

Heat pump model		Master Therm	AQ30IC-1	
Heat pump type			Brine/Water	
Supplementary heater			No	
Heat pump combination heater			Yes	
Reference heating season			Average	
Reference water temperature			LOW, 35°C	
Full load heating		Prated [kW]	11.43	
Seasonal efficiency		ηs [%]	189	
Annual electricity consumption		QHE [kWh]	4796	
Average 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]			
A	-7	10.10	4.39	0.900
B	2	6.25	4.87	0.900
C	7	4.30	5.41	0.900
D	12	1.89	5.51	0.900
TOL (E)	-10	11.43	4.30	0.900
Tbivalent (F)	-10	11.43	4.30	0.900

Reference heating season			Average	
Reference water temperature			High, 55°C	
Full load heating		Prated [kW]	10.71	
Seasonal efficiency		ηs [%]	145	
Annual electricity consumption		QHE [kWh]	5786	
Average 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]			
A	-7	9.37	3.09	0.900
B	2	5.82	3.78	0.900
C	7	3.87	4.40	0.900
D	12	1.82	4.53	0.971
TOL (E)	-10	10.71	2.93	0.900
Tbivalent (F)	-10	10.71	2.93	0.900

Reference heating season			Warmer	
Reference water temperature			Low, 35°C	
Full load heating		Prated [kW]	11.43	
Seasonal efficiency		ηs [%]	193	
Annual electricity consumption		QHE [kWh]	3036	
Warmer 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]			
B	2	11.43	4.30	0.900
C	7	7.49	4.71	0.900
D	12	3.17	5.65	0.900
TOL (E)	2	11.43	4.30	0.900
Tbivalent (F)	2	11.43	4.30	0.900

Heat pump model		Master Therm		AQ30IC-1	
Reference heating season			Warmer		
Reference water temperature			High, 55°C		
Full load heating		Prated [kW]	10.71		
Seasonal efficiency		η_s [%]	143		
Annual electricity consumption		Q_{HE} [kWh]	3791		
Warmer 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient	
	Outdoor air				
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)	
B	2	10.71	2.93	0.900	
C	7	6.99	3.39	0.900	
D	12	3.02	4.42	0.900	
TOL (E)	2	10.71	2.93	0.900	
Tbivalent (F)	2	10.71	2.93	0.900	

Reference heating season			Colder		
Reference water temperature			Low, 35°C		
Full load heating		Prated [kW]	11.43		
Seasonal efficiency		η_s [%]	202		
Annual electricity consumption		Q_{HE} [kWh]	5357		
Colder 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient	
	Outdoor air				
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)	
A	-7	7.01	4.83	0.900	
B	2	4.30	5.41	0.900	
C	7	2.79	5.65	0.900	
D	12	2.53	5.51	0.974	
TOL (E)	-22	11.43	4.30	0.900	
Tbivalent (F)	-22	11.43	4.30	0.900	
G	-15	10.89	6.25	0.993	

Reference heating season			Colder		
Reference water temperature			High, 55°C		
Full load heating		Prated [kW]	10.71		
Seasonal efficiency		η_s [%]	154		
Annual electricity consumption		Q_{HE} [kWh]	6502		
Colder 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient	
	Outdoor air				
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)	
A	-7	6.61	3.61	0.900	
B	2	4.10	4.28	0.900	
C	7	2.70	4.76	0.900	
D	12	2.45	4.76	0.977	
TOL (E)	-22	10.71	2.93	0.900	
Tbivalent (F)	-22	10.71	2.93	0.900	
G	-15	10.09	4.11	0.995	

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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]	3-4 (4,5-6)	
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]	1.81	
Declared load profile / Tapping cycle			L
Daily electricity consumption	Q_{elec} [kWh]	3.332	
Water heating energy efficiency	η_{wh} [%]	86	
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	11	11
Space heating seasonal efficiency, Average climate	%	189	145
Space heating annual electricity consumption, Average cl.	kWh	4796	5786
Nominal heating capacity Pdesign, Colder climate	kW	11	11
Space heating seasonal efficiency, Colder climate	%	202	154
Space heating annual electricity consumption, Colder cl.	kWh	5357	6502
Nominal heating capacity Pdesign, Warmer climate	kW	11	11
Space heating seasonal efficiency, Warmer climate	%	193	143
Space heating annual electricity consumption, Warmer cl.	kWh	3036	3791
Sound power level Lwa	dBA	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	%	191	147
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	204	156
Set Space heating seasonal efficiency, Warmer climate	%	195	145

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	%	193	149
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	206	158
Set Space heating seasonal efficiency, Warmer climate	%	197	147