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

GB/T 17758-2023

Replacing GB/T 17758-2010

Unitary air conditioners

单元式空气调节机

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1 Scope

The document lays down the types and basic parameters, the technical requirements, the test methods, the inspection rules and the marking, packaging, transport and storage of unitary air conditioners.

It applies to process-type unitary air conditioners and to comfort-type unitary air conditioners whose nominal cooling capacity is greater than or equal to 7 000 W; both are called air conditioners in the rest of the text.

2 Normative references

The content of the documents listed below constitutes, through the normative references made in the text, requirements that cannot be dispensed with. For dated references only the edition corresponding to that date applies; for undated references the latest edition, including all amendments, applies.

The list printed in Clause 2 is: GB/T 191 Packaging - Pictorial marking for handling of goods; GB/T 2423.17 Environmental testing for electric and electronic products - Part 2: Test methods - Test Ka: Salt mist; 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 2894-2008 Safety signs and guideline for the use; GB/T 3241 Electroacoustics - Octave-band and fractional-octave-band filters; GB/T 3767-2016 Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Engineering method for an approximately free field over a reflecting plane; GB/T 3785.1-2010 Electroacoustics - Sound level meters - Part 1: Specifications; GB 4706.32-2012 Safety of household and similar electrical appliances - Particular requirements for heat pumps, air-conditioners and dehumidifiers; GB/T 5773 Positive displacement refrigerant compressors - Methods of test for performance; GB/T 6388 Transport package shipping mark; GB/T 6882 Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Precision methods for anechoic rooms and hemi-anechoic rooms; GB/T 9237 Refrigerating systems and heat pumps - Safety and environmental requirements; GB/T 9286 Paints and varnishes - Cross cut test; GB/T 10870 The methods of performance test for water chilling (heat pump) packages using the vapor compression cycle; GB/T 13306 Plates; GB/T 15173-2010 Electroacoustics - Sound calibrators; GB/T 18430.1 Water chilling (heat pump) packages using the vapor compression cycle - Part 1: Water chilling (heat pump) packages for industrial or commercial and similar application; GB/T 18836-2017 Duct air conditioning (heat pump) units; GB 25130 Unitary air conditioners - Safety requirements; GB/T 26125 Electrical and electronic products - Determination of six regulated substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers); GB/T 26572 Requirements for concentration limits for certain restricted substances in electrical and electronic products; JB/T 7249 Refrigerating and air conditioning equipment - Terminology.

3 Terms and definitions

The terms and definitions given in JB/T 7249 and the following ones apply to the document.

3.1 unitary air conditioner: equipment that supplies treated air directly to a room or a zone.

Note: it is made up mainly of a refrigeration system together with an air circulation device and/or heating, humidifying and air-cleaning devices.

3.2 comfort air conditioning unit: air conditioner used to meet the comfort requirements of a space in which people are active.

3.3 process air conditioning unit: air conditioner used to meet or to safeguard the environmental requirements of a particular place or the requirements of a particular production process.

3.4 vapor compression cycle heat pump: device that, driven by electrical or mechanical power, uses the vapour compression refrigeration cycle to move heat continuously from a low-temperature medium (or body) to a high-temperature medium (or body). Note: unless stated otherwise, heat pump in the document means a vapour compression cycle heat pump.

3.5 cooling (heating) capacity: sum of the heat removed from (delivered to) the room or the zone by the air conditioner in unit time under the stated test conditions. Note 1: the unit is the watt (W). Note 2: different capacity figures correspond to different working conditions; the capacity measured under the nominal cooling condition is called the nominal cooling capacity.

3.6 cooling (heating) power input: total power consumed by the air conditioner while running under the stated test conditions. Note: the unit is the watt (W).

3.7 middle cooling (heating) capacity: sum of the heat removed from (delivered to) the room or the zone in unit time when, under the stated test conditions, the air conditioner develops one half of its nominal cooling (heating) capacity and runs continuously and steadily. Note: one half of the nominal cooling (heating) capacity lies within the range 50 % +/- 5 % of the nominal cooling (heating) capacity.

3.8 middle cooling (heating) power input: total power consumed when, under the stated test conditions, the air conditioner develops one half of its nominal cooling (heating) capacity and runs continuously and steadily.

3.9 minimal cooling (heating) capacity: sum of the heat removed from (delivered to) the room or the zone in unit time when, under the stated test conditions, the air conditioner runs continuously and steadily at its minimum capacity.

3.10 minimal cooling (heating) power input: total power consumed when, under the stated test conditions, the air conditioner runs continuously and steadily at its minimum capacity.

The foreword states that Clause 3 of this edition carries 34 terms and definitions. Only 3.1 to 3.10 appear on the pages examined; the wording of the remaining terms was not read and is therefore not reported.

Foreword Technical changes from GB/T 17758-2010

The foreword lists the technical changes made against GB/T 17758-2010, lettered a) to y), beyond the structural and editorial rework.

a) the field of application was changed and process-type air conditioners were added to it (see Clause 1; Clause 1 of the 2010 edition). b) the terms and definitions of the body and of the annexes of the former standard were merged, with deletions, changes and additions, going from 39 terms and definitions to 34 (see Clause 3; Clause 3, Annex B and Annex C of the 2010 edition). c) the types of air conditioner were changed and a classification by use and by suitable climatic environment was added (see 4.1; 4.1 of the 2010 edition). d) the basic electrical parameters of the air conditioner were deleted and the basic environmental parameters for operation were changed (see 4.3.1; 4.3.1 and 4.3.2 of the 2010 edition). e) the test conditions were changed and general test conditions for class T2 and class T3 air conditioners were added (see 4.3.2; 4.3.3 of the 2010 edition).

- f) the general requirements were changed, the requirements for special types of air conditioner were deleted and general provisions on appearance, materials and structure were added (see 5.1; 5.1 of the 2010 edition). g) requirements and a test method for the strength of the water system were added (see 5.2.2 and 6.4.2). h) a requirement for the nominal air flow was added to the nominal-condition performance (see 5.4.1). i) requirements for the nominal cooling energy efficiency ratio and the nominal heating coefficient of performance of process-type air conditioners were added (see 5.4.2.3 and 5.4.3.3). j) the limit requirements for the performance coefficients were changed (see 5.5 and Table 6 of 5.6; Table 3 of 5.3.17 of the 2010 edition).
- k) the requirements and test methods for condensation and for the removal of condensate were changed and the two tests were merged into one (see 5.10 and 6.12; 5.3.11, 5.3.12, 6.3.11 and 6.3.12 of the 2010 edition). l) the requirements and test method for defrosting were changed (see 5.11 and 6.13; 5.3.13 and 6.3.13 of the 2010 edition). m) requirements and a test method for the water-side pressure loss were added (see 5.12 and 6.14). n) the safety requirements were changed and requirements and test methods for the maximum operating current and for the content of harmful substances were added (see 5.13 and 6.15; 5.2 of the 2010 edition). o) the noise requirements and test method were changed, including the requirements for the measuring position on the indoor side of duct-type units (see 5.14 and Annex E; 5.3.14 and Annex D of the 2010 edition).
- p) requirements and a test method for the standby power of the air conditioner were added (see 5.15 and 6.17). q) the requirements and test method for the electric heating power were changed (see 5.16 and 6.18; 5.3.6 and 6.3.7 of the 2010 edition). r) requirements and a test method for the control of auxiliary electric heating were added (see 5.17 and 6.19). s) requirements and test methods for the corrosion resistance of electroplated and painted parts were added (see 5.18 and 6.20). t) the general test conditions and test requirements of the former standard were changed and that part of the technical detail was reworked from the three angles of test conditions, installation of the air conditioner and data processing (see 6.1 to 6.3; 6.1 and 6.2 of the 2010 edition).
- u) the requirements for type inspection were changed and the inspection items were rearranged (see 7.3; 7.3 of the 2010 edition). v) the requirements for the marking of the nameplate were changed (see 8.1.1; 8.1.1 of the 2010 edition). w) marking and packaging requirements for air conditioners using flammable refrigerants were added (see 8.1.2 and 8.2.5). x) part of the packaging requirements were changed, such as the requirements for the refrigerant charge (see 8.2; 8.2 of the 2010 edition). y) a method for correcting the power consumed by the indoor unit was added (see Annex B).

The foreword also records that the document was first issued in 1999, revised for the first time in 2010, and that the 2023 text is the second revision. It is drafted according to the rules of GB/T 1.1-2020.