement principle of the relative deviation of pixel center distance is shown in Figures 3 and 4.

5.1.2.2.3

Measurement conditions

The display under test is disconnected from the power supply and is in a black screen state.

5.2.1.3 Measurement conditions

The measurement conditions are as follows.

5.2.2.3 Measurement conditions

The measurement conditions are as follows a) The ambient illumination change is less than $\pm 10\%$; there is no obvious colored light source;

b) The acquisition range of the color analyzer shall not be less than 16 adjacent pixels.

5.2.2.4 Measurement steps

5.2.2.4.1

Horizontal viewing angle

Measure as follows.

5.3.5.1 Purpose

Measure the out-of-control pixels on the display.

5.3.5.2 Measurement principle

Identify the out-of-control pixels on the display by visual inspection; calculate the pixel out-of-control rate.

5.3.5.3 Measurement conditions

Drive the LED display normally.

5.3.5.4 Measurement steps

5.3.5.4.1

Entire screen pixel out-of-control rate

Measurement is performed as follows.

5.3.5.4.2

Regional pixel failure rate

Measure as follows.

- a) Start the test software; select the pixel failure rate test function (see Appendix B); set a 100 x 100 pixel movable red square (highest grayscale);

5.3.6.1 Purpose

Measure the ability of the display brightness to adjust as the ambient brightness changes.

5.3.6.2 Measurement principle

The automatic brightness adjustment function of the display is to sense the ambient illumination through a photoelectric sensor and feed it back to the display controller for brightness adjustment.

5.3.6.3 Measurement conditions

The measurement conditions are as follows.

5.3.6.4 Measurement steps

Perform the measurement as follows.

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