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

GB/T 31379.2-2025

**Test methods for polarizers of flat panel displays - Part 2:
Optical properties**

平板显示器偏光片测试方法 第2部分：光学性能

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document is Part 2 of GB/T 31379 "Test Methods for Polarizers of Flat Panel Displays". GB/T 31379 has published the following... part.

1. Physical and Chemical Properties;

2. Optical Properties;

3. Reliability. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Semiconductor Equipment and Materials (SAC/TC203). This document was drafted by: Sujin Optoelectronics (Nanjing) Co., Ltd., China Electronics Technology Standardization Institute, and Shenzhen Sanli Optoelectronics Technology Co., Ltd. Joint-stock company, Sugon Optoelectronics (Guangzhou) Co., Ltd., Foshan Weida Optoelectronic Materials Co., Ltd., Sugon Optoelectronics Technology (Zhangjiagang) Co., Ltd. Limited Liability Company, Tianma Microelectronics Co., Ltd., TCL CSOT Technology Co., Ltd., Guangzhou Changjia Electronics Co., Ltd., Shenzhen Liande Automation Equipment Co., Ltd., Hunan Feiyoute Electronic Technology Co., Ltd., Sichuan Dongcai Technology Group Co., Ltd., Guangzhou Huaxing Optoelectronic Technology Co., Ltd., Ningbo Huizhixing New Material Technology Co., Ltd., Dongguan Youlian Hengda Optoelectronic Co., Ltd., Nanjing Hanqi New Materials Co., Ltd., Dongguan Depu Electronics Co., Ltd., Shenzhen Kangrong Electronics Co., Ltd., and Ningbo Jinhui Optical Technology Co., Ltd. The main drafters of this document are. Zhu Zhiyong, Wu Yiran, Zhang Le, Zhao Junsha, Li Juntao, Wang Dongyan, Liao Jianneng, Zhang Peng, Huang Weidong, and Zheng Hetao. Zhou Zihao, Cao Kewei, Lu Lanfu, Huo Bingzhong, Wang Xiaoling, Di Peng, Shi Zeyuan, Zhang Baoshuai, Fang Xu, Nie Yunhui, Liu Riming, Hu Jin, Ao Xueli Yao Fuheng, Cheng Fanbao, Liu Wei, Huang Xuerun, Hao Wukang, Wang Jiantai, Liang

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Polarizing films are an indispensable optical component for flat panel displays. They can adjust the direction of light, increase contrast, and block reflected light. With the development of technology, the application range of flat panel displays is constantly expanding, and the performance requirements are gradually increasing. Flat panel display manufacturers are focusing on the performance of polarizers. The demand for technology has also diversified, such as using low water contact angle polarizers to improve the adhesion between the touchscreen and the polarizer, and using low reflectivity polarizers... Advertising screens with emissivity polarizers alleviate visual fatigue by reducing the intensity of ambient light reflection. Different uses of displays require different polarizers. Due to varying performance requirements, perfecting the testing standards for polarizers is crucial for the independent development of polarizers in my country. GB/T 31379 is proposed to consist of 4 parts.

1. Physicochemical Properties. The purpose is to provide test methods for the physicochemical properties of polarizers for flat panel displays.
2. Optical Performance. The aim is to provide a testing method for the optical performance of polarizers in flat panel displays.
3. Reliability. The aim is to provide a testing method for the reliability of polarizers in flat panel displays.
4. Surface Properties. The aim is to provide a test method for the surface properties of polarizers for flat panel displays. Test methods for polarizers in flat panel displays Part

1 Scope

GB/T 31379.2-2025 is the Chinese national standard covering the optical measurement of a display polariser - the single-piece transmittance and the degree of polarisation, the parallel and crossed transmittance that set the contrast ratio, the colour, and the uniformity across the sheet. Part 2 of the series, first edition. In force from 1 May 2026. Issued on 5 October 2025, it has been in force since 1 May 2026.

This document describes the test methods for the transmittance, polarization, hue, reflectance, haze, and optical compensation value of polarizers for flat panel displays. This document applies to the testing of the optical performance of polarizers used in flat panel displays.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this

document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 2410 Determination of light transmittance and haze of transparent plastics

GB/T 7921 Uniform color space and color difference formula

GB/T 33048 Determination of Optical Compensation Value of Polarizer

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 polarizer An optical film material that converts natural light into polarized light.

3.2 Transmittance Note

1. Transmittance is expressed as a percentage. Note

2. Transmittance is further divided into single transmittance, parallel transmittance, and cross transmittance.

---Single transmittance TS. The transmittance of a light beam as measured by passing through a single polarizer.

---Parallel transmittance TP. The transmittance of a light beam as measured by passing through two polarizers with parallel absorption axes.

---Orthogonal transmittance TC. The transmittance of a light beam as measured by passing through two polarizers with mutually perpendicular absorption axes.

3.3 A physical quantity that represents the degree of polarization of polarized light.

Note. Polarization degree is also called polarization degree.

3.4 Hue This indicates the color characteristics of the polarizer.

Note. The color space adopted is the CIE International Commission on Illumination 1976 ($L^*a^*b^*$) color space, where a^* represents green-red hue and b^* represents blue-yellow hue.