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CCS F01



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

GB 31276-2014

**Minimum allowable values of energy efficiency and evaluating
values of energy conservation of tungsten halogen lamp**

普通照明用卤钨灯能效限定值及节能评价

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Standardization Administration of China**

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Foreword

4.3 This standard is mandatory, the rest are recommended. This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard by the National Development and Reform Commission resource conservation and environmental protection, energy conservation and comprehensive utilization of Industry and Information Technology Ministry. This standard by the National Standardization Technical Committee for Energy and Management (SAC/TC20) centralized. This standard drafting units. China National Institute of Standardization, Osram (China) Lighting Co., Ltd., Zhejiang Shenghui Lighting Co., Ltd., Philips (China) Investment Co., Ltd., Kwong Ming Source Lighting Appliance Co., NVC Lighting Technology Co., Ltd., Foshan Electrical and Lighting Co. Shares the company. The main drafters of this standard. Zhao Yuejin, Zhangjun Bin, Lu Guangming, Yu Gaojie, Chengtai Song, Xiong Fei, Wei Bin. Tungsten halogen lamps for general lighting energy efficiency limit And energy conservation evaluation values

1 Scope

GB 31276-2014 is the Chinese national standard on minimum allowable values of energy efficiency and evaluating values of energy conservation of tungsten halogen lamp, in the field of energy and heat transfer engineering. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 10 October 2014 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 September 2015. Classification: ICS 27.010, CCS F01. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the limit values, evaluating values of energy conservation and energy efficiency test methods for domestic and similar general lighting with halogen lamps.

This standard applies to the rated voltage is less than or equal to 24V, a power range of 5W ~ 100W; rated voltage of 220V ~ 250V, power Rates from non-directional 15W ~ 500W tungsten halogen lamps for general illumination. This standard does not apply to directional halogen lamps.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 14094 halogen lamps (non - vehicle) - Performance requirements

GB 14196.2 lamps - Safety requirements - Part 2. domestic and similar general lighting with halogen lamps

GB 14196.3 lamps - Safety requirements - Part 3. Tungsten halogen lamps (non-motorized vehicles)

GB/T 26178 flux measurement method

3 Terms and Definitions

GB/T 14094 and defined by the following terms and definitions apply to this document.

3.1 The initial tungsten halogen light efficiency

initialluminousefficacyfortungstenhalogenlamp Under standard test conditions, halogen measured initial luminous flux and the measured power ratio.

3.2 Halogen lamps energy efficiency limit

minimumallowablevaluesofenergyefficiencyfortungstenhalogenlamp Under standard test conditions, the value of the minimum standard halogen lamps initial light effect achieved.

3.3 Halogen lamps energy conservation evaluation values

evaluatingvaluesofenergyconservationfortungstenhalogenlamp Under standard test conditions, minimum standards for the initial value of energy-saving halogen lamps light effect achieved.

3.4 Halogen lamps Directional/non-directional halogen lamps

directionalhalogenlamp/non-directionalhalogenlamp Lamps in solid angle of π steradian (sr) within (equivalent to 120 ° cone angle of the conical solid angle) more than 80% of the light output, known as directed Halogen lamps; on the contrary, is called non-directional halogen lamps.

4. Technical Requirements

4.1 Basic requirements This standard applies halogen lamps, their safety should be consistent with GB 14196.2 and GB 14196.3 requirements; performance should be consistent with GB/T 14094 Requirements.

4.2 defines the calculated value of energy efficiency halogen lamps and energy-saving evaluation value Halogen lamps and energy-saving energy efficiency limit value shall be evaluated formula (1) is calculated. $\eta = (2b a^2/P) - 4a^2b/P a^4/P^2 2b^2$ (1) Where. η

--- Initial luminous efficacy, in lumens per watt (lm/W); P

--- rated power in watts (W); a, b

--- constant (constant energy efficiency limit value and energy conservation evaluation values in Table 1). The calculated energy efficiency of limited value and energy after an evaluation of the value of decimal places after the decimal place value rounding. Table 1 defines the calculation of energy efficiency and energy conservation evaluation values constant value Initial luminous efficacy values coefficient Rated voltage $\leq 24V$ 220V ~ 250V Energy efficiency of limited value evaluating values of energy efficiency limit value of energy conservation evaluation values a 0.70 0.51 1

0.75 b 0.041 0.028 0.05 0.035

4.3 halogen lamps energy efficiency limit The initial tungsten halogen light effect in line with the formula (1) and Table 1 gives the constants calculated the energy efficiency of limited value, or Table 2, Table 3 shows the energy efficiency Limit. At the same time the life of halogen lamps shall meet the requirements of 4.5.

4.4 tungsten-halogen energy-saving evaluation value The initial tungsten halogen light effect in line with the formula (1) and Table 1 gives the constants of the calculated energy conservation evaluation values, or Table 2, Table 3 shows energy Evaluation value. At the same time the life of halogen lamps shall meet the requirements of 4.5. Table 2 halogen lamps energy efficiency of limited value and the initial luminous efficiency energy saving evaluation value (rated voltage $\leq 24V$) in lumens per watt rated power efficiency Limit Energy Saving Evaluation value rated power efficiency Limit Energy Saving Evaluation value 5 5.9 10.0 14 10.0 16.2 23 12.0 19.1 6 6.6 11.0 15 10.3 16.6 24 12.2 19.4 7 7.1 11.9 16 10.5 17.0 25 12.4 19.6 8 7.7 12.7 17 10.8 17.3 26 12.5 19.8 9 8.1 13.4 18 11.0 17.7 27 12.7 20.0 10 8.6 14.1 19 11.3 18.0 28 12.8 20.2 11 9.0 14.7 20 11.5 18.3 29 13.0 20.4 12 9.3 15.2 21 11.7 18.6 30 13.1 20.6 13 9.7 15.7 22 11.9 18.9 31 13.2

20.8 TABLE 2 (cont.) Lumens per watt rated power efficiency Limit Energy Saving Evaluation value rated power efficiency Limit Energy Saving Evaluation value rated power efficiency Limit Energy Saving Evaluation value 32 13.4 21.0 55 15.4 23.7 78 16.5 25.3 33 13.5 21.1 56 15.4 23.8 79 16.6 25.4 34 13.6 21.3 57 15.5 23.9 80 16.6 25.4 35 13.7 21.5 58 15.5 24.0 81 16.6 25.5 36 13.8 21.6 59 15.6 24.1 82 16.7 25.5 37 13.9 21.7 60 15.7 24.2 83 16.7 25.6 38 14.0 21.9 61 15.7 24.2 84 16.8 25.6 39 14.1 22.0 62 15.8 24.3 85 16.8 25.7 40 14.2 22.2 63 15.8 24.4 86 16.8 25.7 41 14.3 22.3 64 15.9 24.5 87 16.9 25.8 42 14.4 22.4 65 15.9 24.5 88 16.9 25.8 43 14.5 22.5 66 16.0 24.6 89 16.9 25.9 44 14.6 22.6 67 16.0 24.7 90 17.0 25.9 45 14.6 22.8 68 16.1 24.7 91 17.0 26.0 46 14.7 22.9 69

16.1 24.8 92 17.0 26.0 47 14.8 23.0 70 16.2 24.9 93 17.1 26.1 48 14.9 23.1 71 16.2 24.9
94 17.1 26.1 49 15.0 23.2 72 16.3 25.0 95 17.1 26.2 50 15.0 23.3 73 16.3 25.0 96 17.2
26.2 51 15.1 23.4 74 16.4 25.1 97 17.2 26.2 52 15.2 23.5 75 16.4 25.2 98 17.2 26.3 53
15.2 23.6 76 16.4 25.2 99 17.3 26.3 54 15.3 23.7 77 16.5 25.3 100 17.3

5 Test methods

Initial luminous efficacy and life should be in accordance with Test Method GB/T 14094 stipulated in the test, in which the initial luminous flux according to GB/T 26178 test.