

Heat pump model	Master Therm	AQ30IC-1, AQ30IC-0
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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		η_s [%]	189	A+++
Annual electricity consumption		Q_{HE} [kWh]	4796	
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	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		η_s [%]	145	A++
Annual electricity consumption		Q_{HE} [kWh]	5786	
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	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		η_s [%]	193	
Annual electricity consumption		Q_{HE} [kWh]	3036	
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	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, AQ30IC-0

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			
	T _j [°C]	P _{dh} [kW]	COP _d (-)	C _{dh} (-)
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			
	T _j [°C]	P _{dh} [kW]	COP _d (-)	C _{dh} (-)
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 [%]	0	
Annual electricity consumption		Q_{HE} [kWh]	0	
Colder 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	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	0
Space heating annual electricity consumption, Colder cl.	kWh	5357	0

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
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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	%	191	147
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	204	2
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	4
Set Space heating seasonal efficiency, Warmer climate	%	197	147