Information for heat pump space heaters and heat pump combination heaters

Warm climate and Medium temperature

CTC AB
Ljungby

Model(s):	**CTC EcoPart i616M**			
Air-to-water heat pump:	**No**	Energy efficiency class:		-
Water-to-water heat pump:	**No**	Controller class:	**VI**	-
Brine-to-water heat pump:	**Yes**	Controller contribution:	**4**	%
Low-temperature heat pump:	**No**	Package efficiency:	**157**	%
Equipped with a supplementary heater:	**Yes**	Package efficiency class:		-
Heat pump combination heater:	**No**			

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

Item	Symbol	Value	Unit
Rated heat output (*)	*Prated*	**16**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**na**	kW
T j = + 2 °C	*Pdh*	**14,3**	kW
T j = + 7 °C	*Pdh*	**10,4**	kW
T j = + 12 °C	*Pdh*	**4,4**	kW
T j = bivalent temperature	*Pdh*	**14,5**	kW
T j = operation limit temperature	*Pdh*	**14,34**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**3**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,020**	*kW*
Thermostat-off mode	P_{TO}	**0,020**	*kW*
Standby mode	P_{SB}	**0,020**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Variable**	
Sound power level, indoors/ outdoors	L_{WA}	**40 / na**	*dB*
Annual energy consumption	Q_{HE}	**5300**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**153**	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*COPd*	**na**	-
T j = +2 °C	*COPd*	**2,57**	-
T j = +7 °C	*COPd*	**3,50**	-
T j = +12 °C	*COPd*	**5,13**	-
T j = bivalent temperature	*COPd*	**2,68**	-
T j = operation limit temperature	*COPd*	**2,57**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output	*Psup*	**1,7**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,6**	*m3/h*

For heat pump combination heater:

Declared load profile		**na**		**Water heating energy efficiency/Energy class**	$\eta_{wh/-}$	**na**	%
Daily electricity consumption	Qelec	**na**	kWh	Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual electricity consumption	AEC	**na**	kWh	Annual fuel consumption	AFC	**na**	GJ

Specific precautions and end of life information:

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

Contact details CTC AB, Näsvägen 8, SE-341 34 Ljungby Tel +46 372 88000 www.ctc.se

Information for heat pump space heaters and heat pump combination heaters

Warm climate and Low temperature

CTC AB
Ljungby

Model(s):	**CTC EcoPart i616M**			
Air-to-water heat pump:	**No**	Energy efficiency class:		-
Water-to-water heat pump:	**No**	Controller class:	**VI**	-
Brine-to-water heat pump:	**Yes**	Controller contribution:	**4**	%
Low-temperature heat pump:	**No**	Package efficiency:	**206**	%
Equipped with a supplementary heater:	**Yes**	Package efficiency class:		-
Heat pump combination heater:	**No**			

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

Item	Symbol	Value	Unit
Rated heat output (*)	*Prated*	**16**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**na**	kW
T j = + 2 °C	*Pdh*	**15,6**	kW
T j = + 7 °C	*Pdh*	**10,4**	kW
T j = + 12 °C	*Pdh*	**4,4**	kW
T j = bivalent temperature	*Pdh*	**15,6**	kW
T j = operation limit temperature	*Pdh*	**15,6**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**2**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,020**	*kW*
Thermostat-off mode	P_{TO}	**0,020**	*kW*
Standby mode	P_{SB}	**0,020**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Variable**	
Sound power level, indoors/ outdoors	L_{WA}	**36 / na**	*dB*
Annual energy consumption	Q_{HE}	**4080**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**202**	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*COPd*	**na**	-
T j = +2 °C	*COPd*	**3,77**	-
T j = +7 °C	*COPd*	**5,01**	-
T j = +12 °C	*COPd*	**6,00**	-
T j = bivalent temperature	*COPd*	**3,77**	-
T j = operation limit temperature	*COPd*	**3,77**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output	*Psup*	**0,0**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**NA**		**Water heating energy efficiency/Energy class**	$\eta_{wh/-}$	**NA**	%
Daily electricity consumption	Qelec	**NA**	kWh	Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual electricity consumption	AEC	**NA**	kWh	Annual fuel consumption	AFC	**na**	GJ

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Information for heat pump space heaters and heat pump combination heaters

Average climate and Medium temperature

CTC AB
Ljungby

Model(s):	**CTC EcoPart i616M**			
Air-to-water heat pump:	**No**	Energy efficiency class:	**A+++**	-
Water-to-water heat pump:	**No**	Controller class:	**VI**	-
Brine-to-water heat pump:	**Yes**	Controller contribution:	**4**	%
Low-temperature heat pump:	**No**	Package efficiency:	**158**	%
Equipped with a supplementary heater:	**Yes**	Package efficiency class:	**A+++**	-
Heat pump combination heater:	**No**			

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

Item	Symbol	Value	Unit
Rated heat output (*)	*Prated*	**16**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**14,2**	kW
T j = + 2 °C	*Pdh*	**8,8**	kW
T j = + 7 °C	*Pdh*	**5,5**	kW
T j = + 12 °C	*Pdh*	**4,4**	kW
T j = bivalent temperature	*Pdh*	**14,6**	kW
T j = operation limit temperature	*Pdh*	**14,34**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-8**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,020**	*kW*
Thermostat-off mode	P_{TO}	**0,020**	*kW*
Standby mode	P_{SB}	**0,020**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Variable**	
Sound power level, indoors/ outdoors	L_{WA}	**40 / na**	*dB*
Annual energy consumption	Q_{HE}	**8176**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**154**	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*COPd*	**2,79**	-
T j = +2 °C	*COPd*	**4,13**	-
T j = +7 °C	*COPd*	**4,89**	-
T j = +12 °C	*COPd*	**5,14**	-
T j = bivalent temperature	*COPd*	**2,70**	-
T j = operation limit temperature	*COPd*	**2,57**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output	*Psup*	**1,7**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,6**	*m3/h*

For heat pump combination heater:

Declared load profile		**NA**		**Water heating energy efficiency/Energy class**	$\eta_{wh/-}$	**NA**	%
Daily electricity consumption	Qelec	**NA**	kWh	Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual electricity consumption	AEC	**NA**	kWh	Annual fuel consumption	AFC	**na**	GJ

Specific precautions and end of life information:

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

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Information for heat pump space heaters and heat pump combination heaters

Average climate and Low temperature

CTC AB
Ljungby

Model(s):	**CTC EcoPart i616M**			
Air-to-water heat pump:	**No**	Energy efficiency class:	**A+++**	-
Water-to-water heat pump:	**No**	Controller class:	**VI**	-
Brine-to-water heat pump:	**Yes**	Controller contribution:	**4**	%
Low-temperature heat pump:	**No**	Package efficiency:	**205**	%
Equipped with a supplementary heater:	**Yes**	Package efficiency class:	**A+++**	-
Heat pump combination heater:	**No**			

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

Item	Symbol	Value	Unit
Rated heat output (*)	*Prated*	**16**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**14,0**	kW
T j = + 2 °C	*Pdh*	**8,5**	kW
T j = + 7 °C	*Pdh*	**5,6**	kW
T j = + 12 °C	*Pdh*	**4,6**	kW
T j = bivalent temperature	*Pdh*	**15,3**	kW
T j = operation limit temperature	*Pdh*	**15,6**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-9**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,020**	*kW*
Thermostat-off mode	P_{TO}	**0,020**	*kW*
Standby mode	P_{SB}	**0,020**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Variable**	
Sound power level, indoors/ outdoors	L_{WA}	**36 / na**	*dB*
Annual energy consumption	Q_{HE}	**6321**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**201**	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*COPd*	**4,17**	-
T j = +2 °C	*COPd*	**5,36**	-
T j = +7 °C	*COPd*	**5,87**	-
T j = +12 °C	*COPd*	**6,03**	-
T j = bivalent temperature	*COPd*	**3,88**	-
T j = operation limit temperature	*COPd*	**3,77**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output	*Psup*	**0,4**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**NA**		**Water heating energy efficiency/Energy class**	$\eta_{wh/-}$	**NA**	%
Daily electricity consumption	Qelec	**NA**	kWh	Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual electricity consumption	AEC	**NA**	kWh	Annual fuel consumption	AFC	**na**	GJ

Specific precautions and end of life information:

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

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Information for heat pump space heaters and heat pump combination heaters

Cold climate and Medium temperature

CTC AB
Ljungby

Model(s):	**CTC EcoPart i616M**			
Air-to-water heat pump:	**No**	Energy efficiency class:		-
Water-to-water heat pump:	**No**	Controller class:	**VI**	-
Brine-to-water heat pump:	**Yes**	Controller contribution:	**4**	%
Low-temperature heat pump:	**No**	Package efficiency:	**165**	%
Equipped with a supplementary heater:	**Yes**	Package efficiency class:		-
Heat pump combination heater:	**No**			

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

Item	Symbol	Value	Unit
Rated heat output (*)	*Prated*	**16**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**9,84**	kW
T j = + 2 °C	*Pdh*	**5,9**	kW
T j = + 7 °C	*Pdh*	**4,5**	kW
T j = + 12 °C	*Pdh*	**4,5**	kW
T j = bivalent temperature	*Pdh*	**14,3**	kW
T j = operation limit temperature	*Pdh*	**14,34**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-18**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,020**	*kW*
Thermostat-off mode	P_{TO}	**0,020**	*kW*
Standby mode	P_{SB}	**0,020**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Variable**	
Sound power level, indoors/ outdoors	L_{WA}	**40 / na**	*dB*
Annual energy consumption	Q_{HE}	**9352**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**161**	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*COPd*	**3,79**	-
T j = +2 °C	*COPd*	**4,78**	-
T j = +7 °C	*COPd*	**5,31**	-
T j = +12 °C	*COPd*	**5,31**	-
T j = bivalent temperature	*COPd*	**2,76**	-
T j = operation limit temperature	*COPd*	**2,57**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output	*Psup*	**1,7**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,6**	*m3/h*

For heat pump combination heater:

Declared load profile		**NA**		**Water heating energy efficiency/Energy class**	$\eta_{wh/-}$	**NA**	%
Daily electricity consumption	Qelec	**NA**	kWh	Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual electricity consumption	AEC	**NA**	kWh	Annual fuel consumption	AFC	**na**	GJ

Specific precautions and end of life information:

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

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Cold climate and Low temperature

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Model(s):	**CTC EcoPart i616M**			
Air-to-water heat pump:	**No**	Energy efficiency class:		-
Water-to-water heat pump:	**No**	Controller class:	**VI**	-
Brine-to-water heat pump:	**Yes**	Controller contribution:	**4**	%
Low-temperature heat pump:	**No**	Package efficiency:	**214**	%
Equipped with a supplementary heater:	**Yes**	Package efficiency class:		-
Heat pump combination heater:	**No**			

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

Item	Symbol	Value	Unit
Rated heat output (*)	*Prated*	**16**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**9,9**	kW
T j = + 2 °C	*Pdh*	**5,9**	kW
T j = + 7 °C	*Pdh*	**4,5**	kW
T j = + 12 °C	*Pdh*	**4,4**	kW
T j = bivalent temperature	*Pdh*	**15,5**	kW
T j = operation limit temperature	*Pdh*	**15,6**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-21**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,020**	*kW*
Thermostat-off mode	P_{TO}	**0,020**	*kW*
Standby mode	P_{SB}	**0,020**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Variable**	
Sound power level, indoors/ outdoors	L_{WA}	**36 / na**	*dB*
Annual energy consumption	Q_{HE}	**7239**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**210**	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*COPd*	**5,22**	-
T j = +2 °C	*COPd*	**5,93**	-
T j = +7 °C	*COPd*	**6,07**	-
T j = +12 °C	*COPd*	**5,76**	-
T j = bivalent temperature	*COPd*	**3077,00**	-
T j = operation limit temperature	*COPd*	**3,77**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output	*Psup*	**0,4**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**NA**		**Water heating energy efficiency/Energy class**	$\eta_{wh/-}$	**NA**	%
Daily electricity consumption	Qelec	**NA**	kWh	Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual electricity consumption	AEC	**NA**	kWh	Annual fuel consumption	AFC	**na**	GJ

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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. t is of great importance that the product's refrigerant, compressor oil and electrical/electronic equipment are properly disposed of. Disposing of the product as household waste is not permitted.

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