Information for heat pump space heaters and heat pump combination heaters
Warm climate and Medium temperature

CTC AB
Ljungby

Model(s):	CTC CombiAir 12M + CTC EcoLogic			
Air-to-water heat pump:	Yes	Energy efficiency class:		-
Water-to-water heat pump:	No	Controller class:	VI	-
Brine-to-water heat pump:	No	Controller contribution:	4	%
Low-temperature heat pump:	No	Package efficiency:	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
Rated heat output (*)	*Prated*	12	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	na	kW
T j = + 2 °C	*Pdh*	9,3	kW
T j = + 7 °C	*Pdh*	7,8	kW
T j = + 12 °C	*Pdh*	5,1	kW
T j = bivalent temperature	*Pdh*	10,4	kW
T j = operation limit temperature	*Pdh*	9,3	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	na	kW
Bivalent temperature	T_{biv}	4	°C
Cycling interval capacity for heating	P_{cych}	na	kW
Degradation co-efficient	*Cdh*	0,97	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,002	kW
Thermostat-off mode	P_{TO}	0,014	kW
Standby mode	P_{SB}	0,015	kW
Crankcase heater mode	P_{CK}	0,035	kW
Other items			
Capacity control		Variable	
Sound power level, indoors/ outdoors	L_{WA}	-/57	dB
Annual energy consumption	Q_{HE}	3445	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	185	%
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	*COPd*	na	-
T j = +2 °C	*COPd*	2,47	-
T j = +7 °C	*COPd*	3,77	-
T j = +12 °C	*COPd*	6,70	-
T j = bivalent temperature	*COPd*	2,92	-
T j = operation limit temperature	*COPd*	2,47	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	na	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	2	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	58	°C
Supplementary heater			
Rated heat output (*)	*Psup*	2,7	kW
Type of energy input		*Electric*	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	4380	m3/h
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m3/h

For heat pump combination heater:

Declared load profile	na	**Efficiency class**	na	**Water heating energy efficiency**	η_{wh}	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	NA	GJ

Specific precautions and end of life information:

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

Contact details CTC AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se

Information for heat pump space heaters and heat pump combination heaters
Warm climate and Low temperature

CTC AB
Ljungby

Model(s):	CTC CombiAir 12M + CTC EcoLogic			
Air-to-water heat pump:	Yes	Energy efficiency class:		-
Water-to-water heat pump:	No	Controller class:	VI	-
Brine-to-water heat pump:	No	Controller contribution:	4	%
Low-temperature heat pump:	No	Package efficiency:	233	%
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
Rated heat output (*)	*Prated*	12	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	na	kW
T j = + 2 °C	*Pdh*	9,2	kW
T j = + 7 °C	*Pdh*	7,8	kW
T j = + 12 °C	*Pdh*	4,8	kW
T j = bivalent temperature	*Pdh*	10,3	kW
T j = operation limit temperature	*Pdh*	9,2	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	na	kW
Bivalent temperature	T_{biv}	4	°C
Cycling interval capacity for heating	P_{cych}	na	kW
Degradation co-efficient	*Cdh*	0,97	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,002	kW
Thermostat-off mode	P_{TO}	0,020	kW
Standby mode	P_{SB}	0,015	kW
Crankcase heater mode	P_{CK}	0,035	kW
Other items			
Capacity control		Variable	
Sound power level, indoors/ outdoors	L_{WA}	-/57	dB
Annual energy consumption	Q_{HE}	2765	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	229	%
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	*COPd*	na	-
T j = +2 °C	*COPd*	3,76	-
T j = +7 °C	*COPd*	5,13	-
T j = +12 °C	*COPd*	7,48	-
T j = bivalent temperature	*COPd*	4,17	-
T j = operation limit temperature	*COPd*	3,76	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	na	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	2	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	58	°C
Supplementary heater			
Rated heat output (*)	*Psup*	2,8	kW
Type of energy input		Electric	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	4380	m3/h
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m3/h

For heat pump combination heater:

Declared load profile	na	**Efficiency class**	na	**Water heating energy efficiency**	η_{wh}	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	NA	GJ

Specific precautions and end of life information:

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

Contact details CTC AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se

Information for heat pump space heaters and heat pump combination heaters
Average climate and Medium temperature

CTC AB
Ljungby

Model(s):	CTC CombiAir 12M + CTC EcoLogic			
Air-to-water heat pump:	Yes	Energy efficiency class:	A++	-
Water-to-water heat pump:	No	Controller class:	VI	-
Brine-to-water heat pump:	No	Controller contribution:	4	%
Low-temperature heat pump:	No	Package efficiency:	136	%
Equipped with a supplementary heater:	No	Package efficiency class:	A++	-
Heat pump combination heater:	No			

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

Item	Symbol	Value	Unit
Rated heat output (*)	*Prated*	**10**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**8,9**	kW
T j = + 2 °C	*Pdh*	**5,5**	kW
T j = + 7 °C	*Pdh*	**3,5**	kW
T j = + 12 °C	*Pdh*	**5,0**	kW
T j = bivalent temperature	*Pdh*	**9,2**	kW
T j = operation limit temperature	*Pdh*	**8,1**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-7,9**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient	*Cdh*	**0,97**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,002**	*kW*
Thermostat-off mode	P_{TO}	**0,014**	*kW*
Standby mode	P_{SB}	**0,015**	*kW*
Crankcase heater mode	P_{CK}	**0,035**	*kW*
Other items			
Capacity control		**Variable**	
Sound power level, indoors/ outdoors	L_{WA}	**-/57**	*dB*
Annual energy consumption	Q_{HE}	**6137**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**132**	%
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	*COPd*	**1,99**	-
T j = +2 °C	*COPd*	**3,22**	-
T j = +7 °C	*COPd*	**4,61**	-
T j = +12 °C	*COPd*	**6,25**	-
T j = bivalent temperature	*COPd*	**1,90**	-
T j = operation limit temperature	*COPd*	**1,92**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**-10**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**58**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,9**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**4380**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**na**	*m3/h*

For heat pump combination heater:

Declared load profile	**na**	**Efficiency class**	**na**
Daily electricity consumption	Qelec	**na**	kWh
Annual electricity consumption	AEC	**na**	kWh

Water heating energy efficiency	η_{wh}	**na**	%
Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual fuel consumption	AFC	**NA**	GJ

Specific precautions and end of life information:

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

Contact details CTC AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se

Information for heat pump space heaters and heat pump combination heaters
Average climate and Low temperature

CTC AB
Ljungby

Model(s):	CTC CombiAir 12M + CTC EcoLogic			
Air-to-water heat pump:	Yes	Energy efficiency class:	A++	-
Water-to-water heat pump:	No	Controller class:	VI	-
Brine-to-water heat pump:	No	Controller contribution:	4	%
Low-temperature heat pump:	No	Package efficiency:	178	%
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
Rated heat output (*)	*Prated*	12	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	10,3	kW
T j = + 2 °C	*Pdh*	6,3	kW
T j = + 7 °C	*Pdh*	4,1	kW
T j = + 12 °C	*Pdh*	4,8	kW
T j = bivalent temperature	*Pdh*	10,2	kW
T j = operation limit temperature	*Pdh*	9,3	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	na	kW
Bivalent temperature	T_{biv}	-7	°C
Cycling interval capacity for heating	P_{cych}	na	kW
Degradation co-efficient	*Cdh*	0,96	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,002	*kW*
Thermostat-off mode	P_{TO}	0,020	*kW*
Standby mode	P_{SB}	0,015	*kW*
Crankcase heater mode	P_{CK}	0,035	*kW*
Other items			
Capacity control		Variable	
Sound power level, indoors/ outdoors	L_{WA}	-/57	*dB*
Annual energy consumption	Q_{HE}	5361	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	174	%
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	*COPd*	2,93	-
T j = +2 °C	*COPd*	4,37	-
T j = +7 °C	*COPd*	5,53	-
T j = +12 °C	*COPd*	7,59	-
T j = bivalent temperature	*COPd*	2,93	-
T j = operation limit temperature	*COPd*	2,68	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	na	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	-10	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	58	°C
Supplementary heater			
Rated heat output (*)	*Psup*	2,2	*kW*
Type of energy input		*Electric*	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	4380	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	*m3/h*

For heat pump combination heater:

Declared load profile	na	**Efficiency class**	na	**Water heating energy efficiency**	η_{wh}	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	NA	GJ

Specific precautions and end of life information:

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

Contact details CTC AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se

Information for heat pump space heaters and heat pump combination heaters
Cold climate and Medium temperature

CTC AB
Ljungby

Model(s):	CTC CombiAir 12M + CTC EcoLogic			
Air-to-water heat pump:	Yes	Energy efficiency class:		-
Water-to-water heat pump:	No	Controller class:	VI	-
Brine-to-water heat pump:	No	Controller contribution:	4	%
Low-temperature heat pump:	No	Package efficiency:	115	%
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
Rated heat output (*)	*Prated*	13	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	7,9	kW
T j = + 2 °C	*Pdh*	4,9	kW
T j = + 7 °C	*Pdh*	3,6	kW
T j = + 12 °C	*Pdh*	4,9	kW
T j = bivalent temperature	*Pdh*	8,9	kW
T j = operation limit temperature	*Pdh*	5,0	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	1,7	kW
Bivalent temperature	T_{biv}	-10	°C
Cycling interval capacity for heating	P_{cych}	-/57	kW
Degradation co-efficient	*Cdh*	0,96	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,002	*kW*
Thermostat-off mode	P_{TO}	0,014	*kW*
Standby mode	P_{SB}	0,015	*kW*
Crankcase heater mode	P_{CK}	0,035	*kW*
Other items			
Capacity control		Variable	
Sound power level, indoors/ outdoors	L_{WA}	-/57	*dB*
Annual energy consumption	Q_{HE}	11639	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	111	%
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	*COPd*	2,36	-
T j = +2 °C	*COPd*	3,48	-
T j = +7 °C	*COPd*	4,93	-
T j = +12 °C	*COPd*	7,12	-
T j = bivalent temperature	*COPd*	2,07	-
T j = operation limit temperature	*COPd*	1,63	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	3,01	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	-20	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	58	°C
Supplementary heater			
Rated heat output (*)	*Psup*	13,0	*kW*
Type of energy input		*Electric*	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	4380	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	*m3/h*

For heat pump combination heater:

Declared load profile	na	**Efficiency class**	na	**Water heating energy efficiency**	η_{wh}	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	NA	GJ

Specific precautions and end of life information:

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

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Information for heat pump space heaters and heat pump combination heaters
Cold climate and Low temperature

CTC AB
Ljungby

Model(s):	CTC CombiAir 12M + CTC EcoLogic				
Air-to-water heat pump:	Yes	Energy efficiency class:		-	
Water-to-water heat pump:	No	Controller class:	VI	-	
Brine-to-water heat pump:	No	Controller contribution:	4	%	
Low-temperature heat pump:	No	Package efficiency:	146	%	
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 (*)	*Prated*	12	kW	**Seasonal space heating energy efficiency**	η_s	142	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	7,1	kW	T j = – 7 °C	*COPd*	3,16	-
T j = + 2 °C	*Pdh*	4,3	kW	T j = +2 °C	*COPd*	4,29	-
T j = + 7 °C	*Pdh*	3,5	kW	T j = +7 °C	*COPd*	5,59	-
T j = + 12 °C	*Pdh*	4,8	kW	T j = +12 °C	*COPd*	7,56	-
T j = bivalent temperature	*Pdh*	8,4	kW	T j = bivalent temperature	*COPd*	2,70	-
T j = operation limit temperature	*Pdh*	6,0	kW	T j = operation limit temperature	*COPd*	2,10	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	1,7	kW	For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	4,02	-
Bivalent temperature	T_{biv}	-12	°C	For air-to-water heat pumps: Operation limit temperature	*TOL*	-20	°C
Cycling interval capacity for heating	P_{cych}	na	kW	Cycling interval efficiency	*COPcyc*	na	-
Degradation co-efficient	*Cdh*	0,95	-	Heating water operating limit temperature	*WTOL*	58	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,002	*kW*	Rated heat output (*)	*Psup*	11,5	*kW*
Thermostat-off mode	P_{TO}	0,020	*kW*	Type of energy input	*Electric*		
Standby mode	P_{SB}	0,015	*kW*				
Crankcase heater mode	P_{CK}	0,035	*kW*				
Other items							
Capacity control	Variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	4380	*m3/h*
Sound power level, indoors/ outdoors	L_{WA}	-/57	*dB*	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	*m3/h*
Annual energy consumption	Q_{HE}	8302	*kWh*				

For heat pump combination heater:

Declared load profile	na	**Efficiency class**	na	**Water heating energy efficiency**	η_{wh}	na	%
Daily electricity consumption	Q_{elec}	na	kWh	Daily fuel consumption	Q_{fuel}	NA	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	NA	GJ

Specific precautions and end of life information:

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

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Information for heat pump space heaters and heat pump combination heaters
Warm climate and Medium temperature

CTC AB
Ljungby

Model(s):	CTC CombiAir 12M + CTC EcoZenith i360/EcoVent i360F			
Air-to-water heat pump:	Yes	Energy efficiency class:		-
Water-to-water heat pump:	No	Controller class:	VI	-
Brine-to-water heat pump:	No	Controller contribution:	4	%
Low-temperature heat pump:	No	Package efficiency:	189	%
Equipped with a supplementary heater:	Yes	Package efficiency class:		-
Heat pump combination heater:	Yes			

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

Item	Symbol	Value	Unit
Rated heat output (*)	*Prated*	12	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	na	kW
T j = + 2 °C	*Pdh*	9,3	kW
T j = + 7 °C	*Pdh*	7,8	kW
T j = + 12 °C	*Pdh*	5,1	kW
T j = bivalent temperature	*Pdh*	10,4	kW
T j = operation limit temperature	*Pdh*	9,3	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	na	kW
Bivalent temperature	T_{biv}	4	°C
Cycling interval capacity for heating	P_{cych}	na	kW
Degradation co-efficient	*Cdh*	0,97	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,002	kW
Thermostat-off mode	P_{TO}	0,014	kW
Standby mode	P_{SB}	0,015	kW
Crankcase heater mode	P_{CK}	0,035	kW
Other items			
Capacity control		Variable	
Sound power level, indoors/ outdoors	L_{WA}	-/57	dB
Annual energy consumption	Q_{HE}	3445	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	185	%
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	*COPd*	na	-
T j = +2 °C	*COPd*	2,47	-
T j = +7 °C	*COPd*	3,77	-
T j = +12 °C	*COPd*	6,70	-
T j = bivalent temperature	*COPd*	2,92	-
T j = operation limit temperature	*COPd*	2,47	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	na	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	2	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	58	°C
Supplementary heater			
Rated heat output (*)	*Psup*	2,7	kW
Type of energy input		Electric	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	4380	m3/h
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m3/h

For heat pump combination heater:

Declared load profile	XL	**Efficiency class**	na	**Water heating energy efficiency**	η_{wh}	104	%
Daily electricity consumption	Qelec	7,890	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1617	kWh	Annual fuel consumption	AFC	NA	GJ

Specific precautions and end of life information:

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

Contact details CTC AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se

Information for heat pump space heaters and heat pump combination heaters
Warm climate and Low temperature

CTC AB
Ljungby

Model(s):	CTC CombiAir 12M + CTC EcoZenith i360/EcoVent i360F			
Air-to-water heat pump:	Yes	Energy efficiency class:		-
Water-to-water heat pump:	No	Controller class:	VI	-
Brine-to-water heat pump:	No	Controller contribution:	4	%
Low-temperature heat pump:	No	Package efficiency:	233	%
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
Rated heat output (*)	*Prated*	12	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	na	kW
T j = + 2 °C	*Pdh*	9,2	kW
T j = + 7 °C	*Pdh*	7,8	kW
T j = + 12 °C	*Pdh*	4,8	kW
T j = bivalent temperature	*Pdh*	10,3	kW
T j = operation limit temperature	*Pdh*	9,2	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	na	kW
Bivalent temperature	T_{biv}	4	°C
Cycling interval capacity for heating	P_{cych}	na	kW
Degradation co-efficient	*Cdh*	0,97	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,002	kW
Thermostat-off mode	P_{TO}	0,020	kW
Standby mode	P_{SB}	0,015	kW
Crankcase heater mode	P_{CK}	0,035	kW
Other items			
Capacity control		Variable	
Sound power level, indoors/ outdoors	L_{WA}	-/57	dB
Annual energy consumption	Q_{HE}	2765	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	229	%
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	*COPd*	na	-
T j = +2 °C	*COPd*	3,76	-
T j = +7 °C	*COPd*	5,13	-
T j = +12 °C	*COPd*	7,48	-
T j = bivalent temperature	*COPd*	4,17	-
T j = operation limit temperature	*COPd*	3,76	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	na	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	2	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	58	°C
Supplementary heater			
Rated heat output (*)	*Psup*	2,8	kW
Type of energy input		Electric	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	4380	m3/h
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m3/h

For heat pump combination heater:

Declared load profile	XL	**Efficiency class**	na	**Water heating energy efficiency**	η_{wh}	104	%
Daily electricity consumption	Qelec	7,890	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1617	kWh	Annual fuel consumption	AFC	NA	GJ

Specific precautions and end of life information:

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

Contact details CTC AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se

Information for heat pump space heaters and heat pump combination heaters
Average climate and Medium temperature

CTC AB
Ljungby

Model(s):	CTC CombiAir 12M + CTC EcoZenith i360/EcoVent i360F			
Air-to-water heat pump:	Yes	Energy efficiency class:	A++	-
Water-to-water heat pump:	No	Controller class:	VI	-
Brine-to-water heat pump:	No	Controller contribution:	4	%
Low-temperature heat pump:	No	Package efficiency:	136	%
Equipped with a supplementary heater:	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
Rated heat output (*)	*Prated*	**10**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**8,9**	kW
T j = + 2 °C	*Pdh*	**5,5**	kW
T j = + 7 °C	*Pdh*	**3,5**	kW
T j = + 12 °C	*Pdh*	**5,0**	kW
T j = bivalent temperature	*Pdh*	**9,2**	kW
T j = operation limit temperature	*Pdh*	**8,1**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-7,9**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient	*Cdh*	**0,97**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,002**	*kW*
Thermostat-off mode	P_{TO}	**0,014**	*kW*
Standby mode	P_{SB}	**0,015**	*kW*
Crankcase heater mode	P_{CK}	**0,035**	*kW*
Other items			
Capacity control		**Variable**	
Sound power level, indoors/ outdoors	L_{WA}	**-/57**	*dB*
Annual energy consumption	Q_{HE}	**6137**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**132**	%
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	*COPd*	**1,99**	-
T j = +2 °C	*COPd*	**3,22**	-
T j = +7 °C	*COPd*	**4,61**	-
T j = +12 °C	*COPd*	**6,25**	-
T j = bivalent temperature	*COPd*	**1,90**	-
T j = operation limit temperature	*COPd*	**1,92**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**-10**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**58**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,9**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**4380**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**na**	*m3/h*

For heat pump combination heater:

Declared load profile	**XL**	**Efficiency class**	**A**	**Water heating energy efficiency**	η_{wh}	**87**	%
Daily electricity consumption	Qelec	**9,250**	kWh	Daily fuel consumption	Qfuel	**NA**	kWh
Annual electricity consumption	AEC	**1919**	kWh	Annual fuel consumption	AFC	**NA**	GJ

Specific precautions and end of life information:

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

Contact details CTC AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se

Information for heat pump space heaters and heat pump combination heaters
Average climate and Low temperature

CTC AB
Ljungby

Model(s):	CTC CombiAir 12M + CTC EcoZenith i360/EcoVent i360F			
Air-to-water heat pump:	Yes	Energy efficiency class:	A++	-
Water-to-water heat pump:	No	Controller class:	VI	-
Brine-to-water heat pump:	No	Controller contribution:	4	%
Low-temperature heat pump:	No	Package efficiency:	178	%
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
Rated heat output (*)	*Prated*	12	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	10,3	kW
T j = + 2 °C	*Pdh*	6,3	kW
T j = + 7 °C	*Pdh*	4,1	kW
T j = + 12 °C	*Pdh*	4,8	kW
T j = bivalent temperature	*Pdh*	10,2	kW
T j = operation limit temperature	*Pdh*	9,3	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	na	kW
Bivalent temperature	T_{biv}	-7	°C
Cycling interval capacity for heating	P_{cych}	na	kW
Degradation co-efficient	*Cdh*	0,96	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,002	kW
Thermostat-off mode	P_{TO}	0,020	kW
Standby mode	P_{SB}	0,015	kW
Crankcase heater mode	P_{CK}	0,035	kW
Other items			
Capacity control		Variable	
Sound power level, indoors/ outdoors	L_{WA}	-/57	dB
Annual energy consumption	Q_{HE}	5361	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	174	%
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	*COPd*	2,93	-
T j = +2 °C	*COPd*	4,37	-
T j = +7 °C	*COPd*	5,53	-
T j = +12 °C	*COPd*	7,59	-
T j = bivalent temperature	*COPd*	2,93	-
T j = operation limit temperature	*COPd*	2,68	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	na	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	-10	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	58	°C
Supplementary heater			
Rated heat output (*)	*Psup*	2,2	kW
Type of energy input		Electric	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	4380	m3/h
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m3/h

For heat pump combination heater:

Declared load profile	XL	**Efficiency class**	A	**Water heating energy efficiency**	η_{wh}	87	%
Daily electricity consumption	Qelec	9,250	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1919	kWh	Annual fuel consumption	AFC	NA	GJ

Specific precautions and end of life information:

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

Contact details CTC AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se

Information for heat pump space heaters and heat pump combination heaters
Cold climate and Medium temperature

CTC AB
Ljungby

Model(s):	CTC CombiAir 12M + CTC EcoZenith i360/EcoVent i360F			
Air-to-water heat pump:	Yes	Energy efficiency class:		-
Water-to-water heat pump:	No	Controller class:	VI	-
Brine-to-water heat pump:	No	Controller contribution:	4	%
Low-temperature heat pump:	No	Package efficiency:	115	%
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
Rated heat output (*)	*Prated*	13	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	7,9	kW
T j = + 2 °C	*Pdh*	4,9	kW
T j = + 7 °C	*Pdh*	3,6	kW
T j = + 12 °C	*Pdh*	4,9	kW
T j = bivalent temperature	*Pdh*	8,9	kW
T j = operation limit temperature	*Pdh*	5,0	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	1,7	kW
Bivalent temperature	T_{biv}	-10	°C
Cycling interval capacity for heating	P_{cych}	-/57	kW
Degradation co-efficient	*Cdh*	0,96	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,002	*kW*
Thermostat-off mode	P_{TO}	0,014	*kW*
Standby mode	P_{SB}	0,015	*kW*
Crankcase heater mode	P_{CK}	0,035	*kW*
Other items			
Capacity control		Variable	
Sound power level, indoors/ outdoors	L_{WA}	-/57	*dB*
Annual energy consumption	Q_{HE}	11639	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	111	%
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	*COPd*	2,36	-
T j = +2 °C	*COPd*	3,48	-
T j = +7 °C	*COPd*	4,93	-
T j = +12 °C	*COPd*	7,12	-
T j = bivalent temperature	*COPd*	2,07	-
T j = operation limit temperature	*COPd*	1,63	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	3,01	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	-20	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	58	°C
Supplementary heater			
Rated heat output (*)	*Psup*	13,0	*kW*
Type of energy input		*Electric*	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	4380	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	*m3/h*

For heat pump combination heater:

Declared load profile	XL	**Efficiency class**	na	**Water heating energy efficiency**	η_{wh}	73	%
Daily electricity consumption	Qelec	11,110	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	2302	kWh	Annual fuel consumption	AFC	NA	GJ

Specific precautions and end of life information:

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

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Information for heat pump space heaters and heat pump combination heaters
Cold climate and Low temperature

CTC AB
Ljungby

Model(s):	CTC CombiAir 12M + CTC EcoZenith i360/EcoVent i360F			
Air-to-water heat pump:	Yes	Energy efficiency class:		-
Water-to-water heat pump:	No	Controller class:	VI	-
Brine-to-water heat pump:	No	Controller contribution:	4	%
Low-temperature heat pump:	No	Package efficiency:	146	%
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
Rated heat output (*)	*Prated*	12	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	7,1	kW
T j = + 2 °C	*Pdh*	4,3	kW
T j = + 7 °C	*Pdh*	3,5	kW
T j = + 12 °C	*Pdh*	4,8	kW
T j = bivalent temperature	*Pdh*	8,4	kW
T j = operation limit temperature	*Pdh*	6,0	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	1,7	kW
Bivalent temperature	T_{biv}	-12	°C
Cycling interval capacity for heating	P_{cych}	na	kW
Degradation co-efficient	*Cdh*	0,95	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,002	kW
Thermostat-off mode	P_{TO}	0,020	kW
Standby mode	P_{SB}	0,015	kW
Crankcase heater mode	P_{CK}	0,035	kW
Other items			
Capacity control		Variable	
Sound power level, indoors/ outdoors	L_{WA}	-/57	dB
Annual energy consumption	Q_{HE}	8302	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	142	%
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	*COPd*	3,16	-
T j = +2 °C	*COPd*	4,29	-
T j = +7 °C	*COPd*	5,59	-
T j = +12 °C	*COPd*	7,56	-
T j = bivalent temperature	*COPd*	2,70	-
T j = operation limit temperature	*COPd*	2,10	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	4,02	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	-20	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	58	°C
Supplementary heater			
Rated heat output (*)	*Psup*	11,5	kW
Type of energy input		Electric	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	4380	m3/h
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	na	m3/h

For heat pump combination heater:

Declared load profile	XL	**Efficiency class**	na	**Water heating energy efficiency**	η_{wh}	73	%
Daily electricity consumption	Q_{elec}	11,110	kWh	Daily fuel consumption	Q_{fuel}	NA	kWh
Annual electricity consumption	AEC	2302	kWh	Annual fuel consumption	AFC	NA	GJ

Specific precautions and end of life information:

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

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