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

CTC AB Ljungby



Model(s):	CTC CombiAir 8M	CTC CombiAir 8M + CTC EcoLogic						
Air-to-water heat pump:	Yes	Energy efficiency class:		-				
Water-to-water heat pump:	No	Controller class:	VI	-				
Brine-to-water heat pump:	No	Controller contribution:	4	%				
Low-temperature heat pump:	No	Package efficiency:	184	%				
Equipped with a supplementary heater:	No	Package efficiency class:		-				
Heat pump combination heater:	No							

ltem	Symbol	Value	Unit	ltem	Symbol	Value	Unit
Rated heat output (*)	Prated	8	kW	Seasonal space heating energy efficiency	η _s	180	%
Declared capacity for heating fo outdoor temperature T j	r part load at in	door temperatı	ure 20 °C and	Declared coefficient of performat part load at indoor temperature 2			
T j = – 7 °C	Pdh	na	kW	T j = – 7 °C	COPd	na] -
T j = + 2 °C	Pdh	6,9	kW	T j = +2 °C	COPd	2,43	-
T j = + 7 °C	Pdh	5,2	kW	T j = +7 °C	COPd	3,69	-
T j = + 12 °C	Pdh	3,8	kW	T j = +12 °C	COPd	6,50	-
T j = bivalent temperature	Pdh	7,4	kW	T j = bivalent temperature	COPd	2,69	-
T j = operation limit temperature	Pdh	6,9	kW	T j = operation limit temperature	COPd	2,43	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	3	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient	Cdh	0,97	-	Heating water operating limit temperature	WTOL	58	°C
Power consumption in modes o	ther than active	mode		Supplementary heater			-
Off mode	P _{OFF}	0,002	kW	Rated heat output (*)	Psup	1,1	kW
Thermostat-off mode	P _{TO}	0,015	kW				
Standby mode	P _{SB}	0,015	kW	Type of energy input		Electric	
Crankcase heater mode	Р _{СК}	0,030	kW				
Other items							
Capacity control		Variable		For air-to-water heat pumps: Rated air flow rate, outdoors	-	3000	m3/l
Sound power level, indoors/ outdoors	L _{WA}	-/54	dB	For water-/brine-to-water heat pumps: Rated brine or water	_	na	m3/l
Annual energy consumption	Q _{HE}	2333	kWh	flow rate, outdoor heat exchanger			
For heat pump combination hea	iter:	· · · · · ·				•	
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	kWł
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	NA	GJ
Specific precautions and end of life information:		end of the produc importance that th	t's life cycle, it mus ne product's refrige	a recycling station or with the installation eng st be sent correctly to a waste station or resell- erant, compressor oil and electrical/electronic Id waste is not permitted.	er offering a serv	vice of that type.	It is of gr
Contact details C	TC AB, Box 309	SE-3/1 26 Liun	aby Tol ±46 27	2 88000 www.ctc.se			23121

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

CTC AB Ljungby



Model(s):	CTC CombiAir 8M + 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:	229	%			
Equipped with a supplementary heater:	No	Package efficiency class:		-			
Heat pump combination heater:	No						

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	8	kW	Seasonal space heating energy efficiency	η _s	225	%
Declared capacity for heating f outdoor temperature T j	or part load at in	door temperat	ure 20 °C and	Declared coefficient of performation part load at indoor temperature is the second statement of the se	-		
T j = – 7 °C	Pdh	na	kW	T j = − 7 °C	COPd	na] -
T j = + 2 °C	Pdh	6,7	kW	T j = +2 °C	COPd	3,77	-
T j = + 7 °C	Pdh	5,2	kW	T j = +7 °C	COPd	5,11	
T j = + 12 °C	Pdh	3,6	kW	T j = +12 °C	COPd	7,29	-
T j = bivalent temperature	Pdh	7,2	kW	T j = bivalent temperature	COPd	4,05	-
T j = operation limit temperature	Pdh	6,7	kW	T j = operation limit temperature	COPd	3,77	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	3	°C	For air-to-water heat pumps: Operation limit temperature	TOL	2	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient	Cdh	0,96	-	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	1,3	kW
Thermostat-off mode	P _{TO}	0,015	kW				
Standby mode	P _{SB}	0,015	kW	Type of energy input		Electric	
Crankcase heater mode	Р _{СК}	0,030	kW				
Other items							Ĩ
Capacity control		Variable		For air-to-water heat pumps: Rated air flow rate, outdoors	-	3000	m3/h
Sound power level, indoors/ outdoors	L _{WA}	-/54	dB	For water-/brine-to-water heat pumps: Rated brine or water	_	na	m3/h
Annual energy consumption	Q _{HE}	1879	kWh	flow rate, outdoor heat exchanger			1110/11
For heat pump combination he	ater:						
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:		end of the produc importance that t	t's life cycle, it mus he product's refrige	a recycling station or with the installation eng st be sent correctly to a waste station or resell erant, compressor oil and electrical/electronic Id waste is not permitted.	er offering a serv	vice of that type.	It is of great
Contact details	CTC AB, Box 309,	SE-341 26 Ljun	gby Tel +46 37	2 88000 www.ctc.se			231218

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

CTC AB Ljungby



Model(s):	CTC CombiAir 8	CTC CombiAir 8M + 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:	131	%			
Equipped with a supplementary heater:	No	Package efficiency class:	A++	-			
Heat pump combination heater:	No						

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	7	kW	Seasonal space heating energy efficiency	η _s	127	%
Declared capacity for heating fo outdoor temperature T j	or part load at ir	door temperati	ure 20 °C and	Declared coefficient of performan part load at indoor temperature 2	-		
T j = – 7 °C	Pdh	6,3	kW	T j = − 7 °C	COPd	1,94	- 1
T j = + 2 °C	Pdh	3,9	kW	T j = +2 °C	COPd	3,11	- 1
T j = + 7 °C	Pdh	2,6	kW	T j = +7 °C	COPd	4,42	- 1
T j = + 12 °C	Pdh	3,7	kW	T j = +12 °C	COPd	5,93	-
T j = bivalent temperature	Pdh	6,6	kW	T j = bivalent temperature	COPd	1,83	-
T j = operation limit temperature	Pdh	5,9	kW	T j = operation limit temperature	COPd	1,86	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-8,6	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient	Cdh	0,97	-	Heating water operating limit temperature	WTOL	58	°C
Power consumption in modes o	ther than active	e mode		Supplementary heater			-
Off mode	P _{OFF}	0,002	kW	Rated heat output (*)	Psup	1,1	kW
Thermostat-off mode	Р _{то}	0,010	kW				
Standby mode	P _{SB}	0,015	kW	Type of energy input		Electric	
Crankcase heater mode	Р _{СК}	0,030	kW				
Other items							
Capacity control		Variable		For air-to-water heat pumps: Rated air flow rate, outdoors	-	3000	m3/h
L Sound power level, indoors/ outdoors	L _{WA}	-/54	dB	For water-/brine-to-water heat pumps: Rated brine or water	-	na	m3/h
Annual energy consumption	Q _{HE}	4435	kWh	flow rate, outdoor heat exchanger			-,
For heat pump combination hea	ater:	·		·		-	-
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:		end of the produc importance that the	t's life cycle, it mus he product's refrige	a recycling station or with the installation eng st be sent correctly to a waste station or resell erant, compressor oil and electrical/electronic Id waste is not permitted.	er offering a serv	ice of that type.	It is of grea
Contact details (CTC AB, Box 309	, SE-341 26 Ljun	gby Tel +46 37	2 88000 www.ctc.se			231218

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

CTC AB Ljungby



Model(s):	CTC CombiAir 8M + 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:	176	%			
Equipped with a supplementary heater:	No	Package efficiency class:	A+++	-			
Heat pump combination heater:	No						

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	8	kW	Seasonal space heating energy efficiency	η _s	172	%
Declared capacity for heating f outdoor temperature T j	or part load at in	door temperati	ure 20 °C and	Declared coefficient of performat part load at indoor temperature :	-		
T j = – 7 °C	Pdh	7,4	kW	T j = – 7 °C	COPd	2,92	- [
T j = + 2 °C	Pdh	4,5	kW	T j = +2 °C	COPd	4,30	-
T j = + 7 °C	Pdh	2,9	kW	T j = +7 °C	COPd	5,42	
T j = + 12 °C	Pdh	3,5	kW	T j = +12 °C	COPd	7,37	
T j = bivalent temperature	Pdh	7,4	kW	T j = bivalent temperature	COPd	2,86	-
T j = operation limit temperature	Pdh	6,9	kW	T j = operation limit temperature	COPd	2,67	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-8	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient	Cdh	0,96	-	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	1,4	kW
Thermostat-off mode	P _{TO}	0,015	kW				
Standby mode	P _{SB}	0,015	kW	Type of energy input		Electric	
Crankcase heater mode	Р _{СК}	0,030	kW				
Other items							
Capacity control		Variable		For air-to-water heat pumps: Rated air flow rate, outdoors	-	3000	m3/h
Sound power level, indoors/ outdoors	L _{WA}	-/54	dB	For water-/brine-to-water heat pumps: Rated brine or water	_	na	m3/h
Annual energy consumption	Q _{HE}	3882	kWh	flow rate, outdoor heat exchanger		iid.	1113/11
For heat pump combination he	ater:	• I	I			•	<u> </u>
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:		end of the produc importance that the	t's life cycle, it mus he product's refrige	a recycling station or with the installation eng st be sent correctly to a waste station or resell erant, compressor oil and electrical/electronic Id waste is not permitted.	er offering a serv	vice of that type.	It is of great
Contact details	CTC AB, Box 309,	SE-341 26 Ljun	gby Tel +46 37	2 88000 www.ctc.se			231218
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Information for heat pump space heaters and heat pump combination heaters **Cold climate and Medium temperature**

CTC AB Ljungby



Model(s):	CTC CombiAir 8	CTC CombiAir 8M + 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:	112	%			
Equipped with a supplementary heater:	No	Package efficiency class:		-			
Heat pump combination heater:	No						

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	10	kW	Seasonal space heating energy efficiency	η _s	108	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperati	ure 20 °C and	Declared coefficient of performation part load at indoor temperature is the second statement of the se	-		
T j = – 7 °C	Pdh	6,2	kW	T j = − 7 °C	COPd	2,29] -
T j = + 2 °C	Pdh	3,8	kW	T j = +2 °C	COPd	3,43	-
T j = + 7 °C	Pdh	2,7	kW	T j = +7 °C	COPd	4,80	
T j = + 12 °C	Pdh	3,7	kW	T j = +12 °C	COPd	6,94	-
T j = bivalent temperature	Pdh	6,7	kW	T j = bivalent temperature	COPd	2,05	-
T j = operation limit temperature	Pdh	3,7	kW	T j = operation limit temperature	COPd	1,60	-
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	3,01	-
Bivalent temperature	T _{biv}	-10	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-20	°C
Cycling interval capacity for heating	P _{cych}	-/50	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient	Cdh	0,96	-	Heating water operating limit temperature	WTOL	58	°C
Power consumption in modes of	other than active	mode		Supplementary heater			-
Off mode	P _{OFF}	0,002	kW	Rated heat output (*)	Psup	10,0	kW
Thermostat-off mode	P _{TO}	0,015	kW				
Standby mode	P _{SB}	0,015	kW	Type of energy input		Electric	
Crankcase heater mode	Р _{СК}	0,030	kW				
Other items							
Capacity control		Variable		For air-to-water heat pumps: Rated air flow rate, outdoors	-	3000	m3/h
Sound power level, indoors/ outdoors	L _{WA}	-/54	dB	For water-/brine-to-water heat pumps: Rated brine or water	_	na	m3/h
Annual energy consumption	Q _{HE}	8844	kWh	flow rate, outdoor heat exchanger		ind ind	1113/11
For heat pump combination he	ater:	<u>.</u>					
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:		end of the produc importance that th	t's life cycle, it mus ne product's refrige	a recycling station or with the installation eng st be sent correctly to a waste station or resell erant, compressor oil and electrical/electronic Id waste is not permitted.	er offering a serv	vice of that type.	It is of great
Contact details	CTC AB, Box 309,	SE-341 26 Ljun	gby Tel +46 37	2 88000 www.ctc.se			231218
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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 8M + 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:	136	%		
Equipped with a supplementary heater:	No	Package efficiency class:		-		
Heat pump combination heater:	No					

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	9	kW	Seasonal space heating energy efficiency	η _s	132	%
Declared capacity for heating f outdoor temperature T j	or part load at in	door temperati	ure 20 °C and	Declared coefficient of performat part load at indoor temperature :	-		
T j = – 7 °C	Pdh	5,5	kW	T j = − 7 °C	COPd	3,13	- [
T j = + 2 °C	Pdh	3,4	kW	T j = +2 °C	COPd	4,32	-
T j = + 7 °C	Pdh	2,6	kW	T j = +7 °C	COPd	5,48	
T j = + 12 °C	Pdh	3,5	kW	T j = +12 °C	COPd	7,34	-
T j = bivalent temperature	Pdh	6,4	kW	T j = bivalent temperature	COPd	2,77	-
T j = operation limit temperature	Pdh	4,4	kW	T j = operation limit temperature	COPd	2,08	-
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}	-11	°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	СОРсус	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	9,0	kW
Thermostat-off mode	P _{TO}	0,015	kW				
Standby mode	P _{SB}	0,015	kW	Type of energy input		Electric	
Crankcase heater mode	Р _{СК}	0,030	kW				
Other items						T	
Capacity control		Variable		For air-to-water heat pumps: Rated air flow rate, outdoors	-	3000	m3/h
Sound power level, indoors/ outdoors	L _{WA}	-/54	dB	For water-/brine-to-water heat pumps: Rated brine or water	_	na	m3/h
Annual energy consumption	Q _{HE}	6264	kWh	flow rate, outdoor heat exchanger		110	1113/11
For heat pump combination he	ater:	<u>.</u>				1	
Declared load profile	na	Efficiency class	na	Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	Q_{elec}	na	kWh	Daily fuel consumption	$\boldsymbol{Q}_{\text{fuel}}$	NA	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	NA	GJ
Specific precautions and end of life information:		end of the produc importance that the	t's life cycle, it mus he product's refrige	a recycling station or with the installation eng st be sent correctly to a waste station or resell erant, compressor oil and electrical/electronic Id waste is not permitted.	er offering a serv	vice of that type.	It is of great
Contact details	CTC AB, Box 309,	SE-341 26 Ljun	gby Tel +46 37	2 88000 www.ctc.se			231218

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

CTC AB Ljungby



Model(s):	CTC CombiAir 8N	CTC CombiAir 8M + 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:	184	%					
Equipped with a supplementary heater:	Yes	Package efficiency class:		-					
Heat pump combination heater:	Yes								

Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature 7 j T = -7°C Pdh 0,9 kW T = -7°C COPd 2,43 - T = -7°C COPd 2,43 - T = -7°C COPd 3,69 - T = +12°C COPd 2,69 - T = +12°C COPd 2,43 - T = +12°C COPd 2,43 - T = +12°C COPd 2,49 - T = +12°C COPd 2,43 - T = +12°C COPd 2,43 - T = +12°C COPd 2,49 - T = +12°C COPD	Item	Symbol	Value	Unit	ltem	Symbol	Value	Unit
outdoor temperature T j $T = -7^{\circ}C$ Pdhna $T = -7^{\circ}C$ Pdhfa $T = -7^{\circ}C$ Pdhfa $T = -7^{\circ}C$ Pdhfa $T = +7^{\circ}C$ COPdfa $T = +7^{\circ}C$ Pdhfa $T = +7^{\circ}C$ COPdfa $T = +7^{\circ}C$ Pdhfa $T = -7^{\circ}C$ Pdh	Rated heat output (*)	Prated	8	kW		η _s	180	%
T j = 2 °C T j = + 7 °C T j = + 7 °CPdh6,9 5,2kW 	Declared capacity for heating f outdoor temperature T j	or part load at in	door temperat	ure 20 °C and		-		
T j = + 7 °CPdh5,2kWT j = + 7 °CCOPd3,69-T j = + 12 °CPdh3,8kWT j = + 12 °CCOPd6,50-T j = bivalent temperaturePdh7,4kWT j = bivalent temperatureCOPd2,69-T j = operation limitPdh6,9kWT j = operation limitCOPd2,43-For air-to-water heat pumps:PdhnakWT j = -15 °C (If TOL < - 20 °C)	T j = – 7 °C	Pdh	na	kW	T j = – 7 °C	COPd	na	- [
T j = + 12 °CPdh3,8kWT j = + 12 °CCOPd6,50-T j = bivalent temperaturePdh7,4kWT j = poration limitCOPd2,63-T j = oparation limitPdh6,9kWT j = oparation limitCOPd2,43-For air-to-water heat pumps:PdhnakWFor air-to-water heat pumps:COPd2,43-T j = -15 °C (if TOL < -20 °C)	T j = + 2 °C	Pdh		kW		COPd		-
TJbivalent temperaturePdh7,4KWTj = operation limit temperaturePdh6,9KWTj = operation limit temperaturePdh6,9KWFor air-to-water heat pumps: TPdhnaKWBivalent temperatureT by3*CBivalent temperatureT by3*CCycling interval capacity for heatingP cychnaKWDegradation co-efficientCdh0,97.Power consumption in modes other than active modeKWCycling interval efficiencyCOPcycOff modeP or0,015KWThermosta-off modeP or0,015KWCapacity controlVariableFor air-to-water heat pumps: consumption in modes other than active modeFor air-to-water heat pumps: outdoorsNTUSound power level, indoors/ outdoorsL wA-/54dBAnnual energy consumption outdoorsQ L L kAW-/54dBDelared load profileXLEfficiency classNaDelared load profileXLEfficiency classNaDelared load profileXLEfficiency classNaDaily electricity consumptionQelec7,610KWhAnnual electricity: consumptionAECNASpecific precautions and end of file information:The packaping must be deposited at a recycling station or with the installation engineer for correct wate annagement. At the end of the product	T j = + 7 °C	Pdh		kW	-	COPd		-
T j = operation limit temperature pdh $6,9$ kWT j = operation limit temperature $COPd$ $2,43$ For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C)	T j = + 12 °C	Pdh	3,8	kW	T j = +12 °C	COPd	6,50	-
temperaturePan6,9KWtemperatureCOPa2,43-For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	T j = bivalent temperature	Pdh	7,4	kW	T j = bivalent temperature	COPd	2,69	-
T j = -15 °C (if TOL < - 20 °C)PannakWT j = -15 °C (if TOL < - 20 °C)CDPana-Bivalent temperatureT biv3°CFor air-to-water heat pumps: Operation limit temperatureTOL2°CCycling interval capacity for heating P_{oych} nakWCycling interval efficiencyCOPcycna-Degradation co-efficientCdh0,97Heating water operating limit temperatureWTOL58°CPower consumption in modes other than active modeOkWSupplementary heaterSupplementary heaterSupplementary heaterOff modeP orr0,015kWType of energy inputElectricElectricCanactase heater modeP or0,030kWType of energy inputElectricCapacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors3000m3/hSound power level, indoors/ outdoorsL wA-/54dBdBFor heat pump combination heater:Efficiency classnamam3/hDeclared load profileXLEfficiency classnaMare heating energy efficiencyNa107Annual electricity consumptionQelec7,610kWhDaily fuel consumptionQfuelNAkWhAnnual electricity consumptionAEC1563kWhAnnual fuel consumptionAFCNAKWSpecific precautions and end of the product 3i fle cycle, timus be sent corectl	T j = operation limit temperature	Pdh	6,9	kW	• •	COPd	2,43	-
Brainer temperature I_{biv} 3 C Operation limit temperature IOL 2 C Cycling interval capacity for heating P_{cych} na kW Operation limit temperature IOL 2 C $C_{cycling}$ interval capacity for heating COP_{cyc} na $-$ Heating water operating limit $WTOL$ 58 C $Cycling interval efficiency COP_{cyc} na - Heating water operating limit WTOL 58 C Cycling interval efficiency VTOL 58 C Cycling interval efficiency VTVOL 58 C T Cycling interval efficiency VTVOL Cycling interval efficiency VTVOL Cycling interval efficiency VTVV Cycling interval efficiency VTVVV VTVVVVVVVVVVVVVVVVVVVVVVVVVVVV$	For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW		COPd	na	-
heating P_{cych} nakWCycling interval efficiency $COPcyc$ naDegradation co-efficient Cdh $0,97$ -Heating water operating limit temperature $WTOL$ 58°CPower consumption in modes other than active mode $0,002$ kW Supplementary heater Rated heat output (*) $Psup$ $1,1$ kW Off mode P_{orr} $0,0015$ kW Supplementary heater Rated heat output (*) $Psup$ $1,1$ kW Standby mode P_{sa} $0,015$ kW Type of energy input $Electric$ Crankcase heater mode P_{cx} $0,030$ kW Type of energy input $Electric$ Capacity controlVariable $Variable$ For air-to-water heat pumps: Rated air flow rate, outdoors 3000 $m3/h$ Sound power level, indoors/ outdoors L_{WA} $-/54$ dB pumps: Rated brine or water 	Bivalent temperature	T _{biv}	3	°C		TOL	2	°C
Degradation co-efficient Cdh 0,97 - temperature WTOL 58 °C Power consumption in modes other than active mode Off mode Power 0,002 kW Supplementary heater Rated heat output (*) Psup 1,1 kW Thermostat-off mode P ro 0,015 kW Type of energy input Electric Electric Crankcase heater mode P cx 0,030 kW Type of energy input Electric m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 3000 m3/h Sound power level, indoors/ outdoors L wA -/54 dB pumps: Rated brine or water na m3/h Annual energy consumption Q HE 2333 kWh Water heating energy nwh 107 % Daily electricity consumption Qelec 7,610 kWh Annual fuel consumption Qfuel NA kWh Annual electricity AEC 1563 kWh Annual fuel consumption Qfuel NA kWh Specific precautions and end of life information: The pa	Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na] -
Off mode P orf 0,002 kW Rated heat output (*) Psup 1,1 kW Thermostat-off mode P ro 0,015 kW Type of energy input Electric Standby mode P ss 0,015 kW Type of energy input Electric Crankcase heater mode P ck 0,030 kW Type of energy input Electric Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 3000 m3/h Sound power level, indoors/ outdoors L WA -/54 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger na m3/h For heat pump combination heater: Efficiency na m3/h m3/h Declared load profile XL Efficiency class na m3/h Daily electricity consumption Qelec 7,610 kWh Annual lectonsumption Qfuel NA kWh Annual electricity consumption AEC 1563 kWh Annual fuel consumption AFC NA GJ Specific precautions and end of life information: Disposing of the product'	Degradation co-efficient	Cdh	0,97	-	o . o	WTOL	58	°C
Thermostat-off mode P_{TO} $0,015$ kW Standby mode P_{ss} $0,015$ kW Crankcase heater mode P_{cx} $0,030$ kW Other items	Power consumption in modes	other than active	mode		Supplementary heater			-
Standby mode P sg 0,015 kW Type of energy input Electric Crankcase heater mode P cx 0,030 kW Type of energy input Electric Other items	Off mode	P _{OFF}	0,002	kW	Rated heat output (*)	Psup	1,1	kW
Crankcase heater mode P or	Thermostat-off mode	P _{TO}	0,015	kW				
Other items Capacity control Variable Sound power level, indoors/ outdoors L wA -/54 dB Annual energy consumption Q HE 2333 kWh For water-/brine-to-water heat pumps: Rated air flow rate, outdoors na m3/h Annual energy consumption Q HE 2333 kWh row ater-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger na m3/h For heat pump combination heater: Efficiency class na m3/h Mater heating energy efficiency nwh 107 % Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 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 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 life cycle, it must be sent correctly to a waste station o	Standby mode	P _{SB}	0,015	kW	Type of energy input		Electric	
Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors 3000 m3/h Sound power level, indoors/ outdoors L _{WA} -/54 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat na m3/h Annual energy consumption Q _{HE} 2333 kWh For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h For heat pump combination heater: Declared load profile XL Efficiency class na Water heating energy efficiency n _{wh} 107 % Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 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 refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.	Crankcase heater mode	Р _{СК}	0,030	kW				
Capacity control Variable Rated air flow rate, outdoors 3000 m3/h Sound power level, indoors/ outdoors L wa -/54 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 2333 kWh kWh Rated air flow rate, outdoor heat pumps: Rated brine or water flow rate, outdoor heat exchanger na m3/h For heat pump combination heater: Efficiency class na Water heating energy efficiency nwh 107 % Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 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.	Other items		•					ī
outdoors L wa -/54 dB pumps: Rated brine or water Annual energy consumption Q HE 2333 kWh pumps: Rated brine or water For heat pump combination heater: 2333 kWh exchanger Declared load profile XL Efficiency class na Water heating energy efficiency η_{wh} 107 % Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 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 iffe 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.	Capacity control		Variable			-	3000	m3/h
Annual energy consumption Q HE 2333 kWh How rate, outdoor heat exchanger For heat pump combination heater:	Sound power level, indoors/ outdoors	L _{WA}	-/54	dB	pumps: Rated brine or water	_	na	m3/h
For heat pump combination heater: Declared load profile XL Efficiency class na Water heating energy efficiency η_{wh} 107 % Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 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.	Annual energy consumption	Q _{HE}	2333	kWh				
Declared load profile XL class na efficiency rlwh 107 % Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 kWh Annual fuel consumption AFC NA GJ Specific precautions and 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.	For heat pump combination he	eater:	·				-	<u> </u>
Annual electricity consumption AEC 1563 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.	Declared load profile	XL	-	na		η_{wh}	107	%
Consumption AEC 1563 KWn 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.	Daily electricity consumption	Qelec	7,610	kWh	Daily fuel consumption	Qfuel	NA	kWh
Specific precautions and end 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.	Annual electricity consumption	AEC	1563	kWh	Annual fuel consumption	AFC	NA	GJ
Contact details CTC AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se 231218	Specific precautions and end of life information:		end of the produc importance that t	t's life cycle, it mus he product's refrige	st be sent correctly to a waste station or resell erant, compressor oil and electrical/electronic	er offering a serv	vice of that type.	It is of great
	Contact details	CTC AB, Box 309,	SE-341 26 Ljun	gby Tel +46 37	2 88000 www.ctc.se			231218

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

CTC AB Ljungby



Model(s):	CTC CombiAir 8N	CTC CombiAir 8M + 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:	229	%					
Equipped with a supplementary heater:	Yes	Package efficiency class:		-					
Heat pump combination heater:	Yes								

Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j T = -7 °C Pdh na T = +2 °C Pdh 6,7 kW T = +2 °C COPd 3,77 - T = +12 °C Pdh 3,6 kW T = +2 °C COPd 5,11 - T = +2 °C COPd 5,11 - T = +2 °C COPd 5,11 - T = +2 °C COPd 3,77 - T = +12 °C COPd 7,29 - T = +12 °C COPd 7	Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
autdoor temperature T j $T j = -7^{\circ}C$ Pdhna $T j = -7^{\circ}C$ Pdh5,7 $T j = +7^{\circ}C$ Pdh5,2 $T j = +7^{\circ}C$ COPd3,77 $T j = bivalent temperaturePdh6,7T j = bivalent temperaturePdh6,7T j = operation limitPdh6,7T j = -15^{\circ}C (If TOL < -20^{\circ}C)PdhP d hnaKWT j = operation limitCOPdT j = -15^{\circ}C (If TOL < -20^{\circ}C)PdhP ar i = -15^{\circ}C (If TOL < -20^{\circ}C)COPdP ar i = -15^{\circ}C (If TOL < -20^{\circ}C)P ar i = -15^{\circ}C (If TOL < -20^{\circ}C$	Rated heat output (*)	Prated	8	kW		η _s	225	%
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Declared capacity for heating for outdoor temperature T j	or part load at in	door temperati	ure 20 °C and				
T j = + 7 °CPdh5,2kWT j = + 7 °CCOPd5,11-T j = + 7 °CPdh3,6KWT j = + 12 °CCOPd7,29-T j = bivalent temperaturePdh7,2KWT j = trace coperation limitCOPd4,05-T j = operation limitPdh6,7KWT j = operation limitCOPd3,77-For air-to-water heat pumps:PdhnakWT j = operation limitCOPd3,77-For air-to-water heat pumps:PdhnakWFor air-to-water heat pumps:COPdna-For air-to-water heat pumps:T j = -15 °C (if TOL < -20 °C)	T j = – 7 °C	Pdh	na	kW	T j = − 7 °C	COPd	na] -
T j = + 12 °CPdh3,6kWT j = +12 °CCOPd7,29-T j = bivalent temperaturePdh6,7kWT j = operation limitCOPd4,05-T j = operation limitPdh6,7kWT j = operation limitCOPd3,77-For air-to-water heat pumps:PdhnakWT j = operation limitCOPd3,77-For air-to-water heat pumps:PdhnakWT j = -15 °C (if TOL < - 20 °C)	T j = + 2 °C	Pdh		kW		COPd		
TJbivalent temperaturePdh7,2KWTJbivalent temperatureCOPd4,05-Tj = operation limit temperaturePdh6,7KWTj = operation limit temperatureCOPd3,77-For air-to-water heat pumps: TPdhnakWFor air-to-water heat pumps: TCOPdna-Bivalent temperatureTbiv3*CFor air-to-water heat pumps: Operation limit temperatureCOPdna-Bivalent temperatureTbiv3*CFor air-to-water heat pumps: Operation limit temperatureTOL2*CCycling interval capacity for heatingP cychnakWCycling interval efficiencyCOPcycna-Degradation co-efficientCdh0,96-Heating water operating limit temperatureTOL2*CStandby modeP or0,015KWSupplementary heaterRated heat output (*)Psup1,3kWType of energy inputElectricSupplementary heater-nam3/hCapacity controlVariable-For air-to-water heat pumps: outdoors3000m3/hSound power level, indoors/ outdoorsL WAA-/54dBDaily fuel consumptionQfuelNaAnnual energy consumptionQHE1563KWhDaily fuel consumptionQfuelNAKWhAnnual electricity consumptionCelec7,610		Pdh		kW		COPd		
T j = operation limit temperature pdh $6,7$ kWT j = operation limit temperature $COPd$ $3,77$ For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	T j = + 12 °C	Pdh	3,6	kW	T j = +12 °C	COPd	7,29	-
temperaturePan6,7kWtemperatureCOPa3,77-For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C)	T j = bivalent temperature	Pdh	7,2	kW	T j = bivalent temperature	COPd	4,05	-
T j = -15 °C (if TOL < -20 °C)PahnakWT j = -15 °C (if TOL < -20 °C)COPana-Bivalent temperatureT biv3°CFor air-to-water heat pumps: Operation limit temperatureTOL2°CCycling interval capacity for heating P_{orch} nakWCycling interval efficiencyCOPcycna-Degradation co-efficientCdh0,96-Heating water operating limit temperatureWTOL58°CPower consumption in modes other than active modeNoKWSupplementary heater Rated heat output (*)PSup1,3kWThemosta-off modeP or o0,015kWType of energy inputElectricCapacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors3000m3/hSound power level, indoors/ outdoorsL wA-/54dBdBAnnual energy consumption Q HE1879kWhFor air-to-water heat pumps: Rated brine or water flow rate, outdoors heat exchanger3000m3/hFor heat pump combination heater:Efficiency classnam3/h107%Daily electricity consumptionQelec7,610kWhDaily fuel consumptionQfuelNAkWhAnnual electricity consumptionAEC1563KWhAnnual fuel consumptionAFCNAGJSpecific precautions and end of the product si fle ordo, it may to be deposited at a recycling station or with the installation engineer for correct w	T j = operation limit temperature	Pdh	6,7	kW		COPd	3,77	-
Briadent temperature I biv 3 C Operation limit temperature I DL 2 C Cycling interval capacity for heating P cych na kW Operation limit temperature I DL 2 C Degradation co-efficient Cdh 0,96 - Heating water operating limit temperature COPCycc na - Power consumption in modes other than active mode 0,002 kW Heating water operating limit temperature WTOL 58 °C Supplementary heater Rated heat output (*) Psup 1,3 kW Thermostat-off mode P or 0,015 kW Type of energy input Electric Crankcase heater mode P ox 0,030 kW Type of energy input Electric Capacity control Variable For air-to-water heat pumps: nated air flow rate, outdoors - 3000 m3/h Sound power level, indoors/ outdoors L wA -/54 dB Gor rate, outdoors - na m3/h For heat pump combination heater: Efficiency na - na m3/h Daily electricity c	For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	Pdh	na	kW		COPd	na	-
heating P_{cych} nakWCycling interval efficiency $COPcyc$ naDegradation co-efficient Cdh $0,96$ Heating water operating limit temperature $WTOL$ 58 $^{\circ}C$ Power consumption in modes other than active mode $0,002$ kW Supplementary heater Rated heat output (*) $Psup$ $1,3$ kW Thermostat-off mode P_{orer} $0,0015$ kW Type of energy input $Electric$ Crankcase heater mode P_{cx} $0,030$ kW Type of energy input $Electric$ Capacity controlVariable KWh For air-to-water heat pumps: Rated air flow rate, outdoors 3000 $m3/h$ Sound power level, indoors/ outdoors L_{WA} $-/54$ dB flow rate, outdoor heat exchanger ma $m3/h$ For heat pump combination heater: $Efficiency$ na $Mater heating energy$ efficiency na $m3/h$ Declared load profileXLEfficiency class na $Water heating energy$ efficiency NA kWh Daily electricity consumptionQelec $7,610$ kWh Daily fuel consumption $Qfuel$ NA kWh Annual electricity consumptionAEC 1563 kWh Annual fuel consumption AFC NA GJ Specific precautions and end of life information: $Disposing$ of the product as household waste is not permitted. $Disposing$ of the product as household waste is not permitted.	Bivalent temperature	T _{biv}	3	°C		TOL	2	°C
Degradation co-efficient Cah 0,96 temperature WIOL 58 *C Power consumption in modes other than active mode Off mode Power 0,002 kW Supplementary heater Rated heat output (*) Psup 1,3 kW Thermostat-off mode P ro 0,015 kW Type of energy input Electric Electric Cahacase heater mode P cx 0,030 kW Type of energy input Electric m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors 3000 m3/h Sound power level, indoors/ outdoors L wA -/54 dB pumps: Rated brine or water na m3/h Annual energy consumption Q HE 1879 kWh Water heating energy nuh 107 % Daily electricity consumption Qelec 7,610 kWh Annual fuel consumption Qfuel NA kWh Annual electricity AEC 1563 kWh Annual fuel consumption AFC NA KW Specific precautions and end of life information: The packaging must be deposited at a recycli	Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Off mode P orf 0,002 kW Thermostat-off mode P ro 0,015 kW Standby mode P sg 0,015 kW Crankcase heater mode P cc 0,030 kW Other items 0,030 kW Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors 3000 m3/h Sound power level, indoors/ outdoors L WA -/54 dB For water-/brine-to-water heat pumps: Rated air flow rate, outdoors 3000 m3/h For heat pump combination heater: Declared load profile XL Efficiency class na m3/h Daily electricity consumption consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kW 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. If was be sent correctly to a waste station or reseller of fiering a service of that type. It is of great importance that the product's fier cycle. If was be sent correctly a awaste station or celler of fiering a service of that type. It is of great importance that the product's fier cycle. It is of great importance that the product's fier cycle. It is of great importance that the product's how pressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted. <td>Degradation co-efficient</td> <td>Cdh</td> <td>0,96</td> <td>-</td> <td></td> <td>WTOL</td> <td>58</td> <td>°C</td>	Degradation co-efficient	Cdh	0,96	-		WTOL	58	°C
Thermostat-off mode P_{TO} $0,015$ kW Standby mode P_{sB} $0,015$ kW Standby mode P_{cx} $0,030$ kW Crankcase heater mode P_{cx} $0,030$ kW Other items P_{cx} $0,030$ kW Capacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors-Sound power level, indoors/ outdoors L_{WA} $-/54$ dB pumps: Rated brine or water flow rate, outdoors-Annual energy consumption Q_{HE} 1879 kWh Por water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger-naFor heat pump combination heater:Declared load profileXLEfficiency classnaDeclared load profileXLEfficiency classnaWater heating energy efficiency η_{wh} 1077 Daily electricity consumptionQelec $7,610$ kWhAnnual fuel consumptionQfuelNAkWhAnnual electricity consumptionAEC 1563 kWhAnnual fuel consumptionAFCNAGJSpecific 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 refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product a household waste is not permitted.	Power consumption in modes of	other than active	mode		Supplementary heater			_
Standby mode P sg 0,015 kW Type of energy input Electric Crankcase heater mode P cx 0,030 kW Type of energy input Electric Other items	Off mode	P _{OFF}	0,002	kW	Rated heat output (*)	Psup	1,3	kW
Crankcase heater mode P cx 0,030 kW Other items Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors 3000 m3/h Sound power level, indoors/ outdoors L wA -/54 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger na m3/h For heat pump combination heater: Efficiency class na m3/h Declared load profile XL Efficiency class na m3/h Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 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 importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product a shousehold waste is not permitted.	Thermostat-off mode	Р _{то}	0,015	kW				
Other items Capacity control Variable Sound power level, indoors/ outdoors L _{WA} -/54 dB Annual energy consumption Q _{HE} 1879 kWh For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoors - na m3/h For heat pump combination heater: - na m3/h Declared load profile XL Efficiency class na Water heating energy efficiency n _{wh} 107 % Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 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 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 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 life cycle, it must be sent or per	Standby mode	P _{SB}	0,015	kW	Type of energy input		Electric	
Other items Capacity control Variable Sound power level, indoors/ outdoors L _{WA} -/54 dB Annual energy consumption Q _{HE} 1879 kWh For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoors - na m3/h For heat pump combination heater: - na m3/h Declared load profile XL Efficiency class na Water heating energy efficiency n _{wh} 107 % Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 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 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 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 life cycle, it must be sent or per	Crankcase heater mode	Р _{СК}	0,030	kW				
Capacity control Variable Rated air flow rate, outdoors 3000 m3/h Sound power level, indoors/ outdoors L wa -/54 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 1879 kWh Water heating energy na m3/h For heat pump combination heater: Efficiency class na Water heating energy n_wh 107 % Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 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 effigrenat, compressor oil and electrical/electronic equipment are properly disposed of.	Other items		. · ·					
outdoors L wa -/54 dB pumps: Rated brine or water Annual energy consumption Q HE 1879 kWh pumps: Rated brine or water For heat pump combination heater: 1879 kWh exchanger Declared load profile XL Efficiency class na Water heating energy efficiency nwh 107 % Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 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 refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.	Capacity control		Variable			-	3000	m3/h
Annual energy consumption Q HE 1879 kWh How rate, outdoor heat exchanger For heat pump combination heater:	Sound power level, indoors/ outdoors	L _{WA}	-/54	dB		_	na	m3/h
For heat pump combination heater: Declared load profile XL Efficiency class na Water heating energy efficiency η_{wh} 107 % Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 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 refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.	Annual energy consumption	Q _{HE}	1879	kWh			ind ind	1113/11
Declared load profile XL class na efficiency I/wh 107 % Daily electricity consumption Qelec 7,610 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1563 kWh Annual fuel consumption AFC NA GJ Specific precautions and 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. Are product as household waste is not permitted.	For heat pump combination he	ater:	4					
Annual electricity consumption AEC 1563 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.	Declared load profile	XL	-	na		η_{wh}	107	%
AEC 1563 KWh Annual fuel consumption AFC NA GJ consumption Specific precautions and 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. Disposing of the product as household waste is not permitted.	Daily electricity consumption	Qelec	7,610	kWh	Daily fuel consumption	Qfuel	NA	kWh
Specific precautions and end 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.	Annual electricity consumption	AEC						
Contact details CTC AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se 231218	Specific precautions and end of life information:		end of the produc importance that the	t's life cycle, it mus he product's refrige	st be sent correctly to a waste station or resell erant, compressor oil and electrical/electronic	er offering a serv	vice of that type.	It is of great
	Contact details	CTC AB, Box 309	SE-341 26 Ljun	gby Tel +46 37	2 88000 www.ctc.se			231218

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

CTC AB Ljungby



Model(s):	CTC CombiAir 8M	CTC CombiAir 8M + 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:	131	%					
Equipped with a supplementary heater:	Yes	Package efficiency class:	A++	-					
Heat pump combination heater:	Yes								

Thermostat-off mode P_{TO} $0,010$ kW Standby mode P_{sB} $0,015$ kW Crankcase heater mode P_{CK} $0,030$ kW Other items $Capacity control$ VariableFor air-to-water heat pumps: Rated air flow rate, outdoors-Sound power level, indoors/ outdoors L_{WA} $-/54$ dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger- aa For heat pump combination heater: M_{HE} $Efficiency$ class A $Water heating energy$ efficiency η_{wh} 86 Daily electricity consumptionQelec $9,390$ kWh Daily fuel consumption $Qfuel$ NA k	ltem	Symbol	Value	Unit	Item	Symbol	Value	Unit
outdoor temperature T jT] = - 7 °CPdh6,3kWT j = - 7 °CCOPd1,94T] = - 7 °CPdh3,9kWT j = - 7 °CCOPd3,11T] = + 12 °CPdh3,7kWT j = + 2 °CCOPd3,11T j = + 12 °CPdh3,7kWT j = + 12 °CCOPd4,42T j = + 12 °CPdh6,6kWT j = + 12 °CCOPd1,83T j = oparation limitPdh5,9kWT j = oparation limitCOPd1,86For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	Rated heat output (*)	Prated	7	kW		η _s	127	%
T j = + 2 °CPdh3,9kWT j = + 2 °CCOPd3,11T j = + 12 °CPdh2,6kWT j = + 7 °CCOPd4,42T j = + 12 °CPdh3,7kWT j = + 12 °CCOPd4,42T j = bivalent temperaturePdh6,6kWT j = + 12 °CCOPd1,83T j = operation limit temperaturePdh5,9kWT j = operation limit temperatureCOPd1,83For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)		or part load at in	door temperati	ure 20 °C and		-		
T j = + 7 °CPdh2,6kWT j = + 7 °CCOPd4,42T j = + 12 °CPdh3,7kWT j = + 12 °CCOPd5,93T j = bivalent temperaturePdh6,6kWT j = peration limit temperatureCOPd1,83T j = operation limit temperaturePdh5,9kWT j = operation limit temperatureCOPd1,86For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	T j = – 7 °C	Pdh	6,3	kW	T j = – 7 °C	COPd	1,94	-
TJfJKWTJFJCCOPd5,93TJ= bivalent temperaturePdh6,6KWTJ= bivalent temperatureCOPd1,83TJ= operation limit temperaturePdh5,9kWTJ= bivalent temperatureCOPd1,86For air-to-water heat pumps: TT-NaKWFor air-to-water heat pumps: TCOPdnaBivalent temperatureTbiv8,6*CFor air-to-water heat pumps: Operation limit temperatureTOL-10Cycling interval capacity for heatingP cychnakWCycling interval efficiencyCOPcycnaBivalent temperatureTbiv8,6*CSuplementary heaterTOL-10Cycling interval capacity for heatingP cychnakWCycling interval efficiencyCOPcycnaDegradation co-efficientCdh0,97-Heating water operating limit temperatureWTOL58Power consumption in modes other than active modeFor air-to-water heat pumps: Rated air flow rate, outdoors-3000nCapacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors-3000nSound power level, indoors/ outdoorsL WA-/54dBFor air-to-water heat pumps: Rated air flow rate, outdoors-naColared load profileXLEfficiency class<	T j = + 2 °C	Pdh	3,9	kW	T j = +2 °C	COPd	3,11	-
Tj = bivalent temperaturePdh6,6kWTj = bivalent temperatureCOPd1,83Tj = operation limitpdh5,9kWTj = operation limitcoPd1,83Tj = operation limitpdh5,9kWFor air-to-water heat pumps:coPd1,86For air-to-water heat pumps:pdhnakWFor air-to-water heat pumps:coPdnaTj = -15 °C (if TOL < - 20 °C)	T j = + 7 °C	Pdh	2,6	kW	T j = +7 °C	COPd	4,42	-
T j = operation limit temperaturePdh5,9kWT j = operation limit temperatureCOPd1,86For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C)	T j = + 12 °C	Pdh	3,7	kW	T j = +12 °C	COPd	5,93	-
temperaturePan5,9KWtemperatureCOPd1,86For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C)	T j = bivalent temperature	Pdh	6,6	kW	T j = bivalent temperature	COPd	1,83	-
T j = -15 *C (if TOL < -20 *C)PannakwT j = -15 *C (if TOL < -20 *C)COPanaBivalent temperatureT biv-8,6*CFor air-to-water heat pumps: Operation limit temperatureTOL-10Cycling interval capacity for heatingP cychnakWCycling interval efficiencyCOPcycnaDegradation co-efficientCdh0,97-Heating water operating limit temperatureWTOL58Power consumption in modes other than active mode0,002kWSupplementary heater Rated heat output (*)Psup1,1Off modeP orr0,010kWType of energy inputElectricCanakcase heater modeP ox0,030kWType of energy inputElectricCapacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors-3000naSound power level, indoors/ outdoorsL WA-/54dBdBMater operating energy row rate, outdoor heat exchanger-naFor heat pump combination heater:Efficiency classAefficiency efficiencyNakDelared load profileXLEfficiency classAefficiency efficiencyNakDaily electricity consumptionQelec9,390kWhDaily fuel consumptionQruelNAk		Pdh	5,9	kW		COPd	1,86] -
Bivalent temperature I biv -3,6 'C Operation limit temperature IOL -10 Cycling interval capacity for heating P na kW Cycling interval efficiency COPcyc na Degradation co-efficient Cdh 0,97 - Heating water operating limit temperature WTOL 58 Power consumption in modes other than active mode 0,002 kW Supplementary heater Rated heat output (*) Psup 1,1 0 Thermostat-off mode P or 0,010 kW KW Type of energy input Electric Crankcase heater mode P or 0,015 kW For air-to-water heat pumps: - 3000 n Capacity control Variable For air-to-water heat pumps: - 3000 n Sound power level, indoors/ outdoors L -/54 dB dB For water-/brine-to-water heat pumps: - and n Annual energy consumption Q HE 4435 kWh Water heating energy n_wh 86 paily electricity consumption Qelec 9,390 kWh Daily fuel consumption		Pdh	na	kW		COPd	na	-
heating P_{cych} nakWCycling interval efficiency $COPcyc$ naDegradation co-efficient Cdh $0,97$ -Heating water operating limit temperature $WTOL$ 58Power consumption in modes other than active modeSupplementary heater Rated heat output (*)Supplementary heater Power consumption in mode P_{ore} $0,002$ kWThermostat-off mode P_{ro} $0,010$ kWType of energy inputElectricStandby mode P_{sg} $0,015$ kWType of energy inputElectricCrankcase heater mode P_{cx} $0,030$ kWFor air-to-water heat pumps: Rated air flow rate, outdoors3000nCapacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors3000nSound power level, indoors/ outdoors L_{WA} $-/54$ dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchangernanFor heat pump combination heater:Efficiency classAWater heating energy efficiency η_{wh} 86Daily electricity consumptionQelec $9,390$ kWhDaily fuel consumptionQfuelNAk	Bivalent temperature	T _{biv}	-8,6	°C		TOL	-10	°C
Degradation co-efficientCan0,97-temperatureWIOL58Power consumption in modes other than active modeSupplementary heaterSupplementary heaterSupplementary heaterOff mode P_{OFF} 0,002kWRated heat output (*)Psup1,1Thermostat-off mode P_{TO} 0,010kWStandby mode P_{SB} 0,015kWType of energy inputElectricCrankcase heater mode P_{CK} 0,030kWType of energy inputElectricOther itemsVariableFor air-to-water heat pumps: Rated air flow rate, outdoors-3000nSound power level, indoors/ outdoors L_{WA} -/54dB kWhdB flow rate, outdoor heat exchangernanFor heat pump combination heater:Efficiency classAWater heating energy efficiency Π_{wh} 86Daily electricity consumptionQelec9,390kWhDaily fuel consumptionQfuelNAk	, ,	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Off mode P_{OFF} $0,002$ kW Rated heat output (*) $Psup$ $1,1$ n Thermostat-off mode P_{TO} $0,010$ kW Type of energy inputElectricStandby mode P_{SB} $0,015$ kW Type of energy inputElectricCrankcase heater mode P_{CK} $0,030$ kW Type of energy inputElectricCapacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors 3000 n Sound power level, indoors/ outdoors L_{WA} $-/54$ dB MRE For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger na n For heat pump combination heater:Efficiency class A Water heating energy efficiency n_{wh} 86 Daily electricityQelec $9,390$ kWhDaily fuel consumption Q_{fuel} NAk	Degradation co-efficient	Cdh	0,97	-		WTOL	58	°C
Thermostat-off mode P_{TO} $0,010$ kW Standby mode P_{5B} $0,015$ kW Type of energy inputElectricCrankcase heater mode P_{CK} $0,030$ kW Type of energy inputElectricOther items $Capacity control$ VariableFor air-to-water heat pumps: Rated air flow rate, outdoors- 3000 n Sound power level, indoors/ outdoors L_{WA} $-/54$ dB $Annual energy consumptionQ_{HE}4435kWhFor water-/brine-to-water heatpumps: Rated brine or waterflow rate, outdoor heatexchanger-nanFor heat pump combination heater:EfficiencyclassAWater heating energyefficiency\Pi_{wh}86Daily electricity consumptionQelec9,390kWhDaily fuel consumptionDaily fuel consumptionQfuelNAk$	Power consumption in modes	other than active	mode		Supplementary heater			
Standby mode P_{58} $0,015$ kW Type of energy inputElectricCrankcase heater mode P_{CK} $0,030$ kW Type of energy input $Electric$ Other itemsCapacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors- 3000 n Sound power level, indoors/ outdoors L_{WA} $-/54$ dB kWh For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger- na n For heat pump combination heater:Efficiency classAWater heating energy efficiency n_{wh} 86 Daily electricity consumptionQelec $9,390$ kWhDaily fuel consumption Q_{fuel} NAk	Off mode	P _{OFF}	0,002	kW	Rated heat output (*)	Psup	1,1	kW
Crankcase heater mode P ck 0,030 kW Other items Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 3000 n Sound power level, indoors/ outdoors L WA -/54 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na n For heat pump combination heater: Efficiency A Water heating energy efficiency N_wh 86 Daily electricity consumption Qelec 9,390 kWh Daily fuel consumption Qfuel NA k	Thermostat-off mode	Р _{то}	0,010	kW				
Other items Capacity control Variable Sound power level, indoors/ outdoors L Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 3000 n Annual energy consumption Q HE 4435 kWh For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger - na n For heat pump combination heater: Efficiency class A Water heating energy efficiency n_wh 86 Daily electricity consumption Qelec 9,390 kWh Daily fuel consumption Qfuel NA k	Standby mode	P _{SB}	0,015	kW	Type of energy input		Electric	
Other items Capacity control Variable Sound power level, indoors/ outdoors L Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 3000 n Annual energy consumption Q HE 4435 kWh For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger - na n For heat pump combination heater: Efficiency class A Water heating energy efficiency n_wh 86 Daily electricity consumption Qelec 9,390 kWh Daily fuel consumption Qfuel NA k	Crankcase heater mode	Р _{СК}	0,030	kW				
Capacity control Variable Rated air flow rate, outdoors 3000 m Sound power level, indoors/ outdoors L wA -/54 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger na m For heat pump combination heater: Variable Water heating energy efficiency n _{wh} 86 Daily electricity consumption Qelec 9,390 kWh Daily fuel consumption Qfuel NA k	Other items							
outdoors L WA -/54 dB pumps: Rated brine or water Annual energy consumption Q HE 4435 kWh pumps: Rated brine or water For heat pump combination heater: Efficiency A Water heating energy nwh 86 Daily electricity consumption Qelec 9,390 kWh Daily fuel consumption Qfuel NA k	Capacity control		Variable			-	3000	m3/h
Annual energy consumption Q HE 4435 kWh Tiow rate, outdoor neat exchanger For heat pump combination heater: For heat pump combination heater: Water heating energy efficiency efficiency Nwh Declared load profile XL Efficiency class A Water heating energy efficiency Nwh 86 Daily electricity consumption Qelec 9,390 kWh Daily fuel consumption Qfuel NA k	•	L _{WA}	-/54	dB	pumps: Rated brine or water	-	na	m3/h
Declared load profile XL Efficiency class A Water heating energy efficiency nwh 86 Daily electricity consumption Qelec 9,390 kWh Daily fuel consumption Qfuel NA k	Annual energy consumption	Q _{HE}	4435	kWh				
Declared load profile XL class A efficiency Tlwh 86 Daily electricity consumption Qelec 9,390 kWh Daily fuel consumption Qfuel NA k	For heat pump combination he	ater:						
Annual electricity	Declared load profile	XL	-	Α		η_{wh}	86	%
Annual electricity AEC 1953 kW/b Annual fuel consumption AEC NA	Daily electricity consumption	Qelec	9,390	kWh	Daily fuel consumption	Qfuel	NA	kWh
consumption AFC 1953 KWII Annual rule consumption AFC NA	•	AEC	1953	kWh	Annual fuel consumption	AFC	NA	GJ
Specific precautions and end The packaging must be deposited at a recycling station or with the installation engineer for correct waste management. of life information: 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 comportance 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. Disposing of the product as household waste is not permitted.			end of the produc importance that t	t's life cycle, it mus he product's refrige	st be sent correctly to a waste station or reseller erant, compressor oil and electrical/electronic	er offering a serv	vice of that type.	It is of great
Contact details CTC AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se 232	Contact details	CTC AB, Box 309,	, SE-341 26 Ljun	gby Tel +46 37	2 88000 www.ctc.se			231218

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

CTC AB Ljungby



Model(s):	CTC CombiAir 8N	CTC CombiAir 8M + 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:	176	%					
Equipped with a supplementary heater:	Yes	Package efficiency class:	A+++	-					
Heat pump combination heater:	Yes								

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	8	kW	Seasonal space heating energy efficiency	η _s	172	%
Declared capacity for heating fo outdoor temperature T j	or part load at in	door temperati	ure 20 °C and	Declared coefficient of performat part load at indoor temperature 2			
T j = – 7 °C	Pdh	7,4	kW	T j = – 7 °C	COPd	2,92	- [
T j = + 2 °C	Pdh	4,5	kW	T j = +2 °C	COPd	4,30	-
T j = + 7 °C	Pdh	2,9	kW	T j = +7 °C	COPd	5,42	-
T j = + 12 °C	Pdh	3,5	kW	T j = +12 °C	COPd	7,37	-
T j = bivalent temperature	Pdh	7,4	kW	T j = bivalent temperature	COPd	2,86	-
T j = operation limit temperature	Pdh	6,9	kW	T j = operation limit temperature	COPd	2,67	-
For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-8	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient	Cdh	0,96	-	Heating water operating limit temperature	WTOL	58	°C
Power consumption in modes o	ther than active	mode		Supplementary heater			-
Off mode	P _{OFF}	0,002	kW	Rated heat output (*)	Psup	1,4	kW
Thermostat-off mode	P _{TO}	0,015	kW				
Standby mode	P _{SB}	0,015	kW	Type of energy input		Electric	
Crankcase heater mode	Р _{СК}	0,030	kW				
Other items							
Capacity control		Variable		For air-to-water heat pumps: Rated air flow rate, outdoors	-	3000	m3/
Sound power level, indoors/	L _{WA}	-/54	dB	For water-/brine-to-water heat pumps: Rated brine or water	-	na	m3/
Annual energy consumption	Q _{HE}	3882	kWh	flow rate, outdoor heat exchanger			1113/1
For heat pump combination hea	ater:	· · · · · ·				•	
Declared load profile	XL	Efficiency class	Α	Water heating energy efficiency	η_{wh}	86	%
Daily electricity consumption	Qelec	9,390	kWh	Daily fuel consumption	Qfuel	NA	kWl
Annual electricity consumption	AEC	1953	kWh	Annual fuel consumption	AFC	NA	GJ
Specific precautions and end of life information:		end of the produc importance that th	t's life cycle, it mus ne product's refrige	a recycling station or with the installation eng st be sent correctly to a waste station or resell- erant, compressor oil and electrical/electronic Id waste is not permitted.	er offering a serv	vice of that type.	It is of gr
Contact details C	TC AB, Box 309	SE-341 26 Liun	ghy Tel +46 37	2 88000 www.ctc.se			23121

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

CTC AB Ljungby



Model(s):	CTC CombiAir 8N	CTC CombiAir 8M + 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:	112	%					
Equipped with a supplementary heater:	Yes	Package efficiency class:		-					
Heat pump combination heater:	Yes								

Sound power level, indoors/ outdoors L WA -/54 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat na m3/h Annual energy consumption Q HE 8844 kWh Kated air flow rate, outdoors na m3/h For heat pump combination heater: Efficiency na Mater heating energy nwh 74 % Daily electricity consumption Qelec 10,860 kWh Daily fuel consumption Qfuel na kWh Annual electricity consumption AEC 2261 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 refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.	Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
outdoor temperature T jT j = -7 °CPdh6.2kWT j = -7 °CC OPd2.29-T j = + 7 °CPdh3.8kWT j = + 7 °CC OPd3.43-T j = + 7 °CPdh3.7kWT j = + 7 °CC OPd4.80-T j = + 12 °CPdh3.7kWT j = + 12 °CC OPd4.80-T j = operation limitPdh6.7kWT j = -15 °CC OPd2.05-T j = operation limitPdh3.7kWT j = operation limitC OPd3.01-For air-to-water heat pumps:Pdh1.7kWT j = operation limitC OPd3.01-For air-to-water heat pumps:T j = -15 °C (if TOL < -20 °C)C OPd3.01Bivalent temperatureT biv-10°COpariz-to-water heat pumps:TOL-20°CCycling interval capacity for heatingP cycn-/50kW-Suppementary heaterSuppementary heaterSuppementary heaterRated heat output (fn0.002kWSuppementary heater-nam3/7Corcling interval capacity for heatingP cycn-/54dBdBnam3/7Corcling interval capacity controlVariablenam3/7Corcling interval capacity controlVariablenam3/7Capacity controlVariable <th>Rated heat output (*)</th> <th>Prated</th> <th>10</th> <th>kW</th> <th></th> <th>η_s</th> <th>108</th> <th>%</th>	Rated heat output (*)	Prated	10	kW		η _s	108	%
T j = + 2° CPdh3.8kWT j = + 2° CCOPd3.43-T j = + 12° CPdh3.7kWT j = + 7° CCOPd4.80-T j = + 12° CPdh3.7kWT j = + 12° CCOPd6.94-T j = operation limitPdh5.7kWT j = operation limitCOPd1.60-t emperaturePdh3.7kWT j = operation limitCOPd1.60-f o air-to-water heat pumps:Pdh3.7kWT j = operation limitCOPd3.01-f o air-to-water heat pumps:Pdh1.7kWFor air-to-water heat pumps:COPd3.01-f o air-to-water heat pumps:T j = -15°C (if TOL < -20°C)		or part load at in	door temperati	ure 20 °C and		-		
T j = + 7 °CPdh2,7kWT j = + 7 °CCOPd4,80-T j = + 12 °CPdh3,7kWT j = + 12 °CCOPd6,94-T j = bivalent temperaturePdh6,7kWT j = bivalent temperatureCOPd2,05-T j = operation limitPdh3,7kWT j = operation limitCOPd2,05-T j = operation limitPdh3,7kWT j = operation limitCOPd1,60-For air-to-water heat pumps:Pdh1,7kWFor air-to-water heat pumps:COPd3,01-T j = -15 °C (if TOL < -20 °C)	T j = – 7 °C	Pdh	6,2	kW	T j = − 7 °C	COPd	2,29	- [
T j = + 12 °CPdh3,7kWT j = +12 °C $COPd$ 6,94.T j = bivalent temperaturePdh6,7kWT j = operation limit $COPd$ 2,05.T j = operation limitPdh3,7kWT j = operation limit $COPd$ 1,60.For air-to-water heat pumps:Pdh1,7kWFor air-to-water heat pumps: $COPd$ 3,01.T j = -15 °C (if TOL < - 20 °C)	•	Pdh		kW	-	COPd	-	-
Tj = bivalent temperaturePdh6,7KWTj = bivalent temperatureCOPd2,05.Tj = operation limit temperaturePdh3,7kWTj = operation limit temperatureCOPd1,60.For air-to-water heat pumps: T j = -15 *C (if TOL < -20 *C)		Pdh		kW		COPd		-
T j = operation limit temperature Pdh $3,7$ kW T j = operation limit temperature $COPd$ $1,60$ $-$ For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C)	T j = + 12 °C	Pdh	3,7	kW	T j = +12 °C	COPd	6,94	-
temperaturePdn3,7kWtemperatureCOPd1,60-For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	T j = bivalent temperature	Pdh	6,7	kW	T j = bivalent temperature	COPd	2,05	-
T j = -15 *C (if TOL < - 20 *C)Pah1,7KWT j = -15 *C (if TOL < -20 *C)COPa3,01-Bivalent temperatureT biv -10*CFor air-to-water heat pumps: Operation limit temperatureTOL-20*CCycling interval capacity for heating P_{cych} -/50kWCycling interval efficiency $COPcyc$ naDegradation co-efficient Cdh $0,96$ -Heating water operating limit temperature $WTOL$ 58*CPower consumption in modes other than active mode $0,002$ kW Supplementary heater Rated heat output (*) P_{Sup} $10,0$ kW Type of energy input $Electric$ Crankcase heater mode P_{cx} $0,030$ kW Type of energy input $Electric$ Capacity controlVariableVariableFor air-to-water heat pumps: Rated air flow rate, outdoors-na $m3/t$ Sound power level, indoors/ outdoors L_{WA} $-/54$ dB dB dB dB dB dB dB Sourd power level, indoors/ outdoors L_{WA} $-/54$ dB Declared load profileXLEfficiency classna dB dB dB dB dB dB dB dB Sourd power level, indoors/ outdoors L_{WA} $-/54$ dB <		Pdh	3,7	kW		COPd	1,60	-
Bradent temperature T_{biv} -10'COperation limit temperature IOL -20'CCycling interval capacity for heating P_{cych} -/50kWOperation limit temperature IOL -20'CDegradation co-efficient Cdh $0,96$ Heating water operating limit wTOL $WTOL$ 58'CPower consumption in modes other than active mode $0,002$ kW Heating water operating limit wTOL $WTOL$ 58'CPower consumption in modes other than active mode $0,002$ kW Supplementary heaterRated heat output (*) $Psup$ $10,0$ kW Type of energy input $Electric$ Crankcase heater mode P_{cx} $0,030$ kW Type of energy input $Electric$ Capacity controlVariable $Variable$ For air-to-water heat pumps: Rated air flow rate, outdoors- na $m3/t$ Sound power level, indoors/ outdoors L_{WA} $-/54$ dB dB dB $m3/t$ For heat pump combination heater:Efficiency class na $m3/t$ $m3/t$ Declared load profileXLEfficiency class na ma_{Ma} f^{4} Annual electricity consumptionQelec $10,860$ kWhAnnual fuel consumption $Qfuel$ na Annual electricity consumptionAEC 2261 kWhAnnual fuel consumptionAFC na G_{J} Specific precautions and end of life information:The packaging m		Pdh	1,7	kW		COPd	3,01	-
heating P cych -750 kW Cycling interval efficiency COPcyc na Degradation co-efficient Cdh 0,96 - Heating water operating limit WTOL 58 *C Power consumption in modes other than active mode 0,002 kW Supplementary heater Rated heat output (*) Psup 10,0 kW Thermostat-off mode P cor 0,015 kW Type of energy input Electric Crankcase heater mode P cor 0,030 kW Type of energy input Electric Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors 3000 m3/t Sound power level, indoors/ outdoors L wA -/54 dB dB flow rate, outdoors na m3/t Por heat pump combination heater: Efficiency na m3/t guily flow rate, outdoor heat na m3/t Daily electricity consumption Qelec 10,860 kWh Annual fleel consumption AFC na Guily fluel consumption AFC na Guily fluel consumption AFC na Guily fluel consumption AFC	Bivalent temperature	T _{biv}	-10	°C		TOL	-20	°C
Degradation co-efficient Cdh 0,96		P _{cych}	-/50	kW	Cycling interval efficiency	СОРсус	na	-
Off mode P OFF 0,002 kW Thermostat-off mode P TO 0,015 kW Standby mode P SB 0,015 kW Crankcase heater mode P CK 0,030 kW Other items 0,030 kW Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 3000 m3/t Sound power level, indoors/ L WA -/54 dB row water /brine-to-water heat pumps: Rated air flow rate, outdoors - na m3/t Annual energy consumption Q HE 8844 kWh - na m3/t For heat pump combination heater: Declared load profile XL Efficiency class na ma m3/t Daily electricity consumption Qelec 10,860 kWh Daily fuel consumption Qfuel na kWh Annual electricity consumption Qelec 10,860 kWh Annual fuel consumption Qfuel na GJ Specific precautions and end of the product's life cycle, it must be sent correctly to a waste station or resulter offering a service of that type if the ording station or with the installation engineer for correct waste management. At the enging must be deposited at a recycling station or with the installation engineer offerus a service of that type if the ording importance that	Degradation co-efficient	Cdh	0,96	-	a . a	WTOL	58	°C
Thermostat-off mode P TO 0,015 kW Standby mode P SB 0,015 kW Crankcase heater mode P CK 0,030 kW Other items 0,030 kW Type of energy input Electric Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 3000 m3/t Sound power level, indoors/ L WA -/54 dB For water-/brine-to-water heat pumps: Rated air flow rate, outdoors - na m3/t Annual energy consumption Q HE 8844 kWh exchanger - na m3/t For heat pump combination heater: Declared load profile XL Efficiency class na m3/t Daily electricity consumption Qelec 10,860 kWh Daily fuel consumption Qfuel na kWh Annual electricity AEC 2261 kWh Annual fuel consumption Qfuel na GJ Specific precautions and end of the product's life cycle, it must be sent correctly to a waste station or residuer offering a service of that type, it is of gr importance that the product's life cycle, it must be sent correctly to a was	Power consumption in modes	other than active	mode		Supplementary heater			_
Standby mode P sg 0,015 kW Type of energy input Electric Crankcase heater mode P cx 0,030 kW Type of energy input Electric Other items	Off mode	P _{OFF}	0,002	kW	Rated heat output (*)	Psup	10,0	kW
Crankcase heater mode P cx 0,030 kW Other items Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 3000 m3/h Sound power level, indoors/ outdoors L wA -/54 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger na m3/h For heat pump combination heater: Efficiency class na m3/h Declared load profile XL Efficiency class na m3/h Daily electricity consumption Qelec 10,860 kWh Annual fuel consumption Qfuel na kWh Annual electricity consumption AEC 2261 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 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 gr importance that the product's refrigerant, compressor oil and electricity/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.	Thermostat-off mode	Р _{то}	0,015	kW				
Other items Capacity control Variable Sound power level, indoors/ outdoors L wa -/54 dB Annual energy consumption Q _{HE} 8844 kWh For water-/brine-to-water heat pumps: Rated air flow rate, outdoors - na m3/t Annual energy consumption Q _{HE} 8844 kWh For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/t Declared load profile XL Efficiency class na m3/t Mater heating energy efficiency na m3/t Daily electricity consumption Qelec 10,860 kWh Daily fuel consumption Qfuel na kWh Annual electricity consumption AEC 2261 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 gr importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of.	Standby mode	P _{SB}	0,015	kW	Type of energy input		Electric	
Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors 3000 m3/h Sound power level, indoors/ outdoors L _{WA} -/54 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h Annual energy consumption Q _{HE} 8844 kWh For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h For heat pump combination heater: Efficiency class na m3/h Mater heating energy efficiency nwh 74 % Daily electricity consumption Qelec 10,860 kWh Daily fuel consumption Qfuel na kWh Annual electricity consumption AEC 2261 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 onspector 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 gr 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.	Crankcase heater mode	Р _{СК}	0,030	kW				
Capacity control Variable Rated air flow rate, outdoors 3000 m3/r Sound power level, indoors/ outdoors L wA -/54 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat na m3/r Annual energy consumption Q HE 8844 kWh Reter heating energy na m3/r For heat pump combination heater: Efficiency na m3/r m3/r Declared load profile XL Efficiency na m3/r Daily electricity consumption Qelec 10,860 kWh Daily fuel consumption Qfuel na kWh Annual electricity AEC 2261 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 ord 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 gr Disposing of the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of.	Other items						T	
outdoors L wA -/54 dB pumps: Rated brine or water Annual energy consumption Q HE 8844 kWh pumps: Rated brine or water For heat pump combination heater: B kWh exchanger na m3/f Declared load profile XL Efficiency class na Water heating energy efficiency η_{wh} 74 % Daily electricity consumption Qelec 10,860 kWh Daily fuel consumption Qfuel na kWh Annual electricity consumption AEC 2261 kWh Annual fuel consumption 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 gri 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.	Capacity control		Variable			-	3000	m3/h
Annual energy consumption Q HE 8844 kWh Tow rate, outdoor heat exchanger For heat pump combination heater: Efficiency na Water heating energy η_{wh} 74 % Daily electricity consumption Qelec 10,860 kWh Daily fuel consumption Qfuel na kWh Annual electricity consumption Qelec 2261 kWh Annual fuel consumption AFC na GJ Specific precautions and 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 gr 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.		L _{WA}	-/54	dB		_	na	m3/h
For heat pump combination heater: Efficiency class na Water heating energy efficiency officiency efficiency n_wh 74 % Daily electricity consumption Qelec 10,860 kWh Daily fuel consumption Qfuel na kWh Annual electricity consumption AEC 2261 kWh Annual fuel consumption AFC na GJ Specific precautions and 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 gr 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.	Annual energy consumption	Q _{HE}	8844	kWh				1110/11
Declared load profile XL class na efficiency na efficiency na 74 % Daily electricity consumption Qelec 10,860 kWh Daily fuel consumption Qfuel na kWh Annual electricity consumption AEC 2261 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 gr 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.	For heat pump combination he	ater:						
Annual electricity consumption AEC 2261 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 gr 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.	Declared load profile	XL		na		η _{wh}	74	%
AEC2261KWnAnnual fuel consumptionAFCnaGJConsumptionThe 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 grof life information:Disposing of the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.	Daily electricity consumption	Qelec	10,860	kWh	Daily fuel consumption	Qfuel	na	kWh
Specific precautions and end 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 gr of life information: 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. Disposing of the product as household waste is not permitted.		AEC	2261	kWh	Annual fuel consumption	AFC	na	GJ
Contact details CTC AB, Box 309, SE-341 26 Liungby Tel +46 372 88000 www.ctc.se 231218			end of the produc importance that the	t's life cycle, it mus he product's refrige	st be sent correctly to a waste station or resell erant, compressor oil and electrical/electronic	er offering a ser	vice of that type	. It is of grea
	Contact details	CTC AB, Box 309,	SE-341 26 Ljun	gby Tel +46 37	2 88000 www.ctc.se			231218

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

CTC AB Ljungby



Model(s):	CTC CombiAir 8	CTC CombiAir 8M + 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:	136	%					
Equipped with a supplementary heater:	Yes	Package efficiency class:		-					
Heat pump combination heater:	Yes								

Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T jPerformance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature 7 jT j = -7 °CPdh5,5kWT j = -7 °CPdh3,4kWT j = +2 °CPdh3,5kWT j = +1 °CPdh2,6kWT j = bivalent temperaturePdh6,4kWT j = poration limitPdh4,4kWT j = oparation limitPdh4,4kWT j = oparation limitCOPd2,08-T j = -15 °C (if TOL < -20 °C)Pdh1,7kWT j = -15 °C (if TOL < -20 °C)Pdh1,7kWBivalent temperatureT bw-11°CCor air-to-water heat pumps: To air-to-water heat pumps: Operation limit temperatureTOL-20Cycling interval capacity for heatingP cychnakWDegradation co-efficientCdh0,95-Power consumption in modes other than active modeKWCycling interval efficiencyCOPcycOff modeP cychna-Mater bater modeP cychna-Off modeP cychna-Capacity controlVariableKWCapacity controlVariableSound power level, indoors/ outdoorsL wA-/54dBAnnual energy consumptionQ HE6264kW	Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
outdoor temperature T j $T j = -7^{\circ}C$ Pdh5.5KW $T j = -7^{\circ}C$ Pdh5.5KW $T j = +7^{\circ}C$ Pdh2.6KW $T j = +7^{\circ}C$ Pdh3.5KW $T j = +7^{\circ}C$ Pdh3.5KW $T j = +7^{\circ}C$ Pdh3.5KW $T j = +7^{\circ}C$ COPd4.32 $T j = bialent temperaturePdh6.4KWT j = operation limitPdh4.4KWT j = operation limitCOPd2.08t = operaturePdh1.7KWT j = -15^{\circ}C (If TOL < -20^{\circ}C)Pdh1.7KWBivalent temperatureT biv-111*COperation limit temperature0.02kWNow consumption in modes other than active mode-Off modeP biv-Off modeP biv0.015KWNouldoors-Standby modeCapacity controlVariableSound power level, indoors/L waOutdoorsL waOperation limit temperature-Declared load profileXLEfficiencynaDecla$	Rated heat output (*)	Prated	9	kW		η _s	132	%
$T_{j} = + 2^{\circ}C \qquad Pdh \qquad 3.4 \qquad kW \\ T_{j} = + 7^{\circ}C \qquad Pdh \qquad 3.5 \qquad kW \\ T_{j} = + 7^{\circ}C \qquad COPd \qquad 4.32 \\ T_{j} = + 7^{\circ}C \qquad COPd \qquad 5.48 \\ T_{j} = + 7^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = + 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = + 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = - 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = - 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = - 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = - 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = - 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = - 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = - 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = - 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = - 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = - 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = - 12^{\circ}C \qquad COPd \qquad 7.34 \\ T_{j} = - 12^{\circ}C \qquad T_{j} = - 1$		or part load at in	door temperati	ure 20 °C and				
T j = + 7 * CPdhZ,6KWT j = + 7 * CPdh3,5KWT j = + 12 * CPdh3,5KWT j = bivalent temperaturePdh6,4KWT j = bivalent temperaturePdh4,4KWT j = operation limitPdh4,4KWFor air-to-water heat pumps:Pdh1,7KWFor air-to-water heat pumps:Pdh1,7KWFor air-to-water heat pumps:Pdh1,7KWFor air-to-water heat pumps:Pdh1,7KWFor air-to-water heat pumps:T j = -15 * C (if TOL < -20 * C)	T j = – 7 °C	Pdh	5,5	kW	T j = − 7 °C	COPd	3,13] -
T j = + 12 * CPdh3,5kWT j = +12 * CCOPd7,34-T j = bivalent temperaturePdh6,4kWT j = operation limitCOPd2,77-T j = operation limitPdh4,4kWT j = operation limitCOPd2,08-For air-to-water heat pumps:Pdh1,7kWT j = operation limitCOPd2,08-For air-to-water heat pumps:T j = -15 * C (if TOL < - 20 * C)	T j = + 2 °C	Pdh	3,4	kW		COPd	4,32	-
Tj = bivalent temperaturePdh6.4KWTj = bivalent temperatureCOPd2,77.Tj = operation limit temperaturePdh4,4KWTj = operation limit temperatureCOPd2,08.For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	T j = + 7 °C	Pdh	2,6	kW		COPd	5,48	-
T j = operation limit temperaturePdh4,4KWT j = operation limit temperatureCOPd2,08For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	T j = + 12 °C	Pdh	3,5	kW	T j = +12 °C	COPd	7,34	-
temperaturePan4,4kWtemperatureCOPa2,08-For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	T j = bivalent temperature	Pdh	6,4	kW	T j = bivalent temperature	COPd	2,77	-
T j = -15 °C (if TOL < - 20 °C)Pah1,7KWT j = -15 °C (if TOL < -20 °C)COPa4,02-Bivalent temperatureT biv-11°CFor air-to-water heat pumps: Operation limit temperatureTOL-20°CCycling interval capacity for heatingP cychnakWCycling interval efficiencyCOPcycna-Degradation co-efficientCdh0,95Heating water operating limit temperatureWTOL58°CPower consumption in modes other than active mode0,002kWSupplementary heater 	T j = operation limit temperature	Pdh	4,4	kW		COPd	2,08	-
Brvalent temperature I biv -11 -C Operation limit temperature I OL -20 -C Cycling interval capacity for heating P cych na kW Operation limit temperature I OL -20 -C Degradation co-efficient Cdh 0,95 - Heating water operating limit WTOL 58 *C Power consumption in modes other than active mode 0,002 kW Heating water operating limit WTOL 58 *C Off mode P opr 0,002 kW Supplementary heater Rated heat output (*) Psup 9,0 kW Thermostat-off mode P so 0,015 kW Type of energy input Electric Crankcase heater mode P cx 0,030 kW Type of energy input Electric Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - na m3/h Sound power level, indoors/ outdoors L WA -/54 dB B For water/brine-to-water heat pumps: Rated brine or water 	For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	Pdh	1,7	kW		COPd	4,02	-
heating P_{cych} nakWCycling interval efficiency $COPcyc$ naDegradation co-efficient Cdh $0,95$ -Heating water operating limit temperature $WTOL$ 58 °CPower consumption in modes other than active mode $0,002$ kW Supplementary heater Rated heat output (*) $PSup$ $9,0$ kW Thermostat-off mode P_{orr} $0,015$ kW Type of energy input $Electric$ Crankcase heater mode P_{cx} $0,030$ kW Type of energy input $Electric$ Capacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors 3000 $m3/h$ Sound power level, indoors/ 	Bivalent temperature	T _{biv}	-11	°C		TOL	-20	°C
Degradation co-efficient Cah 0,95 - temperature WIOL 58 *C Power consumption in modes other than active mode Off mode Porr 0,002 kW Supplementary heater Rated heat output (*) Psup 9,0 kW Thermostat-off mode P ro 0,015 kW Type of energy input Electric Electric Canackase heater mode P cx 0,030 kW Type of energy input Electric m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 3000 m3/h Sound power level, indoors/ outdoors L wA -/54 dB pumps: Rated brine or water - na m3/h For heat pump combination heater: Efficiency na m3/h m3/h m3/h Daily electricity consumption Q _{elec} 10,860 kWh Annual fuel consumption Q _{tuel} NA kWh Annual electricity AEC 2261 kWh Annual fuel consumption Q _{tuel} NA kWh Annual electricity AEC 2261 kWh	Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Off mode P orf 0,002 kW Thermostat-off mode P ro 0,015 kW Standby mode P se 0,015 kW Crankcase heater mode P cc 0,030 kW Other items Other items For air-to-water heat pumps: Rated air flow rate, outdoors 3000 m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors 3000 m3/h Sound power level, indoors/ outdoors L wA -/54 dB dB ma m3/h Annual energy consumption Q HE 6264 kWh rechanger na m3/h Por heat pump combination heater: Efficiency na m3/h dB ma m3/h Daily electricity consumption Qelec 10,860 kWh Daily fuel consumption Qelec NA kWh Annual electricity AEC 2261 kWh Annual fuel consumption AFC NA GJ Specific precautions and end of life information: Disposing of the product's fiergregra, tompressor oil and electricit/electronic equipment are properly disposed of. Disposing of the product's household wa	Degradation co-efficient	Cdh	0,95	-		WTOL	58	°C
Thermostat-off mode P_{TO} $0,015$ kW Standby mode P_{SB} $0,015$ kW Crankcase heater mode P_{CX} $0,030$ kW Other items P_{CX} $0,030$ kW Capacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors- 3000 $m3/h$ Sound power level, indoors/ outdoors L_{WA} $-/54$ dB flow rate, outdoors-na $m3/h$ For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat-na $m3/h$ Annual energy consumption Q_{HE} 6264 kWh Rated sing energy erknager-na $m3/h$ Declared load profileXLEfficiency classnaWater heating energy efficiency Π_{wh} 74 %Daily electricity consumption consumption Q_{elec} 10,860kWhAnnual fuel consumption Q_{fuel} NAkWhAnnual electricity consumptionAEC2261kWhAnnual fuel consumptionAFCNAGJSpecific 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 refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product a household waste is not permitted.	Power consumption in modes	other than active	mode		Supplementary heater			_
Standby mode P sg 0,015 kW Type of energy input Electric Crankcase heater mode P cx 0,030 kW Type of energy input Electric Other items	Off mode	P _{OFF}	0,002	kW	Rated heat output (*)	Psup	9,0	kW
Crankcase heater mode P cx 0,030 kW Other items Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors 3000 m3/h Sound power level, indoors/ outdoors L wA -/54 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger na m3/h For heat pump combination heater: Efficiency class na m3/h Declared load profile XL Efficiency class na m3/h Daily electricity consumption consumption Qelec 10,860 kWh Daily fuel consumption Qeluel NA kWh Annual electricity consumption AEC 2261 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 remoder the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product a household waste is not permitted.	Thermostat-off mode	P _{TO}	0,015	kW				
Crankcase heater mode P cx 0,030 kW Other items	Standby mode	P _{SB}	0,015	kW	Type of energy input		Electric	
Other items Capacity control Variable Sound power level, indoors/ outdoors L _{WA} -/54 dB Annual energy consumption Q _{HE} 6264 kWh For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoors - na m3/h For heat pump combination heater: - na m3/h m3/h Declared load profile XL Efficiency class na Water heating energy efficiency nwh 74 % Daily electricity consumption Q _{elec} 10,860 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2261 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 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 life cycle, it must be sent or permitted.	Crankcase heater mode			kW				
Capacity control Variable Rated air flow rate, outdoors 3000 m3/h Sound power level, indoors/ outdoors L WA -/54 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 6264 kWh Retediared low rate, outdoor heat exchanger na m3/h For heat pump combination heater: Efficiency class na Water heating energy efficiency nwh 74 % Daily electricity consumption Q_elec 10,860 kWh Daily fuel consumption Q_fuel NA kWh Annual electricity consumption AEC 2261 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.	Other items							
outdoors L wA -/54 dB pumps: Rated brine or water na m3/h Annual energy consumption Q HE 6264 kWh flow rate, outdoor heat na m3/h For heat pump combination heater: Declared load profile XL Efficiency class na Water heating energy efficiency nwh 74 % Daily electricity consumption Qelec 10,860 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption Qelec 2261 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 refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.	Capacity control		Variable			-	3000	m3/h
Annual energy consumption Q _{HE} 6264 kWh flow rate, outdoor heat exchanger For heat pump combination heater:	•	L _{WA}	-/54	dB	pumps: Rated brine or water	_	na	m3/h
Declared load profile XL Efficiency class na Water heating energy efficiency η_{wh} 74 % Daily electricity consumption Q _{elec} 10,860 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2261 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 refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.	Annual energy consumption	Q _{HE}	6264	kWh				-,
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Annual electricity consumption AEC 2261 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.	Declared load profile	XL	-	na		η_{wh}	74	%
Consumption AEC 2261 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. Disposing of the product as household waste is not permitted.	Daily electricity consumption	Q_{elec}	10,860	kWh	Daily fuel consumption	\mathbf{Q}_{fuel}	NA	kWh
Specific precautions and end 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.	Annual electricity consumption	AEC	2261	kWh	Annual fuel consumption	AFC	NA	GJ
Contact details CTC AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se 231218	Specific precautions and end		end of the produc importance that the	t's life cycle, it mus he product's refrige	t be sent correctly to a waste station or resell erant, compressor oil and electrical/electronic	er offering a serv	vice of that type	. It is of great
	Contact details	CTC AB, Box 309,	SE-341 26 Ljun	gby Tel +46 37	2 88000 www.ctc.se			231218