

Average climate and High temperature

Model(s):	CTC EcoHeat 410
Air-to-water heat pump:	No
Water-to-water heat pump:	No
Brine-to-water heat pump:	Yes
Low-temperature heat pump:	No
Equipped with a supplementary heater:	No
Heat pump combination heater:	Yes

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low-temperature heat pumps, parameters shall be declared for low-temperature application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>Prated</i>	11	kW	Seasonal space heating energy efficiency	η_s	125	%
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	<i>P_{dh}</i>	9,4	kW	T _j = -7 °C	<i>COP_d</i>	3,02	-
T _j = +2 °C	<i>P_{dh}</i>	9,6	kW	T _j = +2 °C	<i>COP_d</i>	3,39	-
T _j = +7 °C	<i>P_{dh}</i>	9,7	kW	T _j = +7 °C	<i>COP_d</i>	3,69	-
T _j = +12 °C	<i>P_{dh}</i>	9,9	kW	T _j = +12 °C	<i>COP_d</i>	4,00	-
T _j = bivalent temperature	<i>P_{dh}</i>	9,4	kW	T _j = bivalent temperature	<i>COP_d</i>	3,08	-
T _j = operation limit temperature	<i>P_{dh}</i>	9,3	kW	T _j = operation limit temperature	<i>COP_d</i>	2,86	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-6	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient (**)	<i>C_{dh}</i>	0,98	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output (*)	<i>P_{sup}</i>	1,8	kW
Thermostat-off mode	<i>P_{TO}</i>	0,026	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	Fixed			-	na	1,9	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	49/na	dB	-			
Annual energy consumption	<i>Q_{HE}</i>	6900	kWh				
For heat pump combination heater:				Water heating energy efficiency			
Declared load profile	L			η_{wh}	87	%	
Daily electricity consumption	<i>Q_{elec}</i>	5,377	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1183	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ
Contact details	Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000			www.ctc.se			

(**) For heat pump space heaters and heat pump combination heaters, the rated heat output *Prated* is equal to the design load for heating *P_{designh}*, and the rated heat output of a supplementary heater *P_{sup}* is equal to the supplementary capacity for heating *sup(T_j)*. (***) If *C_{dh}* is not determined by measurement then the default degradation coefficient is *C_{dh}* = 0,9.

Average climate and Low temperature

Model(s):	CTC EcoHeat 410
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Water-to-water heat pump:	No
Brine-to-water heat pump:	Yes
Low-temperature heat pump:	No
Equipped with a supplementary heater:	No
Heat pump combination heater:	Yes

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low-temperature heat pumps, parameters shall be declared for low-temperature application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>Prated</i>	12	kW	Seasonal space heating energy efficiency	η_s	157	%
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	<i>P_{dh}</i>	10,0	kW	T _j = -7 °C	<i>COP_d</i>	4,24	-
T _j = +2 °C	<i>P_{dh}</i>	10,1	kW	T _j = +2 °C	<i>COP_d</i>	4,40	-
T _j = +7 °C	<i>P_{dh}</i>	10,2	kW	T _j = +7 °C	<i>COP_d</i>	4,54	-
T _j = +12 °C	<i>P_{dh}</i>	10,3	kW	T _j = +12 °C	<i>COP_d</i>	4,68	-
T _j = bivalent temperature	<i>P_{dh}</i>	10,0	kW	T _j = bivalent temperature	<i>COP_d</i>	4,27	-
T _j = operation limit temperature	<i>P_{dh}</i>	10,0	kW	T _j = operation limit temperature	<i>COP_d</i>	4,16	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-6	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient (**)	<i>C_{dh}</i>	0,96	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output (*)	<i>P_{sup}</i>	1,9	kW
Thermostat-off mode	<i>P_{TO}</i>	0,082	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	Fixed			-	na	2,3	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	49/na	dB	-	na		m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	5938	kWh				
For heat pump combination heater:							
Declared load profile	L			Water heating energy efficiency	η_{wh}	87	%
Daily electricity consumption	<i>Q_{elec}</i>	5,377	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1183	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ
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