

Warm climate and Medium temperature

Model(s):	CTC EcoAir 406 + CTC EcoZenith i350/ i350F		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	144 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	140	%
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>	4,3	kW	T _j = +2 °C	<i>COP_d</i>	2,43	-
T _j = +7 °C	<i>P_{dh}</i>	5,7	kW	T _j = +7 °C	<i>COP_d</i>	3,39	-
T _j = +12 °C	<i>P_{dh}</i>	7,5	kW	T _j = +12 °C	<i>COP_d</i>	4,80	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,5	kW	T _j = bivalent temperature	<i>COP_d</i>	2,69	-
T _j = operation limit temperature	<i>P_{dh}</i>	4,3	kW	T _j = operation limit temperature	<i>COP_d</i>	2,50	-
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>	4	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	2	°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>	55	°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>	0,006	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	-	4100	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	1947	kWh				
For heat pump combination heater:							
Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	112	%
Daily electricity consumption	<i>Q_{elec}</i>	6,835	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1504	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ
						170810	

Contact details

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

Warm climate and Low temperature

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Model(s):	CTC EcoAir 406 + CTC EcoZenith i350/ i350F		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	192 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	188	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	na	kW	T _j = -7 °C	<i>COP_d</i>	na	-
T _j = +2 °C	<i>P_{dh}</i>	4,7	kW	T _j = +2 °C	<i>COP_d</i>	3,66	-
T _j = +7 °C	<i>P_{dh}</i>	6,3	kW	T _j = +7 °C	<i>COP_d</i>	4,96	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,45	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,8	kW	T _j = bivalent temperature	<i>COP_d</i>	3,79	-
T _j = operation limit temperature	<i>P_{dh}</i>	4,7	kW	T _j = operation limit temperature	<i>COP_d</i>	3,87	-
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>	2	°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>	55	°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>	0,019	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	-	4100	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	1451	kWh				
For heat pump combination heater:							
Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	111,6	%
Daily electricity consumption	<i>Q_{elec}</i>	6,835	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1504	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ
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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output *Prated* is equal to the design load for heating *P_{designh}*, and the rated heat output of a supplementary heater *P_{sup}* is equal to the supplementary capacity for heating *sup(T_j)*. (**) If *C_{dh}* is not determined by measurement then the default degradation coefficient is *C_{dh}* = 0,9.

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Model(s):	CTC EcoAir 406 + CTC EcoZenith i350/ i350F		
Air-to-water heat pump:	Yes	Energy efficiency class:	A+ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	119 %
Equipped with a supplementary heater:	Yes	Package efficiency class:	A+ -
Heat pump combination heater:	Yes		

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

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	115	%
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>	3,5	kW	T _j = -7 °C	<i>COP_d</i>	2,13	-
T _j = +2 °C	<i>P_{dh}</i>	4,4	kW	T _j = +2 °C	<i>COP_d</i>	2,93	-
T _j = +7 °C	<i>P_{dh}</i>	6,0	kW	T _j = +7 °C	<i>COP_d</i>	3,99	-
T _j = +12 °C	<i>P_{dh}</i>	7,6	kW	T _j = +12 °C	<i>COP_d</i>	5,21	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,8	kW	T _j = bivalent temperature	<i>COP_d</i>	2,44	-
T _j = operation limit temperature	<i>P_{dh}</i>	3,1	kW	T _j = operation limit temperature	<i>COP_d</i>	1,82	-
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>	-5	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-10	°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>	55	°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>	0,006	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	-	4100	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	3470	kWh				
For heat pump combination heater:							
Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	98	%
Daily electricity consumption	<i>Q_{elec}</i>	7,752	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1705	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ
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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output *Prated* is equal to the design load for heating *P_{designh}*, and the rated heat output of a supplementary heater *P_{sup}* is equal to the supplementary capacity for heating *sup(T_j)*. (**) If *C_{dh}* is not determined by measurement then the default degradation coefficient is *C_{dh}* = 0,9.

Average climate and Low temperature

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Model(s):	CTC EcoAir 406 + CTC EcoZenith i350/ i350F		
Air-to-water heat pump:	Yes	Energy efficiency class:	A++ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	155 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	151	%
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>	3,9	kW	T _j = -7 °C	<i>COP_d</i>	3,16	-
T _j = +2 °C	<i>P_{dh}</i>	4,8	kW	T _j = +2 °C	<i>COP_d</i>	3,92	-
T _j = +7 °C	<i>P_{dh}</i>	6,4	kW	T _j = +7 °C	<i>COP_d</i>	5,25	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,66	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,1	kW	T _j = bivalent temperature	<i>COP_d</i>	3,35	-
T _j = operation limit temperature	<i>P_{dh}</i>	3,5	kW	T _j = operation limit temperature	<i>COP_d</i>	2,85	-
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>	-5	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-10	°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>	55	°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>	0,019	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	-	4100	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	2722	kWh				
For heat pump combination heater:							
Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	98	%
Daily electricity consumption	<i>Q_{elec}</i>	7,752	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1705	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ
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Cold climate and Medium temperature

Model(s):	CTC EcoAir 406 + CTC EcoZenith i350/ i350F		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	107 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	103	%
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>	3,6	kW	T _j = -7 °C	<i>COP_d</i>	2,49	-
T _j = +2 °C	<i>P_{dh}</i>	4,5	kW	T _j = +2 °C	<i>COP_d</i>	3,22	-
T _j = +7 °C	<i>P_{dh}</i>	6,1	kW	T _j = +7 °C	<i>COP_d</i>	4,34	-
T _j = +12 °C	<i>P_{dh}</i>	7,6	kW	T _j = +12 °C	<i>COP_d</i>	5,44	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,4	kW	T _j = bivalent temperature	<i>COP_d</i>	2,37	-
T _j = operation limit temperature	<i>P_{dh}</i>	1,7	kW	T _j = operation limit temperature	<i>COP_d</i>	1,67	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	2,6	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	1,76	-
Bivalent temperature	<i>T_{biv}</i>	-9	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-22	°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>	55	°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>	3,5	kW
Thermostat-off mode	<i>P_{TO}</i>	0,006	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	-	4100	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	4785	kWh				
For heat pump combination heater:							
Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	89	%
Daily electricity consumption	<i>Q_{elec}</i>	8,552	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1881	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ
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Cold climate and Low temperature

Model(s):	CTC EcoAir 406 + CTC EcoZenith i350/ i350F		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	135 %
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>Prated</i>	4	kW	Seasonal space heating energy efficiency	η_s	131	%
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>	4,0	kW	T _j = -7 °C	<i>COP_d</i>	3,34	-
T _j = +2 °C	<i>P_{dh}</i>	4,9	kW	T _j = +2 °C	<i>COP_d</i>	4,07	-
T _j = +7 °C	<i>P_{dh}</i>	6,4	kW	T _j = +7 °C	<i>COP_d</i>	5,40	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,62	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,2	kW	T _j = bivalent temperature	<i>COP_d</i>	2,92	-
T _j = operation limit temperature	<i>P_{dh}</i>	1,9	kW	T _j = operation limit temperature	<i>COP_d</i>	1,83	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	2,9	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	2,58	-
Bivalent temperature	<i>T_{biv}</i>	-13	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-22	°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>	55	°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>	0,019	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	-	4100	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	3045	kWh				
For heat pump combination heater:							
Declared load profile/ Energy efficiency class	XL / A			Water heating energy efficiency	η_{wh}	89	%
Daily electricity consumption	<i>Q_{elec}</i>	8,552	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1881	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ
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Warm climate and Medium temperature

Model(s):	CTC EcoAir 406 + CTC EcoLogic		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	144 %
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>	5	kW	Seasonal space heating energy efficiency	η_s	140	%
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>	4,3	kW	T _j = +2 °C	<i>COP_d</i>	2,43	-
T _j = +7 °C	<i>P_{dh}</i>	5,7	kW	T _j = +7 °C	<i>COP_d</i>	3,39	-
T _j = +12 °C	<i>P_{dh}</i>	7,5	kW	T _j = +12 °C	<i>COP_d</i>	4,80	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,5	kW	T _j = bivalent temperature	<i>COP_d</i>	2,69	-
T _j = operation limit temperature	<i>P_{dh}</i>	4,3	kW	T _j = operation limit temperature	<i>COP_d</i>	2,50	-
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>	4	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	2	°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>	55	°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>	0,006	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	-	4100	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	1947	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

Contact details

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

Warm climate and Low temperature

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Model(s):	CTC EcoAir 406 + CTC EcoLogic		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	192 %
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>	5	kW	Seasonal space heating energy efficiency	η_s	188	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	na	kW	T _j = -7 °C	<i>COP_d</i>	na	-
T _j = +2 °C	<i>P_{dh}</i>	4,7	kW	T _j = +2 °C	<i>COP_d</i>	3,66	-
T _j = +7 °C	<i>P_{dh}</i>	6,3	kW	T _j = +7 °C	<i>COP_d</i>	4,96	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,45	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,8	kW	T _j = bivalent temperature	<i>COP_d</i>	3,79	-
T _j = operation limit temperature	<i>P_{dh}</i>	4,7	kW	T _j = operation limit temperature	<i>COP_d</i>	3,87	-
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>	2	°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>	55	°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>	0,019	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	-	4100	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	1451	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

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

Average climate and Medium temperature

Model(s):	CTC EcoAir 406 + CTC EcoLogic		
Air-to-water heat pump:	Yes	Energy efficiency class:	A+ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	119 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	115	%
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>	3,5	kW	T _j = -7 °C	<i>COP_d</i>	2,13	-
T _j = +2 °C	<i>P_{dh}</i>	4,4	kW	T _j = +2 °C	<i>COP_d</i>	2,93	-
T _j = +7 °C	<i>P_{dh}</i>	6,0	kW	T _j = +7 °C	<i>COP_d</i>	3,99	-
T _j = +12 °C	<i>P_{dh}</i>	7,6	kW	T _j = +12 °C	<i>COP_d</i>	5,21	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,8	kW	T _j = bivalent temperature	<i>COP_d</i>	2,44	-
T _j = operation limit temperature	<i>P_{dh}</i>	3,1	kW	T _j = operation limit temperature	<i>COP_d</i>	1,82	-
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>	-5	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-10	°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>	55	°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>	0,006	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	Fixed			-	4100	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	-	na		m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	3470	kWh				
For heat pump combination heater:				Water heating energy efficiency			
Declared load profile	na			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

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

Average climate and Low temperature

Model(s):	CTC EcoAir 406 + CTC EcoLogic		
Air-to-water heat pump:	Yes	Energy efficiency class:	A++ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	155 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	151	%
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>	3,9	kW	T _j = -7 °C	<i>COP_d</i>	3,16	-
T _j = +2 °C	<i>P_{dh}</i>	4,8	kW	T _j = +2 °C	<i>COP_d</i>	3,92	-
T _j = +7 °C	<i>P_{dh}</i>	6,4	kW	T _j = +7 °C	<i>COP_d</i>	5,25	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,66	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,1	kW	T _j = bivalent temperature	<i>COP_d</i>	3,35	-
T _j = operation limit temperature	<i>P_{dh}</i>	3,5	kW	T _j = operation limit temperature	<i>COP_d</i>	2,85	-
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>	-5	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-10	°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>	55	°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>	0,019	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	-	4100	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	2722	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
						160406	

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

Cold climate and Medium temperature

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Model(s):	CTC EcoAir 406 + CTC EcoLogic		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	107 %
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>	5	kW	Seasonal space heating energy efficiency	η_s	103	%
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>	3,6	kW	T _j = -7 °C	<i>COP_d</i>	2,49	-
T _j = +2 °C	<i>P_{dh}</i>	4,5	kW	T _j = +2 °C	<i>COP_d</i>	3,22	-
T _j = +7 °C	<i>P_{dh}</i>	6,1	kW	T _j = +7 °C	<i>COP_d</i>	4,34	-
T _j = +12 °C	<i>P_{dh}</i>	7,6	kW	T _j = +12 °C	<i>COP_d</i>	5,44	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,4	kW	T _j = bivalent temperature	<i>COP_d</i>	2,37	-
T _j = operation limit temperature	<i>P_{dh}</i>	1,7	kW	T _j = operation limit temperature	<i>COP_d</i>	1,67	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	2,6	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	1,76	-
Bivalent temperature	<i>T_{biv}</i>	-9	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-22	°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>	55	°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>	3,5	kW
Thermostat-off mode	<i>P_{TO}</i>	0,006	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	-	4100	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	4785	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

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

Cold climate and Low temperature

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Model(s):	CTC EcoAir 406 + CTC EcoLogic		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	135 %
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>	4	kW	Seasonal space heating energy efficiency	η_s	131	%
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>	4,0	kW	T _j = -7 °C	<i>COP_d</i>	3,34	-
T _j = +2 °C	<i>P_{dh}</i>	4,9	kW	T _j = +2 °C	<i>COP_d</i>	4,07	-
T _j = +7 °C	<i>P_{dh}</i>	6,4	kW	T _j = +7 °C	<i>COP_d</i>	5,40	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,62	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,2	kW	T _j = bivalent temperature	<i>COP_d</i>	2,92	-
T _j = operation limit temperature	<i>P_{dh}</i>	1,9	kW	T _j = operation limit temperature	<i>COP_d</i>	1,83	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	2,9	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	2,58	-
Bivalent temperature	<i>T_{biv}</i>	-13	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-22	°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>	55	°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>	0,019	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	-	4100	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	3045	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

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

Warm climate and Medium temperature

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Model(s):	CTC EcoAir 406 + CTC EcoZenith 250		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	135 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	131	%
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>	4,3	kW	T _j = +2 °C	<i>COP_d</i>	2,24	-
T _j = +7 °C	<i>P_{dh}</i>	5,7	kW	T _j = +7 °C	<i>COP_d</i>	3,16	-
T _j = +12 °C	<i>P_{dh}</i>	7,5	kW	T _j = +12 °C	<i>COP_d</i>	4,54	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,4	kW	T _j = bivalent temperature	<i>COP_d</i>	2,37	-
T _j = operation limit temperature	<i>P_{dh}</i>	4,3	kW	T _j = operation limit temperature	<i>COP_d</i>	2,31	-
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>	2	°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>	55	°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>	0,4	kW
Thermostat-off mode	<i>P_{TO}</i>	0,010	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	-	4100	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	1866	kWh				
For heat pump combination heater:							
Declared load profile	L	Efficiency class	na	Water heating energy efficiency	η_{wh}	71	%
Daily electricity consumption	<i>Q_{elec}</i>	6,566	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	na	kWh
Annual electricity consumption	<i>AEC</i>	1445	kWh	Annual fuel consumption	<i>AFC</i>	na	GJ
							160204

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



Warm climate and Low temperature

Model(s):	CTC EcoAir 406 + CTC EcoZenith 250		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	178 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	174	%
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>	4,7	kW	T _j = +2 °C	<i>COP_d</i>	3,32	-
T _j = +7 °C	<i>P_{dh}</i>	6,3	kW	T _j = +7 °C	<i>COP_d</i>	4,60	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,06	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,8	kW	T _j = bivalent temperature	<i>COP_d</i>	3,44	-
T _j = operation limit temperature	<i>P_{dh}</i>	4,7	kW	T _j = operation limit temperature	<i>COP_d</i>	3,53	-
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>	2	°C
Cycling interval capacity for heating	<i>P_{Cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{Cyc}</i>	na	-
Degradation co-efficient (**)	<i>C_{dh}</i>	0,96	-	Heating water operating limit temperature	<i>WTOL</i>	55	°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>	0,027	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	-	4100	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	1568	kWh				

For heat pump combination heater:

Declared load profile	L	Efficiency class	na	Water heating energy efficiency	η_{wh}	71	%
Daily electricity consumption	<i>Q_{elec}</i>	6,566	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1445	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

160204

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

Average climate and Medium temperature

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Model(s):	CTC EcoAir 406 + CTC EcoZenith 250		
Air-to-water heat pump:	Yes	Energy efficiency class:	A+ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	125 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	121	%
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>	3,8	kW	T _j = -7 °C	<i>COP_d</i>	2,23	-
T _j = +2 °C	<i>P_{dh}</i>	4,9	kW	T _j = +2 °C	<i>COP_d</i>	3,20	-
T _j = +7 °C	<i>P_{dh}</i>	6,3	kW	T _j = +7 °C	<i>COP_d</i>	4,05	-
T _j = +12 °C	<i>P_{dh}</i>	7,5	kW	T _j = +12 °C	<i>COP_d</i>	4,95	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,2	kW	T _j = bivalent temperature	<i>COP_d</i>	2,64	-
T _j = operation limit temperature	<i>P_{dh}</i>	3,3	kW	T _j = operation limit temperature	<i>COP_d</i>	1,90	-
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>	-4	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-10	°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>	55	°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>	0,018	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	Variable			-	4100	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	-	na		m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	3288	kWh				

For heat pump combination heater:

Declared load profile	L	Efficiency class	B	Water heating energy efficiency	η_{wh}	Value	Unit
Daily electricity consumption	<i>Q_{elec}</i>	7,902	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1738	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

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

Average climate and Low temperature

Model(s):	CTC EcoAir 406 + CTC EcoZenith 250		
Air-to-water heat pump:	Yes	Energy efficiency class:	A+ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	140 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	136	%
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>	3,9	kW	T _j = -7 °C	<i>COP_d</i>	2,81	-
T _j = +2 °C	<i>P_{dh}</i>	4,8	kW	T _j = +2 °C	<i>COP_d</i>	3,54	-
T _j = +7 °C	<i>P_{dh}</i>	6,4	kW	T _j = +7 °C	<i>COP_d</i>	4,87	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,25	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,2	kW	T _j = bivalent temperature	<i>COP_d</i>	3,07	-
T _j = operation limit temperature	<i>P_{dh}</i>	3,5	kW	T _j = operation limit temperature	<i>COP_d</i>	2,51	-
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>	-4	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-10	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient (**)	<i>C_{dh}</i>	0,96	-	Heating water operating limit temperature	<i>WTOL</i>	55	°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>	2,0	kW
Thermostat-off mode	<i>P_{TO}</i>	0,027	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	-	4100	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	3244	kWh				

For heat pump combination heater:

Declared load profile	L	Efficiency class	B	Water heating energy efficiency	η_{wh}	59	%
Daily electricity consumption	<i>Q_{elec}</i>	7,902	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1738	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

160406

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

Cold climate and Medium temperature

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Model(s):	CTC EcoAir 406 + CTC EcoZenith 250		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	99 %
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>Prated</i>	6	kW	Seasonal space heating energy efficiency	η_s	95	%
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>	3,6	kW	T _j = -7 °C	<i>COP_d</i>	2,29	-
T _j = +2 °C	<i>P_{dh}</i>	4,5	kW	T _j = +2 °C	<i>COP_d</i>	2,97	-
T _j = +7 °C	<i>P_{dh}</i>	6,1	kW	T _j = +7 °C	<i>COP_d</i>	4,07	-
T _j = +12 °C	<i>P_{dh}</i>	7,6	kW	T _j = +12 °C	<i>COP_d</i>	5,15	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,5	kW	T _j = bivalent temperature	<i>COP_d</i>	2,23	-
T _j = operation limit temperature	<i>P_{dh}</i>	1,7	kW	T _j = operation limit temperature	<i>COP_d</i>	0,96	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	2,6	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	1,55	-
Bivalent temperature	<i>T_{biv}</i>	-8	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-22	°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>	55	°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>	3,9	kW
Thermostat-off mode	<i>P_{TO}</i>	0,010	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	-	4100	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	5625	kWh				

For heat pump combination heater:

Declared load profile	L	Efficiency class	na	Water heating energy efficiency	η_{wh}	52	%
Daily electricity consumption	<i>Q_{elec}</i>	8,931	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1965	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

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

Cold climate and Low temperature

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Model(s):	CTC EcoAir 406 + CTC EcoZenith 250		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	120 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	116	%
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>	4,0	kW	T _j = -7 °C	<i>COP_d</i>	3,32	-
T _j = +2 °C	<i>P_{dh}</i>	4,9	kW	T _j = +2 °C	<i>COP_d</i>	4,05	-
T _j = +7 °C	<i>P_{dh}</i>	6,4	kW	T _j = +7 °C	<i>COP_d</i>	5,38	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,61	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,6	kW	T _j = bivalent temperature	<i>COP_d</i>	2,64	-
T _j = operation limit temperature	<i>P_{dh}</i>	1,9	kW	T _j = operation limit temperature	<i>COP_d</i>	1,83	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	2,9	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	2,53	-
Bivalent temperature	<i>T_{biv}</i>	-10	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-22	°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>	55	°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>	3,3	kW
Thermostat-off mode	<i>P_{TO}</i>	0,027	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	-	4100	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	4331	kWh				
For heat pump combination heater:							
Declared load profile	L	Efficiency class	na	Water heating energy efficiency	η_{wh}	52	%
Daily electricity consumption	<i>Q_{elec}</i>	8,931	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1965	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ
						160204	

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

Warm climate and Medium temperature

Model(s):	CTC EcoAir 406 + CTC EcoZenith 550		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	137 %
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>	5	kW	Seasonal space heating energy efficiency	η_s	133	%
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>	4,3	kW	T _j = +2 °C	<i>COP_d</i>	2,24	-
T _j = +7 °C	<i>P_{dh}</i>	5,7	kW	T _j = +7 °C	<i>COP_d</i>	3,19	-
T _j = +12 °C	<i>P_{dh}</i>	7,5	kW	T _j = +12 °C	<i>COP_d</i>	4,56	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,5	kW	T _j = bivalent temperature	<i>COP_d</i>	2,50	-
T _j = operation limit temperature	<i>P_{dh}</i>	4,3	kW	T _j = operation limit temperature	<i>COP_d</i>	2,31	-
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>	4	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	2	°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>	55	°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>	0,006	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	-	4100	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	2051	kWh				
For heat pump combination heater:							
Declared load profile	XL	Efficiency class	na	Water heating energy efficiency	η_{wh}	85	%
Daily electricity consumption	<i>Q_{elec}</i>	8,943	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1967	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ
160204							

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

Warm climate and Low temperature

Model(s):	CTC EcoAir 406 + CTC EcoZenith 550		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	179 %
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>	5	kW	Seasonal space heating energy efficiency	η_s	175	%
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>	4,7	kW	T _j = +2 °C	<i>COP_d</i>	3,32	-
T _j = +7 °C	<i>P_{dh}</i>	6,3	kW	T _j = +7 °C	<i>COP_d</i>	4,60	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,06	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,8	kW	T _j = bivalent temperature	<i>COP_d</i>	3,44	-
T _j = operation limit temperature	<i>P_{dh}</i>	4,7	kW	T _j = operation limit temperature	<i>COP_d</i>	3,53	-
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>	2	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient (**)	<i>C_{dh}</i>	0,96	-	Heating water operating limit temperature	<i>WTOL</i>	55	°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>	0,023	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	-	4100	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	1555	kWh				
For heat pump combination heater:							
Declared load profile	XL	Efficiency class	na	Water heating energy efficiency	η_{wh}	85	%
Daily electricity consumption	<i>Q_{elec}</i>	8,943	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	1967	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ
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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output *P_{rated}* is equal to the design load for heating *P_{designh}*, and the rated heat output of a supplementary heater *P_{sup}* is equal to the supplementary capacity for heating *sup(T_j)*. (**) If *C_{dh}* is not determined by measurement then the default degradation coefficient is *C_{dh}* = 0,9.

Average climate and Medium temperature

Model(s):	CTC EcoAir 406 + CTC EcoZenith 550		
Air-to-water heat pump:	Yes	Energy efficiency class:	A+ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	116 %
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>	5	kW	Seasonal space heating energy efficiency	η_s	112	%
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>	3,5	kW	T _j = -7 °C	<i>COP_d</i>	2,01	-
T _j = +2 °C	<i>P_{dh}</i>	4,7	kW	T _j = +2 °C	<i>COP_d</i>	3,01	-
T _j = +7 °C	<i>P_{dh}</i>	5,9	kW	T _j = +7 °C	<i>COP_d</i>	3,75	-
T _j = +12 °C	<i>P_{dh}</i>	7,2	kW	T _j = +12 °C	<i>COP_d</i>	4,69	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,8	kW	T _j = bivalent temperature	<i>COP_d</i>	2,35	-
T _j = operation limit temperature	<i>P_{dh}</i>	2,9	kW	T _j = operation limit temperature	<i>COP_d</i>	1,66	-
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>	-4	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-10	°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>	55	°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>	2,0	kW
Thermostat-off mode	<i>P_{TO}</i>	0,006	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	Variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4100	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	3550	kWh				
For heat pump combination heater:							
Declared load profile	XL	Efficiency class	B	Water heating energy efficiency	η_{wh}	73	%
Daily electricity consumption	<i>Q_{elec}</i>	10,407	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	2289	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

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

Average climate and Low temperature

Model(s):	CTC EcoAir 406 + CTC EcoZenith 550		
Air-to-water heat pump:	Yes	Energy efficiency class:	A+ -
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	141 %
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>	5	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>	3,9	kW	T _j = -7 °C	<i>COP_d</i>	2,81	-
T _j = +2 °C	<i>P_{dh}</i>	4,8	kW	T _j = +2 °C	<i>COP_d</i>	3,53	-
T _j = +7 °C	<i>P_{dh}</i>	6,4	kW	T _j = +7 °C	<i>COP_d</i>	4,86	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,25	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,1	kW	T _j = bivalent temperature	<i>COP_d</i>	2,99	-
T _j = operation limit temperature	<i>P_{dh}</i>	3,5	kW	T _j = operation limit temperature	<i>COP_d</i>	2,51	-
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>	-5	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-10	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient (**)	<i>C_{dh}</i>	0,96	-	Heating water operating limit temperature	<i>WTOL</i>	55	°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>	0,023	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	-	4100	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	2998	kWh				
For heat pump combination heater:							
Declared load profile	XL	Efficiency class	B	Water heating energy efficiency	η_{wh}	73	%
Daily electricity consumption	<i>Q_{elec}</i>	10,407	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	2289	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ
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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$. (**) If C_{dh} is not determined by measurement then the default degradation coefficient is $C_{dh} = 0,9$.



Model(s):	CTC EcoAir 406 + CTC EcoZenith 550		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	99 %
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>	6	kW	Seasonal space heating energy efficiency	η_s	95	%
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>	3,6	kW	T _j = -7 °C	<i>COP_d</i>	2,29	-
T _j = +2 °C	<i>P_{dh}</i>	4,5	kW	T _j = +2 °C	<i>COP_d</i>	2,97	-
T _j = +7 °C	<i>P_{dh}</i>	6,1	kW	T _j = +7 °C	<i>COP_d</i>	4,07	-
T _j = +12 °C	<i>P_{dh}</i>	7,6	kW	T _j = +12 °C	<i>COP_d</i>	5,15	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,5	kW	T _j = bivalent temperature	<i>COP_d</i>	2,23	-
T _j = operation limit temperature	<i>P_{dh}</i>	1,7	kW	T _j = operation limit temperature	<i>COP_d</i>	0,96	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	2,589	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	1,554	-
Bivalent temperature	<i>T_{biv}</i>	-8	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-22	°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>	55	°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>	3,9	kW
Thermostat-off mode	<i>P_{TO}</i>	0,006	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	-	4100	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	5609	kWh				

For heat pump combination heater:

Declared load profile	XL	Efficiency class	na	Water heating energy efficiency	η_{wh}	66	%
Daily electricity consumption	<i>Q_{elec}</i>	11,646	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	2562	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

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

Cold climate and Low temperature

Model(s):	CTC EcoAir 406 + CTC EcoZenith 550		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	VII -
Brine-to-water heat pump:	No	Controller contribution:	3,5 %
Low-temperature heat pump:	No	Package efficiency:	120 %
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>	5	kW	Seasonal space heating energy efficiency	η_s	116	%
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>	4,0	kW	T _j = -7 °C	<i>COP_d</i>	2,97	-
T _j = +2 °C	<i>P_{dh}</i>	4,9	kW	T _j = +2 °C	<i>COP_d</i>	3,67	-
T _j = +7 °C	<i>P_{dh}</i>	6,4	kW	T _j = +7 °C	<i>COP_d</i>	5,00	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,22	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,4	kW	T _j = bivalent temperature	<i>COP_d</i>	1,49	-
T _j = operation limit temperature	<i>P_{dh}</i>	1,9	kW	T _j = operation limit temperature	<i>COP_d</i>	2,69	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	2,197	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	2,197	-
Bivalent temperature	<i>T_{biv}</i>	-11	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-22	°C
Cycling interval capacity for heating	<i>P_{cych}</i>	na	kW	Cycling interval efficiency	<i>COP_{cyc}</i>	na	-
Degradation co-efficient (**)	<i>C_{dh}</i>	0,96	-	Heating water operating limit temperature	<i>WTOL</i>	55	°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>	2,9	kW
Thermostat-off mode	<i>P_{TO}</i>	0,023	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	-	4100	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	3993	kWh				
For heat pump combination heater:							
Declared load profile	XL	Efficiency class	na	Water heating energy efficiency	η_{wh}	66	%
Daily electricity consumption	<i>Q_{elec}</i>	11,646	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	NA	kWh
Annual electricity consumption	<i>AEC</i>	2562	kWh	Annual fuel consumption	<i>AFC</i>	NA	GJ

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Warm climate and Medium temperature

Model(s):	CTC EcoAir 406 + CTC Basicstyrning		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	I -
Brine-to-water heat pump:	No	Controller contribution:	1 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	140	%
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>	4,3	kW	T _j = +2 °C	<i>COP_d</i>	2,43	-
T _j = +7 °C	<i>P_{dh}</i>	5,7	kW	T _j = +7 °C	<i>COP_d</i>	3,39	-
T _j = +12 °C	<i>P_{dh}</i>	7,5	kW	T _j = +12 °C	<i>COP_d</i>	4,80	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,5	kW	T _j = bivalent temperature	<i>COP_d</i>	2,69	-
T _j = operation limit temperature	<i>P_{dh}</i>	4,3	kW	T _j = operation limit temperature	<i>COP_d</i>	2,50	-
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>	4	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	2	°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>	55	°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>	0,006	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	Fixed			-	4100	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	-	na		m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	1947	kWh				
For heat pump combination heater:				Water heating energy efficiency			
Declared load profile	na			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

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

Warm climate and Low temperature

Model(s):	CTC EcoAir 406 + CTC Basicstyrning		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	I -
Brine-to-water heat pump:	No	Controller contribution:	1 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	188	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7 °C	<i>P_{dh}</i>	na	kW	T _j = -7 °C	<i>COP_d</i>	na	-
T _j = +2 °C	<i>P_{dh}</i>	4,7	kW	T _j = +2 °C	<i>COP_d</i>	3,66	-
T _j = +7 °C	<i>P_{dh}</i>	6,3	kW	T _j = +7 °C	<i>COP_d</i>	4,96	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,45	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,8	kW	T _j = bivalent temperature	<i>COP_d</i>	3,79	-
T _j = operation limit temperature	<i>P_{dh}</i>	4,7	kW	T _j = operation limit temperature	<i>COP_d</i>	3,87	-
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>	2	°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>	55	°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>	0,019	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	Fixed			-	4100	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	-	na		m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	1451	kWh				
For heat pump combination heater:				Water heating energy efficiency			
Declared load profile	na			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

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

Average climate and Medium temperature

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Model(s):	CTC EcoAir 406 + CTC Basicstyrning		
Air-to-water heat pump:	Yes	Energy efficiency class:	A+ -
Water-to-water heat pump:	No	Controller class:	I -
Brine-to-water heat pump:	No	Controller contribution:	1 %
Low-temperature heat pump:	No	Package efficiency:	116 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	115	%
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>	3,5	kW	T _j = -7 °C	<i>COP_d</i>	2,13	-
T _j = +2 °C	<i>P_{dh}</i>	4,4	kW	T _j = +2 °C	<i>COP_d</i>	2,93	-
T _j = +7 °C	<i>P_{dh}</i>	6,0	kW	T _j = +7 °C	<i>COP_d</i>	3,99	-
T _j = +12 °C	<i>P_{dh}</i>	7,6	kW	T _j = +12 °C	<i>COP_d</i>	5,21	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,8	kW	T _j = bivalent temperature	<i>COP_d</i>	2,44	-
T _j = operation limit temperature	<i>P_{dh}</i>	3,1	kW	T _j = operation limit temperature	<i>COP_d</i>	1,82	-
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>	-5	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-10	°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>	55	°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>	0,006	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	Fixed			-	4100	na	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	-	na		m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	3470	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

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

Average climate and Low temperature

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Model(s):	CTC EcoAir 406 + CTC Basicstyrning		
Air-to-water heat pump:	Yes	Energy efficiency class:	A++ -
Water-to-water heat pump:	No	Controller class:	I -
Brine-to-water heat pump:	No	Controller contribution:	1 %
Low-temperature heat pump:	No	Package efficiency:	152 %
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>Prated</i>	5	kW	Seasonal space heating energy efficiency	η_s	151	%
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>	3,9	kW	T _j = -7 °C	<i>COP_d</i>	3,16	-
T _j = +2 °C	<i>P_{dh}</i>	4,8	kW	T _j = +2 °C	<i>COP_d</i>	3,92	-
T _j = +7 °C	<i>P_{dh}</i>	6,4	kW	T _j = +7 °C	<i>COP_d</i>	5,25	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,66	-
T _j = bivalent temperature	<i>P_{dh}</i>	4,1	kW	T _j = bivalent temperature	<i>COP_d</i>	3,35	-
T _j = operation limit temperature	<i>P_{dh}</i>	3,5	kW	T _j = operation limit temperature	<i>COP_d</i>	2,85	-
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>	-5	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-10	°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>	55	°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>	0,019	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	Fixed			-	4100	na	m ³ /h
Sound power level, indoors/ outdoors	<i>L_{WA}</i>	na/56	dB	-	na		m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	2722	kWh	160406			
For heat pump combination heater:				Water heating energy efficiency			
Declared load profile	na			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
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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output *Prated* is equal to the design load for heating *P_{designh}*, and the rated heat output of a supplementary heater *P_{sup}* is equal to the supplementary capacity for heating *sup(T_j)*. (**) If *C_{dh}* is not determined by measurement then the default degradation coefficient is *C_{dh}* = 0,9.

Model(s):	CTC EcoAir 406 + CTC Basicstyrning		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	I -
Brine-to-water heat pump:	No	Controller contribution:	1 %
Low-temperature heat pump:	No	Package efficiency:	104 %
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>	5	kW	Seasonal space heating energy efficiency	η_s	103	%
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>	3,6	kW	T _j = -7 °C	<i>COP_d</i>	2,49	-
T _j = +2 °C	<i>P_{dh}</i>	4,5	kW	T _j = +2 °C	<i>COP_d</i>	3,22	-
T _j = +7 °C	<i>P_{dh}</i>	6,1	kW	T _j = +7 °C	<i>COP_d</i>	4,34	-
T _j = +12 °C	<i>P_{dh}</i>	7,6	kW	T _j = +12 °C	<i>COP_d</i>	5,44	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,4	kW	T _j = bivalent temperature	<i>COP_d</i>	2,37	-
T _j = operation limit temperature	<i>P_{dh}</i>	1,7	kW	T _j = operation limit temperature	<i>COP_d</i>	1,67	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	2,6	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	1,76	-
Bivalent temperature	<i>T_{biv}</i>	-9	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-22	°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>	55	°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>	3,5	kW
Thermostat-off mode	<i>P_{TO}</i>	0,006	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	-	4100	m ³ /h
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m ³ /h
Annual energy consumption	<i>Q_{HE}</i>	4785	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

Cold climate and Low temperature

Model(s):	CTC EcoAir 406 + CTC Basicstyrning		
Air-to-water heat pump:	Yes	Energy efficiency class:	-
Water-to-water heat pump:	No	Controller class:	I -
Brine-to-water heat pump:	No	Controller contribution:	1 %
Low-temperature heat pump:	No	Package efficiency:	132 %
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>	4	kW	Seasonal space heating energy efficiency	η_s	131	%
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>	4,0	kW	T _j = -7 °C	<i>COP_d</i>	3,34	-
T _j = +2 °C	<i>P_{dh}</i>	4,9	kW	T _j = +2 °C	<i>COP_d</i>	4,07	-
T _j = +7 °C	<i>P_{dh}</i>	6,4	kW	T _j = +7 °C	<i>COP_d</i>	5,40	-
T _j = +12 °C	<i>P_{dh}</i>	7,9	kW	T _j = +12 °C	<i>COP_d</i>	6,62	-
T _j = bivalent temperature	<i>P_{dh}</i>	3,2	kW	T _j = bivalent temperature	<i>COP_d</i>	2,92	-
T _j = operation limit temperature	<i>P_{dh}</i>	1,9	kW	T _j = operation limit temperature	<i>COP_d</i>	1,83	-
For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>P_{dh}</i>	2,9	kW	For air-to-water heat pumps: T _j = -15 °C (if TOL < -20 °C)	<i>COP_d</i>	2,58	-
Bivalent temperature	<i>T_{biv}</i>	-13	°C	For air-to-water heat pumps: Operation limit temperature	<i>TOL</i>	-22	°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>	55	°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>	0,019	kW	Type of energy input	Electric		
Standby mode	<i>P_{SB}</i>	0,018	kW	For air-to-water heat pumps: Rated air flow rate, outdoors			
Crankcase heater mode	<i>P_{CK}</i>	0,000	kW				
Other items				For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			
Capacity control	Fixed			-	4100	<i>m³/h</i>	
Sound power level, indoors/outdoors	<i>L_{WA}</i>	na/56	<i>dB</i>	-	na	<i>m³/h</i>	
Annual energy consumption	<i>Q_{HE}</i>	3045	<i>kWh</i>				
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

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