

ISO 13256-1:2021 (E)

Water-source heat pumps — Testing and rating for performance — Part 1: Water-to-air and brine-to-air heat pumps

Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Symbols
5	Rating and test conditions
5.1	Rating conditions for the determination of net capacities
5.1.1	Ratings
5.1.2	Power input of fans for heat pumps without duct connection
5.1.3	Power input of fans for heat pumps with duct connection
5.1.4	Power input of liquid pumps
5.1.5	Airflow rates
5.1.6	Liquid flow rates
5.1.6.1	General
5.1.6.2	Source side flowrate
5.1.7	Test liquids
5.2	Rating test conditions for cooling and heating capacities
6	Performance Requirements
6.1	General
6.2	Maximum operating conditions test
6.2.1	Test conditions
6.2.2	Test procedures
6.2.3	Test requirements
6.3	Minimum operating conditions test
6.3.1	Test conditions
6.3.2	Test procedures
6.3.3	Test requirements
6.4	Enclosure sweat and condensate test
6.4.1	General
6.4.2	Test conditions
6.4.3	Test procedures
6.4.4	Test requirements
7	Test methods
7.1	General
7.2	General test requirements
7.3	Equipment installation
7.4	Cooling and heating capacity tests procedure
7.4.1	General
7.4.2	Reconditioning period
7.4.3	Data collection period
7.4.4	Net total cooling capacity
7.4.5	Net heating capacity
7.5	Uncertainties of measurement
7.6	Data to be recorded

7.7	Uncertainties of measurements and permissible deviations for steady-state cooling and heating capacity tests
7.8	Test results
8	Marking provisions
8.1	Nameplate requirements
8.2	Nameplate information
8.3	Designation of standard ratings capacity
8.4	Refrigerant designation
9	Publication of ratings
9.1	Published ratings
9.2	Additional ratings
Annex A	(normative) Test requirements
A.1	General test room requirements
A.2	Equipment installation
A.3	Static pressure measurements across indoor coil — Equipment with a fan and a single outlet
A.4	Equipment with fans and multiple outlets or multiple indoor units
A.5	Equipment without a fan and with a single outlet
Annex B	(informative) Airflow measurement
B.1	Airflow determination
B.2	Airflow and static pressure
B.3	Nozzle apparatus
B.4	Static pressure measurements
B.5	Discharge airflow measurements
B.6	Indoor-side airflow measurements
B.7	Ventilation, exhaust and leakage airflow measurements — Calorimeter test method
Annex C	(normative) Indoor air enthalpy test method
C.1	General
C.2	Application
C.3	Calculation of cooling capacity
C.4	Calculation of heating capacity
Annex D	(informative) Refrigerant enthalpy test method
D.1	General
D.2	Refrigerant flow method
D.3	Refrigerant temperature, pressure, and flow measurements
D.4	Calculation of cooling capacity
D.5	Calculation of heating capacities
Annex E	(normative) Liquid enthalpy test method
E.1	General
E.2	Application
E.3	Calculations
E.3.1	Cooling capacity
E.3.2	Heating capacity
Annex F	(informative) Correction of fan or pump power input for external static pressures other than zero
F.1	Fan Correction
F.2	Pump Correction
Annex G	(informative) Additional ratings based upon previous standard version ISO 13256-1:1998
Annex H	(informative) Cooling condensate measurements
H.1	General
H.2	Calculations