

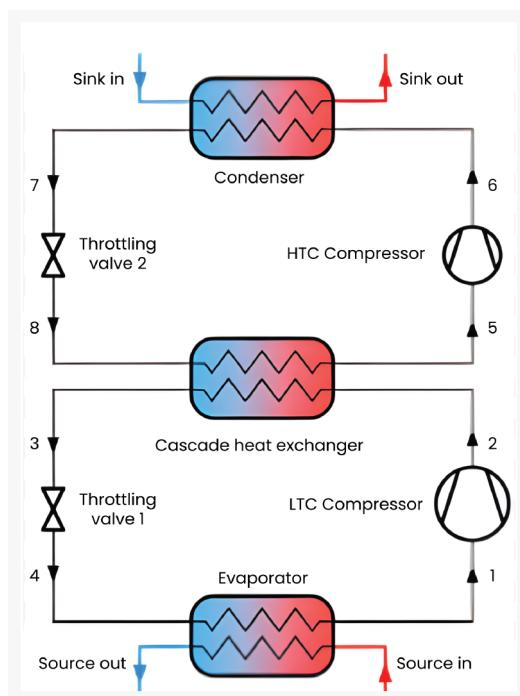
## HIGH-TEMPERATURE CASCADE HEAT PUMP WATER HEATER



The heat pump water heater can produce heating hot water in temperature up to 90°C by utilizing cascade arrangement of two-stage refrigeration cycles.

The low-pressure cycle operates with R410a and the high-pressure cycle with R134a. This arrangement is optimized for winter heating application, since the R410A is a well performing with low outdoor temperature while the R134A is the refrigerant perfectly designed for high pressure and temperatures.

The two-stage heating cycles are equipped with full inverter technology to ensure maximum efficiency, much higher than traditional heat pumps. Both compressors, low and high pressure, as well as fans and circulation pumps, are equipped with inverters, in combination with electronic expansion valves and high-performance heat exchangers.



### V-SHAPE HEAT EXCHANGER

The heat pump is built with high quality components, including DC inverter compressor, V-shape heat exchanger, and high-efficiency plate heat exchangers, ensuring excellent performance and longevity.



### EXTREME LOW AMBIENT TEMPERATURE DOWN TO -35°C

The design of high-efficiency DC Inverter cascade technology is a stable heat source for high-temperature side under different ambient temperatures of -35°C. No auxiliary electric heating elements are required, while maintaining a stable heat output.



### HIGH OUTLET TEMPERATURE

The maximum outlet temperature of the Heat Pump Water Heater is 90°C. This high heating supply temperature meets the requirements of most commercial building heating systems, industrial process heating systems, and central heating supply plants



### INTELLIGENT DEFROSTING TECHNOLOGY

Leveraging our advanced product design and proprietary control technology, the defrosting process does not absorb heat from the yield heat, which can avoid temperature fluctuations.



### EASY DESIGN AND INSTALLATION

The all-in-one heating plant assembly has incorporated multiple compressors and comprehensive load controls with optional in-built pumps. This could minimise on-site installation and commissioning work.



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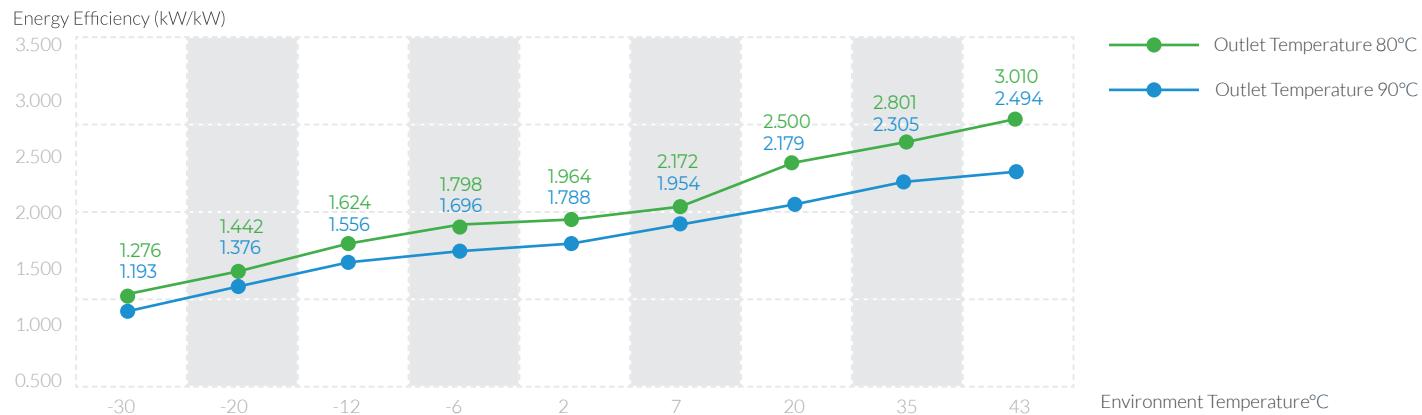
# TECHNICAL DATA

Model	CSHT 56X	CSHT 110X
Rated Heating Capacity (thermal)*	56 kW	110 kW
COP (Coefficient of Performance) **	2.19	2.05
Rated Outlet Temperature (°C)	80°C	80°C
Circulating Water Flow Rate (m <sup>3</sup> /h)	6.0 m <sup>3</sup> /h	11.8 m <sup>3</sup> /h
Power Supply (V/Ph/Hz)	400V/3P/50Hz	400V/3P/50Hz
Rated Power/Current (kW/A)	25.6 kW/42.6 A	53.7 kW/93.9 A
Maximum Power/Current (kW/A)	38.5 kW/61.8 A	73.5 kW/126.5 A
Water-Side Pressure Drop	50 kPa	60 kPa
Circulating Pipe Connection	DN65	DN80
Sound Level	71dB(A)	74dB(A)
Ambient Temperature Range	-20°C - 43°C	-20°C - 43°C
Dimension (LxWxH)	2180x1270x2070mm	2432x1330x2220mm
Total Weight (shipping)	1,000kg	1,500kg

\* Increased system capacity can be achieved by multiple units in cascade arrangement.

\*\* Standard Test Condition (STC): Ambient temperature 7°C; Outlet water temperature 80°C.

## PERFORMANCE



The cascade heat pump heating system can create high heating temperatures of up to 90°C while maintaining high system efficiency, resulting in significant reduction in greenhouse gas emission. At an ambient temperature of 20°C, the rated COP of the system reaches to 2.5. Integrating with proper design of heating system, highest system efficiency and energy savings can be achieved.

## APPLICATION

The high-temperature cascade heat pump water heater and associated heating hot water system can be widely use in commercial, industrial, and municipal heating applications.

- Space heating and airconditioning
- Industrial processing heating
- Agriculture heating
- High temperature heating plant
- Replacement of gas-fired water heater



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