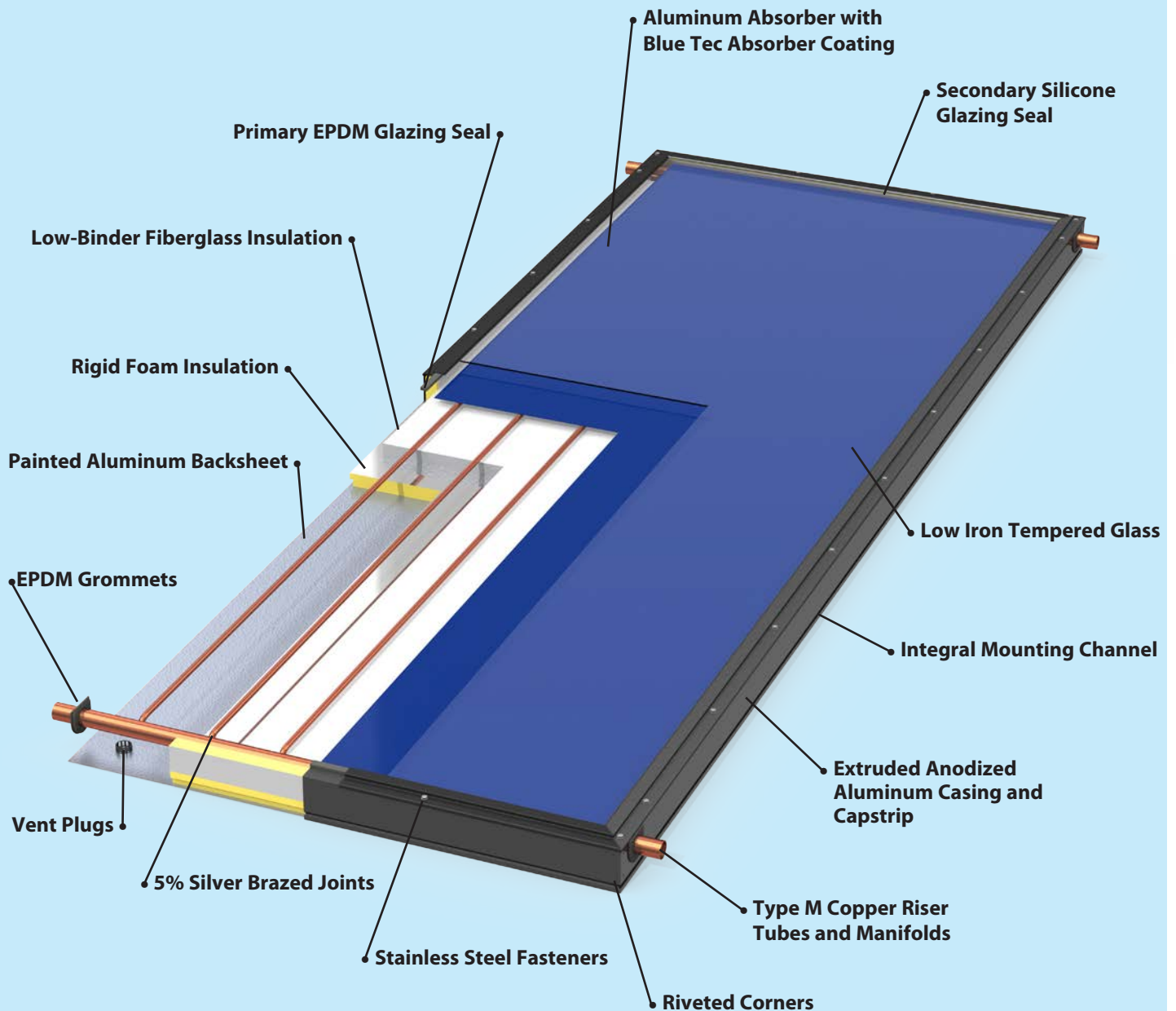




## THE CHOICE IN COMMERCIAL SOLAR WATER HEATING TECHNOLOGY



# SUN EARTH INC. ThermoRay SERIES SPECIFICATIONS

SunEarth Model No.	Width Inches	Length Inches	Depth Inches	Gross Area Sq Ft	Net Aperture Sq Ft	Dry Weight, Lbs.	Fluid Capacity U.S. Gallons	Water Design Flow Rate GPM	40% Propylene Glycol Design Flow Rate GPM	Pressure Drop at Design Flow Rate in PSIG	Max Flow Rate GPM	Std. Header Width, Inches	Std. Header Diameter, Inches Nominal	Header, Center to Center, Inches
TRB-40	48.2	122.2	3.25	40.9	37.2	130	.87	1.20	1.39	0.009	12	51.38	1	115.63
TRB-32	48.2	98.2	3.25	32.8	29.7	98	.77	0.97	1.11	0.006	12	51.38	1	93.63

ASTM E330 Maximim Test Load ±90 psf - Apply the appropriate factors of safety according to the test standards and local building code requirements when designing a solar thermal system

## THERMAL PERFORMANCE RATINGS\*

Category (Ti-Ta)	BTU/ft <sup>2</sup> ·Day		
	CLEAR DAY	MILDLY CLOUDY DAY	CLOUDY DAY
A(-9°F)	1471	1115	758
B(9°F)	1340	984	627
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 Standard OG-100. Tested at water design flowrate.

## ENGINEERING SPECIFICATIONS

(Performance specifications subject to testing error of +/- 3%)

The following shall be the specifications for the solar collectors. Collectors shall be SunEarth ThermoRay model\_\_\_\_, and shall be of the glazed liquid flat plate type. Collectors shall be tested in conformance with ASHRAE 90-2003 and Solar Rating and Certification Corporation (SRCC) 100-05, and have their thermal performance rated according to SRCC Document RM-1. The collectors shall be certified by SRCC and listed by the International Association of Plumbing and Mechanical Officials (IAPMO).

### GENERAL:

The dimensions of the collector shall be \_\_\_\_\_ inches in length, \_\_\_\_\_ inches in width and 3.25 inches in depth. The collector casing shall be an anodized aluminum extrusion (AA 6063 T6), minimum thickness 0.060 inch, with an architectural dark bronze finish. The casing shall have a notched framewalls for ease of plate removal and reinstallation. Sheet metal screwed fasteners shall be stainless steel (18-8 #10). The backsheet shall be painted textured aluminum not less than .014 inch thickness. A 1 inch vent plug shall be installed in each of the four corners of the backsheet to minimize condensation. An integral mounting channel shall allow the solar collector to be mounted without penetration of the extruded aluminum casing.

### GLAZING:

The collector glazing shall be on sheet of low iron tempered glass, with a minimum of .125 inch thickness (.15625 on TRB-40), and a minimum transmissivity of 91 percent (89 on TRB-40). The glazing shall be thermally isolated from the casing by a continuous EPDM gasket. There shall be a continuous secondary silicone seal between the glass and casing capstrip to minimize moisture from entering the casing.

### INSULATION:

Due to SunEarth's policy of continuous product improvement, specifications are subject to change without notice.

The insulation shall be foil-faced polyisocyanurate foam sheathing board of a minimum 1 inch thickness, silicone in place to the aluminum backsheet, covered by low-binder fiberglass of a minimum 1 inch thickness, providing thermal isolation of the foam from the absorber plate. Total thermal resistance shall be a minimum of R-12. The sides and ends of the collector shall be insulated with a minimum of 1 inch foil-faced polyisocyanurate foam sheathing board.

### ABSORBER PLATE AND PIPING:

The absorber shall consist of an aluminum plate of no less than .017 inch thickness. Risers shall be a minimum of .39 inch O.D. copper with a wall thickness of .020 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 400F maximum operating temperature.

### ABSORBER COATING AND PERFORMANCE CURVE:

The absorber coating shall be blue sputtered with a minimum absorptivity of 95 percent and a maximum emissivity of 5 percent. The instantaneous efficiency of the collector shall be a minimum Y-intercept of 0.751 and a slope of no less than -0.734 Btu/ft<sup>2</sup>\*hr\*°F.

Note: Please refer to the SRCC website at [www.solar-rating.org](http://www.solar-rating.org) for the current y-intercept and slope for each collector.

MANUFACTURED BY:



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