

Heat pump model	Master Therm	AQ37I-1
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Heat pump type	Brine/Water
Supplementary heater	Yes
Heat pump combination heater	No

Reference heating season			Average	
Reference water temperature			LOW, 35°C	
Full load heating	Prated [kW]		15.27	
Seasonal efficiency	η_s [%]		196	A+++
Annual electricity consumption	Q_{HE} [kWh]		6185	
Average 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T_j [°C]	P_{dh} [kW]	COP_d (-)	C_{dh} (-)
A	-7	13.65	4.54	0.900
B	2	8.63	5.04	0.900
C	7	5.42	5.60	0.900
D	12	2.62	5.60	0.975
TOL (E)	-10	15.27	4.44	0.900
Tbivalent (F)	-10	15.27	4.44	0.900

Reference heating season			Average	
Reference water temperature			High, 55°C	
Full load heating	Prated [kW]		13.89	
Seasonal efficiency	η_s [%]		151	A+++
Annual electricity consumption	Q_{HE} [kWh]		7232	
Average 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T_j [°C]	P_{dh} [kW]	COP_d (-)	C_{dh} (-)
A	-7	12.35	3.16	0.900
B	2	8.17	3.92	0.900
C	7	5.00	4.59	0.900
D	12	2.52	4.70	0.978
TOL (E)	-10	13.89	3.00	0.900
Tbivalent (F)	-10	13.89	3.00	0.900

Reference heating season			Warmer	
Reference water temperature			Low, 35°C	
Full load heating	Prated [kW]		15.27	
Seasonal efficiency	η_s [%]		198	
Annual electricity consumption	Q_{HE} [kWh]		3961	
Warmer 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T_j [°C]	P_{dh} [kW]	COP_d (-)	C_{dh} (-)
B	2	15.27	4.44	0.900
C	7	10.33	4.82	0.900
D	12	4.39	5.73	0.900
TOL (E)	2	15.27	4.44	0.900
Tbivalent (F)	2	15.27	4.44	0.900

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Reference heating season				Warmer	
Reference water temperature				High, 55°C	
Full load heating		Prated [kW]		13.89	
Seasonal efficiency		η_s [%]		148	
Annual electricity consumption		Q_{HE} [kWh]		4744	
Warmer 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient	
	Outdoor air				
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)	
B	2	13.89	3.00	0.900	
C	7	9.68	3.49	0.900	
D	12	4.17	4.59	0.900	
TOL (E)	2	13.89	3.00	0.900	
Tbivalent (F)	2	13.89	3.00	0.900	

Reference heating season				Colder	
Reference water temperature				Low, 35°C	
Full load heating		Prated [kW]		15.27	
Seasonal efficiency		η_s [%]		203	
Annual electricity consumption		Q_{HE} [kWh]		7137	
Colder 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient	
	Outdoor air				
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)	
A	-7	9.68	4.96	0.900	
B	2	5.95	5.60	0.900	
C	7	3.87	5.73	0.900	
D	12	3.50	5.60	0.981	
TOL (E)	-22	15.27	4.44	0.900	
Tbivalent (F)	-22	15.27	4.44	0.900	
G	-15	12.93	4.73	0.900	

Reference heating season				Colder	
Reference water temperature				High, 55°C	
Full load heating		Prated [kW]		13.99	
Seasonal efficiency		η_s [%]		157	
Annual electricity consumption		Q_{HE} [kWh]		8356	
Colder 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient	
	Outdoor air				
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)	
A	-7	9.12	3.72	0.900	
B	2	5.64	4.49	0.900	
C	7	3.39	4.91	0.900	
D	12	3.39	4.91	0.983	
TOL (E)	-22	13.99	3.07	0.900	
Tbivalent (F)	-22	13.99	3.07	0.900	
G	-15	12.14	3.36	0.900	

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Power consumption in modes other than "active mode"			
Off mode	P _{OFF} [kW]	0.012	
Thermostat off mode	P _{TO} [kW]	0.012	
Standby mode	P _{SB} [kW]	0.012	
Crankcaseheater mode	P _{CK} [kW]	-	
Supplementary heater capacity	P _{SUP} [kW]	7.5	
Supplementary heater type	[-]	electricity	
Capacity control		Variable	
Sound power level Indoor	L _{WA} [dBA]	48	
Sound power level Outdoor	L _{WA} [dBA]	-	
Rated brine flow	[m ³ /h]	2.42	
Temperature controller			
Type	Carel pCO5/pCO5+/uPC, Master Therm custom SW		
Class	II		
Contribution	%	2.0	
Temperature controller + Room Terminal			
Type	Carel pCO5/pCO5+/uPC + pAD, 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	15	14
Space heating seasonal efficiency, Average climate	%	196	151
Space heating annual electricity consumption, Average cl.	kWh	6185	7232
Nominal heating capacity Pdesign, Colder climate	kW	15	14
Space heating seasonal efficiency, Colder climate	%	203	157
Space heating annual electricity consumption, Colder cl.	kWh	7137	8356
Nominal heating capacity Pdesign, Warmer climate	kW	15	14
Space heating seasonal efficiency, Warmer climate	%	198	148
Space heating annual electricity consumption, Warmer cl.	kWh	3961	4744
Sound power level Lwa	dB(A)	48	

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	%	198	153
Set Space heating energy efficiency class, Average climate	-	A+++	A+++
Set Space heating seasonal efficiency, Colder climate	%	205	159
Set Space heating seasonal efficiency, Warmer climate	%	200	150

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	%	200	155
Set Space heating energy efficiency class, Average climate	-	A+++	A+++
Set Space heating seasonal efficiency, Colder climate	%	207	161
Set Space heating seasonal efficiency, Warmer climate	%	202	152