INTERNATIONAL ISO

Third edition
2015-07-15

Graphic technology — Displays for colour proofing — Characteristics

Technologie graphique — Affichages pour la réalisation d'épreuves en couleur — Caractéristiques

Reference number
ISO 12646:2015(E)

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 130, *Graphic technology.*

This third edition cancels and replaces the second edition (ISO 12646:2008), which has been technically revised to improve the compatibility with the requirements of soft proofing defined in ISO 14861.

Introduction

The ability to match colour images displayed on colour displays to the images produced when the same digital file is rendered by proofing and printing systems (commonly referred to as “soft” proofing) is increasingly expected in graphic arts. Obtaining such a match is not simple and to be fully accurate requires careful control of many aspects of the process. The primary purpose of this International Standard is to make recommendations with respect to the soft proof displays requirements. If these are met, it is then possible for a soft proofing system such as defined in ISO 14861 to accurately colour match to the hard copy proof. Hence, this International Standard is intended for display manufacturers in order to qualify their display for use in graphic arts proofing systems.

The appearance of a colour image on a colour display is influenced by many physical factors other than controlled ambient viewing conditions. Among the most important of these are uniformity, size and resolution (in order to permit rendition of the proof at close to its normal size and with the finest detail visible on the hard copy at normal viewing distances), variation of electro-optical properties with viewing direction, freedom from flicker and glare (specular reflections with distinct images), the opto-electronic calibration of the display, and the settings of its display driver software. In this regard, to be acceptable in a proofing system that provides a reasonable level of image quality, the display needs to also exhibit these properties at an acceptable quality.

Note that even for displays of the highest quality, the appearance of the displayed image will be limited by the accuracy of the colour transformation used for converting the digital file from its encoded colour space to that required for display purposes.

This International Standard specifies requirements for displays to be used in soft proofing systems defined by ISO 14861. ISO 14861 primarily focuses on applications where the displayed image will be compared to a hard copy in an adjacent viewing cabinet or where the viewing cabinet intentionally contains the display. Furthermore, in order to address the different needs for the soft proofing use cases, two different conformance levels (class A and class B) will be defined in this International Standard.

However, in some practical situations, the image on the screen is evaluated in the absence of a hard copy. This International Standard might be used as reference, but this is not required. Users of this International Standard will also benefit from CIE Publication 122 which provides an overview of the relationship between digital and colorimetric data. Those unfamiliar with the evaluation of displays will also find it helpful to read IEC 61223-2-5 which contains much useful detailed information about evaluation and testing of image display devices.