

Solar Air Heating: Overview

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For people who live in colder climates, solar air heating is likely to be the most cost effective form of renewable energy available. Homes from northern Texas through Canada are using solar heaters in conjunction with their normal heating system to greatly reduce their heating bills. Solar heating systems can reduce your yearly heating bills by as much as 30 to 40% per year.

Great Return on Investment

Solar air heating has a long list of benefits for home energy use. By using these systems, you can:

- Reduce your energy usage
- Cut your fuel bills
- Help protect the environment
- Help make our country less dependent on foreign fuel sources

This sounds great! But you're still curious about the return on your investment, aren't you? Here are some thoughts about the financial side of a solar air heating system:

Solarsheat

1500G

Note the built-in solar electric panel at the top - powers the built-in fan. No external power needed.

Take the example of a solar air heater on a home in New England. In central Massachusetts, we can expect the need for home heating for about 5 months of the year. Most homes here use a central boiler fed by #2 heating oil. At the current price of that fuel, and based on a modest 15% projected offset in heating costs on a 120-gallon-a-month consumption rate, a solar air heater would pay for itself in less than 6 years! And it will do so without producing greenhouse gases.

If your old furnace or boiler is due for replacement, buying a new, more efficient boiler for \$5,000 to \$6,000 may decrease your yearly fuel consumption by 20-30%. However, if you spend \$3,000 for a solar air heating system, you'll achieve the same efficiency gain or better --without the hassle of removing the old boiler-- and **save \$2,000 to \$4,500** over the initial cost of a new boiler! Replacing the boiler *and* installing solar air heating will produce the greatest long-term cost savings overall.

If you are a commercial property owner and you pay for your tenants' heating, then you have very real concerns about heating costs. The increase in heating fuel could mean you'll be paying thousands of dollars more than you did in previous winters. You likely have a contract for a few years to hold the lease price, which means a real drop in profit. If you're planning to hold onto your property for more than 2-3 years, it makes sound financial sense to install solar air heating to reduce your heating costs. The money you save in heating costs could prevent lost rent which would otherwise have to cover the rising fuel costs.

Heating Fuel Prices may be Skyrocketing but Sunshine is *Still* Free

Many people have been simply stunned by the incredible jump in heating fuel costs over the last few years. With the huge increase in natural gas and heating oil prices weighing down their budget, many homeowners are wondering what they can do to ease the burden. The addition of a solar air heater to your home or business is a simple and affordable solution that could reduce your heating fuel costs by \$400 to \$700 per winter. That savings will increase as prices continue to rise!

Solar air heating systems are supplemental heating systems that work in conjunction with, but independently of, your main heating system. The more hot air produced by the solar air heater, the less your primary heating system has to work -- and therefore the less fuel you have to buy. Solar air heating systems are different from most traditional heating systems in that the heating fuel is entirely free. You pay for fuel for as long as you use your boiler, stove, furnace, heat pump, etc.. With a solar air heating system, your initial (and only) investment is the air heater.. That's it. Your fuel-- sunshine-- is **free**.

Solarsheat G being installed on a home in Worcester, Massachusetts.

We also carry recirculating solar air heaters. This type of system circulates indoor air through a sealed, sun-heated solar collector mounted on an exterior wall, returning the warmed air back to the living space. The solar collectors are made with high thermal-absorption, black aluminum plates enclosed beneath highly transmissive glass. Air drawn through the system absorbs the collector's heat, rising in temperature by as much as 50 degrees (F.). This process is similar to how a car with a dark interior heats up in the sun. All the system needs is some sunlight-- it can even be partially overcast-- and it will boost the temperature of your home.

Models vary, but most solar air heaters are roughly 3½ to 4 feet wide and 6½ to 7 feet tall. They can be fairly easily mounted on the outside of your house. Some brands do not even require electricity and come with built in solar electric panels to operate the circulating fan; others use a small amount of house AC. They all come with an internal thermistor that regulates the minimum temperature at which they turn on; this minimum setting prevents cold air being circulated into the interior space. For convenience, you control the collector's output with the included thermostat, like the one for your primary heating system. Most residential applications call for one solar air heating collector. However, some air heating systems allow you to use multiple collectors joined together to heat a larger area. Sizes, efficiencies, appearance and options vary, so it's a matter of selecting the model that best fits your needs. The [Solar Rating and Certification Corporation](#) is an independent entity that certifies and rates solar air heaters and water heating collectors. You can learn more about the certified ratings for various brands, including the ones we carry, there.

For best operating success, the collectors should be mounted in a shade-free location with **good southern exposure**. Rooftop mounting is possible, but such installations are more complex and can be less efficient because of the necessary duct work. With solar air heating, there is more flexibility in mounting location than with solar electric modules but

please consult the installation manual of your product for complete details. A contractor can easily install a single-collector system in as little as one day. Each recirculating system requires two wall penetrations (for cold intake and hot output), generally about 5 to 6 inches in diameter each, and kits include mounting brackets.



1500GS

Specifications:

Part No. - SH1500-GS

Energy Rating - 1.5 kWh BTU - 5118

Dimensions - 86"X 43.15" X 3.8" (221cm x 109.6cm x 9.7cm)

Gross Area - 26 ft² or 2.4 m²

Weight - 82 lbs/37.2 kg

Color - Black

Type - Modular solar air collector

Material - Aluminum extrusion

Absorber - Aluminum

Glazed - Yes, tempered glass

Thermal insulation - Polyisocyanurate with R20 Rating

Flow Rate - 150 CFM

C02 Reduction - .35 ton/year

Temp - 120°F or 49°C

Mounting - Wall or roof

Manufactured in - Canada

Warranty - 1 year from date of purchase

SOLARSHEAT 1500GS

The SolarSheat 1500GS uses heat energy from the sun that would normally strike the roof or exterior wall, to heat your home. Each 1500GS can heat a room up to 750 sq-ft (70 sq. meters) (depending on heat loss and solar gain).

Installation

The modular frame and mount design allows single or multiple SolarSheat 1500GS units to be connected together. They can be used to directly heat multiple rooms, an insulated and sealed crawl space, basement, radiant air floors, or the entire house. It can also be connected directly to your home's furnace to heat in the winter. The 1500GS mounts on an external wall or roof. It can also be mounted on the ground with collector stands.