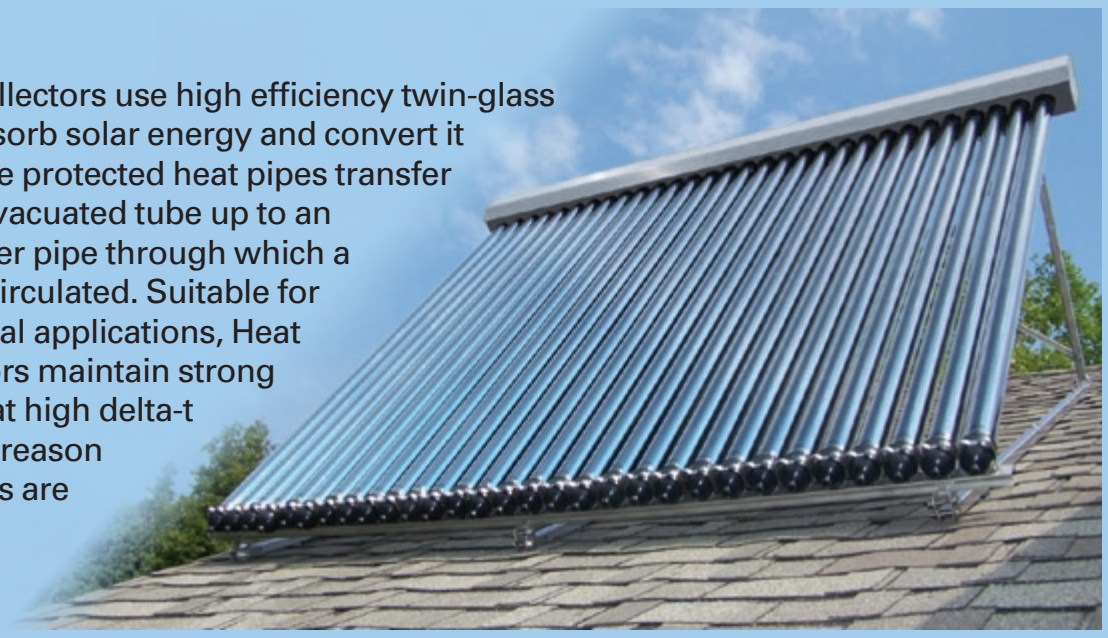
Heat Transfer 30-Tube Collector

Product Specifications Sheet

HeatTransfer
Advanced Heating and Hot Water Systems

Overview

Heat Transfer Solar Collectors use high efficiency twin-glass evacuated tubes to absorb solar energy and convert it into usable heat. Freeze protected heat pipes transfer heat from within the evacuated tube up to an insulated copper header pipe through which a heat transfer liquid is circulated. Suitable for domestic or commercial applications, Heat Transfer Solar Collectors maintain strong efficiency levels even at high delta-t temperatures. For this reason Heat Transfer collectors are ideal for cold regions and high temperature applications.



Included in Package

Part #HP-30SC

- Manifold with 30 Evacuated Tubes
- Standard Roof Frame
- Conductive Heat Paste

Internationally Certified Product

OG-100

Basic Collector Data

Collector Size	30 Tubes
Overall Length of Frame Front Track	80" (1980mm)
Overall Height of Frame Front Track and Manifold	6.14. (156mm)
Overall Width of Manifold	86.4 (2196mm)
Absorber O.D. Inner Tube x Exposed Tube Length	25.8 ft
Aperture I.D. of Outer Glass Tube x Exposed Tube Length	30.3 ft
Gross Area	46.8_ (4.35m_)
Gross Dry Weight	208.5lb (94.8kg)
Fluid Capacity	24 fl oz (710ml)

Copper Header Specifications

Material	99.93% Copper
Length	L + (X – 1) x 2.759 + 9.45
Header Dimensions	ø0.7"ODx0.047 M Grade Copper Pipe
Brazing Rod Materials	45% Ag, 30% Cu, 25% Zn (BAg45CuZi) & 93% Cu, 7% P (Bcu93P)
Inlet & Outlet	ø0.866"OD x 0.039"
Temperature Sensor Port	ø0.039"OD x 0.039"
Recommended Flow Rate	0.026G/Tube/min (10tube=0.26G/min)
Max Flow Rate	3.9G/Min (15L/min)
Max Operating Pressure Rating	800kPa (116psi)

Manifold Casing and Insulation

Manifold Length	L=(x-1) x 2.759+6.3
Height	5.15" / 130mm
Width	5.512" / 140mm
Tube Spacing	2.759" / 70mm
Manifold Material	0.03" Alum (Grade 5005-H16)
Glass Wool Insulation	4.36 lb / ft

Frame

Material	0.059"thk 439 Stainless Steel
SS Tube Clips	301 Stainless Steel
Bolts, Washers and Nuts	304 Stainless Steel&5005-H16 Aluminum

Evacuated Tubes

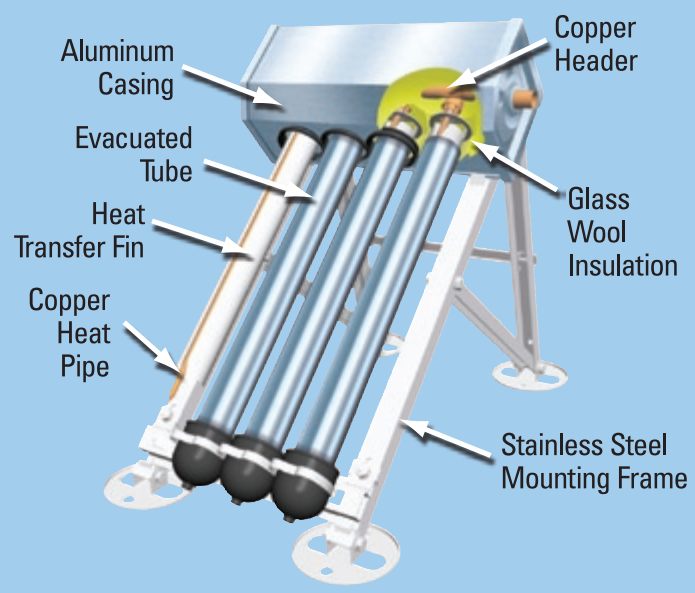
Tube Length	70.8" / 1800mm
Outer Tube Dimensions	ø2.28x0.07 / ø 58mm x 1.8mm
Inner Tube Dimensions	ø1.85 x 0.07ø47mm x 1.8mm
Weight	4.4lb / 2kg
Glass Material	Borosilicate Glass 3.3
Absorber Material	Graded-Index Coating AL-N
Thermal Expansion	3.3 x 10-6˚C
Absortance(_)	>92% (AM1.5)
Emittance(_)	<8% (80˚C)
Vacuum	P<5 x 10(–3) Pa
Stagnation Temperature	>395˚F / >200˚C
Heat Loss	<0.8W (m_˚C)
Maximum Strength	120psi / 0.8Mpa
Absorber Area per Tube	0.86ft_ / 0–08m_
Heat Transfer Fins	0.0078" / 0.2mm Aluminum Fins

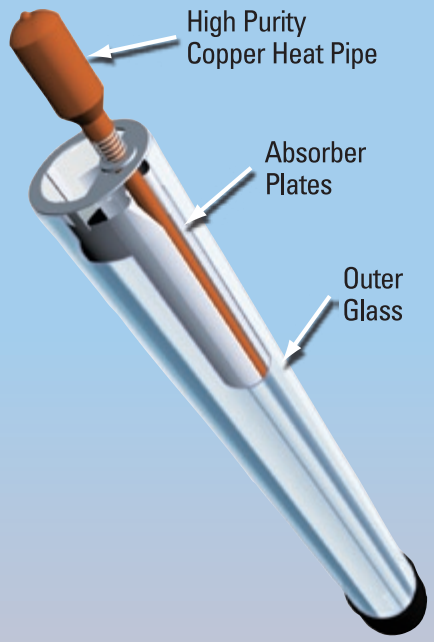
Heat Pipes

Length	70.8" (1800mm)
Material	ø0.314"ODx0.027" Oxygen Free Copper
Condenser Dimensions	ø0.78"ODx1.18" (ø20mmODx30mm)
Heat Transfer Liquid	Purified Water (non-toxic)
Maximum Working Temperature	577˚(300˚C)
Startup Temperature	<86˚F (<30˚C)
Vacuum	P<5x10(–3) Pa
Vertical Installation Angle	20-70˚
Spring Plate	0.8mm/0.03"Aluminum(Grade 5005-H16)
Spring	301 Grade Stainless Steel
Washer	1.5mm/0.05"Aluminum(Grade 5005-H16)

Rubber Components

Material	HTV Silicone Rubber (UV Stabilized)
Density	1.15g/cm_+/–0.05
Durometer Hardness	50-70 (Depending on Components)
Elongation	320%
Rebound	54%
Max. Working Temperature	577˚(300˚)
Tensile Strength	6.4 Mpa
Tear Strength	12.5 KNM





Solar Collector Certification and Rating

SRCC-OG-100

CERTIFIED SOLAR COLLECTOR

SUPPLIER: **Heat Transfer Products**
120 Braley Road
East Freetown, MA 02717
MODEL: HTP-Evacuated Tube HP-30SC
COLLECTOR TYPE: Tubular
CERTIFICATION #: 100-2008-019A

Collector Thermal Performance Rating

Megajoules Per Panel Per Day				
CATEGORY (Ti-Ta)*		Clear Day 23 MJ/ m²-d	Mildly Cloudy 17 MJ/ m²-d	Cloudy Day 11 MJ/ m²-d
A	(–5°C)	41	31	21
B	(5°C)	39	29	19
C	(20°C)	37	27	17
D	(50°C)	32	22	12
E	(80°C)	27	17	8

Thousands of Btu Per Panel Per Day				
CATEGORY (Ti-Ta)		Clear Day 2000 Btu/ ft²-d	Mildly Cloudy 1500 Btu/ ft²-d	Cloudy Day 1000 Btu/ ft²-d
A	(–9°F)	39	29	20
B	(9°F)	37	28	18
C	(36°F)	35	25	16
D	(90°F)	30	21	12
E	(144°F)	26	16	7

A–Pool Heating (Warm Climate) B–Pool Heating (Cool Climate) C–Water Heating (Warm Climate)
D–Water Heating (Cool Climate) E–Air Conditioning
*Ti = Inlet temperature to the collector
*Ta = The ambient air temperature
(For the methodology of this thermal performance rating see www.solar-rating.org/standards/ogdocuments/RM-1_2002.PDF)