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

GB 19044-2022

Replacing GB 19044-2013

**Minimum allowable values of energy efficiency and energy
efficiency grades of fluorescent lamps for general lighting**

普通照明用荧光灯能效限定值及能效等级

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Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents. This document replaces GB 19044-2013 Minimum allowable values of energy efficiency and the energy efficiency grades of self-ballasted fluorescent lamps for general lighting service, GB 19043-2013 Minimum allowable values of energy efficiency and the energy efficiency grades of double-capped fluorescent lamps for general lighting service, GB 19415-2013 Minimum allowable values of energy efficiency and evaluating values of energy conservation for single-capped fluorescent lamps, GB 29144-2012 Minimum allowable values of energy efficiency and the energy efficiency grades for self-ballasted electrodeless fluorescent lamps with general lighting service, and GB 29142-2012 Minimum allowable values of energy efficiency and energy efficiency grades for single-capped electrodeless fluorescent lamps. Compared with GB 19044-2013, GB 19043-2013, GB 19415-2013, GB 29144-2012, GB 29142-2012, except for structural adjustment and editorial changes, the main technical changes are as follows:

- a) Add the terms and definitions of luminous efficacy of fluorescent lamps and minimum allowable value of energy efficiency of fluorescent lamps (see Chapter 3);
- b) Remove the terms and definitions of the initial luminous efficacy of self-ballasted fluorescent lamps, the minimum allowable value of energy efficiency of self-ballasted fluorescent lamps, the evaluating value of energy conservation of self-ballasted fluorescent lamps, the initial luminous efficacy of double-capped fluorescent lamps, the minimum allowable value of double-capped fluorescent lamps, the evaluating value of energy

conservation of double-capped fluorescent lamps, the initial luminous efficacy of single-capped fluorescent lamps, the minimum allowable value of single-capped fluorescent lamps, the evaluating values of energy conservation of single-capped fluorescent lamps, the initial luminous efficacy of self-ballasted electrodeless fluorescent lamps, the minimum allowable value of self-ballasted electrodeless fluorescent lamps, the evaluating values of energy conservation of self-ballasted electrodeless fluorescent lamps, the initial luminous efficacy of single-capped electrodeless fluorescent lamps, the minimum allowable value of single-capped electrodeless fluorescent lamps, and the evaluating values of energy conservation of single-capped electrodeless fluorescent lamps (see Chapter 3 of GB 19044-2013, Chapter 3 of GB 19043-2013, Chapter 3 of GB 19415-2013, Chapter 3 of GB 29144-2012, Chapter 3 of GB 29142-2012);

c) Delete the basic requirements (see

4.1 of GB 19044-2013,

4.1 of GB 19043-2013,

4.1 of GB 19415-2013,

4.1 of GB 29144-2012,

4.1 of GB 29142-2012); Minimum allowable values of energy efficiency and energy efficiency grades of fluorescent lamps for general lighting

1 Scope

China's mandatory energy efficiency standard for fluorescent lamps used in general lighting - the tubes and compact lamps that lit offices, schools, factories and homes for a generation, and which this standard has progressively squeezed out of the market as LED sources overtook them. It specifies the minimum allowable values of energy efficiency, the energy conservation evaluation values, the energy efficiency grades, the test methods and the inspection rules for fluorescent lamps for general lighting. The efficiency is expressed as the initial luminous efficacy in lumens per watt, tabulated by lamp type, rated power and correlated colour temperature - the last of these mattering because a warmer lamp is inherently less efficacious than a cooler one and would otherwise be judged unfairly against it. The minimum allowable value is the compliance threshold below which a lamp may not be manufactured, imported or sold; the energy conservation evaluation value is the higher threshold used for the energy saving certification; and the grades are what the purchaser reads on the energy label. What gives a standard of this kind its force is that it is not a target but a floor, revised upward each edition: each revision removes the least efficient products from the market outright, and it is that ratchet rather than any subsidy that has done most to change what is actually sold. The test methods refer the measurement of efficacy, and the lamp life and lumen maintenance that go with it, back to the product standards, so that the label figure and the compliance figure are obtained in the same way.

Issued on 29 December 2022 and in force since 1 January 2024, it replaces GB 19044-2013.

This document specifies the energy efficiency grades, minimum allowable values and test methods of fluorescent lamps for general lighting. This document applies to the following types of fluorescent lamps: -- Self-ballasted fluorescent lamps with a rated power of 3 W ~ 60 W and self- ballasted electrodeless fluorescent lamps with a rated power of 10 W ~ 60 W, both of which are of rated voltage 220 V, frequency

50 Hz AC power supply, using screw lamp cap or bayonet lamp cap, integrating control, start and stable ignition components. -- Preheated cathode lamps (hereinafter referred to as double-capped fluorescent lamps) that work on lines with starters at AC power frequency and can work on high-frequency lines, and work on high-frequency lines; -- Single-capped fluorescent lamps with preheated cathodes; -- Single-ended electrodeless fluorescent lamps of rated power 30 W ~ 400 W. This document does not apply to self-ballasted fluorescent lamps with shades.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the version corresponding to that date is applicable to this document; for undated references, the latest version (including all amendments) is applicable to this document.

GB/T 10682, Double-capped fluorescent lamps - Performance specifications

GB/T 17262, Single-capped fluorescent lamps - Performance specification

GB/T 17263, Self-ballasted lamps for general lighting service - Performance requirements

GB/T 21091, Self-ballasted electrodeless fluorescent lamps for general lighting services - Performance requirements

GB/T 34841, Fluorescent induction lamps - Performance specification

3 Terms and definitions

Terms and definitions determined by GB/T 10682, GB/T 17262, GB/T 17263, GB/T 21091, GB/T 34841, as well as the following, are applicable to this document.

3.1 Luminous efficacy of fluorescent lamps The ratio of the measured initial luminous flux to the input power of the fluorescent lamp under the test conditions specified in the standard.

Note: The unit is lumens per watt (lm/W).

3.2 Minimum allowable value of energy efficiency of fluorescent lamps The minimum allowable value of luminous efficacy of the fluorescent lamp under the test conditions

specified in the standard.

4.1 Energy efficiency grades

4.1.1 The energy efficiency grades of fluorescent lamps are divided into 3 grades, of which grade 1 has the highest energy efficiency.

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