სსტ ისო/სიე 11664-4:2019/2020

საქართველოს სტანდარტი

კოლორომეტრია - ნაწილი 4: საერთაშორისო განათების კომისიის მიერ დამტკიცებული ფერების სივრცე - CIE 1976 L*a*b* colour space

საქართველოს სტანდარტებისა და მეტროლოგიის
ეროვნული სააგენტო
თბილისი

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4 პირველად

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

CIE Central Bureau
Babenbergerstraße 9/9A
A-1010 Vienna, Austria
Phone: +43 1 714 3187
Fax: +41 22 749 09 47
Email: ciecb@cie.co.at
Website: www.cie.co.at

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Foreword

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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).

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This document was prepared by the International Commission on Illumination (CIE) in cooperation with Technical Committee ISO/TC 274, *Light and lighting*.

This first edition of ISO/CIE 11664-4 cancels and replaces ISO 11664-4:2008 | CIE 11664-4:2007, of which it constitutes a minor revision. The document has been editorially revised as per current ISO rules and the references have been updated.

A list of all parts in the ISO 11664 and ISO/CIE 11664 series can be found on the ISO website.

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.

Introduction

The three-dimensional colour space produced by plotting CIE tristimulus values (*X*, *Y*, *Z*) in rectangular coordinates is not visually uniform, nor is the (x,y,Y) space nor the two-dimensional CIE (x,y) chromaticity diagram. Equal distances in these spaces do not represent equally perceptible differences between colour stimuli. For this reason, in 1976, the CIE introduced and recommended two new spaces (known as CIELAB and CIELUV) whose coordinates are nonlinear functions of *X*, *Y* and *Z*. The recommendation was put forward in an attempt to unify the then very diverse practice in uniform colour spaces and associated colour-difference formulae[1][2]. Both these more-nearly uniform colour spaces have become well accepted and widely used. Numerical values representing approximately the magnitude of colour differences can be described by simple Euclidean distances in the spaces or by more sophisticated formulae that improve the correlation with the perceived size of differences.

The purpose of this document is to define procedures for calculating the coordinates of the CIE 1976 L*a*b* (CIELAB) colour space and the Euclidean colour difference values based on these coordinates. This document does not cover more sophisticated colour-difference formulae based on CIELAB, such as the CMC formula[3], the CIE94 formula[4], the DIN99 formula[5], and the CIEDE2000 formula[6][7], nor does it cover the alternative uniform colour space, CIELUV[8].