



# Commercial Heat Pump Water Heating Solutions

# PHNXX

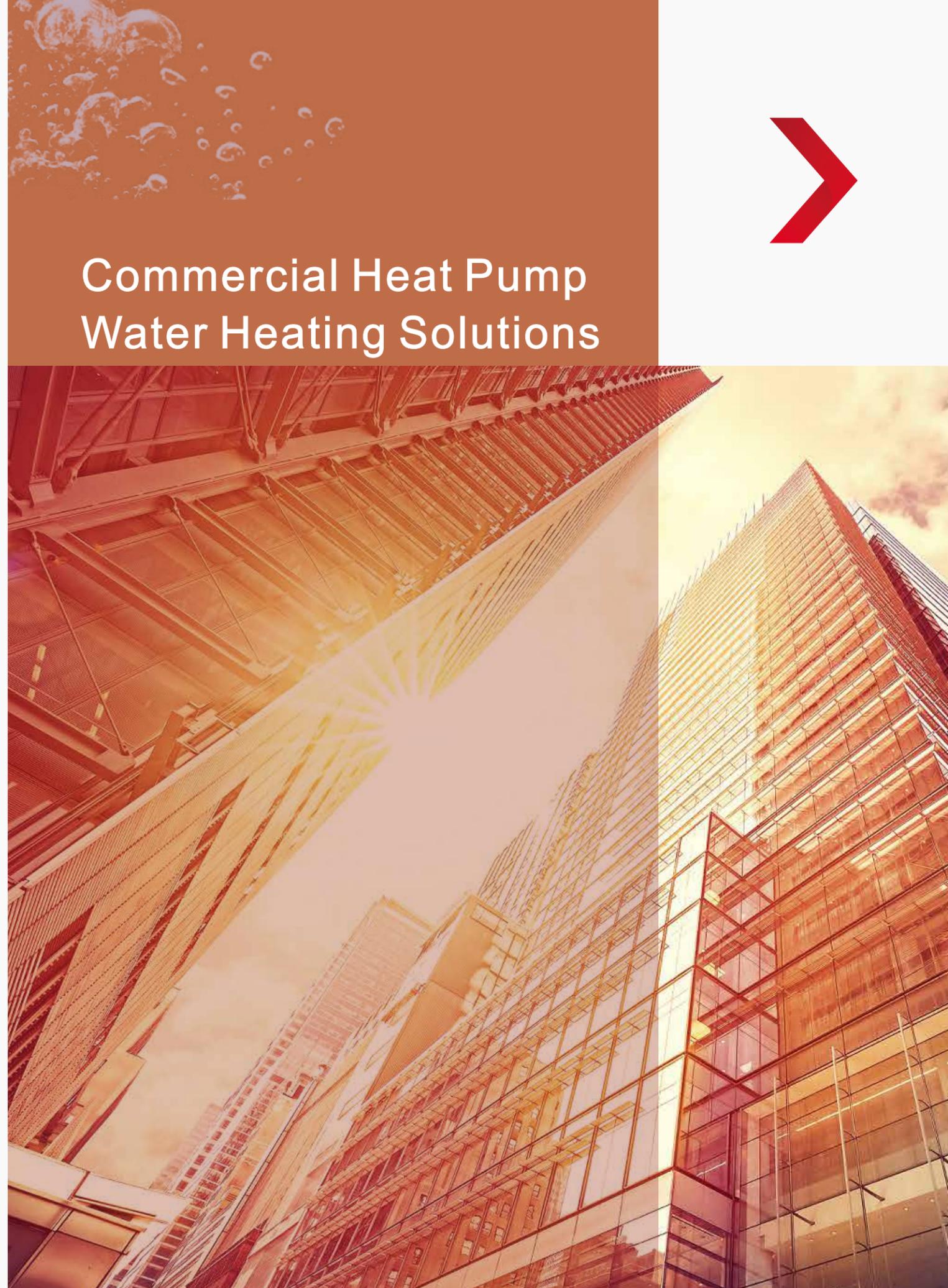
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## About PHNIX

PHNIX is one of the largest manufacturers of Swimming Pool Heat Pumps, House Heating Heat Pumps and Heat Pump Water Heaters in China. PHNIX 's vision is "To be a young company forever and leave more blue sky and white clouds to the future generations."

With more than 299 national patents covering heat pump applications and heat pump technologies, PHNIX has built up a complete heat pump industrial chain.

PHNIX provides high-end users with integrated energy-saving solutions and products including Swimming Pool Heat Pumps, Swimming Pool Dehumidifiers, House Heating&Cooling Heat Pumps, Hot Water Heating Solution, Industrial & Agricultural Heat Pumps Dryer and Residential Heat Pump Water Heaters home and abroad.

As an international enterprise, PHNIX attaches great importance to high-end overseas markets, exporting more than 50 percent of its products to Europe, North America, Middle East, Australia, and other developed regions.

# Milestone

**2002**

Foundation of PHNIX

**2005**

80% of the products are for exportation and she becomes one of the leading heat pump manufacturers in China.

**2009**

PHNIX becomes the biggest swimming pool heat pump manufacturer in China with the most exportation volume.

**2011**

China's first ultra-low temperature heat pump unit "Polaris Series" is successfully applied in extremely chilly climate of Naqu.

**2013**

PHNIX's second factory in Nansha, Guangzhou was build up.

**2016**

Represent as China Team for 80edays EV challenge.

**2017**

PHNIX is awarded as the Outstanding Contribution Company in the Beijing Coal to Electricity project.

**2018**

PHNIX establishes LinkedGo Thermostat Company and R32 swimming pool heat pump is mass produced and exported.

**2019**

New HeatPlus Series commercial heat pump water heater is released.



## Market Overview

Through years of technological innovation and strategic market expansion, PHNIX has become one of the most famous and influential brands of HEAT PUMPS in China.

PHNIX has been highly recognized in the European and North American Heat Pump markets since 2002. Until now, about 50% of PHNIX Heat Pump products, including Hot Water Heat Pumps, Swimming Pool Heat Pumps and House Heating Heat Pumps, are exported to markets outside of China.

## Cooperative Partner

Heat pump technology is our core strength. PHNIX focuses on technological research and development, adopting the most appropriate components for every heat pump. PHNIX also values technical communications and collaboration with world famous enterprises.



# Production Advantage

From 2005, PHNIX has started transforming the structure of the factory and focusing on building automatic intelligence technology into the production process. Up to now, the production process has involved multiple automatic production devices including Copper Pipe Cutter, Pipe Bender Robot, Automated Vacuum Circulatory System, Robotic Palletization and Packaging and AGV and so on. Over 30 percent of automatic production devices are put into use in PHNIX manufacturing process.

To follow through on this commitment to quality, PHNIX has built the world's leading energy-saving integrated performance laboratory for air-to-water heat pumps. The laboratory received approvals from Intertek and SGS and can conduct third-party testing certification independently at the facility.



Automatic Vacuum Machine



Refrigerant Charging Machine



Inspection Room



Electric Safety Inspection



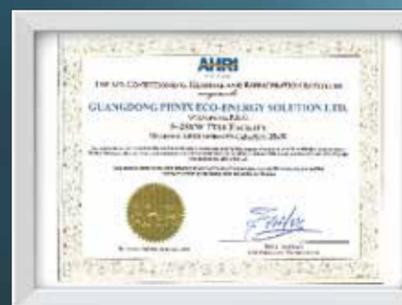
AGV Robot



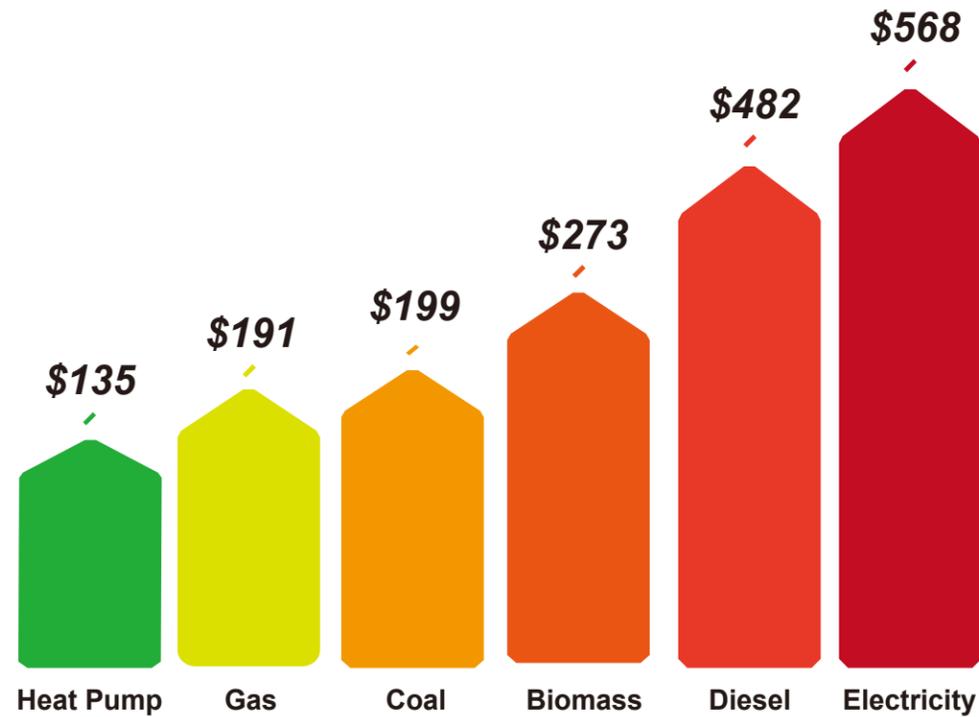
Packaging Robot

# Certification

In each of its operation service, PHNIX's top priority is to ensure the reliability and quality of its products and to meet the technical & professional certifications of overseas markets. As an international brand, PHNIX holds several international certifications, including CE, ETL, SAA, C-tick, Standardmark, and so on.



# Energy Cost Comparison



## Operating Cost Comparison

Items	Heat Pump	Gas	Coal	Biomass	Diesel	Electricity
Calorific Value	860kcal/kW	8600kcal/L	5000kcal/Kg	4000	10200kcal/L	860kcal/kW
Unit Price	\$0.1/kWh	\$0.3/m <sup>3</sup>	\$0.075/Kg	0.20	\$0.9/L	\$0.10/kWh
Heating Load	300kW	300kW	300kW	300kW	300kW	300kW
$\eta$	400%	85%	35%	85%	85%	95%
Consumption Per Hour	75kW/h	35m <sup>3</sup> /h	147Kg/h	76	30L/h	316kW/h
Operating Hours Per	18h	18h	18h	18h	18h	18h
Operating Cost Per Day	\$135	\$191	\$199	\$273	\$482	\$568
Operating Days Per	250days	250days	250days	250days	250days	250days
Operating Cost Per Year	\$33750	\$47647	\$49757	\$68294	\$120519	\$142105

# Innovation

## Modbus/DTU/BMS

The mainboard has RS485 connector reserved and can communicate via Modbus. What's more, it is compatible with a DTU module and also available for BMS with a converter.



## Optimised Energy-saving Solutions

PHNIX Heat Pump Water Heaters are of various models ranging from 12kW~129kW. Users can choose the most suitable one for their residential or commercial applications, so as to achieve the most cost-effective results according to their actual demand or existing water tank size.



## User-friendly Smart Display

PHNIX Heat Pump Water Heater's 5-inch wire-controlled LCD display is provided with powerful functions, such as water temperature curve display, fast heating, one key mute, timer and so on. It has several control modes and the operation is much easier.



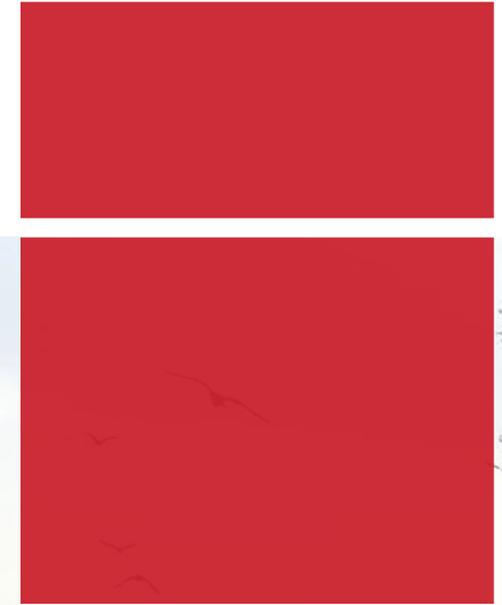
# HeatPlus Series

Heat Pump Water Heater

- Hotels
- Apartment Buildings
- Recreation Club
- Hot spring
- SPA/Salon/Sauna
- Healthy Clubs

**COP up to 4.96**

The highest level in commercial hot water industry



# Key Components

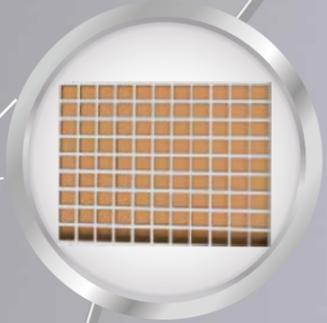
## Heat Exchanger

High efficiency tube in shell heat exchanger is with no welding points or danger of leakages & corrosions.



## Finned Heat Exchanger

Copper-aluminum finned heat exchanger is with 25% bigger heat exchanging capacity.



## DC Motor

Dedicated speed module enhances COP and heating performance.



## Fan Blade

With better dynamic balance and reducing turbulent flow noise, heat pump work efficiency is greatly improved.



## EEV

Advanced EEV control logic ensures dedicated superheat management.



## 5 Inch Color Display

Multi-functioned display provides easy control experience and maintenance.



## Compressor

ZW scroll compressor is dedicated for heat pump water heater.



## Smart PCB

165-265V power-supply fluctuation range.



# HeatPlus



## Specifications

Model		PASHW030-XC	PASHW050S-XI	PASHW060S-XA	PASHW100S-XA	PASHW130S-XA
Hot Water Capacity*	kW	11.6	17.2	23	37.0	48.0
Power Input*	kW	2.49	3.8	4.84	7.45	9.97
COP*	W/W	4.66	4.53	4.75	4.96	4.81
Hot Water Volume	L/h	250	370	494	795	1031
Hot Water Capacity**	kW	8.86	13.5	17.51	28.0	36.0
Power Input**	kW	2.60	3.91	4.95	7.67	10.1
COP**	W/W	3.41	3.45	3.54	3.65	3.56
Max. Power Input	kW	3.68	5.85	6.9	10.0	14.3
Max. Running Current	A	17.1	9.2	11.5	16.9	24.2
Power Supply	V/Ph/Hz	220~240V/1N~/50Hz		380~415V/3N~/50Hz		
Compressor Quantity	/	1	1	1	2	2
Compressor Type	/	Rotary	Scroll			
Compressor Brand	/	Gree	Copeland ZW Series Heat Pump Dedicated Compressor			
Throttle Device	/	Electronic Expansion Valve				
Fan Quantity	/	1	2			
Circulation Water Pump	/	/				
Fan Motor Input	W	85	60×2	75×2	200×2	200×2
Water Flow Volume	m³/h	2.0	3.0	4.0	6.5	8.3
Water Pressure Drop	kPa	65	60	129	64	110
Water Connection	inch	1.0	1	1.2	1.5	1.5
Noise	dB(A)	54	56	56	57	61
Air Volume	m³/h	4000	3000×2	3340×2	4250×2	5500×2
Air Discharge Type	/	Horizontal			Vertical	
Max.Outlet Water Temp.	°C	60				
Operation Range	°C	-15~43				
Condenser	/	PHNIX Patented Tube in Shell Heat Exchanger				
Evaporator	/	Hydrophilic Aluminum Finned Heat Exchanger with Speical Coating/ Gold Colorful for Option				
Defrosting	/	by 4-Way Valve				
Controller	/	PHNIX Multi-function Controller				
Display	/	5 inch Colorful Touch Display				
Refrigerant	/	R410A				
Cabinet	/	Eco-friendly Galvanized Metal /Stainless Steel for Option				
Net Weight	kg	92	126	152	327	350
Gross Weight	kg	107	141	175	377	400
Net Dimensions(L/W/H)	mm	1100/490/920	1050/400/1245	1000/395/1315	1700/800/1735	1700/800/1735
Shipping Dimensions(L/W/H)	mm	1120/500/1050	1100/455/1375	1070/450/1445	1830/880/1900	1830/880/1900

Test Condition\*: ambient temperature 20°C/15°C, water circulation from 15°C to 55°C.

Test Condition\*\*: ambient temperature 7°C/6°C, water temp. (in/out): 40°C/45°C.

The data above is for reference only.For more specific data, please refer to the nameplate on the unit.



### High Efficiency

25% higher efficiency by Φ7 mm evaporator & gold color coating for seaside cities.



### German Design

We adopt the German design to renew the product internal structure.



### High COP of 4.96

The COP is as high as 4.9 which is even higher than the first class energy level.



### Copeland ZW Compressor

Heat Pump dedicated R410A scroll compressor is adopted for the series.



### Ultra-quiet Operation

With an improved evaporator wind field design, the unit is of ultra-quiet operation in commercial building places.



### Wide Application

Super-widely operation envelope for all climates hot water application.



# HeatPower Series

High Temperature Water Heater

- 5-Star Hotel
- Hospitals
- Food Processing Industry
- Printing
- Textile
- Drinks Distillation Process
- Rinse Factory
- Electroplating Industry

Outlet water temperature up to 80°C



# HeatPower



## Low Operating Cost

The operating cost is very low compared with conventional heat source, such as electricity, coal, gas and diesel.



## Environmental Friendly

Adopting R134a refrigerant of lower GWP, the air pollution emission is zero, which is very environmental-friendly compared with coal.



## 80°C Hot Water Outlet

With stable high temperature hot water supply, the unit can be widely used in different industrial applications.



## Communication Function

With Modbus RS485/BMS, central management control and DTU remote control, multiple units can be managed together.



## Multiple-Protections

The multiple protective design ensure the unit's long service life and stable operation.



## Wide Operation Range

With advanced 4-way-valve applied in the unit, the unit can be used in environment from -7°C to 45°C.



## Specifications



Model	PASHW	PASHW60SB-GX-PS	PASHW120SB-GX-PS	PASHW180SB-GX-PS	PASHW360S-GX-PS
Hot Water Capacity (A20/15°C, W15-65°C)	kW	19.0	35.0	70.0	135.0
Power Input	kW	5.3	9.2	19.0	38.6
COP	W/W	3.58	3.68	3.68	3.50
Hot Water Volume	L/h	326	602	1204	2321
Max. Power Input	kW	7.5	18.1	36.2	64.4
Max. Running Current	A	14.3	32.3	64.6	108.5
Power Supply	V/Ph/Hz	380~415V/3N~/50Hz			
Compressor Quantity	/	1	1	2	4
Compressor Type	/	Scroll			
Compressor Brand	/	Copeland Non-EVI			
Fan Quantity	/	2	1	2	2
Circulation Water Pump	/	Grundfos CM 3-3	Grundfos CM 5-3	Grundfos CM 10-2	/
Fan Motor Input	W	200×2	750	750×2	1800×2
Water Flow Volume	m³/h	3.3	6.0	12.0	23.2
Water Pressure Drop	kPa	25	38	42	45
Water Connection	/	1.2 inch	DN40 Flange	DN65 Flange	DN80 Flange
Noise	dB(A)	58	65	68	70
Air Volume	m³/h	5000×2	12000×1	14000×2	23000×2
Air Discharge Type	/	Horizontal	Vertical		
Max.Outlet Water Temp.	°C	80			
Operation Range	°C	-7~45			
Condenser	/	PHNIX Patented Tube in Shell Heat Exchanger			
Evaporator	/	High Efficiency Aluminum Finned Heat Exchange			
Defrosting	/	by 4-Way Valve			
Controller	/	PHNIX PC Controller			
Display	/	5 inch Smart Central Display			
Refrigerant	/	R134a			
Cabinet	/	Eco-friendly Galvanized Metal /Stainless Steel for Option			
Net Weight	kg	219	468	600	1050
Gross Weight	kg	238	512	643	1100
Net Dimensions(L/W/H)	mm	1175×400×1605	1195×980×1900	1930×1050×1980	2350×1150×2370
Shipping Dimensions(L/W/H)	mm	1205×450×1730	1220×1020×1950	1980×1100×2050	2400×1300×2500

Test Condition: ambient temperature 20°C/15°C, water circulation from 15°C to 65°C.

The data above is for reference only. For more specific data, please refer to the nameplate on the unit.

# HeatMax Series

Water Source Heat Pump Water Heater

- Pharmacy Industry
- Sewage Treatment
- Gas boilers Replacement
- Desalination Plants
- Dairy Requirement Sterilization

The perfect solution for industrial water heating



# HeatMax



## High COP

High heat transfer efficiency enables it to have high energy saving performance.



## Enjoy Cold Air for Free

Providing you with high temperature outlet water and simultaneously offers free cooling.



## Various Application

a. Work with existing water chillers for hot water & cooling;  
b. Work with existing cooling tower for factory process cooling & hot water.



## Higher ROI

Low cost water heating and free cooling air, flexible installation and combination solution equals to high ROI in the long run.



## More Reliable

Durable and reliable of itself, the unit can run stably all year around without being affected by ambient temperature.



## Compact Design & Flexible installation

The multi-connected heat exchanger design makes it so compact to adjust to various installation location.



# Specifications



Model	PTWSHW	125S	250S	500S
*Heating Capacity	kW	34.4	68.8	137.6
*Cooling Capacity	kW	26.0	52.1	104.1
*Power Input	kW	8.0	16.0	32.0
*COP	WW	4.30	4.30	4.30
*EER	WW	3.25	3.25	3.25
**Heating Capacity	kW	27.6	55.2	110.4
**Cooling Capacity	kW	20.1	40.2	80.3
**Power Input	kW	7.6	15.0	30.5
**COP	WW	3.62	3.62	3.62
**EER	WW	2.63	2.63	2.63
Rated Power Input	kW	8.5	17.0	34.0
Rated Running Current	A	19.8	39.5	79.1
Max Power Input	kW	14.6	29.2	58.4
Max Running Current	A	27.0	54.0	108.0
Power Supply	V/Ph/Hz	380~415V/3N~/50Hz		
Compressor Type	/	Copeland ZW150KBE-TFP-522 Scroll Compressor		
Compressor Quantity	/	1	2	4
Evaporator	Type	PHNIX Patented Tube in Shell Heat Exchanger		
	Water Flow(m³/h)	4.5	9.0	18.0
	Water Pressure Drop(kPa)	45.0	40.0	37.0
	Water Connection	DN40	DN65	DN80
Condenser	Type	PHNIX Patented Tube in Shell Heat Exchanger		
	Water Flow(m³/h)	6.0	12.0	24.0
	Pressure Drop(kPa)	75.0	70.0	66.0
	Water Connection	DN40	DN65	DN80
Noise	dB(A)	65.0	68.0	69.0
Refrigerant	/	R134a		
Controller	/	PHNIX Controller		
Display	/	Dot-Matrix Liquid Crystal Display	5 Inch Colorful Touch Display	
Max. Outlet Water Temp.	°C	80		
Cabinet	/	Eco-friendly Galvanized Metal/Stainless Steel for option		
Net Weight	kg	202	441	866
Net Dimensions(L/W/H)	mm	1030/640/730	1172/900/1365	1600/1130/1500
Shipping Dimensions(L/W/H)	mm	1130/710/910	1360/960/1520	1790/1210/1670

\*Testing Condition Evaporator Side inlet/outlet:20/15 °C ; Condenser Side inlet/outlet: 50/55 °C

\*\*Testing Condition Evaporator Side inlet/outlet:12/7 °C ; Condenser Side inlet/outlet: 50/55 °C

# Project Reference



**HeatPlus: PASHW060S-XI 2 units**

【Project application in Bangalore, India】

60°C hot water heat pumps are working together with diesel boilers for Golf Club.



**HeatPower: PTASHW120SB-GX-PS 2 units**

【Project application in Thailand】

80°C hot water for Water Mill Golf Course.



**HeatPlus: PASHW060S-XI 8 units**

【Project application in Malaysia】

60°C hot water for hospital.



**HeatPower: PTASHW180SB-GX-PS 3 units**

【Project application in Tel Aviv, Israel】

80°C hot water heat pumps replace gas boiler in Dan Hotel.

# Project Reference

**HeatMax: PTWSHW500S-GX-PS 6 units**

【Project application in Chennai, India】

80°C hot water for Nissan car seat manufacturer.



**HeatMax: PTWSHW500S-GX-PS 4 units**

【Project application in Bangalore, India】

80°C hot water for Toyota car factory.

**HeatPower: PASHW576S-V 3 units**

【Project application in Johannesburg, South Africa】

70°C hot water for an apartment building.



**HeatPro: PASHW300S-PS 3 units**

【Project application in Ghana, Africa】

60°C hot water for industry.

# Project Reference



# Project Reference

