



Warm climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC EcoLogic		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	141 %
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
Rated heat output (*)	<i>P_{rated}</i>	12	kW	Seasonal space heating energy efficiency	η_s	137	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = - 7 °C	<i>P_{dh}</i>	na	kW	T _j = - 7 °C	<i>COP_d</i>	na	-
T _j = + 2 °C	<i>P_{dh}</i>	13,6	kW	T _j = +2 °C	<i>COP_d</i>	3,08	-
T _j = + 7 °C	<i>P_{dh}</i>	11,1	kW	T _j = +7 °C	<i>COP_d</i>	3,45	-
T _j = + 12 °C	<i>P_{dh}</i>	11,5	kW	T _j = +12 °C	<i>COP_d</i>	4,14	-
T _j = bivalent temperature	<i>P_{dh}</i>	11	kW	T _j = bivalent temperature	<i>COP_d</i>	3,18	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	3	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	0,5	kW
Thermostat-off mode	<i>P_{TO}</i>	0,005	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For air-to-water heat pumps: Rated air flow rate, outdoors			
Capacity control	Fixed			For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB		-	2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	4364	kWh				

For heat pump combination heater:

Declared load profile	na			Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	<i>Q_{elec}</i>	na	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	na	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Warm climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC EcoLogic		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
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
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	180	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	na	kW	T _j = -7 °C	<i>COP_d</i>	na	-
T _j = +2 °C	<i>P_{dh}</i>	11,8	kW	T _j = +2 °C	<i>COP_d</i>	4,60	-
T _j = +7 °C	<i>P_{dh}</i>	11,9	kW	T _j = +7 °C	<i>COP_d</i>	4,83	-
T _j = +12 °C	<i>P_{dh}</i>	12,0	kW	T _j = +12 °C	<i>COP_d</i>	5,11	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,8	kW	T _j = bivalent temperature	<i>COP_d</i>	4,68	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	3	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,98	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	0,9	kW
Thermostat-off mode	<i>P_{TO}</i>	0,022	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,6	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	3618	kWh				

For heat pump combination heater:

Declared load profile	na			Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	<i>Q_{elec}</i>	na	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	na	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Contact details

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

www.ctc.se

181001

Average climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC EcoLogic		
Air-to-water heat pump:	No	Energy efficiency class:	A++ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	142 %
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
Rated heat output (*)	<i>P_{rated}</i>	12	kW	Seasonal space heating energy efficiency	η_s	138	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11	kW	T _j = -7 °C	<i>COP_d</i>	3,25	-
T _j = +2 °C	<i>P_{dh}</i>	11,2	kW	T _j = +2 °C	<i>COP_d</i>	3,64	-
T _j = +7 °C	<i>P_{dh}</i>	11,4	kW	T _j = +7 °C	<i>COP_d</i>	4,02	-
T _j = +12 °C	<i>P_{dh}</i>	11,6	kW	T _j = +12 °C	<i>COP_d</i>	4,40	-
T _j = bivalent temperature	<i>P_{dh}</i>	11	kW	T _j = bivalent temperature	<i>COP_d</i>	3,25	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-7	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	1,5	kW
Thermostat-off mode	<i>P_{TO}</i>	0,005	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	7084	kWh				

For heat pump combination heater:

Declared load profile	na			Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	<i>Q_{elec}</i>	na	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	na	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Contact details

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Average climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC EcoLogic		
Air-to-water heat pump:	No	Energy efficiency class:	A+++ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	186 %
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
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	182	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11,8	kW	T _j = -7 °C	<i>COP_d</i>	4,69	-
T _j = +2 °C	<i>P_{dh}</i>	11,9	kW	T _j = +2 °C	<i>COP_d</i>	4,88	-
T _j = +7 °C	<i>P_{dh}</i>	12,0	kW	T _j = +7 °C	<i>COP_d</i>	5,06	-
T _j = +12 °C	<i>P_{dh}</i>	12,1	kW	T _j = +12 °C	<i>COP_d</i>	5,23	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,8	kW	T _j = bivalent temperature	<i>COP_d</i>	4,69	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-7	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,98	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	1,6	kW
Thermostat-off mode	<i>P_{TO}</i>	0,022	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For air-to-water heat pumps: Rated air flow rate, outdoors			
Capacity control	Fixed					na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		2,6	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	5814	kWh				

For heat pump combination heater:

Declared load profile	na			Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	<i>Q_{elec}</i>	na	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	na	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Cold climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC EcoLogic		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	145 %
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
Rated heat output (*)	P_{rated}	12	kW	Seasonal space heating energy efficiency	η_s	141	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	P_{dh}	11,2	kW	T _j = -7 °C	COP_d	3,56	-
T _j = +2 °C	P_{dh}	11,4	kW	T _j = +2 °C	COP_d	3,94	-
T _j = +7 °C	P_{dh}	11,6	kW	T _j = +7 °C	COP_d	4,29	-
T _j = +12 °C	P_{dh}	11,7	kW	T _j = +12 °C	COP_d	4,54	-
T _j = bivalent temperature	P_{dh}	11	kW	T _j = bivalent temperature	COP_d	3,25	-
T _j = operation limit temperature	P_{dh}	na	kW	T _j = operation limit temperature	COP_d	na	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	P_{dh}	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	COP_d	na	-
Bivalent temperature	T_{biv}	-18	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°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	$WTOL$	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,018	kW	Rated heat output	P_{sup}	1,4	kW
Thermostat-off mode	P_{TO}	0,005	kW	Type of energy input	Electric		
Standby mode	P_{SB}	0,018	kW				
Crankcase heater mode	P_{CK}	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/outdoors	L_{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,1	m ³ /h
Annual energy consumption	Q_{HE}	8195	kWh				

For heat pump combination heater:

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Declared load profile		na		Water heating energy efficiency	η_{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

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

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Cold climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC EcoLogic		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	189 %
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
Rated heat output (*)	<i>P_{rated}</i>	12	kW	Seasonal space heating energy efficiency	η_s	185	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11,9	kW	T _j = -7 °C	<i>COP_d</i>	4,89	-
T _j = +2 °C	<i>P_{dh}</i>	12,0	kW	T _j = +2 °C	<i>COP_d</i>	5,06	-
T _j = +7 °C	<i>P_{dh}</i>	12,1	kW	T _j = +7 °C	<i>COP_d</i>	5,18	-
T _j = +12 °C	<i>P_{dh}</i>	12,1	kW	T _j = +12 °C	<i>COP_d</i>	5,20	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,8	kW	T _j = bivalent temperature	<i>COP_d</i>	4,66	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-20	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cy}</i>	na	kW	Cycling interval efficiency	<i>COP_{cy}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,98	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	0,7	kW
Thermostat-off mode	<i>P_{TO}</i>	0,022	kW	Type of energy input Electric			
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	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	Fixed			-			
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	-			
Annual energy consumption	<i>Q_{HE}</i>	6373	kWh	-			

For heat pump combination heater:

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Declared load profile		na		Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	<i>Q_{elec}</i>	na	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	na	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

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Warm climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i360/ i360F		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	141 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	-
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	12	kW	Seasonal space heating energy efficiency	η_s	137	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = - 7 °C	<i>P_{dh}</i>	na	kW	T _j = - 7 °C	<i>COP_d</i>	na	-
T _j = + 2 °C	<i>P_{dh}</i>	13,6	kW	T _j = +2 °C	<i>COP_d</i>	3,08	-
T _j = + 7 °C	<i>P_{dh}</i>	11,1	kW	T _j = +7 °C	<i>COP_d</i>	3,45	-
T _j = + 12 °C	<i>P_{dh}</i>	11,5	kW	T _j = +12 °C	<i>COP_d</i>	4,14	-
T _j = bivalent temperature	<i>P_{dh}</i>	11	kW	T _j = bivalent temperature	<i>COP_d</i>	3,18	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	3	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	0,5	kW
Thermostat-off mode	<i>P_{TO}</i>	0,005	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	4364	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	<i>Q_{elec}</i>	7,619	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1676	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.



Warm climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i360/ i360F		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	184 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	-
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	180	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = - 7 °C	<i>P_{dh}</i>	na	kW	T _j = - 7 °C	<i>COP_d</i>	na	-
T _j = + 2 °C	<i>P_{dh}</i>	11,8	kW	T _j = +2 °C	<i>COP_d</i>	4,60	-
T _j = + 7 °C	<i>P_{dh}</i>	11,9	kW	T _j = +7 °C	<i>COP_d</i>	4,83	-
T _j = + 12 °C	<i>P_{dh}</i>	12,0	kW	T _j = +12 °C	<i>COP_d</i>	5,11	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,8	kW	T _j = bivalent temperature	<i>COP_d</i>	4,68	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	3	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,98	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	0,9	kW
Thermostat-off mode	<i>P_{TO}</i>	0,022	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,6	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	3618	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	<i>Q_{elec}</i>	7,619	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1676	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.



Average climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i360/ i360F		
Air-to-water heat pump:	No	Energy efficiency class:	A++ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	142 %
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
Rated heat output (*)	<i>P_{rated}</i>	12	kW	Seasonal space heating energy efficiency	η_s	138	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = - 7 °C	<i>P_{dh}</i>	11	kW	T _j = - 7 °C	<i>COP_d</i>	3,25	-
T _j = + 2 °C	<i>P_{dh}</i>	11,2	kW	T _j = +2 °C	<i>COP_d</i>	3,64	-
T _j = + 7 °C	<i>P_{dh}</i>	11,4	kW	T _j = +7 °C	<i>COP_d</i>	4,02	-
T _j = + 12 °C	<i>P_{dh}</i>	11,6	kW	T _j = +12 °C	<i>COP_d</i>	4,40	-
T _j = bivalent temperature	<i>P_{dh}</i>	11	kW	T _j = bivalent temperature	<i>COP_d</i>	3,25	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-7	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	1,5	kW
Thermostat-off mode	<i>P_{TO}</i>	0,005	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For air-to-water heat pumps: Rated air flow rate, outdoors			
Capacity control	Fixed					na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	7084	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	<i>Q_{elec}</i>	7,619	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1676	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Average climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i360/ i360F		
Air-to-water heat pump:	No	Energy efficiency class:	A+++ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	186 %
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
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	182	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11,8	kW	T _j = -7 °C	<i>COP_d</i>	4,69	-
T _j = +2 °C	<i>P_{dh}</i>	11,9	kW	T _j = +2 °C	<i>COP_d</i>	4,88	-
T _j = +7 °C	<i>P_{dh}</i>	12,0	kW	T _j = +7 °C	<i>COP_d</i>	5,06	-
T _j = +12 °C	<i>P_{dh}</i>	12,1	kW	T _j = +12 °C	<i>COP_d</i>	5,23	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,8	kW	T _j = bivalent temperature	<i>COP_d</i>	4,69	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-7	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,98	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	1,6	kW
Thermostat-off mode	<i>P_{TO}</i>	0,022	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,6	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	5814	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	<i>Q_{elec}</i>	7,619	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1676	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Contact details

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Cold climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i360/ i360F		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	145 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	-
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	12	kW	Seasonal space heating energy efficiency	η_s	141	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11,2	kW	T _j = -7 °C	<i>COP_d</i>	3,56	-
T _j = +2 °C	<i>P_{dh}</i>	11,4	kW	T _j = +2 °C	<i>COP_d</i>	3,94	-
T _j = +7 °C	<i>P_{dh}</i>	11,6	kW	T _j = +7 °C	<i>COP_d</i>	4,29	-
T _j = +12 °C	<i>P_{dh}</i>	11,7	kW	T _j = +12 °C	<i>COP_d</i>	4,54	-
T _j = bivalent temperature	<i>P_{dh}</i>	11	kW	T _j = bivalent temperature	<i>COP_d</i>	3,25	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-18	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	1,4	kW
Thermostat-off mode	<i>P_{TO}</i>	0,005	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	8195	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	<i>Q_{elec}</i>	7,619	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1676	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

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**Cold climate and Low temperature**

Model(s):	CTC EcoPart 412 + CTC EcoZenith i360/ i360F		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	189 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	-
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	12	kW	Seasonal space heating energy efficiency	η_s	185	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = - 7 °C	<i>P_{dh}</i>	11,9	kW	T _j = - 7 °C	<i>COP_d</i>	4,89	-
T _j = + 2 °C	<i>P_{dh}</i>	12,0	kW	T _j = + 2 °C	<i>COP_d</i>	5,06	-
T _j = + 7 °C	<i>P_{dh}</i>	12,1	kW	T _j = + 7 °C	<i>COP_d</i>	5,18	-
T _j = + 12 °C	<i>P_{dh}</i>	12,1	kW	T _j = + 12 °C	<i>COP_d</i>	5,20	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,8	kW	T _j = bivalent temperature	<i>COP_d</i>	4,66	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-20	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cyh}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyh}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,98	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	0,7	kW
Thermostat-off mode	<i>P_{TO}</i>	0,022	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,6	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	6373	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	<i>Q_{elec}</i>	7,619	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1676	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

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Warm climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i255		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	126 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	-
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	12	kW	Seasonal space heating energy efficiency	η_s	122	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = - 7 °C	<i>P_{dh}</i>	na	kW	T _j = - 7 °C	<i>COP_d</i>	na	-
T _j = + 2 °C	<i>P_{dh}</i>	10,9	kW	T _j = +2 °C	<i>COP_d</i>	2,81	-
T _j = + 7 °C	<i>P_{dh}</i>	11,3	kW	T _j = +7 °C	<i>COP_d</i>	3,14	-
T _j = + 12 °C	<i>P_{dh}</i>	11,7	kW	T _j = +12 °C	<i>COP_d</i>	3,72	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,0	kW	T _j = bivalent temperature	<i>COP_d</i>	2,90	-
T _j = operation limit temperature	<i>P_{dh}</i>	10,9	kW	T _j = operation limit temperature	<i>COP_d</i>	2,81	-
For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	3	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	1,3	kW
Thermostat-off mode	<i>P_{TO}</i>	0,018	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	4905	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	L / A			Water heating energy efficiency	η_{wh}	86	%
Daily electricity consumption	<i>Q_{elec}</i>	5,434	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1195	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Warm climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i255		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	154 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	-
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	150	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	na	kW	T _j = -7 °C	<i>COP_d</i>	na	-
T _j = +2 °C	<i>P_{dh}</i>	11,9	kW	T _j = +2 °C	<i>COP_d</i>	4,11	-
T _j = +7 °C	<i>P_{dh}</i>	12,0	kW	T _j = +7 °C	<i>COP_d</i>	4,30	-
T _j = +12 °C	<i>P_{dh}</i>	12,1	kW	T _j = +12 °C	<i>COP_d</i>	4,54	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,9	kW	T _j = bivalent temperature	<i>COP_d</i>	4,17	-
T _j = operation limit temperature	<i>P_{dh}</i>	11,9	kW	T _j = operation limit temperature	<i>COP_d</i>	4,11	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	3	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,95	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	0,9	kW
Thermostat-off mode	<i>P_{TO}</i>	0,018	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,6	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	4331	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	L / A			Water heating energy efficiency	η_{wh}	86	%
Daily electricity consumption	<i>Q_{elec}</i>	5,434	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1195	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Contact details

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

www.ctc.se

200701

Average climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i255		
Air-to-water heat pump:	No	Energy efficiency class:	A+ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	136 %
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
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	132	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	10,9	kW	T _j = -7 °C	<i>COP_d</i>	3,11	-
T _j = +2 °C	<i>P_{dh}</i>	11,3	kW	T _j = +2 °C	<i>COP_d</i>	3,57	-
T _j = +7 °C	<i>P_{dh}</i>	11,3	kW	T _j = +7 °C	<i>COP_d</i>	3,87	-
T _j = +12 °C	<i>P_{dh}</i>	11,5	kW	T _j = +12 °C	<i>COP_d</i>	4,23	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,0	kW	T _j = bivalent temperature	<i>COP_d</i>	3,16	-
T _j = operation limit temperature	<i>P_{dh}</i>	10,8	kW	T _j = operation limit temperature	<i>COP_d</i>	2,93	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-6	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	2,1	kW
Thermostat-off mode	<i>P_{TO}</i>	0,018	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	7652	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	L / A			Water heating energy efficiency	η_{wh}	86	%
Daily electricity consumption	<i>Q_{elec}</i>	5,434	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1195	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Contact details

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

www.ctc.se

201106



Average climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i255		
Air-to-water heat pump:	No	Energy efficiency class:	A++ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	159 %
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
Rated heat output (*)	<i>P_{rated}</i>	14	kW	Seasonal space heating energy efficiency	η_s	155	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11,9	kW	T _j = -7 °C	<i>COP_d</i>	4,19	-
T _j = +2 °C	<i>P_{dh}</i>	12,0	kW	T _j = +2 °C	<i>COP_d</i>	4,36	-
T _j = +7 °C	<i>P_{dh}</i>	12,1	kW	T _j = +7 °C	<i>COP_d</i>	4,50	-
T _j = +12 °C	<i>P_{dh}</i>	12,2	kW	T _j = +12 °C	<i>COP_d</i>	4,64	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,9	kW	T _j = bivalent temperature	<i>COP_d</i>	4,21	-
T _j = operation limit temperature	<i>P_{dh}</i>	11,9	kW	T _j = operation limit temperature	<i>COP_d</i>	4,11	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-6	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,95	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	2,2	kW
Thermostat-off mode	<i>P_{TO}</i>	0,018	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,6	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	7153	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	L / A			Water heating energy efficiency	η_{wh}	86	%
Daily electricity consumption	<i>Q_{elec}</i>	5,434	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1195	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.



Cold climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i255		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	129 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	-
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	125	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11,4	kW	T _j = -7 °C	<i>COP_d</i>	3,24	-
T _j = +2 °C	<i>P_{dh}</i>	11,6	kW	T _j = +2 °C	<i>COP_d</i>	3,56	-
T _j = +7 °C	<i>P_{dh}</i>	11,8	kW	T _j = +7 °C	<i>COP_d</i>	3,85	-
T _j = +12 °C	<i>P_{dh}</i>	11,9	kW	T _j = +12 °C	<i>COP_d</i>	4,06	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,1	kW	T _j = bivalent temperature	<i>COP_d</i>	3,00	-
T _j = operation limit temperature	<i>P_{dh}</i>	10,9	kW	T _j = operation limit temperature	<i>COP_d</i>	2,81	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-17	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,98	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	1,9	kW
Thermostat-off mode	<i>P_{TO}</i>	0,018	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	9526	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	L / A			Water heating energy efficiency	η_{wh}	86	%
Daily electricity consumption	<i>Q_{elec}</i>	5,434	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1195	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.



Cold climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i255		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	160 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	-
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	156	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	12,0	kW	T _j = -7 °C	<i>COP_d</i>	4,37	-
T _j = +2 °C	<i>P_{dh}</i>	12,1	kW	T _j = +2 °C	<i>COP_d</i>	4,50	-
T _j = +7 °C	<i>P_{dh}</i>	12,1	kW	T _j = +7 °C	<i>COP_d</i>	4,60	-
T _j = +12 °C	<i>P_{dh}</i>	12,2	kW	T _j = +12 °C	<i>COP_d</i>	4,62	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,9	kW	T _j = bivalent temperature	<i>COP_d</i>	4,21	-
T _j = operation limit temperature	<i>P_{dh}</i>	11,9	kW	T _j = operation limit temperature	<i>COP_d</i>	4,11	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-18	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cy}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,95	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	1,5	kW
Thermostat-off mode	<i>P_{TO}</i>	0,018	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	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	Fixed			-	na	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	50/na	dB	-	2,6	2,6	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	8028	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	L / A			Water heating energy efficiency	η_{wh}	Value	Unit
Daily electricity consumption	<i>Q_{elec}</i>	5,434	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1195	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Warm climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i555		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	126 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	-
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	12	kW	Seasonal space heating energy efficiency	η_s	122	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	na	kW	T _j = -7 °C	<i>COP_d</i>	na	-
T _j = +2 °C	<i>P_{dh}</i>	10,9	kW	T _j = +2 °C	<i>COP_d</i>	2,81	-
T _j = +7 °C	<i>P_{dh}</i>	11,3	kW	T _j = +7 °C	<i>COP_d</i>	3,14	-
T _j = +12 °C	<i>P_{dh}</i>	11,7	kW	T _j = +12 °C	<i>COP_d</i>	3,72	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,0	kW	T _j = bivalent temperature	<i>COP_d</i>	2,90	-
T _j = operation limit temperature	<i>P_{dh}</i>	10,9	kW	T _j = operation limit temperature	<i>COP_d</i>	2,81	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	3	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	0,9	kW
Thermostat-off mode	<i>P_{TO}</i>	0,025	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	4879	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	<i>Q_{elec}</i>	7,620	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1676	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Contact details

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Warm climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i555		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	158 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	-
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	154	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = - 7 °C	<i>P_{dh}</i>	na	kW	T _j = - 7 °C	<i>COP_d</i>	na	-
T _j = + 2 °C	<i>P_{dh}</i>	11,9	kW	T _j = +2 °C	<i>COP_d</i>	4,11	-
T _j = + 7 °C	<i>P_{dh}</i>	12,0	kW	T _j = +7 °C	<i>COP_d</i>	4,30	-
T _j = + 12 °C	<i>P_{dh}</i>	12,1	kW	T _j = +12 °C	<i>COP_d</i>	4,54	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,9	kW	T _j = bivalent temperature	<i>COP_d</i>	4,17	-
T _j = operation limit temperature	<i>P_{dh}</i>	11,9	kW	T _j = operation limit temperature	<i>COP_d</i>	4,11	-
For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	3	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,97	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	0,9	kW
Thermostat-off mode	<i>P_{TO}</i>	0,073	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,6	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	4228	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	<i>Q_{elec}</i>	7,620	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1676	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Average climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i555		
Air-to-water heat pump:	No	Energy efficiency class:	A+ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	127 %
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
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	123	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11,1	kW	T _j = -7 °C	<i>COP_d</i>	2,97	-
T _j = +2 °C	<i>P_{dh}</i>	11,5	kW	T _j = +2 °C	<i>COP_d</i>	3,32	-
T _j = +7 °C	<i>P_{dh}</i>	11,6	kW	T _j = +7 °C	<i>COP_d</i>	3,63	-
T _j = +12 °C	<i>P_{dh}</i>	11,8	kW	T _j = +12 °C	<i>COP_d</i>	3,94	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,2	kW	T _j = bivalent temperature	<i>COP_d</i>	3,02	-
T _j = operation limit temperature	<i>P_{dh}</i>	10,9	kW	T _j = operation limit temperature	<i>COP_d</i>	2,81	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-6	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	2,3	kW
Thermostat-off mode	<i>P_{TO}</i>	0,025	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	7388	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	<i>Q_{elec}</i>	7,620	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1676	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

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Average climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i555		
Air-to-water heat pump:	No	Energy efficiency class:	A++ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	162 %
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
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	158	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11,9	kW	T _j = -7 °C	<i>COP_d</i>	4,19	-
T _j = +2 °C	<i>P_{dh}</i>	12,0	kW	T _j = +2 °C	<i>COP_d</i>	4,34	-
T _j = +7 °C	<i>P_{dh}</i>	12,1	kW	T _j = +7 °C	<i>COP_d</i>	4,49	-
T _j = +12 °C	<i>P_{dh}</i>	12,2	kW	T _j = +12 °C	<i>COP_d</i>	4,64	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,9	kW	T _j = bivalent temperature	<i>COP_d</i>	4,19	-
T _j = operation limit temperature	<i>P_{dh}</i>	11,9	kW	T _j = operation limit temperature	<i>COP_d</i>	4,11	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-7	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,97	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,002	kW	Rated heat output	<i>P_{sup}</i>	1,6	kW
Thermostat-off mode	<i>P_{TO}</i>	0,073	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,6	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	6728	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	<i>Q_{elec}</i>	7,620	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1676	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

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Cold climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i555		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	129 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	-
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	12	kW	Seasonal space heating energy efficiency	η_s	125	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11,4	kW	T _j = -7 °C	<i>COP_d</i>	3,23	-
T _j = +2 °C	<i>P_{dh}</i>	11,6	kW	T _j = +2 °C	<i>COP_d</i>	3,55	-
T _j = +7 °C	<i>P_{dh}</i>	11,7	kW	T _j = +7 °C	<i>COP_d</i>	3,84	-
T _j = +12 °C	<i>P_{dh}</i>	11,9	kW	T _j = +12 °C	<i>COP_d</i>	4,05	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,1	kW	T _j = bivalent temperature	<i>COP_d</i>	2,96	-
T _j = operation limit temperature	<i>P_{dh}</i>	10,9	kW	T _j = operation limit temperature	<i>COP_d</i>	2,81	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-18	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	1,5	kW
Thermostat-off mode	<i>P_{TO}</i>	0,025	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	9177	kWh				

For heat pump combination heater:

Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	<i>Q_{elec}</i>	7,620	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1676	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

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Cold climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC EcoZenith i555		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	Yes	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	163 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	-
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	159	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = - 7 °C	<i>P_{dh}</i>	12,0	kW	T _j = - 7 °C	<i>COP_d</i>	4,37	-
T _j = + 2 °C	<i>P_{dh}</i>	12,1	kW	T _j = + 2 °C	<i>COP_d</i>	4,50	-
T _j = + 7 °C	<i>P_{dh}</i>	12,1	kW	T _j = + 7 °C	<i>COP_d</i>	4,60	-
T _j = + 12 °C	<i>P_{dh}</i>	12,2	kW	T _j = + 12 °C	<i>COP_d</i>	4,62	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,9	kW	T _j = bivalent temperature	<i>COP_d</i>	4,21	-
T _j = operation limit temperature	<i>P_{dh}</i>	11,9	kW	T _j = operation limit temperature	<i>COP_d</i>	4,11	-
For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-18	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cy}</i>	na	kW	Cycling interval efficiency	<i>COP_{cy}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,97	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	1,5	kW
Thermostat-off mode	<i>P_{TO}</i>	0,073	kW	Type of energy input: Electric			
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	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	Fixed			-			
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	-			
Annual energy consumption	<i>Q_{HE}</i>	7875	kWh	-			

For heat pump combination heater:

Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	<i>Q_{elec}</i>	7,620	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1676	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.



Warm climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC Basicstyrning		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	I -
Brine-to-water heat pump:	Yes	Controller contribution:	1 %
Low-temperature heat pump:	No	Package efficiency:	138 %
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
Rated heat output (*)	<i>P_{rated}</i>	12	kW	Seasonal space heating energy efficiency	η_s	137	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = - 7 °C	<i>P_{dh}</i>	na	kW	T _j = - 7 °C	<i>COP_d</i>	na	-
T _j = + 2 °C	<i>P_{dh}</i>	13,6	kW	T _j = +2 °C	<i>COP_d</i>	3,08	-
T _j = + 7 °C	<i>P_{dh}</i>	11,1	kW	T _j = +7 °C	<i>COP_d</i>	3,45	-
T _j = + 12 °C	<i>P_{dh}</i>	11,5	kW	T _j = +12 °C	<i>COP_d</i>	4,14	-
T _j = bivalent temperature	<i>P_{dh}</i>	11	kW	T _j = bivalent temperature	<i>COP_d</i>	3,18	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = - 15 °C (if TOL < - 20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	3	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	0,5	kW
Thermostat-off mode	<i>P_{TO}</i>	0,005	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For air-to-water heat pumps: Rated air flow rate, outdoors			
Capacity control	Fixed					na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	4364	kWh				

For heat pump combination heater:

Declared load profile	na			Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	<i>Q_{elec}</i>	na	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	na	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Warm climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC Basicstyrning		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	I -
Brine-to-water heat pump:	Yes	Controller contribution:	1 %
Low-temperature heat pump:	No	Package efficiency:	181 %
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
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	180	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	na	kW	T _j = -7 °C	<i>COP_d</i>	na	-
T _j = +2 °C	<i>P_{dh}</i>	11,8	kW	T _j = +2 °C	<i>COP_d</i>	4,60	-
T _j = +7 °C	<i>P_{dh}</i>	11,9	kW	T _j = +7 °C	<i>COP_d</i>	4,83	-
T _j = +12 °C	<i>P_{dh}</i>	12,0	kW	T _j = +12 °C	<i>COP_d</i>	5,11	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,8	kW	T _j = bivalent temperature	<i>COP_d</i>	4,68	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	3	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,98	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	0,9	kW
Thermostat-off mode	<i>P_{TO}</i>	0,022	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,6	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	3618	kWh				

For heat pump combination heater:

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Declared load profile		na		Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	<i>Q_{elec}</i>	na	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	na	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Contact details

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181001

Average climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC Basicstyrning		
Air-to-water heat pump:	No	Energy efficiency class:	A++ -
Water-to-water heat pump:	No	Controller class:	I -
Brine-to-water heat pump:	Yes	Controller contribution:	1 %
Low-temperature heat pump:	No	Package efficiency:	139 %
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
Rated heat output (*)	<i>P_{rated}</i>	12	kW	Seasonal space heating energy efficiency	η_s	138	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11	kW	T _j = -7 °C	<i>COP_d</i>	3,25	-
T _j = +2 °C	<i>P_{dh}</i>	11,2	kW	T _j = +2 °C	<i>COP_d</i>	3,64	-
T _j = +7 °C	<i>P_{dh}</i>	11,4	kW	T _j = +7 °C	<i>COP_d</i>	4,02	-
T _j = +12 °C	<i>P_{dh}</i>	11,6	kW	T _j = +12 °C	<i>COP_d</i>	4,40	-
T _j = bivalent temperature	<i>P_{dh}</i>	11	kW	T _j = bivalent temperature	<i>COP_d</i>	3,25	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-7	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	1,5	kW
Thermostat-off mode	<i>P_{TO}</i>	0,005	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,1	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	7084	kWh				

For heat pump combination heater:

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Declared load profile		na		Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	<i>Q_{elec}</i>	na	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	na	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Contact details

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Average climate and Low temperature

Model(s):	CTC EcoPart 412 + CTC Basicstyrning		
Air-to-water heat pump:	No	Energy efficiency class:	A+++ -
Water-to-water heat pump:	No	Controller class:	I -
Brine-to-water heat pump:	Yes	Controller contribution:	1 %
Low-temperature heat pump:	No	Package efficiency:	183 %
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
Rated heat output (*)	<i>P_{rated}</i>	13	kW	Seasonal space heating energy efficiency	η_s	182	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11,8	kW	T _j = -7 °C	<i>COP_d</i>	4,69	-
T _j = +2 °C	<i>P_{dh}</i>	11,9	kW	T _j = +2 °C	<i>COP_d</i>	4,88	-
T _j = +7 °C	<i>P_{dh}</i>	12,0	kW	T _j = +7 °C	<i>COP_d</i>	5,06	-
T _j = +12 °C	<i>P_{dh}</i>	12,1	kW	T _j = +12 °C	<i>COP_d</i>	5,23	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,8	kW	T _j = bivalent temperature	<i>COP_d</i>	4,69	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-7	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,98	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	1,6	kW
Thermostat-off mode	<i>P_{TO}</i>	0,022	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,6	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	5814	kWh				

For heat pump combination heater:

Declared load profile	na			Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	<i>Q_{elec}</i>	na	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	na	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Contact details

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Cold climate and Medium temperature

Model(s):	CTC EcoPart 412 + CTC Basicstyrning		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	I -
Brine-to-water heat pump:	Yes	Controller contribution:	1 %
Low-temperature heat pump:	No	Package efficiency:	142 %
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
Rated heat output (*)	<i>Prated</i>	12	kW	Seasonal space heating energy efficiency	η_s	141	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = - 7 °C	<i>Pdh</i>	11,2	kW	T j = - 7 °C	<i>COPd</i>	3,56	-
T j = + 2 °C	<i>Pdh</i>	11,4	kW	T j = +2 °C	<i>COPd</i>	3,94	-
T j = + 7 °C	<i>Pdh</i>	11,6	kW	T j = +7 °C	<i>COPd</i>	4,29	-
T j = + 12 °C	<i>Pdh</i>	11,7	kW	T j = +12 °C	<i>COPd</i>	4,54	-
T j = bivalent temperature	<i>Pdh</i>	11	kW	T j = bivalent temperature	<i>COPd</i>	3,25	-
T j = operation limit temperature	<i>Pdh</i>	na	kW	T j = operation limit temperature	<i>COPd</i>	na	-
For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	<i>Pdh</i>	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	<i>COPd</i>	na	-
Bivalent temperature	<i>T biv</i>	-18	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P cych</i>	na	kW	Cycling interval efficiency	<i>COPcyc</i>	na	-
Degradation co-efficient	<i>Cdh</i>	0,99	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P OFF</i>	0,018	kW	Rated heat output	<i>Psup</i>	1,4	kW
Thermostat-off mode	<i>P TO</i>	0,005	kW	Type of energy input Electric			
Standby mode	<i>P SB</i>	0,018	kW				
Crankcase heater mode	<i>P CK</i>	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	Fixed			-	na	<i>m3/h</i>	
Sound power level, indoors/ outdoors	<i>L WA</i>	50/na	<i>dB</i>	-	2,1	<i>m3/h</i>	
Annual energy consumption	<i>Q HE</i>	8195	<i>kWh</i>	-	2,1	<i>m3/h</i>	

For heat pump combination heater:

Declared load profile	na			Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	<i>Qelec</i>	na	kWh	Daily fuel consumption	<i>Qfuel</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	na	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

Cold climate and Low temperature

341 26 Ljungby

Model(s):	CTC EcoPart 412 + CTC Basicstyrning		
Air-to-water heat pump:	No	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	I -
Brine-to-water heat pump:	Yes	Controller contribution:	1 %
Low-temperature heat pump:	No	Package efficiency:	186 %
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
Rated heat output (*)	<i>Prated</i>	12	kW	Seasonal space heating energy efficiency	η_s	185	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	11,9	kW	T _j = -7 °C	<i>COP_d</i>	4,89	-
T _j = +2 °C	<i>P_{dh}</i>	12,0	kW	T _j = +2 °C	<i>COP_d</i>	5,06	-
T _j = +7 °C	<i>P_{dh}</i>	12,1	kW	T _j = +7 °C	<i>COP_d</i>	5,18	-
T _j = +12 °C	<i>P_{dh}</i>	12,1	kW	T _j = +12 °C	<i>COP_d</i>	5,20	-
T _j = bivalent temperature	<i>P_{dh}</i>	11,8	kW	T _j = bivalent temperature	<i>COP_d</i>	4,66	-
T _j = operation limit temperature	<i>P_{dh}</i>	na	kW	T _j = operation limit temperature	<i>COP_d</i>	na	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	na	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	na	-
Bivalent temperature	<i>T_{biv}</i>	-20	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	na	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient	<i>C_{dh}</i>	0,98	-	Heating water operating limit temperature	<i>WTOL</i>	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0,018	kW	Rated heat output	<i>P_{sup}</i>	0,7	kW
Thermostat-off mode	<i>P_{TO}</i>	0,022	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW				
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items							
Capacity control	Fixed						
Sound power level, indoors/outdoors	<i>L_{WA}</i>	50/na	dB	For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	6373	kWh	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,6	m ³ /h

For heat pump combination heater:

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Declared load profile		na		Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	<i>Q_{elec}</i>	na	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	na	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ

Specific precautions and end of life information:

The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. At the end of the product's life cycle, it must be sent correctly to a waste station or reseller offering a service of that type. It is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

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