Frequently Asked Questions

Heating a swimming pool with solar energy is not a new concept. In fact, the very first solar pool heaters were introduced in the 1970s. Since then, over two-million pool owners have been enjoying the benefits of a longer, more comfortable season. Even so, we realize pool owners will still have some questions and concerns about solar, and how well it will work for them. To help you decide if solar is right for you, we've put together a list of the most popular questions related to solar pool heating systems:

How does a solar pool heater work?

A solar heater uses your existing pump to circulate filtered pool water to the solar collectors (often called "panels"), where it is heated and returned back to the pool. A diverter valve—which can be manually controlled or automatically regulated through the use of a thermostat—is installed just down stream of the filter, and diverts the flow of pool water to the collectors whenever solar energy is available and necessary.

Is a solar pool heater simple to operate?

Solar integrates seamlessly with the latest in pool automation technology. An automatically controlled solar pool heater works similarly to your home's thermostat. Simply choose your desired comfort level by setting a temperature on the controller, and the system does the rest. Alternatively, systems can be installed with a manually controlled diverter valve.

What if I already have a fossil-fuel heater?

If your existing gas or electric heater is in good working condition, but is just too expensive to operate as often as you'd like to swim, a hybrid pool heating system may be the answer. In a hybrid configuration, solar provides the primary source of heat, and your existing fossil-fuel heater remains as a backup if necessary.

How does the cost of solar compare?

The cost of installing a solar pool heater is comparable with that of a similarly sized fossil-fuel heater. However, unlike other heaters, solar uses free energy from the sun, so there are zero operating costs once installed. With no monthly bill to heat your pool, solar can pay for itself in as little as 2 years. Over a period of 15 years, solar can save a pool owner as much as $28,000 in heating costs (at today's rates).

Is solar pool heating dependable?

Solar energy is just another form of fuel (the oldest and most cost-effective), and a properly sized pool heater can more than double your swim season. Our systems have been operating worldwide for over 30 years, heating both residential and commercial pools and spas. As long as the sun keeps shining, you can depend on solar for a longer, more comfortable swimming season.

For more Frequently Asked Questions visit www.warmwater.com/faq

Aquatherm: The Most Trusted Name in Solar Pool Heating

We firmly believe that heating a swimming pool with a fossil-fuel heater is a luxury we can no longer afford. For over 20 years, we have focused on providing an alternative to pool owners who share that belief. To date, we have helped over 500,000 pool owners around the world maximize their swim season, as well as their investment in a swimming pool—independent of fossil-fuels.

All materials are processed and assembled under one roof, at our 50,000 square-foot facility in Lakewood, New Jersey. This "pellets to pallets," vertically-integrated approach gives us total quality control, and assures collectors and components of the highest quality.

As the only ISO-registered solar collector manufacturer in the U.S., Aquatherm is proud to meet the strict quality management standards set forth by ISO 9001:2008.

Aquatherm Industries is the largest manufacturer of solar pool heaters in the United States, and the preeminent leader in polymer technologies for solar heating applications. Our success has been built around our international Dealer Network, the strongest and most comprehensive in the industry. Our Dealers are among the elite in solar professionals, and continue to set the standard for quality installations and customer satisfaction. With Dealers throughout the United States and worldwide from Australia to Europe, the sun is always shining on an Aquatherm Solar Pool Heater.

aquatherm INDUSTRIES, INC.

LIVE GREEN. SWIM WARM.

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Available through:

Made in the USA

ECOSUN®

SOLAR POOL HEATER

SWIM IN THE WARMTH OF THE SUN!

Swim in the Warmth of the Sun

Maybe your swimming pool is the perfect centerpiece for **backyard gatherings** with friends and family. Maybe it's a chance for **peaceful relaxation** after a stressful day, or your preferred way of **staying in shape**. Whatever the reason you became a pool owner, one thing is certain...

If your pool is often too cold to enjoy, you're not using it for all it's worth.

Though a gas or electric pool heater can help you **swim longer and more comfortably**, that enjoyment comes at a price. Using fossil-fuel to heat a swimming pool takes an enormous amount of energy, and expensive monthly bills are a guarantee.

Whether you have heated your pool in the past and fallen victim to the high costs associated with it, or you are simply looking for an alternative to burning fossil-fuels, a **solar pool heater** is the answer.

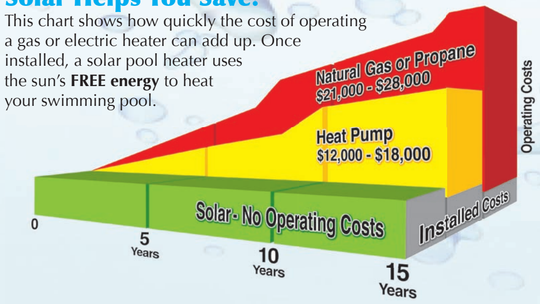
With solar, you can enjoy your pool for all it's worth by using the sun's endless supply of free energy to heat your pool water.

A Smarter Way to Heat Your Pool

Of all the options to heat your pool, solar energy is the **most cost-effective and environmentally-friendly** method available. In fact, solar pool heating is so effective, that over the last 35 years it has become the largest use of solar in the U.S. - accounting for over 75% of solar thermal (heating) collector shipments. (Source: Department of Energy Solar Collector Activity Report)

Solar Helps You Save!

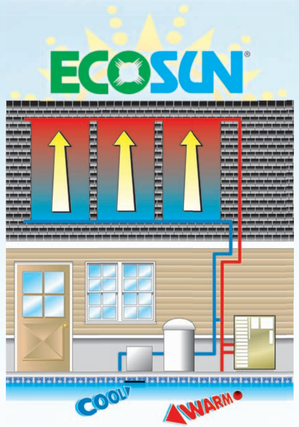
This chart shows how quickly the cost of operating a gas or electric heater can add up. Once installed, a solar pool heater uses the sun's **FREE energy** to heat your swimming pool.



Did You Know?

With three gallons of oil, you could:

Simple, Dependable, Affordable... Naturally!



We want you to enjoy your pool for all it's worth, so we made the Ecosun Solar Pool Heater effortless to use:

1. Simply set your desired comfort level on the system's automatic control (like a thermostat).
2. When your pool needs heat, the controller signals a motorized diverter valve to turn. Using your pool's existing filtration pump, water is diverted to the solar collectors.
3. Your pool water moves through the solar collectors, absorbing the sun's free heat before returning to your pool.

Hybrid Heating System

If you have an existing fossil-fuel heater, it can be utilized as a back-up option in a **hybrid heating system**. In a hybrid configuration, solar is used as the primary heat source.

Evolution of Solar Pool Heater Design

With its patented vented web and unique fluted tube surface, the **Ecosun Hybrid Collector** has evolved from lessons learned in over 35 years of solar pool heater design.

Ecosun's tube-and-web design provides maximum surface area (similar to "tube-on-tube" collectors), while allowing for the all the benefits of a "loose tube" design, including:

- Advanced wind-load relief
- Moisture ventilation for the roof
- Protection from the stresses of thermal expansion & contraction

This evolution has resulted in the most advanced solar pool heating collector available today.

70's

Square Tube-on-Tube: Early efforts drew from existing technologies. This design was easy to manufacture, but resulted in poor performance and was subject to buckling and tube separation.

80's

Round Tube-on-Tube: The next attempt tried round tubes, instead of square. Though performance increased, the design was still plagued with buckling from thermal expansion and contraction.

90's

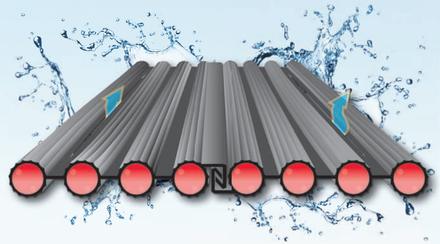
Loose (Separated) Tube: Taken from the industrial process heat industry, separate tubes designed to lose heat were held together by simple plastic clips, which allowed the collector to shift. The loose tubes also collected debrid and perofmance suffered as wind passed through the tubes.

Trust the Ecosun Solar Pool Heater

Since 1993, **tens-of-thousands of pool owners** around the world have experienced a longer and more comfortable swimming season, thanks to the Ecosun Solar Pool Heater.

Features & Benefits

- **Patented Vented Web** allows for roof moisture ventilation and wind-load relief.
- **Fluted Tubes** result in 10% more surface area, maximizing the sun's energy.
- **Expansion Joints** relieve stresses on the collector caused by thermal expansion and contraction.



Eagle Claw™ MOUNTING SYSTEM

When used in conjunction with our **stainless-steel Eagle Claw™ Mounting System**, Ecosun combines the strength and performance of a full-plate collector with the benefits of roof ventilation and reduced wind-load. You can rest-assured your Ecosun Solar Pool Heater will perform for years to come.

Technical Data

IAPMO R&T · Florida Solar Energy Center · NSF

DIMENSIONS

	1.5" Series			2" Series		
Model Number	16104-12	16104-10	16104-8	16204-12	16204-10	16204-8
Nominal Size-ft.	4x12	4x10	4x8	4x12	4x10	4x8
Overall Collector Length-in	144.0	120.0	96.0	144.0	120.0	96.0
Collector Width-in	47.0	47.0	47.0	47.0	47.0	47.0
Manifold Length-in	50.5	50.5	50.5	50.5	50.5	50.5
Manifold O.D.-in	1.9	1.9	1.9	2.4	2.4	2.4
Manifold I.D.-in	1.5	1.5	1.5	2.0	2.0	2.0
Gross Collector Area-ft²	47.3	39.3	31.4	47.3	39.3	31.4
Net Collector Area-ft²	47.3	39.3	31.4	47.3	39.3	31.4

FLUID FLOW RATES

Model Number	16104-12	16104-10	16104-8	16204-12	16204-10	16204-8
Maximum-GPM	10.0	10.0	10.0	10.0	10.0	10.0
Minimum-GPM	3.0	2.5	2.5	3.0	2.5	2.5
Standard-GPM	5.0	4.0	3.25	5.0	4.0	3.25
Max. Collector with Single Feed @ Recommended Flow Rate	10	12	12	10	14	14

WEIGHTS

Dry-lbs	21.3	17.1	14.3	22.3	18.1	15.3
Wet lbs	48.0	41.6	35.1	54.0	47.6	41.1
Wet lbs-ft²	1.0	1.0	1.1	1.1	1.2	1.3
Fluid Capacity-gal	3.2	2.9	2.5	3.8	3.5	3.1

NSF-50 LISTED

The Ecosun Solar Pool Heater meets or exceeds the strict safety, durability, and toxicity criteria of the National Sanitation Foundation's Standard 50 (NSF-50).

In most states, recreational aquatic equipment is required to meet the criteria of this standard, which verifies a product "is durable in design and construction, and is resistant to corrosion."

PRESSURES

Pressure Drop:	0.05 @ 2.5 gpm; 0.20 @ 5.0 gpm; 0.60 @ 10.0 gpm
Recommended Max. Operating Pressure	50 PSI @ 77° F
Max. Operating Pressure:	75 PSI @ 77° F; 35 PSI @ 140° F
Design Burst Pressure:	Greater than 100 PSI @ 140° F

THERMAL PERFORMANCE

Equation: $n = 0.9248 - 0.0512(u) - (4.76 + 1.998u)$

Rating: 1,104.44 Btus / ft² (certified by FSEC)

Tested and Certified in accordance with ISO 9806 and NSF/ANSI Standard 50; 2010