Information requirements
(heat pump space heaters and heat pump combination heaters)

Model(s): COPMAX HIGH POWER 4KW

Air-to-water heat pump	Y			Low-temperature heat pump	N		
Water-to-water heat pump	N			Equipped with a supplementary heater	Y		
Brine-to-water heat pump	N			Heat pump combination heater	Y		
Parameters declared for	Medium-temperature application						
Parameters declared for	Average climate condition						
Item	symbol	value	unit	Item	symbol	value	unit
Rated heat output (*)	Prated	5	kW	Seasonal space heating energy efficiency	ηs	137	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = – 7 ℃	Pdh	4.3	kW	Tj = – 7 ℃	COPd	2.47	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 2 ℃	Pdh	2.7	kW	Tj = 2 ℃	COPd	3.19	–
Degradation co-efficient (**)	Cdh	0.98	–				
Tj = 7 ℃	Pdh	1.7	kW	Tj = 7 ℃	COPd	4.89	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = 12℃	Pdh	1.6	kW	Tj = 12℃	COPd	6.61	–
Degradation co-efficient (**)	Cdh	0.94	–				
Tj = bivalent temperature	Pdh	4.3	kW	Tj = bivalent temperature	COPd	2.47	–
Tj = operation limit temperature	Pdh	3.6	kW	Tj = operation limit temperature	COPd	1.56	–
For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	Pdh	NA	kW	For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	COPd	NA	–
Bivalent temperature	Tbiv	-7	℃	For air-to-water heat pumps: Operation limit temperature	TOL	-10	℃
Cycling interval capacity for heating	Pcych	NA	kW	Cycling interval efficiency	COPcyc	NA	–
				Heating water operating limit temperature	WTOL	65	℃
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.025	kW	Rated heat output (*)	Psup	1.4	kW
Thermostat-off mode	P_{TO}	0.025	kW	Type of energy input	Electric		
Standby mode	P_{SB}	0.025	kW				
Crankcase heater mode	P_{CK}	0.025	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	–	3200	m 3 /h
Sound power level, outdoors	L_{WA}	58	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	–	NA	m 3 /h
Annual energy consumption	Q_{HE}	2882	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	128	%
Daily electricity consumption	Qelec	6.253	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1311	kWh	Annual fuel consumption	AFC	NA	GJ

Contact details: Mimersvej 2, 8722 Hedensted, Denmark	Name of the supplier: VVS-EKSPERTEN A/S

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information requirements
(heat pump space heaters and heat pump combination heaters)

Model(s): COPMAX HIGH POWER 4KW

Air-to-water heat pump	Y			Low-temperature heat pump	N		
Water-to-water heat pump	N			Equipped with a supplementary heater	Y		
Brine-to-water heat pump	N			Heat pump combination heater	Y		
Parameters declared for	Medium-temperature application						
Parameters declared for	Colder climate condition						
Item	symbol	value	unit	Item	symbol	value	unit
Rated heat output (*)	Prated	4	kW	Seasonal space heating energy efficiency	ηs	112	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = – 7 ℃	Pdh	2.6	kW	Tj = – 7 ℃	COPd	2.05	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 2 ℃	Pdh	1.6	kW	Tj = 2 ℃	COPd	3.77	–
Degradation co-efficient (**)	Cdh	0.97	–				
Tj = 7 ℃	Pdh	1.3	kW	Tj = 7 ℃	COPd	5.15	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = 12℃	Pdh	1.5	kW	Tj = 12℃	COPd	7.21	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = bivalent temperature	Pdh	3.5	kW	Tj = bivalent temperature	COPd	1.76	–
Tj = operation limit temperature	Pdh	2.5	kW	Tj = operation limit temperature	COPd	1.20	–
For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	Pdh	3.5	kW	For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	COPd	1.76	–
Bivalent temperature	Tbiv	-15	℃	For air-to-water heat pumps: Operation limit temperature	TOL	-22	℃
Cycling interval capacity for heating	Pcych	NA	kW	Cycling interval efficiency	COPcyc	NA	–
				Heating water operating limit temperature	WTOL	65	℃
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.025	kW	Rated heat output (*)	Psup	1.5	kW
Thermostat-off mode	P_{TO}	0.025	kW	Type of energy input	Electric		
Standby mode	P_{SB}	0.025	kW				
Crankcase heater mode	P_{CK}	0.025	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	–	3200	m 3 /h
Sound power level, outdoors	L_{WA}	58	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	–	NA	m 3 /h
Annual energy consumption	Q_{HE}	3721	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	90	%
Daily electricity consumption	Qelec	8.849	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1862	kWh	Annual fuel consumption	AFC	NA	GJ
Contact details: Mimersvej 2, 8722 Hedensted, Denmark				Name of the supplier: VVS-EKSPERTEN A/S			

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information requirements
(heat pump space heaters and heat pump combination heaters)

Model(s): COPMAX HIGH POWER 4KW

Air-to-water heat pump	Y			Low-temperature heat pump	N		
Water-to-water heat pump	N			Equipped with a supplementary heater	Y		
Brine-to-water heat pump	N			Heat pump combination heater	Y		
Parameters declared for	Medium-temperature application						
Parameters declared for	Warmer climate condition						
Item	symbol	value	unit	Item	symbol	value	unit
Rated heat output (*)	Prated	5	kW	Seasonal space heating energy efficiency	ηs	170	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = – 7 ℃	Pdh	NA	kW	Tj = – 7 ℃	COPd	NA	–
Degradation co-efficient (**)	Cdh	NA	–				
Tj = 2 ℃	Pdh	5.2	kW	Tj = 2 ℃	COPd	2.44	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 7 ℃	Pdh	3.2	kW	Tj = 7 ℃	COPd	3.67	–
Degradation co-efficient (**)	Cdh	0.98	–				
Tj = 12℃	Pdh	1.5	kW	Tj = 12℃	COPd	5.79	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = bivalent temperature	Pdh	5.2	kW	Tj = bivalent temperature	COPd	2.44	–
Tj = operation limit temperature	Pdh	5.2	kW	Tj = operation limit temperature	COPd	2.44	–
For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	Pdh	NA	kW	For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	COPd	NA	–
Bivalent temperature	Tbiv	2	℃	For air-to-water heat pumps: Operation limit temperature	TOL	2	℃
Cycling interval capacity for heating	Pcych	NA	kW	Cycling interval efficiency	COPcyc	NA	–
				Heating water operating limit temperature	WTOL	65	℃
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.025	kW	Rated heat output (*)	Psup	0	kW
Thermostat-off mode	P_{TO}	0.025	kW	Type of energy input	Electric		
Standby mode	P_{SB}	0.025	kW				
Crankcase heater mode	P_{CK}	0.025	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	–	3200	m 3 /h
Sound power level, outdoors	L_{WA}	58	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	–	NA	m 3 /h
Annual energy consumption	Q_{HE}	1604	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	120	%
Daily electricity consumption	Qelec	6.683	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1219	kWh	Annual fuel consumption	AFC	NA	GJ
Contact details: Mimersvej 2, 8722 Hedensted, Denmark				Name of the supplier: VVS-EKSPERTEN A/S			

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information requirements
(heat pump space heaters and heat pump combination heaters)

Model(s): COPMAX HIGH POWER 4KW

Air-to-water heat pump	Y			Low-temperature heat pump	N		
Water-to-water heat pump	N			Equipped with a supplementary heater	Y		
Brine-to-water heat pump	N			Heat pump combination heater	Y		
Parameters declared for	Low-temperature application						
Parameters declared for	Average climate condition						
Item	symbol	value	unit	Item	symbol	value	unit
Rated heat output (*)	Prated	5	kW	Seasonal space heating energy efficiency	ηs	192	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = – 7 ℃	Pdh	4.8	kW	Tj = – 7 ℃	COPd	3.43	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 2 ℃	Pdh	3.1	kW	Tj = 2 ℃	COPd	4.83	–
Degradation co-efficient (**)	Cdh	0.98	–				
Tj = 7 ℃	Pdh	1.9	kW	Tj = 7 ℃	COPd	5.95	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = 12℃	Pdh	1.7	kW	Tj = 12℃	COPd	8.49	–
Degradation co-efficient (**)	Cdh	0.94	–				
Tj = bivalent temperature	Pdh	4.8	kW	Tj = bivalent temperature	COPd	3.43	–
Tj = operation limit temperature	Pdh	4.4	kW	Tj = operation limit temperature	COPd	2.46	–
For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	Pdh	NA	kW	For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	COPd	NA	–
Bivalent temperature	Tbiv	-7	℃	For air-to-water heat pumps: Operation limit temperature	TOL	-10	℃
Cycling interval capacity for heating	Pcych	NA	kW	Cycling interval efficiency	COPcyc	NA	–
				Heating water operating limit temperature	WTOL	65	℃
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.025	kW	Rated heat output (*)	Psup	0.6	kW
Thermostat-off mode	P_{TO}	0.025	kW	Type of energy input	Electric		
Standby mode	P_{SB}	0.025	kW				
Crankcase heater mode	P_{CK}	0.025	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	–	3200	m 3 /h
Sound power level, outdoors	L_{WA}	58	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	–	NA	m 3 /h
Annual energy consumption	Q_{HE}	2306	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	128	%
Daily electricity consumption	Qelec	6.253	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1311	kWh	Annual fuel consumption	AFC	NA	GJ

Contact details: Mimersvej 2, 8722 Hedensted, Denmark	Name of the supplier: VVS-EKSPERTEN A/S

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information requirements
(heat pump space heaters and heat pump combination heaters)

Model(s): COPMAX HIGH POWER 4KW

Air-to-water heat pump	Y			Low-temperature heat pump	N		
Water-to-water heat pump	N			Equipped with a supplementary heater	Y		
Brine-to-water heat pump	N			Heat pump combination heater	Y		
Parameters declared for	Low-temperature application						
Parameters declared for	Colder climate condition						
Item	symbol	value	unit	Item	symbol	value	unit
Rated heat output (*)	Prated	5	kW	Seasonal space heating energy efficiency	ηs	168	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = – 7 ℃	Pdh	2.9	kW	Tj = – 7 ℃	COPd	3.43	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 2 ℃	Pdh	1.8	kW	Tj = 2 ℃	COPd	5.41	–
Degradation co-efficient (**)	Cdh	0.97	–				
Tj = 7 ℃	Pdh	1.3	kW	Tj = 7 ℃	COPd	6.24	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = 12℃	Pdh	1.5	kW	Tj = 12℃	COPd	8.38	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = bivalent temperature	Pdh	3.7	kW	Tj = bivalent temperature	COPd	2.85	–
Tj = operation limit temperature	Pdh	3.2	kW	Tj = operation limit temperature	COPd	1.65	–
For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	Pdh	3.7	kW	For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	COPd	2.85	–
Bivalent temperature	Tbiv	-15	℃	For air-to-water heat pumps: Operation limit temperature	TOL	-22	℃
Cycling interval capacity for heating	Pcych	NA	kW	Cycling interval efficiency	COPcyc	NA	–
				Heating water operating limit temperature	WTOL	65	℃
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.025	kW	Rated heat output (*)	Psup	1.8	kW
Thermostat-off mode	P_{TO}	0.025	kW	Type of energy input	Electric		
Standby mode	P_{SB}	0.025	kW				
Crankcase heater mode	P_{CK}	0.025	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	–	3200	m 3 /h
Sound power level, outdoors	L_{WA}	58	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	–	NA	m 3 /h
Annual energy consumption	Q_{HE}	2630	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	90	%
Daily electricity consumption	Qelec	8.849	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1862	kWh	Annual fuel consumption	AFC	NA	GJ

Contact details: Mimersvej 2, 8722 Hedensted, Denmark	Name of the supplier: VVS-EKSPERTEN A/S

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0.9.

Information requirements
(heat pump space heaters and heat pump combination heaters)

Model(s): COPMAX HIGH POWER 4KW

Air-to-water heat pump	Y			Low-temperature heat pump	N		
Water-to-water heat pump	N			Equipped with a supplementary heater	Y		
Brine-to-water heat pump	N			Heat pump combination heater	Y		
Parameters declared for	Low-temperature application						
Parameters declared for	Warmer climate condition						
Item	symbol	value	unit	Item	symbol	value	unit
Rated heat output (*)	Prated	5	kW	Seasonal space heating energy efficiency	ηs	239	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = – 7 ℃	Pdh	NA	kW	Tj = – 7 ℃	COPd	NA	–
Degradation co-efficient (**)	Cdh	NA	–				
Tj = 2 ℃	Pdh	5.1	kW	Tj = 2 ℃	COPd	3.85	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 7 ℃	Pdh	3.4	kW	Tj = 7 ℃	COPd	5.80	–
Degradation co-efficient (**)	Cdh	0.98	–				
Tj = 12℃	Pdh	1.5	kW	Tj = 12℃	COPd	7.20	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = bivalent temperature	Pdh	5.1	kW	Tj = bivalent temperature	COPd	3.85	–
Tj = operation limit temperature	Pdh	5.1	kW	Tj = operation limit temperature	COPd	3.85	–
For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	Pdh	NA	kW	For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	COPd	NA	–
Bivalent temperature	Tbiv	2	℃	For air-to-water heat pumps: Operation limit temperature	TOL	2	℃
Cycling interval capacity for heating	Pcych	NA	kW	Cycling interval efficiency	COPcyc	NA	–
				Heating water operating limit temperature	WTOL	65	℃
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.025	kW	Rated heat output (*)	Psup	0	kW
Thermostat-off mode	P_{TO}	0.025	kW	Type of energy input	Electric		
Standby mode	P_{SB}	0.025	kW				
Crankcase heater mode	P_{CK}	0.025	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	–	3200	m 3 /h
Sound power level, outdoors	L_{WA}	58	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	–	NA	m 3 /h
Annual energy consumption	Q_{HE}	1124	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	120	%
Daily electricity consumption	Qelec	6.683	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1219	kWh	Annual fuel consumption	AFC	NA	GJ

Contact details: Mimersvej 2, 8722 Hedensted, Denmark	Name of the supplier: VVS-EKSPERTEN A/S

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.


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