

Heat pump model	Master Therm	AQ37I-1, AQ37I-0
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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]	Pdh [kW]	COPd (-)	Cdh (-)
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]	Pdh [kW]	COPd (-)	Cdh (-)
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]	Pdh [kW]	COPd (-)	Cdh (-)
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		
Supplementary heater capacity	P_{sup} [kW]	7.5
Supplementary heater type	[-]	electricity
Capacity control		
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	dBA	48
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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	%	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