



The ROA air-source CO<sub>2</sub> heat pump water heater with VFD-controlled compressor is a highly efficient and energy-saving device. It uses the natural, environmentally friendly refrigerant CO<sub>2</sub>, which is non-toxic, non-flammable, and has excellent environmental performance, with an ODP of 0 and a GWP of 1—far superior to conventional refrigerants such as R134a (GWP 1430) and R410A (GWP 2088). It also operates over a wider ambient temperature range; even at extremely low temperatures of -30°C (-22°F), it can stably produce high-temperature hot water above 80°C (176°F) without auxiliary heating. By absorbing and transferring heat from the surrounding environment, the unit efficiently generates high-temperature hot water, significantly reducing energy consumption and lowering operating costs.



R744 (CO<sub>2</sub>)  
Eco-friendly  
Refrigerant



High  
Outlet Water  
Temperature



Low  
Ambient  
Temperature



High  
Performance



Adaptive  
Flow  
Control



Transcritical  
Control



Inverter  
Control  
Technology

MODEL		ROA-50PC4A	ROA-85PC4A	ROA-125PC4A	ROA-190PC4A	
Normal Condition	Heating Capacity	kW	45.5	84.5	124.5	186.2
		MBH	155.3	288.4	424.9	635.5
	Water Flow Rate	m <sup>3</sup> /h	1.0	1.8	2.7	4.0
		GPH	258	480	707	1057
Input Power	kW	10.1	18.6	27.4	41.2	
	W/W	4.50	4.54	4.54	4.52	
Nominal High-Temperature Water Outlet Condition	Heating Capacity	kW	38.6	72.9	111.2	166.0
		MBH	131.7	248.8	379.5	566.6
	Water Flow Rate	m <sup>3</sup> /h	0.5	1.0	1.5	2.2
		GPH	135	255	389	580
Input Power	kW	11.1	21.1	32.6	48.9	
	W/W	3.48	3.45	3.41	3.39	
Low Temperature Condition	Heating Capacity	kW	29.0	54.6	83.5	123.2
		MBH	99.0	186.3	285.0	420.5
	Water Flow Rate	m <sup>3</sup> /h	0.5	1.0	1.6	2.3
		GPH	143	270	412	608
Input Power	kW	9.4	17.7	27.4	41.0	
	W/W	3.09	3.08	3.05	3.00	
Power Supply		460V/3ph/60Hz				
Max. Input Power		kW	17	30	42	62
Max. Input Current		A	25	44	62	92
Ambient Temperature		-35°C~50°C (-31°F~122°F)				
Max. Inlet Water Temperature		55°C (131°F)				
Max. Outlet Water Temperature		95°C (203°F)				
Refrigerant		R744 (CO <sub>2</sub> )				
Compressor		CO <sub>2</sub> -dedicated Semi-hermetic Piston (Inverter Type)				
Heat Exchanger		High Efficient Copper-tube Fin (Air Side) /Tube-in-tube (Hot Water Side)				
Number of EC Fans		1	2	2	3	
Design Pressure	HP	140bar (2030PSI)				
	LP	80bar (1160PSI)				
Water System	Pipe Diameter	mm	DN20 (Female)	DN25 (Female)	DN32 (Female)	DN40 (Female)
		in	3/4" (Female)	1" (Female)	1-1/4" (Female)	1-1/2" (Female)
Pressure Drop		≤150kPa (≤22PSI)				
Dimension (L*W*H)		mm	1700*950*1800	2050*1100*2200	2700*1410*2300	3000*1600*2500
		in	70*38*71	81*44*87	107*56*91	119*63*99
Sound Power		dB(A)	≤65	≤70	≤72	≤75
Weight		kg	600	900	1400	2000
		lbs	1323	1984	3086	4409

### Notes:

- 1) Nominal Condition: Dry bulb temperature 20°C (68°F), wet bulb temperature 15°C (59°F), inlet water temperature 15°C (59°F), outlet water temperature 55°C (131°F);
- 2) Nominal High-Temperature Condition: Dry bulb temperature 20°C (68°F), wet bulb temperature 15°C (59°F), inlet water temperature 15°C (59°F), outlet water temperature 80°C (176°F);
- 3) Low Ambient Temperature condition: Dry bulb temperature -7°C (19.4°F), wet bulb temperature -8°C (17.6°F), inlet water temperature 9°C (48.2°F), outlet water temperature 55°C (131°F);
- 4) Specifications are subjected to change with product improvements. No prior notice will be given. Please refer to the actual product for final specifications.