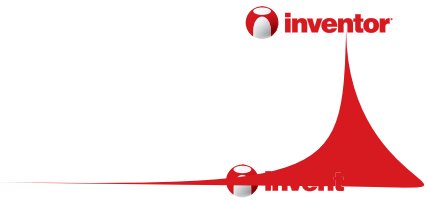
Domestic Hot Water Production Systems | VARIO

inventor®
Your-conditions

CATALOGUE 2012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These days, people are increasingly focusing on the cost of heating as well as the environmental issues. Traditional heating systems cost more money and are bad for sustainable development of the environment. Thus, people are searching for new heating technology with high efficiency, low running cost and eco-friendly features.

This is why we created Vario!

What is Vario?

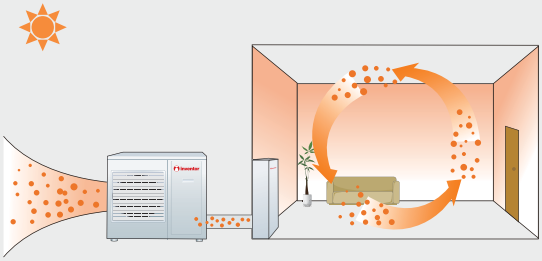
Vario, is a DC inverter multifunctional air to water heat pump system. By adopting advanced heat pump technology, absorbs natural heat from the ambient air and uses it for room heating. It does not only satisfy room-heating requirements but also supplies domestic hot water.

Besides, Vario can also provide you cool air in hot summer. It is All in One!

Choose Vario, and enjoy a comfortable air all year round!

Eco-friendly---Create a Green World

Vario adopts R410A, a new eco-friendly refrigerant which is harmless for the atmosphere. Moreover, with advanced heat pump



Hydro Unit (incorporating the control system):

Heat is transfered
refrigerant pi
unit. Th s the
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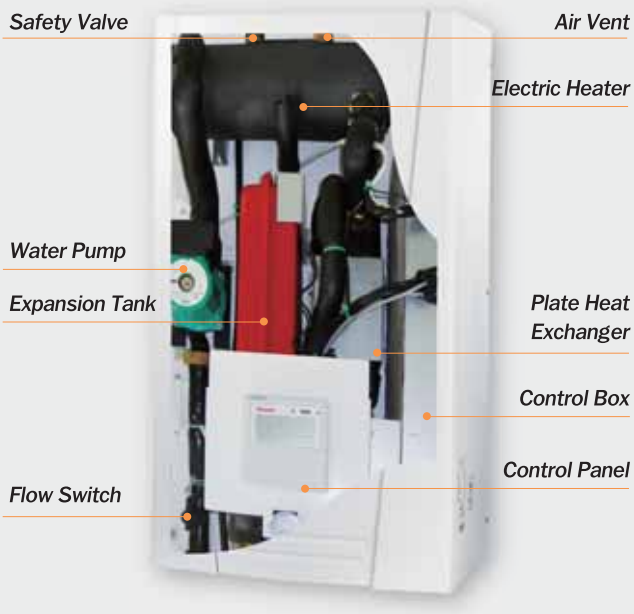
HYDRO UNIT

Vario's hydro unit equipped with high COP plate heat exchanger and high efficiency pump. The innovative compact design gives you more flexibility.



High Efficiency

› High COP plate heat exchanger

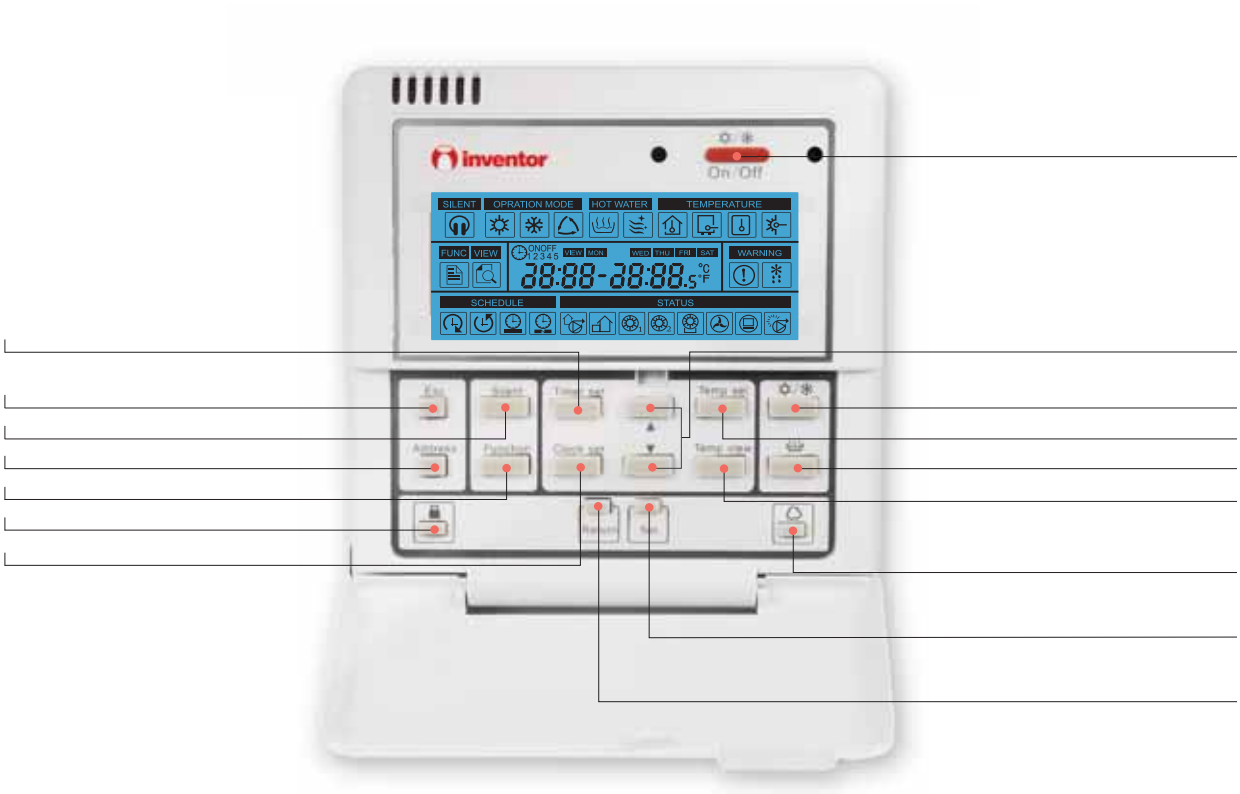
› High efficient pump

Flexible and Compact Design

Compact design, easy for installation
Dimension (WxDxH) (mm)

500x324x900mm.

Pressure safety, plate heat exchanger, expansion tank, water pump and control box all in one.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On/Off
SILENT
OPRATION MODE
HOT WATER
TEMPERATURE
FUNC
VIEW
WARNING
SCHEDULE
STATUS

Reliability

› When water is used, due to the existance of bearing tank, the unit is refilled with water. This ensures rapid storage and continuous delivery.

› The magnesium stick protecting container contributes to lifespan.

› Thermal insulting layer of 50mm thickness.

› Water and electricity isolation ensures safe operation.

Water and electricity are completely separated so that electrical leakage is absolutely avoided.

Advanced microcomputer control and complete protection functions are preventing any electricity leakage, dry heating, over-high temperature, etc.

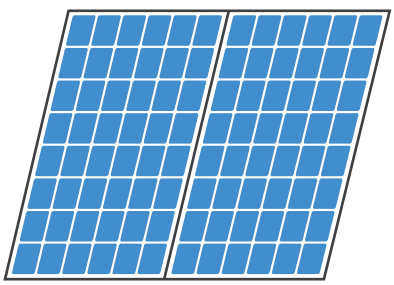
Dry heating

Electricity leakage

Over-high temperature

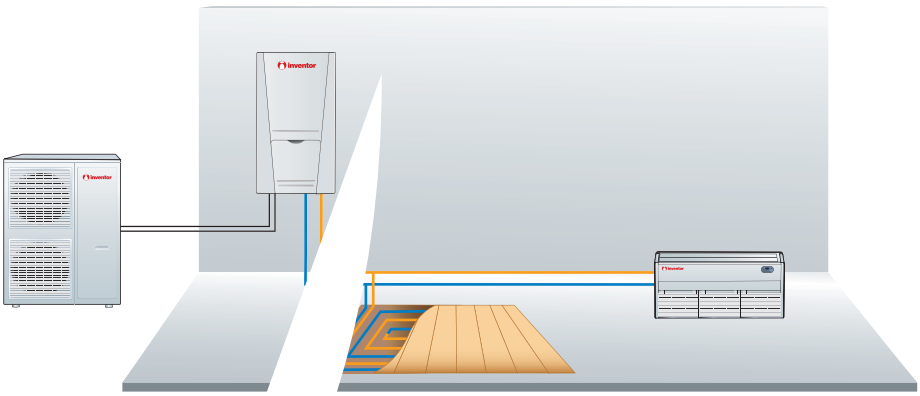
Flexibility

› Dual-coil design makes convenient to join solar panel or boiler.



Solar panel

Boiler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6kW, 8kW, 10kW

12kW, 14kW, 16kW

Model			DHW-CQ6.0Pd/ Na-K(O)	DHW-CQ8.0Pd/ Na-K(O)	DHW-CQ10Pd/ Na-K(O)	DHW-CQ12Pd/ Na-K(O)	DHW-CQ14Pd/ Na-K(O)	DHW-CQ16Pd/ Na-K(O)
Capacity[1]	Heating (floor heating)	kW	6.2	8.5	10.0	12.0	13.5	16.0
	Cooling (floor cooling)	kW	5.5	9.0	10.5	14.0	15.0	15.5
Power input[1]	Heating (floor heating)	kW	1.50	2.10	2.50	2.79	3.21	3.95
	Cooling (floor cooling)	kW	1.60	2.50	3.14	3.68	4.29	4.63
EER[1]	Cooling (floor cooling)		3.40	3.60	3.35	3.80	3.50	3.35
COP[1]	Heating (floor heating)		4.10	4.00	4.00	4.30	4.20	4.05
Capacity[2]	Heating (fan coil or radiator)	kW	5.5	8.0	9.0	11.5	12.5	14.0
	Cooling (for fan coil)	kW	4.0	6.5	8.0	10.0	11.0	11.5
Power input[2]	Heating (fan coil or radiator)	kW	1.83	2.65	2.90	3.38	3.73	4.59
	Cooling (for fan coil)	kW	1.54	2.50	3.08	3.45	3.93	4.60
EER[2]	Cooling (for fan coil)		2.60	2.60	2.60	2.90	2.80	2.50
COP[2]	Heating (fan coil or radiator)		3.00	3.00	3.10	3.40	3.35	3.05
Power Supply			1-Phase, 220~240V, 50Hz					
Compressor	Type		Hermetically sealed swing compressor					
Refrigerant charge	R410A	g	1700	2000	2000	3300	3300	3300
Sanitary water Temperature		°C	40~80					
Sound pressure level	Cooling	dB(A)	57	57	57	57	57	60
	Heating	dB(A)	59	59	59	59	59	62
Dimensions	WxDxH	mm	921x427x791			950x412x1253		
Weight		Kg	66	69	69	99	99	99
Connecting pipe (refrigerant)	Gas	mm	12.7	15.9	15.9	15.9	15.9	15.9
		inch	1/2	5/8	5/8	5/8	5/8	5/8
	Liquid	mm	6.35	9.52	9.52	9.52	9.52	9.52
		inch	1/4	3/8	3/8	3/8	3/8	3/8

Hydro Unit

Model		DHW-CQ6.0Pd/ Na-K(I)	DHW-CQ8.0Pd/ Na-K(I)	DHW-CQ10Pd/ Na-K(I)	DHW-CQ12Pd/ Na-K(I)	DHW-CQ14Pd/ Na-K(I)	DHW-CQ16Pd/ Na-K(I)
Nominal Input (W)		3200	6200	6200	6200	6200	6200
Power Supply (Ph/V/Hz)		1-Phase, 220-240V, 50Hz					
Leaving water temp.	Cooling (Fan coil unit) °C	7-25	7-25	7-25	7-25	7-25	7-25
	Cooling (Floor cooling) °C	18-25	18-25	18-25	18-25	18-25	18-25
	Heating (Fan coil unit) °C	25~55 (High Temperature Cycle)					
	Heating (Floor heating) °C	25~45 (Low Temperature Cycle)					
Pump	Type	Water Cooled	Water Cooled	Water Cooled	Water Cooled	Water Cooled	Water Cooled
	Nr. of. speed	3	3	3	3	3	3
	Power input (W)	200	200	200	200	200	200
	Water flow limit (LPM)	12	12	12	12	12	12
Electric Heater	Operation	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic
	Steps	2	2	2	2	2	2
	Capacity (kW)	3	6	6	6	6	6
	Combination (kW)	1.5+1.5	3+3	3+3	3+3	3+3	3+3
Sound pressure level (dB(A))		31	31	31	31	31	31
Dimensions (WxDxH) (mm)		900x500x324	900x500x324	900x500x324	900x500x324	900x500x324	900x500x324
Weight (Kg)		52	52	52	53	53	53

Water Tank

Model			AT200LCJ/A-K	AT300LCJ/A-K	AT200LCJ2/A-K	AT300LCJ2/A-K
Volume (L)			200	300	200	300
Power Supply			1-Phase, 220-240V, 50Hz			
Electric Heater Power (W)			3000	3000	3000	3000
Cool water inlet pipe	Outlet diameter	mm	DN15	DN15	DN15	DN15
		inch	1/2	1/2	1/2	1/2
	Screw Thread spec		1/2'' Female BSP	1/2'' Female BSP	1/2'' Female BSP	1/2'' Female BSP
Circulation Water Inlet/ Outlet Pipe	Outlet diameter	mm	/	/	DN20	DN20
		inch	/	/	3/4	3/4
	Screw thread spec		/	/	3/4'' Female BSP	3/4'' Female BSP
Water inlet/ outlet (heat pump) pipe	Outlet diameter	mm	DN20	DN20	DN20	DN20
		inch	3/4	3/4	3/4	3/4
	Screw thread spec		3/4'' Female BSP	3/4'' Female BSP	3/4'' Female BSP	3/4'' Female BSP
Dimensions	ΦDxH (mm)		Φ630X1620	Φ630X1620	Φ710X1645	Φ710X1645
Net weight (Kg)			68	82	71	87

SPECIFICATIONS

3 Phase system

12kW, 14kW, 16kW

Outdoor Unit

Model			DHW-CQ12Pd/Na-M(O)	DHW-CQ14Pd/Na-M(O)	DHW-CQ16Pd/Na-M(O)
Capacity[1]	Heating (floor heating)	kW	12.0	14.0	15.5
	Cooling (floor cooling)	kW	14.0	15.0	15.5
Power input[1]	Heating (floor heating)	kW	2.67	3.33	3.70
	Cooling (floor cooling)	kW	3.68	4.29	4.43
EER[1]	Cooling (floor cooling)		3.80	3.50	3.50
COP[1]	Heating (floor heating)		4.50	4.20	4.00
Capacity[2]	Heating (fan coil or radiator)	kW	11.0	12.0	14.0
	Cooling (fan coil)	kW	10.0	10.5	11.0
Power input[2]	Heating (fan coil or radiator)	kW	3.24	3.58	4.38
	Cooling (fan coil)	kW	3.45	3.75	4.07
EER[2]	Cooling (fan coil)		2.90	2.80	2.70
COP[2]	Heating (fan coil or radiator)		3.40	3.35	3.20
Power Supply (Ph/V/Hz)			3-Phase, 380-415V, 50Hz		
Compressor	Type		Hermetically sealed swing compressor		
Refrigerant charge	R410A	g	3.500	3.500	3.500
Sanitary water Temperature		°C	40~80	40~80	40~80
Sound pressure level	Cooling	dB(A)	57	57	60
	Heating	dB(A)	59	59	62
Dimensions	WxDxH	mm	950x412x1253	950x412x1253	950x412x1253
Weight		Kg	99	99	99
Connecting pipe (refrigerant)	Gas	mm	15.9	15.9	15.9
		inch	5/8	5/8	5/8
	Liquid	mm	9.52	9.52	9.52
		inch	3/8	3/8	3/8

Note:

1. Capacities and power inputs are based on the following conditions:
(1) Cooling conditions
Indoor water temperature 23 °C / 18 °C
Outdoor air temperature 35 °CDB / 24 °CWB
(2) Heating conditions
Indoor water temperature 30 °C / 35 °C
Outdoor air temperature 7 °CDB / 6 °CWB
(3) Standard piping length 7.5m

2. Capacities and power inputs are based on the following conditions:
(1) Cooling conditions
Indoor water temperature 12 °C / 7 °C
Outdoor air temperature 35 °CDB / 24 °CWB
(2) Heating conditions
Indoor water temperature 40 °C / 45 °C
Outdoor air temperature 7 °CDB / 6 °CWB
(3) Standard piping length 7.5m

Hydro Unit

Model		DHW-CQ12Pd/Na-M(I)	DHW-CQ14Pd/Na-M(I)	DHW-CQ16Pd/Na-M(I)
Nominal Input (W)		6200	6200	6200
Power Supply (Ph/V/Hz)		3-Phase, 380-415V, 50Hz		
Leaving water temp.	Cooling (Fan coil unit) °C	7-25	7-25	7-25
	Cooling (Floor cooling) °C	18-25	18-25	18-25
	Heating (Fan coil unit) °C	25~55 (High Temperature Cycle)		
	Heating (Floor heating) °C	25~45 (Low Temperature Cycle)		
Pump	Type	Water Cooled	Water Cooled	Water Cooled
	Nr. of. speed	3	3	3
	Power input (W)	200	200	200
	Water flow limit (LPM)	12	12	12
Electric Heater	Operation	Automatic	Automatic	Automatic
	Steps	1	1	1
	Capacity (kW)	6.0	6.0	6.0
	Combination (kW)	6.0	6.0	6.0
Sound pressure level (dB(A))		31	31	31
Dimensions (WxDxH) (mm)		900x500x324	900x500x324	900x500x324
Weight (Kg)		53	53	53

Water Tank

Model			AT200LCJ/A-M	AT300LCJ/A-M	AT200LCJ2/A-M	AT300LCJ2/A-M
Volume (L)			200	300	200	300
Power Supply (Ph/V/Hz)			3-Phase, 380-415V, 50Hz			
Electric Heater Power (W)			3.000	3.000	3.000	3.000
Cool water inlet pipe	Outlet diameter	mm	DN15	DN15	DN15	DN15
		inch	1/2	1/2	1/2	1/2
	Screw Thread spec		1/2'' Female BSP	1/2'' Female BSP	1/2'' Female BSP	1/2'' Female BSP
Circulation Water Inlet/ Outlet Pipe	Outlet diameter	mm	/	/	DN20	DN20
		inch	/	/	3/4	3/4
	Screw thread spec		/		3/4'' Female BSP	3/4'' Female BSP
Water inlet/ outlet (heat pump) pipe	Outlet diameter	mm	DN20	DN20	DN20	DN20
		inch	3/4	3/4	3/4	3/4
	Screw thread spec		3/4'' Female BSP	3/4'' Female BSP	3/4'' Female BSP	3/4'' Female BSP
Dimensions	ΦDxH (mm)		Φ540X1595	Φ620X1620	Φ540X1595	Φ620X1620
Net weight (Kg)			68	82	71	87

AIR SOURCE HEAT PUMP WATER HEATER

R134a

Circulating Heat Pump

3.8kW, 5.0kW

150L - 300L

› The air is the main energy source and the electric heat is the auxiliary energy. This way the unit produces high temperature hot water which is stored in the water tank and used for family bathing, heating and daily life. It is the most energy saving and environment friendly water heater used in families.

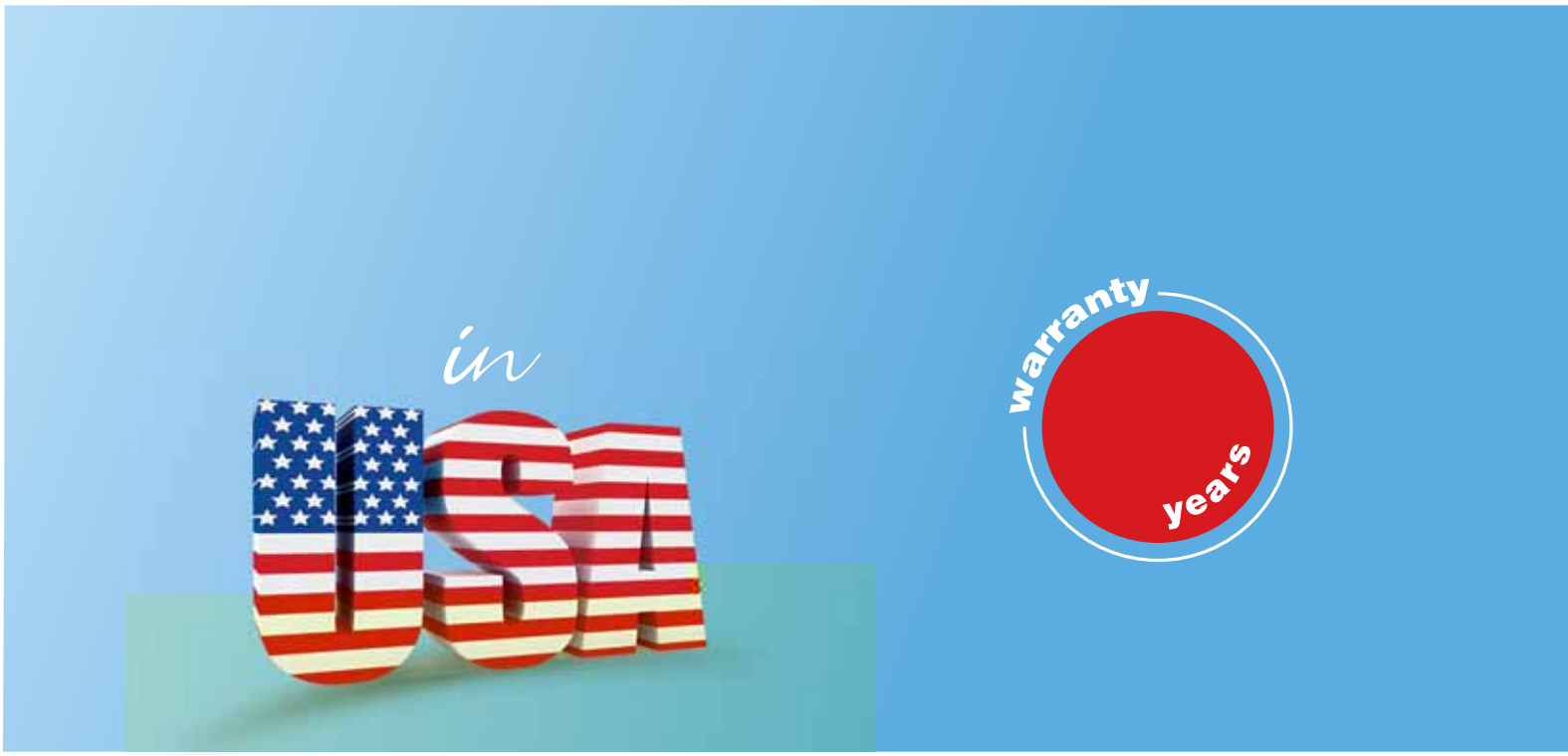
- High efficiency and energy saving
- Easy Installation and Maintenance
- Comfortable
- Auto cleaning,healthy on every day
- Multipoint water supply and simultaneous water using
- Intelligent water supply and energy saving
- Safe and Reliable

Model	Water-tank
DHW-C3.8/NbA-K	WT150LC-K
	WT200LC-K
	WT250LC-K
DHW-C5.0/NbA-K	WT250LC-K
	WT300LC-K

Nominal Testing Condition				
Item	Outdoor Condition		Water Side Condition	
	DB Temperature(°C)	WB Temperature(°C)	Initial Water Temperature(°C)	Final Water Temperature(°C)
Water Heating	20	15	15	55

Operation Range	Item	Outdoor Condition(DB °C)
	Water Heating	-15~43

Model		DHW-C3.8/NbA-K	DHW-C5.0/NbA-K
Rated water heating capacity	kW	3.8	5.0
Rated water supply	L/h	82	108
Water temperature	°C	35-70	35-70
Noise	dB(A)	50	52
R134a charged volume	kg	0.70	0.95
Power supply	V/Ph/Hz	220-240V/1Ph/50Hz	
Power input/ Water heating	(kW)	1.02	1.35
COP (Heating)*	W/W	3.72	3.70
Outine dimension (WxDxH)	mm	762x256x750	762x256x750
Package dimension (WxDxH)	mm	881x363x815	881x363x815
Connecting pipes diameter (to water tank)	(Inch)	3/4	3/4
N.W / G.W	Kg	55/61	60/66

Water tank model		WT150LC-K	WT200LC-K	WT250LC-K	WT300LC-K
Tank volume (L)		150	200	250	300
Power supply (V/Ph/Hz)		220-240V/1Ph/50Hz			
Auxiliary electrical heater power input (kW)		1.5	1.5	1.5	1.5
Dimension	Outline (Diameter x H) (mm)	520X1.350	540X1.595	540X1.945	620X1.620
	Package (WxDxH) (mm)	1.378X608X625	1.623X628X645	1.973X628X645	1.648X708X725
Water pipes diameter	Tap water inlet (Inch)	1/2	1/2	1/2	1/2
	Hot water outlet (Inch)	1/2	1/2	1/2	1/2
N.W./G.W (Kg)		45/52	57/66	68/77	71/81

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