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

GB/T 43828.1-2024

**Graphic technology - Prepress digital data exchange - Colour
targets for input scanner calibration - Part 1: Colour targets for
input scanner calibration**

印刷技术 印前数据交换 输入扫描仪校准用色标 第1部分：输入扫描仪校准用色标
(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 1 of GB/T 43828 "Printing technology - Color standards for prepress data exchange - Input scanner calibration".

GB/T 43828 has published the following parts.

- Part 1: Color standards for input scanner calibration;
- Part 2: High-order color scale for input scanner calibration.

This document is equivalent to ISO 12641-1:2016 "Printing technology Prepress data exchange Input scanner calibration color scale Part 1 Part 1: Enter the color mark for scanner calibration.

Introduction

Color code design and data are the digital benchmarks for calibration and characterization of image capture devices in various printing and scene presentations, and are of great significance to the digitalization of the industry.

The use of ISO 12641 color data set and its mapping algorithm can improve the printing and packaging industry.

Improve the technical level of color benchmark establishment and color management, fill the color benchmark gap in the printing industry chain, optimize color management methods, and provide a reference for my country it provides a supplement to the construction of printing technology standard system.

GB/T 43828 specifies a set of color scales for calibrating photographic product/scanner combinations in the process of publishing and printing preparation.

Color values define the color scale of additive color transparency and subtractive color paper, which can be used to evaluate color and color image digital acquisition the color

reproduction quality of the digital photography, color display and printing reproduction can be improved and used as the system calibration reference parameter to solve the whole pre-press, printing and the digitization of printing, especially the benchmark data problem in color image standardization, greatly improves the efficiency of printing manuscript production and evaluation, and reduces Low operating costs, reduce duplication and redundancy of operations. GB/T 43828 adopts ISO 12641, which aims to establish color input scanner color calibration the color code data is composed of two parts.

--- Part 1: Color scale for input scanner calibration. The purpose is to use additive color transparency and subtractive color transparency in publishing and printing.

Color scale for color paper, and use the layout and colorimetric values of the color scale of calibrated photography products/scanner combinations as a reference for digital photography, System calibration reference parameters for color display and print reproduction.

--- Part 2: High-order color scale for input scanner calibration. The purpose is to calibrate image capture devices in the publishing and printing process.

Advanced reflectance and transmission color scales, scale layouts, and color value frameworks for characterizing and characterizing color in digital imaging and printed manuscripts Research, testing and evaluation as well as system calibration reference parameters for digital photography, color display and print reproduction.

Color calibration color scale design uses CIE1976L*, a*, b* or CIELAB color space to measure the uniformity of hue angle, brightness and chroma.

The spacing and color difference (ΔE^*_{ab}) are the most effective way to reasonably distribute the color patches. Although CIELAB is defined based on reflective observation conditions, the uniformity of the color scale depends on the viewing conditions, but the color difference (ΔE^*_{ab}) can still provide a reasonable error for transmissive materials. The goal of color scale design is to define There are color blocks that are not related to the dye set. The main part of the color standard tries to contain the actual commonly used color blocks, and the non-main part of the color standard is intended to define the color blocks used to produce special the unique color characteristics of a particular set of dyes in the color scale are used to establish the value of each color block of the color scale using a general procedure. Appendix A provides information on the selection of Appendix B provides application notes for calibrating color input scanners.

Printing Technology Prepress Data Exchange Enter the color patch for scanner calibration
Part 1: Color patches for input scanner calibration

1 Scope

This document specifies the format and colorimetric values of color scales for use in calibrating photographic product/input scanner combinations (for use in preparation for printing and publication).

process).

This file is suitable for creating color scales for orthochromatic transparencies and color photographic papers.

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.

ISO 1008 Photography-Paperdimensions-Pictorialsheets general use-Dimensions) ISO 13655 Graphic technology - Spectral measurement and colorimetry of printed images Note. GB/T 19437-2004 Printing technology Spectral measurement and colorimetric calculation of printed images (ISO 13655:1996, IDT)

3 Terms and definitions

The following terms and definitions apply to this document.

CIE tristimulus value in the tristimulus color system specified by CIE, the number of three reference color stimuli required to match a specific color stimulus.

Note: In the 1931 CIE standard color space, the tristimulus values are represented by the symbols X, Y, and Z.

CIE1976 L*, a*, b* color difference CIE1976 L*, a*, b* color difference ΔE^*_{ab} the difference in color stimuli between two points in L*, a*, b* space that conforms to the definition of Euclidean distance.

$\Delta E^*_{ab} = [(\Delta L^*)^2 + (\Delta a^*)^2 + (\Delta b^*)^2]^{1/2}$ Among them, ΔL^* , Δa^* , and Δb^* are the differences between two corresponding stimulus values.

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