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Minimum Allowable Values of Energy Efficiency and Energy Efficiency Grades for Ducted Air Conditioners

风管送风式空调机组能效限定值及能效等级

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Minimum Allowable Values of Energy Efficiency and Energy Efficiency Grades for Ducted Air Conditioners

1 Scope

This Standard specifies the energy efficiency grades, technical requirements and test methods for ducted air conditioners.

This Standard is applicable to ducted air-conditioning (heat pump) units and direct evaporation all fresh air handling units that use motor-driven compressors, and whose indoor unit static pressures are greater than 0 Pa (gauge pressure).

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 17758-2010, Unitary air conditioners

GB/T 18836, Ducted air-conditioning (heat pump) units

GB 21455, Minimum allowable values of the energy efficiency and energy efficiency grades for variable speed room air conditioners

GB/T 25128-2010, Direct evaporation all fresh air handling units

3 Terms and definitions

Terms and definitions determined by GB/T 18836, GB/T 25128-2010 and the following ones are applicable to this document.

3.1 Minimum allowable values of energy efficiency for ducted air conditioners

Under the specified working conditions, the minimum allowable values of the coefficient of performance of ducted air-conditioning (heat pump) units and direct evaporation all fresh air handling units.

5 Technical requirements

- **5.1** The minimum allowable values of ducted air-conditioning (heat pump) units and direct evaporation all fresh air handling units are the index values corresponding to grade-3 of the energy efficiency grades in Table 1.
- **5.2** Products which use electric auxiliary heating shall realize manual opening and closing of auxiliary heating system, and shall be installed with devices that show the working state of the electric auxiliary heating system in obvious position.
- **5.3** Under the condition when the outdoor-side dry bulb temperature of the product is larger than or equal to 0°C, the electric auxiliary heating shall not be automatically turned on.
- **5.4** The allowable difference shall meet the following requirements:
 - a) The marked value of energy efficiency of the product shall not be less than the specified index value corresponding to the rated energy efficiency grade, and it shall be within the value range corresponding to the rated energy efficiency grade.
 - b) The actual test value of energy efficiency of the product shall not be less than 95% of the marked value.
 - c) The marked nominal cooling capacity and actual test value of the product shall be within the nominal cooling capacity corresponding to the rated energy efficiency grade.
 - d) The calculated value of actual-measured power consumption of the product shall be less than or equal to 110% of the marked-value.

6 Test method

- **6.1** The test method for energy efficiency of air conditioners shall be carried out according to GB/T 18836 and GB/T 17758-2010; the actual-measured values shall be kept in two decimal places. Where:
 - a) When the air-cooled air conditioner is taken for SEER test, it's available to select among the rated, intermediate and minimum capacity tests of 29°C working condition; it's also available to obtain from the actual-measured value of the corresponding cooling capacity at 35°C working condition which is multiplied by 1.077, or the actual-measured value of consumed power of 35°C working condition which is multiplied by 0.914;
 - b) The power consumption of the water-cooled air conditioner is not included

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