Colorimetry - Part 5: CIE 1976 L*u*v* Colour Space and u', v' Uniform Chromaticity Scale Diagram


This joint ISO/CIE Standard (replacing CIE S 014-5/E:2009) specifies the method of calculating the coordinates of the CIE 1976 L*u*v* colour space including correlates of lightness, chroma, saturation and hue. It includes two methods for calculating Euclidean distances in this space to represent the relative perceived magnitude of colour differences. It also specifies the method of calculating the coordinates of the u',v' uniform chromaticity scale diagram.

The Standard is applicable to tristimulus values calculated using the colour-matching functions of the CIE 1931 standard colorimetric system or the CIE 1964 standard colorimetric system. The Standard may be used for the specification of colour stimuli perceived as belonging to a reflecting or transmitting object, where a three-dimensional space more uniform than tristimulus space is required. This includes self-luminous displays, like cathode ray tubes, if they are being used to simulate reflecting or transmitting objects and if the stimuli are appropriately normalized. The Standard, as a whole, does not apply to colour stimuli perceived as belonging to an area that appears to be emitting light as a primary light source, or that appears to be specularly reflecting such light. Only the u',v' chromaticity diagram defined in Section 4.1 and the correlates of hue and saturation defined in Section 4.3 apply to such colour stimuli.

This Standard has been approved by CIE and by ISO. It may be obtained from the CIE National Committees or via the website of the CIE Central Bureau (www.cie.co.at).

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