

**Warm climate and Medium temperature (55)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith i350/ i350F</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>184</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	-
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>13</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>180</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>na</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>na</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>12,8</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>2,33</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>8,2</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>3,95</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,8</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>6,16</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>12,8</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>2,33</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>12,8</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>2,33</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>na</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>2</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>2</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,99</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,015</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>0,0</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,010</b>	kW	<b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,000</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	Type of energy input			
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors			
Sound power level, indoors/ outdoors	<i>L<sub>WA</sub></i>	<b>na/61</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>3730</b>	kWh				
For heat pump combination heater:							
<b>Declared load profile</b>	<b>XL</b>	<b>Efficiency class</b>	<b>NA</b>	<b>Water heating energy efficiency</b>	$\eta_{wh}$	<b>112</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>6,835</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>na</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>1504</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>na</b>	GJ
							<b>170710</b>

Contact details

Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000

[www.ctc.se](http://www.ctc.se)

(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output *P<sub>rated</sub>* is equal to the design load for heating *P<sub>designh</sub>*, and the rated heat output of a supplementary heater *P<sub>sup</sub>* is equal to the supplementary capacity for heating *sup(T<sub>j</sub>)*. (\*\*) If *C<sub>dh</sub>* is not determined by measurement then the default degradation coefficient is *C<sub>dh</sub>* = 0,9.

**Warm climate and Low temperature (35)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith i350/ i350F</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>244</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	-
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>14</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>240</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>na</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>na</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>13,5</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>3,32</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>8,7</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>5,67</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,6</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>7,55</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>13,5</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>3,32</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>13,5</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>3,32</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>na</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>2</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>2</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,99</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,015</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>0,0</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,010</b>	kW	<b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,000</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	Type of energy input			
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors	-	<b>6200</b>	m <sup>3</sup> /h
Sound power level, indoors/ outdoors	<i>L<sub>WA</sub></i>	<b>na/55</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	<b>na</b>	m <sup>3</sup> /h
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>2968</b>	kWh				

For heat pump combination heater:

Declared load profile	XL	Efficiency class	NA	Water heating energy efficiency	$\eta_{wh}$	112	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>6,835</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>na</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>1504</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>na</b>	GJ

**170710**Contact details [Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000](mailto:ener@enertech.se) [www.ctc.se](http://www.ctc.se)(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output *P<sub>rated</sub>* is equal to the design load for heating *P<sub>designh</sub>*, and the rated heat output of a supplementary heater *P<sub>sup</sub>* is equal to the supplementary capacity for heating *sup(T<sub>j</sub>)*. (\*\*) If *C<sub>dh</sub>* is not determined by measurement then the default degradation coefficient is *C<sub>dh</sub>* = 0,9.

**Average climate and Medium temperature (55)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith i350/ i350F</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	<b>A++</b> -
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b> -
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>136</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	<b>A++</b> -
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>9</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>132</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>7,6</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>2,07</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>4,6</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>3,49</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>4,8</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>4,69</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,8</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>6,36</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>8,4</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>1,71</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>8,4</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,71</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>na</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-10</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-10</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,99</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,015</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>0,1</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,010</b>	kW	<b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,000</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	Type of energy input			
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors	-	<b>6200</b>	m <sup>3</sup> /h
Sound power level, indoors/ outdoors	<i>L<sub>WA</sub></i>	<b>na/61</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	<b>na</b>	m <sup>3</sup> /h
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>5090</b>	kWh				
For heat pump combination heater:							
<b>Declared load profile</b>	<b>XL</b>	<b>Efficiency class</b>	<b>A</b>	<b>Water heating energy efficiency</b>	$\eta_{wh}$	<b>98</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>7,816</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>NA</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>1720</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>NA</b>	GJ
				<b>170710</b>			

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(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output *P<sub>rated</sub>* is equal to the design load for heating *P<sub>designh</sub>*, and the rated heat output of a supplementary heater *P<sub>sup</sub>* is equal to the supplementary capacity for heating *sup(T<sub>j</sub>)*. (\*\*) If *C<sub>dh</sub>* is not determined by measurement then the default degradation coefficient is *C<sub>dh</sub>* = 0,9.

**Average climate and Low temperature (35)**

Model(s):	CTC EcoAir 520M + CTC EcoZenith i350/ i350F		
Air-to-water heat pump:	Yes	Energy efficiency class:	A++ -
Water-to-water heat pump:	No	Controller class:	VI -
Brine-to-water heat pump:	No	Controller contribution:	4 %
Low-temperature heat pump:	No	Package efficiency:	181 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	A+++ -
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
<b>Rated heat output (*)</b>	$P_{rated}$	<b>8</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>177</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	$P_{dh}$	<b>6,9</b>	kW	T <sub>j</sub> = -7 °C	$COP_d$	<b>3,09</b>	-
T <sub>j</sub> = +2 °C	$P_{dh}$	<b>4,2</b>	kW	T <sub>j</sub> = +2 °C	$COP_d$	<b>4,82</b>	-
T <sub>j</sub> = +7 °C	$P_{dh}$	<b>5,0</b>	kW	T <sub>j</sub> = +7 °C	$COP_d$	<b>6,18</b>	-
T <sub>j</sub> = +12 °C	$P_{dh}$	<b>5,7</b>	kW	T <sub>j</sub> = +12 °C	$COP_d$	<b>7,62</b>	-
T <sub>j</sub> = bivalent temperature	$P_{dh}$	<b>8,0</b>	kW	T <sub>j</sub> = bivalent temperature	$COP_d$	<b>2,72</b>	-
T <sub>j</sub> = operation limit temperature	$P_{dh}$	<b>8,0</b>	kW	T <sub>j</sub> = operation limit temperature	$COP_d$	<b>2,72</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	$P_{dh}$	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	$COP_d$	<b>na</b>	-
Bivalent temperature	$T_{biv}$	<b>-10</b>	°C	For air-to-water heat pumps: Operation limit temperature	TOL	<b>-10</b>	°C
Cycling interval capacity for heating	$P_{cych}$	<b>na</b>	kW	Cycling interval efficiency	$COP_{cyc}$	<b>na</b>	-
Degradation co-efficient (**)	$C_{dh}$	<b>0,98</b>	-	Heating water operating limit temperature	WTOL	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	$P_{OFF}$	<b>0,015</b>	kW	Rated heat output (*)	$P_{sup}$	<b>0,0</b>	kW
Thermostat-off mode	$P_{TO}$	<b>0,010</b>	kW	Type of energy input			<b>Electric</b>
Standby mode	$P_{SB}$	<b>0,000</b>	kW				
Crankcase heater mode	$P_{CK}$	<b>0,000</b>	kW				
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors	-	<b>6200</b>	m <sup>3</sup> /h
Sound power level, indoors/ outdoors	$L_{WA}$	<b>na/55</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	<b>na</b>	m <sup>3</sup> /h
Annual energy consumption	$Q_{HE}$	<b>3526</b>	kWh				
For heat pump combination heater:							
<b>Declared load profile</b>	<b>XL</b>	<b>Efficiency class</b>	<b>A</b>	<b>Water heating energy efficiency</b>	$\eta_{wh}$	<b>98</b>	%
Daily electricity consumption	$Q_{elec}$	<b>7,816</b>	kWh	Daily fuel consumption	$Q_{fuel}$	<b>na</b>	kWh
Annual electricity consumption	AEC	<b>1720</b>	kWh	Annual fuel consumption	AFC	<b>na</b>	GJ
						<b>170710</b>	

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(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output  $P_{rated}$  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  $C_{dh} = 0,9$ .

**Cold climate and Medium temperature (55)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith i350/ i350F</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>125</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	-
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>Prated</i>	<b>10</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>121</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>6,1</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>2,49</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>4,1</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>4,12</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>5,0</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>5,40</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,7</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>6,84</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>7,9</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>1,69</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>5,4</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,01</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>7,8</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>1,60</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-14</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-22</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,015</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>4,6</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,010</b>	kW	Type of energy input	<b>Electric</b>		
Standby mode	<i>P<sub>SB</sub></i>	<b>0,000</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW				
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors	-	<b>6200</b>	m <sup>3</sup> /h
Sound power level, indoors/ outdoors	<i>L<sub>WA</sub></i>	<b>na/61</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	<b>na</b>	m <sup>3</sup> /h
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>7956</b>	kWh				

For heat pump combination heater:

Declared load profile	XL	Efficiency class	NA	Water heating energy efficiency	$\eta_{wh}$	82	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>9,257</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>na</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>2037</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>na</b>	GJ

**170710**Contact details [Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000](mailto:ener@enertech.se) [www.ctc.se](http://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<sub>designh</sub>*, and the rated heat output of a supplementary heater *P<sub>sup</sub>* is equal to the supplementary capacity for heating *sup(T<sub>j</sub>)*. (\*\*) If *C<sub>dh</sub>* is not determined by measurement then the default degradation coefficient is *C<sub>dh</sub>* = 0,9.

**Cold climate and Low temperature (35)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith i350/ i350F</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>153</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	-
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>11</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>149</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>6,7</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>3,42</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>4,1</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>4,51</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>5,0</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>6,57</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,6</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>7,53</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>8,4</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>2,44</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>5,6</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,70</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>7,9</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>2,26</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-13</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-22</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,015</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>5,4</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,010</b>	kW	Type of energy input <b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,000</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	<b>Variable</b>			-	<b>6200</b>	<i>m<sup>3</sup>/h</i>	
Sound power level, indoors/ outdoors	<i>L<sub>WA</sub></i>	<b>na/55</b>	<i>dB</i>	-	<b>na</b>	<i>m<sup>3</sup>/h</i>	
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>7156</b>	<i>kWh</i>				

For heat pump combination heater:

Declared load profile	<b>XL</b>	Efficiency class	<b>NA</b>	Water heating energy efficiency	$\eta_{wh}$	<b>82</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>9,257</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>na</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>2037</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>na</b>	GJ

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Contact details

Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000

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(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output *P<sub>rated</sub>* is equal to the design load for heating *P<sub>designh</sub>*, and the rated heat output of a supplementary heater *P<sub>sup</sub>* is equal to the supplementary capacity for heating *sup(T<sub>j</sub>)*. (\*\*) If *C<sub>dh</sub>* is not determined by measurement then the default degradation coefficient is *C<sub>dh</sub>* = 0,9.

**Warm climate and Medium temperature (55)**

Model(s):	CTC EcoAir 520M + CTC EcoLogic		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VI
Brine-to-water heat pump:	No	Controller contribution:	4 %
Low-temperature heat pump:	No	Package efficiency:	184 %
Equipped with a supplementary heater:	No	Package efficiency class:	-
Heat pump combination heater:	No		

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
<b>Rated heat output (*)</b>	$P_{rated}$	<b>13</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>180</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	$P_{dh}$	na	kW	T <sub>j</sub> = -7 °C	$COP_d$	na	-
T <sub>j</sub> = +2 °C	$P_{dh}$	12,8	kW	T <sub>j</sub> = +2 °C	$COP_d$	2,33	-
T <sub>j</sub> = +7 °C	$P_{dh}$	8,2	kW	T <sub>j</sub> = +7 °C	$COP_d$	3,95	-
T <sub>j</sub> = +12 °C	$P_{dh}$	5,8	kW	T <sub>j</sub> = +12 °C	$COP_d$	6,16	-
T <sub>j</sub> = bivalent temperature	$P_{dh}$	12,8	kW	T <sub>j</sub> = bivalent temperature	$COP_d$	2,33	-
T <sub>j</sub> = operation limit temperature	$P_{dh}$	12,8	kW	T <sub>j</sub> = operation limit temperature	$COP_d$	2,33	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	$P_{dh}$	na	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	$COP_d$	na	-
Bivalent temperature	$T_{biv}$	2	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	$P_{cych}$	na	kW	Cycling interval efficiency	$COP_{cyc}$	na	-
Degradation co-efficient (**)	$C_{dh}$	0,99	-	Heating water operating limit temperature	WTOL	55	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	$P_{OFF}$	0,015	kW	Rated heat output (*)	$P_{sup}$	0,0	kW
Thermostat-off mode	$P_{TO}$	0,010	kW	Type of energy input <b>Electric</b>			
Standby mode	$P_{SB}$	0,000	kW				
Crankcase heater mode	$P_{CK}$	0,000	kW				
Other items							
Capacity control	Variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	6200	m <sup>3</sup> /h
Sound power level, indoors/outdoors	$L_{WA}$	na/61	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m <sup>3</sup> /h
Annual energy consumption	$Q_{HE}$	3730	kWh				
For heat pump combination heater:							
<b>Declared load profile</b>	na			<b>Water heating energy efficiency</b>	$\eta_{wh}$	na	%
Daily electricity consumption	$Q_{elec}$	na	kWh	Daily fuel consumption	$Q_{fuel}$	na	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	na	GJ

## Contact details

Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000

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(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output  $P_{rated}$  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  $C_{dh} = 0,9$ .

**Warm climate and Low temperature (35)**

Model(s):	CTC EcoAir 520M + CTC EcoLogic		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VI
Brine-to-water heat pump:	No	Controller contribution:	4 %
Low-temperature heat pump:	No	Package efficiency:	244 %
Equipped with a supplementary heater:	No	Package efficiency class:	-
Heat pump combination heater:	No		

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
<b>Rated heat output (*)</b>	$P_{rated}$	<b>14</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>240</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	$P_{dh}$	na	kW	T <sub>j</sub> = -7 °C	$COP_d$	na	-
T <sub>j</sub> = +2 °C	$P_{dh}$	13,5	kW	T <sub>j</sub> = +2 °C	$COP_d$	3,32	-
T <sub>j</sub> = +7 °C	$P_{dh}$	8,7	kW	T <sub>j</sub> = +7 °C	$COP_d$	5,67	-
T <sub>j</sub> = +12 °C	$P_{dh}$	5,6	kW	T <sub>j</sub> = +12 °C	$COP_d$	7,55	-
T <sub>j</sub> = bivalent temperature	$P_{dh}$	13,5	kW	T <sub>j</sub> = bivalent temperature	$COP_d$	3,32	-
T <sub>j</sub> = operation limit temperature	$P_{dh}$	13,5	kW	T <sub>j</sub> = operation limit temperature	$COP_d$	3,32	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	$P_{dh}$	na	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	$COP_d$	na	-
Bivalent temperature	$T_{biv}$	2	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	$P_{cych}$	na	kW	Cycling interval efficiency	$COP_{cyc}$	na	-
Degradation co-efficient (**)	$C_{dh}$	0,99	-	Heating water operating limit temperature	WTOL	55	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	$P_{OFF}$	0,015	kW	Rated heat output (*)	$P_{sup}$	0,0	kW
Thermostat-off mode	$P_{TO}$	0,010	kW	Type of energy input <b>Electric</b>			
Standby mode	$P_{SB}$	0,000	kW				
Crankcase heater mode	$P_{CK}$	0,000	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	Variable			-		6200	m <sup>3</sup> /h
Sound power level, indoors/outdoors	$L_{WA}$	na/55	dB	-		na	m <sup>3</sup> /h
Annual energy consumption	$Q_{HE}$	2968	kWh				
For heat pump combination heater:				<b>Water heating energy efficiency</b>			
<b>Declared load profile</b>	na			$\eta_{wh}$		na	%
Daily electricity consumption	$Q_{elec}$	na	kWh	Daily fuel consumption	$Q_{fuel}$	na	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	na	GJ

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**Average climate and Medium temperature (55)**

Model(s):	CTC EcoAir 520M + CTC EcoLogic		
Air-to-water heat pump:	Yes	Energy efficiency class:	A++ -
Water-to-water heat pump:	No	Controller class:	VI -
Brine-to-water heat pump:	No	Controller contribution:	4 %
Low-temperature heat pump:	No	Package efficiency:	136 %
Equipped with a supplementary heater:	No	Package efficiency class:	A++ -
Heat pump combination heater:	No		

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
<b>Rated heat output (*)</b>	$P_{rated}$	<b>9</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>132</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	$P_{dh}$	<b>7,6</b>	kW	T <sub>j</sub> = -7 °C	$COP_d$	<b>2,07</b>	-
T <sub>j</sub> = +2 °C	$P_{dh}$	<b>4,6</b>	kW	T <sub>j</sub> = +2 °C	$COP_d$	<b>3,49</b>	-
T <sub>j</sub> = +7 °C	$P_{dh}$	<b>4,8</b>	kW	T <sub>j</sub> = +7 °C	$COP_d$	<b>4,69</b>	-
T <sub>j</sub> = +12 °C	$P_{dh}$	<b>5,8</b>	kW	T <sub>j</sub> = +12 °C	$COP_d$	<b>6,36</b>	-
T <sub>j</sub> = bivalent temperature	$P_{dh}$	<b>8,4</b>	kW	T <sub>j</sub> = bivalent temperature	$COP_d$	<b>1,71</b>	-
T <sub>j</sub> = operation limit temperature	$P_{dh}$	<b>8,4</b>	kW	T <sub>j</sub> = operation limit temperature	$COP_d$	<b>1,71</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	$P_{dh}$	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	$COP_d$	<b>na</b>	-
Bivalent temperature	$T_{biv}$	<b>-10</b>	°C	For air-to-water heat pumps: Operation limit temperature	$TOL$	<b>-10</b>	°C
Cycling interval capacity for heating	$P_{cych}$	<b>na</b>	kW	Cycling interval efficiency	$COP_{cyc}$	<b>na</b>	-
Degradation co-efficient (**)	$C_{dh}$	<b>0,99</b>	-	Heating water operating limit temperature	$WTOL$	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	$P_{OFF}$	<b>0,015</b>	kW	Rated heat output (*)	$P_{sup}$	<b>0,1</b>	kW
Thermostat-off mode	$P_{TO}$	<b>0,010</b>	kW	Type of energy input	<b>Electric</b>		
Standby mode	$P_{SB}$	<b>0,000</b>	kW				
Crankcase heater mode	$P_{CK}$	<b>0,000</b>	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	<b>Variable</b>			-	<b>6200</b>	$m^3/h$	
Sound power level, indoors/outdoors	$L_{WA}$	<b>na/61</b>	dB	-	<b>na</b>	$m^3/h$	
Annual energy consumption	$Q_{HE}$	<b>5090</b>	kWh				
For heat pump combination heater:				<b>Water heating energy efficiency</b>			
<b>Declared load profile</b>	<b>na</b>			$\eta_{wh}$	<b>na</b>	%	
Daily electricity consumption	$Q_{elec}$	<b>na</b>	kWh	Daily fuel consumption	$Q_{fuel}$	<b>NA</b>	kWh
Annual electricity consumption	$AEC$	<b>na</b>	kWh	Annual fuel consumption	$AFC$	<b>NA</b>	GJ

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**Average climate and Low temperature (35)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoLogic</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	<b>A++</b> -
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b> -
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>181</b> %
Equipped with a supplementary heater:	<b>No</b>	Package efficiency class:	<b>A+++</b> -
Heat pump combination heater:	<b>No</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>8</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>177</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>6,9</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>3,09</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>4,2</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>4,82</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>5,0</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>6,18</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,7</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>7,62</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>8,0</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>2,72</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>8,0</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>2,72</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>na</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-10</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-10</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,015</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>0,0</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,010</b>	kW	Type of energy input <b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,000</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	<b>Variable</b>			-	<b>6200</b>	<i>m<sup>3</sup>/h</i>	
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/55</b>	<i>dB</i>	-	<b>na</b>	<i>m<sup>3</sup>/h</i>	
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>3526</b>	<i>kWh</i>				
For heat pump combination heater:				For heat pump combination heater:			
<b>Declared load profile</b>	<b>na</b>			<b>Water heating energy efficiency</b>	$\eta_{wh}$	<b>na</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>na</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>na</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>na</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>na</b>	GJ

## Contact details

Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000

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(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output *P<sub>rated</sub>* is equal to the design load for heating *P<sub>designh</sub>*, and the rated heat output of a supplementary heater *P<sub>sup</sub>* is equal to the supplementary capacity for heating *sup(T<sub>j</sub>)*. (\*\*) If *C<sub>dh</sub>* is not determined by measurement then the default degradation coefficient is *C<sub>dh</sub>* = 0,9.



Model(s):	<b>CTC EcoAir 520M + CTC EcoLogic</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>125</b> %
Equipped with a supplementary heater:	<b>No</b>	Package efficiency class:	-
Heat pump combination heater:	<b>No</b>		

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
<b>Rated heat output (*)</b>	<i>Prated</i>	<b>10</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>121</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>6,1</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>2,49</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>4,1</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>4,12</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>5,0</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>5,40</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,7</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>6,84</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>7,9</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>1,69</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>5,4</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,01</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>7,8</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>1,60</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-14</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-22</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,015</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>4,6</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,010</b>	kW	Type of energy input <b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,000</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	<b>Variable</b>			-	<b>6200</b>	<i>m<sup>3</sup>/h</i>	
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/61</b>	<i>dB</i>	-	<b>na</b>	<i>m<sup>3</sup>/h</i>	
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>7956</b>	<i>kWh</i>				

For heat pump combination heater:							
<b>Declared load profile</b>	<b>na</b>			<b>Water heating energy efficiency</b>	$\eta_{wh}$	<b>na</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>na</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>na</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>na</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>na</b>	GJ

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Contact details **Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000** [www.ctc.se](http://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 *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.

**Cold climate and Low temperature (35)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoLogic</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>153</b> %
Equipped with a supplementary heater:	<b>No</b>	Package efficiency class:	-
Heat pump combination heater:	<b>No</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>11</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>149</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>6,7</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>3,42</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>4,1</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>4,51</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>5,0</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>6,57</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,6</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>7,53</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>8,4</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>2,44</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>5,6</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,70</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>7,9</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>2,26</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-13</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-22</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,015</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>5,4</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,010</b>	kW	Type of energy input <b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,000</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	<b>Variable</b>			-	<b>6200</b>	<i>m<sup>3</sup>/h</i>	
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/55</b>	<i>dB</i>	-	<b>na</b>	<i>m<sup>3</sup>/h</i>	
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>7156</b>	<i>kWh</i>				
For heat pump combination heater:				For heat pump combination heater:			
<b>Declared load profile</b>	<b>na</b>			<b>Water heating energy efficiency</b>	$\eta_{wh}$	<b>na</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>na</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>na</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>na</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>na</b>	GJ

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(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output *P<sub>rated</sub>* is equal to the design load for heating *P<sub>designh</sub>*, and the rated heat output of a supplementary heater *P<sub>sup</sub>* is equal to the supplementary capacity for heating *sup(T<sub>j</sub>)*. (\*\*) If *C<sub>dh</sub>* is not determined by measurement then the default degradation coefficient is *C<sub>dh</sub>* = 0,9.



Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith 250</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>145</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	-
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>Prated</i>	<b>12</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>141</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>na</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>na</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>12,3</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>1,54</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>8,0</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>3,05</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,7</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>5,28</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>12,3</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>1,54</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>12,3</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,54</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>na</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>2</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>2</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,99</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,031</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>0,0</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,009</b>	kW	<b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,031</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	Type of energy input			
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors	-	<b>6200</b>	m <sup>3</sup> /h
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/61</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	<b>na</b>	m <sup>3</sup> /h
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>4525</b>	kWh				

For heat pump combination heater:

<b>Declared load profile</b>	<b>L</b>	<b>Efficiency class</b>	<b>NA</b>	<b>Water heating energy efficiency</b>	$\eta_{wh}$	<b>66</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>7,118</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>NA</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>1566</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>NA</b>	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.

**Warm climate and Low temperature (35)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith 250</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>197</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	-
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>13</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>193</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>na</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>na</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>13,3</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>2,43</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>8,6</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>4,61</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,6</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>6,31</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>13,3</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>2,43</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>13,3</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>2,43</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>na</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>2</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>2</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,99</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,031</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>0,0</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,005</b>	kW	Type of energy input <b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,031</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW				
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors			
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/55</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>3634</b>	kWh				

For heat pump combination heater:

<b>Declared load profile</b>	<b>L</b>	<b>Efficiency class</b>	<b>NA</b>	<b>Water heating energy efficiency</b>	$\eta_{wh}$	<b>66</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>7,118</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>NA</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>1566</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>NA</b>	GJ

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**Average climate and Medium temperature (55)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith 250</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	<b>A+</b> -
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b> -
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>118</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	<b>A+</b> -
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>Prated</i>	<b>7</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>114</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>6,6</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>1,75</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>4,1</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>2,94</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>4,6</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>4,01</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,7</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>5,55</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>6,6</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>1,75</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>7,2</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,47</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>na</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-7</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-10</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,031</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>0,2</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,009</b>	kW	Type of energy input <b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,031</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	<b>Variable</b>			-	<b>6200</b>	<b>na</b>	m <sup>3</sup> /h
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/61</b>	dB	-	<b>na</b>		m <sup>3</sup> /h
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>5246</b>	kWh				

For heat pump combination heater:

Declared load profile	<b>L</b>	Efficiency class	<b>B</b>	Water heating energy efficiency	$\eta_{wh}$	<b>53</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>8,780</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>NA</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>1932</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>NA</b>	GJ

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**Average climate and Low temperature (35)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith 250</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	<b>A++</b> -
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b> -
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>154</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	<b>A+++</b> -
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>8</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>150</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>6,7</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>2,51</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>4,0</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>3,93</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>4,9</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>5,12</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,7</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>6,38</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>6,7</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>2,51</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>7,7</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>2,25</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>na</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-7</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-10</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,031</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>0,0</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,005</b>	kW	<b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,031</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	Type of energy input			
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors	-	<b>6200</b>	m <sup>3</sup> /h
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/55</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	<b>na</b>	m <sup>3</sup> /h
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>4047</b>	kWh				
For heat pump combination heater:							
<b>Declared load profile</b>	<b>L</b>	<b>Efficiency class</b>	<b>B</b>	<b>Water heating energy efficiency</b>	$\eta_{wh}$	<b>53</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>8,780</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>NA</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>1932</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>NA</b>	GJ
				<b>160203</b>			

Contact details

Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000

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(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output  $P_{rated}$  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  $C_{dh} = 0,9$ .





Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith 250</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>108</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	-
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>8</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>104</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>5,0</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>2,16</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>3,4</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>3,57</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>4,7</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>4,72</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,7</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>6,03</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>5,9</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>1,79</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>4,4</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,14</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>6,3</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>1,49</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-11</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-22</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,026</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>8,2</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,028</b>	kW	Type of energy input <b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,000</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	<b>Variable</b>			-	<b>6200</b>	<i>m<sup>3</sup>/h</i>	
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/61</b>	<i>dB</i>	-	<b>na</b>	<i>m<sup>3</sup>/h</i>	
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>7524</b>	<i>kWh</i>				

For heat pump combination heater:							
<b>Declared load profile</b>	<b>L</b>	<b>Efficiency class</b>	<b>NA</b>	<b>Water heating energy efficiency</b>	$\eta_{wh}$	<b>46</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>10,113</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>NA</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>2225</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>NA</b>	GJ

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(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output *P<sub>rated</sub>* is equal to the design load for heating *P<sub>designh</sub>*, and the rated heat output of a supplementary heater *P<sub>sup</sub>* is equal to the supplementary capacity for heating *sup(T<sub>j</sub>)*. (\*\*) If *C<sub>dh</sub>* is not determined by measurement then the default degradation coefficient is *C<sub>dh</sub>* = 0,9.

**Cold climate and Low temperature (35)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith 250</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>126</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	-
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>11</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>122</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>6,4</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>2,85</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>3,9</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>3,62</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>4,9</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>5,51</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,6</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>6,29</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>7,2</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>2,56</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>5,9</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,84</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>7,6</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>1,96</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-10</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-22</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,031</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>10,5</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,005</b>	kW	Type of energy input	<b>Electric</b>		
Standby mode	<i>P<sub>SB</sub></i>	<b>0,031</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW				
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors	-	<b>6200</b>	m <sup>3</sup> /h
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/55</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	<b>na</b>	m <sup>3</sup> /h
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>8260</b>	kWh				

For heat pump combination heater:

Declared load profile	L	Efficiency class	NA	Water heating energy efficiency	$\eta_{wh}$	46	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>10,113</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>NA</b>	kWh
Annual electricity consumption	AEC	<b>2225</b>	kWh	Annual fuel consumption	AFC	<b>NA</b>	GJ

**160203**

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(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output *P<sub>rated</sub>* is equal to the design load for heating *P<sub>designh</sub>*, and the rated heat output of a supplementary heater *P<sub>sup</sub>* is equal to the supplementary capacity for heating *sup(T<sub>j</sub>)*. (\*\*) If *C<sub>dh</sub>* is not determined by measurement then the default degradation coefficient is *C<sub>dh</sub>* = 0,9.

**Warm climate and Medium temperature (55)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith i550 230/400V</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>147</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	-
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>12</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>143</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>na</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>na</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>12,3</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>1,54</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>8,0</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>3,05</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,7</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>5,28</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>12,3</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>1,54</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>12,3</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,54</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>na</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>2</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>2</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,99</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,018</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>0,0</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,024</b>	kW	<b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,018</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	Type of energy input			
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors	-	<b>6200</b>	m <sup>3</sup> /h
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/61</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	<b>na</b>	m <sup>3</sup> /h
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>4479</b>	kWh				

For heat pump combination heater:

Declared load profile	<b>XL</b>	Efficiency class	<b>NA</b>	Water heating energy efficiency	$\eta_{wh}$	<b>112</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>6,835</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>na</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>1504</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>na</b>	GJ

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(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output *P<sub>rated</sub>* is equal to the design load for heating *P<sub>designh</sub>*, and the rated heat output of a supplementary heater *P<sub>sup</sub>* is equal to the supplementary capacity for heating *sup(T<sub>j</sub>)*. (\*\*) If *C<sub>dh</sub>* is not determined by measurement then the default degradation coefficient is *C<sub>dh</sub>* = 0,9.

**Warm climate and Low temperature (35)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith i550 230/400V</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>197</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	-
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>13</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>193</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>na</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>na</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>13,3</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>2,43</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>8,6</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>4,61</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,6</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>6,31</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>13,3</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>2,43</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>13,3</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>2,43</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>na</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>2</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>2</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,99</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,018</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>0,0</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,073</b>	kW	<b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,018</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	Type of energy input			
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors			
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/55</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>3628</b>	kWh				

For heat pump combination heater:

Declared load profile	XL	Efficiency class	NA	Water heating energy efficiency	$\eta_{wh}$	112	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>6,835</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>na</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>1504</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>na</b>	GJ

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**Average climate and Medium temperature (55)**

Model(s):	CTC EcoAir 520M + CTC EcoZenith i550 230/400V		
Air-to-water heat pump:	Yes	Energy efficiency class:	A+ -
Water-to-water heat pump:	No	Controller class:	VI -
Brine-to-water heat pump:	No	Controller contribution:	4 %
Low-temperature heat pump:	No	Package efficiency:	119 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	A+ -
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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>7</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>115</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>7,6</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>1,75</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>4,1</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>2,94</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>4,6</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>4,01</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,7</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>5,55</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>6,6</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>1,75</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>7,2</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,47</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>na</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-7</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-10</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,015</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>0,2</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,024</b>	kW	Type of energy input <b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,018</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	<b>Variable</b>			-	<b>6200</b>	<b>na</b>	m <sup>3</sup> /h
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/61</b>	dB	-	<b>na</b>		m <sup>3</sup> /h
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>5201</b>	kWh				
For heat pump combination heater:							
<b>Declared load profile</b>	<b>XL</b>	<b>Efficiency class</b>	<b>A</b>	<b>Water heating energy efficiency</b>	$\eta_{wh}$	<b>98</b>	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>7,816</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>NA</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>1719</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>NA</b>	GJ

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**Average climate and Low temperature (35)**

Model(s):	CTC EcoAir 520M + CTC EcoZenith i550 230/400V		
Air-to-water heat pump:	Yes	Energy efficiency class:	A++ -
Water-to-water heat pump:	No	Controller class:	VI -
Brine-to-water heat pump:	No	Controller contribution:	4 %
Low-temperature heat pump:	No	Package efficiency:	156 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	A++ -
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
<b>Rated heat output (*)</b>	<i>Prated</i>	<b>8</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>152</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>6,7</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>2,51</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>4,0</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>3,93</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>4,3</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>5,12</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,7</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>6,37</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>6,7</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>2,51</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>7,7</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>2,25</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>na</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>na</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-7</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-10</b>	°C
Cycling interval capacity for heating	<i>P<sub>cyh</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyh</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,018</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>0,0</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,073</b>	kW	Type of energy input	<b>Electric</b>		
Standby mode	<i>P<sub>SB</sub></i>	<b>0,018</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW				
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors	-	<b>6200</b>	m <sup>3</sup> /h
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/55</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	<b>na</b>	m <sup>3</sup> /h
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>4011</b>	kWh				

For heat pump combination heater:

Declared load profile	XL	Efficiency class	A	Water heating energy efficiency	$\eta_{wh}$	98	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>7,816</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>na</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>1719</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>na</b>	GJ

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**Cold climate and Medium temperature (55)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith i550 230/400V</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>109</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	-
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>8</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>105</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>6,1</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>2,16</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>3,4</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>3,57</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>4,7</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>4,72</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,7</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>6,03</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>5,9</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>1,79</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>4,4</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,14</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>6,3</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>1,49</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-11</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-22</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,018</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>8,2</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,024</b>	kW	Type of energy input <b>Electric</b>			
Standby mode	<i>P<sub>SB</sub></i>	<b>0,018</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	<b>Variable</b>			-	<b>6200</b>	<i>m<sup>3</sup>/h</i>	
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/61</b>	<i>dB</i>	-	<b>na</b>	<i>m<sup>3</sup>/h</i>	
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>7497</b>	<i>kWh</i>				

For heat pump combination heater:

Declared load profile	XL	Efficiency class	NA	Water heating energy efficiency	$\eta_{wh}$	82	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>9,257</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>na</b>	kWh
Annual electricity consumption	<i>AEC</i>	<b>2037</b>	kWh	Annual fuel consumption	<i>AFC</i>	<b>na</b>	GJ

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Contact details

Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000

[www.ctc.se](http://www.ctc.se)

(\*) For heat pump space heaters and heat pump combination heaters, the rated heat output *P<sub>rated</sub>* is equal to the design load for heating *P<sub>designh</sub>*, and the rated heat output of a supplementary heater *P<sub>sup</sub>* is equal to the supplementary capacity for heating *sup(T<sub>j</sub>)*. (\*\*) If *C<sub>dh</sub>* is not determined by measurement then the default degradation coefficient is *C<sub>dh</sub>* = 0,9.

**Cold climate and Low temperature (35)**

Model(s):	<b>CTC EcoAir 520M + CTC EcoZenith i550 230/400V</b>		
Air-to-water heat pump:	<b>Yes</b>	Energy efficiency class:	-
Water-to-water heat pump:	<b>No</b>	Controller class:	<b>VI</b>
Brine-to-water heat pump:	<b>No</b>	Controller contribution:	<b>4</b> %
Low-temperature heat pump:	<b>No</b>	Package efficiency:	<b>127</b> %
Equipped with a supplementary heater:	<b>Yes</b>	Package efficiency class:	-
Heat pump combination heater:	<b>Yes</b>		

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
<b>Rated heat output (*)</b>	<i>P<sub>rated</sub></i>	<b>11</b>	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	<b>123</b>	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T <sub>j</sub>			
T <sub>j</sub> = -7 °C	<i>P<sub>dh</sub></i>	<b>6,7</b>	kW	T <sub>j</sub> = -7 °C	<i>COP<sub>d</sub></i>	<b>2,85</b>	-
T <sub>j</sub> = +2 °C	<i>P<sub>dh</sub></i>	<b>3,9</b>	kW	T <sub>j</sub> = +2 °C	<i>COP<sub>d</sub></i>	<b>3,62</b>	-
T <sub>j</sub> = +7 °C	<i>P<sub>dh</sub></i>	<b>4,9</b>	kW	T <sub>j</sub> = +7 °C	<i>COP<sub>d</sub></i>	<b>5,51</b>	-
T <sub>j</sub> = +12 °C	<i>P<sub>dh</sub></i>	<b>5,6</b>	kW	T <sub>j</sub> = +12 °C	<i>COP<sub>d</sub></i>	<b>6,29</b>	-
T <sub>j</sub> = bivalent temperature	<i>P<sub>dh</sub></i>	<b>7,2</b>	kW	T <sub>j</sub> = bivalent temperature	<i>COP<sub>d</sub></i>	<b>2,56</b>	-
T <sub>j</sub> = operation limit temperature	<i>P<sub>dh</sub></i>	<b>5,9</b>	kW	T <sub>j</sub> = operation limit temperature	<i>COP<sub>d</sub></i>	<b>1,84</b>	-
For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>P<sub>dh</sub></i>	<b>7,6</b>	kW	For air-to-water heat pumps: T <sub>j</sub> = -15 °C (if TOL < -20 °C)	<i>COP<sub>d</sub></i>	<b>1,96</b>	-
Bivalent temperature	<i>T<sub>biv</sub></i>	<b>-10</b>	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	<b>-22</b>	°C
Cycling interval capacity for heating	<i>P<sub>cych</sub></i>	<b>na</b>	kW	Cycling interval efficiency	<i>COP<sub>cyc</sub></i>	<b>na</b>	-
Degradation co-efficient (**)	<i>C<sub>dh</sub></i>	<b>0,98</b>	-	Heating water operating limit temperature	<i>WTOL</i>	<b>55</b>	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	<b>0,018</b>	kW	Rated heat output (*)	<i>P<sub>sup</sub></i>	<b>10,5</b>	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	<b>0,073</b>	kW	Type of energy input	<b>Electric</b>		
Standby mode	<i>P<sub>SB</sub></i>	<b>0,018</b>	kW				
Crankcase heater mode	<i>P<sub>CK</sub></i>	<b>0,000</b>	kW				
Other items							
Capacity control	<b>Variable</b>			For air-to-water heat pumps: Rated air flow rate, outdoors	-	<b>6200</b>	m <sup>3</sup> /h
Sound power level, indoors/outdoors	<i>L<sub>WA</sub></i>	<b>na/55</b>	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	<b>na</b>	m <sup>3</sup> /h
Annual energy consumption	<i>Q<sub>HE</sub></i>	<b>8238</b>	kWh				

For heat pump combination heater:

Declared load profile	XL	Efficiency class	NA	Water heating energy efficiency	$\eta_{wh}$	82	%
Daily electricity consumption	<i>Q<sub>elec</sub></i>	<b>9,257</b>	kWh	Daily fuel consumption	<i>Q<sub>fuel</sub></i>	<b>na</b>	kWh
Annual electricity consumption	AEC	<b>2037</b>	kWh	Annual fuel consumption	AFC	<b>na</b>	GJ

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