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Minimum allowable values of energy efficiency and energy efficiency grades for single-capped electrodeless fluorescent lamps

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Foreword

Clause 4.4 of this standard is mandatory, AND the rest is recommended.

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

This standard was proposed by the Department of Energy Conservation and Environmental Protection of the National Development and Reform Commission and the Department of Energy and Comprehensive Utilization of the Ministry of Industry and Information Technology.

The standard shall be under the jurisdiction of the National Energy Infrastructure and Management Standardization Technical Committee (SAC/TC 20).

The drafting organizations of this standard: China Standardization Institute, Changzhou Teweile Energy Conservation Lighting Scientific Co., Ltd., Zhejiang Shenghui Lighting Co., Ltd., Shandong Bestlite Lighting Appliance Co., Ltd., Nortrum (Shanghai) Co., Ltd., National Electric Light Source Quality Supervision and Inspection Center (Shanghai), Beijing Electric Light Source Research Institute, Zhejiang Xiong Bang Energy Saving Products Co., Ltd., Henan Boyang Sunny Green Lighting Co., Ltd., Anhui Jiuzhou Tianji Light Co., Ltd., Changzhou Funeng Electronics Co., Ltd., Changzhou Laiyue Lighting Co., Ltd., Fujian Yuanguang Yaming Electrical Appliance Co., Ltd., Guangzhou Langlaifu Lighting Appliance Technology Co., Ltd., Hebei Shijiazhuang Baoshi Energy Saving Lighting Technology Co., Ltd., Jingjing Optoelectronics Technology Co., Ltd., Zhejiang Changhong Electric Light Source Co., Ltd., Liaoning Baolin Group Co., Ltd., Zhejiang Keshi Electronic Technology Co., Ltd., Guangdong Shunxiang Energy Saving Lighting Technology Co., Ltd., Anhui Excellence Electric Co., Ltd., Wuhu Fengyun Science and Technology Energy Technology Co., Ltd., Wuhu Fengyun Technology Co., Ltd., Huangshi Qiming Lighting Co., Ltd., Jiangmen Fuyuhemei Lighting Appliance Co., Ltd., Foshan Nanhai District Luocun Heilong Electrical Light Fixture Factory Lianhe Branch, China Energy Conservation Association Power Saving and Green Power Comission, Jiangsu Zhenghui Lighting Technology Co., Ltd., Beijing Zhongying Zhengyuan Energy Saving Technology Service Co., Ltd., Ningbo Rijin Weiye Electronics Co., Ltd., Chengdong Dongxu Energy Saving Technology Co., Ltd., Shanghai Yixi Electronic Technology Co., Ltd.

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Minimum allowable values of energy efficiency and energy efficiency grades for single-capped electrodeless fluorescent lamps

1 Scope

This standard specifies the energy efficiency grades, energy efficiency limit value, energy saving evaluation value, and test method of single-capped electrodeless fluorescent lamps.

This standard applies to the external coupling and internal coupling single-capped electrodeless fluorescent lamps having a rated power of 30 W ~ 400 W.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this Standard.

QB/T 2938 Single-capped electrodeless fluorescent lamps

3 Terms and definitions

The terms and definitions as defined in QB/T 2938 AND the following terms and definitions apply to this document.

3.1

Initial luminous efficacy for single-capped electrodeless fluorescent lamps

The ratio of the initial luminous flux of the single-capped electrodeless fluorescent lamp to the measured power (external coupling is the lamp power, AND internal coupling is the lamp-ballast system power).

3.2

Minimum allowable values of energy efficiency for single-capped electrodeless fluorescent lamps

The allowable minimum initial luminous efficiency of a single-capped electrodeless fluorescent lamp under the test conditions as specified in this standard.

Appendix A

(Normative)

Internal coupling electrodeless fluorescent lamp luminous efficiency test

A.1 Test conditions

A.1.1 Ambient temperature

The test shall be carried out in an airless convection chamber AND at an ambient temperature of 20 °C ~ 27 °C.

A.1.2 Supply voltage and frequency

A.1.2.1 Test voltage and frequency

When the ballast is marked with the supply voltage range used, OR when the ballast has several different independent rated supply voltages, AND any predetermined voltage for this ballast can be selected as the rated voltage. The power frequency input into the ballast shall be 50 Hz.

A.1.2.2 Power supply stability

The supply voltage shall be stable within ± 0.5% of the rated voltage. However, during actual measurement, the voltage error shall be adjusted to within 0.2% of the rated voltage.

A.1.2.3 Test supply voltage waveform

The total harmonic content of the test power supply voltage shall not exceed 3%; the harmonic content is defined as the sum of the effective value of each harmonic component (r.m.s.), AND the base wave is defined as 100%.

A.1.3 Magnetic effect

There shall be no magnetic objects within the range of 25 mm from the surface of the tested ballast, unless otherwise specified.

A.1.4 Installation of internal coupling electrodeless fluorescent lamps

In order to ensure uniformity of the electrical characteristics of the lamp, the lamp's measuring position shall be as described in the lamp parameter table. If the lamp's parameter table does not provide installation instructions, the lamp shall be installed horizontally.

The test position of the lamp shall be consistent with the position at the preheating stage.

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