THERMOTECHNIKA CROWN COOL

TECHNICAL DATA SHEET

TC HeatEco MONO 15 kW
Air to Water Heat Pump

Model		TC HeatEco MONO 15 kW	
Power Supply / Refrigerant		V/Hz/Ph	380-415/50/3 - R290
Max. Heating Capacity (1)		kW	14,3
C.O.P. (1)		W/W	4,42
Heating Capacity Min./Max. (1)		kW	9,04 ~ 14,3
Heating Power Input Min./Max. (1)		kW	1,08 ~ 3,32
C.O.P. Min/Max (1)		W/W	4,33 ~ 8,37
Fan speed		rpm	680
Max. Heating Capacity (2)		kW	13,2
C.O.P. (2)		W/W	3,59
Heating Capacity Min./Max. (2)		kW	7,14 ~ 13,2
Heating power input Min./Max. (2)		kW	1,37 ~ 3,69
C.O.P. Min./Max. (2)		W/W	3,57 ~ 5,24
Fan speed		rpm	680
Max. Cooling Capacity (3)		kW	7,32
E.E.R (3)		W/W	2,31
Cooling Capacity Min./Max. (3)		kW	6,07 ~ 7,32
Cooling Power Input Min./Max. (3)		kW	2,1~ 3,76
E.E.R. Min/Max. (3)		W/W	1,94 ~ 4,00
Fan speed		rpm	700
Max. Cooling Capacity (4)		kW	6,12
E.E.R (4)		W/W	2,17
Cooling Capacity Min./Max. (4)		kW	4,02 ~ 6,12
Cooling Power Input Min./Max. (4)		kW	1,04 ~ 3,22
E.E.R. Min/Max. (4)		W/W	1,45 ~ 4,10
Fan speed		rpm	800
Recommended circuit breaker		A	16
IP rating			IPX4
Max. power consuption	Fan	W	205
	Outdoor unit	kW	4,9
	Secondary pump	W	95

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Model		**TC HeatEco MONO 15 kW**	
Workable Ambient Temperature Range		°C	-25~43
Max. Air intake temperature (Heating/Cooling)		°C	43/43
Min. Air intake temperature (Heating/Cooling)		°C	-25/21
Max. System Water Temperature (Heating / Cooling)		°C	75/35
Min. System Water Temperature (Heating / Cooling)		°C	10/5
Max. Operation High Pressure		MPa	3,0
Max. Operation Low Pressure		MPa	0,8
Compressor	Type		WHP13300PSDPC8FQ
	Oil in compressor		HAF68
	Oil volume in compressor	ml	1150
Refrigerant	Type / Amount	- / kg	R290/1
	Global warming potential (GWP)		3
	CO2 equivalent		0
	Max. refrigerant operating pressure	MPa	3
Fan	Quantity	db	1
	Airflow	m^3/h	3500
	Rated power	W	120
Noise Level (sound power)		dB(A)	67
Water Side Heat Exchanger	Type		Plate Heat Exchanger
	Water Pressure Drop	kPa	24
	Piping Connection	Inch	1
Allowable Water Flow	Min./Rated./Max.	L/S	0,64/0,71/0,85
Max. flow temperature		°C	75
SCOP			4,91
Energy efficiency class			A+++
Net Dimension(L×D×H)		mm	1204x515x962
Net Weight		Kg	123

Note:

(1) Heating condition: water inlet/outlet temperature: 30°C/35°C, Ambient temperature: DB 7°C/WB 6°C;

(2) Heating condition: water inlet/outlet temperature: 40°C/45°C, Ambient temperature: DB 7°C/WB 6°C;

(3) Cooling condition: water inlet/outlet temperature: 23°C/18°C, Ambient temperature: DB 35°C/WB 24°C;

(4) Cooling condition: water inlet/outlet temperature: 12°C/7°C, Ambient temperature: DB 35°C/WB 24°C;

(5) The specifications are subject to change without prior notice. For actual specifications of unit, please refer to the stickers on the unit.

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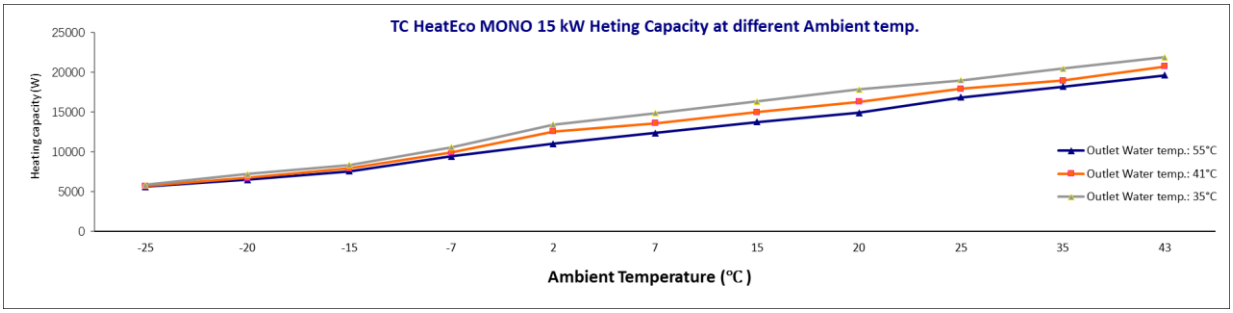
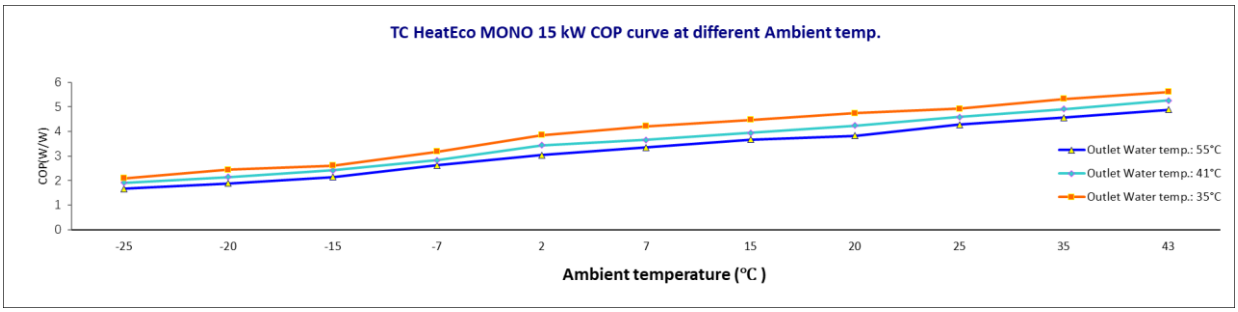
Test report of TC HeatEco MONO 15 kW Heating Capacity, Power Input and COP at different Ambient temperatures

Ambient Temp. (℃)	-25	-20	-15	-7	2	7	15	20	25	35	43
Heating Capacity (W) (Outlet Water Temp. 55℃)	5603	6513	7563	9419	11007	12358	13761	14920	16847	18200	19631
Heating Capacity (W) (Outlet Water Temp. 41℃)	5700	6750	7930	9940	12574	13617	14996	16287	17920	18983	20764
Heating Capacity (W) (Outlet Water Temp. 35℃)	5867	7210	8370	10571	13440	14892	16327	17862	18999	20481	21895
Power Input (W) (Outlet Water Temp. 55℃)	3367	3457	3514	3589	3621	3689	3752	3898	3941	3984	4023
Power Input (W) (Outlet Water Temp. 41℃)	2974	3141	3275	3504	3652	3724	3804	3846	3907	3866	3947
Power Input (W) (Outlet Water Temp. 35℃)	2801	2950	3208	3325	3485	3533	3649	3761	3856	3842	3907
COP (Outlet Water Temp. 55℃)	1,66	1,88	2,15	2,62	3,04	3,35	3,67	3,83	4,27	4,57	4,88
COP (Outlet Water Temp. 41℃)	1,92	2,15	2,42	2,84	3,44	3,66	3,94	4,23	4,59	4,91	5,26
COP (Outlet Water Temp. 35℃)	2,09	2,44	2,61	3,18	3,86	4,22	4,47	4,75	4,93	5,33	5,60





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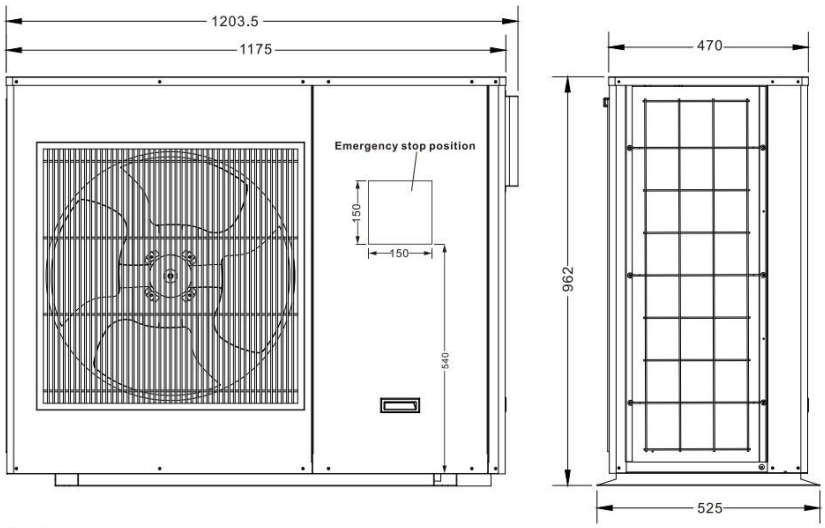
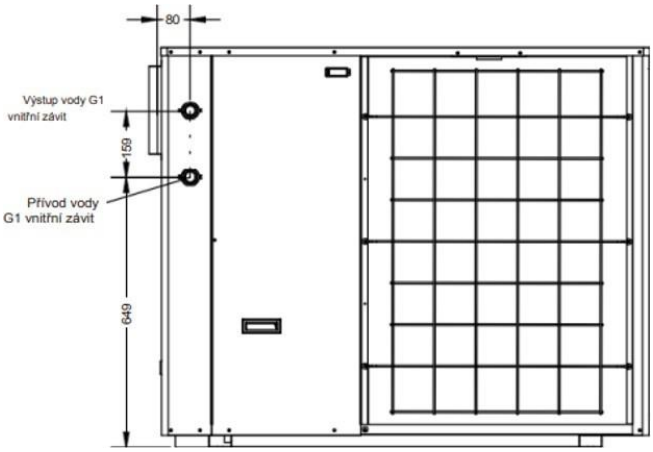
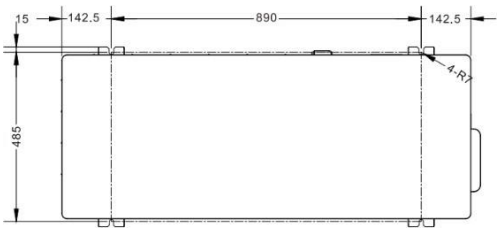
TC HeatEco MONO 15 kW dimensions







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Parameters shall be declared for medium temperature application and for low-temperature application.

Item	Symbol	Value	Unit
Rated Heat Output (1)	Prated	10,242	kW
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj:			
Tj=-7°C	Pdh	9,002	kW
Tj=+2°C	Pdh	5,548	kW
Tj=+7°C	Pdh	3,578	kW
Tj=+12°C	Pdh	4,003	kW
Tj=bivalent temperature	Pdh	9,002	kW
Tj= operation limit temperature	Pdh	9,647	kW
For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C)	Pdh	-	kW
Bivalent Temperature	Tbiv	-7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (2)	Cdh	0,9	-
Power Consumption in modes other than active mode:			
Off Mode	POFF	0,012	kW
Thermostat off mode	CTU	0,012	kW
Standby mode	PSB	0,012	kW
Crankcase heater mode	PCK	0,059	kW
Other Items			
Capacity Control		Variable	
Sound power level, indoor/outdoor	LWA	-/67	dB
Annual energy consumption	QHE	4396	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	190,3	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj:			
Tj=-7°C	PERd	89	%
Tj=+2°C	PERd	54	%
Tj=+7°C	PERd	35	%
Tj=+12°C	PERd	39	%
Tj=bivalent temperature	PERd	88	%
Tj= operation limit temperature	PERd	94	%
For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C)	PERd	-	%
For air-to-water heat pumps: Operating limit temperature	TOL	-10	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	75	°C
Supplementary heater			
Rated heat output	Psup		kW
Type of energy input	Electric		

Parameters shall be declared for medium temperature application and for low-temperature application.

Item	Symbol	Value	Unit
Rated Heat Output (1)	Prated	9,647	kW
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj:			
Tj=-7°C	Pdh	8,512	kW
Tj=+2°C	Pdh	5,221	kW
Tj=+7°C	Pdh	3,394	kW
Tj=+12°C	Pdh	4,001	kW
Tj= bivalent temperature	Pdh	8,512	kW
Tj= operation limit temperature	Pdh	10,029	kW
For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C)	Pdh	-	kW
Bivalent Temperature	Tbiv	-7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation co-efficient (2)	Cdh	0,9	-
Power Consumption in modes other than active mode			
Off Mode	POFF	0,012	kW
Thermostat off mode	CTU	0,012	kW
Standby mode	PSB	0,012	kW
Crankcase heater mode	PCK	0,059	kW
Other Items			
Capacity Control		Változó	
Sound power level, indoor/outdoor	LWA	-/67	dB
Annual energy consumption	QHE	5117	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	151,8	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj:			
Tj=-7°C	PERd	88	%
Tj=+2°C	PERd	54	%
Tj=+7°C	PERd	35	%
Tj=+12°C	PERd	41	%
Tj= bivalent temperature	PERd	88	%
Tj= operation limit temperature	PERd	104	%
For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C)	PERd	-	%
For air-to-water heat pumps: Operating limit temperature	TOL	-10	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature	WTOL	75	°C
Supplementary heater			
Rated heat output	Psup		kW
Type of energy input	Electric		

(1) For heat pump heaters and combined heat pump heaters, the rated thermal output Prated must equal the design heating load Pdesign, and the rated thermal output Psup of the auxiliary heater must equal the auxiliary heating output sup(Tj).

(2) If the Cdh value is not determined by measurement, the default degradation coefficient is Cdh= 0.9.

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