



**CERTIFIED SOLAR COLLECTOR**

SUPPLIER:  
**Boss Polymer Technologies**  
 28 Miles Street  
 Mulgrave  
 Melbourne, VICTORIA 3170 Australia  
 www.bosspolymer.com.au

BRAND: TufMan  
 MODEL: 10 Tube TufMan  
 COLLECTOR TYPE: Unglazed Flat Plate  
 CERTIFICATION #: 2011093A  
 Original Certification: February 16, 2012  
 Expiration Date: November 01, 2023

In Accordance with:  
**SRCC Standard 100-2010-08**

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

COLLECTOR THERMAL PERFORMANCE RATING (Collector Tested per ISO 9806:1994)							
Kilowatt-hours (thermal) Per m <sup>2</sup> Per Day				Thousands of Btu Per ft <sup>2</sup> Per Day			
Climate ->	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 ->	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)
Category (Ti-Ta)				Category (Ti-Ta)			
A (-5 °C)	5.2	3.9	2.5	A (-9 °F)	1.7	1.2	0.8
B (5 °C)	3.9	2.6	1.3	B (9 °F)	1.2	0.8	0.4
C (20 °C)	2.3	1.1	0.2	C (36 °F)	0.7	0.4	0.1
D (50 °C)	0.3	0.0	0.0	D (90 °F)	0.1	0.0	0.0

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

COLLECTOR SPECIFICATIONS					
<b>Gross Area:</b>	8.400 m <sup>2</sup>	90.42 ft <sup>2</sup>	<b>Dry Weight:</b>	32 kg	71 lb
<b>Net Aperture Area:</b>	8.110 m <sup>2</sup>	87.30 ft <sup>2</sup>	<b>Fluid Capacity:</b>	13.0 liter	3.4 gal
<b>Absorber Area:</b>	0.000 m <sup>2</sup>	0.00 ft <sup>2</sup>	<b>Test Pressure:</b>	415 kPa	60 psi

TECHNICAL INFORMATION		Tested in accordance with: ISO 9806:1994
<b>ISO Efficiency Equation</b> [NOTE: Based on gross area and (P)=Ti-Ta]		
<b>SI UNITS:</b>	Wind speed (u) in m/s, Temperature (Ti – Ta) in °C, Radiation (G") in W/m <sup>2</sup> $\eta = (0.999)(1 - 0.0639u) - (12.1671 + 0.4601u)(P/G")$	
<b>IP UNITS:</b>	Wind speed (u) in mph, Temperature (Ti – Ta) in °F, Radiation (G") in Btu/hr-ft <sup>2</sup> $\eta = (0.999)(1 - 0.0286u) - (2.1429 + 0.0362u)(P/G")$	

Incident Angle Modifier								Test Fluid:	
θ	10	20	30	40	50	60	70	Water	
κτ <sub>a</sub>	1.00	0.98	0.96	0.92	0.85	0.74	0.49	<b>Test Mass Flow Rate:</b>	0.0161 kg/(s m <sup>2</sup> )    11.85 lb/(hr ft <sup>2</sup> )
								<b>Impact Safety Rating: 0</b>	

REMARKS: All sizes of this collector model are certified

*Jean Higgins*

Technical Director

Print Date: May, 2015 Page 1 of 1  
 Please verify certification is active on the SRCC website.  
 © Solar Rating & Certification Corporation™

www.solar-rating.org ♦ 400 High Point Drive, Suite 400 ♦ Cocoa, Florida 32926 ♦ (321) 213-6037 ♦ Fax (321) 821-0910

