ISO 18326:2018 (E)

Non-ducted portable air-cooled air conditioners and air-to-air heat pumps having a single exhaust duct — Testing and rating for performance

Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Symbols

5 Cooling tests

5.1 Cooling capacity test
5.1.1 General conditions
5.1.2 Condensate containers
5.1.3 Tests using supplementary water evaporation feature
5.1.4 Temperature conditions
5.1.5 Airflow conditions — Air quantity
5.1.6 Test conditions
5.1.6.1 General
5.1.6.2 Preconditions
5.1.6.3 Testing requirements
5.1.6.4 Duration of test
5.2 Maximum cooling performance test
5.2.1 General conditions
5.2.2 Temperature conditions
5.2.3 Temperature conditions
5.2.3.1 Preconditions
5.2.3.2 Duration of test
5.2.4 Performance requirements
5.2.4.1 General
5.2.4.2 Protective device
5.2.4.3 Exception
5.3 Condensate control and enclosure sweat performance test
5.3.1 General conditions
5.3.2 Temperature conditions
5.3.3 Airflow conditions
5.3.4 Test conditions
5.3.4.1 Preconditions
5.3.4.2 Duration of test
5.3.5 Performance requirements
5.3.5.1 Condensate water
5.3.5.2 Condense air

6 Heating tests

6.1 Heating capacity tests
6.1.1 General conditions
6.1.1.1 General
6.1.1.2 Selectable resistive elements
6.1.1.3 Condensate containers
6.1.2 Temperature conditions
6.1.3 Airflow conditions — Air quantity

6.1.4 Test conditions
6.1.4.1 General
6.1.4.2 Preconditions
6.1.4.3 Testing requirements
6.1.4.4 Duration of test
6.2 Maximum heating performance test
6.2.1 General conditions
6.2.2 Temperature conditions
6.2.3 Airflow conditions
6.2.4 Test conditions
6.2.4.1 Preconditions
6.2.4.2 Duration of the test
6.2.4.3 Performance requirements

7 Test methods and uncertainties of measurements

7.1 Test methods
7.1.1 General
7.1.2 Calorimeter test method
7.1.3 Capacity tests
7.2 Uncertainties of measurement
7.3 Test tolerances for steady-state cooling and heating tests
7.3.1 Variation of individual observations
7.3.2 Variation of average observations
7.3.3 Sampling rate
7.3.4 Tolerances for capacity calculations
7.4 Test tolerances for performance tests

8 Test capacity results

8.1 Capacity results
8.1.1 General
8.1.2 Adjustments
8.1.3 Cooling capacity calculations
8.1.3.1 Average cooling capacity
8.1.3.2 Total electrical power input
8.1.4 Heating capacity calculations
8.1.4.1 Average heating capacity
8.1.4.2 Total electrical power input
8.2 Data to be recorded
8.3 Test report
8.3.1 General information
8.3.2 Capacity tests

9 Marking provisions

9.1 Nameplate requirements
9.2 Nameplate information

10 Publication of ratings

10.1 Standard ratings
10.1.1 General
10.1.2 Units
10.1.3 EER and COP
10.1.4 Capacity rating and test voltage
10.2 Other ratings

Annex A (normative) Test requirements

A.1 Test room requirement
A.2 Equipment installation
A.2.1 General
A.2.2 Exhaust duct set-up
A.2.3 Exhaust duct length and orientation
A.2.4 Orientation of unit
A.2.5 Miscellaneous equipment settings
A.2.6 Temperature measuring equipment
A.2.7 Photographs

Annex B (normative) Units with a supplementary water-tank — Determining the duration of supplementary water evaporation feature

B.1 General
B.2 Preparation and pre-conditioning period
B.3 Recording period
B.4 Performance requirements

Annex C (informative) Airflow measurement

C.1 Airflow determination
C.1.1 General
C.1.2 Quantities
C.2 Airflow and static pressure
C.3 Nozzle apparatus
C.4 Diffusers
C.5 Exhaust fan
C.6 Manometers
C.7 Means of determining nozzle discharge coefficient
C.7.1 Throat velocity
C.7.2 Nozzle construction
C.7.3 Nozzle discharge coefficient
C.7.4 Appropriate nozzle construction
C.8 Static pressure measurements
C.9 Discharge airflow measurements
C.10 Indoor-side airflow measurements
C.10.1 Readings
C.10.2 Calculating air-mass flow rate
C.10.3 Calculating airflow through multiple nozzles
C.11 Ventilation, exhaust and leakage airflow measurements — Calorimeter test method

Annex D (normative) Calorimeter test method

D.1 General
D.1.1 Determining capacity
D.1.2 Installation of equipment
D.1.3 Pressure equalizing devices
D.1.4 Size of calorimeter
D.1.5 Baffles
D.1.6 Pressure equilibrium — Indoor and outdoor compartments
D.1.7 Pressure equilibrium — Open space
D.1.8 Reconditioning equipment
D.1.9 Heating, humidifying and cooling
D.1.10 Fans
D.1.11 Air interactions
D.1.12 Temperature of air leaving indoor heat exchanger
D.1.13 Interior surfaces
D.2 Calibrated room-type calorimeter
D.2.1 Determining heat leakage
D.2.2 Calibrating heat leakage
D.2.3 Alternative calibration
D.2.4 Verification using capacity calibrating devices
D.3 Balanced ambient room-type calorimeter
D.3.1 General
D.3.2 Interior surfaces
D.3.3 Heat leakage
D.3.4 Insulation
D.4 Calculation of cooling capacity
D.4.1 Energy flow quantities
D.4.2 Total cooling capacity — Indoor
D.4.3 Valid assumption
D.4.4 Water vapour
D.4.5 Heat leakage
D.4.6 Total cooling capacity — Outdoor
D.4.7 Latent cooling capacity
D.4.8 Sensible cooling capacity

D.4.9 Sensible heat ratio
D.5 Calculation of heating capacity
D.5.1 Energy flow quantities
D.5.2 Heating capacity
D.5.3 Heating capacity — Heat-absorbing side

Annex E (informative) Cooling condensate measurements

E.1 General
E.2 Calculations

Annex F (informative) Example of multiple point air sampling apparatus

F.1 Scope
F.2 Principle — Measurement of air temperature
F.3 Configuration of air temperature sensor
F.4 Air sampling tree

Page count: 47