



The Techno-Solis collector is the most durable solar panel on the market today. In production since 1976, our panels have been installed by Authorized Techno-Solis Dealers all over the world and in just about every climatic condition possible. We have a proven track record of reliability, design superiority and unsurpassed performance.

Techno-Solis has hundreds of thousands of solar pool heating installations in the United States, Canada and overseas. We offer standard sizes of 4' x 8', 4' x 10' and 4' x 12' systems, and we have the ability to custom-design collectors to suit any application.

The following are just a few of the advantages that Techno-Solis offers you as a solar contractor:

- ⚙ An unbeatable reputation for quality.
- ⚙ Nearly 30 years of innovative pool heating technology and experience.
- ⚙ The most proven and reliable pool heating products available anywhere in the world.
- ⚙ Most affordable dealer prices in the industry.
- ⚙ Outstanding sales and technical support for all of our dealers.



Contact Us!

Phone: (727) 823-6766

Toll-Free: (888) 99-SOLAR

Fax: (727) 823-6768

Web: www.techno-solis.com

Email: info@techno-solis.com

Offices in USA and Canada

Dimensions, Approvals & Performance

		1.5" Header			2.0" Header		
Size/ Part #	Units	4 x 12 (c15ts12)	4 x 10 (c15ts10)	4 x 8 (c15ts08)	4 x 12 (c20ts12)	4 x 10 (c20ts10)	4 x 8 (c20ts08)
DIMENSIONS							
Overall Length	In	143.3	119.55	95.18	144.12	120.37	96.00
Absorber Width	In	47.63	47.63	47.63	47.50	47.50	47.50
Header Length	In	50.75	50.75	50.75	50.75	50.75	50.75
Header OD	In	1.9	1.9	1.9	2.31	2.31	2.31
Header ID	In	1.48	1.48	1.48	1.89	1.89	1.89
Gross Area	Sq ft	47.31	39.46	31.40	47.62	39.79	31.65
Net Area	Sq ft	47.39	39.54	31.48	47.50	39.67	31.53
Number of Flow Channels		104	104	104	104	104	104
Nominal Hole Size	In	.125	.125	.125	.156	.156	.156
WEIGHT							
Dry	Lbs	29	24	19	30	25	20
Wet	Lbs	62.5	53.6	44.7	62.5	53.6	44.7
Wet Dispersed	Lbs/sq ft	1.32	1.36	1.42	1.31	1.35	1.41
Fluid Capacity	Gal	4.03	3.56	3.09	4.12	3.64	3.18
FLOW RATES							
Max	Gpm	10	10	10	10	10	10
Min	Gpm	3	2.5	2.5	3	2.5	2.5
Recommended	Gpm	4.9	4.9	4.9	4.9	4.9	4.9
Max # panels in parallel	Panels	7	8	8	10	11	12
PRESSURE							
Drop	Psi	.15	.15	.15	0.15	0.15	0.15
Max fluid static	Psi	80	80	80	80	80	80
Max operating	Psi	35	35	35	35	35	35
PERFORMANCE							
FSEC Certification	BTU/day	45400	37900	30200	45400	37900	30200
Wind Load	mph	150 mph	150 mph	150 mph	150 mph	150 mph	150 mph

Techno-Solis exceeds the criteria required for approvals from the following accredited laboratories and independent testing agencies:

- Florida Solar Energy Center (FSEC)
- Solar Rating and Certification Corp. (SRCC)
- Dade County
- The Canadian National Solar Test Facility (NSTF)
- City of Los Angeles

Dimensions & Performance metric

Part #		c20ts12	c20ts10	c20t08	c15ts12	c15ts10	c15ts08
Dimension	<i>units</i>						
nominal size							
overall length	<i>m</i>	3.66	3.06	2.44	3.64	3.04	2.42
absorber length	<i>m</i>	3.54	2.94	2.32	3.54	2.94	2.32
absorber width	<i>m</i>	1.21	1.21	1.21	1.21	1.21	1.21
header length	<i>m</i>	1.29	1.29	1.29	1.29	1.29	1.29
header outside diam.	<i>cm</i>	5.87	5.87	5.87	4.83	4.83	4.83
header inside diam.	<i>cm</i>	4.80	4.80	4.80	3.76	3.76	3.76
gross area	<i>sq m</i>	4.42	3.70	2.94	4.395	3.666	2.917
net area	<i>sq m</i>	4.41	3.69	2.93	4.403	3.673	2.925
number of flow channels		104	104	104	104	104	104
nominal hole size	<i>mm</i>	3.97	3.97	3.97	3.97	3.97	3.97
Weight							
dry	<i>kg</i>	13.61	11.34	9.07	13.15	10.89	8.62
wet	<i>kg</i>	29.17	25.13	20.59	28.35	24.31	20.28
wet dispersed	<i>kg/sq m</i>	0.61	0.63	0.66	0.60	0.62	0.64
fluid capacity	<i>l</i>	15.60	13.78	12.04	15.26	13.48	11.70
flow rates							
max	<i>l/min</i>	37.86	37.86	37.86	37.86	37.86	37.86
min	<i>l/min</i>	11.36	9.47	9.47	11.36	9.47	9.47
<i>recommended</i>	<i>panels</i>	18.55	18.55	18.55	18.55	18.55	18.55
<i>max # panels in parallel</i>	<i>panels</i>	10	11	12	8	9	9
Pressure							
drop	<i>atm</i>	0.0102	0.0102	0.0102	0.0102	0.0102	0.0102
max. fluid static	<i>atm</i>	5.4400	5.4400	5.4400	5.4400	5.4400	5.4400
max. operating	<i>atm</i>	2.3800	2.3800	2.3800	2.3800	2.3800	2.3800
Performance							
FSEC Certification	<i>KWh/day</i>	13.36	11.17	8.91	13.31	11.11	8.85

How to Size a Solar System

Step 1: Determine the surface area of the pool

Step 2*: Determine the direction that the roof is facing. The relationship between the direction of the roof and the size of the system is as follows:

- South (preferred direction in N. Hemisphere) – System should represent between 50 - 85% of the pool area.
- West - System should represent 60 - 100% of the pool area.
- East - System should represent 65 - 105% of the pool area.

Step 3: Decide which size panels you want. Panels are available in 4 x 8 (1.22m x 2.4m), 4 x 10 (1.22m x 3.1m) and 4 x 12 (1.22 x 3.7m). Divide by 32, 40, or 48 respectively to determine the number of panels needed. The average system size is 7 panels, and the most popular size is 1.5" header 4' x 12' (1.22 x 3.7m).

EXAMPLE:** Homeowner has 16' x 32' (4.9m x 9.8m) pool with a south facing roof and wants to use 4' x 10' (1.22m x 3.1m) panels:

Pool Size – 4.9m x 9.8m = 156m pool area.

156m x .85 = 132.6m (the required solar system area)

1.22m x 3.1m = 12.2m per panel.

132.6m / 12.2m = 10.87 or 11 panels needed.

The following is what is needed for the above application:

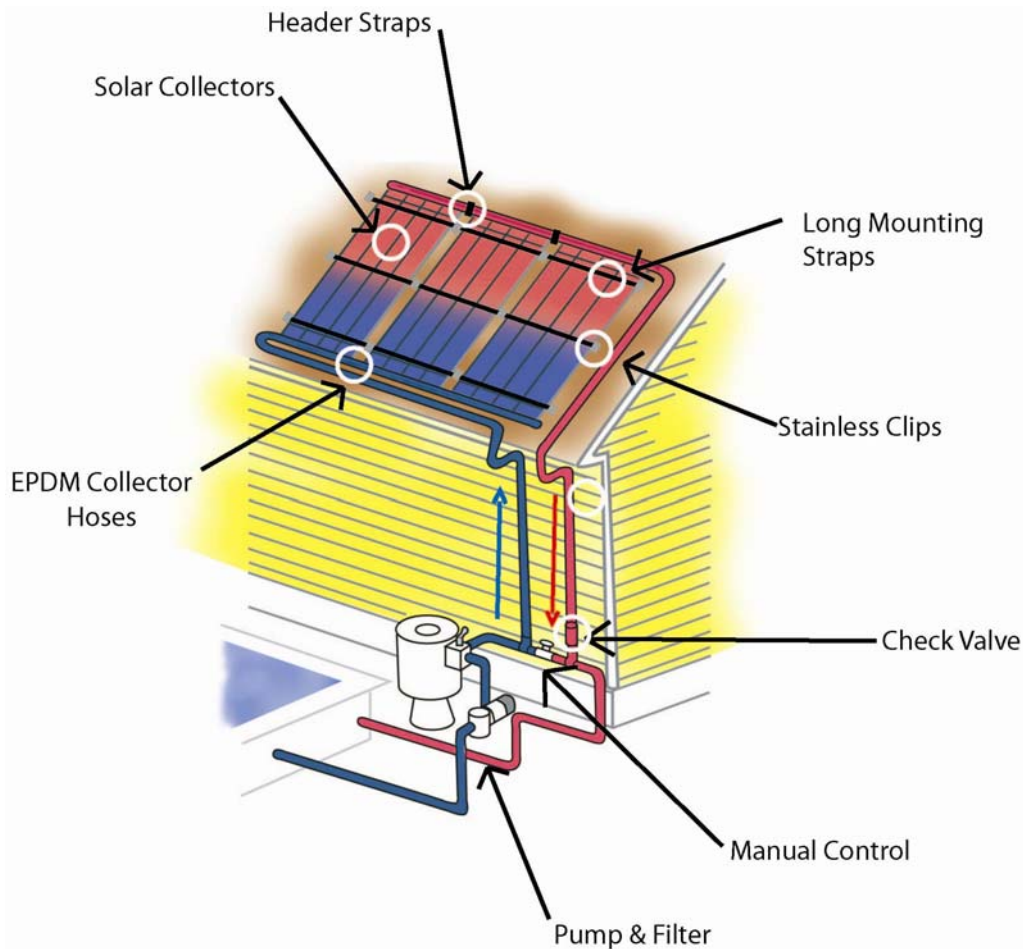
11	Solar panel 4 x 10 (1.22m x 3.1m)	c15ts10
11	Panel Kit	K15pan-c
1	System Kit	K15sys-c
1	Vacuum Breaker Kit	K15vac
1	Roll of Strap	Astr100p

Common Sizes				
Pool Size		Solar System Size		
US	Metric	Qty	US Panel Size	Metric Panel Size
12' x 24'	3.66 x 7.32	5	4' x 12'	1.22m x 3.7m
14' x 28'	4.27 x 8.53	7	4' x 12'	1.22m x 3.7m
15' x 30'	4.57 x 9.144	8	4' x 12'	1.22m x 3.7m
16' x 32'	4.88 x 9.75	9	4' x 12'	1.22m x 3.7m
18' x 36'	5.49 x 10.97	11	4' x 12'	1.22m x 3.7m
20' x 40'	6.10 x 12.19	14	4' x 12'	1.22m x 3.7m

*Please note that the relationship between the total heating area and the total surface area of the pool varies from region to region depending on climate.

**Example and "Common Sizes" chart above are based on 85% heating coverage.

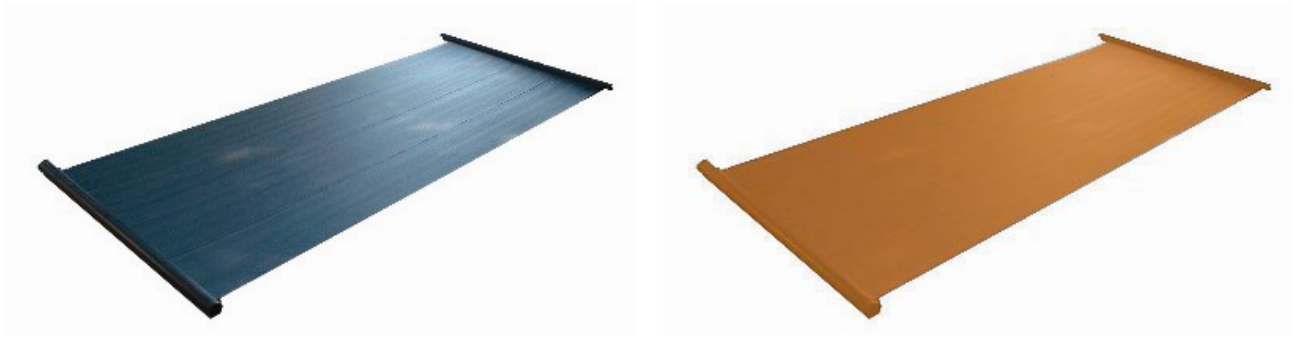
System Diagram



A solar pool heating system is simple to operate and requires no change in the way you maintain standard pool equipment. The diagram to the right shows the components of a typical solar heater and the steps below explain the process.

1. Your existing pool pump moves water to the solar collectors.
2. Cool water enters the solar collector from the bottom and is heated as it flows through the collector flow tubes to the top of the panel.
3. The warm water is then returned to your pool

Building a Great Panel



At Techno-Solis we pride ourselves on quality. Here's a glimpse at how we ensure that our solar heaters are the most efficient and reliable solar panels on the market today:

STEP 1: Materials

We use a combination of the very highest quality Polypropylene, Carbon Black, and non-depleting UV Stabilizers to guarantee an efficient and durable panel.

STEP 2: Extrusion

Extrusion is the process of converting the material into a panel form. Techno-Solis is one of the few (if not the only) manufacturers that does all of its extrusion in-house. Our "in-house" extruding expertise gives us the assurance that each of our panels meets the highest standards of quality. Also, by using the same material throughout the panel (even the weld) we eliminate weak points or uneven expansion and contraction in the finished product.

STEP 3: Assembly

Once the extrusion is complete, Techno-Solis uses highly skilled technicians and the latest technologies to assemble each solar panel. Techno-Solis is the only manufacturer that goes the extra mile by adding a reinforced bead weld to provide additional strength and protection.

STEP 4: Testing

Before leaving our factory, *EVERY* Techno-Solis Panel passes a weld, seam, flow and pressure test at 95psi of water. This guarantees a perfect product.

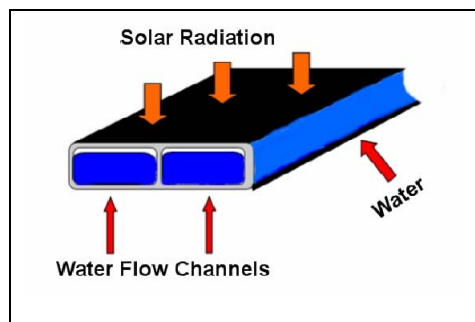
Superior Design

Most pool heating panels are designed to be repaired...Techno-Solis panels are designed to last.

The majority of solar pool heaters are designed with “individual” round flow tubes so that if a tube leaks it can be easily plugged. Some manufacturers even state in their warranty that a damaged system will be repaired if possible. In most cases a “repair” is nothing more than a plug. The problem with this is that a plugged panel is much less efficient or effective at heating your pool.

Another problem with the design of most solar pool heating systems is that the shape and thickness of the flow tube walls do not allow for prolonged expansion or contraction that occurs during seasonal temperature changes, or extreme weather such as freezing.

Techno-Solis’ patented flat panel design is proven to be more Efficient and more Durable than other solar pool heaters. Here’s why:



Absorb More Heat

Techno-Solis collectors are visibly thicker than any other pool heating collector because we use up to 35 percent more raw materials in our panels. This attracts more heat.

Reduce Heat Loss Better

Techno-Solis flow tubes are connected so that they stay warm longer. Other panels can cool rapidly during windy conditions because the “individual” flow tubes aren’t insulated by each other.

Last Longer

The extra material in our panels allows for greater expansion and contraction, provides extra UV protection, and prevents weak spots.

Prevent Freeze Damage (covered by warranty)

Because water expands by approximately 9 % when turning to ice, the strain put on a solar panel’s flow channel can be devastating.

Techno-Solis Pool Heaters, however, are designed to withstand internal freezing better than any other panel on the market today. As the picture to the right illustrates, the 2 keys to our durability are the thickness of our panels and the shape of the flow channels.

