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

GB 17896-2022

Replacing GB 17896-2012

**Minimum allowable values of energy efficiency and energy
efficiency grades of ballasts for gas discharge lamps for
general lighting**

普通照明用气体放电灯用镇流器能效限定值及能效等级

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1 Scope

China's mandatory energy efficiency standard for the ballasts of gas discharge lamps used in general lighting - the control gear that starts the lamp and limits its current, and which consumes power of its own for as long as the lamp is lit. On a fluorescent installation the ballast losses are a significant fraction of the total, and because they are invisible - nobody sees a ballast, only the light - they were for decades the easiest place to save money in manufacture at the customer's expense. This standard closes that off. 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 the ballasts of gas discharge lamps for general lighting. The efficiency is expressed in the terms the application requires: the ballast efficiency factor and the total input power of the ballast-lamp circuit at the rated lamp power, tabulated by lamp type and rating, so that a ballast is judged on how much power the whole circuit draws to produce the light the lamp is rated for rather than on a figure measured in isolation. The minimum allowable value is the compliance threshold below which a ballast may not be manufactured, imported or sold; the energy conservation evaluation value is the higher threshold used for energy saving product certification; and the grades are what appears on the energy label. The test methods refer the measurement back to the product standards so that the value on a label and the value used for the limit are obtained the same way. Issued on 29 December 2022 and in force since 1 January 2024, it replaces GB 17896-2012.

This Document specifies the energy efficiency grades, minimum allowable values of energy efficiency and test methods for ballasts for tubular fluorescent lamps, AC electronic ballasts for single-ended electrodeless fluorescent lamps, ballasts for metal halide lamps and ballasts for high-pressure sodium lamps. This Document applies to inductive ballasts and electronic ballasts for tubular fluorescent lamps with a rated voltage of 220 V and a frequency of

50 Hz, and a nominal power of 4 W~120 W; electronic ballasts for externally coupled single-ended electrodeless fluorescent lamps with a rated power of 30 W~400 W; independent and built-in inductive ballasts and electronic ballasts for metal halide lamps with a nominal power of 20 W~1,500 W; and independent and built-in inductive ballasts for high-pressure sodium lamps with a nominal power of 70 W~1,000 W. This Document does not apply to electronic ballasts for non-preheat start fluorescent lamps and non-detachable ballasts that form part of integrated lamps.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in 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) is applicable to this Document.

GB/T 32483.1 Energy performance of lamp controlgear - Part 1: Controlgear for fluorescent lamps - Method of measurement to determine the total input power of controlgear circuits and the efficiency of the controlgear

GB/T 32483.2 Energy performance of lamp controlgear - Part 2: Controlgear for high intensity discharge lamps(excluding fluorescent lamps) - Method of measurement to determine the efficiency of controlgear

GB/T 34841 Fluorescent induction lamps - Performance specification

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in GB/T 32483.1, GB/T 32483.2 and the following apply.

3.1 Ballast efficiency; etab The ratio of the ballast output power (lamp power) to the total input power of the ballast-lamp circuit. NOTE: Sensors, network connections or other auxiliary loads are disconnected. If they cannot be disconnected, the power of these loads shall be deducted from the result.

3.2 Minimum allowable value of energy efficiency for ballast The minimum allowable value of ballast efficiency under the test conditions specified in the standard.

3.3 Standby power Average power consumption of the ballast in standby mode. NOTE 1:

Standby mode is a mode of the ballast where the ballast is connected to the supply voltage and the lighting function is off but can be turned on by an external trigger signal instead of a network trigger signal. NOTE 2: External trigger signal such as a sensor or timer.

4.1 Energy efficiency grades

4.1.1 Ballast energy efficiency grades are divided into 3 grades, among which Grade-1 has the highest energy efficiency.