

Solar Info Guides

Solar Collectors



Innovating Today's Solar Technology
for the Future of Tomorrow

Solar Collector Basics

There are two main types of Solar Collectors.

There are Evacuated Tube Solar Collectors and there are Flat Plate Solar Collectors. Each of these types of Solar Collectors are extremely affordable, efficient, and provide clean, cost-effective Solar Hot Water for a number of applications, including:

- Domestic Solar Hot Water
- Solar Pool & Spa Heating
- Solar Radiant & Home Heating

And each type of Solar Collector can be used for residential, industrial, commercial, agricultural and municipal Solar Hot Water Systems. This type of versatility and variety makes Solar Hot Water one of

the best, and fastest growing industries in the world.

When choosing the SunMaxx Solar Collector for your Solar Hot Water System you must take a number of different factors into consideration to ensure that you get a SunMaxx Solar Hot Water System that will provide maximum performance, the best initial investment, the shortest payback period and the highest over return on your investment. Use the information below to compare SunMaxx Evacuated Tube Solar Collectors and SunMaxx Flat Plate Solar Collectors.



SunMaxx Evacuated Tube Solar Collectors

These Solar Collectors are extremely versatile, and can be used in any climate, including norther, cold climates - down to temperatures of - 60F with a Drainback or Pressurized Glycol Solar Hot Water System installation.

Pros:

- Use in any climate
- Extremely freeze protected
- Extremely efficient
- Low initial investment
- Short payback periods
- Multiple styles and models to choose from
- Easy, hassle free maintenance



SunMaxx Flat Plate Solar Collectors

Flat Plate Solar Collectors are intended for use in southern, warmer climates where freezing temperatures are not a problem. While they can be used in cold climates, their efficiency and performance suffers during the winter months because of their limited freeze protection.

Pros:

- Use in any climate / Typically for warmer climates
- moderately freeze protected
- Extremely efficient
- Low initial investment
- Short payback periods

Evacuated Tube Solar Collectors - Heat Pipe

SunMaxx Evacuated Tube Solar Collectors with Heat Pipes are the most popular type of Evacuated Tube Solar Collectors available on the market.

These Solar Collectors are tried and tested, proving their performance and efficiency value over the years, and are currently providing free, clean hot water and heating to homes, businesses and offices around the world.

Each Solar Collector includes Double Walled Glass Tubes, Copper Heat Pipes with Condenser Bulbs, a manifold, roof connection feet and an adjustable tilt mounting frame.



These Solar Collectors can be flush mounted flat against a roof with a suitable pitch, or they can be used with the Tilt Mount Frame to provide the optimum tilt angle on low-pitch, or flat, roofs. To operate properly, SunMaxx Heat Pipe Evacuated Tube Solar Collectors must be installed at an angle of 20 - 75 degrees.

Collector Specifications

	SunMaxx-10	SunMaxx-20	SunMaxx-25	SunMaxx-30
Number of Tubes	10	20	25	30
Dimensions	35.3" x 79"	67.9" x 79"	84.3" x 79"	100.7" x 79"
Weight	88 lbs	170 lbs	212 lbs	252 lbs
Aperture Area	10.01 ft ²	20.03 ft ²	25.03 ft ²	30.04 ft ²
Nominal Flow Rate	0.28 GPM	0.56 GPM	0.70 GPM	0.84 GPM
Storage Tank Size	30 - 40 Gallon	50 - 60 Gallon	60 - 70 Gallon	70+ Gallon
Connection Fittings	1" NPT	1" NPT	1" NPT	1" NPT
Warranty	3 Years	3 Years	3 Years	3 Years
Expected Lifetime	25 - 30 Years	25 - 30 Years	25 - 30 Years	25 - 30 Years

Collector Performance

	SunMaxx-10		SunMaxx-20		SunMaxx-25		SunMaxx-30	
	Annual BTU	Oil Offset (Gallons)	Annual BTU	Oil Offset (Gallons)	Annual BTU	Oil Offset (Gallons)	Annual BTU	Oil Offset (Gallons)
New York	2.25M	18.5	4.50M	37.0	5.62M	46.2	6.75M	55.4
Philadelphia	2.44M	20.0	4.88M	40.1	6.10M	50.1	7.32M	60.1
Miami	4.05M	33.3	8.10M	66.5	10.12M	83.2	12.15M	99.8
Chicago	2.36M	19.4	4.72M	38.8	5.80M	48.5	7.08M	58.2
Nashville	2.57M	21.1	5.14M	42.2	6.42M	52.8	7.71M	63.3
Denver	2.89M	23.7	5.78M	47.5	7.22M	59.3	8.67M	71.2
Los Angeles	4.16M	34.2	8.32M	68.3	10.40M	85.4	12.48M	102.5
Seattle	2.25M	18.5	4.50M	37.0	5.62M	46.2	6.75M	55.4

Evacuated Tube Solar Collectors - U-Pipe

SunMaxx Evacuated Tube Solar Collectors with U-Pipes are a great low-cost alternative when Heat Pipe Evacuated Tube Solar Collectors will not work for your application.

U-Pipe Evacuated Tube Solar Collectors are smaller than their Heat Pipe cousins, allowing them to fit on roofs, and in other spaces where Heat Pipe Collectors may not fit. Additionally, U-Pipe Solar Collectors are less expensive than Heat Pipe Solar Collectors, allowing for a lower initial investment and shorter payback period. However, the tradeoff is that U-Pipe Solar Collectors produce less BTU than Heat Pipe Models, meaning that more U-Pipe Collectors will be required for the same



job when replacing Heat Pipe Collectors.

The biggest advantage is that U-Pipe Collectors can be installed flat or vertical and still perform at peak efficiency. This makes

Collector Specifications

	SunMaxx-20U	SunMaxx-30U
Number of Tubes	20	30
Dimensions	64" x 66"	64" x 91"
Weight	115 lbs	170 lbs
Aperture Area	19.4 ft ²	29.1 ft ²
Nominal Flow Rate	0.56 GPM	0.84 GPM
Storage Tank Size	30 - 40 Gallon	50 - 60 Gallon
Connection Fittings	1/2" NPT	1" NPT
Warranty	3 Years	3 Years
Expected Lifetime	25 - 30 Years	25 - 30 Years

U-Pipe Solar Collectors particularly ideal for commercial and municipal applications where flat roofs with limited space are often a concern when determining how many Solar Collectors will fit.

Collector Performance

	SunMaxx-20U		SunMaxx-30U	
	Annual BTU	Oil Offset (Gallons)	Annual BTU	Oil Offset (Gallons)
New York	4.00M	32.9	6.00M	49.3
Philadelphia	4.34M	35.7	6.51M	53.5
Miami	7.20M	59.2	10.81M	88.8
Chicago	4.20M	34.5	6.30M	51.8
Nashville	4.57M	37.6	6.86M	56.4
Denver	5.14M	42.3	7.71M	63.4
Los Angeles	7.40M	60.8	11.10M	91.2
Seattle	4.00M	32.9	6.00M	49.3

Flat Plate Solar Collectors

SunMaxx Flat Plate Solar Collectors are extremely affordable and efficient, making them a great addition to any Solar Hot Water System. Though they are intended for use mostly in warm, southern climates, SunMaxx Flat Plate Solar Collectors can be used effectively and efficiently in northern, colder climates as well - though they will not perform as well in these conditions as an Evacuated Tube Solar Collector.

Flat Plate Solar Collectors, in warm climates, are more efficient and cost-effective than Evacuated Tube Solar Collectors, providing better performance, a shorter payback period and a higher overall return on your investment.

If you live in a southern climate, and are looking for the best performing solar collector and most cost-

effective Solar Hot Water System, a SunMaxx Flat Plate Solar Collector is the choice for you.

Like Heat Pipe Solar Collectors, Flat Plate Solar Collectors must be installed at an angle of 20 - 75 degrees in order to operate properly.



Specifications

Dimensions:	6.5' x 3.2' x 3"
Gross Area:	32.5 ft ²
Aperture Area:	19.8 ft ²
Absorber Area:	18.6 ft ²
Number of Covers:	1
Cover Material:	Low Iron Glass
Cover Thickness:	0.16"
Cover Transmission:	94%
Weight:	98 lbs

Max Operating Temp:	200 C
Max Pressure:	1400 kPa

Absorber

Material:	Red Copper
Surface Treatment:	Black Chromed
Construction Type:	Fin & Tube
Header Material:	Copper TP2
Header Tube Size:	1" ID / 1/32" thickness
Riser material:	Copper TP2
Riser Tube Size:	.4" ID / 1/40" thickness

Thermal Insulation

Insulation material:	Fiberglass Insulation
Insulation Thickness:	30mm x 50mm x 30mm

Casing

Frame:	Aluminum Alloy
Frame Color:	Silver Anodized
Back Plate:	Galvanized Steel Plate
Lifting Lugs:	2 per side
Sealing Gasket:	NBR or EDPM