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

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**Graphic technology - Displays for colour proofing -
Characteristics**

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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 of Standardization Documents" drafted.

This document is equivalent to ISO 12646:2015 "Indicators of Performance for Color Proofing Displays in Printing Technology".

The following editorial changes have been made to this document.

--- Added ISO 13406-2, CIE69, IEC 61747 in References.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

Color images displayed on color monitors can be matched to images produced by proofing and printing systems using the same digital file

Proofing (often referred to as "soft proofing"), this capability is increasingly expected. Obtaining such a match is not easy, and it is necessary to achieve complete accuracy

Indeed, many aspects of the process need to be carefully controlled. The main purpose of this document is to make recommendations on the requirements for soft proofing displays, if full

If these requirements are met, a soft proofing system as defined in ISO 14861 can be used to precisely match colors to hardcopy proofs. Therefore, this

The document is intended for display manufacturers to verify that their displays can be used in a print proofing system.

The appearance of images displayed by color monitors is affected by many physical factors

in addition to the controllable environmental viewing conditions. in

The most important are uniformity, size and resolution (in order to reproduce the size close to the usual proofs and reproduce the hard copy at normal viewing distances)

the finest detail possible on the shell), electro-optic properties that vary with viewing direction, no flicker and glare (apparent specular reflection on the image), display

The photoelectric calibration of the monitor, and the setting of the display driver software. Therefore, in order to enable the proofing system to achieve a reasonable level of image quality, display

The above performance of the device is subject to an acceptable quality requirement.

It is important to note that even with the highest quality monitors, the appearance of the displayed image will still be affected by removing the digital file from its encoded color null.

A limit on the precision of color conversion between conversions to the color space required for the display.

This document specifies the requirements for monitors used in soft proofing systems as defined by ISO 14861. ISO 14861 focuses primarily on incorporating

Applications where the displayed image is compared with a hard copy in an adjacent viewing box, or with a hard copy in a viewing box that specifically contains a display

application for comparison. In addition, in order to meet the different needs of soft proofing application cases, this document will define two different levels of compliance

(Grade A and Grade B).

However, in some practical cases, the images on the screen are evaluated without hard copy, the provisions of this document can be used as a reference

Exam but not required. Users of this document will also benefit from CIE Publication 122, which outlines the relationship between digital and colorimetric data

Tie. Those unfamiliar with monitor evaluation will also find it helpful to read IEC 61223-2-5, which contains many

Displays useful details for device evaluation and testing.

Displays for color proofing in printing technology

Performance

1 Scope

This document specifies requirements for two levels of compliance for the characteristics of soft-proofing displays for color graphics, including under different drive signals.

The uniformity and electro-optical characteristics that vary with the viewing direction are required.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

ISO 13655 Printing technology Spectral measurement and colorimetric calculation of printed images (Graphicstechnology-Spectralmeasure-

Note. GB/T 19437-2004 Spectral measurement and chromaticity calculation of printed images in printing technology (ISO 13655.1996, IDT)

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1

calibration

Under given conditions, establishes a quantity displayed by a measuring instrument or measuring system, or expressed by a material measure of some reference material

A set of operational relationships between a value and the corresponding magnitude implemented by the corresponding standard.

[Source. ISO International Glossary of Basic and Common Glossary of Metrology]

NOTE. In typical print production, however, it is actively feasible to adjust the display or press to the specified target value according to the actual application.

method.

3.2

colorimeter

An instrument that measures color values, such as color tristimulus values.

[Source. ISO 12637-2.2008, 2.18]

3.3

Orientation optimized for display-specific electro-optical properties.

NOTE. Examples of important electro-optic properties are having maximum brightness and maximum contrast in a particular direction.

3.4

gamma gamma

The best fit parameter, which relates the normalized output luminance to the normalized input digital value presented to the display system, which

The middle display system includes software and hardware system, which is represented by the following formula.