

# Performance Parameter Table

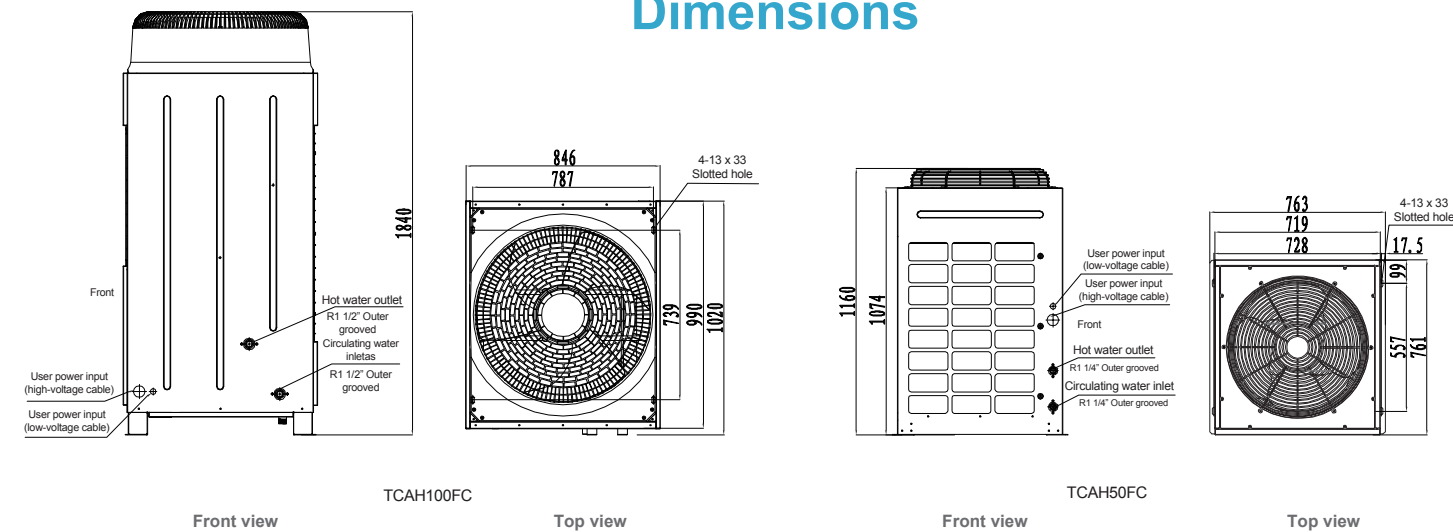
Circulating



Model	TCAH100FC	TCAH50FC
Nominal heating capacity (kW)	38.5	18.6
Rated input power (kW)	8.75	4.24
COP (W/W)	4.40	4.39
Water output (L/h)	828	400
Rated water flow (m³/h)	6.6	3.2
Water resistance (kPa)	50	60
Power supply	380V 3N~50Hz	380V 3N~50Hz
Operating voltage range	380±10%	380±10%
Maximum total power (kW)	13.2	6.8
Maximum running current (A)	23.3	11.7
Applicable ambient temperature (°C)	-10~48	-10~48
Noise (dB(A))	65	60
Maximum allowable pressure at the high pressure side (MPa)	4.4	4.4
Maximum allowable pressure at the low pressure side (MPa)	3.1	3.1
Maximum pressure of water system	1	1
Refrigerant/filling quantity	R410A/4.8kg	R410A/2.4kg
Waterproofing grade	IPX4, applicable to outdoor applications	IPX4, applicable to outdoor applications
Protection class	I	I
Hot water outlet pipe diameter (outer grooved)	DN40 (R1 1/2" )	DN32 (R1 1/4" )
Circulating water inlet pipe diameter (outer grooved)	DN40 (R1 1/2" )	DN32 (R1 1/4" )
Net weight (kg)	287	170
Gross weight (kg)	310	195

- Note: Nominal heating capacity test conditions: outdoor dry/wet bulb temperature is 20/15°C; initial temperature is 15°C; final temperature is 55°C.
- Models, parameters and performance due to product improvements may change without notice. Please refer to the nameplate parameters and real product.

## Dimensions

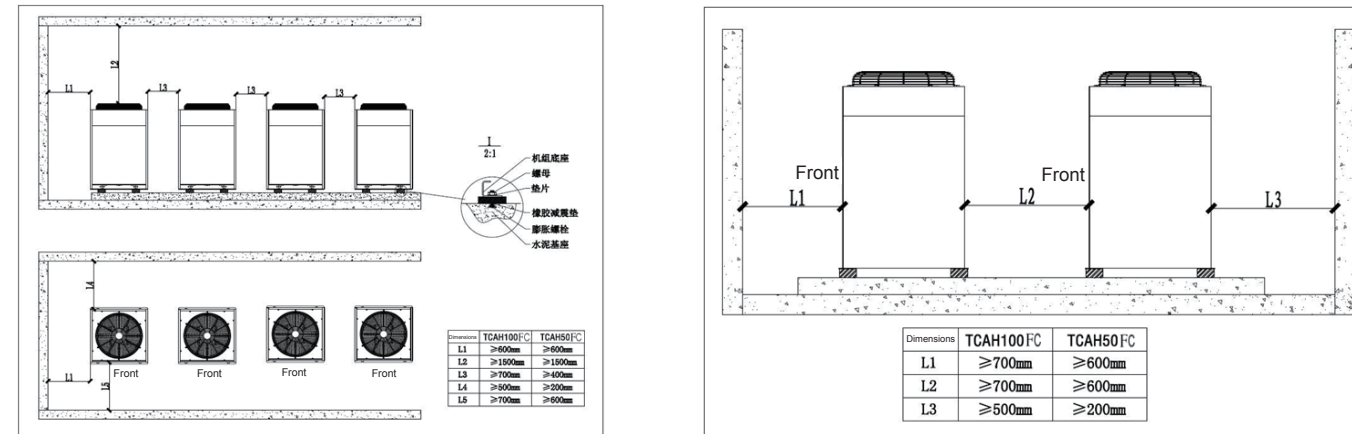


## Table of Variable Working Condition Parameters

Ambient Temperature (°C)	Water Inlet Temperature (°C)	Water Outlet Temperature (°C)	TCAH50FC Heating Capacity	TCAH100FC Heating Capacity
-10	9	45	0.547	0.594
-7	9	47	0.573	0.649
2	9	50	0.741	0.767
7	9	51	0.842	0.868
20	15	55	1.000	1.000
27	15	55	1.085	1.159
35	29	55	1.129	1.249
43	29	55	1.173	1.305
48	34	55	1.270	1.293

Model	Water Inlet/Outlet Temperature Difference (°C)	Ambient Temperature (°C)								
		-10	-7	2	7	20	27	35	43	48
TCAH50FC	30	0.729	0.833	1.009	1.161	1.333	1.477	1.081	1.562	1.682
	35	0.625	0.714	0.865	0.995	1.143	1.266	0.927	1.338	1.441
	40	0.547	0.625	0.757	0.871	1.000	1.108	0.811	1.171	1.261
TCAH100FC	30	0.757	0.897	1.009	1.141	1.333	1.532	1.598	1.683	1.651
	35	0.649	0.769	0.865	0.978	1.143	1.313	1.369	1.443	1.416
	40	0.568	0.673	0.757	0.856	1.000	1.149	1.198	1.262	1.239

## Installation Diagram



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DISCLAIMER NOTE: Data provided herein are not binding and might change without prior notice.

## Intelligent Technology Better Life

TICA Air Source Heat Pump Water Heater **Circulating**

FORM No. A9916G01

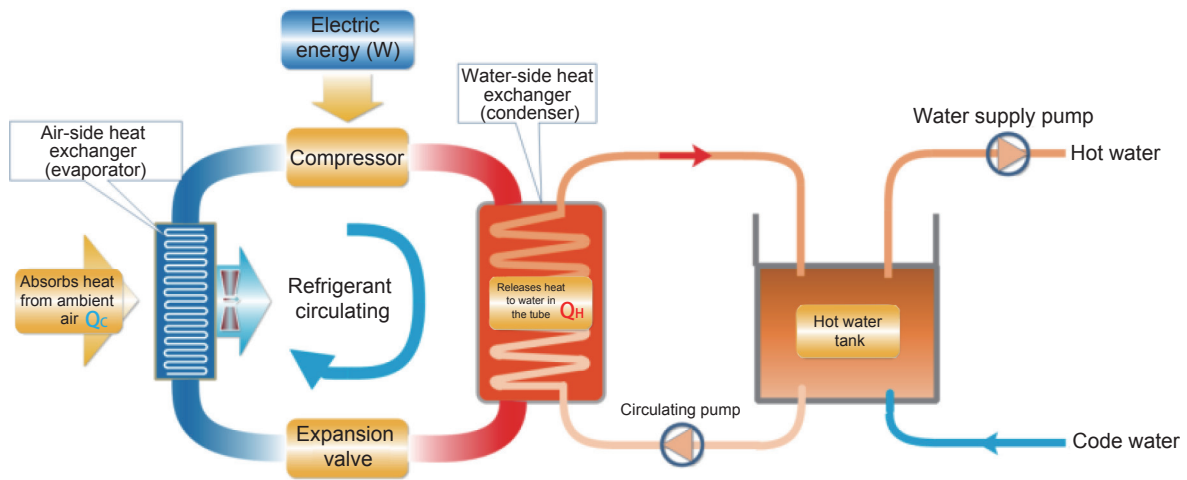
# Advanced Design, Energy Efficient, Environmentally Friendly

Circulating



TICA circulating air source heat pump water heater is energy efficient, environmentally friendly, safe, and reliable. Its automatic intelligent operation substantially prolongs the service life of the unit while saving energy. Operation and maintenance are also simple and reliable. It supports all-season operations regardless of weather, and applies mainly to hotels, hospitals, schools, and beauty salons for water heating and constant temperature water supply.

## Schematic Diagram of Circulating Air Source Heat Pump Water Heater



## Green and Environmental-friendly

We are the first company of the industry to use R410A refrigerant in heat pump units. In addition to being green and environmental-friendly, with an Ozone Depletion Potential (ODP) of 0 and no substitution risk, R410A is excellent in heat exchange, which helps enhance the performance of the unit and reduce operating energy consumption.

	R22	R410A
ODP	0.055	0



# Product Features



## Energy-saving and High Heating Performance

Table of Cost Comparison under Water Heating Conditions

Energy Type	Calorific Value	Thermal Efficiency	Effective Value	Energy Price	Cost (yuan)	Comparison
Electric heating	860 kcal/°C	95%	817 kcal/°C	1 yuan/°C	0.245	168%
Gasoline	10200kcal/kg	75%	7650 kcal/°C	6.5yuan/kg	0.17	116%
Liquefied gas	12000kcal/kg	80%	9600 kcal/°C	7 yuan/kg	0.146	100%
Heat pump	860 kcal/°C	350%	3010 kcal/°C	7 yuan/°C	0.066	46%

Note:

The data listed in the above table is acquired under the same condition — 5 kg water at 15°C was heated to 55°C with 40°C temperature raise. The heat needed is equal to 5 kg x 1 kcal/kg · °C x 40°C = 200 kcal Operating costs of various devices are estimated values.

## Stable and Reliable

Enlarged effective heat exchange area of the heat exchanger allows for reduced thermal degradation in low-ambient-temperature scenarios.

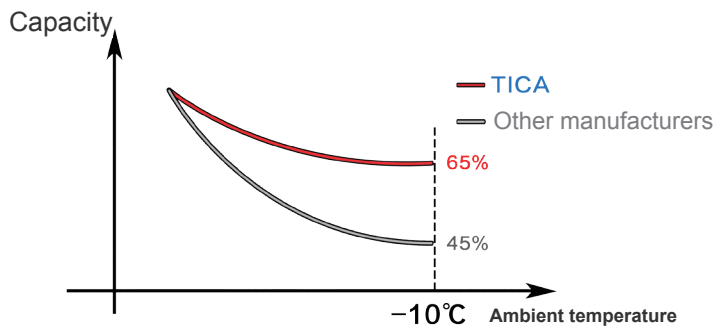


Diagram of thermal degradation under low ambient temperature

Compressor of internationally renowned brand features high pressure ratio and high outflow water temperature.

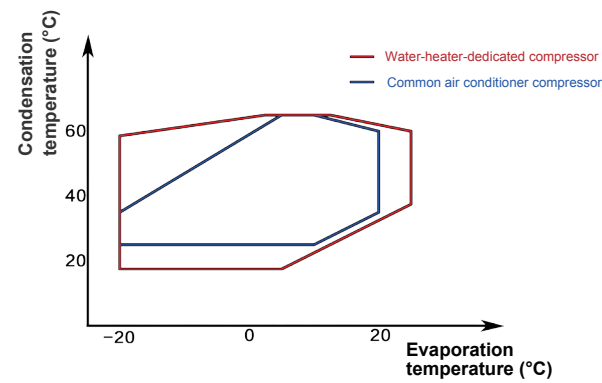


Diagram of compressor operating range

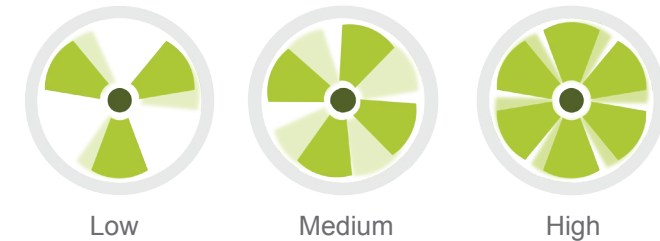
# Excellent Performance, Remarkable Quality

Circulating

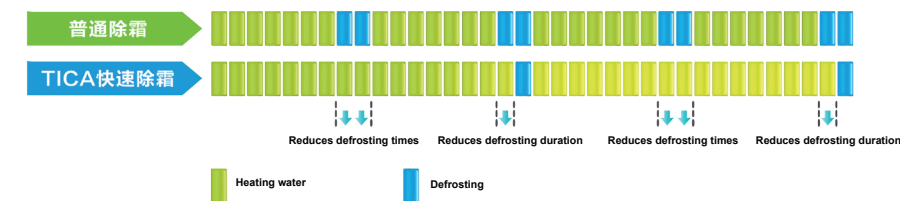


The electronic expansion valve precisely regulates the refrigerant circulation flow according to different operating conditions and prevents the evaporator outlet from getting overheated, ensuring reliable operation of the unit.

The multi-gear design of the fan allows for automatic switches among different gears based on different operating conditions, which is efficient and reliable.



Intelligent defrosting: defrosting operating rate below 2°C is not less than 95%.



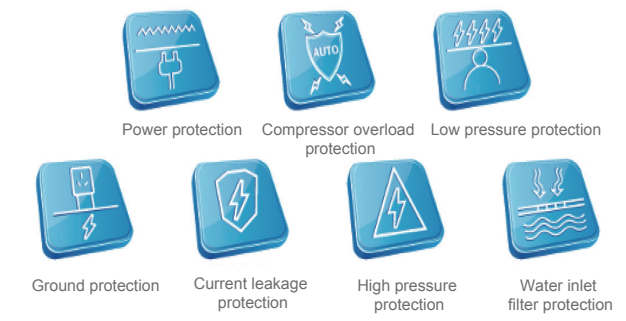
Intelligent judgment effectively reduces the times of defrosting, extends water-heating duration, and enhances water-heating efficiency, thereby outputting more hot water.

## Multi-protection for Safer Operation

Multi-protection design, with special embedded electric leakage protection switch, ensures security and reliability.



Multiple safety technology measures ensure safety in all respects.



Refrigerant-water heat exchanger perfectly implements the complete isolation between water and electricity, thus eliminating the dangers such as fire, explosion, electric shock, and gas poisoning that traditional water heaters may cause.