Information requirements (heat pump space heaters and heat pump combination heaters)							
Model(s): CopMax HiPower							
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	10	kW	Seasonal space heating energy efficiency	ηs	140	%
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	9.0	kW	Tj = – 7 ℃	COPd	2.45	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 2 ℃	Pdh	5.2	kW	Tj = 2 ℃	COPd	3.44	–
Degradation co-efficient (**)	Cdh	0.98	–				
Tj = 7 ℃	Pdh	3.5	kW	Tj = 7 ℃	COPd	4.63	–
Degradation co-efficient (**)	Cdh	0.97	–				
Tj = 12℃	Pdh	2.9	kW	Tj = 12℃	COPd	5.21	–
Degradation co-efficient (**)	Cdh	0.96	–				
Tj = bivalent temperature	Pdh	9.0	kW	Tj = bivalent temperature	COPd	2.45	–
Tj = operation limit temperature	Pdh	9.6	kW	Tj = operation limit temperature	COPd	2.15	–
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	0.4	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	–	5800	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}	5907	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	123	%
Daily electricity consumption	Qelec	6.506	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1358	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 HiPower

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	9	kW	Seasonal space heating energy efficiency	ηs	124	%
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	5.8	kW	Tj = – 7 ℃	COPd	2.95	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 2 ℃	Pdh	3.5	kW	Tj = 2 ℃	COPd	3.50	–
Degradation co-efficient (**)	Cdh	0.98	–				
Tj = 7 ℃	Pdh	2.7	kW	Tj = 7 ℃	COPd	4.83	–
Degradation co-efficient (**)	Cdh	0.96	–				
Tj = 12℃	Pdh	3.4	kW	Tj = 12℃	COPd	6.08	–
Degradation co-efficient (**)	Cdh	0.96	–				
Tj = bivalent temperature	Pdh	7.6	kW	Tj = bivalent temperature	COPd	2.20	–
Tj = operation limit temperature	Pdh	4.1	kW	Tj = operation limit temperature	COPd	1.06	–
For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	Pdh	7.6	kW	For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	COPd	2.20	–
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	4.9	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	–	5800	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}	7206	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	101	%
Daily electricity consumption	Qelec	7.905	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1648	kWh	Annual fuel consumption	AFC	NA	GJ

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(*) 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 HiPower

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	10	kW	Seasonal space heating energy efficiency	ηs	165	%
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	10.1	kW	Tj = 2 ℃	COPd	2.55	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 7 ℃	Pdh	6.0	kW	Tj = 7 ℃	COPd	3.63	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 12℃	Pdh	3.3	kW	Tj = 12℃	COPd	5.30	–
Degradation co-efficient (**)	Cdh	0.96	–				
Tj = bivalent temperature	Pdh	10.1	kW	Tj = bivalent temperature	COPd	2.55	–
Tj = operation limit temperature	Pdh	10.1	kW	Tj = operation limit temperature	COPd	2.55	–
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	–	5800	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}	3236	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	123	%
Daily electricity consumption	Qelec	6.505	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1358	kWh	Annual fuel consumption	AFC	NA	GJ

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(*) 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 HiPower

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	9	kW	Seasonal space heating energy efficiency	ηs	189	%
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	8.3	kW	Tj = – 7 ℃	COPd	3.15	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 2 ℃	Pdh	4.6	kW	Tj = 2 ℃	COPd	4.32	–
Degradation co-efficient (**)	Cdh	0.98	–				
Tj = 7 ℃	Pdh	3.3	kW	Tj = 7 ℃	COPd	7.46	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = 12℃	Pdh	3.2	kW	Tj = 12℃	COPd	7.44	–
Degradation co-efficient (**)	Cdh	0.94	–				
Tj = bivalent temperature	Pdh	8.3	kW	Tj = bivalent temperature	COPd	3.15	–
Tj = operation limit temperature	Pdh	8.3	kW	Tj = operation limit temperature	COPd	2.74	–
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	0.7	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	–	5800	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}	4069	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	123	%
Daily electricity consumption	Qelec	6.506	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1358	kWh	Annual fuel consumption	AFC	NA	GJ
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(*) 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 HiPower

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	10	kW	Seasonal space heating energy efficiency	ηs	150	%
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	5.7	kW	Tj = – 7 ℃	COPd	2.95	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 2 ℃	Pdh	3.4	kW	Tj = 2 ℃	COPd	4.71	–
Degradation co-efficient (**)	Cdh	0.97	–				
Tj = 7 ℃	Pdh	2.8	kW	Tj = 7 ℃	COPd	6.23	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = 12℃	Pdh	3.2	kW	Tj = 12℃	COPd	6.85	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = bivalent temperature	Pdh	7.8	kW	Tj = bivalent temperature	COPd	2.73	–
Tj = operation limit temperature	Pdh	6.0	kW	Tj = operation limit temperature	COPd	1.86	–
For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	Pdh	7.8	kW	For air-to-water heat pumps: Tj = – 15℃ (if TOL < – 20℃)	COPd	2.73	–
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	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	–	5800	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}	6194	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	101	%
Daily electricity consumption	Qelec	7.905	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1648	kWh	Annual fuel consumption	AFC	NA	GJ

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(*) 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 HiPower

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	10	kW	Seasonal space heating energy efficiency	ηs	223	%
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	10.1	kW	Tj = 2 ℃	COPd	3.70	–
Degradation co-efficient (**)	Cdh	0.99	–				
Tj = 7 ℃	Pdh	6.0	kW	Tj = 7 ℃	COPd	5.63	–
Degradation co-efficient (**)	Cdh	0.98	–				
Tj = 12℃	Pdh	3.0	kW	Tj = 12℃	COPd	6.22	–
Degradation co-efficient (**)	Cdh	0.95	–				
Tj = bivalent temperature	Pdh	10.1	kW	Tj = bivalent temperature	COPd	3.70	–
Tj = operation limit temperature	Pdh	10.1	kW	Tj = operation limit temperature	COPd	3.70	–
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	–	5800	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}	2399	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	ηwh	123	%
Daily electricity consumption	Qelec	6.505	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1358	kWh	Annual fuel consumption	AFC	NA	GJ

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(*) 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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