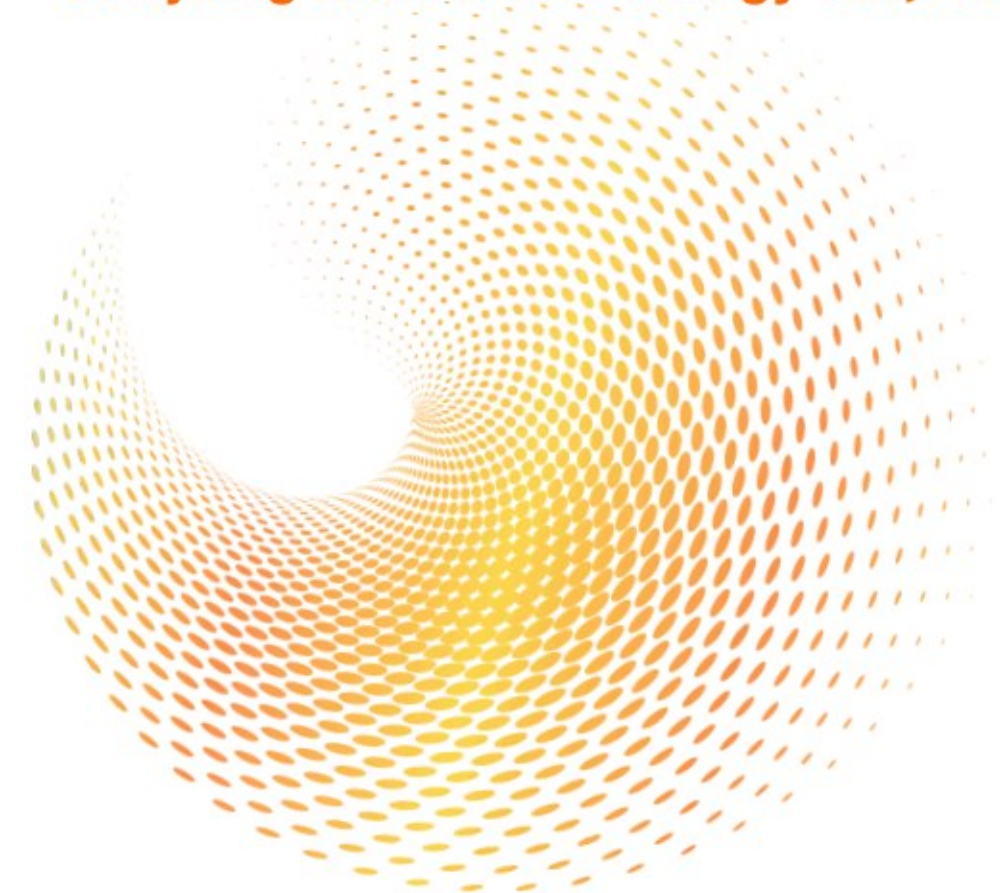




Zhejiang Kesun New Energy Co.,Ltd



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COMPANY PROFILE



As a professional factory with a leading position in the solar thermal industry, Zhejiang Kesun New Energy Co., Ltd. integrates R&D, design, production and sales, and provides professional services to customers from all over the world. It was formed by the merger of Haining Ensun Solar Technology Co., Ltd. and Zhejiang Yile New Energy Co., Ltd.

Relying on the company's strong technological innovation capabilities, a large amount of investment in research and development, targeting customer needs, incorporating bold and innovative design concepts, we have developed and produced a series of new products: Sus coil Solar water heater Solar Air Heater and so on. The products are exported to more than 30 countries including Poland, Mexico, Spain, Bulgaria, South Africa, South Korea, Peru, Argentina, Vietnam, India, Poland, Macedonia, Serbia, Malaysia, Zimbabwe, Nepal, Kenya so on.

In the next a few years, Kesun company will increase investment in science and technology, strengthen technological advantages, improve service quality, and continuously improve employee training plans and corporate incentives, so that the company will form a high-quality talent team including scientific research personnel, management personnel, and marketing personnel, which lays a solid foundation of scientific research and human resources for the company's sustainable development goals in the new century.

"Enjoy the sunshine, enjoy the life", we hope to create a better future with you!



SOLAR VACUUM TUBES

Solar vacuum tubes are key components of solar thermal systems used for harnessing solar energy. These tubes consist of two main parts: an outer transparent glass tube and an inner absorber tube. The inner absorber tube is coated with a selective absorbing material that absorbs sunlight and converts it into heat energy. The space between these tubes is evacuated to create a vacuum, which helps to minimize heat loss through convection and conduction.



Table of Parameters:

Model		58-1800
Structure		All-glass double-layer
Tube Material		High quality borosilicate glass 3.3
Dimensions	Outer tube diameter and thickness	ø58 & 1.6mm / 2.0mm / 2.2mm
	Inner tube diameter and thickness	ø47 & 1.6mm
	Tube length	1800mm
Absorption Coating	Structure	ALN/AIN-SS/Cu
	Sediment method	Magnetron sputtering coating
	Absorptance	$a=0.93-0.96(AM1.5)$
	Emittance ratio	$\Sigma=0.04-0.06(80^{\circ}C\pm5^{\circ}C)$
Vacuum quality		$P\leq 5.0 \times 10^{-2} \text{ Pa}$
Stagnation parameter		$Y=270-300m^2 \cdot ^{\circ}C/kw$
Average heat loss coefficient		$U_{LT}=0.4-0.6W(m^2 \cdot ^{\circ}C)$

Solar vacuum tubes with heat pipes are efficient and reliable systems for capturing solar energy and converting it into usable heat. They are commonly used in solar water heating systems, where they provide an environmentally friendly and cost-effective alternative to traditional heating methods.



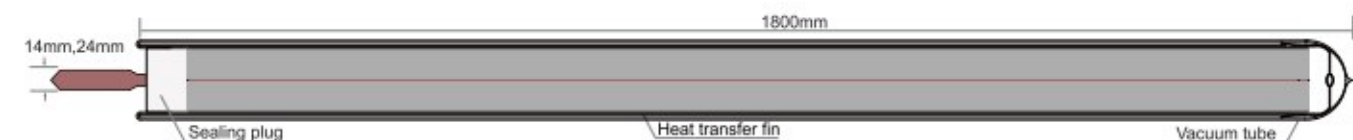
Model: 58-1800 (14)

- Vacuum tube: three target 58-1800
- Heat transfer fin: Styro Aluminum Conductive Fin
- Heat pipe: Red copper Condenser Diameter 14mm
- Sealing: silicon rubber with pressed stainless steel ring



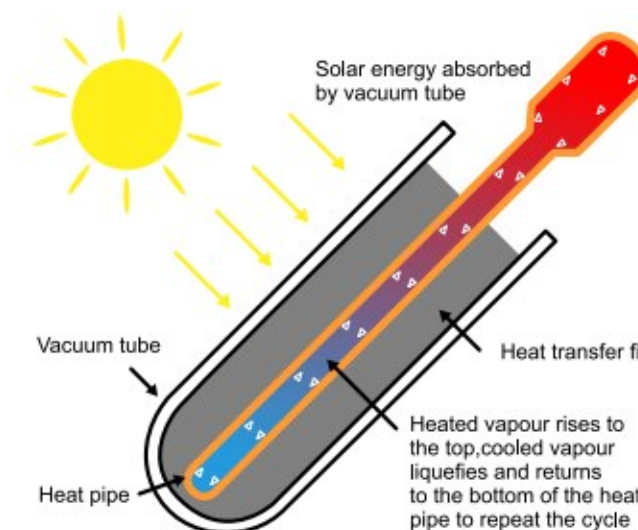
Model: 58-1800 (24)

- Vacuum tube: three target 58-1800
- Heat transfer fin: Styro Aluminum Conductive Fin
- Heat pipe: Red copper Condenser Diameter 24mm
- Sealing: silicon rubber with pressed stainless steel ring



Solar vacuum tubes with heat pipes advantages:

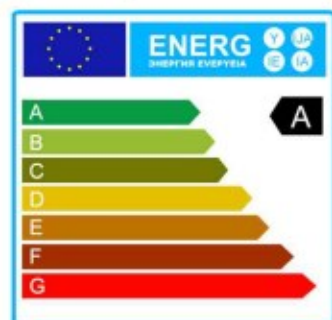
1. High Efficiency: The vacuum minimizes heat loss, while the heat pipe efficiently transfers heat from the absorber to the heat transfer fluid.
2. Improved Performance in Cold Weather: Solar vacuum tubes with heat pipes can operate efficiently even in cold weather ($-50^{\circ}C$) conditions.
3. Reliability: Heat pipes have no moving parts and are sealed, making them highly reliable with minimal maintenance requirements.



4. Quick Start-Up: Solar vacuum tubes with heat pipes can quickly start collecting solar energy as soon as sunlight is available.
5. No water inside vacuum tube, the whole collector can still work if a tube damaged.



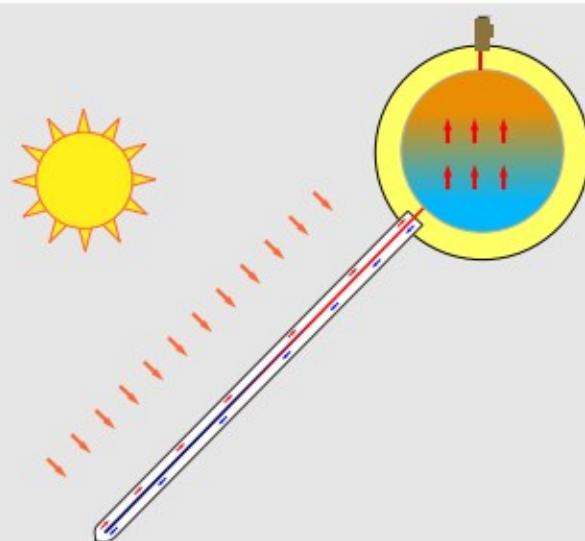
COMPACT PRESSURIZED SOLAR WATER HEATER



The compact pressure solar water heater comprises a high-pressure storage tank, solar vacuum tubes with a heat pipe, and a support frame. The storage tank is built to endure the pressurized water supply, which allows for a direct connection to the household plumbing systems. Solar vacuum tubes capture solar energy and transform it into thermal energy, while the heat pipe conducts this thermal energy to the tank immediately for efficient water heating.

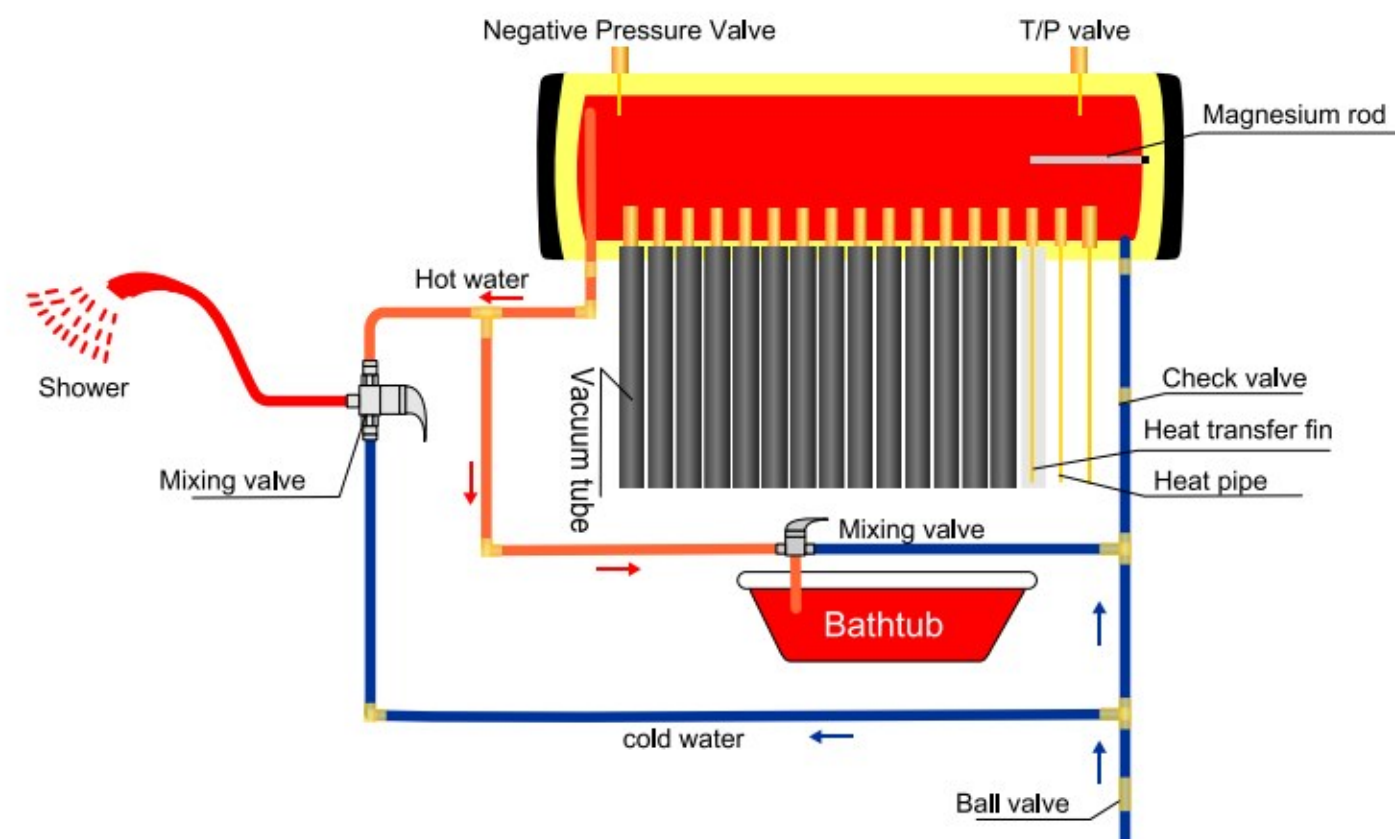
Model: CPS

- Inner tank: SUS304-2B or SUS316L stainless steel
- Out tank: Color steel/Stainless steel/PVDF
- Insulation: High density PU foam
- Vacuum tube: Borosilicate glass 3.3 Φ 58-1800
- Heat pipe: Red copper 14-1700
- Support frame: Galvanized steel/Aluminum alloy/Stainless steel
- Working pressure: no more than 7 bars
- Accessories: PT valve/Check valve/Mg rod/NP valve/Sensor sleeve



Main features:

- Certification: Solar keymark (EN12975), CE
- Pressurized system: direct connection to house plumbing system, comfortable high pressure hot water for shower.
- Suitable for cold weather: low temperature endurable
- Durability and Longevity: High quality materials ensure more than 15 years lifespan.
- ECO friendly and economic: Harness solar energy and affordable price for the system.



Model	Absorbing Area(m ²)	Vacuum tube(Heat Pipe)			Tank Capacity (Liter)	Loading Qty(sets)	
		Diameter(mm)	Length(mm)	NO:(pcs)		40HQ	20GP
ENSUN-CPS100	0.8	58	1800	10	100	178	70
ENSUN-CPS120	0.96	58	1800	12	120	158	62
ENSUN-CPS150	1.2	58	1800	15	150	128	51
ENSUN-CPS200	1.6	58	1800	20	200	98	39
ENSUN-CPS240	1.92	58	1800	24	240	80	32
ENSUN-CPS300	2.4	58	1800	30	300	68	27

NON-PRESSURIZED SOLAR WATER HEATER



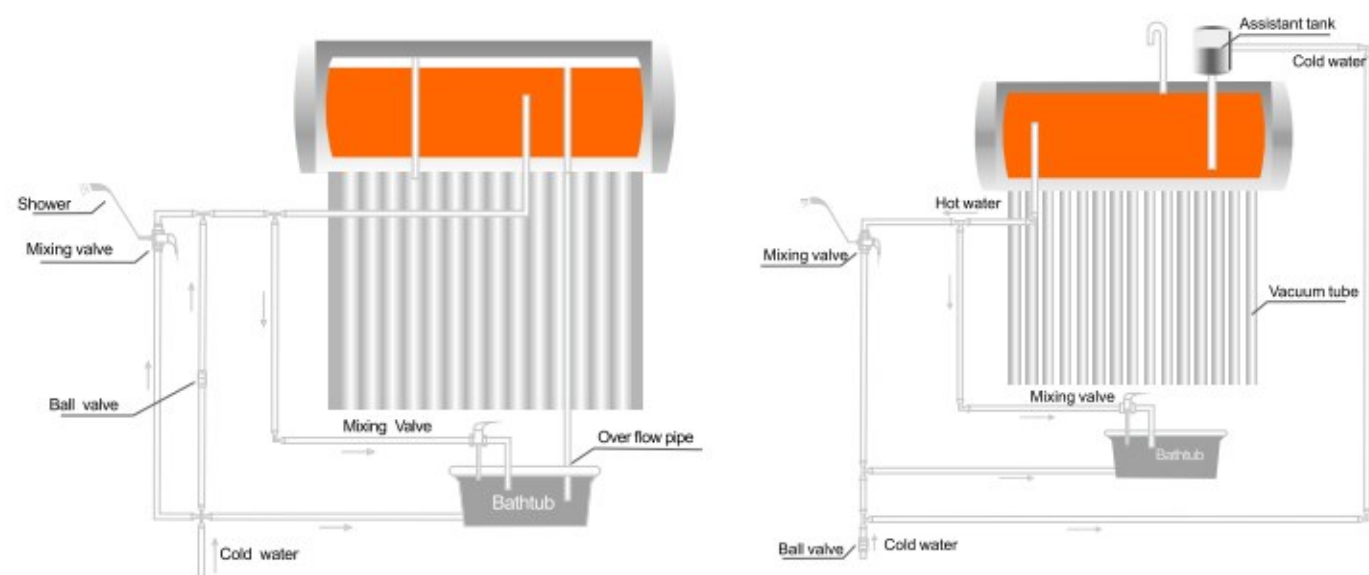
Model: CNP

- Inner tank: Stainless steel SUS304-2B or SUS316L
- Out tank: Galvanized steel / stainless steel / PVDF
- Insulation: High density PU foam
- Vacuum tube: Borosilicate glass 3.3 Φ58-1800
- Support frame: Galvanized steel / stainless steel / aluminum alloy
- Option accessories: Assistant tank / Electric heater / Controller

Features:

- **Higher Efficiency:** Vacuum tubes have a higher efficiency in capturing solar energy compared to flat-plate collectors.
- **Affordability:** making them a cost-effective option for households and small businesses
- **Reliability:** Non-pressure solar water heaters are known for their reliability and durability
- **Faster Heating:** Vacuum tubes heat water more quickly due to their superior insulation properties and ability to focus solar energy on a smaller surface area.
- **Reduced Corrosion:** The vacuum inside the tubes prevents oxidation and corrosion of the absorber coating, prolonging the life of the system and reducing maintenance requirements.

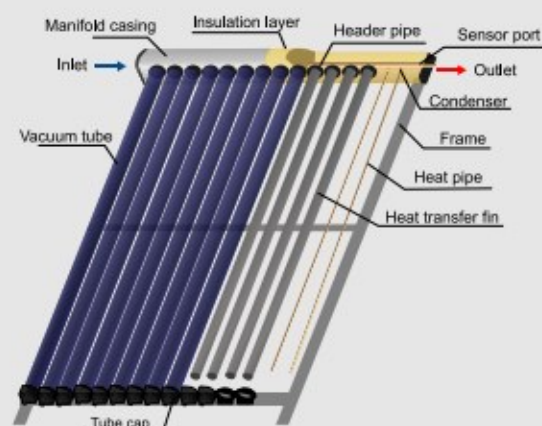
Using a thermosiphon system, a water flow cycle is established within the tubes due to the differing densities of hot and cold water. Hot water naturally rises while cold water flows to the bottom, creating a gravitational circulation system.



Model	Absorbing Area(m ²)	Vacuum tube			Tank Capacity (Liter)	Loading Qty(sets)	
		Diameter (mm)	Length (mm)	NO: (pcs)		40HQ	20GP
ENSUN-CNP80	0.64	58	1800	8	80	235	92
ENSUN-CNP100	0.8	58	1800	10	100	200	78
ENSUN-CNP120	0.96	58	1800	12	120	170	68
ENSUN-CNP150	1.2	58	1800	15	150	141	55
ENSUN-CNP180	1.44	58	1800	18	180	118	48
ENSUN-CNP200	1.6	58	1800	20	200	108	42
ENSUN-CNP240	1.92	58	1800	24	240	90	36
ENSUN-CNP300	2.40	58	1800	30	300	72	28

SOLAR COLLECTOR

A heat pipe solar collector is a type of solar thermal collector used to harness solar energy for heating purposes, typically for water heating or space heating in residential or commercial buildings. Heat pipe solar collectors are highly efficient and reliable systems for converting sunlight into usable heat.



Specifications:

- Vacuum tube material: Borosilicate glass 3.3
- Manifold pipe material: Red copper
- Heat pipe material: Red copper
- Manifold casing material: Aluminum alloy
- Insulation: High-density rockwool
- Frame material: Aluminium alloy
- Heat transfer fin material: Aluminum sheet
- Working Pressure: 6 bars

Features:

- Solar keymark certified
- High efficiency
- Low heat loss due to vacuum tube design
- Suitable for cold weather, can operate efficiently even in -50°C
- Material resistant to corrosion in all types of climates
- Comprehensive life time more than 15 years
- Maintenance free



MODEL: HSC

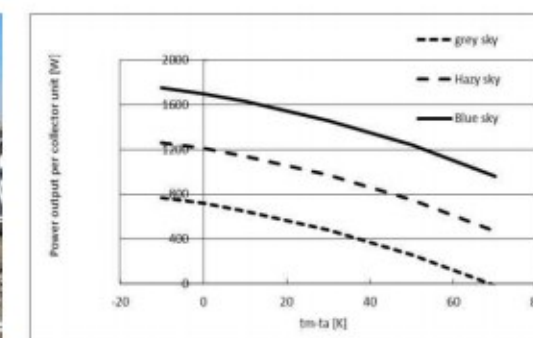
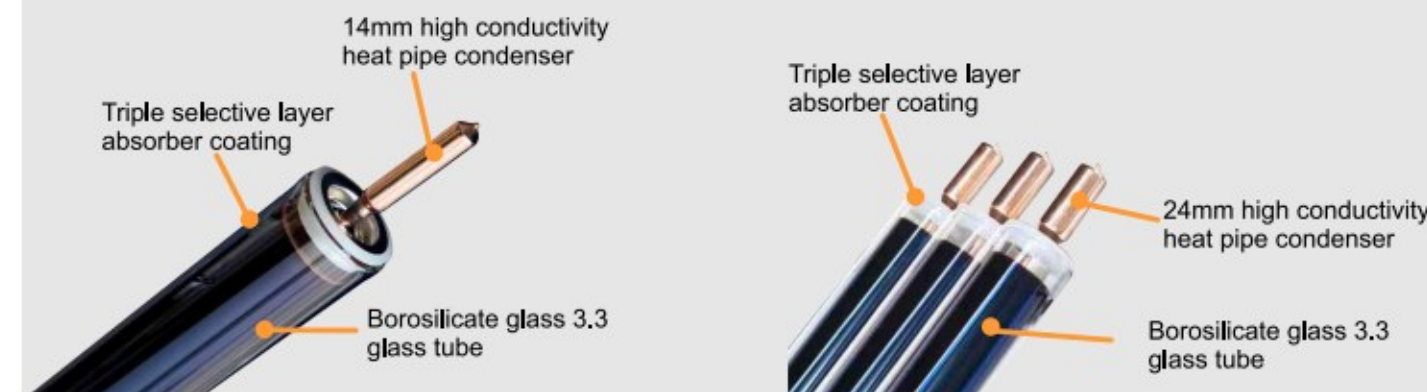


Figure 2 — Power output per collector unit for SRC



Model	Solar Vacuum tube with heat pipe					Container Loading Qty			Daily Output (50-90°C)
	Dia	Length	Coating	Qty	Condenser	20GP	40GP	40GP	
HSC-10	Φ58	1800	ALN/AIN-SS/Cu	10	Φ14	165	330	380	100L
HSC-12	Φ58	1800	ALN/AIN-SS/Cu	12	Φ14	145	300	340	120L
HSC-15	Φ58	1800	ALN/AIN-SS/Cu	15	Φ14	130	265	310	150L
HSC-18	Φ58	1800	ALN/AIN-SS/Cu	18	Φ14	105	215	250	180L
HSC-20	Φ58	1800	ALN/AIN-SS/Cu	20	Φ14	100	205	235	200L
HSC-24	Φ58	1800	ALN/AIN-SS/Cu	24	Φ14	92	190	220	240L
HSC-25	Φ58	1800	ALN/AIN-SS/Cu	25	Φ14	88	180	210	250L
HSC-30	Φ58	1800	ALN/AIN-SS/Cu	30	Φ14	85	175	205	300L

PRESSURIZED WATER TANK



Model: PWT

- Inner tank: SUS304-2B, SUS316L or Duplex SUS 2205 stainless steel
- Out tank: Color steel (white and grey available)
- Insulation: Polyurethane foam 45kgs/m³ high density
- Tank capacity: 50L to 1500L available
- Heat exchanger: stainless steel pipe or copper pipe
- Coil quantity: 1,2,3,4
- Working pressure: no more than 7 bars
- Optional accessories: electric heater

Main features

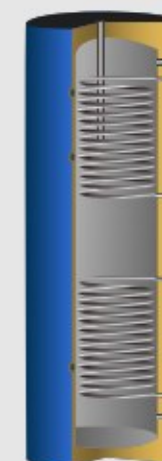
- 72hours remains hot water. Pressurized solar water tanks are typically well-insulated to minimize heat loss.
- Pressure Rating. These tanks are designed to handle pressure from cold water and thermal expansion.
- Health material. The stainless steel material to resist corrosion and maintain water quality.
- Multi-function. The heat exchanger can be connected to multi energy sources such as solar and heat pump combined.
- Safety. To prevent overpressure and overheating, pressurized solar water tanks are equipped with PT valve.
- Backup Heating Element (Optional)
- Durable hard water with magnesium rod.

Duplex 2205、316L、304 Performance Comparision

Characteristics	Duplex 2205	316L	304
PRE(Pitting Resistance Equivalent)	≈ 35	24-26	18-20
Pitting Resistance	★★★★★(excellent)	★★★★☆(good)	★★★☆☆(OK)
Crevice Corrosion Resistance	★★★★★(excellent)	★★★★☆(good)	★★★☆☆(OK)
SCC Resistance	★★★★★(excellent)	★★★★☆(good)	★★★☆☆(not good)
Seawater Corrosion Resistance	★★★★★(excellent)	★★★★☆(good)	★★★☆☆(not recommend)
Oxidation Resistance	★★★★☆(good)	★★★★★(excellent)	★★★★☆(good)
Food Grade	★★★★★(excellent)	★★★★★(excellent)	★★★★★(excellent)
Pressure REsistance	★★★★★(excellent)	★★★★☆(good)	★★★★☆(good)



PWT(1 Coil)



PWT(2 Coil)



PWT(3 Coil)

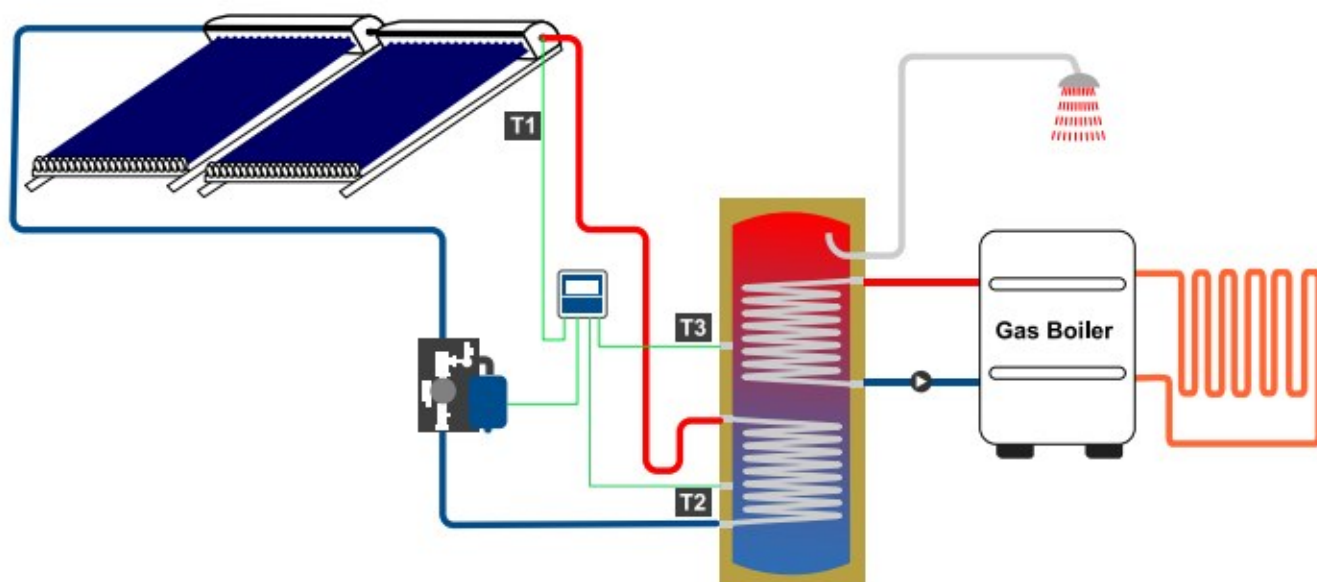
Model No.	Cap.	Coil heat exchanger	Mater./Dia./Thick.	Pack.Des.	Ref. Wei.
PWT-100T	100L	no coil	SUS304/Φ380/ £ 1.2	560×560×1170	30KG
		single coil	SUS304/Φ380/ £ 1.2	560×560×1170	35KG
PWT-150L	150L	no coil	SUS304/Φ380/ £ 1.2	560×560×1520	39KG
		single coil	SUS304/Φ380/ £ 1.2	560×560×1520	44KG
		double coils	SUS304/Φ380/ £ 1.2	560×560×1520	49KG
PWT-200L	200L	no coil	SUS304/Φ380/ £ 1.5	660×660×1360	45KG
		single coil	SUS304/Φ380/ £ 1.5	660×660×1360	50KG
		double coils	SUS304/Φ380/ £ 1.5	660×660×1360	55KG
PWT-250L	250L	no coil	SUS304/Φ380/ £ 1.5	635×635×1555	51KG
		single coil	SUS304/Φ380/ £ 1.5	635×635×1555	56KG
		double coils	SUS304/Φ380/ £ 1.5	635×635×1555	64KG
PWT-300L	300L	no coil	SUS304/Φ380/ £ 1.5	660×660×1830	61KG
		single coil	SUS304/Φ380/ £ 1.5	660×660×1830	66KG
		double coils	SUS304/Φ380/ £ 1.5	660×660×1830	75KG
PWT-400L	400L	no coil	SUS304/Φ380/ £ 2.0	780×780×1700	72KG
		single coil	SUS304/Φ380/ £ 2.0	780×780×1700	83KG
		double coils	SUS304/Φ380/ £ 2.0	780×780×1700	98KG
PWT-500L	500L	no coil	SUS304/Φ380/ £ 2.0	780×780×1930	85KG
		single coil	SUS304/Φ380/ £ 2.0	780×780×1930	98KG
		double coils	SUS304/Φ380/ £ 2.0	780×780×1930	110KG
PWT-800L	800L	single coil	SUS304/Φ380/ £ 3.0	1205×1205×1850	150KG
		double coils	SUS304/Φ380/ £ 3.0	1205×1205×1850	160KG
PWT-1000L	1000L	single coil	SUS304/Φ380/ £ 3.0	1205×1205×2050	178KG
		double coils	SUS304/Φ380/ £ 3.0	1205×1205×2050	190KG

SPLIT SOLAR WATER HEATER

Model: SPS

- Tank capacity: 100L to 1000L
- Collector: heat pipe solar collector
- Heat exchanger: copper pipe or stainless steel pipe
- Group pump station with controller
- Expansion vessel: 8L or 14L

A split pressurized solar water heater is an advanced solar thermal system designed for efficient hot water production. This system is divided into three main components: the solar collectors, the water storage tank and group pump station, allowing for flexible installation and space optimization. The collectors, usually mounted on the roof, absorb solar radiation and heat the working fluid within a closed loop. This heated fluid then circulates to the storage tank through a heat exchanger, transferring the heat to the water stored inside without mixing the fluids.



Main features

- Split Design: By separating the collector from the storage tank, the water tank can be installed in anywhere indoor, while solar combined with buildings well.
- Pressurized System: The pressurized operation enhances consistent and comfortable hot water supply.
- High Efficiency: high efficient vacuum tube solar collector
- Integration Capability: It can be integrated with existing heating systems, including gas or electric boilers
- Eco-Friendly: renewable solar energy to heat water



Model	Collector	Working station	Expansion tank	Tank Capacity	Loading Quantities	
				Liters	20GP Sets	40HQ Sets
ENSUN-SPS100-12	ENSUN-HSC12	1PC	8L	100L	50	112
ENSUN-SPS150-15	ENSUN-HSC15	1PC		150L	35	83
ENSUN-SPS150-20	ENSUN-HSC20	1PC		150L	30	74
ENSUN-SPS200-20	ENSUN-HSC20	1PC	12L	200L	28	68
ENSUN-SPS200-24	ENSUN-HSC24	1PC		200L	25	63
ENSUN-SPS250-24	ENSUN-HSC24	1PC		250L	24	60
ENSUN-SPS300-30	ENSUN-HSC30	1PC	18L	300L	20	48
ENSUN-SPS300-36	ENSUN-HSC18	2PC		300L	18	46
ENSUN-SPS300-40	ENSUN-HSC20	2PC		300L	17	44
ENSUN-SPS400-40	ENSUN-HSC20	2PC		400L	17	40
ENSUN-SPS400-48	ENSUN-HSC24	2PC	24L	400L	16	39
ENSUN-SPS500-60	ENSUN-HSC20	3PC		500L	13	32
ENSUN-SPS800-100	ENSUN-HSC20	5PC		800L	7	23
ENSUN-SPS1000-120	ENSUN-HSC20	6PC		1000L	5	18

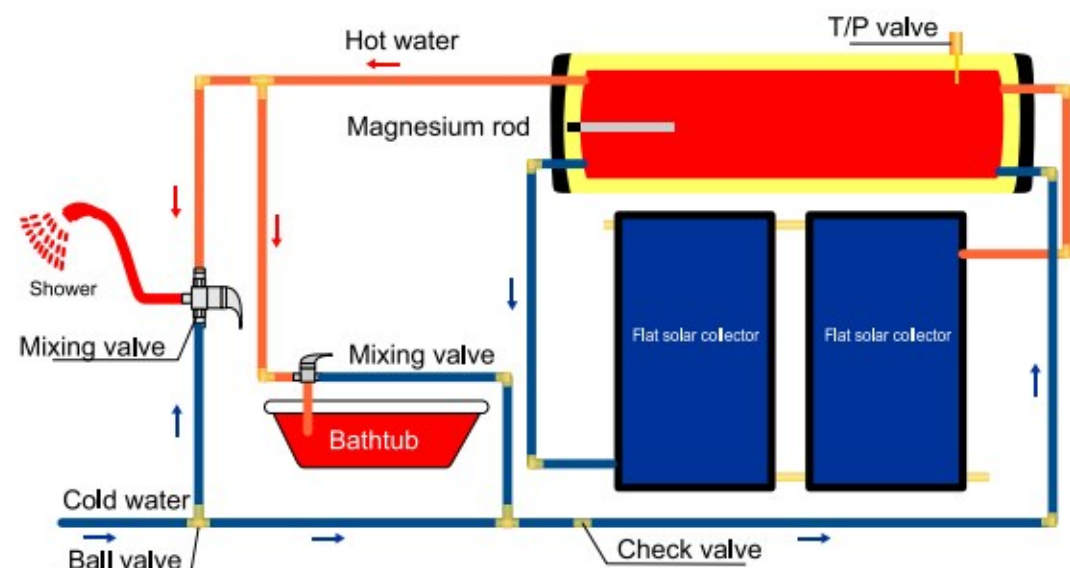
FLAT PLATE PRESSURIZED SOLAR WATER HEATER



Model:CPS-F

- Inner tank: SUS304-2B or SUS316L stainless steel
- Out tank: Color steel/stainless steel/PVDF
- Insulation: High density PU foam
- Collector: Flat plate solar collector
- Absorber: coated black or blue conductive material
- Support frame: Aluminum alloy or galvanized steel

The flat plate pressurized solar water heater is a comprehensive system comprised of a pressurized storage tank, a flat plate solar collector, and a support frame. This system operates on the principle of thermosyphon, where hot water naturally ascends from the top of the solar collector to fill the tank while cold water descends from the tank to the bottom of the collector. This efficient design ensures continuous circulation of heated water, providing a reliable and sustainable solution for meeting hot water needs.



Main features

- Pressurized hot water flows out
- Thermosyphon System: circulation without the need for additional pumps
- Easy installation and free maintenance

Model	Flat collectors		Absorber Area/m ²	Tank Capacity	Loading qty/sets		
	qty/pcs	M2			20GP	40GP	40HQ
CPS/F100	1	2.00	1.98	100L	45	80	105
CPS/F150	1	2.00	1.98	150L	40	75	99
CPS/F200	1	3.00	2.92	200L	38	70	91
CPS/F250	2	4.00	3.96	250L	32	65	86
CPS/F300	2	4.00	3.96	300L	27	56	66

INDIRECT(Jacket) SOLAR WATER HEATER

An indirect solar water heater has two inner tanks to separate the potable water (the water intended for use) from the heat transfer fluid (often a non-freezing liquid such as propylene glycol) circulating through the solar collectors. Having two inner tanks in an indirect solar water heater allows for efficient heat transfer while maintaining the safety and quality of the potable water supply. It ensures that the water used for daily activities remains clean and free from any potential contaminants.

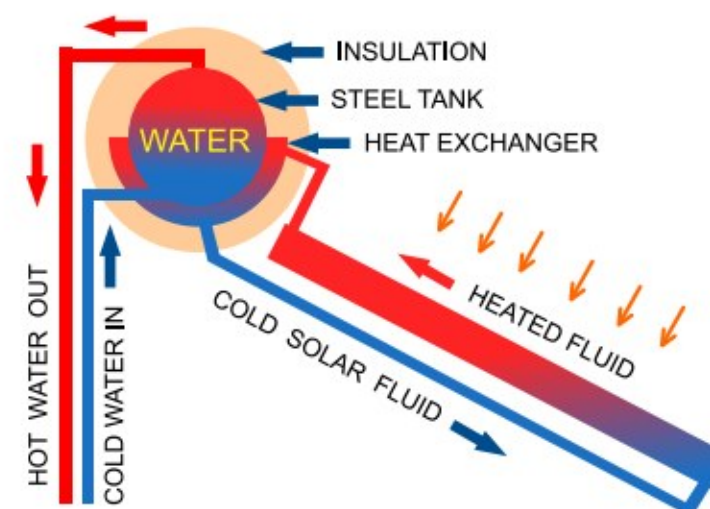


Specifications:

- Potable inner tank: Steel with enamel coating
- Storage inner tank: SUS204-2B or SUS316L
- Out tank: Galvanized steel
- Insulation: High density PU foam
- Frame: Galvanized steel/ Stainless steel/ Aluminum alloy
- Solar collector: Blue or black absorber solar collector

The main features of an indirect solar water heater include:

- **Separate Tanks:** The system typically comprises two separate tanks—one for potable water and another for the heat transfer fluid—to prevent any contamination.
- **Safety and quality:** Use a heat exchanger to transfer heat from the solar collectors to the potable water indirectly, ensuring safety and quality.
- **Thermal Siphon System:** No need for a pump or controller.
- **Durability:** Constructed from high-quality materials for durability and longevity, requiring minimal maintenance over its lifespan.



The indirect solar water heater operates as a thermal siphon system, eliminating the need for a pump or controller. The heat transfer fluid naturally flows into the solar collector and ascends to the fluid tank as it absorbs heat. Eventually, the heat energy is transferred to the potable water inside the dedicated tank without direct contact.

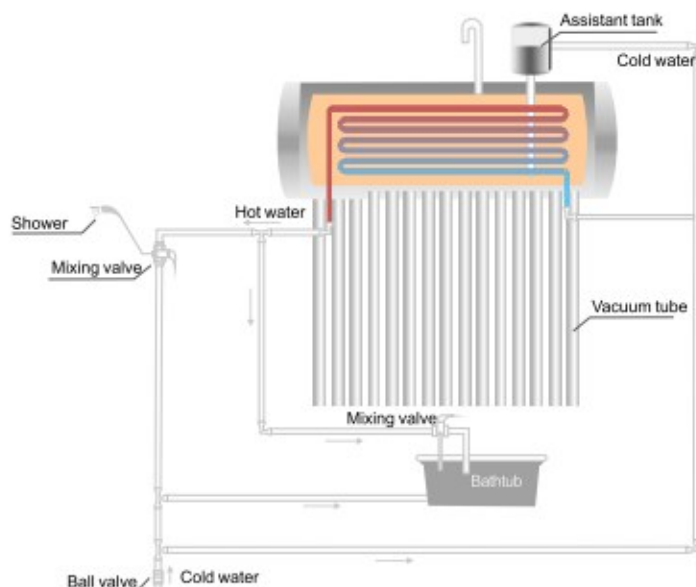
PRE-HEATED SOLAR WATER HEATER



Model: PHP

- Inner tank: SUS304-2B stainless steel
- Out tank: Stainless steel / Color steel / PVDF
- Insulation: PU foam (high pressure foaming)
- Vacuum tube: Borosilicate glass 3.3 Φ58-1800
- Support Frame: galvanized steel / aluminum alloy / stainless steel
- Heat exchanger: stainless steel flexible pipe / copper pipe
- Assistant tank: 5L / 8L / 20L

As cold water travels through the coil heat exchanger inside the water tank, it rapidly heats up and flows out with high pressure, providing an immediate supply of hot water. This process guarantees a pleasurable shower experience. The water contained within the tank serves exclusively for energy storage, leading to the system being termed a preheating solar water heater.



Main features

- Fresh hot water: the hot water are always fresh. do not use the storage water.
- Pressurized System: water flows out with pressure
- High Efficiency: high efficient solar vacuum tube
- More affordable: Compare to heat pipe pressure system, it has a more affordable price.
- Eco-Friendly: renewable solar energy to heat water

MODEL	Absorbing Area(m ²)	Vacuum tube			Tank Capacity (Liter)	Loading Qty(sets)	
		Diameter (mm)	Length (mm)	NO: (pcs)		40HQ	20GP
ENSUN-PHP120	0.96	58	1800	12	120	170	68
ENSUN-PHP150	1.2	58	1800	15	150	141	55
ENSUN-PHP180	1.44	58	1800	18	180	118	48
ENSUN-PHP200	1.6	58	1800	20	200	108	42
ENSUN-PHP240	1.92	58	1800	24	240	90	36
ENSUN-PHP300	2.40	58	1800	30	300	72	28

PV SOLAR WATER HEATER

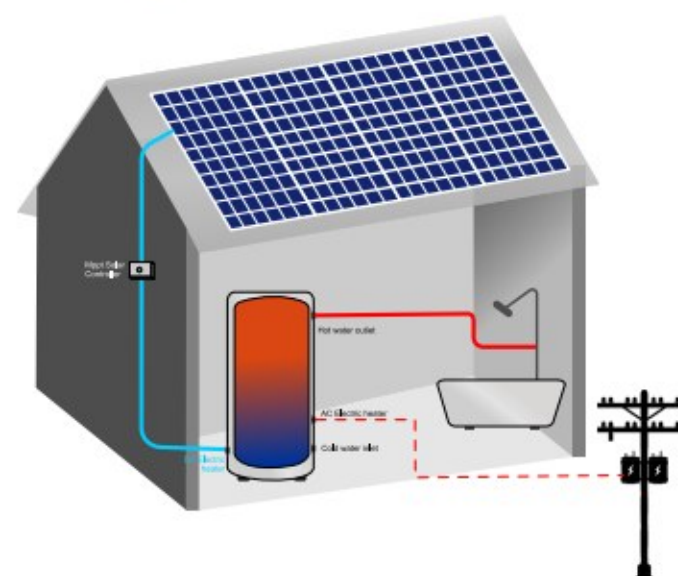
A PV solar water heater is a type of solar water heating system that utilizes photovoltaic (PV) panels to generate electricity, which is then used to power a water heating element. Unlike traditional solar water heaters that rely on direct sunlight to heat water through solar thermal collectors, PV solar water heaters indirectly use solar energy by converting sunlight into electricity and then using that electricity to heat water.

Here's how it typically works:

- Photovoltaic (PV) panels are installed on the roof or another suitable location to capture sunlight and convert it into electricity.
- The electricity generated by the PV panels is fed into a water heating element, a DC electric resistance heating element in water tank.
- This heating element warms up the water stored in the tank, providing hot water for household use.

PV solar water heaters offer several advantages:

- Power storage into water, no need battery
- Easy installation, cable plug design
- Safety, low voltage power
- High pressure hot water
- AC backup option is available
- Smart controller
- Easy to use
- Free maintenance



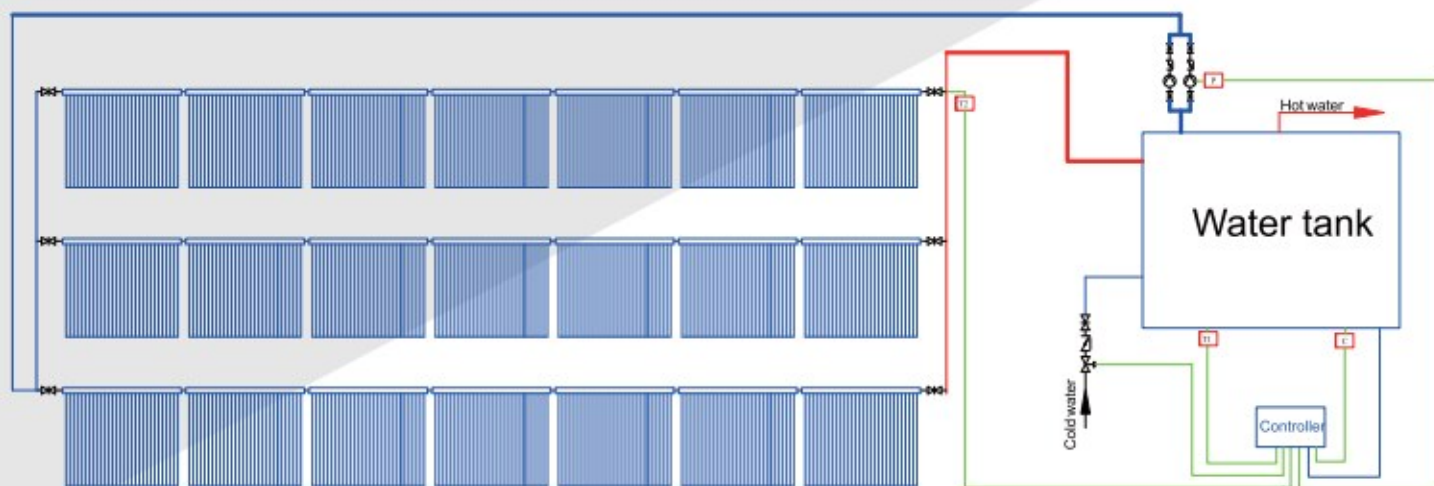
SOLAR WATER HEATING PROJECT



Heat pipe solar collectors are commonly used in large-scale heating projects, catering to various areas such as room heating, shower centers and industrial settings.

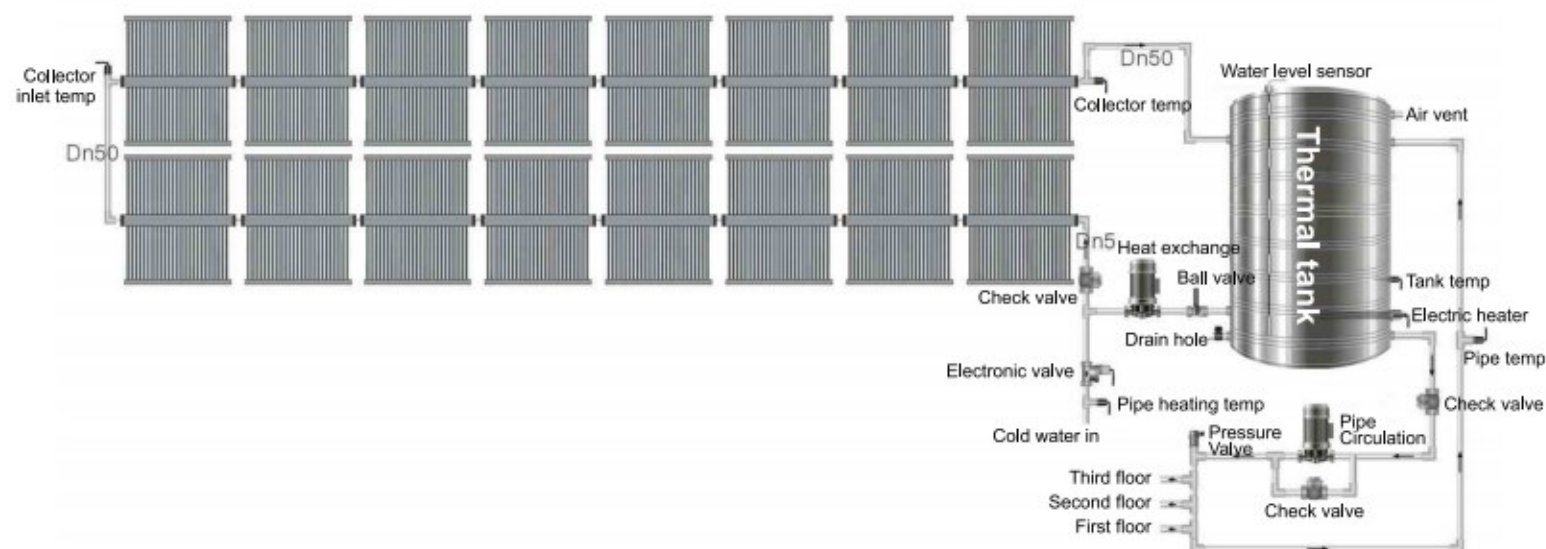
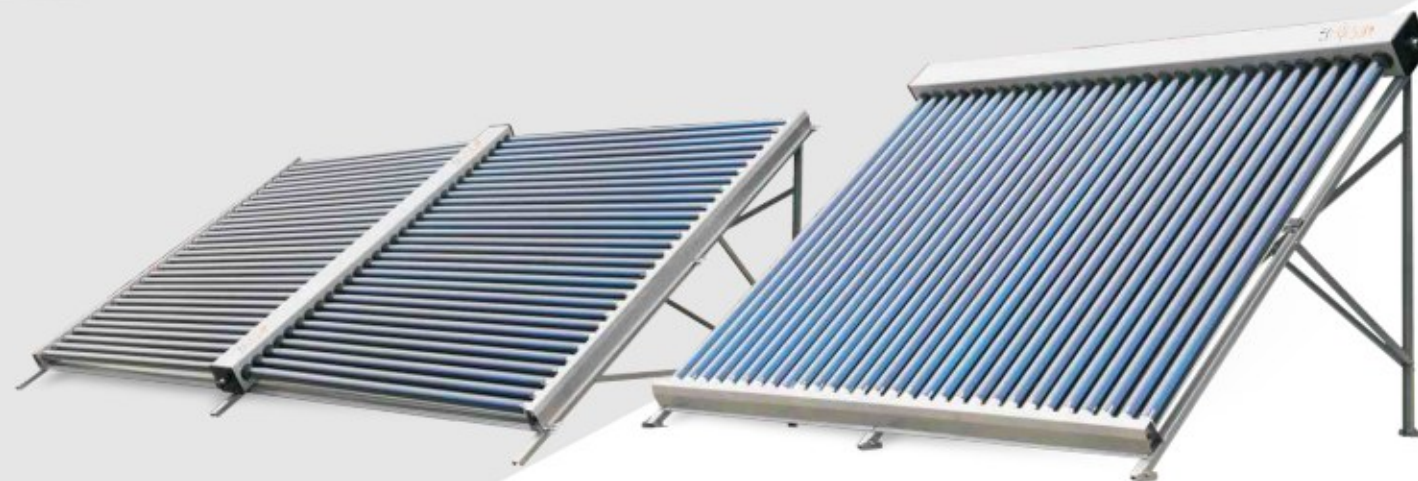
ENSUN's heat pipe solar collector heating projects typically consist of a well-balanced assembly of solar collectors, storage tanks, circulation systems with controllers, heat exchangers, and more.

The entire system operates automatically, harnessing sunlight without cost. When solar collectors gather heat energy, the heat transfer fluid flows through the manifold pipes, transmitting the energy to the storage tank via heat exchanger coils. Serving as an energy reservoir, the storage tank then distributes this heat energy for room heating or other heating applications.

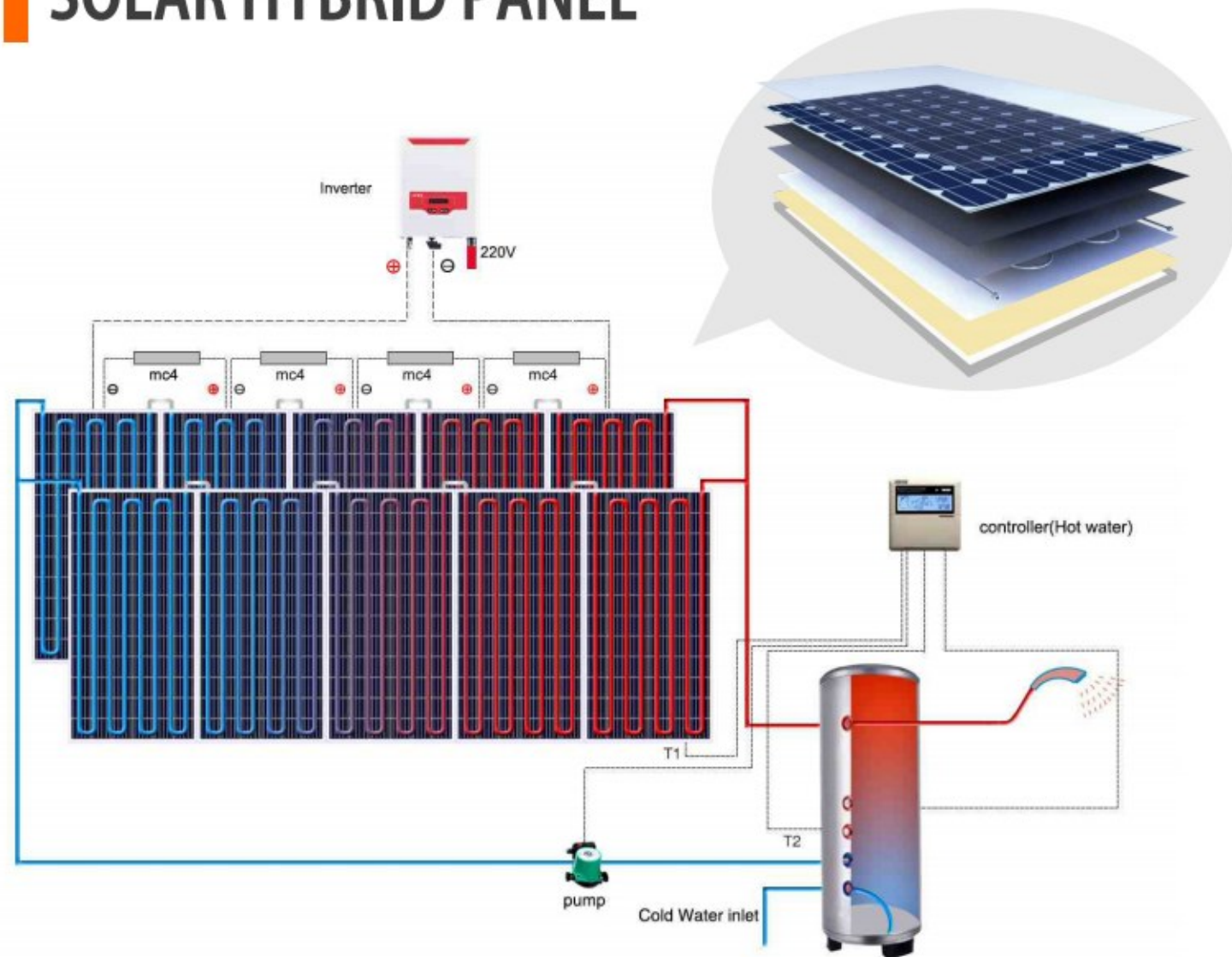


NON PRESSURE SOLARCOLLECTOR

A non-pressure solar collector is a thermosiphon-based system where cold water directly flows into vacuum tubes and is heated by solar energy. This system is highly cost-effective for large-scale hot water consumption and is often paired with a large storage tank. The heated water is then pumped into the storage tank for later use.



SOLAR HYBRID PANEL



WARRANTY



- 10 years process quality assurance
- 12 years 90% power output guarantee
- 25 years 80% power output guarantee

Data required for CDR (EU) No 812/2013 -Reference Area A_{ref}

Zero-loss efficiency (no)	0.41	--
First-order coefficient (a_1)	5.54	W/(m ² K)
Second-order coefficient (a_2)	0.008	W/(m ² K ²)
Incidence angle modifier IAM (50°)	0.88	--

Remark: The data given in this section are related to collector reference area (A_{ref}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806. Consistent data sets for either aperture or gross area can be used in calculations like in the regulation 811 and 812 and simulation programs.

COMPATIBLE PANEL FOR APPLICATION



DHW



Floor heating



Heating&Cooling

IDEA SOLUTION FOR



Hospital



Residential



Hotel



Commercial



School



Pool

Technical Specifications



Specification / Type	PVT-430W	PVT-450W	PVT-550W	PVT-580W	PVT-600W	PVT-670W
Dimensions	1722*1134*41mm	2094*1038*41mm	2279*1134*41mm	2278*1134*41mm	2172*1303*41mm	2384*1303*41mm
Weight	26.5kgs	30kgs	35kgs	38.5kgs	38kgs	41kgs
Gross area	1.95mm ²	2.37mm ²	2.58mm ²	2.58mm ²	2.83mm ²	3.1mm ²
Number of cells	60 (6x10)	144 (6*12*2)	144 (6*12*2)	144 (6*12*2)	120 (6*10*2)	132 (6*11*2)
Cell dimensions (mm)	158,75x158,75	166x166	182x182	182x182	210x210	210x210
Nominal Power (Wp)	430W	450W	550W	580W	600W	670W
Glazing	PV glass	PV glass	PV glass	PV glass	PV glass	PV glass
Absorber Surface (PV)	Mono	Mono	Mono	Mono	Mono	Mono
Absorber Surface (T)	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Safety Class	II	II	II	II	II	II
Power tolerance, current tolerance, and voltage tolerance	±3%	±3%	±3%	±3%	±3%	±3%
Volume of heat transfer fluid	0.9L	1.0L	1.3L	1.3L	1.5L	1.5L
Imp(A) Nominal Current	13.06A	10.98A	13.11A	13.62A	17.44A	18.43A
Isc(A) Short Circuit Current(±5%)	13.94A	11.42A	14.00A	14.37A	18.52A	17.42A
Vmp(A) Nominal Voltage	32.98V	41.00V	41.96V	42.59V	34.40V	38.48V
Voc(V) Open Circuit Current(±5%)	39.26V	49.50V	49.90V	51.47V	41.50V	46.15V
Welding Type	Ultrasonic	Ultrasonic	Ultrasonic	Ultrasonic	Ultrasonic	Ultrasonic
Absorber Tube Diameter	9.52mm	9.52mm	9.52mm	9.52mm	9.52mm	9.52mm
Absorber Tube Thickness	0.7mm	0.7mm	0.7mm	0.7mm	0.7mm	0.7mm
Manifold Tube Diameter	N/A	N/A	N/A	N/A	N/A	N/A
Manifold Tube Thickness	N/A	N/A	N/A	N/A	N/A	N/A
Tube Number (absorber and manifold)	8	8	10	10	12	12
Tube Distance	100mm	100mm	100mm	100mm	100mm	100mm
Max. Operation Pressure	0.6MPa	0.6MPa	0.6MPa	0.6MPa	0.6MPa	0.6MPa
Test Pressure	1.0MPa	1.0MPa	1.0MPa	1.0MPa	1.0MPa	1.0MPa
Maximum operating temperature	90°C	90°C	90°C	90°C	90°C	90°C
pressure drop	552Pa when flow rate 338l/h					
Permissible positive mechanical load	1500Pa	1500Pa	1500Pa	1500Pa	1500Pa	1500Pa
Permissible negative mechanical load	1500Pa	1500Pa	1500Pa	1500Pa	1500Pa	1500Pa
Impact resistance	D-33.4mm steel ball drop from 2meter without breakage					
Climate class for testing	Class B					

FLAT PLATE SOLAR COLLECTOR



Model: FPC-black

- Absorber: Black coating (special technology)
- Absorptance: $\geq 92\%$
- Emittance: $\leq 8\%$
- Glass: Low iron tempered glass, thickness 3.2mm
- Insulation layer: Glasswool
- Working pressure: 6 bars
- Flow pipe: Red copper (main pipe 22mm, sub pipe 8mm)
- Frame: Aluminum alloy
- Back board: Color steel / Aluminum sheet/ Stainles steel sheet



Model: FPC-blue

- Absorber: Blue titanium
- Absorptance: $\geq 95\%$
- Emittance: $\leq 5\%$
- Glass: Low iron tempered glass, thickness 3.2mm
- Insulation layer: Glasswool
- Working pressure: 6 bars
- Flow pipe: Red copper (main pipe 22mm, sub pipe 8mm)
- Frame: Aluminum alloy
- Back board: Color steel / Aluminum sheet/ Stainles steel sheet



A flat plate solar collector is a device for heating purposes. It consists of absorber plate which is coated with black or blue conductive material. As sunlight strikes the absorber plate, it heats up, transferring thermal energy to the heat transfer fluid circulating within the collector. This heated fluid can then be used for various applications, including space heating, water heating, or powering absorption chillers for cooling.

Main features

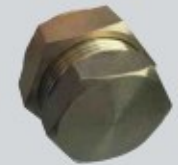
- Certified with Solar Keymark according to EN12975 standards
- Seamlessly integrates with architectural designs
- Ideal solution for large-scale solar heat projects

Model	Dimensions(mm)	Gross Area(m ²)	Packing size(mm)	Reference weight(kgs)
FPC-1.5	1500*1000*80	1.5	1610*1100*85	23
FPC-2.0	2000*1000*80	2	2010*1100*85	29
FPC-2.5	2000*1250*80	2.5	2010*1350*85	36
FPC-3.0	2000*1500*80	3	2010*1600*85	43

SOLAR ACCESSORIES

SR 881	Single pipe group pump station	SR 21H	Double pipe group pump station
	Power supply: 110V/220V Collector temp. measuring range: -10~200 °C Tank temp. measuring range: 0~110 °C Water proof grade: IP40 Max. working pressure: 6 Bar Input: 1×Pt1000, 2×NTC10K Output: 1×circulation pump, 1×electrical heater Application: Split solar water heater		Power supply: 110V/220V Collector temp. measuring range: -10~200 °C Tank temp. measuring range: 0~110 °C Water proof grade: IP43 Max. working pressure: 6 Bar Input: 1×Pt1000, 3×NTC10K Output: 2×circulation pump, 1×electrical heater Application: Split solar water heater
SR 11H	Single pipe group pump station	018024060	Expansion vessel
	Power supply: 110V/220V Collector temp. measuring range: -10~200 °C Tank temp. measuring range: 0~115 °C Water proof grade: IP42 Max. working pressure: 10 Bar Input: 2×Pt1000, 7×NTC10K Output: 3×circulation pump, 1×electrical heater Application: Split solar water heater		Capacity: 18/24/60 L Max. working pressure: 10 Bar Temperature range: -10~90 °C Pre-charge: 2 Bar Connection size: 3/4 inch
RS 15/6	Circulation pump	PH-101E	Circulation pump
	Brand: Wilo Power supply: 220V 50Hz Output power: 16~37 W Head: 3~6 m Displacement: 1.5~2.5 t/h Connection size: 15 mm Weight: 2.1 Kg		Brand: Wilo Power supply: 220V 50Hz Output power: 100 W Head: 5 m Max. displacement: 7.8 t/h Connection size: 40 mm Weight: 11 Kg
SR 81	Intelligent controller	SR 609C	Intelligent controller
	Power supply: 110V / 220V Collector temp. measuring range: -10~200 °C Tank temp. measuring range: 0~110 °C Main functions: 1. Temperature difference control 2. Timing heating 3. Collector low temperature protection 4. Tank re-cooling function 5. Manual heating Application: Split solar water heater		Power supply: 110V / 220V Suitable power of electrical heater, $\leq 2000W$ Tank temp. measuring range: 0~100 °C Main functions: 1. Manual heating 2. Temperature display 3. Timing heating at three time sections 4. Memory protection when power is failure 5. Trouble indication of sensor Application: Compact pressurized solar water heater Pre-heated solar water heater
SR 501	Intelligent controller	TK-8A	Intelligent controller
	Power supply: 110V / 220V Suitable power of electrical heater, $\leq 2000W$ Temperature range of measurement: 0~99 °C Electromagnetic valve: DC12V/AC220V, Main functions: 1. Water temperature/water level display 2. Water level pre-set 3. Manual water loading 4. Timing heating Application: Non-pressurized solar water heater		Power supply: 110V / 220V Collector temp. measuring range: -10~200 °C Tank temp. measuring range: 0~110 °C Main functions: 1. Temperature difference control 2. Timing heating 3. Collector low temperature protection 4. Tank re-cooling function 5. Manual heating Application: Split solar water heater
TK-7Y	Assistant tank	Feeder SS	Assistant tank
	Power supply: 110V/220V Suitable power of electrical heater, $\leq 2000W$ Tank temp. measuring range: 0~100 °C Main functions: 1. Time display 2. Temperature display 3. Temperature preset 4. Time heating 5. Manual heating 6. Power off memory Application: Compact pressurized solar water heater Pre-heated solar water heater		Inner tank: SUS304-2B stainless steel Outer tank: color steel / Stainless steel / PVDF Insulation layer: PU foam Capacity: 5L - 20L Application: Non-pressurized solar water heater Pre-heated solar water heater

Vacuum tube type	Magnesium rod	Screw type	Magnesium rod
	Measurement: Φ20×230mm Application: Non-pressurized solar water heater		Measurement: Φ22×300mm, Φ28×600mm Connection size: 3/4 inch, 1 inch Application: Pressurized solar water heater
Hook 01	Roof hook	Hook 02	Roof hook
	Material: SUS304-2B stainless steel, Galvanized steel Thickness: 4mm Application: Solar collector slope roof mount		Material: SUS304-2B stainless steel Thickness: 4mm Advantage: Adjustable Application: Solar collector slope roof mount
Twin pipe	Twin way pre-insulated solar hose	Connector	Solar collector connector
	Connection size: 3/4 inch Corrugated pipe: SUS304-2B stainless steel Jacketing material: UV resistant EPDM Insulation thickness: 13mm / 20mm Temperature sensor: 1 way silicone cable Application: Split solar water heater		Connection size: 3/4 inch component: SUS304-2B stainless steel corrugated pipe, brass nut Application: Solar collector
1/2 3/4	Nut, gasket and clip washer	Φ8x80mm	Sensor sleeve
	Connection size: 3/4 inch Component: Brass nut, PTFE gasket, stainless steel clip washer Application: Twin way pre-insulated solar hose		Material: Brass Connection size: 1/2 inch Measurement: Φ8×80mm Application: Pressurized solar water heater
Air Vent 1/2	Automatic air vent valve	AKE PT	T/P valve
	Material: Brass Connection size: 1/2 inch Max. working temperature: 180 ℃; Max. working pressure: 10 Bar Max. percentage of glycol: 50% Application: Split solar water heater		Material: Brass Connection size: 3/4 inch Working pressure: 6 Bar Working temperature: 90 ℃ Application: Pressurized solar water heater
One-way	Check valve	3-way	Reducing Tee
	Material: Brass Connection size: 3/4 inch		Material: Brass Connection size: 3/4x1/2x3/4 inch

Incoloy 800/316L	Electric heater	Copper	Thermostat electric heater
	Rated voltage: 220V Rated power: 1500W, 2500W Connection size: 1 inch Material: Incoloy 800/316L		Rated voltage: 220V Rated power: 1500W, 2500W Connection size: 1.25 inch Material: copper
3/4-3/4	Equal male straight	DN22-DN22	Coupling
	Material: Brass Connection size: 3/4x3/4 inch		Material: Brass Connection size: DN22xDN22mm
DN22-3/4	Adaptor	3/4"	Plug
	Material: Brass Connection size: DN22mmx3/4 inch		Material: Brass Connection size: 3/4 inch
-30~200	Antifreezing liquid	NP58-500-5	Mini non-pressure solar water heater
	Frozen point: -30 ℃ Boiling point: 105 ℃ Working temperature: -30 ℃ ~ 200 ℃ Package: 10 L/Barrel Odor: Without peculiar smell Toxicological characteristics: Nontoxic grade Application: Split solar water heater		Vacuum tube: Φ58×500mm Tube quantity: 4 pcs Inner tank: SUS304-2B stainless steel Outer tank: Color steel Insulation layer: PU foam Bracket: Galvanized steel
HSC58-500-5	Mini heat pipe solar collector	USC58-500-5	Mini U pipe solar collector
	Vacuum tube: Φ58×500mm Tube quantity: 5 pcs Header pipe: Red copper Heat pipe: Red copper Insulation layer: Rock wool Manifold casing: Aluminum alloy Heat transfer fin: United Aluminium sheet		Vacuum tube: Φ58×500mm Tube quantity: 5 pcs Header pipe: Red copper U pipe: Red copper Insulation layer: Rock wool Manifold casing: Aluminum alloy Heat transfer fin: United Aluminium sheet
A06	Filling and flushing valve	SR 802	Relay
	Material: Brass Connection size: 3/4x3/4x3/4x3/4 inch Application: Split solar water heater		Suitable power: ≤ 4000W Water proof grade: IP43 Shell Material: ABS plastic