

Heat pump model	Master Therm	BA30I-1
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Heat pump type	Air/Water
Supplementary heater	Yes
Heat pump combination heater	No

Reference heating season		Average		
Reference water temperature		LOW, 35°C		
Full load heating		Prated [kW]	7.64	
Seasonal efficiency		η_s [%]	187	A+++
Annual electricity consumption		Q_{HE} [kWh]	3326	
Average 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T _j [°C]	P _d h [kW]	COP _d (-)	C _d h (-)
A	-7	6.76	2.80	0.900
B	2	4.35	4.52	0.900
C	7	2.82	6.91	0.900
D	12	3.46	8.54	0.958
TOL (E)	-10	6.23	2.64	0.900
Tbivalent (F)	-7	6.76	2.80	0.900

Reference heating season		Average		
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	7.14	
Seasonal efficiency		η_s [%]	141	A++
Annual electricity consumption		Q_{HE} [kWh]	4088	
Average 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T _j [°C]	P _d h [kW]	COP _d (-)	C _d h (-)
A	-7	6.31	2.02	0.900
B	2	4.15	3.46	0.900
C	7	2.69	5.33	0.900
D	12	3.31	6.53	0.966
TOL (E)	-10	5.61	1.79	0.900
Tbivalent (F)	-7	6.31	2.02	0.900

Reference heating season		Warmer		
Reference water temperature		Low, 35°C		
Full load heating		Prated [kW]	9.04	
Seasonal efficiency		η_s [%]	270	
Annual electricity consumption		Q_{HE} [kWh]	1771	
Warmer 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T _j [°C]	P _d h [kW]	COP _d (-)	C _d h (-)
B	2	9.04	3.49	0.900
C	7	5.83	5.83	0.900
D	12	2.61	8.85	0.900
TOL (E)	2	9.04	3.49	0.900
Tbivalent (F)	2	9.04	3.49	0.900

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Reference heating season		Warmer		
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	8.41	
Seasonal efficiency		η_s [%]	185	
Annual electricity consumption		Q_{HE} [kWh]	2386	
Warmer 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
B	2	8.41	2.34	0.900
C	7	5.36	3.89	0.900
D	12	2.47	6.32	0.900
TOL (E)	2	8.41	2.34	0.900
Tbivalent (F)	2	8.41	2.34	0.900

Reference heating season		Colder		
Reference water temperature		Low, 35°C		
Full load heating		Prated [kW]	11.14	
Seasonal efficiency		η_s [%]	139.07	
Annual electricity consumption		Q_{HE} [kWh]	6587	
Colder 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	6.74	1.00	2.943
B	2	4.10	1.00	4.831
C	7	2.64	1.00	7.116
D	12	1.17	0.45	8.536
TOL (E)	-22	11.14	1.00	2.128
Tbivalent (F)	-7	6.74	1.00	2.943
G	-15	9.09	1.00	2.430

Reference heating season		Colder		
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	10.94	
Seasonal efficiency		η_s [%]	114.12	
Annual electricity consumption		Q_{HE} [kWh]	7845	
Colder 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	6.62	1.00	2.376
B	2	4.03	1.00	3.864
C	7	2.59	1.00	5.798
D	12	1.15	0.46	6.963
TOL (E)	-22	10.94	1.00	1.510
Tbivalent (F)	-7	6.62	1.00	2.376
G	-15	8.92	1.00	1.840

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Power consumption in modes other than "active mode"		
Off mode	P_{OFF} [kW]	0.018
Thermostat off mode	P_{TO} [kW]	0.017
Standby mode	P_{SB} [kW]	0.018
Crankcaseheater mode	P_{CK} [kW]	-

Supplementary heater capacity	P_{sup} [kW]	6(+6)
Supplementary heater type	[-]	electricity

Capacity control		Variable
Sound power level Indoor	L_{WA} [dBA]	-
Sound power level Outdoor	L_{WA} [dBA]	58
Rated airflow	[m ³ /h]	max.6000

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	8	7
Space heating seasonal efficiency, Average climate	%	187	141
Space heating annual electricity consumption, Average cl.	kWh	3326	4088

Nominal heating capacity Pdesign, Colder climate	kW	11	11
Space heating seasonal efficiency, Colder climate	%	139	114
Space heating annual electricity consumption, Colder cl.	kWh	6587	7845

Nominal heating capacity Pdesign, Warmer climate	kW	9	8
Space heating seasonal efficiency, Warmer climate	%	270	185
Space heating annual electricity consumption, Warmer cl.	kWh	1771	2386

Sound power level Lwa Outdoor	dBA	58
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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	%	189	143
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	141	116
Set Space heating seasonal efficiency, Warmer climate	%	272	187

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	%	191	145
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	143	118
Set Space heating seasonal efficiency, Warmer climate	%	274	189