

Information requirements (heat pump space heaters and heat pump combination heaters)							
Model(s): GRS-CQ8.0Pd/NhG4-M							
Air-to-water heat pump	Y			Low-temperature heat pump	N		
Water-to-water heat pump	N			Equipped with a supplementary heater	N		
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	9	kW	Seasonal space heating energy efficiency	$\eta_s$	135	%
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	2.14	-
Degradation co-efficient (**)	Cdh	0.99	-				
$T_j = 2\text{ °C}$	Pdh	5.0	kW	$T_j = 2\text{ °C}$	COPd	3.37	-
Degradation co-efficient (**)	Cdh	0.98	-				
$T_j = 7\text{ °C}$	Pdh	3.3	kW	$T_j = 7\text{ °C}$	COPd	4.53	-
Degradation co-efficient (**)	Cdh	0.97	-				
$T_j = 12\text{ °C}$	Pdh	3.0	kW	$T_j = 12\text{ °C}$	COPd	5.44	-
Degradation co-efficient (**)	Cdh	0.95	-				
$T_j = \text{bivalent temperature}$	Pdh	7.8	kW	$T_j = \text{bivalent temperature}$	COPd	2.14	-
$T_j = \text{operation limit temperature}$	Pdh	8.6	kW	$T_j = \text{operation limit temperature}$	COPd	2.07	-
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20 °C )	Pdh	NA	kW	For air-to-water heat pumps: $T_j = -15\text{ °C}$ (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 <sub>OFF</sub>	0.025	kW	Rated heat output (*)	P <sub>sup</sub>	0.4	kW
Thermostat-off mode	P <sub>TO</sub>	0.025	kW	Type of energy input	Electric		
Standby mode	P <sub>SB</sub>	0.025	kW				
Crankcase heater mode	P <sub>CK</sub>	0.025	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	5800	m <sup>3</sup> /h
Sound power level, outdoors	L <sub>WA</sub>	68	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	NA	m <sup>3</sup> /h
Annual energy consumption	Q <sub>HE</sub>	5261	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	$\eta_{wh}$	123	%
Daily electricity consumption	Q <sub>elec</sub>	6.506	kWh	Daily fuel consumption	Q <sub>fuel</sub>	NA	kWh
Annual electricity consumption	AEC	1358	kWh	Annual fuel consumption	AFC	NA	GJ
Contact details: West Jinji Rd, Qianshan, Zhuhai, Guangdong, China, 519070				Name of the supplier: GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI			
(*) 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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Air-to-water heat pump	Y			Low-temperature heat pump	N		
Water-to-water heat pump	N			Equipped with a supplementary heater	N		
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	8	kW	Seasonal space heating energy efficiency	$\eta_s$	120	%
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	5.1	kW	$T_j = -7\text{ °C}$	COPd	2.75	-
Degradation co-efficient (**)	Cdh	0.99	-				
$T_j = 2\text{ °C}$	Pdh	3.0	kW	$T_j = 2\text{ °C}$	COPd	3.4	-
Degradation co-efficient (**)	Cdh	0.97	-				
$T_j = 7\text{ °C}$	Pdh	3.2	kW	$T_j = 7\text{ °C}$	COPd	4.61	-
Degradation co-efficient (**)	Cdh	0.96	-				
$T_j = 12\text{ °C}$	Pdh	3.0	kW	$T_j = 12\text{ °C}$	COPd	5.79	-
Degradation co-efficient (**)	Cdh	0.95	-				
$T_j = \text{bivalent temperature}$	Pdh	6.8	kW	$T_j = \text{bivalent temperature}$	COPd	2.20	-
$T_j = \text{operation limit temperature}$	Pdh	4.4	kW	$T_j = \text{operation limit temperature}$	COPd	1.22	-
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20 °C )	Pdh	6.8	kW	For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20 °C )	COPd	2.20	-
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 <sub>OFF</sub>	0.025	kW	Rated heat output (*)	P <sub>sup</sub>	3.6	kW
Thermostat-off mode	P <sub>TO</sub>	0.025	kW	Type of energy input	Electric		
Standby mode	P <sub>SB</sub>	0.025	kW				
Crankcase heater mode	P <sub>CK</sub>	0.025	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	5800	m <sup>3</sup> / h
Sound power level, outdoors	L <sub>WA</sub>	68	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	NA	m <sup>3</sup> / h
Annual energy consumption	Q <sub>HE</sub>	6706	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	$\eta_{wh}$	101	%
Daily electricity consumption	Q <sub>elec</sub>	7.905	kWh	Daily fuel consumption	Q <sub>fuel</sub>	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.							

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Air-to-water heat pump	Y			Low-temperature heat pump	N		
Water-to-water heat pump	N			Equipped with a supplementary heater	N		
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	9	kW	Seasonal space heating energy efficiency	$\eta_s$	168	%
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	8.9	kW	$T_j = 2\text{ °C}$	COPd	2.12	-
Degradation co-efficient (**)	Cdh	0.99	-				
$T_j = 7\text{ °C}$	Pdh	6.3	kW	$T_j = 7\text{ °C}$	COPd	3.99	-
Degradation co-efficient (**)	Cdh	0.98	-				
$T_j = 12\text{ °C}$	Pdh	3.0	kW	$T_j = 12\text{ °C}$	COPd	5.29	-
Degradation co-efficient (**)	Cdh	0.96	-				
$T_j = \text{bivalent temperature}$	Pdh	8.9	kW	$T_j = \text{bivalent temperature}$	COPd	2.12	-
$T_j = \text{operation limit temperature}$	Pdh	8.9	kW	$T_j = \text{operation limit temperature}$	COPd	2.12	-
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20 °C )	Pdh	NA	kW	For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20 °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 <sub>OFF</sub>	0.025	kW	Rated heat output (*)	P <sub>sup</sub>	0.1	kW
Thermostat-off mode	P <sub>TO</sub>	0.025	kW	Type of energy input	Electric		
Standby mode	P <sub>SB</sub>	0.025	kW				
Crankcase heater mode	P <sub>CK</sub>	0.025	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	5800	m <sup>3</sup> / h
Sound power level, outdoors	L <sub>WA</sub>	68	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	NA	m <sup>3</sup> / h
Annual energy consumption	Q <sub>HE</sub>	2751	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	$\eta_{wh}$	123	%
Daily electricity consumption	Q <sub>elec</sub>	6.505	kWh	Daily fuel consumption	Q <sub>fuel</sub>	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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Model(s): GRS-CQ8.0Pd/NhG4-M							
Air-to-water heat pump	Y			Low-temperature heat pump	N		
Water-to-water heat pump	N			Equipped with a supplementary heater	N		
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	8	kW	Seasonal space heating energy efficiency	$\eta_s$	176	%
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	7.4	kW	$T_j = -7\text{ °C}$	COPd	3.12	-
Degradation co-efficient (**)	Cdh	0.99	-				
$T_j = 2\text{ °C}$	Pdh	4.2	kW	$T_j = 2\text{ °C}$	COPd	4.17	-
Degradation co-efficient (**)	Cdh	0.98	-				
$T_j = 7\text{ °C}$	Pdh	2.84	kW	$T_j = 7\text{ °C}$	COPd	5.92	-
Degradation co-efficient (**)	Cdh	0.95	-				
$T_j = 12\text{ °C}$	Pdh	3.2	kW	$T_j = 12\text{ °C}$	COPd	7.18	-
Degradation co-efficient (**)	Cdh	0.94	-				
$T_j = \text{bivalent temperature}$	Pdh	7.4	kW	$T_j = \text{bivalent temperature}$	COPd	3.12	-
$T_j = \text{operation limit temperature}$	Pdh	8.0	kW	$T_j = \text{operation limit temperature}$	COPd	2.84	-
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20 °C )	Pdh	NA	kW	For air-to-water heat pumps: $T_j = -15\text{ °C}$ (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 <sub>OFF</sub>	0.025	kW	Rated heat output (*)	P <sub>sup</sub>	0	kW
Thermostat-off mode	P <sub>TO</sub>	0.025	kW	Type of energy input	Electric		
Standby mode	P <sub>SB</sub>	0.025	kW				
Crankcase heater mode	P <sub>CK</sub>	0.025	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	5800	m <sup>3</sup> / h
Sound power level, outdoors	L <sub>WA</sub>	68	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	NA	m <sup>3</sup> / h
Annual energy consumption	Q <sub>HE</sub>	3882	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	$\eta_{wh}$	123	%
Daily electricity consumption	Q <sub>elec</sub>	6.506	kWh	Daily fuel consumption	Q <sub>fuel</sub>	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): GRS-CQ8.0Pd/NhG4-M							
Air-to-water heat pump	Y			Low-temperature heat pump	N		
Water-to-water heat pump	N			Equipped with a supplementary heater	N		
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	9	kW	Seasonal space heating energy efficiency	$\eta_s$	142	%
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	5.4	kW	$T_j = -7\text{ °C}$	COPd	2.75	-
Degradation co-efficient (**)	Cdh	0.99	-				
$T_j = 2\text{ °C}$	Pdh	3.2	kW	$T_j = 2\text{ °C}$	COPd	4.52	-
Degradation co-efficient (**)	Cdh	0.98	-				
$T_j = 7\text{ °C}$	Pdh	2.6	kW	$T_j = 7\text{ °C}$	COPd	5.63	-
Degradation co-efficient (**)	Cdh	0.94	-				
$T_j = 12\text{ °C}$	Pdh	3.2	kW	$T_j = 12\text{ °C}$	COPd	7.01	-
Degradation co-efficient (**)	Cdh	0.95	-				
$T_j = \text{bivalent temperature}$	Pdh	6.0	kW	$T_j = \text{bivalent temperature}$	COPd	1.71	-
$T_j = \text{operation limit temperature}$	Pdh	6.1	kW	$T_j = \text{operation limit temperature}$	COPd	1.87	-
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20°C )	Pdh	6.0	kW	For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < -20°C )	COPd	1.71	-
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 <sub>OFF</sub>	0.025	kW	Rated heat output (*)	P <sub>sup</sub>	2.9	kW
Thermostat-off mode	P <sub>TO</sub>	0.025	kW	Type of energy input	Electric		
Standby mode	P <sub>SB</sub>	0.025	kW				
Crankcase heater mode	P <sub>CK</sub>	0.025	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	5800	m <sup>3</sup> / h
Sound power level, outdoors	L <sub>WA</sub>	68	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	NA	m <sup>3</sup> / h
Annual energy consumption	Q <sub>HE</sub>	5935	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	$\eta_{wh}$	101	%
Daily electricity consumption	Q <sub>elec</sub>	7.905	kWh	Daily fuel consumption	Q <sub>fuel</sub>	NA	kWh
Annual electricity consumption	AEC	1648	kWh	Annual fuel consumption	AFC	NA	GJ
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Model(s): GRS-CQ8.0Pd/NhG4-M							
Air-to-water heat pump	Y			Low-temperature heat pump	N		
Water-to-water heat pump	N			Equipped with a supplementary heater	N		
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	9	kW	Seasonal space heating energy efficiency	$\eta_s$	226	%
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	8.6	kW	$T_j = 2\text{ °C}$	COPd	2.93	-
Degradation co-efficient (**)	Cdh	0.99	-				
$T_j = 7\text{ °C}$	Pdh	5.4	kW	$T_j = 7\text{ °C}$	COPd	5.4	-
Degradation co-efficient (**)	Cdh	0.97	-				
$T_j = 12\text{ °C}$	Pdh	3.0	kW	$T_j = 12\text{ °C}$	COPd	7.04	-
Degradation co-efficient (**)	Cdh	0.95	-				
$T_j = \text{bivalent temperature}$	Pdh	8.6	kW	$T_j = \text{bivalent temperature}$	COPd	2.93	-
$T_j = \text{operation limit temperature}$	Pdh	8.6	kW	$T_j = \text{operation limit temperature}$	COPd	2.93	-
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	Ppsych	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 (*)	$P_{sup}$	0.4	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 <sup>3</sup> /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 <sup>3</sup> /h
Annual energy consumption	$Q_{HE}$	2001	kWh				
For heat pump combination heater:							
Declared load profile	XL			Water heating energy efficiency	$\eta_{wh}$	123	%
Daily electricity consumption	$Q_{elec}$	6.505	kWh	Daily fuel consumption	$Q_{fuel}$	NA	kWh
Annual electricity consumption	AEC	1358	kWh	Annual fuel consumption	AFC	NA	GJ
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