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

GB/T 21091-2026

Replacing GB/T 21091-2007

**Self-ballasted electrodeless fluorescent lamps for general
lighting services - Performance specifications**

普通照明用自镇流无极荧光灯 性能规范

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document supersedes GB/T 21091-2007 "Performance Requirements for Self-Ballasted Electrodeless Fluorescent Lamps for General Lighting" and is consistent with GB/T 21091- Compared to.2007, aside from structural adjustments and editorial changes, the main technical changes are as follows:

- Some terms and definitions have been changed (see Chapter 3, Chapter 3 of the.2007 edition);
- The model designation rules have been changed (see 4.2,.2007 version 4.2);
- The basic parameters for lamp start-up performance have been removed (see 4.3.3 in the.2007 version);
- The startup performance requirements have been changed (see 5.3, version
- Added electromagnetic compatibility requirements for lamps (see 5.10);
- The requirements for lamp dimensional testing have been changed (see 6.2,.2007 edition of 6.2);
- The requirements for the lamp start-up performance test have been changed (see 6.3,.2007 version of 6.3). Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China National Light Industry Council. This document is under the jurisdiction of the National Technical Committee on Standardization of Lighting Appliances (SAC/TC224). This document was drafted by: Hangzhou Hanguang

Lighting Co., Ltd., Zhejiang Interlight Optoelectronics Technology Co., Ltd., and Zhejiang Provincial Electronic Information Product Inspection Center. The institute includes the National Electric Light Source Quality Supervision and Inspection Center (Beijing), Zhejiang Hanlan Optoelectronics Co., Ltd., and Beijing Electric Light Source Research Institute Co., Ltd. The main drafters of this document are: Wu Yongqiang, Zhang Hong, Xue Xiaoxiao, Wang Qiang, and Yang Jianlin. The release history of this document and the document it replaces is as follows:

---First published in 2007 as GB/T 21091-2007;

---This is the first revision. Performance Specifications for Self-Ballasted Electrodeless Fluorescent Lamps for General Lighting

1. Scope This document specifies the product classification, requirements, inspection rules, marking, packaging, transportation, and other aspects of self-ballasted electrodeless fluorescent lamps (hereinafter referred to as "lamps"). Storage, and the corresponding experimental methods are described. This document applies to lamps with a rated voltage of 220V and a frequency of 50Hz, using screw-in or bayonet-type lamp holders, for general lighting in households and similar settings. The lights.

4 Classification and Model

4.1 Product Classification Lamps are classified according to the form of their discharge tubes: double tube, four tube, multi tube, spiral, ring, spherical, reflective, etc., and their types should conform to GB/T Requirements of Appendix E in 17262-2011.

4.2 Model Number Designation Rules The rules for naming lamp models are as follows:

5 Requirements

5.1 Safety Requirements The safety requirements for lamps shall comply with the requirements of GB 21554.

5.2 External Dimensions of the Lamp The dimensions of the lamp shall conform to the manufacturer's specified specifications, and the lamp holder shall conform to the requirements of GB/T 1406.1 or GB/T 1406.5.

5.3 Startup Performance

5.3.1 Startup Time The start-up time of the lamp meets the following requirements.

- a) Start at room temperature The lamp's start-up time should not exceed 1 second at a normal temperature of $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ and 92% of its rated voltage.
- b) Low temperature start-up The lamp's start-up time should not exceed 10 seconds at -10°C and 92% of rated voltage. If the manufacturer has specified a lower start-up

temperature or... Lamps with shorter start-up times should start at 92% of rated voltage, at the indicated minimum temperature and within the start-up time.

5.3.2 Rise Time The light's rise time should not exceed 3 seconds.

5.3.3 Settling Time The stabilization time of the lamp should not exceed 40 minutes.

5.4 Lamp Power When a lamp operates stably at its rated voltage and frequency, the absolute value of the difference between its actual power consumption and its rated power should not exceed the rated power. 15% of the constant power.

5.5 Power Factor When the lamp operates at its rated voltage and frequency, its actual power factor should not be lower than the nominal value stated by the manufacturer or distributor by more than 0.05. The nominal value of a high power factor lamp should be no less than 0.90, and the nominal value of a low power factor lamp should be no less than 0.55.

5.6 Initial Luminous Efficacy/Luminous Flux The initial luminous flux of the lamp shall not be less than the specifications in Table

1. The initial luminous flux of the lamp may be stated by the manufacturer or distributor, but its measured value should not be less than... It is less than 95% of the stated value.

5.7 Color Characteristics The color characteristics of the lamps should conform to the specifications in Table 2. The initial average value of the color rendering index Ra of lamps should not be lower than the value specified in Table 2, and individual values should not be lower than the average value by more than 3 orders of magnitude, with $R_9 > 0$. The average tolerance of the lamp color should conform to the values specified in Table 2.

5.8 Lifetime Characteristics The lamp ignites at its rated voltage, and its median lifespan should be no less than 30,000 hours.

5.9 Luminous flux maintenance The luminous flux maintenance rate of the lamp should be no less than 90% after 2000 hours of operation, and no less than [a certain percentage] after 6000 hours of operation. At 85%.

5.10 Electromagnetic compatibility characteristics

5.10.1 Radio Interference Characteristics The radio interference characteristics of the lamp shall comply with the requirements of GB/T 17743.

5.10.2 Harmonics The harmonic current of the lamp shall comply with the requirements of GB 17625.1.

5.10.3 Electromagnetic compatibility immunity The electromagnetic compatibility immunity of the lamp shall meet the requirements of GB/T 18595.

6 Test Methods

6.1 General Requirements for Testing The photoelectric parameters of the lamp should be measured in an environment with an ambient temperature of $25^{\circ}\text{C}\pm 2^{\circ}\text{C}$ and a relative humidity of no more than 65% without convection. conduct. During stabilization, the power supply voltage should remain within $\pm 0.5\%$; during measurement, it should drop to within $\pm 0.2\%$. For lifespan... The test results should be stable within $\pm 2\%$. The total harmonic distortion (THD) of the power supply voltage should not exceed 3%. The percentage of THD to the fundamental frequency is the root mean square of each harmonic component. sum. All tests should be conducted at the rated frequency, and the lamp should be placed in free space with the lamp head pointing vertically upwards.

6.2 Dimensional Test The external dimensions of the lamp are measured using a measuring tool with an error of no more than

0.05 mm. The lamp holder shall be inspected using the gauges specified in GB/T 1483.1 or GB/T 1483.5.

6.3 Start-up performance test The test methods for startup time, settling time, and rise time shall be carried out in accordance with the provisions of section

5.4 of GB/T 17263-2025.

6.4 Testing of photoelectric parameters The test methods for lamp power and power factor shall be carried out in accordance with the provisions of section

5.5 of GB/T 17263-2025. The initial luminous efficacy/luminous flux and color characteristics of the lamp are tested according to the provisions of section

5.6 of GB/T 17263-2025. The luminous efficacy of the lamp... It was calculated.

6.5 Life Characteristics Test The median life and luminous flux maintenance of the lamps shall be tested in accordance with the provisions of section

6.5 of GB/T 17263-2025.

6.6 Electromagnetic Compatibility Characteristics Test The electromagnetic compatibility characteristics of a lamp include radio interference characteristics, harmonics, and electromagnetic compatibility immunity. Tests are conducted according to GB/T 17743,... The requirements of GB 17625.1 and GB/T 18595 shall be followed.

6.7 Marking Test The correctness and clarity of the light signs are checked visually. The durability of the light signs is checked by wiping them with a damp cloth for 15 seconds, allowing them to dry, and then wiping them with a cloth dampened with [unclear - possibly a substance or ingredient]. Wipe with a cloth containing alkyl for 15 seconds. After the test, the marking should still be clearly visible.