

Belaria® pro (25)

Type of heat pump:	Air to water heat pump
Low-temperature heat pump: (Yes/No)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Temperature application: (35°C/55°C)	<input checked="" type="checkbox"/> 35 °C <input type="checkbox"/> 55 °C
Equipped with supplementary heater: (Yes/No)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Heat pump combination heater: (Yes/No)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Contact details:	Hoval Aktiengesellschaft, 9490 Vaduz, Liechtenstein

		cold	average	warm	
Rated heat output	P_{rated}	21	21	24	kW

Outdoor temperature T_j	Declared capacity for part load (indoor temperature = 20 °C)				
	P_{dh}				
$T_j = -15\text{ °C}$	P_{dh}	16.7	-	-	kW
$T_j = -7\text{ °C}$	P_{dh}	12.1	17.9	-	kW
$T_j = +2\text{ °C}$	P_{dh}	10.3	10.8	22.1	kW
$T_j = +7\text{ °C}$	P_{dh}	10.0	10.3	15.2	kW
$T_j = +12\text{ °C}$	P_{dh}	10.1	10.6	10.1	kW
$T_j = \text{Bivalenz temperature } (T_{biv})$	P_{dh}	16.7	21.2	22.1	kW
$T_j = \text{Operation limit temperature (TOL)}$	P_{dh}	14.7	21.2	22.1	kW
Bivalenz temperature (T_{biv})	T_{biv}	-15.0	-10.0	2.0	°C

Power consumption in modes other than active mode				
Thermostat-off mode	P_{TO}		0.0282	kW
Standby mode	P_{SB}		0.0280	kW
Off-mode	P_{OFF}		0.0006	kW
Crankcase heater mode	P_{CK}		0.0000	kW

Other items					
Annual energy consumption	Q_{HE}	10,516	7,597	4,475	kWh
Sound power levels, indoors/outdoors	L_{WA}		- / 61		dB
Capacity control			variable		

		cold	average	warm	
Seasonal space heating efficiency	η_s	186	220	280	%
Seasonal coefficient of performance	SCOP	4.73	5.58	7.09	---

Outdoor temperature T_j	Declared coefficient of performance for part load (indoor temperature = 20 °C)				
	COP_d				
$T_j = -15\text{ °C}$	COP_d	2.75	-	-	---
$T_j = -7\text{ °C}$	COP_d	3.97	3.34	-	---
$T_j = +2\text{ °C}$	COP_d	5.92	5.62	3.04	---
$T_j = +7\text{ °C}$	COP_d	7.38	7.10	6.25	---
$T_j = +12\text{ °C}$	COP_d	9.13	9.22	9.25	---
$T_j = \text{Bivalenz temperature } (T_{biv})$	COP_d	2.75	2.71	3.04	---
$T_j = \text{Operation limit temperature (TOL)}$	COP_d	2.37	2.71	3.04	---
Operation limit temperature	TOL	-20.0	-10.0	2.0	°C
Heating water operating limit temperature	$WTOL$		70		°C

Supplementary heater				
Rated heat output (*)	P_{sup}			kW
Type of energy input		n.a.		

For air-to-water heat pumps:				
Rated air flow rate, outdoors	---		6,600	m ³ /h
For water- or brine-to-water heat pumps:				
Rated brine or water flow rate, outdoor heat exchanger	---		n.a.	m ³ /h

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Heat pump combination heater: (Yes/No)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Contact details:	Hoval Aktiengesellschaft, 9490 Vaduz, Liechtenstein

		cold	average	warm	
Rated heat output	P_{rated}	20	19	23	kW

Outdoor temperature T_j	Declared capacity for part load (indoor temperature = 20 °C)				
	P_{dh}				
$T_j = -15\text{ °C}$	P_{dh}	16.6	-	-	kW
$T_j = -7\text{ °C}$	P_{dh}	12.8	17.6	-	kW
$T_j = +2\text{ °C}$	P_{dh}	11.6	10.2	22.4	kW
$T_j = +7\text{ °C}$	P_{dh}	10.4	9.9	15.2	kW
$T_j = +12\text{ °C}$	P_{dh}	10.4	10.7	10.7	kW
$T_j =$ Bivalenz temperature (T_{biv})	P_{dh}	16.6	18.4	22.4	kW
$T_j =$ Operation limit temperature (TOL)	P_{dh}	15.3	18.4	22.4	kW
Bivalenz temperature (T_{biv})	T_{biv}	-15.0	-10.0	2.0	°C

Power consumption in modes other than active mode				
Thermostat-off mode	P_{TO}		0.0282	kW
Standby mode	P_{SB}		0.0280	kW
Off-mode	P_{OFF}		0.0006	kW
Crankcase heater mode	P_{CK}		0.0000	kW

Other items					
Annual energy consumption	Q_{HE}	13,604	9,381	6,003	kWh
Sound power levels, indoors/outdoors	L_{WA}		- / 61		dB
Capacity control			variable		

		cold	average	warm	
Seasonal space heating efficiency	η_s	141	164	202	%
Seasonal coefficient of performance	SCOP	3.60	4.18	5.12	---

Outdoor temperature T_j	Declared coefficient of performance for part load (indoor temperature = 20 °C)				
	COP_d				
$T_j = -15\text{ °C}$	COP_d	2.10	-	-	---
$T_j = -7\text{ °C}$	COP_d	3.01	2.41	-	---
$T_j = +2\text{ °C}$	COP_d	4.39	4.20	2.23	---
$T_j = +7\text{ °C}$	COP_d	5.80	5.42	4.36	---
$T_j = +12\text{ °C}$	COP_d	7.51	7.15	6.89	---
$T_j =$ Bivalenz temperature (T_{biv})	COP_d	2.10	2.08	2.23	---
$T_j =$ Operation limit temperature (TOL)	COP_d	1.55	2.08	2.23	---
Operation limit temperature	TOL	-20.0	-10.0	2.0	°C
Heating water operating limit temperature	WTOL		70		°C

Supplementary heater				
Rated heat output (*)	P_{sup}			kW
Type of energy input		n.a.		

For air-to-water heat pumps:				
Rated air flow rate, outdoors	---		6,600	m ³ /h
For water- or brine-to-water heat pumps:				
Rated brine or water flow rate, outdoor heat exchanger	---		n.a.	m ³ /h