



SOLAR RATING
& CERTIFICATION
CORPORATION

OG-100 ICC-SRCC™ CERTIFIED SOLAR AIR HEATING COLLECTOR #10001759

SUPPLIER:

USA: Conserval Systems, Inc.
10 John James Audubon Pkwy, Ste 110
Amherst, NY 14228 USA

Canada: Conserval Engineering Inc.
200 Wildcat Road
Toronto, ON M3J 2N5 Canada
solarwall.com

BRAND:

MODEL: SolarWall
SW 2-Stage
COLLECTOR TYPE: Air Transpired
CERTIFICATION NUMBER: 10001759
ORIGINAL CERTIFICATION DATE: Oct. 22, 2012
RENEWAL EXPIRATION DATE: Oct. 1, 2023

Certifications are subject to annual renewal

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

OG-100 COLLECTOR EFFICIENCY RATINGS¹ (η) – Black Absorber Color²

Wind Speed ³ ►	Low Wind (1.0 m/s, 2.2 mph)	Medium Wind (2.0 m/s, 4.5 mph)	High Wind (3.0 m/s, 6.7 mph)
Air Flow Rate			
0.3 scmm/m ² (1.1 scfm/ft ²)	0.34	0.32	0.29
0.6 scmm/m ² (2.1 scfm/ft ²)	0.47	0.43	0.40
1.2 scmm/m ² (4.1 scfm/ft ²)	0.59	0.56	0.53

1: Thermal efficiency (η) is based on aperture area and includes back losses.

2: Efficiency ratings are based on test data for the specific collector described in the "Collector Test Sample Details" section below. Performance values for collectors that use an absorber painted a different color than the one tested can be estimated by multiplying the efficiency values above by the ratio of the absorptivity of the new paint color and the absorptivity of the tested collector (0.94 in this case). This assumes that the new color paint has a similar emissivity to the tested collector (0.88 in this case), the absorbers in each stage are the same color. Absorptivity should be measured per ASTM C1549.

3: Efficiency data adjusted to 1.0, 2.0, 3.0 m/s speeds by means of linear interpolation. Original data available in Testing Summary below.

CERTIFIED COLLECTOR SPECIFICATIONS

Collectors must match the design of the sample tested for certification. In order to be considered certified, installed collectors must match the following specifications.

Description	2-Stage, Open-Loop, Transpired, Solar Air Heating Collector	
Max. Flow Rate	1.2 scmm/m ² (4.1 scfm/ft ²)*	
Panel Width	945 mm (37.21 in)	
Panel Length	Varies	
Air Inlet	Front perforated panel	
Air Outlet	Varies	
STAGE 1		
Stage Type	<input checked="" type="checkbox"/>	Unglazed
	<input type="checkbox"/>	Glazed
Absorber Type	Perforated galvanized steel plate	
STAGE 2		
Stage Type	<input type="checkbox"/>	Unglazed
	<input checked="" type="checkbox"/>	Glazed: Polycarbonate, 1 mm thick, 50% panel coverage
Absorber Type	Perforated galvanized steel plate	



* Data supplied by collector manufacturer and was not measured independently by the testing laboratory.



TESTING SUMMARY

SOLARWALL SW-2 STAGE COLLECTOR

ICC-SRCC OG-100 CERTIFICATION #10001759

Test Lab Exova Canada, Inc. Laboratory testing of a collector sample is required for OG-100 certification to confirm that the collector passes qualification tests and to obtain performance results. The following sections provide information on the collector tested for the purposes of OG-100 certification.

Test Report Number 11-06-S0012

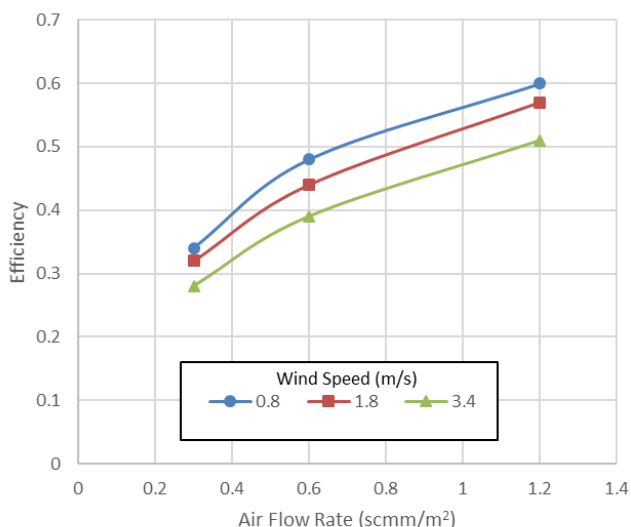
Test Report Date August 17, 2011

Test Standard CSA F378-2011

COLLECTOR TEST SAMPLE DETAILS							
Absorber	Coating	Paint: Black, SW56068					
	Absorptivity	0.95*					
	Material	Galvanized steel, 24 gauge					
	Porosity	Not reported					
Gross Area		9.243 m ² (99.49 ft ²)					
Aperture Area (Net)		9.243 m ² (99.49 ft ²)					
Gross Sample Dimensions (LXWXH)		3.355 m x 2.755 m x 0.24 cm 11.0 ft x 9.0 ft x 9.45 in					
Dry Weight		Not reported					
THERMAL EFFICIENCY TESTING DETAILS							
Testing Location		Indoors, conditioned space (25° C)					
Added Back Insulation		2" rigid foam					
THERMAL EFFICIENCY DATA SUMMARY (912 W/m ² average insolation)							
Wind Speed		0.8 m/s (1.8 mph)	1.8 m/s (4.0 mph)		3.4 m/s (7.6 mph)		
Air Flow		η	Δ T (K)**	η	Δ T (K)**	η	Δ T (K)**
0.3 scmm/m ² (1.1 scfm/ft ²)		0.34	44.3	0.32	41.1	0.28	36.8
0.6 scmm/m ² (2.1 scfm/ft ²)		0.48	31.7	0.44	29.8	0.39	26.6
1.2 scmm/m ² (4.1 scfm/ft ²)		0.60	20.8	0.57	19.6	0.51	19.0

The graph plots Thermal Efficiency (Y-axis, 0 to 0.7) against Air Flow Rate (X-axis, 0 to 1.4 scmm/m²). Three data series are shown for different wind speeds: 0.8 m/s (blue circles), 1.8 m/s (red squares), and 3.4 m/s (green triangles). All three series show a positive correlation between air flow rate and thermal efficiency. The 0.8 m/s series consistently shows the highest efficiency, followed by 1.8 m/s, and then 3.4 m/s.

Air Flow Rate (scmm/m²)	Efficiency (0.8 m/s)	Efficiency (1.8 m/s)	Efficiency (3.4 m/s)
0.3	0.34	0.32	0.28
0.6	0.48	0.44	0.39
1.2	0.60	0.57	0.51



* Data supplied by collector manufacturer and was not measured independently by the test laboratory.

** ΔT defined as $T_e - T_a$ where T_e is the temperature of the air exiting the collector and T_a is the ambient (inlet) air temperature.

REMARKS:

- Performance is unreliable if the collector is used at a pressure drop of less than 25 Pa.
- Wind impact on efficiency should not be extrapolated to large-scale systems because the ratio of wind-blown edge loss to gain across the surface area is diminished for large vs. small collectors (arrays).
- All lengths of this collector are certified.

Shawn Martin

Vice President of Technical Services, ICC-SRCC

