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

Model(s): COPMAX HIGH POWER 14KW

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	13	kW	Seasonal space heating energy efficiency	ηs	138	%
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	11.8	kW	Tj = – 7 ℃	COPd	2.21	–
Degradation co-efficient (**)	Cdh	1.00	–				
Tj = 2 ℃	Pdh	6.9	kW	Tj = 2 ℃	COPd	3.66	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 7 ℃	Pdh	4.4	kW	Tj = 7 ℃	COPd	4.30	–
Degradation co-efficient (**)	Cdh	0.98	–				
Tj = 12℃	Pdh	3.0	kW	Tj = 12℃	COPd	4.93	–
Degradation co-efficient (**)	Cdh	0.96	–				
Tj = bivalent temperature	Pdh	11.8	kW	Tj = bivalent temperature	COPd	2.21	–
Tj = operation limit temperature	Pdh	11.6	kW	Tj = operation limit temperature	COPd	2.02	–
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	–	5015	m 3 /h
Sound power level, outdoors	L_{WA}	68	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}	7769	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	110	%
Daily electricity consumption	Qelec	7.243	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1518	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 14KW

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	13	kW	Seasonal space heating energy efficiency	ηs	118	%
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	7.8	kW	Tj = – 7 ℃	COPd	2.55	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 2 ℃	Pdh	4.4	kW	Tj = 2 ℃	COPd	3.71	–
Degradation co-efficient (**)	Cdh	0.98	–				
Tj = 7 ℃	Pdh	2.9	kW	Tj = 7 ℃	COPd	4.61	–
Degradation co-efficient (**)	Cdh	0.96	–				
Tj = 12℃	Pdh	3.3	kW	Tj = 12℃	COPd	5.03	–
Degradation co-efficient (**)	Cdh	0.96	–				
Tj = bivalent temperature	Pdh	10.4	kW	Tj = bivalent temperature	COPd	1.82	–
Tj = operation limit temperature	Pdh	6.7	kW	Tj = operation limit temperature	COPd	1.06	–
For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	Pdh	10.4	kW	For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	COPd	1.82	–
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	6.3	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	–	5015	m 3 /h
Sound power level, outdoors	L_{WA}	68	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}	10373	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	87	%
Daily electricity consumption	Qelec	9.164	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1924	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 14KW

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	15	kW	Seasonal space heating energy efficiency	ηs	159	%
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	14.6	kW	Tj = 2 ℃	COPd	2.31	–
Degradation co-efficient (**)	Cdh	1.00	–				
Tj = 7 ℃	Pdh	8.8	kW	Tj = 7 ℃	COPd	3.29	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 12℃	Pdh	3.9	kW	Tj = 12℃	COPd	5.47	–
Degradation co-efficient (**)	Cdh	0.97	–				
Tj = bivalent temperature	Pdh	14.6	kW	Tj = bivalent temperature	COPd	2.31	–
Tj = operation limit temperature	Pdh	14.6	kW	Tj = operation limit temperature	COPd	2.31	–
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	–	5015	m 3 /h
Sound power level, outdoors	L_{WA}	68	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}	4801	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	113	%
Daily electricity consumption	Qelec	7.036	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1475	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 14KW

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	13	kW	Seasonal space heating energy efficiency	ηs	179	%
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	11.6	kW	Tj = – 7 ℃	COPd	2.89	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 2 ℃	Pdh	6.7	kW	Tj = 2 ℃	COPd	4.50	–
Degradation co-efficient (**)	Cdh	0.98	–				
Tj = 7 ℃	Pdh	4.5	kW	Tj = 7 ℃	COPd	5.82	–
Degradation co-efficient (**)	Cdh	0.97	–				
Tj = 12℃	Pdh	3.4	kW	Tj = 12℃	COPd	7.53	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = bivalent temperature	Pdh	11.6	kW	Tj = bivalent temperature	COPd	2.89	–
Tj = operation limit temperature	Pdh	11.1	kW	Tj = operation limit temperature	COPd	2.28	–
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	1.9	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	–	5015	m 3 /h
Sound power level, outdoors	L_{WA}	68	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}	5927	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	110	%
Daily electricity consumption	Qelec	7.243	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1518	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 14KW

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	12	kW	Seasonal space heating energy efficiency	ηs	158	%
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	7.0	kW	Tj = – 7 ℃	COPd	3.40	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 2 ℃	Pdh	4.2	kW	Tj = 2 ℃	COPd	5.04	–
Degradation co-efficient (**)	Cdh	0.97	–				
Tj = 7 ℃	Pdh	3.0	kW	Tj = 7 ℃	COPd	6.06	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = 12℃	Pdh	3.2	kW	Tj = 12℃	COPd	6.17	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = bivalent temperature	Pdh	9.7	kW	Tj = bivalent temperature	COPd	2.38	–
Tj = operation limit temperature	Pdh	7.6	kW	Tj = operation limit temperature	COPd	1.79	–
For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	Pdh	9.7	kW	For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	COPd	2.38	–
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	4.4	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	–	5015	m 3 /h
Sound power level, outdoors	L_{WA}	68	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}	7293	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	87	%
Daily electricity consumption	Qelec	9.164	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1924	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 14KW

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	14	kW	Seasonal space heating energy efficiency	ηs	240	%
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	13.7	kW	Tj = 2 ℃	COPd	2.90	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 7 ℃	Pdh	8.5	kW	Tj = 7 ℃	COPd	5.36	–
Degradation co-efficient (**)	Cdh	0.98	–				
Tj = 12℃	Pdh	3.7	kW	Tj = 12℃	COPd	7.86	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = bivalent temperature	Pdh	13.7	kW	Tj = bivalent temperature	COPd	2.90	–
Tj = operation limit temperature	Pdh	13.7	kW	Tj = operation limit temperature	COPd	2.90	–
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	0.3	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	–	5015	m 3 /h
Sound power level, outdoors	L_{WA}	68	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}	2995	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	113	%
Daily electricity consumption	Qelec	7.036	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1475	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.


66329902117