

**OG-100 ICC-SRCC™ CERTIFIED SOLAR COLLECTOR # 10001909**



**SOLAR RATING  
& CERTIFICATION  
CORPORATION**

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-30 / ETC-30C  
Collector Type: Tubular  
Certification #: 10001909  
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 <sup>2</sup> .day)	Medium Radiation (4.7 kWh/m <sup>2</sup> .day)	Low Radiation (3.1 kWh/m <sup>2</sup> .day)	Climate -> Category (Ti-Ta)	High Radiation (2000 Btu/ft <sup>2</sup> .day)	Medium Radiation (1500 Btu/ft <sup>2</sup> .day)	Low Radiation (1000 Btu/ft <sup>2</sup> .day)
A (-5 °C)	13.3	10.0	6.8	A (-9 °F)	45.3	34.2	23.0
B (5 °C)	12.8	9.6	6.3	B (9 °F)	43.7	32.6	21.5
C (20 °C)	12.0	8.7	5.5	C (36 °F)	40.9	29.8	18.6
D (50 °C)	10.1	6.9	3.7	D (90 °F)	34.4	23.5	12.5
E (80 °C)	7.8	4.6	1.7	E (144 °F)	26.7	15.8	5.9

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 <sup>2</sup> .°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 <sup>2</sup> .°F	
Incident Angle:	$\theta$	10 <sup>0</sup>	20 <sup>0</sup>	30 <sup>0</sup>	40 <sup>0</sup>	50 <sup>0</sup>	60 <sup>0</sup>	70 <sup>0</sup>
Transverse IAM:	K <sub>tr</sub>	1.02	1.07	1.17	1.30	1.43	1.43	
Longitudinal IAM:	K <sub>l</sub>	1.00	0.99	0.97	0.95	0.91	0.83	0.68

COLLECTOR SPECIFICATIONS					
Gross Area:	4.397 m <sup>2</sup>	47.33 ft <sup>2</sup>	Dry Weight:	95.0 kg	209.4 lb
Net Aperture Area:	2.859 m <sup>2</sup>	30.77 ft <sup>2</sup>	Fluid Capacity:	0.7 liter	0.2 gal
REMARKS:					

*Shawn Martin*

Technical Director

Print Date: April 24, 2018 Page 1 of 5

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



**OG-100 ICC-SRCC™ CERTIFIED SOLAR COLLECTOR # 10001909**



**SOLAR RATING  
& CERTIFICATION  
CORPORATION™**

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-30 / ETC-30C  
Collector Type: Tubular  
Certification #: 10001909  
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.

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

**COLLECTOR TESTING INFORMATION**

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

**SOLAR COLLECTOR CONSTRUCTION DETAILS**

**Header Enclosure:**

<b>Gross Length:</b>	2.004 m	<b>Gross Width:</b>	2.194 m	<b>Gross Depth:</b>	0.140 m
<b>Tube Bank:</b>					
<b>Gross Length:</b>	0.129 m	<b>Gross Width:</b>	2.190 m		

**COLLECTOR MATERIALS**

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

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



**OG-100 ICC-SRCC™ CERTIFIED SOLAR COLLECTOR # 10001909**



**SOLAR RATING  
& CERTIFICATION  
CORPORATION™**

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-30 / ETC-30C  
Collector Type: Tubular  
Certification #: 10001909  
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.

<b>Reflector Shape:</b>		<b>Reflector Material:</b>	
-------------------------	--	----------------------------	--

ABSORBER					
<b>Header Material:</b>	Copper	<b>Header OD:</b>	21.2 mm	<b>Header Wall:</b>	0.6 mm
<b>Riser Tube Material:</b>	Copper	<b>Riser Tube OD:</b>	8.0 mm	<b>Riser Tube Wall Thickness:</b>	1.0 mm
<b>Fin Material:</b>	Glass	<b>Fin Thickness:</b>	0.20 mm		
<b>Flow Pattern:</b>	Mixed	<b>Number of Flow Tubes / Heat Pipes:</b>	30	<b>Tube / Heat Pipe Spacing:</b>	70.0 mm
<b>Number of absorber tubes:</b>	1	<b>Flow Tube to Fin Bond:</b>	Mechanical	<b>Length of Flow Path:</b>	
<b>Length of Flow Path:</b>		<b>Riser to Fin/Plate Bond:</b>	Mechanical		

INSULATION:					
Location	Type	Thickness	Location	Type	Thickness
<b>Back – Top Layer:</b>	Vacuum	4.0 mm	<b>Sides – Inner Layer:</b>		
<b>Back – Bottom Layer:</b>			<b>Sides – Outer Layer:</b>		
<b>Enclosure Fastening Methods:</b>	Rivets		<b>Header Enclosure:</b>	Aluminum	

Power Output per Collector(W) [ Ti-Ta, G = 1000 W/m² ]				
0	10	30	50	70
1920	1874	1765	1629	1468



**OG-100 ICC-SRCC™ CERTIFIED SOLAR COLLECTOR # 10001909**



SOLAR RATING  
& CERTIFICATION  
CORPORATION

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-30 / ETC-30C  
Collector Type: Tubular  
Certification #: 10001909  
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.

PRESSURE DROP				
Flow	$\Delta P$		Flow	$\Delta P$
ml/s	Pa		gpm	in H <sub>2</sub> O
20	80		0.32	0.3
50	380		0.79	1.5
80	896		1.27	3.6



**OG-100 ICC-SRCC™ CERTIFIED SOLAR COLLECTOR # 10001909**



**SOLAR RATING  
& CERTIFICATION  
CORPORATION**

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-30 / ETC-30C  
Collector Type: Tubular  
Certification #: 10001909  
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.

**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.

