TUBE COLLECTOR CT WITH CPC(PARABOLIC CONCENTRATOR)

With higher performance compared to conventional equipment, thanks to a patented overheating protection system using core technology.

For this reason, it includes a polished mirror collector, which facilitates the capture of 360° sunlight, with technology similar to concentrated solar.

Better efficiency and peace of mind:

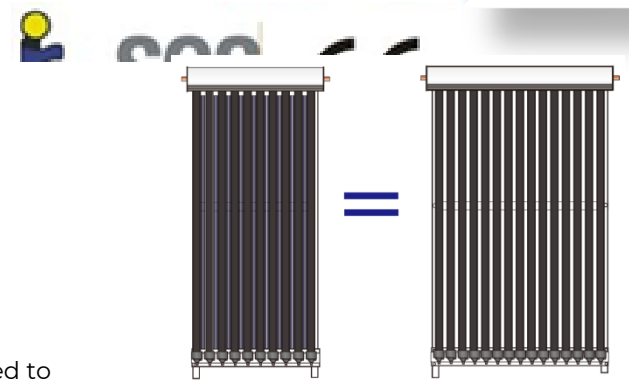
- **Summer:** overheating prevention.
- **Winter:** higher sunlight absorbing.

*In accordance with the UNE-EN 12975, Solar thermal systems and their components, and with a MITECO approval certificate.

*Warranty: 3 years. Shel life: 15 - 20 years.

MÁX. 85°C, EVEN WITHOUT CONSUMPTION
ABSORB 40% MORE*
80% MORE POWER OUTPUT*
TECNOLOGÍA HEAT PIPE – SOLAR SYSTEM CAN WORK NORMALLY WHEN TUBES BROKEN
HAIL RESISTANT UP TO 25 Ø MM
WIND RESISTANT UP TO 25 M/S
FREEZE RESISTANT UP TO -35 °C
HEAT PRESERVATION UP TO 72 HOURS

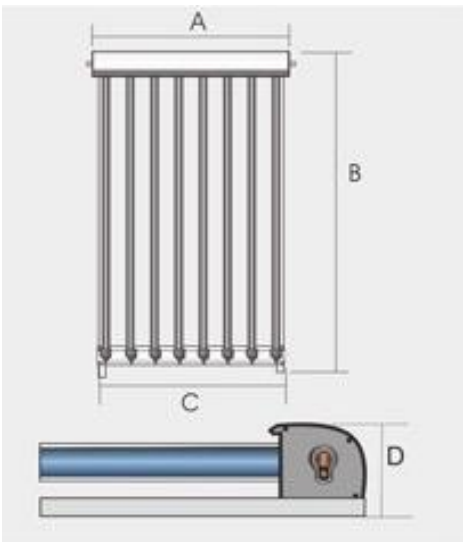
EASY ASSEMBLY



* Compared to conventional equipment without collector.

MODELS OF TUBE SOLAR PANELS WITH POLISHED MIRROR COLLECTOR

Model	N° of vaccum tubes	Med. A (mm)	Med. B (mm)	Med. C (mm)	Med. D (mm)	Collector weight (kg)	Tubes weight (kg)	Total weight (kg)
CT 8	8	910	1980	828	133	15	20	35
CT 10	10	1130	1980	1048	133	15	25	40
CT 12	12	1350	1980	1268	133	15	28	43
CT 15	15	1680	1980	1598	133	22	37	59
CT 18	18	2010	1980	1928	133	22	45	67
CT 20	20	2230	1980	2148	133	23	50	73
CT 22	22	2450	1980	2368	133	23	53	76
CT 24	24	2670	1980	2588	133	28	56	84



Model	Capacity (liters/ day/60°C)	Effective área of cllector (m^2)	Peak power	Average power output*	Power for surface	η0	a1 ($W/m^2 \cdot K$)	a2 ($W/m^2 \cdot K^2$)
CT 8	110 – 130	1.42	1633 W	939 W	521,67 W/m^2	0,668	1,496	0,005
CT 10	140 – 170	1.80	2028 W	1189 W	530,80 W/m^2	-	-	-
CT 12	160 – 180	2.17	2423 W	1440 W	539,33 W/m^2	-	-	-
CT 15	200 – 220	2.74	3016 W	1815 W	545,05 W/m^2	-	-	-
CT 18	250 – 270	3.31	3608 W	2191 W	550,50 W/m^2	-	-	-
CT 20	280 – 300	3.68	4003 W	2442 W	552,49 W/m^2	-	-	-
CT 22	300 – 340	4.06	4398 W	2692 W	555,05 W/m^2	-	-	-
CT 24	350 – 370	4.44	4792 W	2943 W	556,33 W/m^2	0,683	1,223	0,005

*Power produced for collector unit.

South orientation. Tilt angle:30°. Latitude: 46.8°. Tª ambient temperatura: 3.2°C

Annual irradiation on the collector plane: 1630 kWh/m^2. tm – ta = 75°C.

South orientation, Tilt angle: 45°. Latitude: 69.6°. Tª ambient temperature: 7,5°C. Annual irradation on the collector plane: 1166 kWh/m^2. tm – ta = 25°C.

G*: Global hemispheric solar irradiation.

η0: optical efficiency of the collector at tm – ta / G* = 0.

a1: coefficient of termal losses at tm – ta = 0.

a2: coefficient of termal losses depending on the temperature.

tm: average temperature of the heat transfer fluid.

ta: ambient air temperatura.

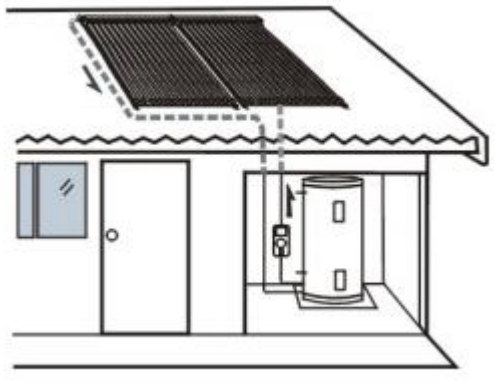
TECHNICAL SPECIFICATIONS

- Tube measurements: Ø58 x 1800 mm
- Aluminum alloy casing.
- Working pressure: 6 bars
- Maximum pressure tested: 12 bars.
- Stangnation temperature 280°C.
- Tª daiuly hot wáter : 45°C-90°C
- Superheat initial limit: 85°C-95°C
- Maximum limit overheating: 95°C-105°C
- Material tubes: borosilicate glass
- Heat pipe material: copper TU1
- Heat pipe length: 1790mm
- Heat pipe diameter condeser Ø14 mm; body Ø 8 mm.
- Insulation: rock wool with polyurethane foam.
- Support: galvanized Steel
- Sealed with silicone
- Connection pipe: TP2 copper Ø 35 mm

Several collectors can be connected in series; it is recommended to use flexible pipes for the connections if more than 3 collectors are connected.

GENERAL USE

- Forced Circulation
- With decentralized pressurized water tank.
- Intelligent control and automatic operation.



It is a system made up of tubes solar panels, a water storage tank, a recirculation group, a controller and their respective installation parts.

The designo f the solar panel allows its installation on both flat and sloped roofs. In addition, the tank can also be placed anywhere in the building.

RECOMMENDED SETS

Tank capacity	**N° of solar panels**	**Recirculation group**	**Expansion vessel**	**Absorbent area (m²)**	**Users**
150 L	1 de 10	I	8 L	1.80	1 – 3 people
200 L	1 de 15	I	8 L	2.74	3 – 4 people
300 L	2 de 10	I	8 L	3.60	4 – 6 people
300 L	1 de 20	I	8 L	3.68	4 – 6 people
500 L	3 de 15	II	12 L	8.22	6 - 8 people
700 L	4 de 15	II	18 L	10.96	8 - 10 people
1000 L	5 de 15	II	24 L	13.70	10 - 15 people

ADDITIONAL INFORMATION

Work principle:

· When the temperature of the solar panel reaches the set value, the controller will start the circulation pump automatically.

· The circulation pump make the liquid conductive of heat (glicol/ water or antifreezer fluid) automatically circulates through the primary circuit.

· The heat conducting liquid transfer the heat to the water mediant the heat exchanger (serpentine) in the water tank.

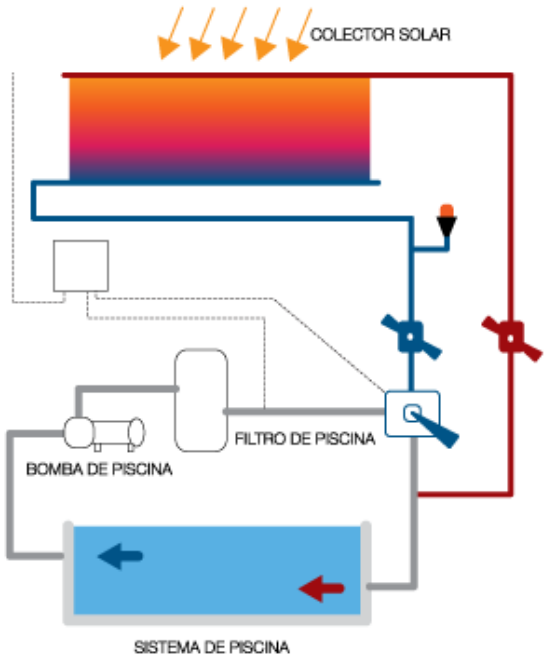
· In the event that the temperature of the solar panel does not reach the established value, the circulation pump Will automatically turn off.

· In the event that the temperature of the water tank does not reach the máximum set temperature, then the auxiliary heating device (electric heater or gas boiler) will be turned on.

· Antifreeze function: Considering that there is no water inside the tubes when it Works, in the event that the temperature os the solar panel is below the set value, the circulation pump will turn on automatically.

If glycol/ water is used, the glycol must be changed periodically to prevent it from becoming acidic. The antifreeze liquid is advisable in cold áreas, since it has a higher boiling point.

POOLS AND JACUZZIS



If you want to use the solar panel for termal heating of your swimming pool or jacuzzi, we recommend the use of the model of tuve solar panel with Polished Mirror Collector, especially the one with 24 vacumm tubes. With vacumm tubes solar panel and polished mirror collector,you can maintain **the temperature of the water in the pool or jacuzzi between 23°C-26°C*** from the end of March to the beginning of November.

In the winter months, benefit from energy savings, since these panels also work on cloudy days, and you can putt he preheated water in your Whirlpool.

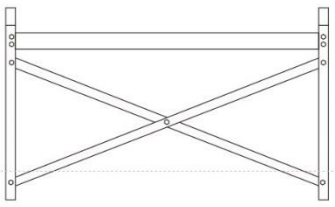
In the case of outdoor pools, we recommend covering it at night, to prevent the drop in water temperature and achieve better performance from the solar systems.

**According to local climate.*

NUMBER OF RECOMMENDED SOLAR PANELS ACCORDING TO THE SIZE OF THE POOL OR JACUZZI

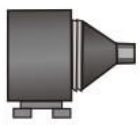
m² of the pool or jacuzzi	**N° of vacuum tuve plates**	**Capacity (litres/day/60°C)**	**Collector effective area (m²)**	**Output power***
6-10	1 de 24	350 - 370	4.44	2943 W
18-21	2 de 24	700 - 740	8.88	5886 W
32-36	3 de 24	1050 – 1110	13.32	8829 W
>40	4 de 24	1400 - 1480	17.76	11772 W

ACCESSORIES INCLUIDED



Frame for flat roof

Lateral



Tube protectors

Inferior

Fixing pads

Thermal conductive paste

Fixing plates

CPC anchors

CPC