International Standard

ISO/IEC 17823

Information technology — Office equipment — Vocabulary for office colour equipment

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Foreword

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 28, *Office equipment*.

This second edition cancels and replaces the first edition (ISO/IEC 17823:2015), which has been technically revised.

The main changes are as follows:

— new terms and definitions have been added;

— references have been updated.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

Technical colour terms have been published in various fields of standards such as colour photography, graphic technology printing and computer graphics. However, no standard colour terms have been published for office equipment.

As a result, misunderstandings between users and colour office equipment providers can occur when terms are interpreted differently.

The purpose of this document is to provide terminology for use by office equipment providers to help customers use their colour equipment effectively.

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Information technology — Office equipment — Vocabulary for office colour equipment

1 Scope

This document provides definitions for colour terms used with office equipment, in particular for use with colour scanning and printing devices that have digital imaging capabilities, including multi-function devices.

This document is not intended to replace terms and definitions published in documents or user interfaces issued or created by manufacturers.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
colour balance
adjustment of colour channel gains or processing

3.1.1
grey balance
set of tone-values for cyan, magenta and yellow that are expected to appear as an achromatic grey under specified *viewing conditions* (3.12.11) when printed using the specified printing conditions

Note 1 to entry: There are three practical definitions and one theoretical definition for grey:

a) practical definitions:

  1) colour having the same CIELAB a* and b* values as the print substrate;

  2) colour that has the same CIELAB a* and b* values as a half-tone *tint* (3.16.2) of similar L* value printed with black ink;

  3) functional (linear or nonlinear) combination of both.

b) theoretical definition:

  1) colour that the CIELAB a* and b* values both equal to 0.

[SOURCE: ISO/TS 10128:2023, 3.4, modified — Note 1 to entry has been modified.]

3.2
black

3.2.1
composite black
black printed with multiple *colourants* (3.9)

3.2.2
pure black
black generated only in black *colourant* (3.9) in a printing device

3.2.3
rich black
black generated by a mixture of black *colourant* (3.9) and other colourants in a printing device

3.3
calibration
set of operations that establish, under specified conditions, the relationship between values of quantities indicated by a measuring instrument or measuring system, or values represented by a material measure or a reference material, and the corresponding values realized by standards

[SOURCE: ISO 14807:2001, 3.11]

3.4
colour appearance
aspect of visual perception through which an object is perceived to have a colour with certain attributes

[SOURCE: CIE S 017/E:2020, 17-22-058]

3.4.1
brightness
attribute of a visual perception according to which an area appears to emit, transmit or reflect, more or less light

[SOURCE: CIE S 017/E: 2020, 17-22-059]

3.4.2
colourfulness
attribute of a visual perception according to which the perceived colour of an area appears to be more or less chromatic

[SOURCE: IEC 60050-845:2020, 845-22-072, modified — Notes to entry have been removed.]

3.4.3
highlight colour
adjustment of colour channel gains or processing

3.4.4
metamerism
phenomenon perceived when two specimens have the same colour under the lighting of an illuminant, but different spectral reflection and transmission curves

[SOURCE: ISO 4618:2023, 3.154]

3.4.5
vividness
attribute of colour used to indicate the degree of departure of the colour from a neutral black colour

3.5
colour difference
perceived dissimilarity between two colour stimuli

[SOURCE: CIE S 017/E: 2020, 17-22-041]

3.6
colour encoding

3.6.1
colour palette
fixed set or range of available colours that can be selected

3.6.2
full colour
representation of colours with 3-channel or more, and each channel has 8-bit or more information

Note 1 to entry: Each channel may have 12-bit or 16-bit. In "commercial printing", there are multi-channel colour reproductions such as "Cyan(C), Magenta(M), Yellow(Y), black(K), Orange(O) and Green(G)".

3.6.3
indexed colour
palette colour
colour selection scheme in which the colour index is used to retrieve colour values from a colour table

[SOURCE: ISO/IEC 8632-1:1999, 4.1.62, modified — The term "palette colour" has been added.]

3.6.4
metallic colour
colour associated with polished metal, the *brightness* (3.4.1) of which varies with the angle of the incident light and the viewing angle

Note 1 to entry: Typically, metallic colour cannot be reproduced well by mixture of device *process colours* (3.6.7).

3.6.5
multi colour
multi-colour
additional colour(s) other than device *process colours* (3.6.7), used in printing process that enhance(s) colour image quality

Note 1 to entry: Typically, complementary colours of process colours such as red, green, violet are used to expand *colour gamut* (3.7.2).

Note 2 to entry: Sometimes light *colourants* (3.9) such as light cyan, light magenta, light black or grey are used to improve image granularity and colour gamut in highlight.

3.6.6
named colour
colour with associated colour expression specification

3.6.7
process colour
colour that is the outcome of a colour separation operation

Note 1 to entry: A process colour typically requires one or more printing units and process inks to be reproduced.

Note 2 to entry: It is typically cyan, magenta, yellow, black for four-colour printing.

[SOURCE: ISO/TS 19303-1:2020, 3.10, modified — Note 2 to entry has been added.]

3.6.8
special colour
specific colour of single *colourant* (3.9) designated, that cannot be reproduced by mixture of device *process colours* (3.6.7)

3.6.9
spot colour
colour of single *colourant* (3.9), identified by name, the printing tone-values of which are specified independently from the colour values specified in a colour coordinate system

[SOURCE: ISO 12639:2004, 4.1.10, modified — The word "colour" is added.]

3.7
colour management
communication of the associated data required for unambiguous interpretation of colour content data, and application of colour data conversions, as required, to produce the intended reproductions

[SOURCE: ISO 15076-1:2010, 3.1.11, modified — Notes to entry have been removed.]

3.7.1
characterization
process of relating device-dependent colour values to device-independent colour values

Note 1 to entry: Adapted from ISO 12637-2:2008, 2.7.

3.7.2
colour gamut
volume, area or solid in a *colour space* (3.8), consisting of all those colours that are either one of the following:

a) present in a specific scene, artwork, photograph, photomechanical, or other reproduction;

b) capable of being created using a particular output device and/or medium

Note 1 to entry: In reproduction and media applications, only the volume or solid in colour space is regarded as colour gamut. In applications such as signal lighting, the colour gamut is an area.

[SOURCE: CIE S 017/E: 2020, 17-32-007]

3.7.3
colour gamut boundary
surface determined by a *colour gamut's* (3.7.2) extremes

[SOURCE: ISO/IEC TR 29186:2012, 3.3]

3.7.4
gamut boundary descriptor
GBD
overall way of approximately describing a *colour gamut boundary* (3.7.3)

[SOURCE: ISO/IEC TR 29186:2012, 3.4]

3.7.5
gamut mapping
mapping of the *colour space* (3.8) coordinates of the elements of a source image to colour space coordinates of the elements of a reproduction to compensate for differences in the source and output medium *colour gamut* (3.7.2) capability

Note 1 to entry: The term "gamut mapping" is somewhat more restrictive than the term "colour rendering" because gamut mapping is performed on colourimetry that has already been adjusted to compensate for viewing condition differences and viewer preferences, although these processing operations are frequently combined in reproduction and preferred reproduction models.

[SOURCE: ISO 22028-2:2013, 3.14]

3.7.6
ICC
International Color Consortium
industry association formed to develop standardized mechanisms for *colour management* (3.7)

[SOURCE: ISO 15930-3:2002, 3.9]