
Strešne enote - Preskušanje in ocenitev pri standardnih nazivnih pogojih in pogojih delne obremenitve za izračun letnega učinka

Rooftop units - Testing and rating at standard rating conditions and part load conditions for calculation of seasonal performance

Dachgeräte - Prüfung und Bewertung unter Standardbedingungen und Teillastbedingungen zur Berechnung der jahreszeitlichen Leistung

Unités de toiture - Essais et détermination des performances nominales et à charge partielle pour le calcul de performances saisonnières

Ta slovenski standard je istoveten z: EN 17625:2025

SIST EN 17625:2026

<https://standards.iteh.ai/catalog/standards/sist/76aa83e9-4b92-45a1-a68b-f80908012c47/sist-en-17625-2026>

ICS:

91.140.30

Prezračevalni in klimatski sistemi

Ventilation and air-conditioning systems

SIST EN 17625:2026

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 17625

November 2025

ICS 91.140.30

English Version

**Rooftop units - Testing and rating at standard rating
conditions and part load conditions for calculation of
seasonal performance**

Unités de toiture - Essais et détermination des
performances nominales et des performances à charge
partielle pour le calcul de performances saisonnières

Dachgeräte - Prüfung und Bewertung unter
Standardbedingungen und Teillastbedingungen zur
Berechnung der jahreszeitlichen Leistun

This European Standard was approved by CEN on 5 October 2025.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

SIST EN 17625:2026

<https://standards.iteh.ai/catalog/standards/sist/76aa83e9-4f92-45a1-a68b-f80908012c47/sist-en-17625-2026>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword	6
1 Scope.....	7
2 Normative references.....	7
3 Terms, definitions, symbols, abbreviated terms and units.....	7
3.1 Terms and definitions	7
3.2 Symbols, abbreviated terms and units.....	21
4 Test conditions	24
4.1 Standard rating conditions.....	24
4.2 Part load conditions.....	24
4.2.1 General.....	24
4.2.2 Units running with no free cooling capabilities, running only at 100 % recycled air.....	25
4.2.3 Units running with free cooling capabilities.....	25
4.2.4 Cooling mode	26
4.2.5 Heating mode	28
5 Test apparatus	30
5.1 General requirements.....	30
5.2 Test room.....	30
5.3 Appliances with duct connection	30
5.4 Installation and connection of the test object	30
5.4.1 General.....	30
5.4.2 Measuring points	30
5.5 Uncertainties of measurement	31
6 Settings	33
6.1 Settings of supply air	33
6.2 Setting on the outdoor heat exchanger side.....	35
6.2.1 Non ducted units	35
6.2.2 Ducted units.....	35
6.2.3 Water-source units.....	36
6.2.4 Units with integrated liquid pumps	36
7 Capacity and power input calculations.....	37
7.1 Basic principles for the determination of capacities.....	37
7.2 Effective power input correction	37
7.2.1 General.....	37
7.2.2 Power input correction of fans for units without duct connection.....	37
7.2.3 Power input correction of fans for units with duct connection	37
7.2.4 Power input correction of liquid pumps	38
8 Capacity test method	39
8.1 Output measurement for water source units	39
8.1.1 Steady-state condition	39
8.1.2 Measurement of heating capacity and cooling capacity	39
8.2 Output measurement for cooling capacity of air source units	39
8.2.1 Steady-state condition	39
8.2.2 Measurement of cooling capacity.....	39
8.3 Output measurement for heating capacity of air source units.....	39
8.3.1 General.....	39

8.3.2	Step 1: Preconditioning	41
8.3.3	Step 2: End of defrost cycle.....	42
8.3.4	Step 3: Equilibrium period	42
8.3.5	Step 5: Data collection.....	42
8.3.6	Step 4: Defrost cycle.....	43
8.3.7	Step 6: Steady-state operation	43
8.3.8	Step 7: Transient operation	43
8.4	Permissible deviations	44
8.5	Test results.....	46
8.5.1	Data to be recorded	46
8.5.2	Cooling capacity calculation	48
8.5.3	Heating capacity calculation.....	49
8.5.4	Effective power input calculation	49
9	Test methods for electric power input during thermostat-off mode, standby mode and crankcase heater mode and off mode	50
9.1	Uncertainties of measurement	50
9.2	Measurement of electric power input during thermostat-off mode.....	50
9.3	Measurement of the electric power input during standby mode.....	50
9.4	Measurement of the electric power input during crankcase heater mode	51
9.5	Measurement of the electric power input during off mode	51
10	Seasonal performances	51
10.1	Calculation of $SEER$, $SEER_F$, $SEER_{on}$ and $SEER_{on,F}$	51
10.1.1	General formula for calculation of $SEER$	51
10.1.2	Calculation of the reference annual cooling demand Q_c	51
10.1.3	Calculation of the reference annual energy consumption for cooling Q_{CE}	52
10.1.4	Calculation of $SEER_{on}$	52
10.1.5	Calculation of $SEER_F$	53
10.1.6	Calculation of the reference annual energy consumption for cooling $Q_{CE,F}$	53
10.1.7	Calculation of $SEER_{on,F}$	53
10.1.8	Calculation procedure for determination of EER_{bin} values at part load conditions....	54
10.2	Calculation of $SCOP$, $SCOP_{on}$ and $SCOP_{net}$	56
10.2.1	General formula for calculation of $SCOP$	56
10.2.2	Calculation of the reference annual heating demand Q_H	56
10.2.3	Calculation of the annual energy consumption for heating Q_{HE}	57
10.2.4	Calculation of $SCOP_{on}$ and $SCOP_{net}$	57
10.2.5	Calculation procedure for determination of COP_{bin} values at part load conditions ...	59
10.3	Calculation of seasonal efficiencies.....	60
10.3.1	Calculation of the seasonal space cooling efficiency $\eta_{s,c}$	60
10.3.2	Calculation of the seasonal space cooling efficiency with free-cooling mode $\eta_{s,cF}$	61
10.3.3	Calculation of the seasonal space heating efficiency $\eta_{s,h}$	61
10.4	Determination of the degradation coefficients C_{dc} and C_{dh}	61
10.4.1	General	61
10.4.2	Air-to-air units – Cooling mode	62
10.4.3	Air-to-air units – Heating mode	63
10.4.4	Water(brine)-to-air units – Cooling mode.....	63
10.4.5	Water(brine)-to-air units – Heating mode	63
11	Test report	63
11.1	General information	63
11.2	Additional information.....	64
11.3	Rating test results.....	64
11.3.1	General	64
11.3.2	Seasonal test results	65

11.4	Specific information of the unit	65
Annex A	(informative) Illustration of rooftop units' configurations.....	66
A.1	General.....	66
A.2	Two-damper rooftop unit	66
A.3	Three-damper rooftop unit.....	67
A.4	Four-damper rooftop unit	70
Annex B	(informative) Space cooling/heating function's seasonal cooling/heating efficiencies while working with a minimum mixture of outdoor air and recycled air	72
B.1	General.....	72
B.2	Definitions	72
B.3	Calculation of the outdoor air load.....	73
B.4	Calculation of outdoor air + building loads.....	75
B.5	Test conditions	76
B.6	Setting of the amount of outdoor air flow rate.....	76
B.7	Seasonal performance.....	80
Annex C	(normative) Indoor air enthalpy method for testing rooftop units.....	82
C.1	General.....	82
C.2	Cooling and heating capacities from the indoor air enthalpy method.....	82
C.3	Heating/Cooling capacity calculations.....	84
C.4	Black box approach.....	88
Annex D	(informative) Examples of testing layout for rooftop units.....	92
D.1	General.....	92
D.2	Single room test set-up	92
D.3	Two-rooms' test set-up	94
Annex E	(informative) Symbols used in Annexes A, C and D	97
Annex F	(normative) Determination of the liquid pump efficiency	99
F.1	General.....	99
F.2	Hydraulic power of the liquid pump.....	99
F.3	Efficiency of integrated pumps	99
F.4	Efficiency of non-integrated pumps	102
Annex G	(normative) Air flow rate measurement.....	103
G.1	General.....	103
G.2	Test installation.....	103
G.3	Test conditions	103
G.4	Air flow measurement.....	103
Annex H	(normative) Climate bins and hours	104

H.1	Bin limit temperature	104
H.2	Cooling.....	104
H.3	Heating	105
H.4	Hours for active, thermostat-off, standby and off modes.....	106
H.5	Hours used for crankcase heater mode.....	107
	Bibliography	108

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[SIST EN 17625:2026](https://standards.iteh.ai/catalog/standards/sist/76aa83e9-4f92-45a1-a68b-f80908012c47/sist-en-17625-2026)

<https://standards.iteh.ai/catalog/standards/sist/76aa83e9-4f92-45a1-a68b-f80908012c47/sist-en-17625-2026>