



Residential Solar Water Heating Systems

CIRREX® SOLAR ELECTRIC PACKAGE SYSTEMS

The CIRREX® packaged system from A. O. Smith is the latest advancement in solar water heating. With the CIRREX® solar water heating system, A. O. Smith provides everything needed for a comprehensive solar system, allowing for quick and easy specification and installation. With Solar Energy Factor ratings up to 10.1 CIRREX® solar water heating systems can provide up to 70% of the energy needed for water heating directly from the sun.

THE CIRREX® ADVANTAGE:

- Standard and Deluxe solar system packages.
- 16 solar water heating systems - one, two or three collector configurations collectors can be added for larger systems.
- All systems are active closed loop systems using a mixture of distilled water and non-toxic propylene glycol as a heat transfer fluid in the solar loop to prevent freezing during winter.
- All solar water heating systems are SRCC certified OG-300.
- Highest quality solar thermal collectors from Chromagen™.
- All solar thermal collectors are SRCC certified OG-100.
- All system packages include integrated solar pump stations that save time, money and provide a clean professional looking installation.
- 80 & 120-gallon direct and indirect solar booster tanks with 4500 watt backup heating elements.
- Single wall and double wall heat exchanger systems.
- Solar Energy Factor (SEF) ratings up to 10.1.
- Provides up to 70% of the energy needed for water heating directly from the sun.
- Can produce the same amount of energy as photovoltaic solar collectors at 1/8th of the cost.
- Full line of solar accessories including Solar Pathfinder™ site analysis unit and Pathfinder Assistant Software, contractor installation kits, collector tilt kits and roof mounting kits for composite, flat, tile, split seam and corrugated metal roof installations. Contact your local sales representative for more information.
- 10-year limited warranty on collectors, 6-year limited warranty on solar booster tanks, 2-year limited warranty on pump station, 1-year limited warranty on miscellaneous parts. For complete information, consult the included written warranty or contact A. O. Smith Water Products Company.



**Eligible for Federal Tax Credit:
through 2016. 30% of
the total installed costs – no cap.
For more information, visit
www.hotwater.com.**



*Proudly partnered with
Chromagen to provide solar
thermal collectors.*

SOLAR THERMAL COLLECTORS

Collectors are assembled using the highest quality materials and advanced techniques, which result in highly efficient, durable products you can depend on for years to come.

- Optimal heat absorption and efficiency.
- Riser tubes are laser welded to the absorber plate which ensures optimum heat transfer and permanent bond.
- Three insulation layers provide a cumulative thermal resistance value of R-8.



1. Low-iron patterned and tempered glazing provides superior strength, anti-glare surface and 91% solar transmittance.
2. Aluminum absorber plate with spectrally selective black coating provides more than 90% solar absorption and less than 40% IR emission for high performance even in cooler climates.
3. Rugged nylon glass fiber moldings on all four corners protect collectors and adjacent property from damage during transport and installation.
4. 1-1/8 inch outside diameter (O.D.) copper sweat inlet/outlet connections.
5. Glass wool insulation layer
6. Black anodized extruded aluminum casing - interlocking construction assembly - requires no fasteners that loosen over time and allow moisture infiltration.
7. Integrated aluminum foil insulation barrier.
8. Injected rigid Polyurethane foam insulation layer.
9. Durable black Polypropylene backsheet - resists punctures during transport and installation, resists corrosion for the life of the collectors.
10. Type M copper risers 5/8" and manifolds 1-1/8" are brazed together in a parallel tube configuration ensuring optimal flow and a low pressure drop. Collectors may be installed in portrait or landscape orientation.

INTEGRATED SOLAR PUMP STATIONS

All-in-one integrated, insulated assembly features:

- Wall mounted for a clean professional looking installation.
- Saves time and money.
- Programmable electronic solar system control with advanced diagnostics and LCD display.
- Precise flow control - multiple speed pumps, flow control valves and variable speed controls.
- Flow meter, temperature and pressure gauges.
- Isolation valves, fill and drain valves, check valves and air stripper.
- Solar loop pressure relief valve.
- Includes solar loop expansion tank with mounting bracket and stainless steel flex line.
- Standard pump stations are used with indirect solar booster tanks that have factory installed internal single wall coil-type heat exchangers.
- Double wall pump stations are equipped with plate-type stainless steel heat exchangers (double wall) and are used with direct solar booster tanks.



Standard Pump Station



Double Wall Pump Station

SOLAR SYSTEM PACKAGES AND SOLAR BOOSTER TANKS

Standard and Deluxe solar system packages are available, see the comparison table below.

INTEGRATED CIRREX® SYSTEMS INCLUDE:

Deluxe vs Standard - Included System Components

System Component Description	Standard	Deluxe
Solar Collector(s)	X	X
Integrated Solar Pump Station With Advanced Programmable Digital LCD Controller	X	X
Solar Loop Expansion Tank (Includes Bracket/Stainless Steel Flex Pipe)	X	X
Solar Loop Pressure Relief Valve	X	X
Thermostatic Mixing Valve	X	X
Propylene Glycol (DOWFROST™) 5-Gallons	X	X
Solar Loop Air Vent	X	X
Temperature Sensors (2) - Tank & Collector Outlet	X	X
Collector Spanner Mounting Hardware Kit (Stainless Steel/Aluminum)	X	X
Roof Flashing for solar loop piping supply line (1 - copper)		X
Roof Flashing for solar loop piping return line and sensor wire (1 - copper)		X
Roof Flashing Kit (Shingle Roof Mounting Kit) - 4 Per/Collector (iodized aluminum)		X
Temperature Sensor Control Wire 75' Roll		X
Collector Copper Sweat Fittings Kit		X
Flexible Pipe Insulation (UV Resistant/300°F) 6' x 1/2" tube (1)		X
Flexible Pipe Insulation (UV Resistant/300°F) 6' x 1" tube (1)		X
Tape, Stretch & Seal		X
Roof & Flashing Sealant		X



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SOLAR SYSTEM PACKAGES - SIZING & PLACING ORDERS

Use our Solar Sizing Guide to determine the number of solar collectors and solar booster tank needed. Order a system package that meets the sizing needs making sure double wall heat exchanger systems are ordered when required by local building codes. Order the required solar booster tank separately to complete the system.

Visit www.hotwater.com for more information including; Specification Sheets, Solar Sizing Guide with site analysis instructions, Online Rebate Locator, Installation Videos and Instruction Manuals.

Deluxe Solar System Packages - Solar Tanks Not Included							
Model Number	Number of Collectors	Solar Collector Model - Size (ft)	Heat Exchanger Type	Solar Booster Tank Ordered Separately (80 or 120-gallon)	Solar Energy Factor		Approx Shipping Weight (lbs)
					80 Gallon Tank	120 Gallon Tank	
SACI-01-M200501-000	1	CR-140-AP - (4' x 10')	Single Wall Internal Coil	SUNX-80 or SUNX-120	2.2	1.9	564
SACI-02-M200202-000	2	CR-110-AP - (3-1/2' x 7')	Single Wall Internal Coil	SUNX-80 or SUNX-120	3.0	2.3	542
SACI-02-M200402-000	2	CR-130-AP - (4' x 8')	Single Wall Internal Coil	SUNX-80 or SUNX-120	5.3	3.3	586
SACI-03-M200203-000	3	CR-110-AP - (3-1/2' x 7')	Single Wall Internal Coil	SUNX-80 or SUNX-120	10.1	4.9	635
SACE-01-M100501-000	1	CR-140-AP - (4' x 10')	Double Wall External Plate	SUN-80 or SUN-120	1.8	1.7	590
SACE-02-M100202-000	2	CR-110-AP - (3-1/2' x 7')	Double Wall External Plate	SUN-80 or SUN-120	2.2	2.1	560
SACE-02-M100402-000	2	CR-130-AP - (4' x 8')	Double Wall External Plate	SUN-80 or SUN-120	3.0	2.8	614
SACE-03-M100203-000	3	CR-110-AP - (3-1/2' x 7')	Double Wall External Plate	SUN-80 or SUN-120	4.3	3.5	661

Standard Solar System Packages - Solar Tanks Not Included							
Model Number	Number of Collectors	Solar Collector Model - Size (ft)	Heat Exchanger Type	Solar Booster Tank Ordered Separately (80 or 120-gallon)	Solar Energy Factor		Approx Shipping Weight (lbs)
					80 Gallon Tank	120 Gallon Tank	
SACI-01-M200501-T41	1	CR-140-AP - (4' x 10')	Single Wall Internal Coil	SUNX-80 or SUNX-120	2.2	1.9	556
SACI-02-M200202-T41	2	CR-110-AP - (3-1/2' x 7')	Single Wall Internal Coil	SUNX-80 or SUNX-120	3.0	2.3	534
SACI-02-M200402-T41	2	CR-130-AP - (4' x 8')	Single Wall Internal Coil	SUNX-80 or SUNX-120	5.3	3.3	578
SACI-03-M200203-T41	3	CR-110-AP - (3-1/2' x 7')	Single Wall Internal Coil	SUNX-80 or SUNX-120	10.1	4.9	627
SACE-01-M100501-T41	1	CR-140-AP - (4' x 10')	Double Wall External Plate	SUN-80 or SUN-120	1.8	1.7	582
SACE-02-M100202-T41	2	CR-110-AP - (3-1/2' x 7')	Double Wall External Plate	SUN-80 or SUN-120	2.2	2.1	560
SACE-02-M100402-T41	2	CR-130-AP - (4' x 8')	Double Wall External Plate	SUN-80 or SUN-120	3.0	2.8	606
SACE-03-M100203-T41	3	CR-110-AP - (3-1/2' x 7')	Double Wall External Plate	SUN-80 or SUN-120	4.3	3.5	653

SOLAR BOOSTER TANKS

Solar Booster Tanks are equipped with a factory installed CSA certified and ASME rated Temperature & Pressure Relief Valve and a single (upper) 4500 watt / 240 volt backup heating element. Indirect tanks have a single wall internal coil-type heat exchanger. Direct tanks are open tanks used with double wall pump stations when local codes require double wall heat exchangers for non-toxic propylene glycol systems.

Indirect Solar Booster Tanks						
Model Number	Gallon Capacity	Energy Factor	Heat Exchanger Included	Heating Elements (240 VAC Single Phase)	GPH Recovery @ 90° F Rise	Dimensions (inches)
SUNX-80	76	N/A	Yes - Single Wall Internal Coil Type	1 upper - 4500W	21	63-1/4" x 24"
SUNX-120	108	N/A	Yes - Single Wall Internal Coil Type	1 upper - 4500W	21	63-1/4" x 28"

Direct Solar Booster Tanks						
Model Number	Gallon Capacity	Energy Factor	Heat Exchanger Included	Heating Elements (240 VAC Single Phase)	GPH Recovery @ 90° F Rise	Dimensions (inches)
SUN-80	80	N/A	No	1 upper - 4500W	21	63-1/4" x 24"
SUN-120	119	N/A	No	1 upper - 4500W	21	63-1/4" x 28"

CODES AND STANDARDS

Complies with current editions of: UL Standard for Household Electric Storage Tank Water Heaters, UL 174; Canadian Standard for Construction and Test of Electric Storage Tank Water Heaters, CAN/CSA-C22.2 No. 110-M90; Packaged Solar Domestic Hot Water Systems (Liquid-to-Liquid Heat Transfer For All-Season Use, F379.1-09; Packaged Solar Domestic Hot Water Systems for Seasonal Use, F379.2-09 and ICC Codes and HUD Standards. Complies with California legislation AB 1953 and Vermont legislation Act 193 that limits the lead content in plumbing fixtures that come into contact with drinking water to a maximum of 0.25%.

For Technical Information and Automated Fax Service, call 800-527-1953. A. O. Smith Corporation reserves the right to make product changes or improvements without prior notice.