TECHNICAL DOCUMENTATION

according Directive 2010/30/EU and corresponding Regulation (EU) No. 811/2013 (Energy Labelling),

Dircetive 2009/125/EC and corresponding Regulation (EU) No. 813/2013 (Ecodesign)

Model:	**iPump T 2-8**
Type of heat pump:	Brine-to-water heat pump
Low-temperature heat pump: (Yes/No)	Yes
Temperature application: (35°C/55°C)	low temperature (35°C)
Equipped with supplementary heater: (Yes/No)	Yes
Heat pump combination heater: (Yes/No)	Yes

		Climate condition			
		cold	average	warm	
Rated heat output	P_{rated}	**7,7**	**7,7**	**7,7**	**kW**

Outdoor temperature T_j	Declared capacity for part load (indoor temperature = 20 °C)				
T_j = – 15 °C	P_{dh}	6,4			kW
T_j = – 7 °C	P_{dh}	4,7	7,0		kW
T_j = +2 °C	P_{dh}	2,9	4,2	7,9	kW
T_j = +7 °C	P_{dh}	1,8	2,8	4,9	kW
T_j = +12 °C	P_{dh}	1,4	1,4	2,3	kW
T_j = Bivalenz temperature (T_{biv})	P_{dh}	7,9	7,9	7,9	kW
T_j = Operation limit temperature (TOL)	P_{dh}	7,9	7,9	7,9	kW
Bivalenz temperature (Tbiv)	T_{biv}	-22	-10	2	°C
Cycling interval capacity for heating	P_{cych}				kW
Degradation co-efficient	C_{dh}	0,9	0,9	0,9	---
Power consumption in modes other than active mode					
Thermostat-off mode	P_{TO}	0,02	0,02	0,02	kW
Standby mode	P_{SB}	0,02	0,02	0,02	kW
Thermostat-off mode	P_{OFF}	0,02	0,02	0,02	kW
Crankase heater mode	P_{CK}	0,02	0,02	0,02	kW
Other items					
Capacity control		variable			
Sound power levels, indoors/outdoors	L_{WA}		44,8		dB
Annual energy consumption	Q_{HE}				kWh
For heat pump combination heater:					
Declared load profile		**XL**			
Daily electricity consumption	Q_{elec}	8,48			kWh
Annual electricity consumption	AEC	1 820			kWh

		Climate condition			
		cold	average	warm	
Seasonal space heating efficiency	η_s	**223**	**209**	**226**	**%**

Outdoor temperature Tj	Declared capacity for part load (indoor temperature = 20 °C)				
T_j = – 15 °C	COP_d	4,63			---
T_j = – 7 °C	COP_d	5,32	4,33		---
T_j = +2 °C	COP_d	6,39	5,46	4,05	---
T_j = +7 °C	COP_d	7,03	6,40	5,25	---
T_j = +12 °C	COP_d	7,34	7,34	6,89	---
T_j = Bivalenz temperature (T_{biv})	COP_d	4,05	4,05	4,05	---
T_j = Operation limit temperature (TOL)	COP_d	4,05	4,05	4,05	---
Operation limit temperature	TOL	-22	-10	2	°C
Cycling interval capacity for heating	COP_{cyc}				---
Heating water operating limit temperature	$WTOL$	62	62	62	°C
Supplementary heater					
Rated heat output (*)	P_{sup}	1-6	1-6	1-6	kW
Type of energy input		electrical			
For air-to-water heat pumps:					
Rated air flow rate, outdoors	---				m^3/h
For water- or brine-to-water heat pumps:					
Rated brine or water flow rate, outdoor heat exchanger	---	n.a.	n.a.	n.a.	m^3/h

Water heating energy efficiency	η_{wh}	**92,1**			**%**
Daily fuel consumption	Q_{fuel}	n.a.	n.a.	n.a.	kWh
Annual fuel consumption	AFC	n.a.	n.a.	n.a.	GJ

Contact details:
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Dircetive 2009/125/EC and corresponding Regulation (EU) No. 813/2013 (Ecodesign)

Model:	**iPump T 2-8**
Type of heat pump:	Brine-to-water heat pump
Low-temperature heat pump: (Yes/No)	Yes
Temperature application: (35°C/55°C)	high temperature (55°C)
Equipped with supplementary heater: (Yes/No)	Yes
Heat pump combination heater: (Yes/No)	Yes

		Climate condition			
		cold	average	warm	
Rated heat output	P_{rated}	**6,8**	**6,8**	**6,8**	**kW**

Outdoor temperature T_j	Declared capacity for part load (indoor temperature = 20 °C)				
T_j = – 15 °C	P_{dh}	5,6	-	-	kW
T_j = – 7 °C	P_{dh}	4,1	5,9		kW
T_j = +2 °C	P_{dh}	2,5	3,7	6,8	kW
T_j = +7 °C	P_{dh}	2,2	2,3	4,3	kW
T_j = +12 °C	P_{dh}	6,8	2,2	2,2	kW
T_j = Bivalenz temperature (T_{biv})	P_{dh}	6,8	6,8	6,8	kW
T_j = Operation limit temperature (TOL)	P_{dh}	6,8	6,8	6,8	kW
Bivalenz temperature (Tbiv)	T_{biv}	-22,0	-10,0	-2,0	°C
Cycling interval capacity for heating	P_{cych}				kW
Degradation co-efficient	C_{dh}	0,9	0,9	0,9	---
Power consumption in modes other than active mode					
Thermostat-off mode	P_{TO}	0,02	0,02	0,02	kW
Standby mode	P_{SB}	0,02	0,02	0,02	kW
Off-mode	P_{OFF}	0,02	0,02	0,02	kW
Crankase heater mode	P_{CK}	0,00	0,00	0,00	kW
Other items					
Capacity control		variable			
Sound power levels, indoors/outdoors	L_{WA}	- /44,8	- / 44,8	- / 44,8	dB
Annual energy consumption	Q_{HE}				kWh
For heat pump combination heater:					
Declared load profile		**XL**			
Daily electricity consumption	Q_{elec}	8,48			kWh
Annual electricity consumption	AEC	1 820			kWh

		Climate condition			
		cold	average	warm	
Seasonal space heating efficiency	η_s	**167**	**158**	**161**	**%**

Outdoor temperature Tj	Declared capacity for part load (indoor temperature = 20 °C)				
T_j = – 15 °C	COP_d	3,52	-	-	---
T_j = – 7 °C	COP_d	4,09	3,27		---
T_j = +2 °C	COP_d	5,02	4,26	3,03	---
T_j = +7 °C	COP_d	5,74	5,15	3,86	---
T_j = +12 °C	COP_d	6,21	5,90	5,44	---
T_j = Bivalenz temperature (T_{biv})	COP_d	3,03	3,00	3,03	---
T_j = Operation limit temperature (TOL)	COP_d	3,03	3,00	3,03	---
Operation limit temperature	TOL	-22,0	-10,0	2,0	°C
Cycling interval capacity for heating	COP_{cyc}				---
Heating water operating limit temperature	$WTOL$	62	62	62	°C
Supplementary heater					
Rated heat output (*)	P_{sup}	1-6	1-6	1-6	kW
Type of energy input		electrical			
For air-to-water heat pumps:					
Rated air flow rate, outdoors	---				m^3/h
For water- or brine-to-water heat pumps:					
Rated brine or water flow rate, outdoor heat exchanger	---	n.a.	n.a.	n.a.	m^3/h

Water heating energy efficiency	η_{wh}	**92,1**			**%**
Daily fuel consumption	Q_{fuel}	n.a.	n.a.	n.a.	kWh
Annual fuel consumption	AFC	n.a.	n.a.	n.a.	GJ

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