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

GB/T 43789.31-2024

Electronic paper displays - Part 3-1: Optical measuring methods

电子纸显示器件 第3-1部分：光学性能测试方法

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is part 3-1 of GB/T 43789 Electronic Paper Display Devices. GB/T 43789 has published the following parts.

- Part 1-1.Terminology;
- Part 3-1.Test methods for optical properties;
- Part 3-2.Test methods for photoelectric properties.

This document is equivalent to IEC 62679-3-1:2014 "Electronic paper display devices Part 3-1.Optical performance test methods".

Introduction

In order to meet the production, manufacturing, inspection and export trade needs of electronic paper display devices in my country, better promote exchanges in related fields in cooperation with the technical cooperation, it is necessary to formulate a series of standards for electronic paper display devices. GB/T 43789 "Electronic paper display devices" is proposed to consist of the following parts constitute.

--- Part 1-1.Terminology. The purpose is to define the basic terminology of electronic paper display devices.

--- Part 1-2.General specification. The purpose is to determine the general specification for the inspection of electronic paper display devices.

--- Part 2: Basic ratings and characteristics. The purpose is to determine the optical performance, electro-optical characteristics and environmental characteristics of electronic paper display devices.

Ratings and characteristics for environmental testing.

--- Part 3-1.Optical performance test methods. The purpose is to determine the standard test conditions and Test Methods.

--- Part 3-2.Photoelectric performance test methods. The purpose is to determine the standard test conditions and Test Methods.

--- Part 3-3.Optical test methods for display devices with integrated lighting units. The purpose is to determine the optical properties of display devices with integrated lighting units.

Optical testing method for sub-paper display devices.

--- Part 4-2.Environmental test methods. The purpose is to determine the environmental test methods for electronic paper display devices.

--- Part 5-1.Readability of electronic paper displays under spatial frequency. The purpose is to determine the readability of electronic paper under spatial frequency.

Assessment standards.

Electronic paper display devices Part 3-1.

Optical performance test methods

1 Scope

This document describes standard test conditions and test methods for the optical performance of electronic paper displays (EPDs).

This document applies to reflective monochrome or color passive field or active matrix electronic paper display device applications.

For electronic paper display devices with integrated light source units (ILU), the integrated light source unit needs to be turned off during testing.

This document does not apply to products with color systems exceeding three colors.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

nology)

Note: GB/T 43789.11-2024 Electronic paper display devices Part 1-1.Terminology (IEC 62679-1-1:2014, IDT) Note. GB/T 2900 (all parts) Electrical terminology [IEC 60050 (all parts)] IEC 61966-2-1 Color testing and management for multimedia systems and devices Part 2-1.Color management default RGB color space Colourmanagement-DefaultRGB colourspace-sRGB) CIE15 Colorimetry

3.1 Terms and Definitions

For the purposes of this document, the terms and definitions defined in IEC 62679-1-1, IEC 60050 (all parts) and the following apply.

3.1.1

Ambient light contrast the contrast of the display screen when a hemispherical diffuse light source and a direct light source are used to illuminate the display screen surface to simulate a real lighting environment.

3.1.2

Simultaneously use hemispherical diffuse light and directional light to illuminate the display surface with specific geometric conditions, spectrum and light intensity to simulate real sunlight.

The color of the display under different lighting conditions.