

Heat pump model	Master Therm	AQ22IP
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Heat pump type	Brine/Water
Supplementary heater	No
Heat pump combination heater	No

Reference heating season			Average	SCOP 4,75
Reference water temperature			LOW, 35°C	
Full load heating	Prated [kW]		7,18	
Seasonal efficiency		η_s [%]	182	A+++
Annual electricity consumption		Q _{HE} [kWh]	3128	
Average 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Brine			
	T _J [°C]	P _{dh} [kW]	COP _d (-)	C _{dh} (-)
A	0	6,44	3,99	0,900
B	0	3,98	4,79	0,900
C	0	2,68	5,42	0,900
D	0	1,78	5,42	0,957
TOL (E)	0	7,18	3,71	0,900
Tbivalent (F)	0	7,18	3,71	0,900

Reference heating season			Average	SCOP 3,69
Reference water temperature			High, 55°C	
Full load heating		Prated [kW]	6,65	A++
Seasonal efficiency		ηs [%]	140	
Annual electricity consumption		QHE [kWh]	3719	
Average 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Brine			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	0	6,02	2,86	0,900
B	0	3,79	3,67	0,900
C	0	2,49	4,42	0,900
D	0	1,73	4,59	0,962
TOL (E)	0	6,65	2,60	0,900
Tbivalent (F)	0	6,65	2,60	0,900

Reference heating season			Warmer	
Reference water temperature			Low, 35°C	
Full load heating		Prated [kW]	7,18	
Seasonal efficiency		ηs [%]	184	
Annual electricity consumption		QHE [kWh]	1997	
Warmer 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Brine			
	Tj [°C]			
B	0	7,18	3,71	0,900
C	0	4,85	4,57	0,900
D	0	2,24	5,61	0,900
TOL (E)	0	7,18	3,71	0,900
Tbivalent (F)	0	7,18	3,71	0,900

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Reference heating season			Warmer	
Reference water temperature			High, 55°C	
Full load heating		Prated [kW]	6,65	
Seasonal efficiency		η_s [%]	134	
Annual electricity consumption		Q_{HE} [kWh]	2504	
Warmer 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Brine			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
B	0	6,65	2,60	0,900
C	0	4,57	3,28	0,900
D	0	1,96	4,20	0,900
TOL (E)	0	6,65	2,60	0,900
Tbivalent (F)	0	6,65	2,60	0,900

Reference heating season			Colder	
Reference water temperature			Low, 35°C	
Full load heating		Prated [kW]	7,18	
Seasonal efficiency		η_s [%]	193	
Annual electricity consumption		Q_{HE} [kWh]	3529	
Colder 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Brine			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	0	4,43	4,71	0,900
B	0	2,68	5,42	0,900
C	0	1,80	5,61	0,900
D	0	1,79	5,46	0,957
TOL (E)	0	7,18	3,71	0,900
Tbivalent (F)	0	7,18	3,71	0,900
G	0	5,54	4,46	0,900

Reference heating season			Colder	
Reference water temperature			High, 55°C	
Full load heating		Prated [kW]	Climate	
Seasonal efficiency		η_s [%]	143	
Annual electricity consumption		Q_{HE} [kWh]	4332	
Colder 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Brine			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	0	4,19	3,47	0,900
B	0	2,54	4,10	0,900
C	0	1,72	4,54	0,900
D	0	1,72	4,54	0,963
TOL (E)	0	6,65	2,60	0,900
Tbivalent (F)	0	6,65	2,60	0,900
G	0	5,37	3,13	0,900

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Power consumption in modes other than "active mode"		
Off mode	P_{OFF} [kW]	0,014
Thermostat off mode	P_{TO} [kW]	0,014
Standby mode	P_{SB} [kW]	0,014
Crankcaseheater mode	P_{CK} [kW]	-

Supplementary heater capacity	P_{sup} [kW]	-
Supplementary heater type	[-]	electricity

Capacity control		Variable
Sound power level Indoor	L_{WA} [dBA]	37
Sound power level Outdoor	L_{WA} [dBA]	-
Rated brine flow	[m ³ /h]	1,28

Temperature controller		
Type	Carel pCO5+, Master Therm custom SW	
Class	II	
Contribution	%	2,0

Temperature controller + Room Terminal		
Type	Carel pCO5+/pCO5OEM+ +pGDx, Master Therm custom SW	
Class	VI	
Contribution	%	4,0

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Information sheet			
Temperature application		Low, 35°C	High, 55°C
Space heating energy efficiency class, Average climate	-	A+++	A++
Nominal heating capacity Pdesign, Average climate	kW	7	7
Space heating seasonal efficiency, Average climate	%	182	140
Space heating annual electricity consumption, Average cl.	kWh	3128	3719

Nominal heating capacity Pdesign, Colder climate	kW	7	Climate
Space heating seasonal efficiency, Colder climate	%	193	143
Space heating annual electricity consumption, Colder cl.	kWh	3529	4332

Nominal heating capacity Pdesign, Warmer climate	kW	7	7
Space heating seasonal efficiency, Warmer climate	%	184	134
Space heating annual electricity consumption, Warmer cl.	kWh	1997	2504

Sound power level Lwa	dBA	37
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Information sheet for energy efficiency Set with Temperature controller			
Temperature application		Low, 35°C	High, 55°C
Controller Carel pCO5/pCO5+/uPC, Class	-	II	II
Controller Carel pCO5/pCO5+/uPC, Contribution	%	2,0	2,0
Set Space heating seasonal efficiency, Average climate	%	184	142
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	195	145
Set Space heating seasonal efficiency, Warmer climate	%	186	136

Information sheet for energy efficiency Set with Temperature controller + Room Terminal			
Temperature application		Low, 35°C	High, 55°C
Controller Carel pCO5/pCO5+/uPC + pAD, Class	-	VI	VI
Controller Carel pCO5/pCO5+/uPC, +pAD, Contribution	%	4,0	4,0
Set Space heating seasonal efficiency, Average climate	%	186	144
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	197	147
Set Space heating seasonal efficiency, Warmer climate	%	188	138