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

**GB/T 39388-2020**

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**Characterization of the performance of illuminance meters and  
luminance meters**

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### Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

The translation method used in this standard is equivalent to the CIES023/E.2013 "Methods for Characterizing the Performance of Luminance Meters and Luminance Meters".

The Chinese documents that have a consistent correspondence with the international documents cited in this standard are as follows.

---GB/T 27418-2017 Measurement Uncertainty Evaluation and Expression (ISO /IEC Guide98-3:2008, MOD).

This standard has made the following editorial changes.

---Deleted the description of international standard substitution in the international standard;

---Deleted the relevant explanatory content of the quality indicators in Chapter 3;

---Revised references.

This standard was proposed by the China National Light Industry Council.

This standard is under the jurisdiction of the National Lighting Standardization Technical Committee (SAC/TC224).

Drafting organizations of this standard. Hangzhou Yuanfang Optoelectronics Information Co., Ltd., China Institute of Metrology, Guangzhou Metrology and Testing Technology

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## 1 Scope

This standard applies to illuminance meters and luminance meters. This standard defines the quality of the performance characterization of the above equipment used in general lighting measurement

Indicators, as well as the measurement process and standard calibration procedures of each indicator.

The measurement of illuminance and brightness and its accuracy are affected by many factors, such as operating conditions, light source characteristics and the characteristics of the photometer used.

For a specific measurement task, the measurement uncertainty cannot be estimated based on the characteristics of the photometer alone. However, in most cases, sex

Equipment with better performance has less measurement uncertainty than equipment with poor performance. This standard aims to.

--- Provide clear and clear definitions for each quality index;

---Specify the measurement steps and methods for quantitatively evaluating these quality indicators;

---Specify the calibration conditions of the illuminance meter and the luminance meter.

## 2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GB/T 20151-2006 Photometric CIE Physical Photometric System

ISO /IEC Guide98-3.20081) Measurement Uncertainty Part 3.Guidance on the labeling of measurement uncertainty

ISO /IEC Guide99.20072) Basic and general concepts and related terms of international metrology vocabulary

IEC 60051-1.1997 Direct acting indicating analog electrical measuring instruments and their accessories Part 1.General requirements for all parts

ISO 11664-2.2007/CIES014-2/E.2006 Chromaticity Part 2.CIE Standard Lighting Body

CIES017/E.2011 International Lighting Vocabulary (ILV. International Lighting Vocabulary)

CIE114/4.1994 CIE Photometry and Colorimetry Compilation of Distribution Temperature and Proportional Temperature

CIE198.2011 photometric measurement uncertainty

CIE202.2011 Spectral sensitivity measurement of detectors, radiometers and photometers

1) It is also the standard JCGM100.2008, from the website of the International Bureau of Weights and Measures (BIPM).

2) It is also the standard JCGM200.2008, from the website of the International Bureau of Weights and Measures (BIPM).

### **3 Terms and definitions**

The following terms and definitions defined in CIES017/E.2011 apply to this document.