ICS 29.140.99
CCS K 70

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 38439-2019

Measuring specification for methods of assessing obtrusive light from outdoor lighting

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Issued on: December 31, 2019 **Implemented on: April 1, 2020**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard was proposed and managed by the National Public Facilities Service Standardization Technical Committee (SAC/TC537). This standard was drafted. Beijing Institute of Lighting, Beijing Qingcheng Pinsheng Lighting Research Institute Co., Ltd., China Academy of Building Research Division, China Institute of Metrology, Beijing Institute of Standardization, Tsinghua University Architectural Design and Research Institute Co., Ltd., Tianjin University Architecture Institute, Shanghai Bifu Lighting Engineering Design Co., Ltd., Horse Technology Group Co., Ltd., Huizhou Nexus Optoelectronic Technology Co., Ltd., Beijing New Space-Time Technology Co., Ltd., Beijing Liangye Environmental Technology Co., Ltd., Tongfang Co., Ltd., Tsinghua Kangli Urban Lighting Research Institute of Shandong Research Design Institute Co., Ltd., Yangmei Guangcheng (Beijing) Architectural Design Co., Ltd., Masco Lighting Equipment (Shanghai) Co., Ltd., Ningbo

Euroc Electric Co., Ltd. The main drafters of this standard. Li Tienan, Ma Yan, Xu Hua, Li Qifeng, Liu Hui, Zhou Gang, Li Yuan, Zhang Mingyu, Tian Chuan, Mu Hongyi, Xu Nan, Cao Xiaobing, Dai Baolin, Cheng Yu, He Wenliang, Zeng Chuan, Yan Shi, Chang Zhigang, Rong Haolei, Ma Liqun, Liang Yi, Yang Bo, Zhu Feibiao, Li Tong, Zhang Yating, Wang Zhengtao, Wang Xiaoying, Zhang Qiuyan, Jiang Lina, Chen Ting. Interference light measurement specification for outdoor lighting

1 Scope

China's national specification for measuring obtrusive light from outdoor lighting. It specifies the terms and definitions and the basic requirements, beginning with the purpose and conditions of measurement. It is the companion to the standard that sets the limits: that one says how much light may fall where it is not wanted, and this one says how to find out whether it does. The measurement is more awkward than it sounds. Light trespass into a window has to be measured at the window in the plane of the glass, at night, with the source in question on and then off so that the background can be subtracted - and the background includes every other light in the neighbourhood. Sky glow has to be measured looking up, where the quantity depends on the atmosphere as much as on the lighting. And glare is a subjective quantity computed from the luminance of the source and its position in the field of view, which requires knowing where the observer is meant to be standing.

This standard specifies the general requirements, measurement instruments, measurement methods, reports and records for the measurement of interference light generated by outdoor lighting facilities. This standard applies to residential areas, transportation roads, urban public resting places, and natural light emitted by outdoor lighting and related lighting devices. Measurement of disturbing light in areas such as ecological zones and people.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 2900.65 Electrical terminology lighting

GB/T 7002 Photometric Test of Flood Lighting

GB/T 9468 General requirements for photometric measurement of luminaire distribution

GB/T 35626-2017 outdoor interference interference light specification JJG211 Luminance Meter Verification Regulations JJG245 Light Meter Verification Regulations JGJ/T 119 Architectural Lighting Terminology Standard

3 Terms and definitions

The terms and definitions defined in GB/T 2900.65, GB/T 35626-2017 and JGJ/T 119 and the following apply to this document.

3.1 Obtrusivelight Light that causes annoyance, discomfort, distraction, or decreased ability to view important information due to intensity or directional characteristics.

Note. Rewrite GB/T 35626-2017, definition 3.2. 3.2 [] illumination iluminance The illuminance of a point on the surface is the quotient obtained by dividing the luminous flux dPhi incident on the facet containing the point by the area dA of the facet.

Note. The unit is lux (lx), 1lx = 1lm/m2.

3.3 Light The luminous intensity per unit projected area is calculated as. L = d2Phi/(dA · costheta · dOmega) Where. L

--- brightness, unit is candela per square meter (cd/m2); d2Phi--the luminous flux propagated by the beam element at a given point within the solid angle dOmega containing the direction, the unit is lumens (lm); dA

--- includes the cross-sectional area of the beam at a given point, in square meters (m2); theta

--- the angle between the beam cross section normal and the beam direction, the unit is degree (°);