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Room air conditioner

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1 Scope

This document specifies the terms and definitions, product classification, technical requirements, tests, inspection rules, marks, packaging, transportation and storage for room air conditioners.

This document applies to household and similar free-supply room air conditioners (hereinafter referred to as air conditioners) that use air-cooled or water-cooled condensers, fully enclosed motor-compressors, and whose rated cooling capacity is below 14000W for the purpose of creating a comfortable indoor environment), as well as ducted air conditioners whose rated cooling capacity is less than 8kW and external static pressure is less than 25Pa.

This document does not apply to the following products and systems.

- portable air conditioners;
- individual components that cannot form a complete cooling system;
- air conditioners using absorption cooling cycle;
- other ducted air conditioners.

2 Normative references

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

GB/T 191, Packaging and storage marks

GB/T 1766, Paints and varnishes - Rating schemes of degradation of coats (ISO 4628.2003, NEQ)

GB/T 2423.3, Environmental testing - Part 2. Testing method - Test Cab. Damp heat, steady state (GB/T 2423.3-2016, IEC 60068-2-78.2012, IDT)

GB/T 2423.17, Environmental testing for electric and electronic products - Part 2.

Test method - Test Ka. Salt mist (GB/T 2423.17-2008, IEC 60068-2-11.1981, IDT)

GB/T 2828.1, Sampling procedures for inspection by attributes - Part 1. Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection (GB/T 2828.1-2012, ISO 2859-1.1999, IDT)

GB/T 2829, Sampling procedures and tables for periodic inspection by attributes (apply to inspection of process stability)

GB/T 4214.1, Test method for noise of household and similar electrical appliances - General requirements (GB/T 4214.1-2017, IEC 60704-1.2010, MOD)

GB/T 4798.1, Classification of environmental conditions - Classification of groups of

environmental parameters and their severities - Part 1.Storage (GB/T 4798.1-2005, IEC 60721-3-1.1997, MOD)

GB/T 5296.2, Instructions for use of products of consumer interest - Part 2.

Household and similar electrical appliances

3.1 Terms and definitions

The following terms and definitions apply to this document.

3.1.1 room air conditioner

A device that supplies conditioned air to a room.

3.1.2 heat pump

A cooling system that heats up the indoor air by converting the flow direction of the refrigerant in the cooling system, absorbing heat from the low temperature outdoor air and releasing heat to the room.

NOTE. Air conditioners with heat pump heating capabilities are called heat pump air conditioners.

3.1.3 supplementary electrical heating devices

An electric heating device used with a heat pump for heating.

3.1.6 heating capacity

When the air conditioner is in heating operation under any given working conditions and conditions, the sum of the heat sent into the room per unit time.

3.1.7 heating power input

The power consumed by the air conditioner during the heating capacity test.

NOTE. The unit is watts (W). The rated value of heating power input includes rated heating power input, rated intermediate heating power input and rated low temperature heating power input.

3.1.8 effective power input

The average electric power input into the air conditioner within the specified time, including.

3.1.9 energy efficiency ratio; EER

Under any given working condition and specified conditions, when the air conditioner is in

cooling operation, the ratio of cooling capacity to effective power input.

NOTE. The unit is watts per watt (W/W).

3.1.10 coefficient of performance; COP

Under any given working condition and specified conditions, when the air conditioner is in heating operation, the ratio of the heating capacity to the effective power input.

NOTE. The unit is watts per watt (W/W).

3.1.11 standard air

Dry air at 20°C and at a standard barometric pressure of 101.325 kPa, having a mass density of 1.204 kg/m³.

4.3.2 Model examples are as follows.

Example 1.KT3C-35/A, means T3 climate type, overall (window type) cold air-cooled room air conditioner. Its rated cooling capacity is 3500 W. It is first redesigned.

Example 2.KFR-28GW, means T1 climate type, split heat-pumped wall-mounted room air conditioner (including indoor unit and outdoor unit). The rated cooling capacity is 2800 W.

5.1.1 Air conditioners shall comply with the provisions of this document and other

relevant mandatory national standards. They shall be designed and manufactured according to the drawings and technical documents approved by the prescribed procedures.

5.2.1 Sealing performance of cooling system

Test according to 6.3.1.Refrigerant leakage shall not be detected in each part of the cooling system.

5.2.3.1 Rated cooling power input

Test according to 6.3.3.The measured cooling power input of fixed speed and variable speed air conditioners shall not exceed 110% of the rated cooling power input. For every 300 W cooling capacity of the water-cooled air conditioner, add 10 W as the rated power input of the cooling system water pump and cooling water tower fan.

5.2.7 Maximum operating cooling

The requirements for testing according to the test method in 6.3.7 are as follows.