

Information requirements (heat pump space heaters and heat pump combination heaters)							
Model(s): AOWD-MB LOGIK-40K							
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	12	kW	Seasonal space heating energy efficiency	η_s	144	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
$T_j = -7\text{ °C}$	Pdh	10.4	kW	$T_j = -7\text{ °C}$	COPd	2.11	-
Degradation co-efficient (**)	Cdh	0.99	-				
$T_j = 2\text{ °C}$	Pdh	6.9	kW	$T_j = 2\text{ °C}$	COPd	3.81	-
Degradation co-efficient (**)	Cdh	0.99	-				
$T_j = 7\text{ °C}$	Pdh	4.3	kW	$T_j = 7\text{ °C}$	COPd	4.36	-
Degradation co-efficient (**)	Cdh	0.97	-				
$T_j = 12\text{ °C}$	Pdh	3.0	kW	$T_j = 12\text{ °C}$	COPd	6.96	-
Degradation co-efficient (**)	Cdh	0.94	-				
$T_j = \text{bivalent temperature}$	Pdh	10.4	kW	$T_j = \text{bivalent temperature}$	COPd	2.11	-
$T_j = \text{operation limit temperature}$	Pdh	9.8	kW	$T_j = \text{operation limit temperature}$	COPd	1.77	-
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$)	Pdh	NA	kW	For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$)	COPd	NA	-
Bivalent temperature	Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Psych	NA	kW	Cycling interval efficiency	COPcyc	NA	-
				Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.025	kW	Rated heat output (*)	P_{sup}	2.2	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}	6606	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	η_{wh}	110	%
Daily electricity consumption	Q_{elec}	7.243	kWh	Daily fuel consumption	Q_{fuel}	NA	kWh
Annual electricity consumption	AEC	1518	kWh	Annual fuel consumption	AFC	NA	GJ
Contact details: sat.eurofredgroup.com.				Name and address of the supplier: EUROFRED S.A. C/ Marques de Sentmenat, 97 08029 Barcelona, Spain			
(*) 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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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	12	kW	Seasonal space heating energy efficiency	η_s	129	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
$T_j = -7\text{ °C}$	Pdh	7.8	kW	$T_j = -7\text{ °C}$	COPd	2.77	-
Degradation co-efficient (**)	Cdh	0.99	-				
$T_j = 2\text{ °C}$	Pdh	4.4	kW	$T_j = 2\text{ °C}$	COPd	3.95	-
Degradation co-efficient (**)	Cdh	0.98	-				
$T_j = 7\text{ °C}$	Pdh	2.8	kW	$T_j = 7\text{ °C}$	COPd	5.55	-
Degradation co-efficient (**)	Cdh	0.95	-				
$T_j = 12\text{ °C}$	Pdh	3.3	kW	$T_j = 12\text{ °C}$	COPd	7.45	-
Degradation co-efficient (**)	Cdh	0.94	-				
$T_j = \text{bivalent temperature}$	Pdh	9.9	kW	$T_j = \text{bivalent temperature}$	COPd	1.96	-
$T_j = \text{operation limit temperature}$	Pdh	7.0	kW	$T_j = \text{operation limit temperature}$	COPd	1.18	-
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$)	Pdh	9.9	kW	For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$)	COPd	1.96	-
Bivalent temperature	Tbiv	-15	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval capacity for heating	Psych	NA	kW	Cycling interval efficiency	COPcyc	NA	-
				Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.025	kW	Rated heat output (*)	P_{sup}	5.0	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}	9034	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	η_{wh}	87	%
Daily electricity consumption	Q_{elec}	9.164	kWh	Daily fuel consumption	Q_{fuel}	NA	kWh
Annual electricity consumption	AEC	1924	kWh	Annual fuel consumption	AFC	NA	GJ
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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	12	kW	Seasonal space heating energy efficiency	η_s	180	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
$T_j = -7\text{ °C}$	Pdh	NA	kW	$T_j = -7\text{ °C}$	COPd	NA	-
Degradation co-efficient (**)	Cdh	NA	-				
$T_j = 2\text{ °C}$	Pdh	12.2	kW	$T_j = 2\text{ °C}$	COPd	2.27	-
Degradation co-efficient (**)	Cdh	1.00	-				
$T_j = 7\text{ °C}$	Pdh	8.1	kW	$T_j = 7\text{ °C}$	COPd	3.74	-
Degradation co-efficient (**)	Cdh	0.99	-				
$T_j = 12\text{ °C}$	Pdh	3.5	kW	$T_j = 12\text{ °C}$	COPd	6.29	-
Degradation co-efficient (**)	Cdh	0.95	-				
$T_j = \text{bivalent temperature}$	Pdh	12.2	kW	$T_j = \text{bivalent temperature}$	COPd	2.27	-
$T_j = \text{operation limit temperature}$	Pdh	12.2	kW	$T_j = \text{operation limit temperature}$	COPd	2.27	-
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$)	Pdh	NA	kW	For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$)	COPd	NA	-
Bivalent temperature	Tbiv	2	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Psych	NA	kW	Cycling interval efficiency	COPcyc	NA	-
				Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.025	kW	Rated heat output (*)	P_{sup}	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}	3558	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	η_{wh}	113	%
Daily electricity consumption	Q_{elec}	7.036	kWh	Daily fuel consumption	Q_{fuel}	NA	kWh
Annual electricity consumption	AEC	1475	kWh	Annual fuel consumption	AFC	NA	GJ
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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	12	kW	Seasonal space heating energy efficiency	η_s	188	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
$T_j = -7$ °C	Pdh	10.7	kW	$T_j = -7$ °C	COPd	2.98	–
Degradation co-efficient (**)	Cdh	0.99	–				
$T_j = 2$ °C	Pdh	6.1	kW	$T_j = 2$ °C	COPd	4.38	–
Degradation co-efficient (**)	Cdh	0.98	–				
$T_j = 7$ °C	Pdh	4.1	kW	$T_j = 7$ °C	COPd	7.03	–
Degradation co-efficient (**)	Cdh	0.96	–				
$T_j = 12$ °C	Pdh	3.4	kW	$T_j = 12$ °C	COPd	9.49	–
Degradation co-efficient (**)	Cdh	0.93	–				
$T_j =$ bivalent temperature	Pdh	10.7	kW	$T_j =$ bivalent temperature	COPd	2.98	–
$T_j =$ operation limit temperature	Pdh	10.2	kW	$T_j =$ operation limit temperature	COPd	2.62	–
For air-to-water heat pumps: $T_j = -15$ °C (if TOL < -20 °C)	Pdh	NA	kW	For air-to-water heat pumps: $T_j = -15$ °C (if TOL < -20 °C)	COPd	NA	–
Bivalent temperature	Tbiv	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Psych	NA	kW	Cycling interval efficiency	COPcyc	NA	–
				Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P _{OFF}	0.025	kW	Rated heat output (*)	P _{sup}	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	–	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}	5194	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	η_{wh}	110	%
Daily electricity consumption	Q _{elec}	7.243	kWh	Daily fuel consumption	Q _{fuel}	NA	kWh
Annual electricity consumption	AEC	1518	kWh	Annual fuel consumption	AFC	NA	GJ
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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	11	kW	Seasonal space heating energy efficiency	η_s	181	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
$T_j = -7\text{ °C}$	Pdh	6.9	kW	$T_j = -7\text{ °C}$	COPd	3.88	-
Degradation co-efficient (**)	Cdh	0.99	-				
$T_j = 2\text{ °C}$	Pdh	4.1	kW	$T_j = 2\text{ °C}$	COPd	5.71	-
Degradation co-efficient (**)	Cdh	0.97	-				
$T_j = 7\text{ °C}$	Pdh	2.7	kW	$T_j = 7\text{ °C}$	COPd	7.20	-
Degradation co-efficient (**)	Cdh	0.93	-				
$T_j = 12\text{ °C}$	Pdh	3.2	kW	$T_j = 12\text{ °C}$	COPd	8.77	-
Degradation co-efficient (**)	Cdh	0.93	-				
$T_j = \text{bivalent temperature}$	Pdh	9.2	kW	$T_j = \text{bivalent temperature}$	COPd	2.74	-
$T_j = \text{operation limit temperature}$	Pdh	7.9	kW	$T_j = \text{operation limit temperature}$	COPd	1.89	-
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20 °C)	Pdh	9.2	kW	For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20 °C)	COPd	2.74	-
Bivalent temperature	Tbiv	-15	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval capacity for heating	Psych	NA	kW	Cycling interval efficiency	COPcyc	NA	-
				Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P _{OFF}	0.025	kW	Rated heat output (*)	P _{sup}	3.1	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}	6044	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	η_{wh}	87	%
Daily electricity consumption	Q _{elec}	9.164	kWh	Daily fuel consumption	Q _{fuel}	NA	kWh
Annual electricity consumption	AEC	1924	kWh	Annual fuel consumption	AFC	NA	GJ
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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	12	kW	Seasonal space heating energy efficiency	η_s	273	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
$T_j = -7\text{ °C}$	Pdh	NA	kW	$T_j = -7\text{ °C}$	COPd	NA	-
Degradation co-efficient (**)	Cdh	NA	-				
$T_j = 2\text{ °C}$	Pdh	11.6	kW	$T_j = 2\text{ °C}$	COPd	3.65	-
Degradation co-efficient (**)	Cdh	0.99	-				
$T_j = 7\text{ °C}$	Pdh	7.3	kW	$T_j = 7\text{ °C}$	COPd	5.74	-
Degradation co-efficient (**)	Cdh	0.98	-				
$T_j = 12\text{ °C}$	Pdh	3.3	kW	$T_j = 12\text{ °C}$	COPd	9.38	-
Degradation co-efficient (**)	Cdh	0.93	-				
$T_j = \text{bivalent temperature}$	Pdh	11.6	kW	$T_j = \text{bivalent temperature}$	COPd	3.65	-
$T_j = \text{operation limit temperature}$	Pdh	11.6	kW	$T_j = \text{operation limit temperature}$	COPd	3.65	-
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$)	Pdh	NA	kW	For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$)	COPd	NA	-
Bivalent temperature	Tbiv	2	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	Pych	NA	kW	Cycling interval efficiency	COPcyc	NA	-
				Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.025	kW	Rated heat output (*)	P_{sup}	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}	2236	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	η_{wh}	113	%
Daily electricity consumption	Q_{elec}	7.036	kWh	Daily fuel consumption	Q_{fuel}	NA	kWh
Annual electricity consumption	AEC	1475	kWh	Annual fuel consumption	AFC	NA	GJ
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