

Heat pump model	Master Therm	BA37ISC
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Heat pump type	Air/Water
Supplementary heater	Yes
Heat pump combination heater	Yes

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]	5036	
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	0.960
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]	5911	
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	0.963
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 [%]	247	
Annual electricity consumption		Q_{HE} [kWh]	2660	
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)	2	12.45	3.33	0.900
Tbivalent (F)	2	12.45	3.33	0.900

Heat pump model		Master Therm		BA37ISC	
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]		3350	
Warmer 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient	
	Outdoor air				
	T_j [°C]	Pdh [kW]	COPd (-)	Cdh (-)	
B	2	11.14	2.28	0.900	
C	7	7.21	3.79	0.900	
D	12	4.51	5.84	0.968	
TOL (E)	2	11.14	2.28	0.900	
Tbivalent (F)	2	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 [%]		134	
Annual electricity consumption		Q_{HE} [kWh]		11723	
Colder 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient	
	Outdoor air				
	T_j [°C]	Pdh [kW]	COPd (-)	Cdh (-)	
A	-7	9.87	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	0.960	
TOL (E)	-20	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]		13020	
Colder 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient	
	Outdoor air				
	T_j [°C]	Pdh [kW]	COPd (-)	Cdh (-)	
A	-7	9.20	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	0.965	
TOL (E)	-20	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]	0.025
Thermostat off mode	P_{TO} [kW]	0.025
Standby mode	P_{SB} [kW]	0.025
Crankcaseheater mode	P_{CK} [kW]	-
Supplementary heater capacity		
Supplementary heater capacity	P_{SUP} [kW]	7.5(+7.5)
Supplementary heater type	[-]	electricity
Capacity control		
Capacity control		Variable
Sound power level Indoor	L_{WA} [dBA]	48
Sound power level Outdoor	L_{WA} [dBA]	65
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
Declared load profile / Tapping cycle		
Declared load profile / Tapping cycle		L
Daily electricity consumption	Q_{elec} [kWh]	3.129
Water heating energy efficiency	η_{wh} [%]	90

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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	5036	5911

Nominal heating capacity Pdesign, Colder climate	kW	16	15
Space heating seasonal efficiency, Colder climate	%	134	112
Space heating annual electricity consumption, Colder cl.	kWh	11723	13020

Nominal heating capacity Pdesign, Warmer climate	kW	12	11
Space heating seasonal efficiency, Warmer climate	%	247	175
Space heating annual electricity consumption, Warmer cl.	kWh	2660	3350

Sound power level Lwa Outdoor	dBA	65	
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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	%	136	114
Set Space heating seasonal efficiency, Warmer climate	%	249	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	%	138	116
Set Space heating seasonal efficiency, Warmer climate	%	251	179