



SOLAR RATING  
& CERTIFICATION  
CORPORATION\*

## OG-100 ICC-SRCC™ CERTIFIED SOLAR AIR HEATING COLLECTOR # 2011123A

**SUPPLIER:**  
Matrix Energy  
294 Labrosse Avenue  
Pointe Claire, Québec  
Canada H9R 5L8  
matrixairheating.com

**BRAND:** MatrixAir  
**MODEL:** DT  
**COLLECTOR TYPE:** Air Transpired  
**CERTIFICATION NUMBER:** 2011123A  
**ORIGINAL CERTIFICATION DATE:** Jul. 02, 2012  
**RENEWAL EXPIRATION DATE:** May 31, 2019  
*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 RATINGS<sup>1</sup> ( $\eta$ ) – Black Absorber Color<sup>2</sup>

Wind Speed <sup>3</sup> ►	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			
1.2 scmm/m <sup>2</sup> (4.0 scfm/ft <sup>2</sup> )	0.51	0.35	0.21
2.1 scmm/m <sup>2</sup> (7.0 scfm/ft <sup>2</sup> )	0.68	0.56	0.35
3.4 scmm/m <sup>2</sup> (11.0 scfm/ft <sup>2</sup> )	0.74	0.68	0.54
4.3 scmm/m <sup>2</sup> (14.0 scfm/ft <sup>2</sup> )	0.75	0.71	0.65

1: Thermal efficiency ( $\eta$ ) is based on aperture area and does not include 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.

<b>Type</b>	<input checked="" type="checkbox"/> Unglazed <input type="checkbox"/> Glazed
<b>Description</b>	2-Stage Transpired Free-Standing Triangular Solar Air Heating Collector
<b>Max. Flow Rate</b>	2.1 scmm/m <sup>2</sup> (14.0 scfm/ft <sup>2</sup> )*
<b>Panel Width</b>	0.624 m (24.6 in)*
<b>Panel Length</b>	3.05 m (10 ft)*
<b>Air Inlet</b>	Transpired – Absorber perforations
<b>Air Outlet</b>	Variable
<b>ABSORBER</b>	
<b>Type</b>	Painted Perforated Plate
<b>Material</b>	Steel, 24 gauge*



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



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# TESTING SUMMARY

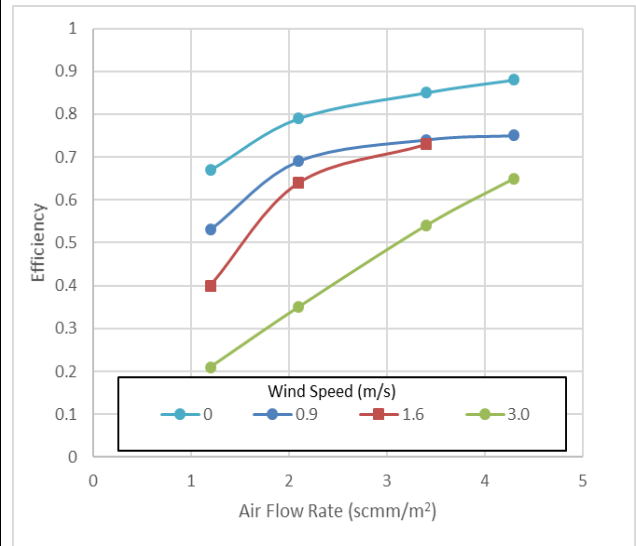
## MATRIXAIR DT COLLECTOR

### ICC-SRCC OG-100 CERTIFICATION #2011123A

**Test Lab** Exova  
**Test Report Number** 09-08-0028  
**Test Report Date** June 12, 2010  
**Test Standard** CSA F378-1987

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.

COLLECTOR TEST SAMPLE DETAILS		
<b>Absorber</b>	<b>Coating</b>	Paint, Black
	<b>Absorptivity</b>	0.94**
	<b>Material</b>	Steel
	<b>Porosity</b>	3.1%
	<b>Profile</b>	Flat
<b>Gross Area</b>		1.716 m <sup>2</sup> (18.47 ft <sup>2</sup> )
<b>Aperture Area (Net)</b>		1.580/ m <sup>2</sup> (17.01 ft <sup>2</sup> )
<b>Gross Sample Dimensions (LXWXD)</b>		2.75 m x 0.54 m x 0.615 m 9.0 ft x 1.8 ft x 2.0 ft <i>(Depth measured at the base of triangle)</i>
<b>Dry Weight</b>		Not Reported



THERMAL EFFICIENCY TESTING DETAILS	
<b>Testing Location</b>	Indoors, Conditioned space (25° C)
<b>Added Back Insulation</b>	2" foil-faced fiberglass

THERMAL EFFICIENCY DATA SUMMARY (900 W/m <sup>2</sup> average insolation)									
Wind Speed		0.0 m/s (0.0 mph)		0.9 m/s (2.0 mph)		1.6 m/s (3.6 mph)		3.0 m/s (6.7 mph)	
		$\eta$	$\Delta T$ (K)***	$\eta$	$\Delta T$ (K)***	$\eta$	$\Delta T$ (K)***	$\eta$	$\Delta T$ (K)***
<b>Air Flow</b>									
1.2 scmm/m <sup>2</sup> (4.0 scfm/ft <sup>2</sup> )		0.67	24.3	0.53	19.8	0.40	14.5	0.21	7.9
2.1 scmm/m <sup>2</sup> (7.0 scfm/ft <sup>2</sup> )		0.79	16.5	0.69	15.0	0.64	13.3	0.35	7.7
3.4 scmm/m <sup>2</sup> (11.0 scfm/ft <sup>2</sup> )		0.85	11.7	0.74	10.2	0.73	9.7	0.54	7.6
4.3 scmm/m <sup>2</sup> (14.0 scfm/ft <sup>2</sup> )		0.88	9.3	0.75	8.7	0.73	8.0	0.65	5.8

\*\* Data measured by test lab at the time of collector testing per CSA F378.

\*\*\*  $\Delta T$  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*  
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