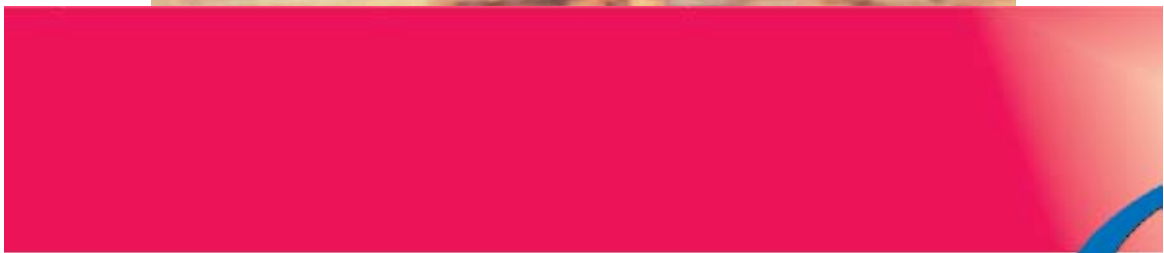


Enjoy...



V O R T E X

Quality Solar Heaters



Enjoy the feel...
of a Solar heated pool or spa.

It makes good sense to get
the most out of life, and your investment.

Besides... you deserve it!



How Does Solar Work?

Solar energy captures the sun's heat...

It's real. Solar energy works world-wide in all geographic regions, even in cold climates!

It's free. Your pool water is gently warmed by the sun's radiant energy as it flows through an energy efficient system of solar panels.

It's easy. Water is circulated by your existing pool pump, and is automatically controlled by your filter timer.¹ No complex electronics to repair or replace.



Everyone loves the feel of a solar heated pool!

Will solar perform?

Solar heating systems are best suited for recreational pools. An effective solar system will raise temperatures into the 80°F range.

In addition to raising the water's temperature, your swimming season can be extended² in cooler climates by as much as 50 percent, and performs year round in warmer climates.

There may be short periods during inclement weather when the pool water becomes cooler; however, several sunny days will return the pool back to a comfortable temperature.³



***VORTEX** solar can extend your family's swimming season.*



Discover a new
place for Family, Friends and Fun!

VORTEX Solar heated pools and spas offer
an advantage in the quality of your life-style.

Besides... you deserve it!



Cost of operation...

Solar, an *all natural* alternative energy source, takes advantage of free heat from the sun.

To capture this heat, your pool pump must circulate during the 6 - 8 hour *solar window*.

If you are currently operating your pump and filter during the entire solar window, you will experience *no increase* in your power bill.⁴

A **VORTEX** Solar system requires little to no maintenance and typically lasts 15-20 years.



Family time warms up with a solar heated pool!

What size of System?

Proper sizing of the solar system *is critical* for achieving optimum heating performance.

Most pools require a solar panel surface area equal to 50-100% of the pool's surface area.

Every home and pool is unique. To determine the system size required for your pool, use the world-wide **VORTEX** *Simplified Sizing Guide*.

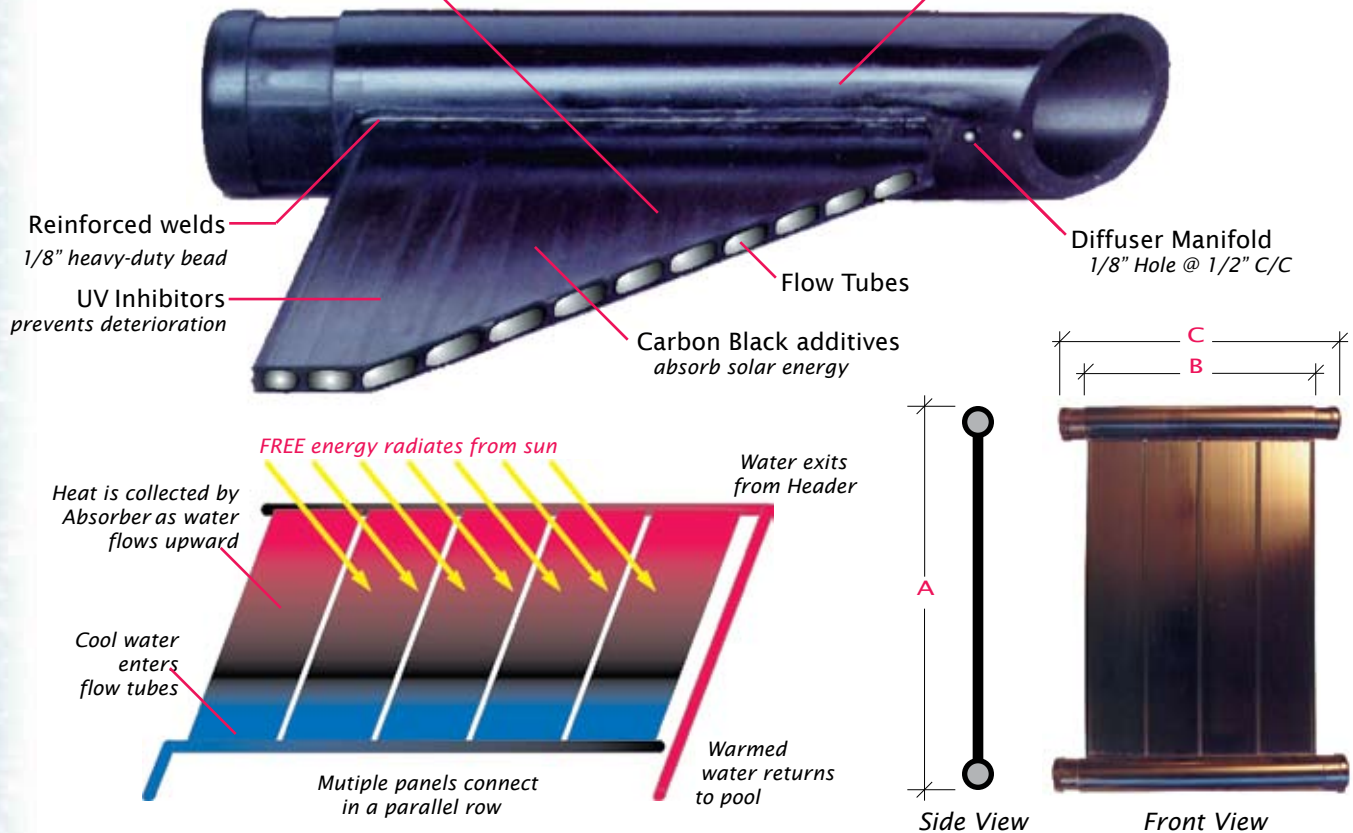
The size of the system determines its ability to maintain the pools temperature at a desired level, and the length of your swimming season.⁵



More time for enjoying those quiet moments alone...

VORTEX Commercial Grade Solar Panels

ABSORBER CROSS-SECTION HEADER



VORTEX
Manufactured in the USA

Technical description:

- *Commercial Grade Panel* with 30% more material content than industry standards, resulting in increased durability/longevity.
- *Headers / Absorber* are made from a Co-polymer (polypropylene / polyethylene) virgin black plastic containing a proprietary ultraviolet (UV) stabilizer with a continuous extrusion process using vacuum forming performed entirely in-house under strict quality controls.
- *Absorber* is comprised of four extruded strips that are heat sealed longitudinally to form a fully wetted surface containing
- 104 elliptical channels which are welded to the Header. An 1/8" bead is welded to the junction of the Absorber and Header for additional strength.*
- *Header* incorporates *Subaqueous Diffuser Manifold* with one hole per channel for improved flow distribution and turbulence.
- *Panels* are connected via EPDM (*ethylene-propylene-diene-monomer*) expansion hoses with stainless steel gear clamps.
- *Attachment to structure* with stainless steel hardware and polypropylene 5/8" strap.

*Independent laboratory tested to 1000 psi .

Quality VORTEX Heaters

Why VORTEX wins...

VORTEX is committed to providing the very highest quality, most durable pool heaters in the solar industry, and we back it up with the best customer warranty offered today.

All brands of solar collectors perform almost identically, making it difficult to compare one manufacturer to another using BTU ratings.

Collectors can only be compared based on:

- *Construction and weight:* Vortex panels are designed to meet heavy-duty commercial grade specifications and are 30% heavier than the industry average. This ensures the greatest panel life-expectancy available.
- *Flow rate and pressure characteristics:*
VORTEX panels are designed to combine high flow rates with low system pressure. This allows for a maximum transfer of heat while reducing excess strain on the pump.
- *Full-Replacement vs. Repair warranty:*
VORTEX panels are totally covered by a Full-Replacement Factory warranty, including labor and freeze protection.* Other brands offer a repair/replace style warranty at the option of manufacturer.

*See Warranty for complete details.



*VORTEX solar works world-wide,
in all climates, on all roof types.*



*Low-profile aesthetically blends
with contemporary architecture.*

VORTEX Quality Pool Heaters
A smart investment, and...
you deserve it!



TECHNICAL RECOMMENDATIONS

¹ Automatic Controls

An automatic control and valve are sometimes used to regulate temperature, usually in northern climates. Larger pools may need a booster pump.

² Extending Swimming Season

See the *Vortex Solar Insolation Chart* to determine the potential swimming season in your area.

³ Alternative Heating Options

If you desire a particular temperature, regardless of the outside weather conditions, or if you swim for exercise/therapy, consider a *Heat Pump* pool heater. If you only use the pool occasionally, or are heating a hot tub, consider a *Gas* pool heater.

⁴ Cost of Operation

If your current filtration time is less than 8 hours, your power bill will increase slightly as you raise the number of hours. Costs vary ^{\$}10 to ^{\$}50 per year.

⁵ System Sizing

The size of the system is based on several factors, including: geographic location; size and shape of pool; desired pool temperature, swimming season, and length of time required to rewarm the pool; solar interference, i.e., shading from trees, screened enclosures, etc.; wind conditions; and direction of roof - facing south*, east, west or flat.

*Use north facing roof in southern hemisphere.

Systems are available in standard panel sizes of 4'x8', 4'x10', 4'x12' and custom sizes.

Panels are generally mounted in a row on one or several roofs, racks, or ground mounts. A typical seven panel 4'x12' system would require a space of 12.5' by 30.75'. Panels are 51" on center.

Using a thermal pool cover dramatically reduces size of heater required, as well as nightly heat loss.

MODEL	VT48	VT40	VT32
	US Metric	US Metric	US Metric
THERMAL PERFORMANCE*			
Panel Output* Btu/day Kj/day	45,600 48,100	38,100 40,181	30,400 32,060
Sq Ft Output* Btu/ft ² Kj/m ²	958 10,858	958 10,858	958 10,858
Efficiency Btu/ft ² /(1600 Btu/ft ² AVG)	60%	60%	60%
DIMENSIONS ~WEIGHT ~ FLOW/Parallel forced circulation			
Nominal Size ft m	4x12 1.22x3.66	4x10 1.22x3.05	4x8 1.22x2.44
A Collector Length in cm	144 365.8	120.25 305.4	95.575 242.8
B Absorber Width in cm	47.50 120.7	47.50 120.7	47.50 120.7
C Header Width in cm	50.75 128.9	50.75 128.9	50.75 128.9
Header OD in cm	1.90 4.83	1.90 4.83	1.90 4.83
Header ID in cm	1.48 3.76	1.48 3.76	1.48 3.76
Gross Collector Area ft ² m ²	47.64 4.43	39.79 3.62	31.65 2.88
Dry Weight lbs kg	30 13.6	25 11.3	20 9.1
Wet Weight lbs/ft ² kgs/m ²	1.35 6.74	1.39 6.95	1.46 7.18
Fluid Capacity gal l	4.12 15.57	3.64 13.76	3.18 12.02
Max Flow gpm mlps	10 633	10 633	10 633
Min Flow gpm mlps	3.0 190	2.5 158	2.5 158
Recommended gpm mlps	4-5 253-316	4-5 253-316	4-5 253-316
Pressure: Drop 0.15psi 1.03kPa Max 90psi 620kPa Operating @140°F 35psi 241kPa			
Optical Radiation Performance: Solar Absorptivity 95% Infrared Emissivity 92%			

*Test results from Florida Solar Energy Center (FSEC)

VORTEX manufactured by:

Authorized VORTEX Dealer:



Quality and Service since 1986
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VORTEX
Quality Solar Heaters