

OG-100 ICC-SRCC™ CERTIFIED SOLAR COLLECTOR # 10001911



Supplier:
Apricus Inc.
 6060 W Manchester Ave #109
 Los Angeles, CA 90045 USA
 www.apricus.com
 Reference Standard:
SRCC Standard 100-2013-01

Brand: Apricus
 Model: ETC-20
 Collector Type: Tubular
 Certification #: 10001911
 Original Certification: March 03, 2014
 Renewal Expiration Date: April 30, 2018
 Certifications must be renewed annually.

This solar collector has been evaluated and certified by the Solar Rating & Certification Corporation™ (ICC-SRCC™), an ISO/IEC 17065 accredited and EPA recognized Certification Body, in accordance with the SRCC OG-100 Certification Program, as defined in SRCC OG-100, Operating Guidelines and Minimum Standards for Certifying Solar Collectors. This award of certification is subject to all terms and conditions of the current OG-100 Program Agreement and the documents incorporated therein by reference. This document must be reproduced in its entirety.

COLLECTOR THERMAL PERFORMANCE RATINGS							
Kilowatt-hours (thermal) Per Panel Per Day				Thousands of Btu Per Panel Per Day			
Climate -> Category (Ti-Ta)	High Radiation (6.3 kWh/m ² .day)	Medium Radiation (4.7 kWh/m ² .day)	Low Radiation (3.1 kWh/m ² .day)	Climate -> Category (Ti-Ta)	High Radiation (2000 Btu/ft ² .day)	Medium Radiation (1500 Btu/ft ² .day)	Low Radiation (1000 Btu/ft ² .day)
A (-5 °C)	9.0	6.8	4.6	A (-9 °F)	30.9	23.3	15.7
B (5 °C)	8.7	6.5	4.3	B (9 °F)	29.8	22.2	14.6
C (20 °C)	8.2	5.9	3.7	C (36 °F)	27.9	20.3	12.7
D (50 °C)	6.9	4.7	2.5	D (90 °F)	23.4	16.0	8.5
E (80 °C)	5.3	3.1	1.2	E (144 °F)	18.2	10.7	4.0

A- Pool Heating (Warm Climate) B- Pool Heating (Cool Climate) C- Water Heating (Warm Climate) D- Space & Water Heating (Cool Climate) E- Commercial Hot Water & Cooling

TECHNICAL RESULTS				Tested in accordance with: ISO 9806:1994				
ISO Efficiency Equation [NOTE: Based on gross area and (P)=Ti-Ta]								
SI UNITS:	$\eta = 0.437 - 0.95850(P/G) - 0.00730(P^2/G)$			Y Intercept:	0.441	Slope:	-1.506 W/m ² .°C	
IP UNITS:	$\eta = 0.437 - 0.16893(P/G) - 0.00071(P^2/G)$			Y Intercept:	0.441	Slope:	-0.265 Btu/hr.ft ² .°F	
Incident Angle:	θ	10 ⁰	20 ⁰	30 ⁰	40 ⁰	50 ⁰	60 ⁰	70 ⁰
Transverse IAM:	K _{tr}	1.02	1.07	1.17	1.30	1.43	1.43	
Longitudinal IAM:	K _l	1.00	0.99	0.97	0.95	0.91	0.83	0.68

COLLECTOR SPECIFICATIONS					
Gross Area:	2.994 m ²	32.23 ft ²	Dry Weight:	64.0 kg	141.1 lb
Net Aperture Area:	1.906 m ²	20.52 ft ²	Fluid Capacity:	0.5 liter	0.1 gal
REMARKS:					

Shawn Martin

Technical Director

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Please verify certification is active on the SRCC website www.solar-rating.org.
 © Solar Rating & Certification Corporation™ (ICC-SRCC) 3060 Saturn Street, Suite 100, Brea, CA 92821



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ADDITIONAL INFORMATION ([click here to return to the rating page](#))

COLLECTOR TESTING INFORMATION

Test Lab:	TUV Rheinland (Shanghai) Co., Ltd.	Test Date:	January 13, 2014		
Test Report Number:	154027353_SRCC_ETC-30_Report_Gao	Test Location:	outdoors		
Test Fluid:	Water				
Test Mass Flow Rate:	0.0200 kg/(s m²)	14.75 lb/(hr ft²)	Test Pressure:	1264 kPa	183 psi

SOLAR COLLECTOR CONSTRUCTION DETAILS

Header Enclosure:

Gross Length:	2.004 m	Gross Width:	1.494 m	Gross Depth:	0.140 m
Tube Bank:					
Gross Length:	0.129 m	Gross Width:	1.494 m		

COLLECTOR MATERIALS

Outer Cover:	Glass Tube	Enclosure back:	Aluminum	Back Insulation:	Vacuum,
Inner Cover:	Glass Tube	Enclosure side:	Aluminum	Side Insulation:	,
Absorber Description:	Glass Tubes	Flow Pattern:	Mixed		
Riser Tube:	Copper	Fin:	Glass		
Absorber Coating:	Selective	Tube to fin connection	Mechanical		

GLAZING	Outer Cover	Inner Cover
Material:	Glass Tube	Glass Tube
Surface Characteristics:	Smooth	Smooth
Thickness:	1.8 mm	1.6 mm
Transmissivity:	High (equal to or greater than 90%)	Low (below 87%)
Gross Tube Length (uninstalled):	1.828 m	
Diameter:	58.600 m	47.000 m
Tube Glazing to Header Enclosure Seal:	EPDM gasket	



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Reflector Shape:		Reflector Material:	
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ABSORBER					
Header Material:	Copper	Header OD:	21.2 mm	Header Wall:	0.6 mm
Riser Tube Material:	Copper	Riser Tube OD:	8.0 mm	Riser Tube Wall Thickness:	1.0 mm
Fin Material:	Glass	Fin Thickness:	0.20 mm		
Flow Pattern:	Mixed	Number of Flow Tubes / Heat Pipes:	20	Tube / Heat Pipe Spacing:	70.0 mm
Number of absorber tubes:	1	Flow Tube to Fin Bond:	Mechanical	Length of Flow Path:	
Length of Flow Path:		Riser to Fin/Plate Bond:	Mechanical		

INSULATION:					
Location	Type	Thickness	Location	Type	Thickness
Back – Top Layer:	Vacuum	4.0 mm	Sides – Inner Layer:		
Back – Bottom Layer:			Sides – Outer Layer:		
Enclosure Fastening Methods:	Rivets		Header Enclosure:	Aluminum with plastic ends	

Power Output per Collector(W) [Ti-Ta, G = 1000 W/m²]				
0	10	30	50	70
1307	1276	1201	1109	1000



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PRESSURE DROP				
Flow	ΔP		Flow	ΔP
ml/s	Pa		gpm	in H ₂ O
20	0		0.32	0.0
50	0		0.79	0.0
80	0		1.27	0.0



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ICC-SRCC OG-100 Certification Label

The collectors listed in this certification must display the label below.
The certification label must be permanently affixed to each collector in accordance with SRCC OG-100 program requirements.

