

Heat pump model	Master Therm	BA30I-1, BA30I-0
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Heat pump type	Air/Water
Supplementary heater	Yes
Heat pump combination heater	No

Reference heating season			Average	SCOP 4.75
Reference water temperature			LOW, 35°C	
Full load heating		Prated [kW]	7.64	
Seasonal efficiency		ηs [%]	187	A+++
Annual electricity consumption		QHE [kWh]	3326	
Average 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
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	SCOP 3.61
Reference water temperature			High, 55°C	
Full load heating		Prated [kW]	7.14	
Seasonal efficiency		ηs [%]	141	A++
Annual electricity consumption		QHE [kWh]	4088	
Average 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
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		ηs [%]	270	
Annual electricity consumption		QHE [kWh]	1771	
Warmer 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
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]			
B	2	Pdh [kW]	COPd (-)	Cdh (-)
C	7	8.41	2.34	0.900
D	12	5.36	3.89	0.900
TOL (E)	2	2.47	6.32	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]			
A	-7	Pdh [kW]	COPd (-)	Cdh (-)
B	2	6.74	1.00	2.943
C	7	4.10	1.00	4.831
D	12	2.64	1.00	7.116
TOL (E)	-22	1.17	0.45	8.536
Tbivalent (F)	-7	11.14	1.00	2.128
		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]			
A	-7	Pdh [kW]	COPd (-)	Cdh (-)
B	2	6.62	1.00	2.376
C	7	4.03	1.00	3.864
D	12	2.59	1.00	5.798
TOL (E)	-22	1.15	0.46	6.963
Tbivalent (F)	-7	10.94	1.00	1.510
		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	

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