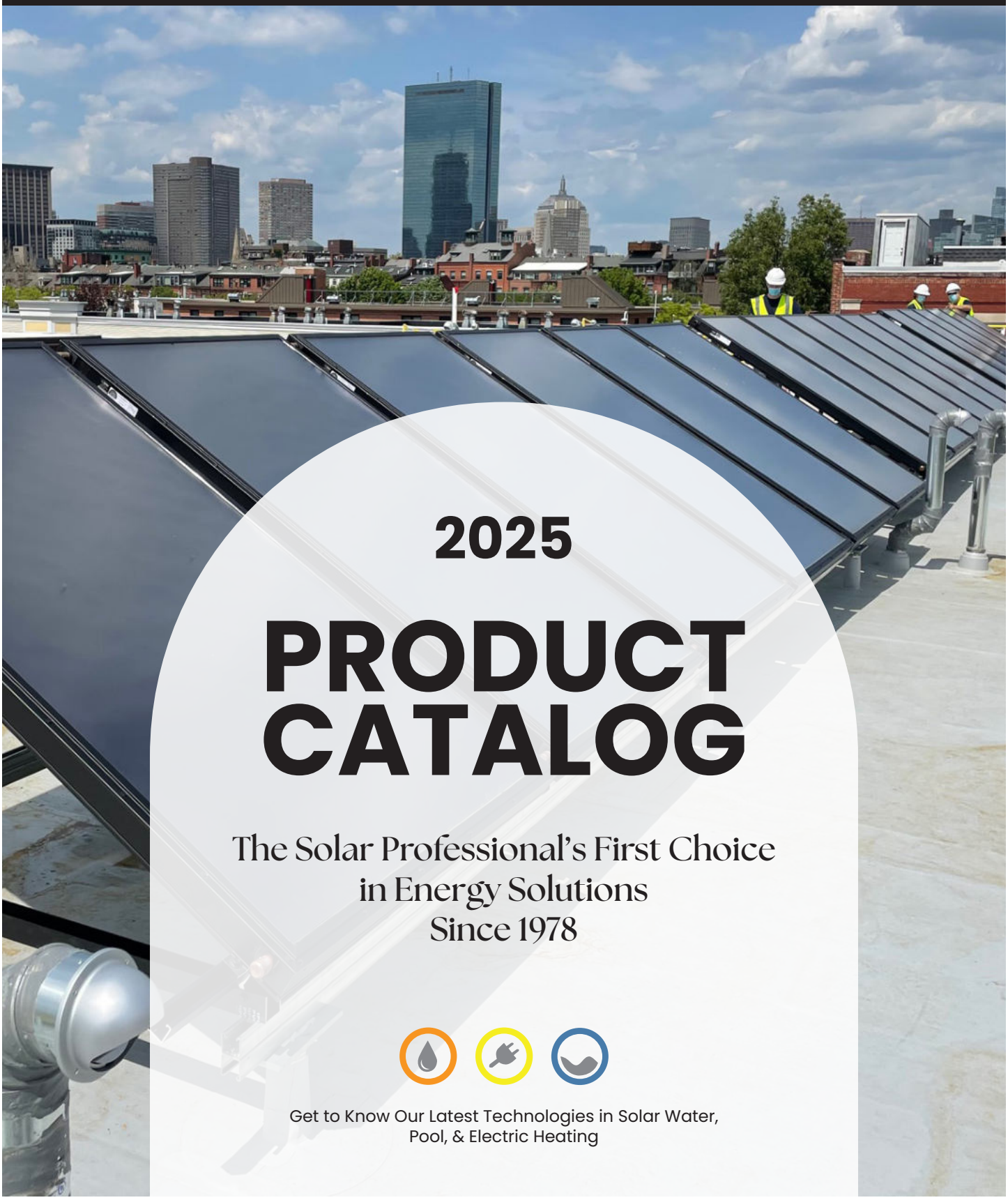
SunEarth®

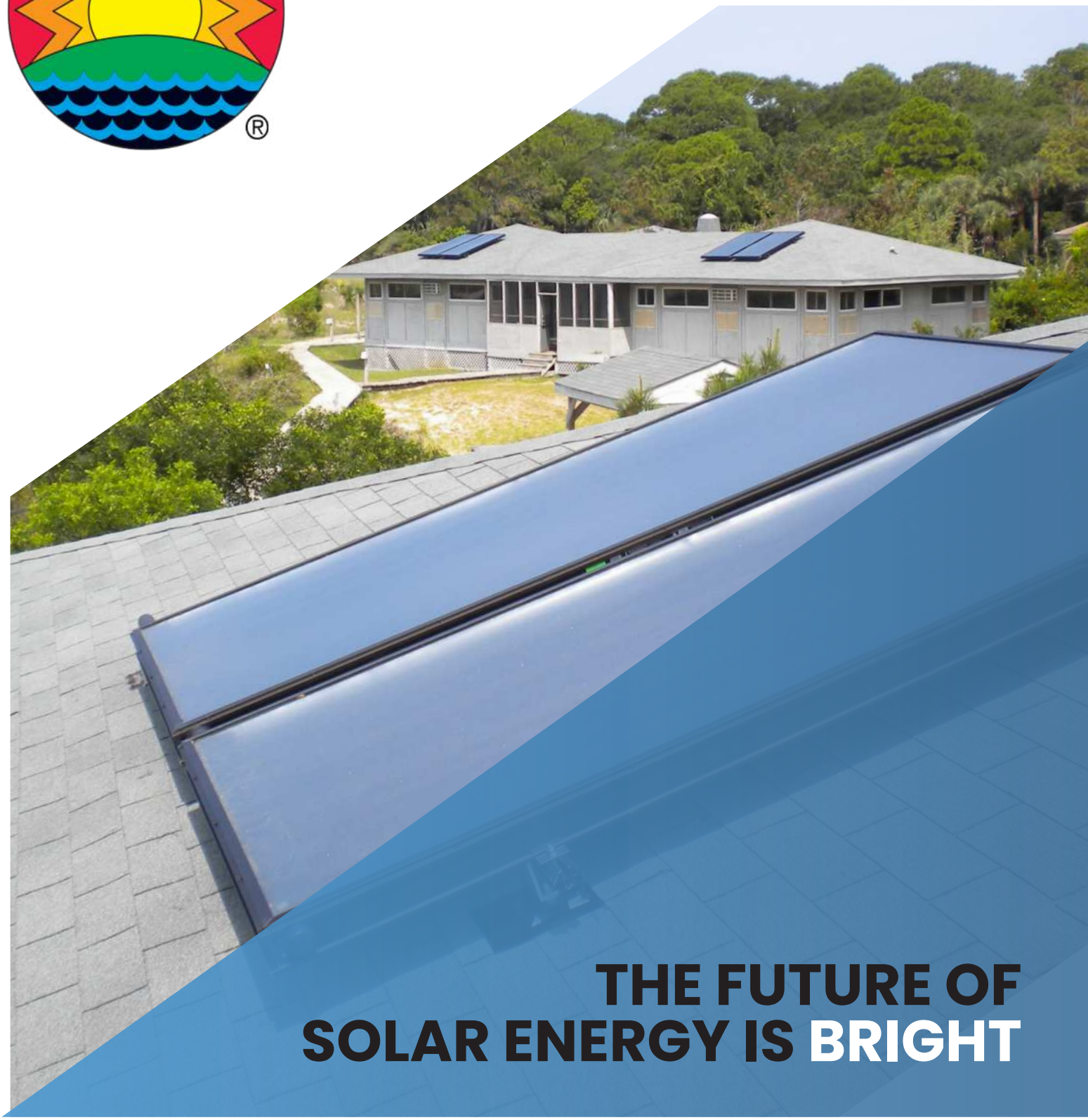


2025

PRODUCT CATALOG

The Solar Professional's First Choice
in Energy Solutions
Since 1978

Get to Know Our Latest Technologies in Solar Water,
Pool, & Electric Heating



THE FUTURE OF SOLAR ENERGY IS BRIGHT

CONTENTS

About SunEarth, Inc.

Since 1978, SunEarth has continuously built industry leading solar hot water collectors, components, and packaged systems. Every SunEarth product is constructed to exacting standards with the world's harshest climates and environmental conditions in mind. Our innovation in residential and commercial solar hot water heating solutions is recognized throughout the industry for performance, durability, and sleek design. SunEarth is a global leader in renewable energy technology, offering more ICC-SRCC certified systems than anyone else in the world.

ADHERING TO OUR VALUES OF QUALITY, RELIABILITY, DEPENDABILITY SINCE 1978

We promise to deliver excellence, strive for continuous improvement, and respond vigorously to market needs. Our corporate values are present in every aspect of our daily lives here at SunEarth, from the sales desk to the shipping department. Each of us at SunEarth has a responsibility for the quality of work we do, and we take pride in each of the products we bring to market. From excellence in materials and products backed with our rigid quality control standards, SunEarth provides components you can always count on.

Visit Our Website to Learn More About the Quality, Reliability, & Dependability of SunEarth Products

SunEarth: A History

1978
SunEarth, Inc. is founded in Santa Rosa, California, USA, and begins manufacturing the Empire Collector series of solar water heating systems.

1987-1992
SunEarth acquires assets of Acro Energy and relocates its headquarters to Ontario, California. In 1992, the SolaRay Corporation fully acquires SunEarth, Inc. In the same year, the Oasis all-copper pool collector, the SunSiphon, and the SunBurst absorber hit the market.

2002
SunEarth introduces the RexRack mounting system, CopperStor, and CompRail, the first ever commercial commpressed rail PV rack. In 2003, SunEarth relocates to a 5-acre facility in Fontana, California.

2006-2009
SunEarth begins collaborations with Steca and Rheem for advancements in controllers and water heaters. In 2009, SunEarth wins the Advanced Energy Manufacturing Tax Credit from the ARRA (America Reinvestment and Recovery Act).

2014
The Solaray Corporation, which includes SunEarth, Inc., Inter-Island Solar Supply, and Pacific Liquid & Air Systems, becomes a 100% employee-owned company.

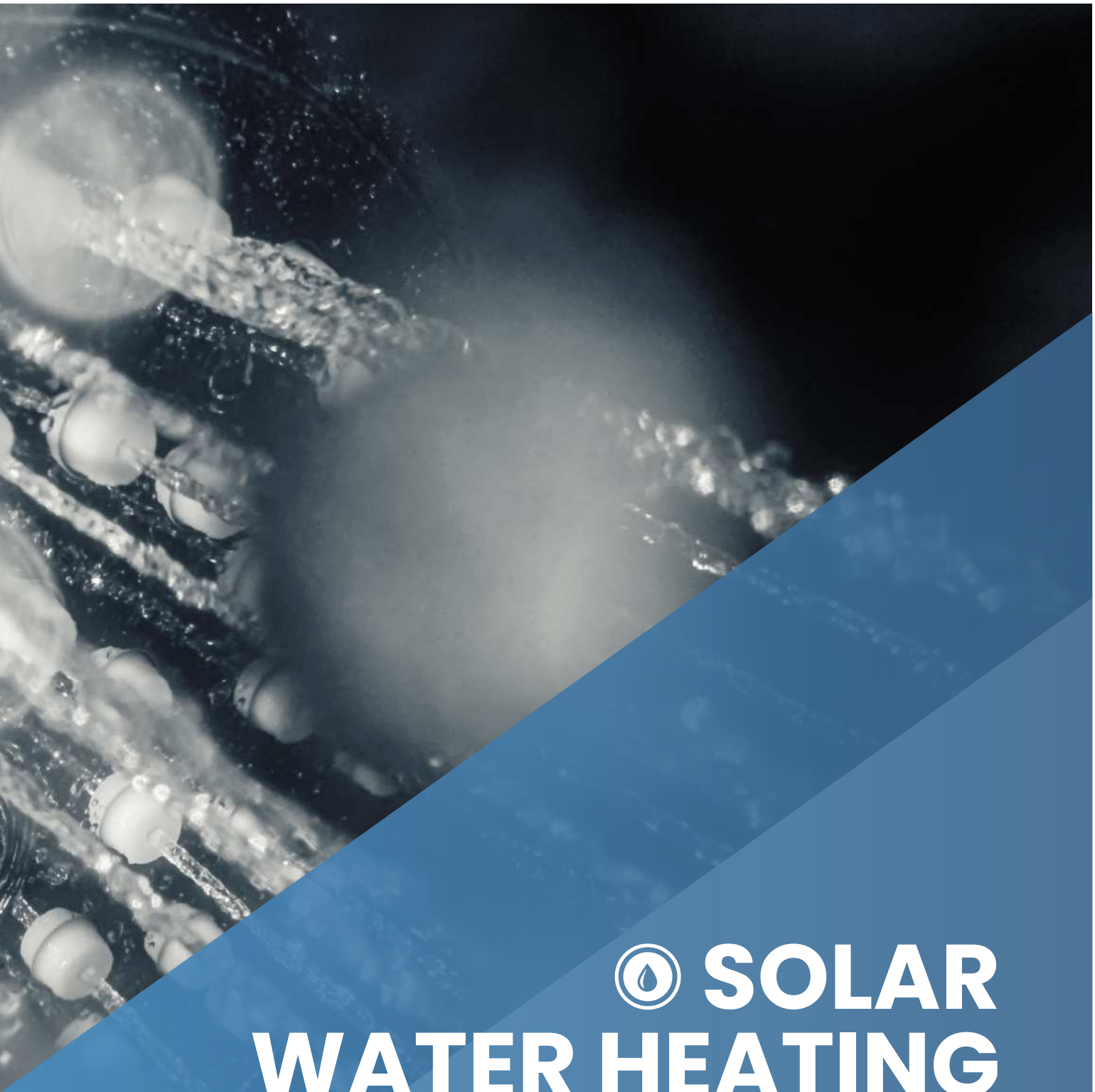
2018
Global Energy News Magazine announces SunEarth as "Best Solar Heating Manufacturer, Western USA" in the 2018 Global Energy Awards.

2019
SunEarth hits a milestone of 210MW since 2009!

WHAT'S A MEGAWATT (MW)?
A megawatt (MW) is a unit of energy capacity. A megawatt is equal to 1,000 kilowatts (kW).

2020-2021
SunEarth is awarded "Best Solar Product Manufacturer in the USA" by Corporate Vision Magazine, "Best Solar Manufacturer in California" in the North America Business Elite Awards, and "Most Innovative PV Water Heating Unit" for our SunWater unit by New World Report.

2022
Our recognition continues in 2022 as we're awarded for "Best Flat Plate Solar Thermal Manufacturer," selected for the 2022 Best of Fontana in the solar energy equipment category, and named #1 of the "Top 10 Renewable Energy Providers" by Energy Tech Magazine.



SOLAR WATER HEATING

At SunEarth, it's our mission is to educate the residential, commercial, and industrial sectors on the benefits of solar heating systems while manufacturing quality, high-performance products that promote renewable energy as a viable and cost-effective solution.

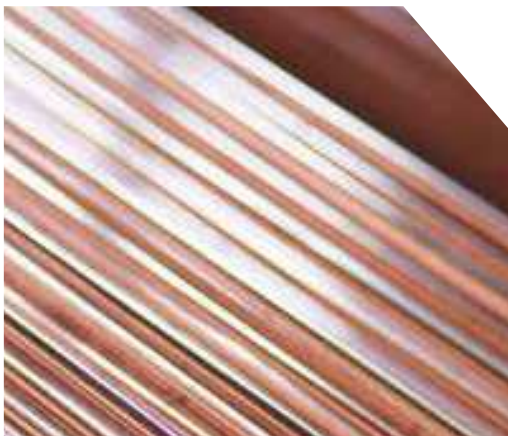
Standard Absorbers

SUNBURST SOLAR ABSORBER PLATES

Best for: Replacement Absorber for Existing Collectors

KEY FEATURES

- All-copper absorber plate
- The SunBurst absorber plate is designed for operating pressures up to 160 PSIG
- Available with semi-selective paint
- Available in custom sizes to fit more existing collectors

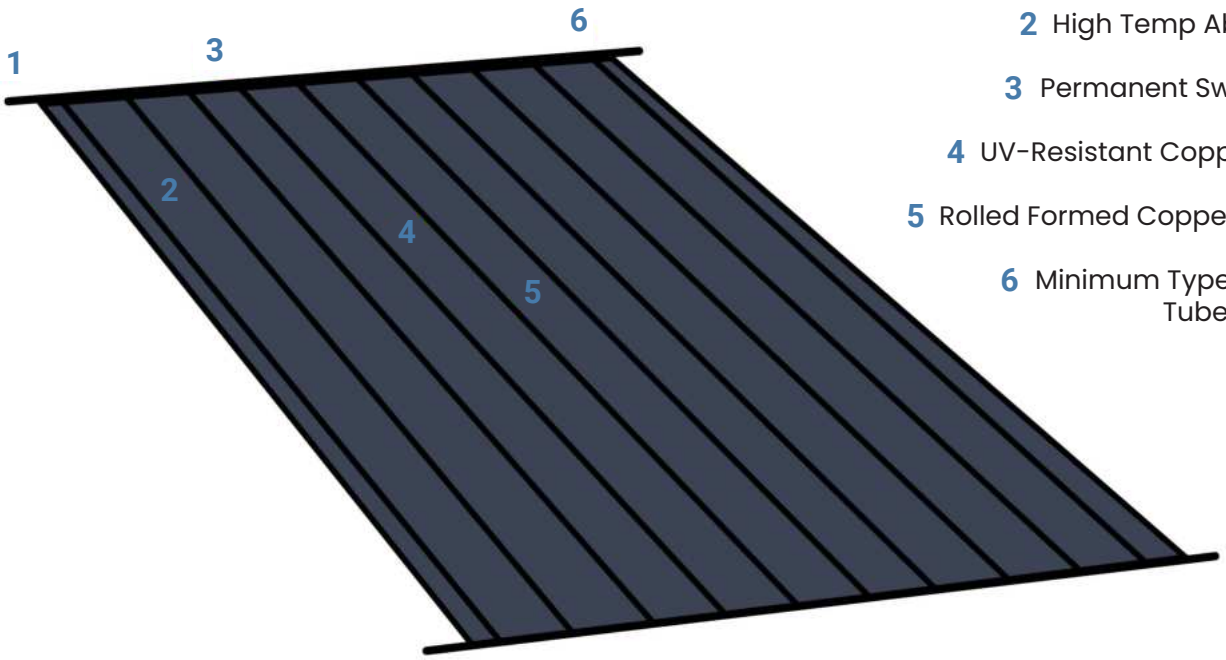


The SunBurst all-copper absorber plate is the heart of each SunEarth liquid flat plate collector. Each SunBurst absorber is constructed of a thick .008 roll-formed copper sheet that is continuously soldered to a Type-M copper header and riser piping assembly utilizing a non-corrosive solder paste. The riser piping is a minimum 1/2" O.D. Type-M copper tubing. The header piping is a minimum 7/8" O.D., 11/8" O.D. or 1 5/8" O.D. Type-M copper tubing depending upon the collector model chosen. The riser-to-header bond is made with a phosphorous brazing alloy with no less than 5% silver content and conforms to the American Welding Society's BCuP-3 classification. The SunBurst absorber has been independently tested by U.L Laboratories to UL Standard 1279, Section 30.2 for liquid containment. The absorber was submitted to an internal hydrostatic pressure of 2.5 times the rated positive pressure of 160 PSIG, or 400 PSIG, for one hour without evidence of leakage or rupture.

STANDARD ABSORBER SPECIFICATIONS

MODEL #	BTA/ MSA-20	BTA/MSA/ PS-21	BTA/MSA/ PS-24	BTA/ MSA-26	BTA/MSA/ PS-32	BTA/MSA/ PS-40	PS-40-1.5
GROSS AREA (SQ FT)	20.6	19.70	24.61	24.8	32.79	40.81	40.81
DRY WEIGHT (LBS)	62	18	20	80	26	33	36
FLUID CAPACITY (US GAL)	0.7	0.72	0.78	0.8	1	1.2	1.61
WATER DESIGN FLOW (GPM)	0.51	0.54	0.62	0.79	0.83	1.04	1.04
△ P AT DESIGN (PSIG)	0.003	0.015	0.017	0.005	0.018	0.020	0.020
MAX FLOW (GPM)	12	12	12	12	12	12	12
MAX PRESSURE (PSIG)	160	160	160	160	160	160	160
HEADER WIDTH (IN)	51.38	43 3/8	39 3/8	51.38	51 3/8	51 3/8	51 3/8
HEADER, CENTER TO CENTER (IN)	57.08	71 5/8	93 5/8	75.63	93 5/8	115 5/8	115 5/8

SUNBURST COMPONENTS



1 Minimum 5% Silver Brazed Joints

2 High Temp Absorber Coating

3 Permanent Sweat Connection

4 UV-Resistant Copper Construction

5 Rolled Formed Copper Absorber Plate

6 Minimum Type M Copper Riser Tubes and Manifolds

LASER-WELDED SOLAR ABSORBER PLATES

Best for: Replacement Absorber for Existing Collectors

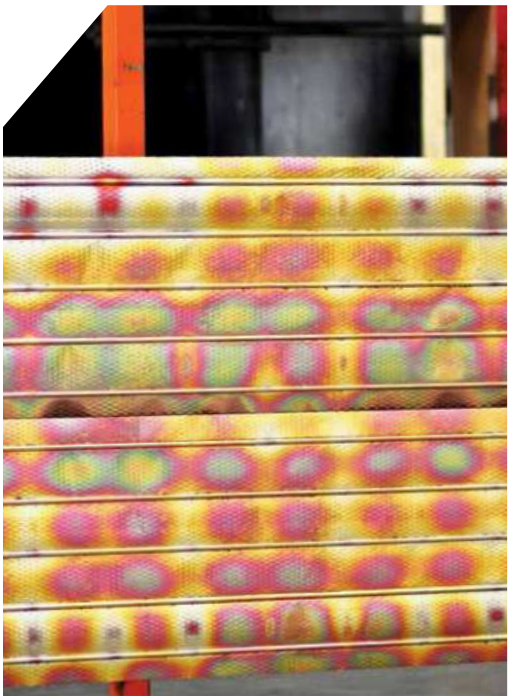
KEY FEATURES

- The absorber plate is designed for operating pressures up to 160 PSIG
- Available with semi-selective paint
- Available in custom sizes to fit more existing collectors

The laser-welded absorber shall consist of an aluminum plate of no less than .017-inch thickness. Risers shall be a minimum of .50-inch O.D. copper with a wall thickness of .025 inches on no more than 4.7-inch centers continuously laser welded to the plate. The risers shall be brazed to 1.125-inch O.D. Type M copper manifolds utilizing a copper phosphorous brazing allow with no less than a minimum 5 percent silver content and conforming to the American Welding Society's BCuP-3 classification. EPDM grommets shall isolate the manifold from the aluminum casing. The absorber plate shall be designed from a 160-psig maximum operating pressure and 400˚F maximum operating temperature.

Custom Absorbers

PROFESSIONALS' FIRST CHOICE FOR COMMERCIAL SOLAR



The extraordinary SunBurst all copper absorber plate is the heart of each SunEarth Empire Series liquid flat plate collector. Each SunBurst absorber is constructed of a thick .008" roll- formed copper sheet that is continuously soldered to a Type-M copper header and riser piping assembly utilizing a non-corrosive solder paste. The riser piping is a minimum 1/2" O.D. Type-M copper tubing. The header piping is a minimum 7/8" O.D., 1 1/8" O.D. or 1 5/8" O.D. Type-M copper tubing depending upon the absorber model chosen. The riser to header bond is made with a phosphorous brazing alloy with no less than 5% silver content and conforms to the American Welding Society's BCuP-3 classification.

The SunBurst absorber plate is designed for operating pressures up to 160 PSIG. The SunBurst absorber has been independently tested by U.L Laboratories to UL Standard 1279, Section 30.2 for liquid containment. The absorber was submitted to an internal hydrostatic pressure of 2.5 times the rated positive pressure of 160 PSIG, or 400 PSIG, for one hour without evidence of leakage or rupture. Available with Semi-Selective Paint and available in sizes up to 14 feet long, SunEarth can manufacture a replacement absorber to fit almost any enclosure giving new life to a collector, and extending the value created by a solar heating system.

SUNEARTH'S CUSTOM ABSORBERS	
Part Number	**Description**
CABS-P-24	Custom 3 x 8 Paint Absorber
CABS-P-24-0.75	Custom 3 x 8 Paint 3/4 Headers
CABS-P-32-0.75	4 x 8 Custom Paint Absorber 3/4 HDR
CABS-32	4 x 8 Custom Absorber
CABS-P-32-1.5	4 x 8 Custom Pain Absorber 1 1/2 HDR
CABS-P-40	Custom 4 x 10 Paint
CABS-P-40-0.75	Custom 40 Paint 3/4 Header
CABS-P-40-1.5	4 x 10 Custom Plate 1 1/2 HDR
CABS-P-48	4 x 12 Painted Custom Plate
CABS-P-48-1.5	Custom 4 x 12 Paint Absorber 1 1/2 HDR

Collectors

EMPIRE SERIES

LIQUID FLAT PLATE COLLECTORS

Best for: Residential & Commercial Water, Pool, & Space Solar Heating Systems

The SunEarth Empire Series liquid flat plate collectors are the solar professional's first choice. The Empire Series has everything that professional contractors demand in a solar collector: sleek appearance, high performance, versatility, ease of installation, and rugged field-tested durability. SunEarth's Empire Series collectors have over four decades of engineering and design built into every product. Their versatility makes them the best choice for residential, multi-family, or commercial systems. Large diameter Type-M copper riser tubes allow the Empire collectors to be used in glycol forced circulation, drainback, or direct system configurations depending upon the climate.

Available with either 1" or 1.5" internal headers, the Empire makes multi-family and commercial projects simpler to design, install, and maintain. The Empire's large commercial headers allow more collectors to be safely installed in a bank while continuing to accommodate normal expansion and contraction in the fully plumbed array. Solar water heating should never be a gamble. With SunEarth's Empire Series collectors professional contractors rest easy. They know their customers will enjoy trouble free and persistent energy savings for many years to come.

THERMAL PERFORMANCE RATINGS

BTU/ft² *DAY			
CATEGORY (Ti-Ta) **Ti: inlet fluid temp** **Ta: ambient temp**	**CLEAR (2000)**	**MILDLY CLOUDY (1500)**	**CLOUDY (1000)**
A (-9°F)	1290	965	645
B (9°F)	1210	890	570
C (36°F)	1035	720	410
D (90°F)	600	315	70
E (144°F)	150	-	-

*A-Pool Heating (Warm Climate) B-Pool Heating C-Water Heating (Warm Climate) D-Water Heating (Cool Climate) E-Air Conditioning/Industrial Process Heat. Thermal performance is obtained by multiplying the collector output for the appropriate application and insolation level by the total gross collector area *Collector ratings are derived from the Solar Rating & Certification Corp (SRCC) Document RM-1 and OG-100. Tested at water design flow rate.*

KEY FEATURES

- Available in six models, four sizes
- Can be used in glycol forced circulation, drainback, or open-loop system configurations, depending upon the climate and application.

AVAILABLE CONNECTIONS

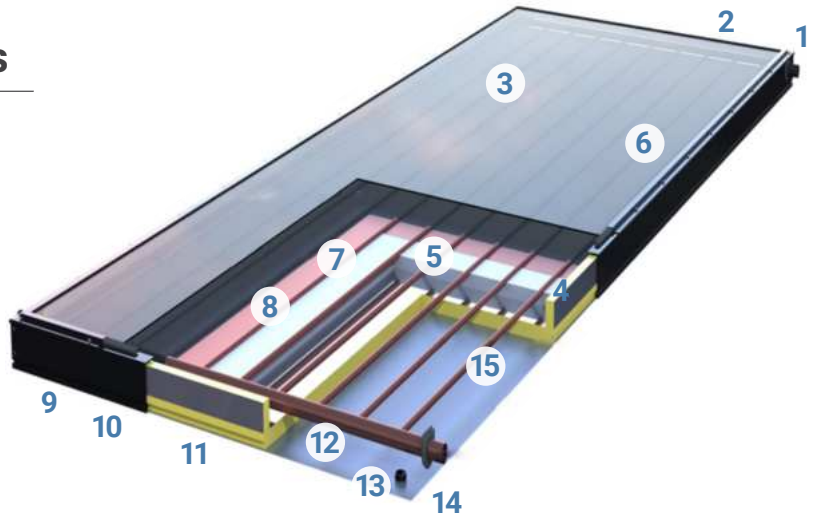
- 1" Sweat (Standard)
- 1" High Temperature FKM SX Press
- 1" High Temperature FKM O-Ring Union

DESIGN LIMITS

- Max Operating Pressure: 160psi
- Max Wind/Snow Load: ± 90psf
- Max Operating Temp: 300°F
- Max Flow Rate: 12gpm

EMPIRE COLLECTOR COMPONENTS

1 Riveted Corners
2 Stainless Steel Fasteners
3 Low Iron Tempered Glass
4 Low-Binder Fiberglass Insulation
5 Rigid Foam Insulation
6 Secondary Silicone Glazing Seal
7 Aluminum Copper Absorber
8 Blue Tee Absorber Coating
9 Integral Mounting Channel
10 Primary EPDM Glazing Seal
11 Minimum 5% Silver Brazed Joints
12 Painted Aluminum Backsheet
13 Vent Plugs
14 EPDM Grommets
15 Type M Copper Riser Tubes and Manifolds



EMPIRE COLLECTOR MATERIALS

Absorber Coating	SOLKOTE®
Absorptivity/Emissivity	94%/56%
Absorber Plate	Copper
Header Size	1" Nominal Copper (1.125"/0.875" OD)
Riser Size	3/8" Nominal Copper (0.50" OD)
Glazing	Low Iron Prismatic/Matt Tempered Glass
Glazing/Header Seal	EPDM
Frame	AA 6063-T6 Bronze Anodized Aluminum
Backing Plate	AA3105-H26 Painted Embossed Aluminum
Insulation	Polyisocyanurate and Fiberglass R≥12

EMPIRE SERIES MODEL SPECIFICATIONS

MODEL #	EP-21	EP-24	EP-32	EP-32-1.5 (COMMERCIAL)	EP-40 (LARGE FORMAT)	EP-40-1.5 (COMMERCIAL)
WIDTH (IN)	40.2	63.2	48.2	48.2	48.2	48.2
LENGTH (IN)	76.2	98.2	98.2	98.2	122.2	122.2
DEPTH (IN)	3.25	3.25	3.25	3.25	3.25	3.25
GROSS AREA (SQ FT)	21.8	24.7	32.8	40.9	40.9	40.9
NET APERTURE (SQ FT)	18.8	21.9	29.7	29.7	37.2	37.2
DRY WEIGHT (LBS)	70	80	106	115	141	150
FLUID CAPACITY (US GAL)	0.72	0.78	1	1.41	1.20	1.61
DESIGN FLOW RATE (GPM)	0.71	0.73	0.97	0.97	1.20	1.20
PRESSURE DROP AT DFR (PSIG)	0.003	0.005	0.006	0.006	0.009	0.006
MAX FLOW RATE (GPM)	12	12	12	25	12	25
MAX PRESSURE (PSIG)	160	160	160	160	160	160
STD HEADER WIDTH (IN)	43.8	39.38	51.38	51.38	51.38	51.38
STD HEADER DIAMETER (IN)	1	1	1	1.5	1	1.5
HEADER, CENTER TO CENTER (IN)	71.63	93.63	93.63	93.63	115.63	115.63

THERMORAY
LIQUID FLAT PLATE COLLECTORS

Best for: Markets with High Heat & Humidity, Reducing Possibility for Stagnation Overheat Conditions

Environmental concerns and rising energy costs have made renewable energy sources a focal point for many commercial building decision-makers. The Thermoray Series of solar collectors assist the commercial building owner in reducing and managing their energy bills, resulting in lower long-term costs. SunEarth has been and industry leader since 1978. Our products are built to withstand even the most demanding applications and are the industry's longest-lasting, trouble-free source of hot water. With an extensive background of commercial solar water heating installations, our products are ideal for hotels, multi-family buildings, hospitals, restaurants, and more.

AVAILABLE CONNECTIONS

- 1" Sweat (Standard)
- 1" High Temperature FKM SX Press
- 1" High Temperature FKM O-Ring Union

THERMORAY TR COLLECTOR MATERIALS

Absorber Coating	Selective MiroSol® TS
Absorbtivity/Emissivity	95%/20%
Absorber Plate	Aluminum
Header Size	1" Nominal Copper (1.125" OD)
Riser Size	3/8" Nominal Copper (0.50" OD)
Glazing	Low Iron Prismatic/Matt Tempered Glass
Glazing/Header Seal	EPDM
Frame	AA 6063-T6 Bronze Anodized Aluminum
Backing Plate	AA3105-H26 Painted Embossed Aluminum
Insulation	Polyisocyanurate and Fiberglass R≥12

DESIGN LIMITS

- Max Operating Pressure: 160psi
- Max Wind/Snow Load: ±90psf
- Max Operating Temp: 400°F
- Max Flow Rate: 12gpm

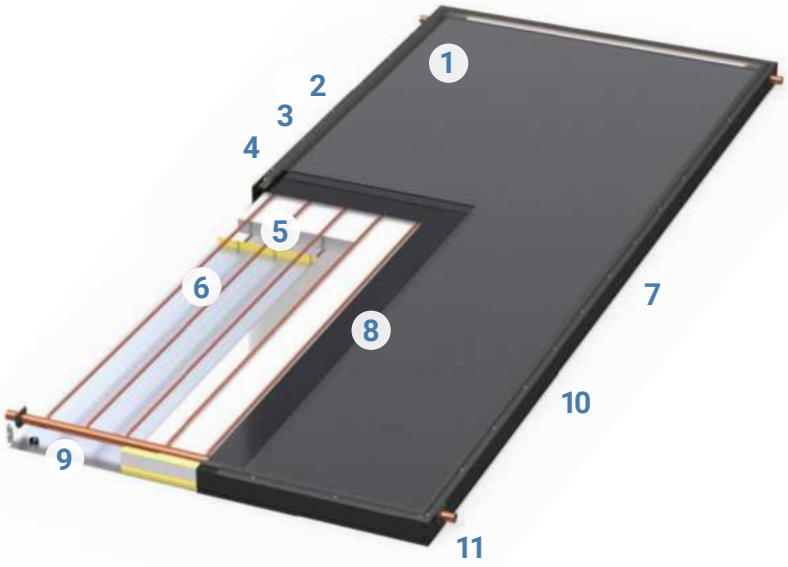
THERMAL PERFORMANCE RATINGS

BTU/ft² *DAY			
CATEGORY (Ti-Ta) **Ti: inlet fluid temp** **Ta: ambient temp**	**CLEAR (2000)**	**MILDLY CLOUDY (1500)**	**CLOUDY (1000)**
A (-9°F)	1344	1023	705
B (9°F)	1161	841	523
C (36°F)	892	577	280
D (90°F)	376	128	-
E (144°F)	-	-	-

*A-Pool Heating (Warm Climate) B-Pool Heating C-Water Heating (Warm Climate) D-Water Heating (Cool Climate) E-Air Conditioning/Industrial Process Heat. Thermal performance is obtained by multiplying the collector output for the appropriate application and insolation level by the total gross collector area *Collector ratings are derived from the Solar Rating & Certification Corp (SRCC) Document RM-1 and OG-100. Tested at water design flow rate.*

THERMORAY COLLECTOR COMPONENTS

1. Low Iron Tempered Glass
2. Silicon Glazing Seal
3. EPDM Glazing Seal
4. Fiberglass Insulation
5. Rigid Foam Insulation
6. Aluminum Backsheet
7. Stainless Fasteners
8. Aluminum Plate with Mirosol® TS Coating
9. Vent Plug
10. Integral Mounting Channel
11. Copper Manifolds

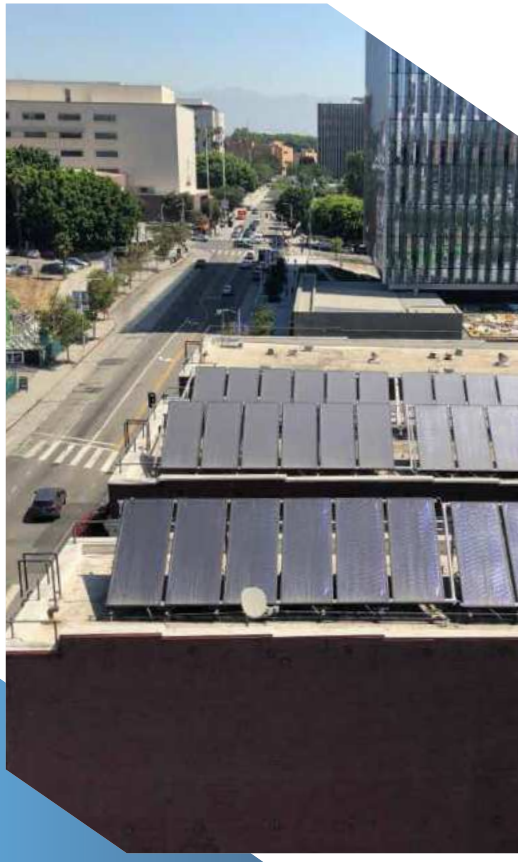


THERMORAY TR SERIES MODEL SPECIFICATIONS				
MODEL #	TR-20	TR-26	TR-32	TR-40
WIDTH (IN)	48.2	48.2	48.2	48.2
LENGTH (IN)	61.9	80.2	98.2	122.2
DEPTH (IN)	3.25	3.25	3.25	3.25
GROSS AREA (SQ FT)	20.6	24.8	32.8	40.9
NET APERTURE (SQ FT)	18.3	24	29.7	37.2
DRY WEIGHT (LBS)	62	80	98	130
FLUID CAPACITY (US GAL)	0.7	0.8	1.0	1.2
DESIGN FLOW RATE (GPM)	0.51	0.79	0.97	1.2
PRESSURE DROP AT DFR (PSIG)	0.005	0.005	0.006	0.009
MAX FLOW RATE (GPM)	12	12	12	12
MAX PRESSURE (PSIG)	160	160	160	160
STD HEADER DIAMETER (IN)	1	1	1	1

THERMORAY BLUE

LIQUID FLAT PLATE COLLECTORS

Best for: Commercial Applications



The ThermoRay Blue has everything that professional contractors demand in a solar collector: Sleek appearance, high performance, ease of installation, and rugged field-tested durability.

THERMORAY BLUE COLLECTOR MATERIALS

Absorber Coating	Highly Selective Eta Plus®
Absorptivity/Emissivity	95%/5%
Absorber Plate	Aluminum
Header Size	1" Nominal Copper (1.125" OD)
Riser Size	3/8" Nominal Copper (0.50" OD)
Glazing	Low Iron Prismatic/Matt Tempered Glass
Glazing/Header Seal	EPDM
Frame	AA 6063-T6 Bronze Anodized Aluminum
Backing Plate	AA3105-H26 Painted Embossed Aluminum
Insulation	Polyisocyanurate and Fiberglass R≥12

THERMAL PERFORMANCE RATINGS

BTU/ft² *DAY			
CATEGORY (Ti-Ta) **Ti: inlet fluid temp** **Ta: ambient temp**	**CLEAR (2000)**	**MILDLY CLOUDY (1500)**	**CLOUDY (1000)**
A (-9°F)	1471	1115	75
B (9°F)	1340	984	62
C (36°F)	1136	789	445
D (90°F)	774	445	146
E (144°F)	452	171	-

*A-Pool Heating (Warm Climate) B-Pool Heating C-Water Heating (Warm Climate) D-Water Heating (Cool Climate) E-Air Conditioning/Industrial Process Heat. Thermal performance is obtained by multiplying the collector output for the appropriate application and insolation level by the total gross collector area *Collector ratings are derived from the Solar Rating & Certification Corp (SRCC) Document RM-1 and OG-100. Tested at water design flow rate.*

AVAILABLE CONNECTIONS

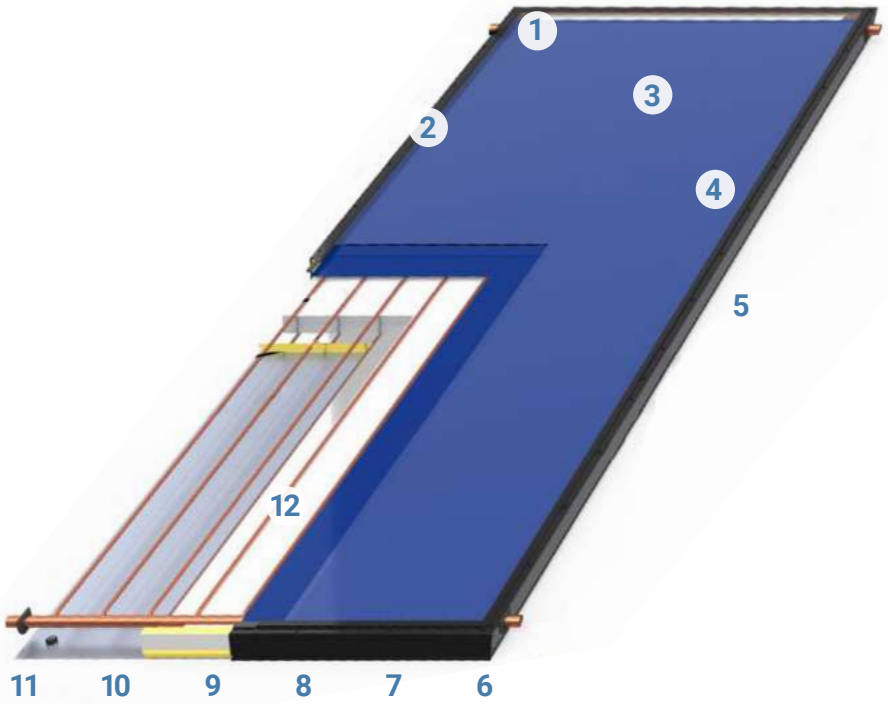
- 1" Sweat (Standard)
- 1" High Temperature FKM SX Press
- 1" High Temperature FKM O-Ring Union

DESIGN LIMITS

- Max Operating Pressure: 160psi
- Max Wind/Snow Load: ± 90psf
- Max Operating Temp: 400°F
- Max Flow Rate: 12gpm

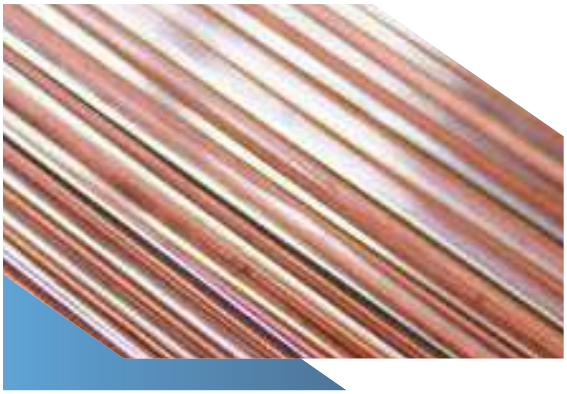
THERMORAY BLUE COLLECTOR COMPONENTS

1 Riveted Corners
2 Stainless Steel Fasteners
3 Secondary Silicone Glazing Seal
4 Aluminum Copper Absorber
5 Blue Tee Absorber Coating
6 Integral Mounting Channel
7 Primary EPDM Glazing Seal
8 Minimum 5% Silver Brazed Joints
9 Painted Aluminum Backsheet
10 Vent Plugs
11 EPDM Grommets
12 Type M Copper Riser Tubes and Manifolds



THERMORAY BLUE SERIES MODEL SPECIFICATIONS				
MODEL #	TRB-20	TRB-26	TRB-32	TRB-40 (LARGE FORMAT)
WIDTH (IN)	48.2	48.2	48.2	48.2
LENGTH (IN)	61.9	80.2	98.2	122.2
DEPTH (IN)	3.25	3.25	3.25	3.25
GROSS AREA (SQ FT)	20.6	24.8	32.8	40.9
NET APERTURE (SQ FT)	18.3	24.0	29.7	37.2
DRY WEIGHT (LBS)	62	80	98	130
FLUID CAPACITY (US GAL)	0.7	0.8	1.0	1.2
DESIGN FLOW RATE (GPM)	0.51	0.79	0.97	1.2
PRESSURE DROP AT DFR (PSIG)	0.005	0.005	0.006	0.009
MAX FLOW RATE (GPM)	12	12	12	12
MAX PRESSURE (PSIG)	160	160	160	160
STD HEADER WIDTH (IN)	51.38	51.38	51.38	51.38
STD HEADER DIAMETER (IN)	1	1	1	1
HEADER, CENTER TO CENTER (IN)	57.08	75.63	93.63	115.63

Collector Parts



STANDARD
ABSORBERS

The longevity of flat plate solar collectors can be attributed to the quality of its absorber. SunEarth's reputation is built upon the focus and attention we give in manufacture this vital collector component. All SunEarth collectors have at their heart an absorber designed and manufactured with one purpose, to stand the test of time and provide decades of reliable service in energy absorption and heat transfer.

EMPIRE & SUNBELT
ABSORBERS

SunEarth's Empire and Sunbelt Series of collectors utilize our proven SunBurst all copper absorber plates. Which have not deviated in size, performance or robustness since the introduction of SunEarth's Empire and SunBelt Series Collector's. SunEarth's dedication to our environment and the value inherent in each SunEarth collector endowed us to maintain allowances in our collector design for the Empire and Sunbelt Series Collectors absorber to be exchanged following its useful life and the collector given a new heat transfer engine. Saving hundreds of dollars in the cost of replacing a collector and saving up to 100 pounds of goods from needless energy waste that is required in the recycling of a collector.

EMPIRE & SUNBELT SERIES ABSORBER SPECIFICATIONS						
MODEL #	**PS-21**	**PS-24**	**PS-32**	**PS-32-1.5**	**PS-40**	**PS-40-1.5**
DRY WEIGHT (LBS)	18	20	26	29	33	36
FLUID CAPACITY (US GAL)	0.72	0.78	1	1.41	1.2	1.61
WATER DESIGN FLOW (GPM)	0.54	0.62	0.83	0.83	1.04	1.04
△ P AT DESIGN (PSIG)	0.015	0.017	0.018	0.018	0.020	0.020
MAX FLOW (GPM)	10	10	10	10	10	25
MAX PRESSURE (PSIG)	160	160	160	160	160	160
HEADER WIDTH (IN)	43 3/8	39 3/8	51 3/8	51 3/8	51 3/8	51 3/8
HEADER, CENTER TO CENTER (IN)	71 5/8	93 5/8	93 5/8	93 5/8	115 5/8	115 5/8

THERMORAY BLUE
ABSORBERS

SunEarth's ThermoRay Series of collectors is based upon the high performing absorber contained within the collector enclosure. Consisting of all copper fluid passages with large half-inch outside diameter risers, the ThermoRay absorber allows for utilization in drainback, indirect glycol and direct solar heating system designs. In accordance with SunEarth core product values, the ThermoRay series absorber is as durable as it is efficient and can be installed as an upgrade to any existing SunEarth Collector.

THERMORAY SERIES ABSORBER SPECIFICATIONS				
MODEL #	MSA/BTA-20	MSA/BTA-26	MSA/BTA-32	MSA/BTA-40
DRY WEIGHT (LBS)	11	16	18	23
FLUID CAPACITY (US GAL)	0.6	0.8	1	1.2
WATER DESIGN FLOW (GPM)	0.51	0.79	0.97	1.2
△ P AT DESIGN (PSIG)	0.004	0.005	0.006	0.009
MAX FLOW (GPM)	10	10	10	10
MAX PRESSURE (PSIG)	160	160	160	160
HEADER WIDTH (IN)	51 3/8	51 3/8	51 3/8	51 3/8
HEADER, CENTER TO CENTER (IN)	57 5/64	75 5/8	93 5/8	93 5/8

GLASS
COLLECTORS

All SunEarth collectors effectively employ Low-Iron, Patterned and Tempered glass to retain solar energy collected while maintaining the safety strengthening characteristics associated with tempering. Benefits harnessed without sacrificing aesthetic details that large panes of glass provide a building or landscape. Since SunEarth collectors are designed to be serviceable and rebuilt, replacement of glass in case of severe weather or malevolence can be accomplished safely with standard hand tools.

GLASS SPECIFICATIONS		
MODEL #	DESCRIPTION	COLLECTOR APPLICABILITY
10050-17	4 X 5 (46 X 59.68) SOLAR GLASS	TR/TRB-20
10050-15	46 IN X 78IN X 3.2MM SOLAR GLASS	TR/TRB-26
10050-10	4 X 10 (46 X 120) SOLAR GLASS	TR/TRB-40 / EP-40 / EP-40-1.5 / EP-40-0.75 / SB-40-0.75
10050-3	3 X 8 (34 X 96) SOLAR GLASS	EP-24 / EP-24-0.75 / SB-24-0.75
10050-8	4 X 8 (46 X 96) SOLAR GLASS	TR/TRB-32 / EP-32 / EP-32-1.5 / EP-32-0.75 / SB-32-0.75
10050-9	3 X 7 (38 X 74) SOLAR GLASS	EP-21

Connection Kits

Comprised of top tier components, SunEarth's connection kits bridge the gap between collectors and energy storage appliances. Utilizing SunEarth's connection kits ensures the seamless installation of a solar heating system. Our kits are size-matched to SunEarth's series of collectors with the specialty components approved by SunEarth as compatible for the temperatures and pressures associated with our high quality solar heating systems.

SYSTEM KITS

SunEarth's systems kits contain the necessary components and accessories to connect SunEarth Collector Array feed and return lines to an energy storage appliance.

Indirect Glycol System Kits include the following:

- Automatic Air Vent
- Automatic Air Vent Isolation Valve
- Collector to Air Vent Isolation Valve Adapters
- Pressure Relief Valve
- Collector to Pressure Relief Valve Adapters
- Collector bank Isolation Valves
- Temperature Sensor Thermowell
- PT1000 Collector Temperature Sensor
- Collector to Isolation Valves Adapters

INDIRECT GLYCOL SYSTEM KITS	
PART #	**DESCRIPTION**
100003-1	1" Collector to 1 CU Kit
100003-1.5	1½" Collector to 1½ CU Kit
100003-1-2	1" Collector to ¾ CU Kit
100003-1-1	1" Collector to ½ CU Kit

ADD-A-ROW KITS

SunEarth's Add-A-Row kits contain the necessary components and accessories when more than one bank of collectors is to be installed.

Indirect Glycol Add-A-Row Kits include the following:

- Automatic Air Vent
- Automatic Air Vent Isolation Valve
- Collector to Air Vent Isolation Valve
- Adapters
- Pressure Relief Valve
- Collector to Pressure Relief Valve Adapters
- Collector bank Isolation Valves
- Collector to Isolation Valves Adapters

INDIRECT GLYCOL ADD-A-ROW KITS	
PART #	**DESCRIPTION**
100002-1	1" Collector Add-A-Row Kit
100002-2-1.5	1½" Collector Add-A-Row Kit

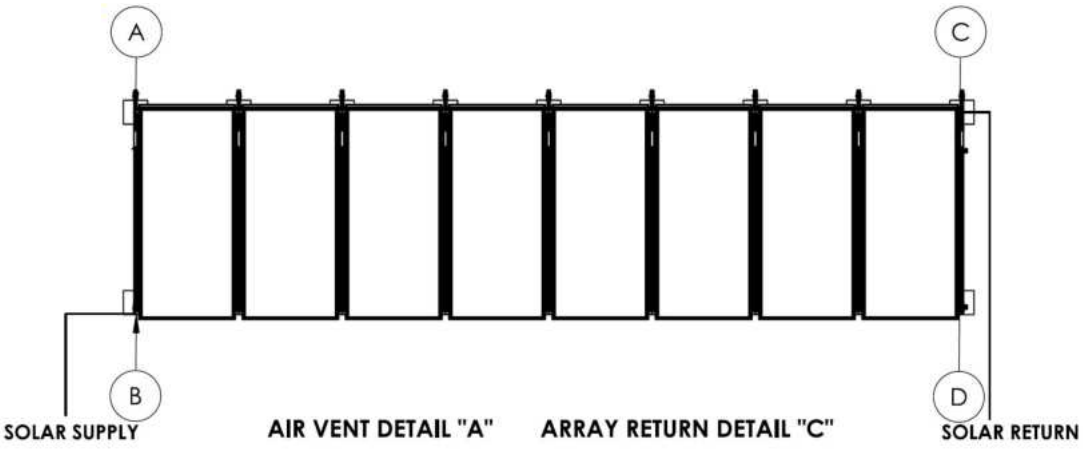
COLLECTOR KITS

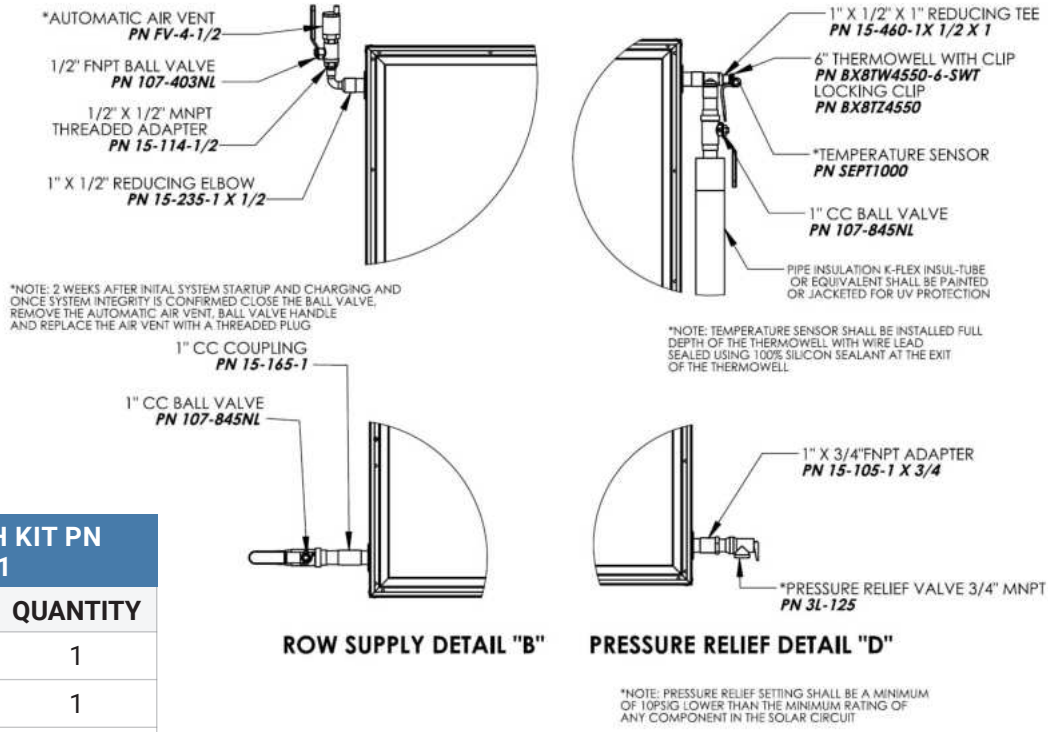
SunEarth's Collector Kits contain the necessary components and accessories when more than one collector is included in an array.

Collector Kits include connectors to couple collectors into a bank.

COLLECTOR KITS	
PART #	**DESCRIPTION**
100001-1	1" Collector Kit
100001-1.5	1½" Collector Kit

PLUMBING GLYCOL
SYSTEMS KIT





INCLUDED WITH KIT PN 100003-1	
PART #	**QUANTITY**
15-460-1	1
BX8TW4550-6SWT	1
BX8TZ4550	1
107-845NL	2
FV-4-1/2	1
107-403NL	1
15-114-1/2	1
15-235-1 X 1/2	1
15-105-1 X 3/4	1
3L-125	1

Controllers

SOLFLUX
CONTROLLER

Take your water heating controls next level with SunEarth's SolFlux Controllers. This smart monitoring solution puts control of water usage in your hands and utilizes sensor devices, gateway connectivity, dashboards, and advanced algorithms. Monitor heat stored in your solar tank in real-time. The SolFlux technology allows for all data to be available for two-way communication via our web or mobile application.

The SunEarth Solflux controller has a compact designer housing and variable input voltage range, which allows for universal use. The integrated heat measure system allows collection of numerical information on the system's solar yields. All controller data is available for 2-way communication via the SolFlux web and mobile application.

SOLFLUX SPECIFICATIONS	
PART #	**SESF-3221**
DIMENSIONS (HxWxD)	7.4" x 4.76" x 2.6"
OPERATING VOLTAGE	115VAC/60HZ *230 Volt Also Available*
CONTROL POWER CONSUMPTION	≤ 0.8 Watt
INPUT	3 temperature (PT1000) 1 Grundfos Direct Sensors™ (temperature / flow rate) 1 Grundfos Direct Sensors™ (temperature / pressure)
OUTPUT	2 Relay Switched Outputs: Max Load 250W (230V-) Or 0-10VDC/PWM control signal for pump speed 1 Non-Powered Relay Output: 20 A, 115 V AC - 230 V AC
TEMPERATURE SENSORS	SEPT 1000-PRB BX8T4550-6(9)-C-SWT 100006-2-C NPT Thermo-well
GRAPHIC DISPLAY	Animated LCD Display, Remote Accessibility
PROTECTION CLASS	IP 22/Din 40050
AMBIENT TEMPERATURE OPERATING RANGE	32˚F –132˚F
WEIGHT	5oz.

KEY FEATURES

- Remote Monitoring with the SolFlux App
- Compact Multi-part Designer Casting
- Remote Software Updates via Wifi Connectivity
- Screw Terminals for Rapid, Universal Installation
- 2-Year Warranty

COLLECTOR DISPLAYS

FOR SOLAR WATER HEATING SYSTEMS

SunEarth offers a complete line of display sized equipment. Ideal for presentations and showcases SunEarth's displays are constructed of the same materials and our full-size products. SunEarth collector displays are available in tabletop Mini size 10" X 20" as well as small scale 24" x 48" either with or without scaled mounting hardware.

Cut away displays allows for additional non visible details to be identified adding to the confidence in construction and longevity that SunEarth's Collectors provide.

COLLECTOR DISPLAY MODELS		
MODEL #	**DIMENSIONS**	**DESCRIPTION**
MINI	10" x 20"	Cutaway Display Empire Tabletop Collector
MINI-FUNCTIONAL	10" x 20"	Acrylic Glazed Display Empire Tabletop Collector
MINI-CP	10" x 20"	Cutaway Display Copperheart Collector
CORNER	6" x 6"	Cutaway Corner Section Of Empire Collector
EP-8	24" x 48"	Acrylic Glazed Display Empire Small Size Collector
TRB-8	24" x 48"	Acrylic Glazed Display Thermoray Small Size Collector
PS-8	24" x 48"	Small Size Sunburst Absorber
BTA-8	24" x 48"	Small Size Thermoray Absorber
DB-1.5-DISPLAY	12" x 24"	Cutaway Display Copperstor Drainback Tank

Reservoirs

COPPERSTOR

COPPER DRAINBACK RESERVOIRS

The CopperStor represents a cost effective advance in drainback reservoir design. Fabricated from spun-end seamless copper tubing with no ferrous metal components, the CopperStor is nearly impervious to corrosion and allows for direct sweated connections without the need for troublesome dielectric unions.

High temperature 5% silver brazed joints ensure high strength and are not affected by lower temperature flames used for sweating the connections. A 3/4" brass cap on the top of the units creates a simple and cost effective method for checking the fill level with a dipstick. CopperStor reservoirs are finished with a water-based matte black paint and wrapped in 1/2" Rubatex insulation to minimize heat loss and sound.

CopperStor drainback reservoirs have been designed for use with the SunEarth Cascade OG-300 solar water heating system, but they may be incorporated into most other professionally engineered drainback systems.

COPPERSTOR SPECIFICATIONS			
MODEL #	**DB-5.0**	**DB-7.5**	**DB-10.0**
WIDTH (IN)	12	18	24
LENGTH (IN)	50	50	50
DEPTH (IN)	5	5	5
DRY WEIGHT (LBS)	42	56	84
FLUID CAPACITY (US GAL)	5.0	7.5	10.0
WET WEIGHT (LBS)	82	117	164
MAX OPERATING PRESS (PSIG)	160	160	160
CONNECTION PIPE DIAMETER (IN)	3/4	3/4	3/4

TYPICAL APPLICATIONS

CopperStor drainback reservoirs can be seamless coupled with the SunEarth HE double wall solar reservoir to create our popular Cascade indirect solar water heating system. Using the SunEarth HE reservoir climates the need for a second pump and external heat exchanger. The CopperStor drainback reservoir can easily be hung from the wall adjacent to the SunEarth HE reservoir for an easy and unobtrusive installation.

For applications where it is not economical to replace the existing storage reservoir or preferable to have a external heat exchanger, the CopperStor may be used in combinations with our SunPlate heat exchanger in our versatile Cascade 2 indirect solar water heating system.

DRAINPACK

COPPER DRAINBACK RESERVOIRS

The Drainpack advances drainback reservoir design by allowing the drainback reservoir to be mounted on the solar storage tank. The concentric radius of the reservoir to storage tank delivers an aesthetically pleasing solution while consolidating the components required in a drainback solar water heating system to a central location, simplifying commissioning and maintenance.

Drainpack reservoirs have been designed for easy integration into SunEarth's Cascade ICC-SRCC OG-300 systems as well as other professionally designed drainback systems.

KEY FEATURES

- 4" Copper parallel Manifolded Sections
- AWS BCup3 silver brazed joints
- ¾" Sweat connections
- Black painted
- ½" Rubatex Insulation
- Integrated visual sight glass
- Return dip tube for quiet operation

TYPICAL APPLICATIONS

SunEarth's Drainpack reservoirs can be seamlessly coupled with the SunEarth HE solar tanks creating the basis of our Drainpack HWS a appliance solution for our Cascade series of solar heater heating systems. Available in 2 sizes which perfectly pair with SU80HE-1 or SU120HE-1 tanks and offer 6.0 gallons and 7.2 gallons of fluid capacity respectively.

DRAINPACK SPECIFICATIONS		
MODEL #	**DP-6.0**	**DP-7.2**
SOLAR TANK PAIRING	SU80HE-1	SU80HE-1
DRY WEIGHT (LBS)	50	60
FLUID CAPACITY (US GAL)	6.0	7.2
MAX OPERATING PRESS (PSIG)	90	90

Racking

REXRACK
SOLAR COLLECTOR RACK

Best for: Ground & Low-Slope Roof Installations

The SunEarth RexRack sets the structural standard for residential and commercial liquid flat plate collector mounting hardware. RexRack is engineered to meet exacting contractor racking requirements for strength, simplicity, versatility, durability and cost. Constructed of corrosion-resistant 6063-T6 anodized aluminum, RexRack is the right choice for challenging high wind and snow load conditions or everyday new or retrofit construction projects.

RexRack provides solar professionals with an incredibly strong, versatile, and modular residential and commercial racking solution. RexRack incorporates telescoping rear legs to accommodate uneven roof surfaces and to provide a range of slope adjustment for the array. RexRack is the clear racking choice in areas that are prone to high wind loads.

RexRack is differentiated from traditional mounting systems by eliminating lateral runners on the roof surface. RexRack runners are fabricated from 6063-T6 aluminum and are located directly under the solar collectors. By relocating the runners to the backside of the collectors, a reinforced lattice is created between the two strut runners and the collectors that are clamped to them. The array itself becomes a single unified rigid body, so the rear legs need only carry the vertical load of the array, eliminating excessive cross bracing required for lateral loads in conventional racking systems.

KEY FEATURES

- Incorporates telescoping rear legs to accommodate uneven roof surfaces and provide a range of slope adjustment for the array
- Constructed from corrosion-resistant anodized 6063-T6 structural aluminum
- All fasteners are stainless steel
- Preferred racking choice in areas that are prone to high wind loads

MOUNTING HARDWARE

SunEarth's versatile Solar Strut mounting hardware is the contractor's clean-line choice for mounting SunEarth flat plate collectors.

- Solar Strut comes in a variety of standard lengths up to 20 ft.
- Available as bronze anodized.
- The profile is available in either 1 5/8 in x 1 5/8 in x 1/8 in, or
- 2 1/2 in x 1 5/8 in x 1/8 in

Collector mounting clips are attached to the Solar Strut with our exclusive stainless steel sliding nut and bolt assembly. Solar Strut and the stainless steel attachment assembly are engineered for use in the world's most corrosive environments.

REXRACK COMPONENTS

1 Aluminum Support Strut

2 C-SSN Mounting Clip

3 Anodized Aluminum Telescoping Legs

4 Stainless Steel Fasteners

REXRACK SPECIFICATIONS	
SUPPORT STRUTS/LEGS	AISI 6063 T6 Anodized Aluminum
MOUNTING FASTENERS	AISI 304 Stainless Steel
COLLECTOR TILT ANGLE	20˚ to 60˚ from Horizontal
UPPER SUPPORT STRUT	20% of Collector Length
LOWER SUPPORT STRUT	6” to 20% of Collector Length
LOWER LEG	90˚ or 70˚ To Collector
COATING	Commercial Bronze and Clear
WARRANTY	5 Years on Finish, 10 Years on Parts

LANDSCAPE RACK

SOLAR COLLECTOR RACK

Best for: Low-Profile Installations

KEY FEATURES

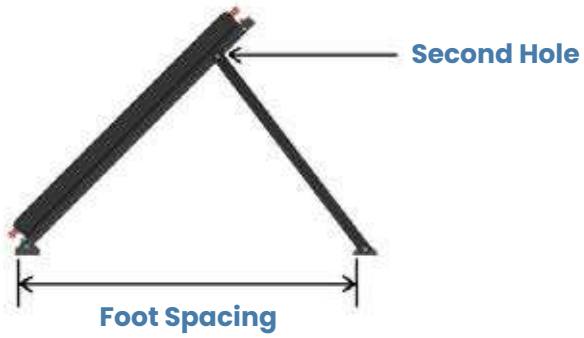
- Ideal for low-profile installations on flat roofs and higher collector tilt on pitched roofs
- Constructed from corrosion-resistant anodized 6063 structural aluminum
- Engineered for challenging high wind and snow load conditions
- Available in 3 leg lengths

Quick to install and simple to use, the Landscape Racks incorporate SunEarth's elegant clip and groove collector attachment system requiring no collector frame penetrations. SunEarth Landscape Racks are the choice for mounting SunEarth flat plate collectors tilted in a landscape orientation. Ideal for low-profile mounts on flat roofs and for higher collector tilts on pitched roofs, Landscape Racks can also be used for "saw tooth" mounting on East or West sloped roofs with the collectors tilted to the South in portrait orientation.

Constructed from corrosion-resistant anodized 6063 structural aluminum and stainless steel fasteners, SunEarth Landscape Racks are engineered for challenging high wind and snow load conditions while the simplicity of design provides the best value solution for everyday new or retrofit construction projects.

SunEarth's Landscape Racks are available with three different leg lengths. For each leg length a range of tilt angles is achieved by changing the leg angle and bolt attachment hole on the supporting strut. By selecting the appropriate Landscape Rack package, collector tilts between 20° and 60° from roof pitch can be achieved.

SunEarth's Landscape racks are the result of an exhaustive design and engineering process, including extensive FEA computer modeling, physical testing, and structural engineering review. For a typical installation of a 4'x10' SunEarth collector with up to 50° tilt, the rack will support a collector load of 108 lbf/ft² due to wind or snow loads while maintaining the structural integrity of the rack and collector system. Stamped structural engineering analysis and calculations are available for select states upon request.



COLLECTOR TILT AND FOOT SPACING TABLE USING FIRST HOLE & SUPPORT STRUT									
MODEL #	**20°**	**26°**	**29°**	**38°**	**40°**	**45°**	**50°**	**55°**	**60°**
MTG-LSR-55-19-BA	51.75”	-	-	-	-	-	-	-	-
MTG-LSR-55-25.5-BA	-	54.5”	42.5”	-	-	-	-	-	-
MTG-LSR-55-40-BA	-	-	-	62.25”	59.25”	51”	39.25”	-	-

MODEL #	**20°**	**26°**	**31°**	**38°**	**40°**	**45°**	**50°**	**55°**	**60°**
MTG-LSR-42-19-BA	42.5”	34.75”	-	-	-	-	-	-	-
MTG-LSR-42-25.5-BA	-	-	45.5”	30.5”	-	-	-	-	-
MTG-LSR-42-40-BA	-	-	-	-	-	54.75”	49”	43.5”	37.75”

COLLECTOR TILT AND FOOT SPACING TABLE USING SECOND HOLE & SUPPORT STRUT									
MODEL #	**22°**	**25°**	**29°**	**34°**	**42°**	**45°**	**50°**	**55°**	**60°**
MTG-LSR-55-19-BA	46.25”	39.25”	-	-	-	-	-	-	-
MTG-LSR-55-25.5-BA	-	-	49”	35.5”	-	-	-	-	-
MTG-LSR-55-40-BA	-	-	-		57.5”	54.5”	48”	14”	32.5”

MODEL #	**27°**	**32°**	**36°**	**40°**	**45°**	**49°**	**50°**	**55°**	**60°**
MTG-LSR-42-19-BA	37.25”	27.75”	-	-	-	-	-	-	-
MTG-LSR-42-25.5-BA	-	-	40.75”	36”	28”	-	-	-	-
MTG-LSR-42-40-BA	-	-	-	-	-	50.75”	50”	46.25”	42.25”

TILT ANGLE (° FROM HORIZONTAL) LANDSCAPE RACK: Rack will resist the tabulated loads on supported collector(s) in psf (lbs/ft²) uplift, down force FOS 1.5									
COLLECTOR	**20°**	**25°**	**30°**	**35°**	**40°**	**45°**	**50°**	**55°**	**60°**
EP/TR/TRB 21	207, 207	207, 207	207, 207	207, 207	207, 207	207, 207	207, 207	135, 135	135, 135
EP/TR/TRB 32-1.5	134, 134	134, 134	134, 134	134, 134	134, 134	134, 134	134, 134	87, 87	87, 87
EP/TR/TRB 40-1.5	108, 108	108, 108	108, 108	108, 108	108, 108	108, 108	108, 108	70, 70	70, 70

SOLAR STRUT
MOUNTING RAILS

SunEarth's versatile Solar Strut Racking System is the contractor's clean-line choice for installing SunEarth hot water collectors. Solar Strut is available in continuous lengths up to 20" bronze anodized finish. Available in depth of 1-5/8" allowing optimization of roof mount spacing.

Collector attachment clamps are affixed to the Solar Strut Rails with our exclusive stainless-steel sliding nut and bolt assembly. Engineered for use in the world's harshest environments, SunEarth's Solar Strut racking system ensures a safe and secure solar system installation.

RAIL SPAN IN INCHES – ROOF WIND ZONE 1

Gable Roof ≤ 45° and Monoslope Roofs ≤ 3°

RAIL SPAN (INCHES) for 1 5/8" SOLAR STRUT

		WIND SPEED, 3-Second Gust (mph)										
		85	90	100	105	110	120	125	130	140	145	150
ROOF SNOW LOAD (PSF)	0	65	62	57	55	53	49	48	46	44	43	42
	10	53	53	53	53	53	49	48	46	44	43	42
	20	45	45	45	45	45	45	45	45	44	43	42
	30	40	40	40	40	40	40	40	40	40	40	40
	40	37	37	37	37	37	37	37	37	37	37	37

Monoslope Roofs ≤ 10°

RAIL SPAN (INCHES) for 1 5/8" SOLAR STRUT											
		WIND SPEED, 3-Second Gust (mph)									
		85	90	100	105	110	120	125	130	140	145	150
ROOF SNOW LOAD (PSF)	0	53	51	48	47	46	44	43	42	40	39	38
	10	53	51	48	47	46	44	43	42	40	39	38
	20	45	45	45	45	45	44	43	42	40	39	38
	30	40	40	40	40	40	40	40	40	40	39	39
	40	37	37	37	37	37	37	37	37	37	37	37

Monoslope Roofs 10° < Ø < 30°

RAIL SPAN (INCHES) for 1 5/8" SOLAR STRUT											
		WIND SPEED, 3-Second Gust (mph)									
		85	90	100	105	110	120	125	130	140	145	150
ROOF SNOW LOAD (PSF)	0	58	56	51	49	47	44	43	42	40	39	38
	10	53	53	51	49	47	44	43	42	40	39	38
	20	45	45	45	45	45	44	43	42	40	39	38
	30	40	40	40	40	40	40	40	40	40	39	38
	40	37	37	37	37	37	37	37	37	37	37	37

Notes: Max. Man Roof Height 30ft. Wind Exposure B Occupancy Category II, Importance Factor 1.0. Maximum Deflection Limit L/180 Topographic Facor 1.0. Seismic Design (max) Seismic Design Category E with AP = 1.0, Rp = 2.5,1p = 1.0, SDS = 2.0G

REXRACK ORDERING DETAILS	
MODEL #	**10070-(SIZE)-(LENGTH)-(FINISH)**
SIZE	250: 2.5 in., 158: 1.625 in.
LENGTH	###: Length in Inches
FINISH	Bronze Anodized (BA)
SAMPLE	0070-158-240 240 in length, 15/8 in solar strut BA finish

Hot Water Stations

THE ISLANDER
SOLAR HOT WATER STATION

Innovative installation practices go hand in hand with innovative products and the Islander, SunEarth's most recent addition to its hot water station lineup, is nothing short of innovative. The Islander is known for performance, longevity, and ease of installation that's guaranteed to satisfy the professional installer.

THE ISLANDER HWS MATERIALS

Tank	Glass Lined Steel Vessel with 2" Non-CFC Foam Insulation
Bypass Valves	3/4" Nominal Forged Brass Threaded (LEAD Free) Chrome Plated Brass Ball
Expansion Tank	16-Gauge Cold Rolled Steel 100% Butyl Water Chamber Polypropylene Lined
Relief Tubes	Polypropylene 105,000 BTUH or Less Rating
Pump	1/25 HP Stainless Steel
Mixing Valve	3/4" Nominal Bronze (LEAD Free) EPDM Seals Engineered Polymer Piston
Flex Lines	Coated Stainless Steel Internal Dielectric Insulator

ISLANDER TECHNICAL SPECIFICATIONS	
SYSTEMS	
MAXIMUM COLLECTOR AREA[1]	96 ft²
MAXIMUM BUILDING HEIGHT[2]	30 ft
POTABLE PLUMBING DIAMETER	³/₄"
SOLAR ELECTRIC	
MAXIMUM POWER INPUT	25 Watts
INPUT VOLTAGE	120V
BACKUP HEATING ELEMENT ELECTRICAL (OPTIONAL)	
MAXIMUM POWER INPUT	4500 Watts
INPUT VOLTAGE	240V

1. Collectors plumbed in parallel
2. Based on 20 feet of piping to the collectors

HOT WATER	
COMPONENT	**PART NUMBER**
SOLAR PUMP	UP15-10SU7P/LC
SOLAR CONTROLLER	SETR0301U
WATER EXPANSION TANK	PH5
BACKUP ELEMENT	9000092015
BACKUP ELEMENT THERMOSTAT	9000509015

THE ISLANDER FEATURES & COMPONENTS

1 **PUMP.** Wet-rotor type whereas the pump and motor form an integral unit with-out shaft seals. Utilizes a stainless-steel impeller/volute with integrated check valve ideal for direct solar heating systems.

2 **STORAGE TANK WITH BACKUP HEATING.** Glass lined and pressure rated the tank uses R-17 insulation and painted metal jacket. Includes a 4500-Watt heating element as a back-up for confidence in hot water availability. The storage tank is protected by a 150 psi/210°F relief valve and aluminum sacrificial anode.

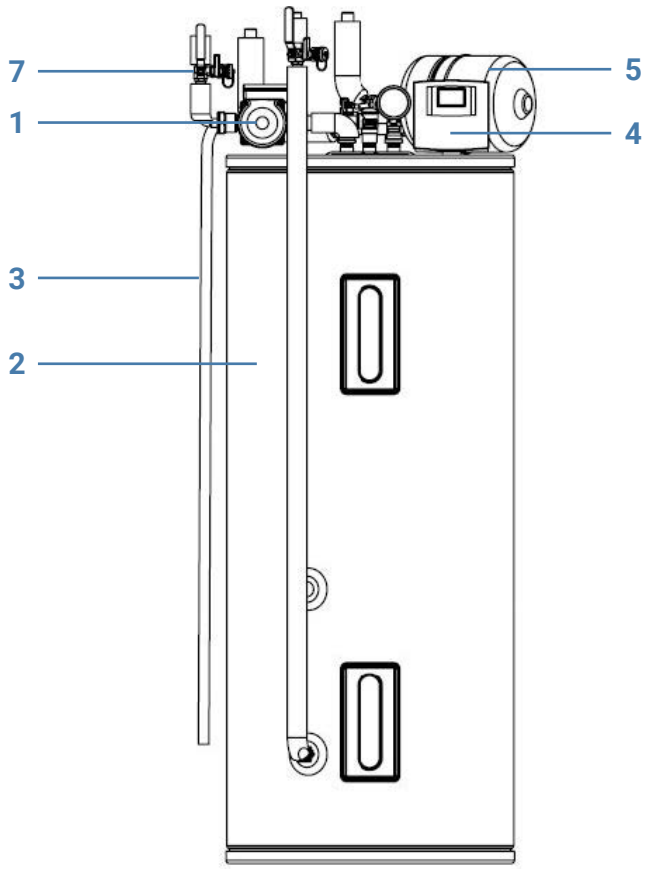
3 **RELIEF VALVE DRAIN TUBES.** Constructed from High Temperature Polypropylene with a rating of 105kBtu/hr.

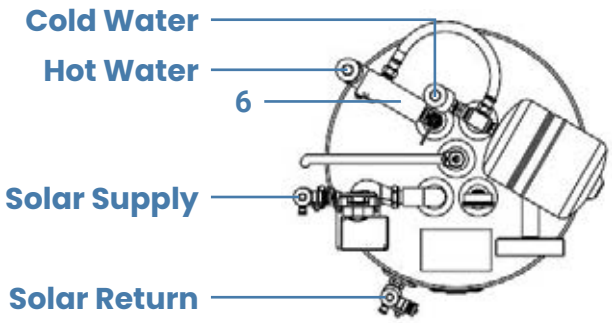
4 **CONTROLLER.** Operates the pump through differential temperature algorithms, the Liquid Crystal Display (LCD) offers insight into the system operation and condition. The controller reports temperature readings from 3 distinct locations; (T1) collector, (T2) bottom of storage tank and (T3) top of storage tank.

5 **THERMAL EXPANSION TANK.** Ensures consistent pressure throughout the wide operational temperature range. The NSF Standard 61 rated potable tank has a total volume of 2.1 gallons and an operational limit of 150psi/200°F.

6 **MIXING VALVE.** Distributes controlled temperature water by incorporating a fast acting, high quality thermostatic element. Factory set to 120°F the mixing valve allows higher storage temperatures saving more energy and reducing the chances of Legionella bacterial growth in the water. Valve can be adjusted between 90°F and 130°F.

7 **SERVICE VALVES.** Comprised of lead free ball drain valves that eliminate 3 leak paths, service valves allow for trouble-free flushing, draining and filling of the solar loop.





MODELS					
MODEL #	**ISLANDER65**	**ISLANDER80**	**ISLANDER8012**	**ISLANDER120**	**ISLANDER12012**
DESCRIPTION	Islander HWS 65-Gallon	Islander HWS 80-Gallon	Islander HWS 80-Gallon 12-Year Warranty	Islander HWS 120-Gallon	Islander HWS 120-Gallon 12-Year Warranty
HEIGHT (INCHES)	75	75	75	77	77
LENGTH (INCHES)	24	26	26	30	30
WIDTH (INCHES)	22	24	24	28	28
APPROX GROSS WEIGHT (LBS)	177	216	216	301	301

THE SOLARAY

SOLAR HOT WATER STATION

SunEarth's SolaRay solar hot water station is a pre-engineered appliance that is designed for ease of installation where inclusion of additional system features is warranted. Including built-in solar bypass valves, air separator, flow meter, and domestic water expansion tank which allows for ease of service and commissioning.

Manufactured using top-tier components and tested for hydraulic integrity, the SolaRay HWS is an appliance-based solution for SunEarth's popular SolaRay AC series solar water heating systems. Featuring an all-copper, double-walled heat exchanger, temperature differential controller, and multi-speed solar pump, SunEarth's SolaRay HWS is the professional contractor's solution for indirect glycol solar hot water system installations.

THE SOLARAY HWS MATERIALS

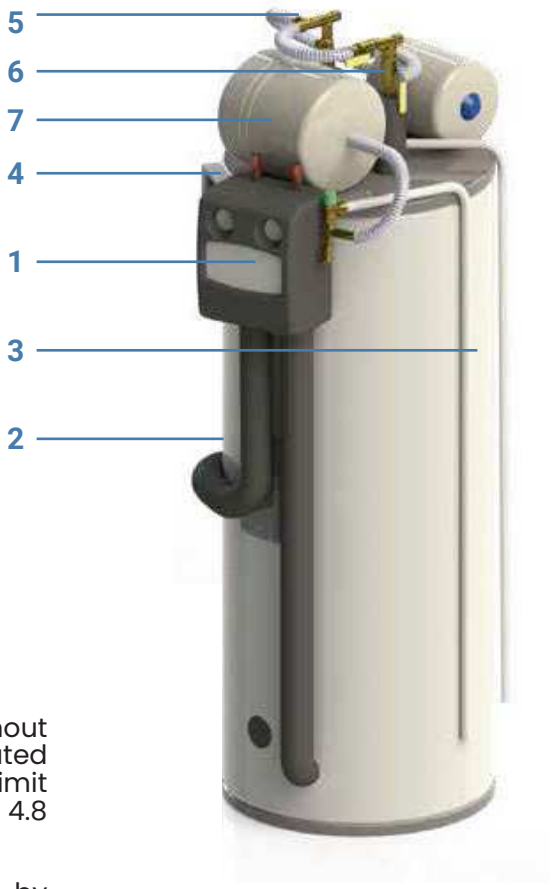
Tank	Glass Lined Steel Vessel with 2" Non-CFC Foam Insulation
Heat Exchanger	5/8" Nominal Copper Double Wall Tubing
Bypass Valves	3/4" Nominal Forged Brass Threaded (LEAD Free) Chrome Plated Brass Ball
Expansion Tank	16-Gauge Cold Rolled Steel 100% Butyl Water Chamber Polypropylene Lined
Relief Tubes	Polypropylene 105,000 BTUH or Less Rating
Pump	1/25 HP Cast Iron
Mixing Valve	3/4" Nominal Bronze (LEAD Free) EPDM Seals Engineered Polymer Piston
Flex Lines	Coated Stainless Steel Internal Dielectric Insulator

SOLARAY TECHNICAL SPECIFICATIONS	
SYSTEMS	
MAXIMUM COLLECTOR AREA[1]	96 ft²
MAXIMUM BUILDING HEIGHT[2]	30 ft
POTABLE PLUMBING DIAMETER	3/4"
SOLAR ELECTRIC	
MAXIMUM POWER INPUT	100 Watts
INPUT VOLTAGE	120V
BACKUP HEATING ELEMENT ELECTRICAL (OPTIONAL)	
MAXIMUM POWER INPUT	4500 Watts
INPUT VOLTAGE	240V

1. Collectors plumbed in parallel
2. Based on 20 feet of piping to the collectors

HOT WATER	
COMPONENT	**PART NUMBER**
SOLAR PUMP	UPS15-58U
SOLAR CONTROLLER	SETR0301U
WATER EXPANSION TANK	PH5
SOLAR EXPANSION TANK	N-30
BACKUP ELEMENT	SP10869ML
BACKUP ELEMENT THERMOSTAT	SP8294
ANODE	AP11525W (80GAL) AP11525J (120GAL)

THE SOLARAY FEATURES & COMPONENTS



1 **SOLAR STATION.** Contains an integrated, 3 speed pump, air separator and vent, flow meter with balancing valve, fill and purge valves as well as a pressure gauge and expansion tank connection. The solar station is protected by a 145 psi pressure relief valve.

2 **HEAT EXCHANGE STORAGE TANK.** Glass lined and pressure tested, includes a copper double wall protected heat exchange coil beneath the tanks R-17 insulation and painted metal jacket. The heat exchange storage tank is protected by a 150 psi/210°F relief valve.

3 **RELIEF VALVE DRAIN TUBES.** Constructed from High Temperature Polypropylene with a rating of 105kBtu/hr.

4 **CONTROLLER.** Operates the pump through differential temperature algorithms, the Liquid Crystal Display (LCD) offers insight into the system operation and condition. The controller reports temperature readings from 3 distinct locations; (T1) collector, (T2) bottom of storage tank and (T3) top of storage tank.

5 **THERMAL EXPANSION TANKS.** Ensures consistent pressure throughout the wide operational temperature range. The NSF Standard 61 rated potable tank has a total volume of 2.1 gallons and an operational limit of 150psi/200°F. The solar expansion tank has a total volume of 4.8 gallons and an operational limit of 150psi/240°F.

6 **MIXING VALVE.** Distributes controlled temperature water by incorporating a fast acting, high quality thermostatic element. Factory set to 120°F the mixing valve allows higher storage temperatures saving more energy and reducing the chances of Legionella bacterial growth in the water. Valve can be adjusted between 90°F and 130°F.

7 **SERVICE BYPASS.** Comprised of lead free ball valves the integrated service bypass allows the backup water heater to continue operating while service is performed on the solar system.

MODELS		
MODEL #	**SOLARAYC80**	**SOLARAYC120**
DESCRIPTION	Solaray AC HWS 80-Gallon	Solaray AC HWS 120-Gallon
HEIGHT (INCHES)	68	70
LENGTH (INCHES)	34	34
WIDTH (INCHES)	24 ½	24 ½
APPROX GROSS WEIGHT (LBS)	198	342

THE SOLARAY-E

SOLAR HOT WATER STATION

The SunEarth SolaRay-E is a ready to install, pre-engineered hot water station (HWS) designed with seamless installation in mind. Factory assembled using top-tier components and tested for hydraulic integrity, the SolaRay-E HWS contains all the components and safety devices necessary for SunEarth's high-performing SolaRay AC indirect glycol system. Featuring an all-copper, double-walled heat exchanger, an adjustable three-speed pump and manufactured by SunEarth, the SolaRay-E HWS is the installer's obvious choice.

THE SOLARAY-E HWS MATERIALS

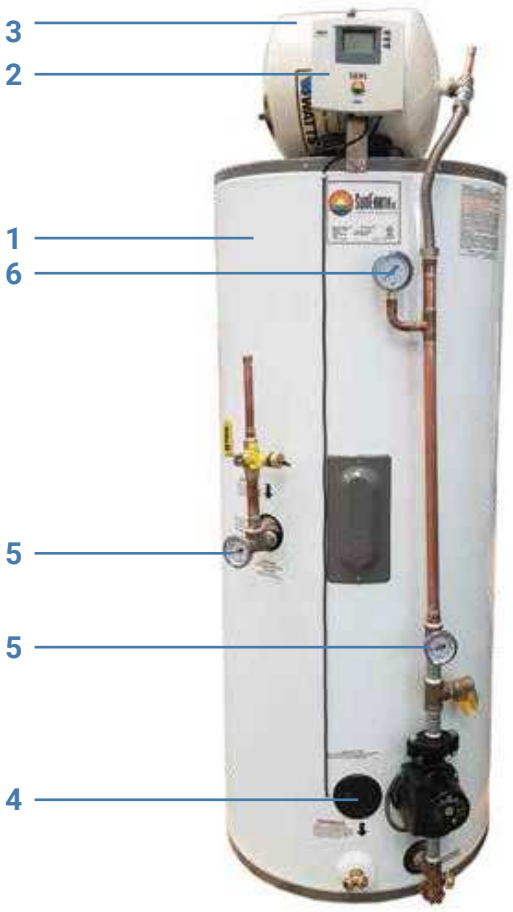
Tank	Glass Lined Steel Vessel with 2" Non-CFC Foam Insulation
Heat Exchanger	5/8" Nominal Copper Double Wall Tubing
Expansion Tank	16-Gauge Cold Rolled Steel 100% Butyl Water Chamber Polypropylene Lined
Pump	1/25 HP Cast Iron
Flex Lines	Coated Stainless Steel Internal Dielectric Insulator

HOT WATER	
COMPONENT	**PART NUMBER**
SOLAR PUMP	UPS15-58FC LC 115V 9H EC
SOLAR CONTROLLER	SETR0301U
SOLAR EXPANSION TANK	N-30
BACKUP ELEMENT BACKUP	SP10869ML
ELEMENT THERMOSTAT	SP8294
ANODE	AP11525W (80GAL) AP11525J (120GAL)

SOLARAY-E TECHNICAL SPECIFICATIONS	
SYSTEMS	
MAXIMUM COLLECTOR AREA[1]	96 ft²
MAXIMUM BUILDING HEIGHT[2]	30 ft
POTABLE PLUMBING DIAMETER	¾"
SOLAR ELECTRIC	
MAXIMUM POWER INPUT	87 Watts
INPUT VOLTAGE	120V
BACKUP HEATING ELEMENT ELECTRICAL (OPTIONAL)	
MAXIMUM POWER INPUT	4500 Watts
INPUT VOLTAGE	240V

1. Collectors plumbed in parallel
2. Based on 20 feet of piping to the collectors

THE SOLARAY-E FEATURES & COMPONENTS



1 **TANK.** Glass lined and pressure tested, includes a copper double wall protected heat exchange coil beneath the tanks R-17 insulation and painted metal jacket. The heat exchange storage tank is protected by a 150 psi/210°F relief valve.

2 **CONTROLLER.** Operates the pump through differential temperature algorithms, the Liquid Crystal Display (LCD) offers insight into the system operation and condition. The controller reports temperature readings from 3 distinct locations; (T1) collector, (T2) bottom of storage tank and (T3) top of storage tank.

3 **THERMAL EXPANSION TANK.** The solar expansion tank has a total volume of 4.8 gallons and an operational limit of 150psi/240°F.

4 **PUMP.** The high efficiency 1/25 cast iron pump uses couplings instead of union connections to avoid any potential leakage. The pump has a built-in cord for ease of installation.

5 **THERMOMETERS.** Two thermometers with the range of 0˚-212˚F are used for monitoring of system's operation temperatures for safety and verification of system's functions.

6 **PRESSURE GAUGE.** With the range of 0 to 100 psi it allows for monitoring of system's pressure for safety and verification of system's function.

MODELS		
MODEL #	**SOLARAYE80**	**SOLARAYE120**
DESCRIPTION	Solaray-E HWS 80-Gallon	Solaray-E HWS 120-Gallon
HEIGHT (INCHES)	70	75
LENGTH (INCHES)	30 ½	32 ½
WIDTH (INCHES)	24 ½	28 ½
APPROX GROSS WEIGHT (LBS)	198	342

THE DRAINPACK

SOLAR HOT WATER STATION

The Drainpack hot water station (HWS) was specifically designed and engineered with the professional installer in mind. The Drainpack is factory assembled using top-tier components and is tested for hydraulic integrity to ensure a smooth installation.

The Drainpack HWS pairs perfectly with SunEarth's high-performing Cascade drainback system and includes all necessary components while eliminating dozens of intermediate connections.

THE DRAINPACK HWS MATERIALS

Tank	Glass Lined Steel Vessel with 2" Non-CFC Foam Insulation
Heat Exchanger	5/8" Nominal Copper Double Wall Tubing
Bypass Valves	3/4" Nominal Forged Brass Threaded (LEAD Free) Chrome Plated Brass Ball
Expansion Tank	16 Gauge Cold Rolled Steel 100% Butyl Water Chamber Polypropylene Lined
Relief Tubes	Polypropylene 105,000 BTUH or Less Rating
Pump	1/25 HP Cast Iron Mixing Valve: 3/4" Nominal Bronze (LEAD Free) EPDM Seals Engineered Polymer Piston
Flex Lines	Coated Stainless Steel Internal Dielectric Insulator

DRAINPACK TECHNICAL SPECIFICATIONS	
SYSTEMS	
MAXIMUM COLLECTOR AREA[1]	96 ft²
MAXIMUM BUILDING HEIGHT[2]	20 ft
MINIMUM CITY WATER PRESSURE	55 PSI
POTABLE PLUMBING DIAMETER	¾"
SOLAR ELECTRIC	
MAXIMUM POWER INPUT	150 Watts
INPUT VOLTAGE	115V

1. Collectors plumbed in parallel
2. Based on 20 feet of piping to the collectors

HOT WATER	
COMPONENT	**PART NUMBER**
SOLAR PUMP	UPS15-88SU
SOLAR CONTROLLER	SETR0301U
SOLAR EXPANSION TANK	PH5
BACKUP ELEMENT	SP10869ML
BACKUP ELEMENT THERMOSTAT	SP8294
ANODE	AP11525W (80GAL) AP11525J (120GAL)

THE DRAINPACK FEATURES & COMPONENTS

DRAINBACK RESERVOIR
The HWS incorporated an all copper 6 gallon drainback reservoir. Including a 75 psi pressure relief valve and integrated sight glass for simple system commissioning and maintenance.

PUMP
Double-insulated magwire to protect the motor windings against condensation that may occur in a solar application. Multiple speed settings with stainless steel impeller and volute. Includes a ferritic rotor can to maximize motor efficiency.

HEAT EXCHANGE STORAGE TANK
Glass lined and pressure rated includes a copper double wall protected heat exchange coil beneath the tanks R-17 insulation
and painted metal jacket. The heat exchange storage tank is protected by a 150 psi/210°F relief valve.

RELIEF VALVE DRAIN TUBES
Constructed from High Temperature Polypropylene with a rating of 105kBtu/hr.

CONTROLLER
Operates the pump through differential temperature algorithms, the Liquid Crystal Display (LCD) offers insight into the system operation and condition. The controller reports temperature readings from 3 distinct locations; (T1) collector, (T2) bottom of storage tank and (T3) top of storage tank.

THERMAL EXPANSION TANKS
Ensures consistent pressure throughout the wide operational temperature range. The NSF Standard 61 rated potable tank
has a total volume of 2.1 gallons and an operational limit of 150 psi/200°F.

MIXING VALVE
Distributes controlled temperature water by incorporating a fast acting, high quality thermostatic element. Factory set to 120°F the mixing valve allows higher storage temperatures saving more energy and reducing the chances of Legionella bacterial growth in the water. Valve can be adjusted between 90°F and 130°F.

SERVICE BYPASS
Comprised of lead free ball valves the integrated service bypass allows the backup water heater to continue operating while service is performed on the solar system.

MODELS		
MODEL #	**DRAINPACK80**	**DRAINPACK120**
DESCRIPTION	Drainpack HWS 80-Gallon	Drainpack HWS 120-Gallon
HEIGHT (INCHES)	68	75
LENGTH (INCHES)	29	32 ½
WIDTH (INCHES)	24 ½	28 ½
APPROX GROSS WEIGHT (LBS)	273	342
TANK CAPACITY (GAL)	80	120

Pump Stations

THE SOLARSTATION SERIES

SOLAR PUMP STATIONS

The innovative SunEarth SolarStation series is comprised of pre-engineered units utilizing quality components in a neat, compact arrangement. SunEarth's SolarStation is ideal for indirect glycol systems utilizing a solar storage tank with integrated solar heat exchanger. The SolarStation HX is designed for indirect and drainback systems where the solar storage tank does not contain a solar heat exchanger. Our SolarStation XL allows for installations with up to 720 square feet of collector area, while the SolarStation XXL increases the applicability of our SolarStation line to 3,000 square feet of collector area.

No matter the system design or size, there is a SunEarth SolarStation engineered to ensure longevity and performance associated with high quality solar heating systems.

SOLARSTATION TECHNICAL SPECIFICATIONS	
MODEL #	**SRS-145-5.1**
MAXIMUM COLLECTOR AREA	160 ft²
MAXIMUM NOMINAL PIPE SIZE	¾ in*
MAXIMUM SOLAR PLUMBING RUN	75 ft
INPUT VOLTAGE	120 VAC
MAXIMUM PUMP POWER	128 W
MAXIMUM ½ INCH POTABLE RUN	50 ft

**40 square foot systems use 1/2 inch collector plumbing.*

SOLARSTATION MATERIALS

Insulation	Expanded Polypropylene
Heat Exchanger	316 Stainless Steel Plates
Plumbing	Type M Copper Pipe
Potable Pump	Stainless Wetting Surfaces
Solar Pump	Cast Iron Wetting Surfaces

EXPANSION TANK CONNECTORS*	
PART NUMBER	**DESCRIPTION**
PS-ETCK	**Expansion Tank Connection Kit** Includes: 18" of ¾" flexible stainless steel hose; expansion tank mounting bracket; expansion tank service check valve with ¾" FNPT termination.

**A connector must be paired with the SolarStation.*

THE SOLARSTATION FEATURES & COMPONENTS

The SolarStation is a pre-engineered assembly of quality components in a neat compact enclosure with an advanced differential controller. A simple, labor saving, attractive solution for closed loop glycol solar systems.

CAST IRON THREE SPEED PUMP (115V-60Hz). Adjustable three speed pump provides flow rates across the range of SRCC OG-300 certified Solaray closed loop glycol systems. Includes line cord for connection to differential controller.

SUNEARTH DIFFERENTIAL CONTROLLER. Supplied with every SolarStation. Easy to read backlit LCD displays system operating temperatures at up to three locations. Includes line cord from controller to 120V outlet, providing plug and play installation and operation.

COMPACT INSULATED ENCLOSURE. Made of expanded polypropylene foam, designed for professional finished appearance and superior durability. Custom molded enclosure allows easy access to all piping connections. Removable cover is fitted around temperature gauges for convenient system performance monitoring.

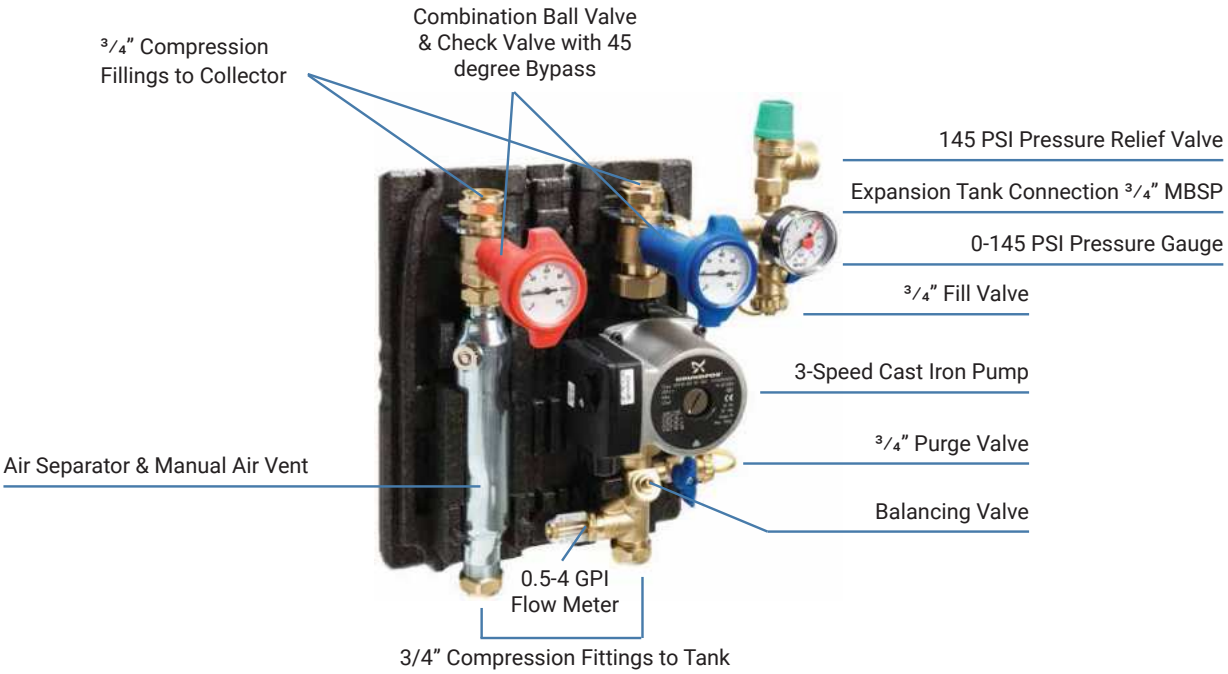
COMBINATION BRASS BALL VALVES AND CHECK VALUES. Includes integrated thermometers, (32°F - 248°F scale). Valves are color coded - blue handle for supply to collectors, red handle for return from collectors. Spring check valve in supply and return ball valves. Check valves can be bypassed by turning the valve handle to the 45° position.

BALANCING VALVE AND FLOW METER (0.5 - 4 GPM). Visual reading of system flow with balancing valve for quick and easy optimization of system flow rate.

AIR SEPARATOR WITH AIR VENT. Air separator tube removes air from flow during pump operation. Air is separated from main flow during system activation and maintenance, and can be expelled by opening air vent. Removal of air from flow reduces potential for air locks in system.

PRESSURE RELIEF VALVE WITH PRESSURE GAGE AND EXPANSION TANK CONNECTION. Pressure relief valve set to discharge at 145 PSI. Pressure gage scale is 0 – 145 PSI (0 – 10 bar). Expansion tank connection is ¾" male BSP.

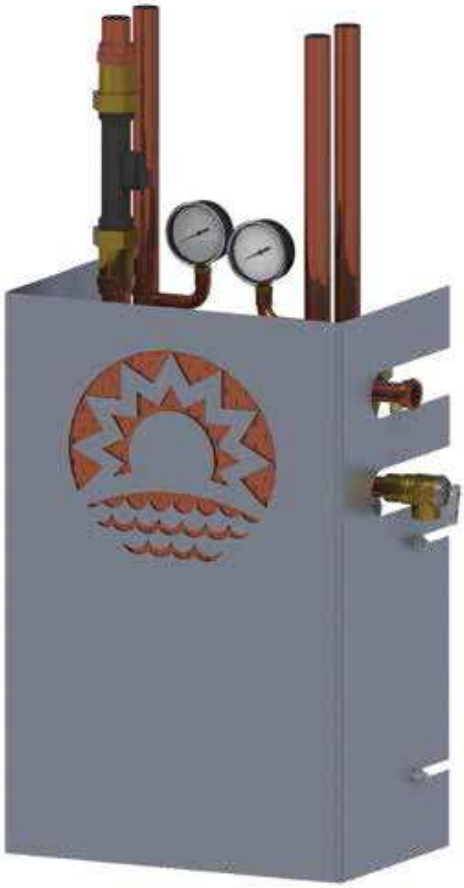
FILL AND DRAIN VALVES WITH ¾" HOSE THREAD. Located upstream and downstream of the pump for filling, purging and draining the glycol loop. Compression fittings for ¾" Type L copper. Top two compression fittings to connect to collectors, bottom two to connect to heat exchanger in tank.



THE SOLARSTATION XL

SOLAR PUMP STATION

Best for: Multi-Family or Commercial Systems



SunEarth's commitment to performance, durability and innovation has lead to the development of our commercial scale pumping station. Our SolarStation XL contains all the features and safety device required allowing for quick selection and implantation in a commercial Solar Water Heating System of up to 720 square feet of collector area. The SolarStation XL satisfies the growing demand of the mechanical system design community for a robust and cost-effective solution for modular system design of Solar Thermal Systems.

SunEarth's SolarStation XL series are factory assembled utilizing only top tier components and tested for hydraulic integrity by SunEarth, the United States leader in Solar Water Heating.

SOLARSTATION XL TECHNICAL SPECIFICATIONS		
MODEL #	**SSXL480**	**SSXL720**
MAXIMUM COLLECTOR AREA	480 ft²	740 ft²
DIMENSIONS (HxWxD)	32x18x12"	32x18x16"
SYSTEM TYPE	Indirect Glycol	Indirect Glycol
MAXIMUM SOLAR PRESSURE	100 PSIG	100 PSIG
MAXIMUM POTABLE PRESSURE	145	145

ELECTRICAL	
MAXIMUM RUNNING POWER INPUT	400 Watts
INPUT VOLTAGE	115 Volts
MAXIMUM RUNNING AMPERAGE	5 Amps
WIRE SIZE	14 AWG
BREAKER SIZE	15 Amps
NON-METALIC CONDUIT	½ inch

THE SOLARSTATION XL FEATURES & COMPONENTS

The SolarStation XL is SunEarth's solution to intermediate commercial solar thermal. Designed with multi speed pumps to ensure compatibility with a wide range of system configurations. The SolarStation XL is factory assembled using top tier components and is tested for hydraulic integrity to ensure a smooth installation every time.

CONTROLLER. Operates the pumps through differential temperature algorithms, the Liquid Crystal Display (LCD) offers insight into the system operation and condition. The controller reports temperature readings from up to 5 locations with 3 controllable outputs. Includes micro-SD card for data logging of Time, date, temperature, flowrate, pressure and energy measurements.

ELECTRONIC FLOW METER, PRESSURE AND TEMPERATURE SENSORS. Enables solar system energy production monitoring and accurate solar system control. Ensuring faster system commissioning with the ability to precisely adjust system parameters.

HEAT EXCHANGER. Brazed Plate Heat Exchanger manufactured from corrosion resistant 316L Stainless Steel. Channel design promotes turbulent flow for superior heat transfer through a range of flow rates. Aluminum bracket allows for attachment to wall mounted strut.

PUMPS. Wet-rotor type whereas the pump and motor form an integral unit without shaft seals. Solar and Potable pump utilize composite impellers with cast-iron and stainless steel volutes respectively. Integrated check valves prevent unwanted heat migration and multiple speed settings provide the ability to tune the solar system for optimal operation rates.

SERVICE VALVES. Ball drain valves eliminate dozens of leak paths, allowing for trouble-free flushing, draining and filling of Solar and potable circuits.

SOLAR PUMP STATION SPECIFICATIONS. The unit pumps shall be controlled via differential temperature controller, utilizing included resistance temperature sensor inputs. There shall be isolation/service drain valves on both the suction and discharge sides of each pump. The heat exchanger solar and potable return ports shall have isolation drain valve unions to allow servicing of the system. The heat exchanger shall have a heat exchange area of no less than 9.34 square feet. The unit shall have a master service switch to completely disable the unit with a single throw. There shall be visual and electronic pressure gauges for both potable and solar plumbing circuits.

THE SOLARSTATION XXL

SOLAR PUMP STATION

Decrease installation time, reduce labor costs and engineering costs with the SolarStation XXL, SunEarth's solution to large scale commercial solar thermal. Designed with multi speed pumps to ensure compatibility with a wide range of system configurations.

The SolarStation XXL is factory assembled using top tier components and is tested for hydraulic integrity to ensure a smooth installation every time.

SOLARSTATION XXL MATERIALS

Frame	Welded Steel
Heat Exchanger	316 Stainless Steel Plates
Plumbing	Type M Copper Pipe
Potable Pump	Stainless Wetting Surfaces
Solar Pump	Cast Iron Wetting Surfaces

SOLARSTATION XL TECHNICAL SPECIFICATIONS			
MODEL #	**SSXXL1000**	**SSXXL2000**	**SSXXL3000**
COLLECTOR AREA	1,000 ft²	2,000 ft²	2,000 ft²
CONNECTION SIZE	1.5 inch	2 inch	2 inch
INPUT VOLTAGE	110 VAC	110 VAC	110 VAC
MAX PUMP POWER	500W	500W	500W
HEAT EXCHANGER AREA	33 ft²	68 ft²	68 ft²
HEAT EXCHANGER RATING	1330 kbtu/hr	2660 kbtu/hr	2660 kbtu/hr

THE SOLARSTATION XXL FEATURES & COMPONENTS

Decrease installation time, reduce labor costs and engineering costs with the SolarStation XXL, SunEarth's solution to large scale commercial solar thermal. Designed with multi speed pumps to ensure compatibility with a wide range of system configurations. The SolarStation XXL is factory assembled using top tier components and is tested for hydraulic integrity to ensure a smooth installation every time.

CONTROLLER. Operates the pumps through differential temperature algorithms, the Liquid Crystal Display (LCD) offers insight into the system operation and condition. The controller reports temperature readings from up to 5 locations with 3 controllable outputs. Includes micro-SD card for data logging of Time, date, temperature, flow-rate, pressure and energy measurements. Customizable options are able to meet the monitoring needs of many commercial buildings.

ELECTRONIC FLOW METER, PRESSURE AND TEMPERATURE SENSORS. Enables solar system energy production monitoring and accurate solar system control. Ensuring faster system commissioning with the ability to precisely adjust system parameters.

HEAT EXCHANGER. Brazed Plate Heat Exchanger manufactured from corrosion resistant 316L Stainless Steel. Channel design promotes turbulent flow for superior heat transfer through a range of flow rates. Aluminum bracket to ensure heat exchangers are fixed to steel framing. Dual heat exchanger models offer double protection against leaks into potable system.

PUMPS. Wet-rotor type whereas the pump and motor form an integral unit without shaft seals. Solar and Potable pump utilize composite impellers with cast-iron and stainless steel volutes respectively. Integrated check valves prevent unwanted heat migration and multiple speed settings provide the ability to tune the solar system for optimal operation rates.

PLUMBING STRAINERS. Allowing for trouble-free flushing of Solar and potable circuits. Extends system life and reduces service calls by safely collecting any scale or installation debris.

ISOLATION VALVES. Allowing for trouble-free flushing of Solar and potable circuits. Extends system life and reduces service calls by safely collecting any scale or installation debris.

SOLAR PUMP STATION SPECIFICATIONS. The unit pumps shall be controlled via differential temperature controller, utilizing included resistance temperature sensor inputs. There shall be isolation/service drain valves on both the suction and discharge sides of each pump. The heat exchanger solar and potable return ports shall have isolation drain valve unions to allow servicing of the system. There shall be visual and electronic pressure gauges for both potable and solar plumbing circuits.

AVAILABLE MODELS

- SSXXL1000, 1000 ft² collector area, Unpressurized Storage
- SSXXL2000, 2000 ft² collector area, Unpressurized Storage
- SSXXL3000, 3000 ft² collector area, Unpressurized Storage
- SSXXL1000-1, 1000 ft² collector area, Pressurized Storage
- SSXXL2000-1, 2000 ft² collector area, Pressurized Storage
- SSXXL3000-1, 3000 ft² collector area, Pressurized Storage

Tanks

DOUBLE-WALL HE
HEAT EXCHANGE TANK

Available in 80- and 120-Gallon Models

SunEarth provides both indirect and direct solar storage tank options. Our indirect tanks incorporate a double-wall, vented, external heat exchanger and are designed for all climates subject to annual mild-hard freeze conditions. The indirect tank is the right choice for SunEarth's SRCC OG-300 approved Solaray and Cascade system options.

KEY FEATURES

- Single element water heater specifically engineered for installation with residential indirect solar systems
- Temperature and pressure relief valve included
- Collector feed and return fittings located at front of tank for convenient installation
- Isolated tank design for better heat retention
- High efficiency stainless steel heating element
- Tank lining resists corrosion and prolongs tank life
- Heat exchanger, copper tubing wrapped around and secured to the tank
- Double wall, vented design for positive leak detection
- Cold water dip tube brings cold water to tank bottom to prevent mixing with heated water
- Anode rod equalizes aggressive water action for prolonged tank life
- Cold water inlet, hot water outlet, relief valve and anode rod at top of tank for easy access and fast, economical installation
- Automatic temperature control
- Over temperature protector

HE SERIES TANK SPECIFICATIONS		
MODEL #	SU80HE-1	SU120HE-1
GALLON CAPACITY (GAL)	80	119
MAX OPERATING PRESSURE	150psi	150psi
ELEMENT WATTAGE (240 VOLT)	4500	4500
HEIGHT (INCHES)	58 ¾	62
DIAMETER (LBS)	24 ½	28 ¼
INSULATION	R-17.3	R-17.3
APPROX. SHIPPING WEIGHT (LBS)	222	380
TANK CONSTRUCTION	Glass-Lined Steel	
HEAT EXCHANGER	Double Wall Vented Copper	
ANODE ROD	¾" NPT Magnesium	
HEAT EXCHANGER COIL CAPACITY (GAL)	2.2	2.6
HEAT EXCHANGER TUBE LENGTH (FT)	120	143

PRESSURE DROP THROUGH COIL (Feet of H_2O)		
Flow Rate (GPM)	SU80HE-1	SU120HE-1
1	1.3	1.6
2	4.8	5.7
3	10.0	12.0

SIDE CONNECT

Raised 7" from the bottom, the Outlet to the solar collector panel helps prevent scale and sediment from entering andcirculating through the solar system. A special threaded stud is also welded to the tank near the outlet for attachement of tank sensors.

TOP CONNECT

A special threaded stud is also welded to the tank behind the lower cavity opening. Low voltage sensor wire is run from this point inside the jacket and out the top for easy control connection.

THE SU SERIES

SOLAR STORAGE TANK

Available in 80- and 120-Gallon Models

SunEarth Preferred SU Series direct solar water heaters are perfectly suited for existing direct (open loop) solar water heating system or for use with an external heat exchanger for indirect systems. Available in 80 and 119-gallon capacities, the SU series provides storage for the hot water produced by the solar collectors and a supplementary electric heating element that maintains consistent water temperature during periods when solar energy is not sufficient. Available with the industry standard 6/6 Year Limited Tank and Parts Warranty.

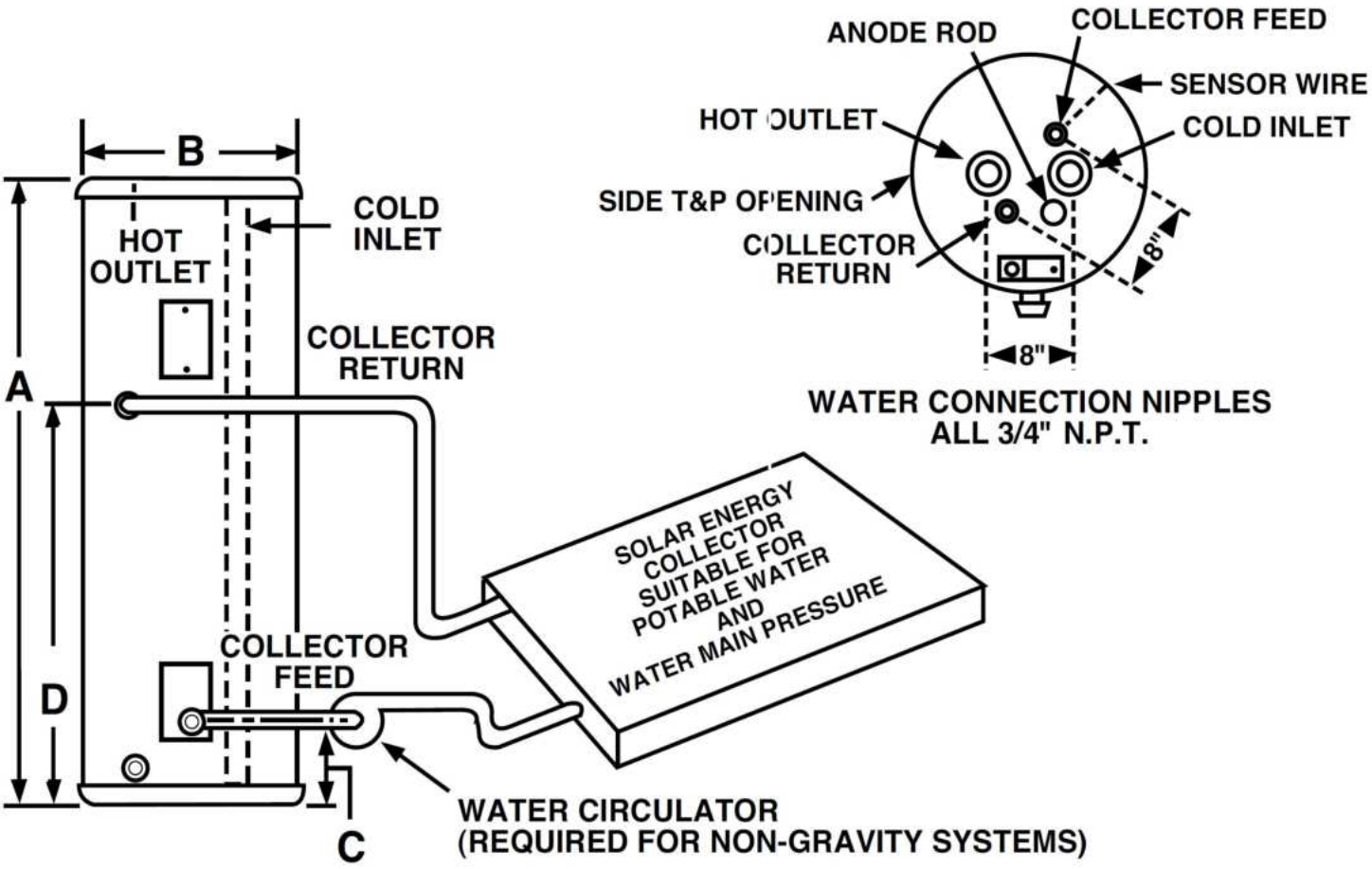
SunEarth's SU Series tank features:
- New flexible design allows installation of the collector feed and return in either the side or top connection ports
- Brass drain valve
- High efficiency heating element
- Automatic temperature control

KEY FEATURES

- 4500 wall heating elements
- Fully Glass-lined
- Magnesium Anode Rod with Stainless Steel core
- 2-inch-Thick (R16) insulation
- CSA certified and ASME rated T&P Included
- Durable tamper-resistant brass drain valve
- Top and side connect in one tank
- Special threaded stud located near the outlet for attachment of tank sensors
- ½" NPT port for installation of thermowell

SU SERIES TANK SPECIFICATIONS		
MODEL #	SU80U-1	SU120U-1
GALLON CAPACITY (GAL)	80	119.9
CONNECTION	SIDE	SIDE
ELEMENT WATTAGE (240 VOLT)	4500	4500
UPPER (INCHES)	58.75	62
HEIGHT (INCHES)	24.5	28.25
DIAMETER (LBS)	192	336
APPROX. SHIPPING WEIGHT (LBS)	R-17.3	R-16.7

This unit uses the potable water within the tank for circulation through the solar system.



THERMAL STORAGE (SETS) TANK

KEY FEATURES

SunEarth Thermal Storage (SETS) offers a cutting-edge solution for efficient thermal energy storage. Our SETS products are designed to meet the diverse needs of residential and commercial users, providing a reliable and environmentally friendly way to harness and store thermal energy. With lightweight, durable construction, SETS simplifies installation and enhances versatility compared to traditional storage tanks.

- Capacities Ranging from 100 to 5,000gal
- Unpressurized for Safety
- Well-insulated for Minimal Heat Loss
- Copper Coils for Efficient Heat Transfer

THE SE SERIES

SOLAR STORAGE TANK

Available in 65-, 80-, and 119-Gallon Models

SunEarth Premium SE Series direct solar water heaters are designed for installation as a part of a direct (open loop) solar water heating system or for use with external heat exchangers in closed loop systems.

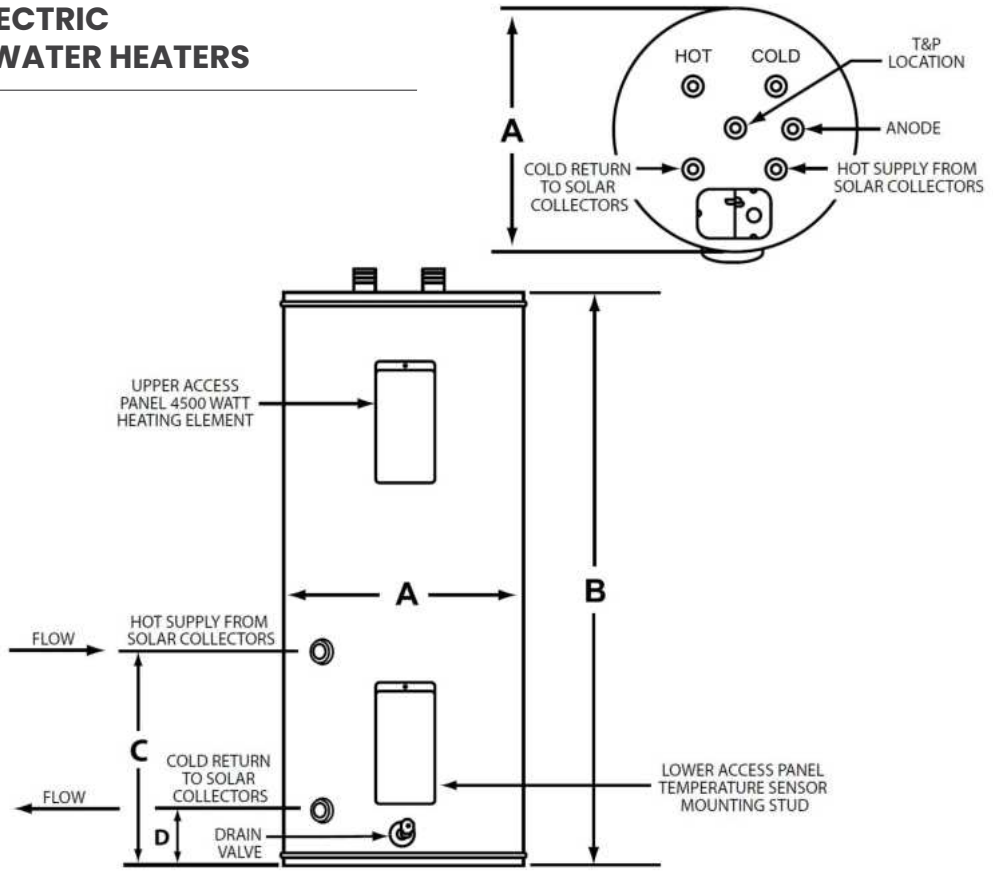
Available in 65, 80 and 119-gallon capacities, these models provide storage for the hot water produced by the solar collectors and a supplementary electric heating element that maintains consistent water temperature during periods when solar energy is not available. Available in 6/6 or 12/12 Year Limited Tank and Parts Warranty.

KEY FEATURES

- 4500 wall heating element (12-yr model features INCOLOY plated elements)
- Fully Glass lined
- Magnesium Anode Rod with Stainless Steel core (12-yr model features dual Anode Rods)
- 2-inch-Thick (R16) insulation
- Pre-installed low lead brass nipple in top connections
- Prewired for tank temperature sensor (sensor not included)
- Factory installed CSA certified and ASME rated T&P
- Durable tamper-resistant brass drain valve
- Top and side connect in one tank

SE SERIES TANK SPECIFICATIONS			
MODEL #	SE65-6*	SE80-6*	SE120-6*
GALLON CAPACITY	65	80	
NUMBER OF HEATING ELEMENTS	1	1	119
ELEMENT WATTAGE (240 VOLT)	4500	4500	1
GALLONS ABOVE HEATING ELEMENT	18.5	22.5	4500
RECOVERY GALLONS PER HR (90° RISE)	21	21	27.8
INSULATION R VALUE	16	16	21
HEIGHT WATER CONNECTION	60.25	60.25	16
JACKET DIAMETER A	22	24	62
HEIGHT TOP OF TANK B	59.25	59.25	28
OPTIONAL SOLAR IN/DOWN C	20.5	20.5	61.5
OPTIONAL SOLAR OUT/UP D	7.5	75	20.5
APPROX SHIPPING WEIGHT	152	191	7.5
			278

RESIDENTIAL ELECTRIC DIRECT SOLAR WATER HEATERS



SOLAR POOL HEATING

Every year, over 100,000 solar pool heating systems are sold to owners who want safe, efficient pool heating. Solar is the most cost-effective form of pool heating, with no additional operating costs and low maintenance, benefitting from the abundant supply of energy from the sun. SunEarth's solar pool heating systems are the best choice for residential and commercial pools.

Collectors

OASIS
SOLAR POOL HEATING COLLECTORS

Best for: Pool & Spa Heating

The Oasis pool and spa collector provides professional distributors and contractors with an alternative to conventional propylene plastic pool collectors. Unlike plastic pool collectors, the Oasis is unaffected over time by ultraviolet radiation. For best results, SunEarth recommends that the Oasis collector be used in conjunction with a stainless steel or titanium heat exchanger.

Did you know? The White House pool and spa is heated by SunEarth's Oasis all-copper pool collectors. The roof-integrated installation was conceived by Solar Design Associates of Harvard, MA.

OASIS COLLECTOR MATERIALS

Collector Material	Roll formed Copper Max. Instantaneous
Efficiency	67%
Header Size	1 1/2"Nominal Copper (1.65" OD)
Riser Size	1/2" Nominal Copper
Collector Coating	Flat Black Polyurethane

KEY FEATURES

- All Copper Absorber Plate
- The Oasis is unaffected over time by ultraviolet radiation
- Alternative to conventional propylene plastic pool collectors

AVAILABLE CONNECTIONS

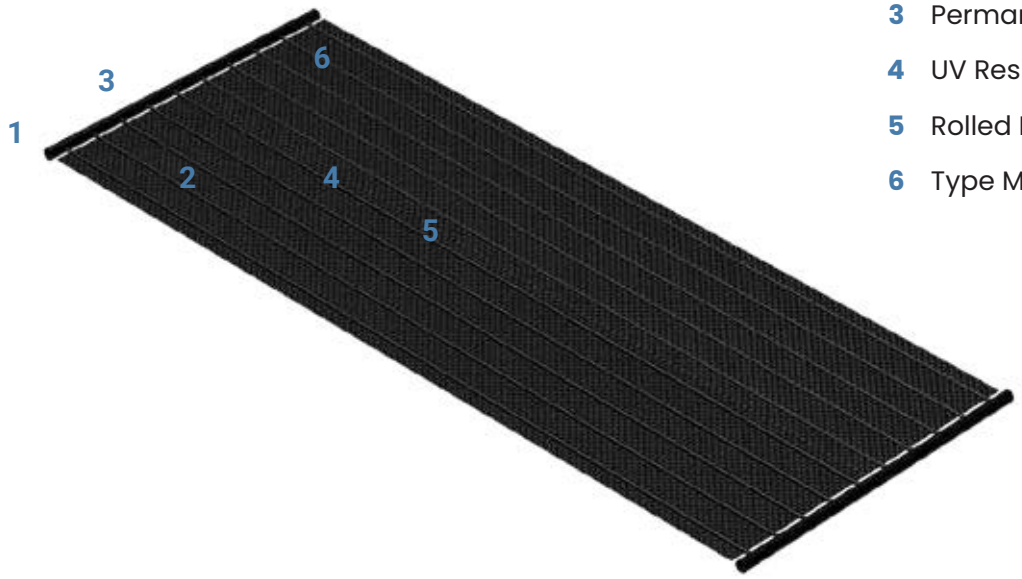
- 1 1/2" Sweat (Standard)
- High Temperature Hose

DESIGN LIMITS

- Internal Static Test Pressure: 160psig
- Max Flow Rate: 25gpm
- Max Wind/Snow: 60 psf
- Max Temperature: 100°F

OASIS SERIES SPECIFICATIONS			
MODEL #	**OP-32**	**OP-40**	**OP-48**
WIDTH (INCHES)	45.63	45.63	45.63
LENGTH (INCHES)	96	120	144
GROSS AREA (FT SQ)	30.47	38.02	45.63
DRY WEIGHT (LBS)	32.21	40.22	48.27
FLUID CAPACITY (GAL)	1.31	1.47	1.63
DESIGN FLOW RATE (GPM)	3.2	4	4.8
PRESSURE DROP AT DFR (PSIG)	0.018	0.020	0.022
MAX FLOW RATE (GPM)	25	25	25
MAX OPERATING PRESS (PSIG)	160	160	160
STD. HEADER WIDTH (INCHES)	45.25	45.25	45.25
HEADER, CENTER TO CENTER	94.375	118.375	142.375

OASIS SERIES COLLECTOR COMPONENTS



1. 5% Silver Brazed Joints
2. High Temp Absorber Coating
3. Permanent Sweat Connection
4. UV Resistant Copper Construction
5. Rolled Formed Copper Absorber Plate
6. Type M Copper Riser Tubes and Manifolds

OASIS PP

SOLAR POOL HEATING COLLECTORS

The Oasis PP is SunEarth's market leading pool and spa heating collector. The Oasis PP is manufactured from a high temperature polypropylene copolymer plastic material with decades of field-tested reliability.

This rugged and affordable collector has been specifically engineered by SunEarth for commercial swimming pool applications, but is equally at home in any residential application. The Oasis PP is the state-of-the-art choice for America's solar pool heating professional contractors.

OASIS PP COLLECTOR MATERIALS

Collector Material	Polypropylene Copolymer
Max. Instantaneous Efficiency	92% (Equal collector/ambient temp. 0 mph wind)
Header Size	2" and 1 1/2" Nominal

KEY FEATURES

- All Propolyne Plastic Panel
- Commercial Grade Vacuum Cooled Heater
- Expansion Joints
- Proprietary Fluted Riser Profile
- Directed Metered Flow

AVAILABLE CONNECTIONS

- 1½" Dual Durometer Coupling
- 2" Dual Durometer Coupling

DESIGN LIMITS

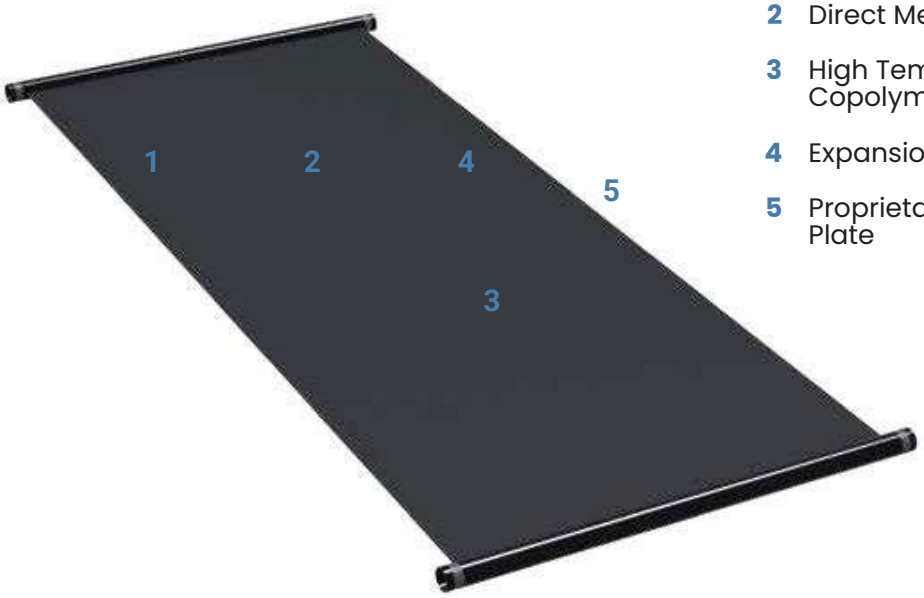
- Internal Static Test Pressure: 100psig
- Working Pressure: 50psig
- Max Flow Rate: 25gpm

THERMAL PERFORMANCE RATINGS

COLLECTOR OUTPUT BTU/ft² *DAY			
CATEGORY (Ti-Ta) **Ti: inlet fluid temp** **Ta: ambient temp**	**CLEAR (2000)**	**MILDLY CLOUDY (1500)**	**CLOUDY (1000)**
A (-9°F)	2200	1800	1400
B (9°F)	1400	1000	600

OASIS PP SERIES SPECIFICATIONS						
MODEL #	OPP-32-1.5	OPP-40-1.5	OPP-48-1.5	OPP-32-2	OPP-40-2	OPP-48-2
WIDTH (INCHES)	46.8	46.8	46.8	46.8	46.8	46.8
LENGTH (INCHES)	94.44	118.08	143.64	94.44	118.08	143.64
GROSS AREA (FT SQ)	31.43	39.29	47.25	31.43	39.29	47.25
DRY WEIGHT (LBS)	14.30	17.10	21.50	15.30	18.10	22.30
FLUID CAPACITY (GAL)	2.50	2.90	3.20	3.10	3.50	3.80
DESIGN FLOW RATE (GPM)	3.24	4	5	3.25	4	5
MAX FLOW RATE (GPM)	10	10	10	10	10	10
MAX OPERATING PRESS (PSIG)	[MISSING]	[MISSING]	[MISSING]	[MISSING]	[MISSING]	[MISSING]
STD. HEADER WIDTH (INCHES)	50.50	50.50	50.50	50.50	50.50	50.50
HEADER, HEADER WIDTH (INCHES)	1.5	1.5	1.5	2	2	2

OASIS PP SERIES COLLECTOR COMPONENTS



1. Commercial Grade Vacuum Cooled Header
2. Direct Metered Flow
3. High Temperature Polypropylene Copolymer
4. Expansion Joints
5. Proprietary Fluted Riser Profile Absorber Plate

OPP Connection Kits

SYSTEM KITS
FOR OPP SOLAR POOL HEATING

Comprised of top tier components SunEarth's connection kits bridge the gap between collectors and the pool. Utilizing SunEarth's connection kits ensures the seamless installation of a solar heating system. Our kits are size matched to SunEarth's collector series with the specialty components approved by SunEarth as compatible for the temperatures and pressures associated with high quality solar heating systems.

SunEarth's systems kits contain the necessary components and accessories to connect SunEarth Collector Array feed and return lines to a pool. Pool System Kits include the following:

- Vacuum Relief Valve
- Outlet Header Hold-Down Bracket Assembly
- Hold-Down Strap Clamp Assembly
- End Cap
- Pipe Adapter
- Hold-Down Strap Bracket
- System Connector Hose
- Hose Clamps
- Check Valve

POOL HEATING SYSTEM KITS	
PART #	**DESCRIPTION**
OPP-18081-1	1 ½ in. OPP System Kit
OPP-18081-2	2 in. OPP System Kit

ADD-A-ROW KITS

SunEarth's Add-A-Row kits contain the necessary components and accessories when more than one bank of collectors is to be installed.

Add-A-Row Kits include the following:

- Vacuum Relief Valve
- Outlet Header Hold-Down Bracket Assembly
- Hold-Down Strap Clamp Assemblies
- End Cap
- Pipe Adapters
- Hold-Down Strap Brackets
- System Connector Hoses
- Hose Clamps

ADD-A-ROW KITS	
PART #	**DESCRIPTION**
OPP-12043-1	1 ½ in. OPP Add-A-Row Kit
OPP-12043-2	2 in. OPP Add-A-Row Kit

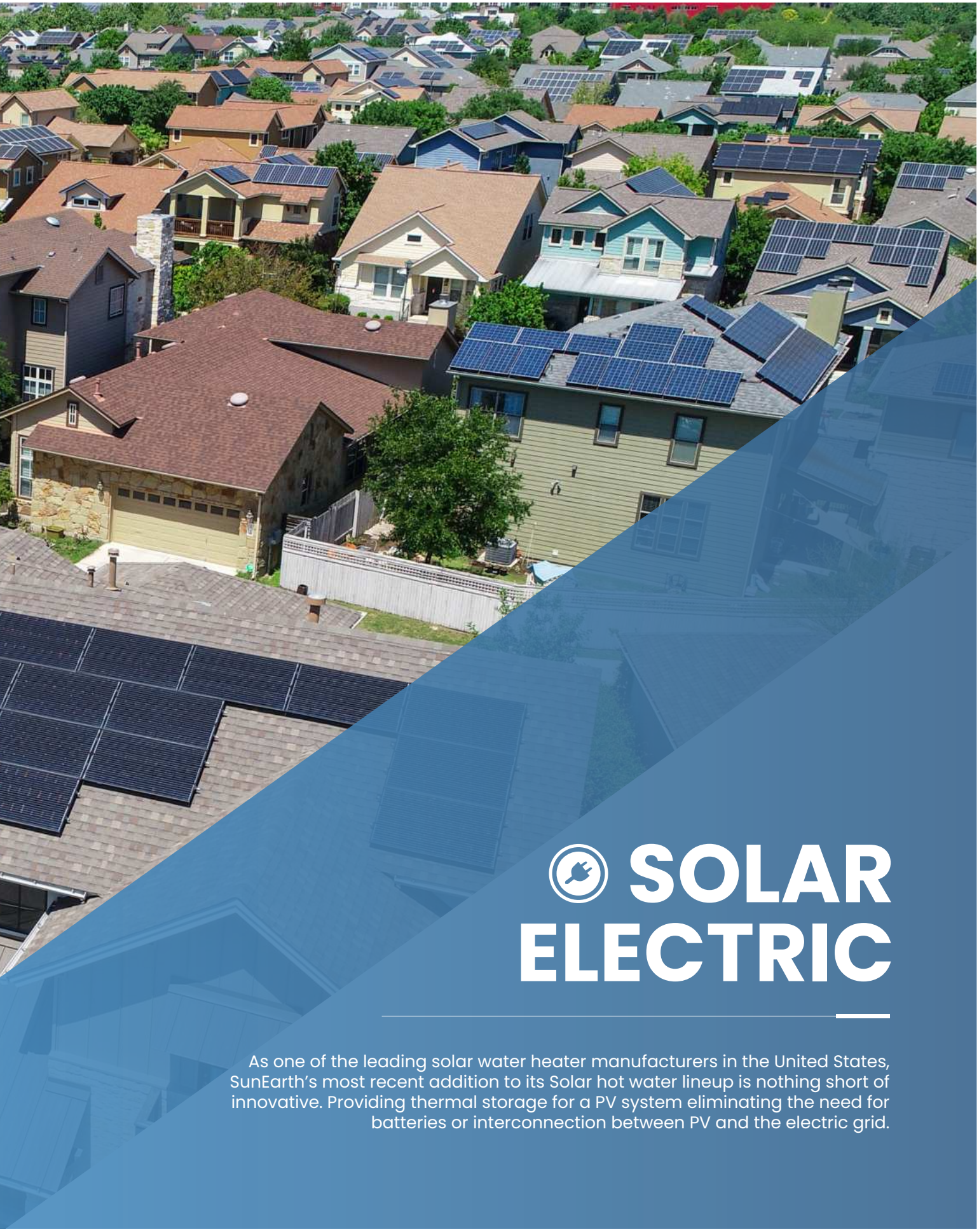
COLLECTOR KITS

SunEarth's Collector Kits contain the necessary components and accessories when more than one collector is included in an array.

Collector Kits include the following:

- Outlet Header Hold-Down Bracket Assembly
- Hold-Down Strap Brackets
- Collector Connector Hoses
- Hose Clamps

COLLECTOR KITS	
PART #	**DESCRIPTION**
OPP-12034-1	1 ½ in. OPP Collector Kit
OPP-12034-2	2 in. OPP Kit



SOLAR ELECTRIC

As one of the leading solar water heater manufacturers in the United States, SunEarth's most recent addition to its Solar hot water lineup is nothing short of innovative. Providing thermal storage for a PV system eliminating the need for batteries or interconnection between PV and the electric grid.

THE SUNWATER

DUAL SOLAR/ELECTRIC WATER HEATER

SunWater PV Water Heater is the highest rated in its class offering two times the efficiency of comparable products. View our SRCC solar rating for our SunWater PV Water Heater. With over 40 years of solar energy experience in an ever-changing landscape, we recognized the need for a dual electric source solar water heater.

The SunWater is a simple, clean, easy-to-use solution delivering high-performance for low and variable occupancy applications. An intelligent water heater configured and specifically designed to match your lifestyle, the SunWater features safe, proven thermal battery technology and increased financial security with no PV interconnection restrictions.

KEY FEATURES

TANK. The water heater tank is glass lined and pressure rated consisting of R-17 insulation and a painted metal jacket. Includes two 1000 Watt PV powered resistive heating elements and a 4500 Watt backup grid tied resistive heating element for confidence in hot water availability. The heater is protected by a 150 psi/210°F relief valve, aluminum sacrificial anode, and preinstalled brass nipples.

CONTROLLER. The controller has a 4.5 inch full color touch screen. Features include tank temperature monitoring, proportion of PV energy in storage, vacation settings for energy conservation during extended non-use, and customizable backup heating element schedule. Allows for utilization of backup resistive element only when needed, controlled via digital temperature sensors and program time setting which maximizes solar energy contribution.

ENERGY SAVINGS

- Takes Full Advantage of Timer Functionality
- Grid Energy Only used during occupancy window

STANDARD

- Utilizes Timer Functionality
- Grid Energy Utilized if Solar Contribution is extremely low during times outside of occupancy window

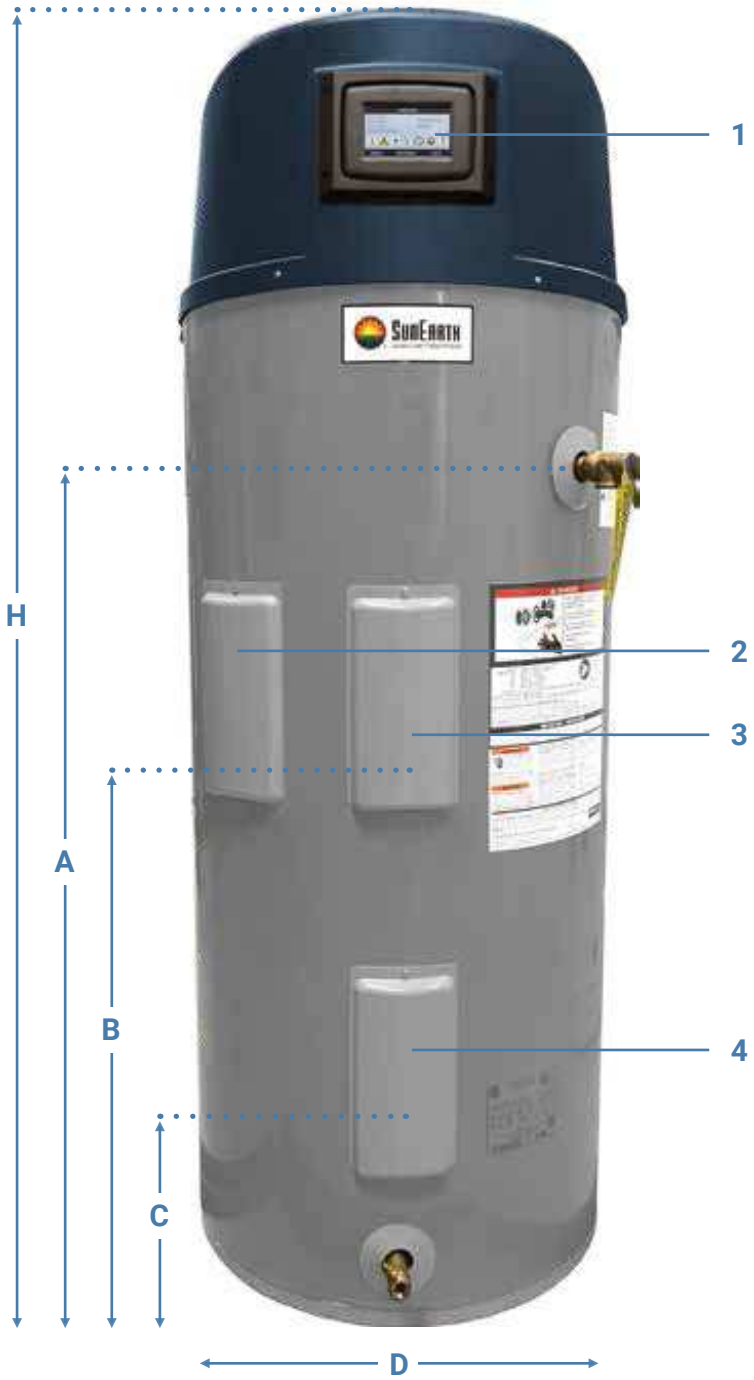
CONVENIENCE

- Grid Element always active to provide hot water at any time

VACATION MODE

- Grid Element is deactivated eliminating standby losses during periods of vacancy

SUNWATER DUAL ELECTRICAL/SOLAR WATER HEATER COMPONENTS



1 User Interface Module
2 Grid Backup Element
3 Solar PV Mid Element
4 Solar PV Lower Element

SYSTEM SPECIFICATIONS	
TANK CAPACITY	45 gal
DRY WEIGHT	130 lbs
OPERATING TEMPERATURE	-40°F to 185°F

SUNWATER SPECIFICATIONS	
MODEL #	**SU80-1**
DESCRIPTION	PV WATER HEATER
GALLONS	45 gal
DIMENSIONS (D X H)	24” x 60”
DIMENSIONS A	40”
DIMENSIONS B	27”
DIMENSIONS C	10”
APPROX. GROSS WEIGHT	130 lbs

SUNWATER SOLAR ELECTRICAL	
Maximum PV Modules	4
PV Modules Power Range	180-310 Watts
PV Modules Voltage Power	15-58 Watts
Maximum Inverters	1
Inverter Max Output Power	1150 Watts

SUNWATER HEATING ELEMENTS	
PV Powered Mid	1000 Watts
PV Powered Lower	1000 Watts
Grid Back Up-Mid	4500 Watts
Tank Electrical Connection	240 VAC

Innovative installation practices go hand in hand with innovative products and the PV Water Heater, SunEarth's most recent addition to its Solar hot water lineup is nothing short of innovative. Provides thermal storage for PV system eliminating the need for batteries or interconnection between PV and the electric grid.


progress
SCHENCK
SunEarth
OME-FLEX
PE Polyethylene Gas Pipe
Solar Hot Water

SYSTEMS OVERVIEW

SunEarth provides a number of engineered residential solar water heating systems that have been certified or listed with various accredited third-party agencies. SunEarth solar water heating systems and components have been certified, approved, and/or listed with the Solar Rating & Certification Corporation (SRCC), the Florida Solar Energy Center (FSEC), the International Association of Plumbing and Mechanical Officials (IAPMO), and the joint U.S. Environmental Protection Agency (EPA)/ U.S. Department of Energy (DOE) Energy Star program.

Systems Overview

SOLARAY
GLYCOL SYSTEM

Best for: Locations that Experience Freezing Weather Conditions

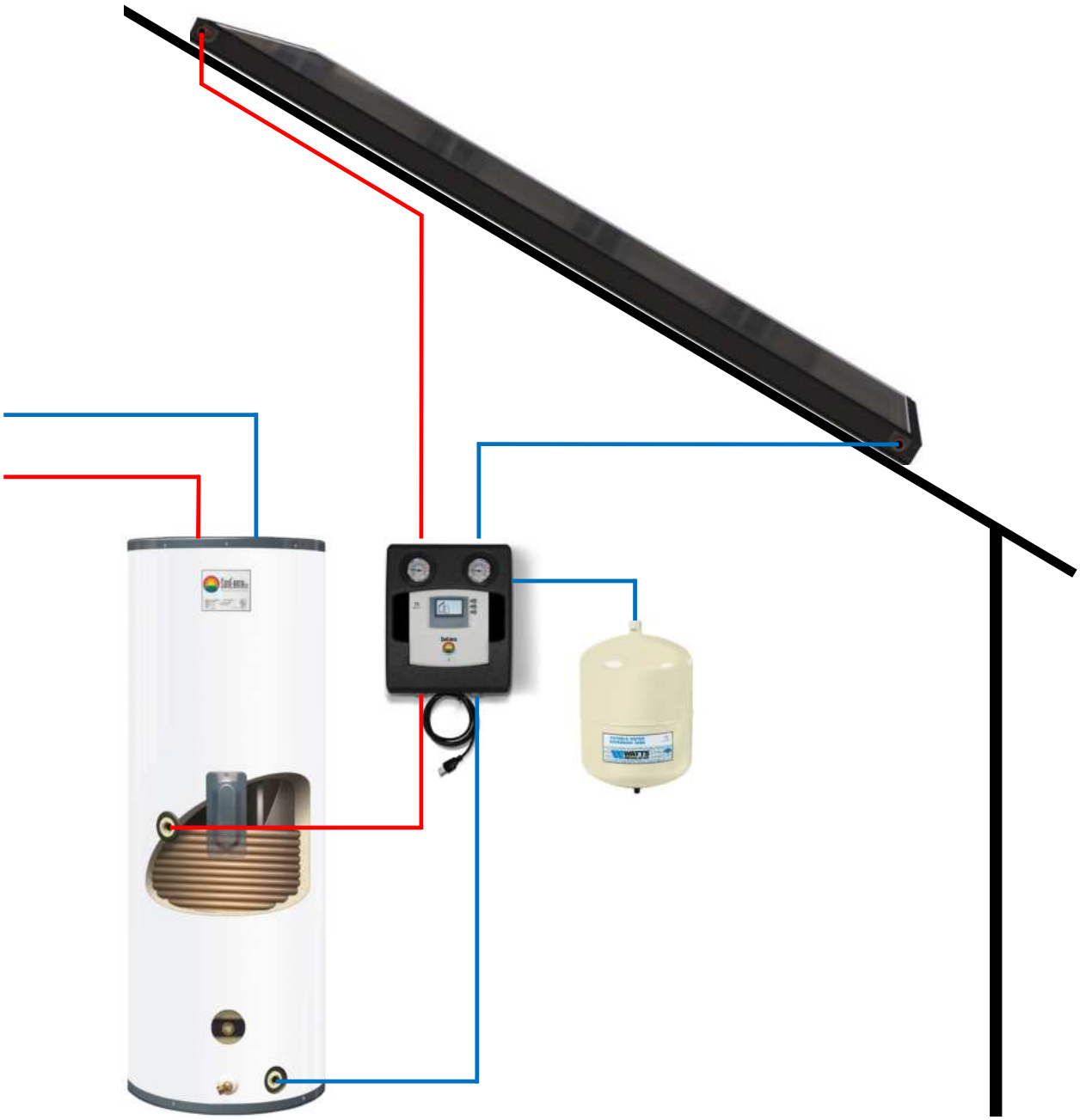
SolaRay is a forced-circulation, closed-loop system, designed primarily for climates that experience annual and persistent hard-freeze conditions. The specified heat transfer fluid is a non-toxic, high temperature rated propylene glycol.

The Solaray System solar storage tank incorporates an integral double-wall, vented, heat exchanger that eliminates the possibility of cross contamination between the propylene glycol and potable water. The versatile SolaRay solar storage tank meets or exceeds all major U.S. building and plumbing code requirements.

SolaRay AC systems use standard mains AC powered circulator pumps and differential controls. SolaRay PV systems use DC pumps powered and controlled directly from a 10- 20 W PV module.

KEY FEATURES

- Forced circulation, pressurized closed loop system
- Mains AC or PV powered DC pumping options
- Propylene Glycol heat transfer fluid
- SRCC rated freeze tolerance limit (FTL): -60°F.



CASCADE
DRAINBACK SYSTEM

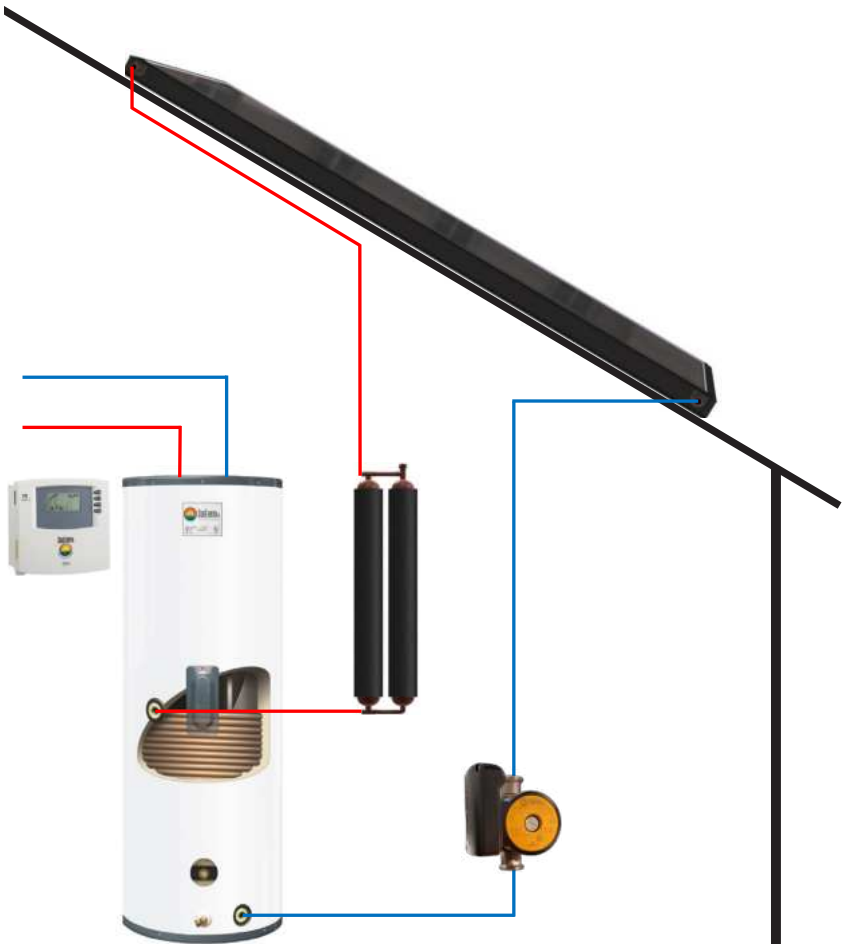
Best for: Locations that Experience Freezing Winter Conditions and High Summer Temperatures with Low Summer Loads

Cascade Drainback is SunEarth's OG-300 certified drainback system. These systems usually employ water as the heat transfer fluid. Water is very stable, low cost and non-toxic with excellent heat transfer properties. Freeze protection is achieved by automatic gravity draining of the collectors and exposed piping into a storage reservoir.

In areas experiencing very hard freezes, Cascade Drainback systems may use a Propylene Glycol heat transfer fluid for additional freeze protection. The heat exchange fluid in the collector array and solar loop piping drains back by gravity into the system's storage reservoir whenever the pump stops circulating. This happens whenever the collector cools down to the temperature of the tank or lower, such as at night; or when the maximum set temperature of the solar tank. Air replaces the heat exchange fluid in the collector array and solar loop piping when the pump is off. No fluid is left exposed in the collector or piping to freeze or overheat.

KEY FEATURES

- Forced circulation, atmospheric pressure closed loop system
- Incorporates the Empire Series collectors, SunEarth HE tanks and stainless steel, glass lined steel or SunEarth's CopperStor drainback storage reservoirs
- SRCC rated freeze tolerance limit (FTL): -50°F.



CASCADE 2

DRAINBACK SYSTEM
WITH EXTERNAL HEAT EXCHANGER

Best for: New Install & Retrofit Systems

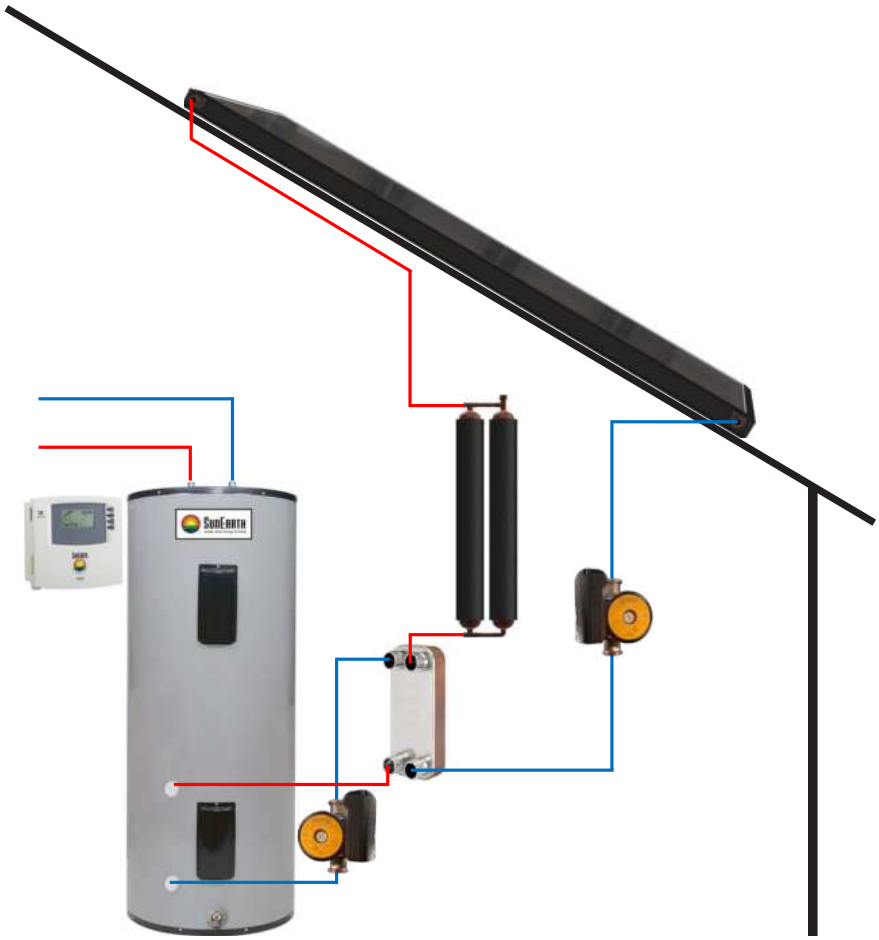
CASCADE 2 provides a simple variation on our popular Cascade Drainback system. Rather than using a solar tank with an integral heat exchanger, the CASCADE 2 matches a basic solar water heater and a high performance SunEarth SunTherm or SunPlate external heat exchanger. With waer as the heat exchange fluid. This simple variation gives the professional solar contractor needed flexibility to choose system components that may provide individual customers with better performance or overall system value.

KEY FEATURES

- Closed loop system with pumped circulation on both collector and potable loop

  Gives the professional contractor flexibility to choose system components that may provide individual customers with better overall system value

- Freeze Tolerance: - 50°F



SUNSAVER

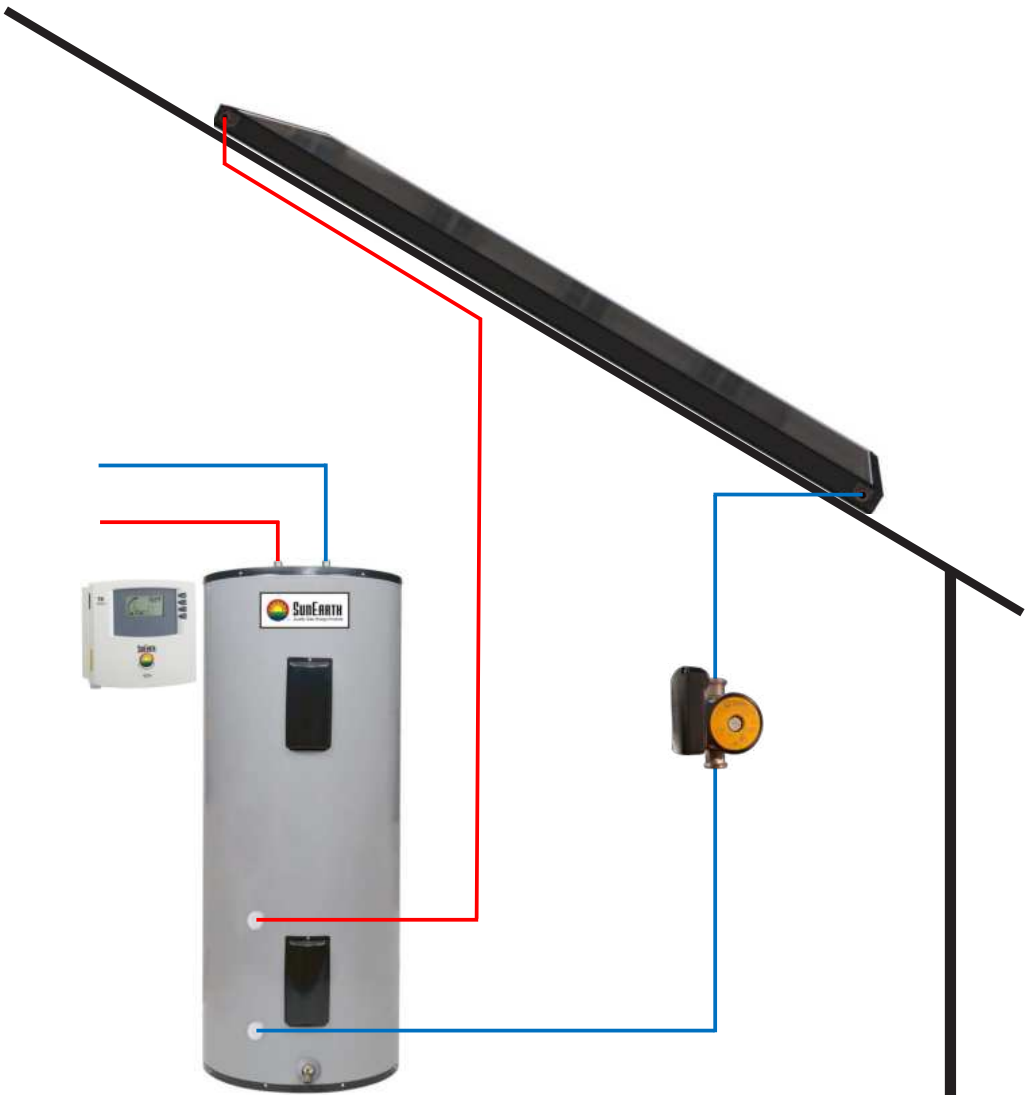
DIRECT (OPEN LOOP) SYSTEM

Best for: Locations that Never Experience Freezing Weather Conditions

SunSaver is SunEarth's only OG-300 certified system that is specifically designed for climates that never experience freeze conditions. Potable water under city pressure efficiently circulates directly through the solar collectors and into the solar tank. Because the system does not utilize heat exchangers, drainback tanks, or other components required in cold climates, the SunSaver is an extremely efficient solar water heating system. At this time SunEarth does not permit the SunSaver to be installed within the continental United States.

KEY FEATURES

- Direct forced circulation system. Simple system does not require heat exchanger in tank resulting in high efficiency and low cost.
- Ideal system for the tropical islands of the Caribbean and Pacific
- SRCC-rated freeze tolerance: 35°F



COPPERHEART

INTEGRAL COLLECTOR STORAGE SYSTEM

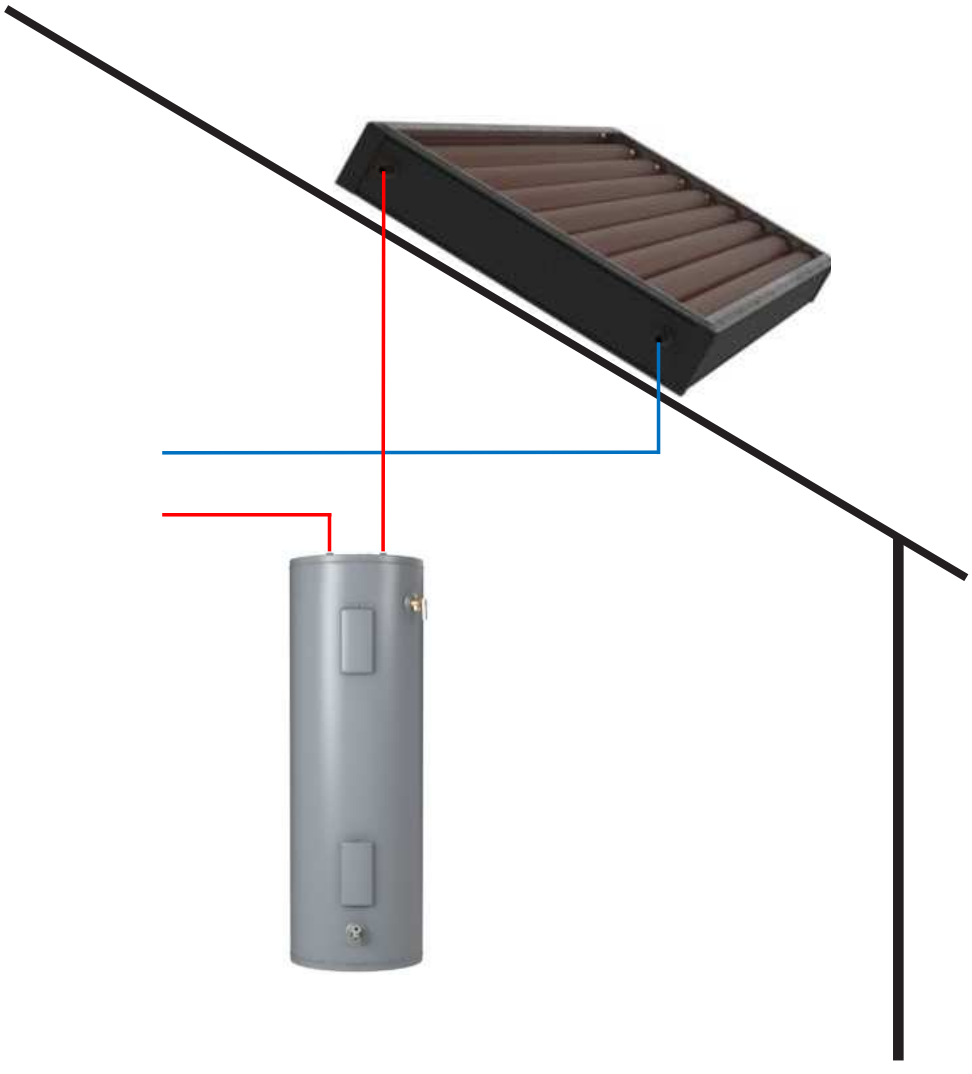
Best for: Passive System Installations that Require No Controller

The CopperHeart integral collector storage system, or ICS, combines thermal collection and storage in a single unit. The CopperHeart is engineered to meet the international demand for a simple, durable and inexpensive domestic water heating system. The retrofit CopperHeart installation typically serves as a solar pre-heater to the existing electric or gas water heater. For new construction the backup heater of choice is most often a compatible tankless gas water heater. Limited freeze protection and overheat protection is achieved due to the large thermal mass of the system. For durability, reliability and simplicity of installation and operation the CopperHeart ICS has no peers.

If properly installed and maintained the CopperHeart ICS can safely be deployed in areas that experience occasional mild freeze conditions. SRCC Rated Freeze Tolerance: 20°F for 18 hours.

KEY FEATURES

- Combines thermal collection and storage in a single unit.
- Simple, durable and inexpensive domestic water heating system
- SRCC-Rated Freeze Tolerance: 20°F for 18 hours
- Direct pressurized passive system
- Copperheart showing certified glycol system



SOLAR RESOURCES

CERTIFICATIONS
BREAKDOWN

SunEarth is Proud to have the Most Certified ICC-SRCC Systems.

The Solar Rating & Certification Corporation (ICC-SRCC™) is the leading solar heating and cooling product certification program in North America, certifying to the requirements of International and Uniform Codes and Standards. The ICC-SRCC rates and certifies individual colar collectors, along with complete solar water heating systems.

As a nationally recognized indpendent third-party certification agency, the ICC-SRCC promulgates standards and operating guidelines of:

- Standard OG - 100 collectors
- Standard OG - 300 systems

The SRCC Standard OG - 300 provides independent assessments of a system's reliability and its performance.

SOLAR RATING & CERTIFICATION CORPORATION
ICC-SRCC
OG-100 Certified
ESTABLISHED 1980
™

SOLAR RATING & CERTIFICATION CORPORATION
ICC-SRCC
OG-300 Certified
ESTABLISHED 1980
™

TERMS & CONDITIONS
FOR SUNEARTH PRODUCTS

TERMS OF PAYMENT

SunEarth does not offer credit terms. Payment is required before shipment.

- All quoted prices are FOB Fontana, CA, freight prepaid and added to invoice and are exclusive of freight, crating, insurance, and handling charges.
- Customers outside the United States must make payment by irrevocable letter of credit, bank transfer, bank draft, or cashiers check.
- Drop-ship orders to non-resellers must be paid in full before shipment and are subject to a $25 fee.

WARRANTY & PRODUCT SPECIFICATION

- Product warranty coverage is pursuant to SunEarth's written warranty statements. Please refer to the Customer Login portion of our website at **www.sunearthinc.com** for a printable version of our warranty.
- Current product specifications and technical information can be found at **www.sunearthinc.com**.

CUSTOM ORDERS & RETURN POLICY

- Custom collector and absorber plate orders require cash with order and may not be canceled. Returned products require prior factory authorization and are subject to a 30% restocking charge.
- Returns must be shipped freight prepaid. Products are non-returnable after 30 days.

GOVERNING LAW & DISPUTE RESOLUTION

- You agree that all matters relating to doing business with SunEarth Inc., including all disputes, will be governed by the laws of the United States and by the laws of the State of California without regard to its conflicts of laws provisions. You agree to the personal jurisdiction by and venue in the state and federal courts in San Bernardino County, California, and waive any objection to such jurisdiction or venue.
- Any claim under these Terms and Conditions of Sale must be brought within one (1) year after the cause of action arises, or such claim or cause of action is barred.
- No recovery may be sought or received for damages other than out-of-pocket expenses, except that the prevailing party will be entitled to costs and attorneys' fees.
- In the event of any controversy or dispute between SunEarth, Inc. and you arising out of doing business with SunEarth, Inc., the parties shall attempt, promptly and in good faith, to resolve any such dispute. If we are unable to resolve any such dispute within a reasonable time (not to exceed thirty (30) days), then either party may submit such controversy or dispute to mediation. If the dispute cannot be resolved through mediation, then the parties shall be free to pursue any right or remedy available to them under applicable law.

PALLET, CRATING, & PACKAGING CHARGES

- Less than pallet lot domestic shipments incur a minimum crating charge of $125.00. Crating charges are waived for full pallet lot orders. For orders of more than one pallet, but less than two pallets, a crating charge of $75 will be applied.
- Non-standard pallets and crating will be quoted per order; SunEarth pallets are custom made for SunEarth standard collectors.
- Full pallets are defined as
  1. Flat Plate Collectors - 12 collectors
  2. Absorber Plates - 38 Absorbers (1 in. Headers), 27 Absorbers (1.5 in Headers)
  3. CopperHearts - 7 collectors
- Standard SunEarth Pallets are provided to our customers at cost. Cost is determined by pallet size.
- Pallets in good condition may be returned for full credit.
- Export shipments incur a pallet charge for each pallet used and a minimum export crating charge of $250 per pallet.

DAMAGED FREIGHT & SHORTAGES

All shipments from SunEarth, unless otherwise agreed, are FOB Fontana, CA, freight prepaid and added to invoice. Title for goods passes to the Buyer at SunEarth's dock. SunEarth bears no liability for product damaged in transit and does not accept the return of damaged product. It is the consignee's responsibility to file any claim for freight related damage with the shipper.

Note: Any discrepancies between the number of items listed of items listed on the SunEarth packing slip and the number of items delivered by the trucking or shipping company on the Bill of Lading AT TIME OF RECEIPT. Have the driver co-sign the Bill of Lading. Be aware that the shipper's liability for any discrepancies ends when the consignee accepts the delivery as complete by signature.

Please notify SunEarth immediately of all shipping discrepancies by faxing a copy of the Bill of Lading to our customer service department.

DO NOT sign the delivery ticket/Bill of Lading until you have thoroughly inspected all the goods and/or shipping cartons/crates for damage. If there is reason to suspect concealed damage, make a complete inspection in the presence of the driver. If any damage is found, make an accurate notation on the delivery slip/Bill of Lading with the driver present. Have the driver co-sign the delivery slip/Bill of Lading.

SUNEARTH®

POSSESSION OF THE SUNEARTH, INC. LIST PRICE SCHEDULE DOES NOT CONSTITUTE AN OFFER TO SELL. ALL PRICES AND PRODUCT SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE FOR MORE INFORMATION PLEASE VISIT WWW.SUNEARTHINC.COM.

SunEarth®

Contact the SunEarth Team for More Information.

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