

Heat pump model	Master Therm	BA371-1
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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]	10.93		
Seasonal efficiency	η_s [%]	176	A+++	
Annual electricity consumption		Q_{HE} [kWh]	5035	
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	9.67	2.64	0.900
B	2	6.10	4.38	0.900
C	7	4.06	6.19	0.900
D	12	4.75	7.62	0.961
TOL (E)	-10	9.04	2.48	0.900
Tbivalent (F)	-7	9.67	2.64	0.900

Reference heating season		Average		
Reference water temperature		High, 55°C		
Full load heating	Prated [kW]	10.02		
Seasonal efficiency	η_s [%]	137	A++	
Annual electricity consumption		Q_{HE} [kWh]	5910	
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	8.86	2.00	0.900
B	2	5.45	3.41	0.900
C	7	3.48	4.94	0.900
D	12	4.08	6.01	0.965
TOL (E)	-10	8.22	1.85	0.900
Tbivalent (F)	-7	8.86	2.00	0.900

Reference heating season		Warmer		
Reference water temperature		Low, 35°C		
Full load heating	Prated [kW]	12.45		
Seasonal efficiency	η_s [%]	249		
Annual electricity consumption		Q_{HE} [kWh]	2645	
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	12.45	3.33	0.900
C	7	8.12	5.54	0.900
D	12	3.58	7.87	0.900
TOL (E)	-10	12.45	3.33	0.900
Tbivalent (F)	-7	12.45	3.33	0.900

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Reference heating season		Warmer		
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	11.14	
Seasonal efficiency		η_s [%]	175	
Annual electricity consumption		Q_{HE} [kWh]	3348	
Warmer 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T_j [°C]	Pd _h [kW]	COP _d (-)	Cdh (-)
B	2	11.14	2.28	0.900
C	7	7.21	3.79	0.900
D	12	4.51	5.84	0.969
TOL (E)	-10	11.14	2.28	0.900
Tbivalent (F)	-7	11.14	2.28	0.900

Reference heating season		Colder		
Reference water temperature		Low, 35°C		
Full load heating		Prated [kW]	16.31	
Seasonal efficiency		η_s [%]	135	
Annual electricity consumption		Q_{HE} [kWh]	11678	
Colder 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T_j [°C]	Pd _h [kW]	COP _d (-)	Cdh (-)
A	-7	9.87	2.78	0.900
B	2	6.18	4.67	0.900
C	7	4.09	6.35	0.900
D	12	4.75	7.62	0.961
TOL (E)	-22	7.55	2.00	0.900
Tbivalent (F)	-7	9.87	2.78	0.900
G	-15	8.44	2.30	0.900

Reference heating season		Colder		
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	15.21	
Seasonal efficiency		η_s [%]	112	
Annual electricity consumption		Q_{HE} [kWh]	12984	
Colder 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T_j [°C]	Pd _h [kW]	COP _d (-)	Cdh (-)
A	-7	9.20	2.27	0.900
B	2	5.89	3.78	0.900
C	7	3.93	5.32	0.900
D	12	4.59	6.36	0.967
TOL (E)	-22	6.95	1.64	0.900
Tbivalent (F)	-7	9.20	2.27	0.900
G	-15	7.82	1.89	0.900

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Power consumption in modes other than "active mode"		
Off mode	P_{OFF} [kW]	0.026
Thermostat off mode	P_{TO} [kW]	0.024
Standby mode	P_{SB} [kW]	0.026
Crankcaseheater mode	P_{CK} [kW]	-

Supplementary heater capacity	P_{SUP} [kW]	7.5(+7.5)
Supplementary heater type	[-]	electricity

Capacity control		Variable
Sound power level Indoor	L_{WA} [dBA]	-
Sound power level Outdoor	L_{WA} [dBA]	62
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	11	10
Space heating seasonal efficiency, Average climate	%	176	137
Space heating annual electricity consumption, Average cl.	kWh	5035	5910

Nominal heating capacity Pdesign, Colder climate	kW	16	15
Space heating seasonal efficiency, Colder climate	%	135	112
Space heating annual electricity consumption, Colder cl.	kWh	11678	12984

Nominal heating capacity Pdesign, Warmer climate	kW	12	11
Space heating seasonal efficiency, Warmer climate	%	249	175
Space heating annual electricity consumption, Warmer cl.	kWh	2645	3348

Sound power level Lwa Outdoor	dBA	62
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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	%	178	139
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	137	114
Set Space heating seasonal efficiency, Warmer climate	%	251	177

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	%	180	141
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	139	116
Set Space heating seasonal efficiency, Warmer climate	%	253	179