VITOCAL 222-G

BWT 221.B06, BWT 221.B08, BWT 221.B10

The product data specified meets the requirements of EU Regulations 811/2013 and 813/2013.

Product data	Symbol	Unit	BWT 221.B06	BWT 221.B08	BWT 221.B10
Declared load profile			XL	XL	XL
Seasonal space heating energy efficiency, medium-temperature application			A++	A++	A++
Water heating energy efficiency classes			A+	A+	A+
Rated heat output, medium-temperature application, Average climate conditions	P_{rated}	kW	6	8	11
Supplementary heater Rated heat output, Average climate conditions	P_{sup}	kW	9	9	9
Annual energy consumption	Q_{HE}	kWh	3452	4338	5630
Annual electricity consumption	AEC	kWh	1329	1329	1329
Seasonal space heating energy efficiency, medium-temperature application, Average climate conditions	η_s	%	134	143	150
Water heating energy efficiency, Average climate conditions	η_{wh}	%	130	130	130
sound power level indoors	L_{WA}	dB	40	43	46

For all special precautions to be taken during assembly, installation or maintenance of the space heater, see the service and installation instructions.

Product data	Symbol	Unit	BWT 221.B06	BWT 221.B08	BWT 221.B10
Rated heat output, medium-temperature application, Colder climate conditions	P_{rated}	kW	9	12	16
Rated heat output, medium-temperature application, Warmer climate conditions	P_{rated}	kW	5	7	9
Supplementary heater Rated heat output, Colder climate conditions	P_{sup}	kW	-	-	-
Supplementary heater Rated heat output, Warmer climate conditions	P_{sup}	kW	-	-	-
Annual energy consumption, medium-temperature application, Colder climate conditions	Q_{HE}	kWh	6069	7633	10312
Annual energy consumption, medium-temperature application, Warmer climate conditions	Q_{HE}	kWh	1857	2449	3281
Annual electricity consumption, Colder climate conditions	AEC	kWh	-	-	-
Annual electricity consumption, Warmer climate conditions	AEC	kWh	-	-	-
Seasonal space heating energy efficiency, medium-temperature application, Colder climate conditions	η_s	%	133	142	143
Seasonal space heating energy efficiency, medium-temperature application, Warmer climate conditions	η_s	%	141	143	145
Sound power level, indoors	L_{WA}	dB	-	-	-

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BWT 221.B06, BWT 221.B08, BWT 221.B10

The product data specified meets the requirements of EU Regulations 811/2013 and 813/2013.

Product data	BWT 221.B06	BWT 221.B08	BWT 221.B10
Operating mode	Brine/Water	Brine/Water	Brine/Water
Mark Master/Slave Heat pump	Master	Master	Master
Equipped with a supplementary heater	Yes	Yes	Yes
Heat pump combination heater	Yes	Yes	Yes
Seasonal space heating energy efficiency, medium-temperature application	A++	A++	A++
Seasonal space heating energy efficiency, Low-temperature application	A+++	A+++	A+++
Water heating energy efficiency classes	A+	A+	A+

Product data	Symbol	Unit	BWT 221.B06	BWT 221.B08	BWT 221.B10
Rated heat output, medium-temperature application, Average climate conditions	P_{rated}	kW	6	8	11
Rated heat output, medium-temperature application, Colder climate conditions	P_{rated}	kW	9	12	16
Rated heat output, medium-temperature application, Warmer climate conditions	P_{rated}	kW	5	7	9
Rated heat output, Low-temperature application, Average climate conditions	P_{rated}	kW	7	9	12
Rated heat output, Low-temperature application, Colder climate conditions	P_{rated}	kW	10	13	17
Rated heat output, Low-temperature application, Warmer climate conditions	P_{rated}	kW	6	8	10
Seasonal space heating energy efficiency, medium-temperature application, Average climate conditions	η_s	%	134	143	150
seasonal coefficient of performance, medium-temperature application, Average climate conditions	SCOP		3,56	3,79	3,97
Seasonal space heating energy efficiency, medium-temperature application, Colder climate conditions	η_s	%	133	142	143
Seasonal space heating energy efficiency, medium-temperature application, Warmer climate conditions	η_s	%	141	143	145
Seasonal space heating energy efficiency, Low-temperature application, Average climate conditions	η_s	%	186	201	204
seasonal coefficient of performance,Low-temperature application, Average climate conditions	SCOP		4,86	5,23	5,32
Seasonal space heating energy efficiency, Low-temperature application, Colder climate conditions	η_s	%	204	193	206
Seasonal space heating energy efficiency, Low-temperature application, Warmer climate conditions	η_s	%	189	205	208

Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj	Symbol	Unit	BWT 221.B06	BWT 221.B08	BWT 221.B10
Tj= -7°C, medium-temperature application, Average climate conditions	Pdh	kW	5,2	7	9,5
Tj= -7°C, medium-temperature application, Colder climate conditions	Pdh	kW	5,4	7,2	9,8
Tj= -7°C, medium-temperature application, Warmer climate conditions	Pdh	kW	-	-	-
Tj= -7°C, Low-temperature application, Average climate conditions	Pdh	kW	5,8	7,6	10,3
Tj= -7°C, Low-temperature application, Colder climate conditions	Pdh	kW	5,9	7,2	10,4
Tj= -7°C, Low-temperature application, Warmer climate conditions	Pdh	kW	-	-	-
Tj= +2°C, medium-temperature application, Average climate conditions	Pdh	kW	5,4	7,2	9,8
Tj= +2°C, medium-temperature application, Colder climate conditions	Pdh	kW	5,6	7,4	10
Tj= +2°C, medium-temperature application, Warmer climate conditions	Pdh	kW	5,7	6,9	9,4
Tj= +2°C, Low-temperature application, Average climate conditions	Pdh	kW	5,8	7,6	10,4
Tj= +2°C, Low-temperature application, Colder climate conditions	Pdh	kW	6	7,7	10,5
Tj= +2°C, Low-temperature application, Warmer climate conditions	Pdh	kW	5,7	7,6	10,3
Tj= +7°C, medium-temperature application, Average climate conditions	Pdh	kW	5,6	7,3	10
Tj= +7°C, medium-temperature application, Colder climate conditions	Pdh	kW	5,7	7,8	10,2
Tj= +7°C, medium-temperature application, Warmer climate conditions	Pdh	kW	5,3	7,1	9,7
Tj= +7°C, Low-temperature application, Average climate conditions	Pdh	kW	5,9	7,7	10,5

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BWT 221.B06, BWT 221.B08, BWT 221.B10

The product data specified meets the requirements of EU Regulations 811/2013 and 813/2013.

Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj	Symbol	Unit	BWT 221.B06	BWT 221.B08	BWT 221.B10
Tj= +7°C, Low-temperature application, Colder climate conditions	Pdh	kW	6	7,8	10,6
Tj= +7°C, Low-temperature application, Warmer climate conditions	Pdh	kW	5,8	7,6	10,3
Tj= +12°C, medium-temperature application, Average climate conditions	Pdh	kW	5,7	7,5	10,2
Tj= +12°C, medium-temperature application, Colder climate conditions	Pdh	kW	5,8	7,6	10,3
Tj= +12°C, medium-temperature application, Warmer climate conditions	Pdh	kW	5,9	7,3	10
Tj= +12°C, Low-temperature application, Average climate conditions	Pdh	kW	6	7,8	10,6
Tj= +12°C, Low-temperature application, Colder climate conditions	Pdh	kW	6	7,8	10,6
Tj= +12°C, Low-temperature application, Warmer climate conditions	Pdh	kW	5,9	7,7	10,5
Tj= bivalent temperature, medium-temperature application, Average climate conditions	Pdh	kW	5,2	7	9,5
Tj= bivalent temperature, medium-temperature application, Colder climateconditions	Pdh	kW	5,4	7,2	9,8
Tj= bivalent temperature, medium-temperature application, Warmer climateconditions	Pdh	kW	5,2	3	9,4
Tj= bivalent temperature, Low-temperature application, Average climate conditions	Pdh	kW	5,8	7,6	10,3
Tj= bivalent temperature, Low-temperature application, Colder climateconditions	Pdh	kW	5,9	7,7	10,4
Tj= bivalent temperature, Low-temperature application, Warmer climateconditions	Pdh	kW	5,7	7,6	10,3
Tj= operation limit temperature, medium-temperature application, Averageclimate conditions	Pdh	kW	5,2	6,9	9,4
Tj= operation limit temperature, Low-temperature application, Colderclimate conditions	Pdh	kW	5,8	7,6	10,4
Tj= operation limit temperature, medium-temperature application, Warmerclimate conditions	Pdh	kW	5,2	6,9	9,4
Tj= operation limit temperature, Low-temperature application, Average climate conditions	Pdh	kW	5,8	7,6	10,3
Tj= operation limit temperature, medium-temperature application, Colderclimate conditions	Pdh	kW	5,2	7	9,5
Tj= operation limit temperature, Low-temperature application, Warmerclimate conditions	Pdh	kW	5,7	7,6	10,3
For air-to-water heat pumps: Tj= -15°C (if TOL < -20°C)	Pdh	kW	-	-	-
bivalent temperature, medium-temperature application, Average climate conditions	T_{biv}	°C	-7	-7	-7
bivalent temperature, medium-temperature application, Colder climate conditions	T_{biv}	°C	-7	-7	-7
bivalent temperature, medium-temperature application, Warmer climate conditions	T_{biv}	°C	2	2	2
bivalent temperature, Low-temperature application, Average climate conditions	T_{biv}	°C	-7	-7	-7
bivalent temperature, Low-temperature application, Colder climate conditions	T_{biv}	°C	-7	-7	-7
bivalent temperature, Low-temperature application, Warmer climate conditions	T_{biv}	°C	2	2	2
Cycling interval capacity for heating, Average climate conditions	P_{cych}	kW	-	-	-
Cycling interval capacity for heating, Colder climate conditions	P_{cych}	kW	-	-	-
Cycling interval capacity for heating, Warmer climate conditions	P_{cych}	kW	-	-	-
Degradation co-efficient medium-temperature application	Cdh		1	1	1
Degradation co-efficient Low-temperature application	Cdh		1	1	1

Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj	Symbol	Unit	BWT 221.B06	BWT 221.B08	BWT 221.B10
Tj= -7°C, medium-temperature application, Average climate conditions	COPd		3	3,2	3,2
Tj= -7°C, medium-temperature application, Colder climate conditions	COPd		-	3,8	3,8
Tj= -7°C, medium-temperature application, Warmer climate conditions	COPd		-	-	-
Tj= -7°C, Low-temperature application, Average climate conditions	COPd		4,6	4,9	5
Tj= -7°C, Low-temperature application, Colder climate conditions	COPd		5,2	5,6	5,8
Tj= -7°C, Low-temperature application, Warmer climate conditions	COPd		-	-	-
Tj= +2°C, medium-temperature application, Average climate conditions	COPd		3,5	3,8	3,8
Tj= +2°C, medium-temperature application, Colder climate conditions	COPd		4	4,3	4,4
Tj= +2°C, medium-temperature application, Warmer climate conditions	COPd		2,8	3	3

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BWT 221.B06, BWT 221.B08, BWT 221.B10

The product data specified meets the requirements of EU Regulations 811/2013 and 813/2013.

Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj	Symbol	Unit	BWT 221.B06	BWT 221.B08	BWT 221.B10
Tj= +2°C, Low-temperature application, Average climate conditions	COPd		4,9	5,2	5,3
Tj= +2°C, Low-temperature application, Colder climate conditions	COPd		5,5	5,9	6,5
Tj= +2°C, Low-temperature application, Warmer climate conditions	COPd		5,2	4,9	5
Tj= +7°C, medium-temperature application, Average climate conditions	COPd		4	4,2	4,3
Tj= +7°C, medium-temperature application, Colder climate conditions	COPd		4,5	4,9	4,8
Tj= +7°C, medium-temperature application, Warmer climate conditions	COPd		3,2	4,2	3,5
Tj= +7°C, Low-temperature application, Average climate conditions	COPd		5,2	5,6	5,7
Tj= +7°C, Low-temperature application, Colder climate conditions	COPd		5,7	6,2	6,8
Tj= +7°C, Low-temperature application, Warmer climate conditions	COPd		4,8	5,2	5,2
Tj= +12°C, medium-temperature application, Average climate conditions	COPd		4,4	4,8	4,8
Tj= +12°C, medium-temperature application, Colder climate conditions	COPd		4,8	5,3	5,3
Tj= +12°C, medium-temperature application, Warmer climate conditions	COPd		4,1	4,3	4,4
Tj= +12°C, Low-temperature application, Average climate conditions	COPd		5,5	5,9	6
Tj= +12°C, Low-temperature application, Colder climate conditions	COPd		5,8	6,2	6,9
Tj= +12°C, Low-temperature application, Warmer climate conditions	COPd		5,2	5,7	5,8
Tj= bivalent temperature, medium-temperature application, Average climate conditions	COPd		3	3,2	3,2
Tj= bivalent temperature, medium-temperature application, Colder climateconditions	COPd		3,5	3,8	3,8
Tj= bivalent temperature, medium-temperature application, Warmer climateconditions	COPd		2,8	3	3
Tj= bivalent temperature, Low-temperature application, Average climate conditions	COPd		4,6	4,9	5
Tj= bivalent temperature, Low-temperature application, Colder climateconditions	COPd		5,2	5,6	5,8
Tj= bivalent temperature, Low-temperature application, Warmer climateconditions	COPd		5,2	4,9	5
Tj= operation limit temperature, medium-temperature application, Averageclimate conditions	COPd		2,9	3	3,1
Tj= operation limit temperature, medium-temperature application, Colderclimate conditions	COPd		2,9	3,1	3,2
Tj= operation limit temperature, medium-temperature application, Warmerclimate conditions	COPd		2,8	3	3
Tj= operation limit temperature, Low-temperature application, Average climate conditions	COPd		4,6	4,9	5
Tj= operation limit temperature, Low-temperature application, Colderclimate conditions	COPd		4,8	5,1	6,1
Tj= operation limit temperature, Low-temperature application, Warmerclimate conditions	COPd		5,2	4,9	5
For air-to-water heat pumps: Tj= -15°C (if TOL < -20°C)	COPd		-	-	-
For air-to-water heat pumps: operation limit temperature, medium-temperature application, Average climate conditions	TOL	°C	-10	-10	-10
For air-to-water heat pumps: operation limit temperature, Low-temperature application, Average climate conditions	TOL	°C	-10	-10	-10
Cycling interval efficiency, Average climate conditions	COPcyc		-	-	-
Cycling interval efficiency, Colder climate conditions	COPcyc		-	-	-
Cycling interval efficiency, Warmer climate conditions	COPcyc		-	-	-
Heating water operating limit temperature	WTOL	°C	65	65	65

Power consumption in operating modes other than the operating state	Symbol	Unit	BWT 221.B06	BWT 221.B08	BWT 221.B10
Power consumption in modes other than active mode Off mode	P_{OFF}	kW	0	0	0
Power consumption in modes other than active mode Thermostat-off mode	P_{TO}	kW	0,012	0	0
Power consumption in modes other than active mode Standby mode	P_{SB}	kW	0,012	0,012	0,012
Power consumption in modes other than active mode Crankcase heater mode	P_{CK}	kW	0	0	0

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BWT 221.B06, BWT 221.B08, BWT 221.B10

The product data specified meets the requirements of EU Regulations 811/2013 and 813/2013.

Auxiliary heating appliances	Symbol	Unit	BWT 221.B06	BWT 221.B08	BWT 221.B10
Supplementary heater Rated heat output, Average climate conditions	P_{sup}	kW	9	9	9
Type of energy input			Electrical	Electrical	Electrical

Other details	Symbol	Unit	BWT 221.B06	BWT 221.B08	BWT 221.B10
Capacity control			variable	variable	variable
sound power level indoors	L_{WA}	dB	40	43	46
Sound power level, indoors	L_{WA}	dB	-	-	-
Annual energy consumption	Q_{HE}	kWh	3452	4338	5630
Annual energy consumption, medium-temperature application, Colder climate conditions	Q_{HE}	kWh	6069	7633	10312
Annual energy consumption, medium-temperature application, Warmer climate conditions	Q_{HE}	kWh	1857	2449	3281
Annual energy consumption, Low-temperature application, Average climate conditions	Q_{HE}	kWh	2802	3398	4554
Annual energy consumption, medium-temperature application, Colder climate conditions	Q_{HE}	kWh	2695	6143	7907
Annual energy consumption, medium-temperature application, Warmer climate conditions Water heating energy efficiency, Colder climate conditions	$Q_{HE}\eta_{wh}$	kWh%	1574	1897	2536
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, medium-temperature application		m^3/h	1	2	1
For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger, Low-temperature application		m^3/h	1	2	2

For combination heaters with heat pump	Symbol	Unit	BWT 221.B06	BWT 221.B08	BWT 221.B10
Declared load profile			XL	XL	XL
Daily electricity consumption, Average climate conditions	Q_{elec}	kWh	6,167	6,167	6,167
Daily electricity consumption, Colder climate conditions	Q_{elec}	kWh	-	-	-
Daily electricity consumption, Warmer climate conditions	Q_{elec}	kWh	-	-	-
Annual electricity consumption	AEC	kWh	1329	1329	1329
Annual electricity consumption, Colder climate conditions	AEC	kWh	-	-	-
Annual electricity consumption, Warmer climate conditions	AEC	kWh	-	-	-
Water heating energy efficiency, Average climate conditions	η_{wh}	%	130	130	130
Water heating energy efficiency, Colder climate conditions	η_{wh}	%	-	-	-
Water heating energy efficiency, Warmer climate conditions	η_{wh}	%	-	-	-

Product fiche Energy efficiency category temperature controller

The product data specified meets the requirements of EU Regulations 811/2013.

Criterion	Energy efficiency category, temperature controller	Contribution, central heating energy efficiency
• Room thermostat which switches the heat source on/off	1	1 %
• Weather-compensated control • Modulating heat source	2	2 %
• Weather-compensated control • Non-modulating heat source	3	1,5 %
• Room thermostat with TPI (Time Proportional Integral) properties • Non-modulating heat source	4	2 %
• Modulating room thermostat • Modulating heat source	5	3 %
• Weather compensation, control unit • Modulating heat source • Room temperature sensor in conjunction with room hook-up	6	4 %
• Weather compensation, control unit • Non-modulating heat source • Room temperature sensor in conjunction with room hook-up	7	3,5 %
• Individual room control with min. 3 room temperature sensors • Modulating heat source	8	5 %