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

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**Method of measuring and specifying colour rendering of light
sources**

光源显色性的表示和测量方法

(English Translation)

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Foreword

This standard is equivalent to using CIE13.3-1995 "light color representation and measurement methods" (in English).

This standard is equivalent translation CIE13.3-1995.

For ease of use, this standard made the following editorial changes.

The term a) "The technical report" to the "standard";

b) use a decimal point instead of a decimal point ", ". ", ";

c) Remove CIE13.3-1995 preface;

d) Remove CIE13.3-1995 of Chapters 1 and Appendix B, will CIE13.3-1995 of Chapters 2 and 3 were changed to 1 and Chapter 2, will CIE13.3-1995 Appendix A to Chapter 3.

The standard proposed by China National Light Industry Council.

This standard by the National Standardization Technical Committee of electrical lighting (SAC/TC224) centralized.

This standard was drafted. National Electric Light Source Quality Supervision and Inspection Center (Beijing), Hangzhou distance Photoelectric Information Co., Ltd., China recognized quality Accreditation Centre.

Introduction

This standard established measurement and representation of the overall color of the object based on the color shift of the light source, (referred to as "color test method").

This is the basic method for color light source was evaluated and recommended for type testing and independent testing of the lamp.

In order to apply the recommended color test method, you must calculate the total color appropriate test color samples selected offset. By spectral radiation Factor to determine a set of eight color samples used to calculate the general color rendering index. These samples cover a hue circle, moderate saturation, brightness Nearly identical. Data represent six traditional colors of the test sample magenta, yellow, green, and blue color and plant color. According to the color shift can be remarkably Color index.

Represent significant sources and methods of measurement of color

1 Purpose

This standard established measurement and representation of the overall color of the object based on the shift light color of the "Color Test Method." this standard should be used as the basic method of evaluation of the light source color of the display, and is recommended for type testing and independent testing of the lamp.

For defined but not used in this standard appears in the International Lighting Vocabulary, see Chapter 3.

2 Range

This standard applies to most general lighting illumination (such as tungsten, fluorescent tubes and compact fluorescent lamps, and other types of Gas discharge lamps, excluding predominantly monochromatic source, such as a low pressure sodium lamp). The method may also be applied to the corrected daylight.

3 Terms and Definitions

The following terms and definitions apply to this standard.

Color colourrenderingproperties Under certain conditions, the light source of the color table to its object under illumination compared to a reference color table effects.

1994 uniform color space 1994uniformspace Produced in three orthogonal axes U^* , V^* , W^* , W^* a space formed nearly identical color space, U^* , V^* , W^* by the formula (3-1) Definition.

$W^* = 25Y^{1/3} - 17$

$U^* = 13W^* (u-u_0) \quad (3-1) \quad V^* = 13W^* (v-v_0) \quad 1 \leq Y \leq 100$ u, v is 1960UCS color coordinates (see Fig. 1960UCS), u_0, v_0 is selected variables achromatic color values.

Note 1: For object color, illumination color coordinates u_0, v_0 choice can be satisfied.

Note 2: In this system, the color ($U^* 1, V^* 1, W^* 1$) and color ($U^* 2, V^* 2, W^* 2$) The size of the difference ΔE of perception.

$\Delta E = [(U^* 1 - U^* 2)^2 + (V^* 1 - V^* 2)^2 + (W^* 1 - W^* 2)^2]^{1/2}$ 3.3 1960UCS FIG

1960UCS diagram Produced in the rectangular coordinate system u, v , a nearly uniform chromaticity diagram, u, v is defined by the formula (3-2).

$u = 4x/(-2x + 12y + 3) = 4X/(X + 15Y + 3Z) \quad (3-2) \quad v = 6y/(-2x + 12y + 3) = 6Y/(X + 15Y + 3Z)$ 3.4 Katherine Kelvin reciprocal (MK-1) reciprocal megakelvin (MK-1) the term used to describe the correlated color temperature differences. Is 106K-1 (instead of the obsolete term "Mired". micro reciprocal degrees).

Note: The difference between equal along the Planckian locus corresponds substantially equal to the reciprocal of Katherine Kelvin.

4 Stars

Evaluation should include general color rendering index, and may be composed of a series of special color rendering index as a supplement.

Export special color rendering index should be based on a comparison of the color difference vector length uniform color space and 1964, and should be in accordance with Chapters 5 and 6