



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

GB/T 18910.102-2021

**Liquid crystal display devices - Part 10-2: Environmental,
endurance and mechanical test methods - Environmental and
endurance**

Issued on: October 11, 2021

Implemented on: May 1, 2022

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

1 Scope	1
2 Normative references	1
3 Terms, definitions and text symbols	2
4 Standard atmospheric conditions for tests and tests	2
5 Test method	2
5.1 General	2
5.2 Rapid temperature changes. two-box method	2
5.3 Specified temperature change rate. one box method	4
5.4 Storage (under high temperature)	5
5.5 Storage (under low temperature)	6
5.6 Low air pressure	7
5.7 Steady-state damp heat	7
5.8 Circulating damp heat (12h 12h cycle)	8
5.9 Combined temperature/humidity cycle test	8
5.10 Light exposure	12
5.11 Electrostatic discharge test	12
Appendix NA (informative appendix) Correspondence between normatively cited international documents and Chinese documents	13
Reference	14

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.Test method of liquid crystal display device reflective type;
- Part 6-3.Liquid crystal display module test method active liquid crystal display module motion artifacts;
- Part 6-4.Liquid crystal display module 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 10-2 of GB/T 18910.

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

The translation method used in this part is equivalent to the adoption of IEC 61747-10-2:2014 "Liquid Crystal Display Device Part 10-2.Environment, Durability and Mechanical test method environment and durability".

Chinese documents that have consistent correspondence with the normatively cited international documents in this section are shown in Appendix NA.

This section has made the following editorial changes.

- Delete (860mbar~1060mbar) in Chapter 4;
- Added an informative appendix NA, which gives a consistent correspondence with the international documents cited in this part of my country document.

1 Scope

This part of GB/T 18910 specifies the test method for liquid crystal display devices, and at the same time, as far as possible

Environmental test methods.

Note. Devices include screens and modules.

The purpose of this section is to evaluate the environmental performance of liquid crystal display devices, to determine a unified preferred test method and stress level preferred value.

If this part is inconsistent with the relevant specifications, the latter shall prevail.

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 2423.34-2012 Environmental Test Part 2.Test Method Test Z/AD.
Temperature/Humidity Combined Cycle

(IEC 60068-2-38.2009, IDT)

IEC 60068 (all parts) Environmental testing (Environmental testing)

IEC 60068-2-1 Environmental Testing Part 2-1.Test Test A. Low Temperature
(Environmentaltesting-Part 2-1.

Tests-TestA.Cold)

IEC 60068-2-2 Environmental testing Part 2-2.Test test B. High temperature (Environmental
testing-Part 2-2.

Tests-TestB.Dryheat)

IEC 60068-2-5 Environmental Test Part 2-5.Test Test Sa. Simulate solar radiation on the
ground (Environmental

testing-Part 2-5.Tests-TestSa.Simulatedsolarradiationatgroundlevelandguidanceforsolararra-
diationtesting)

IEC 60068-2-13 Basic Environmental Test Procedure Part 2-13.Test Test M. Low Air
Pressure (Environmentaltes-

ting-Part 2-13.Tests-TestM.Lowairpressure)

IEC 60068-2-14.20091) Environmental testing Part 2-14.Test test N. Temperature change
(Environmentaltes-

ting-Part 2-14.Tests-TestN.Changeoftemperature)

1) IEC 60068-2-14.1984 is cited in the original text of IEC. This edition of the standard has been abolished and replaced by IEC 60068-2-14.2009. This part of the cited documents

Changed to the 2009 version, and relevant references apply.

IEC 60068-2-30 Environmental test Part 2-30. Test test Db. Alternating damp heat (12h 12h cycle) (Environ-

mental testing-Part 2-30. Tests-Test Db. Damp heat, cyclic (12h 12h cycle)]

IEC 60068-2-78 Environmental Test Part 2-78. Test Test Cab. Constant Humidity Test (Environmental

testing-Part 2-78. Tests-Test Cab. Damp heat, steady state)

IEC 60747 (all parts) Semiconductor devices (Semiconductor devices)