



OG-100 Solar Thermal Collector Certification

No./2011124A

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CERTIFICATION HOLDER: Matrix Energy 294 Labrosse Avenue Pointe Claire, Québec H9R 5L8 Canada www.matrixairheating.com	EVALUATION SUBJECT	
	BRAND:	MatrixAir
	MODEL:	TR
	TYPE:	Solar Air Heating Collector - Transpired, Building Integrated, Unglazed

PRODUCT CERTIFICATION SYSTEM:

The ICC-SRCC OG-100 certification program includes evaluation and performance ratings for solar thermal collectors as established in the [ICC-SRCC Rules for Solar Heating & Cooling Product Listing Reports](#). The program also includes periodic factory inspections and surveillance of the manufacturer's quality management system.

COMPLIANCE WITH THE FOLLOWING STANDARD(S): ICC 901/SRCC 100 - 2020, Solar Thermal Collectors Standard

THERMAL PERFORMANCE TEST STANDARD: CSA F378-1987 (DEVIATION from ISO 9806-2017 specified in ICC 901)

COLLECTOR SPECIFICATIONS

To be considered certified, installed collectors must match the following specifications.

Max. Design Flow Rate	2.4 scmm/m ² (8.0 scfm/ft ²)	
Panel Width	1.92 m (6.28 ft)	
Panel Length	2.47 m (8.09 ft)	
Weight	9.8 – 19.5 kg/m ² (2 – 4 lb/ft ²)	
Air Inlet	Absorber panel perforations	
Air Outlet	Varies	
Orientation	0° (horizontal) - 90° (vertical)	
Absorber Type	Perforated, profiled 24-gauge steel plate with paint coating	
Absorber Profile	35150, Flat	

IDENTIFICATION:

Certified collectors must be identified with the OG-100 certification mark below in accordance with the [Rules for Certification Mark and Certificate Use](#) and labeled in with the information below per ICC 901/SRCC 100:



1. Manufacturer's name and model number.
2. ICC-SRCC OG-100 collector certification number
3. Maximum operating temperature
4. Dry (empty) weight
5. Fluid volume
6. Compatible heat transfer fluids
7. Standard stagnation temperature
8. Year of manufacture and/or serial number.

OG-100 COLLECTOR EFFICIENCY RATINGS¹ (η_a) – 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			
0.9 scmm/m² (3 scfm/ft²)	0.43	0.36	0.27
1.5 scmm/m² (5.0 scfm/ft²)	0.57	0.49	0.40
2.1 scmm/m² (6.7 scfm/ft²)	0.60	0.53	0.46

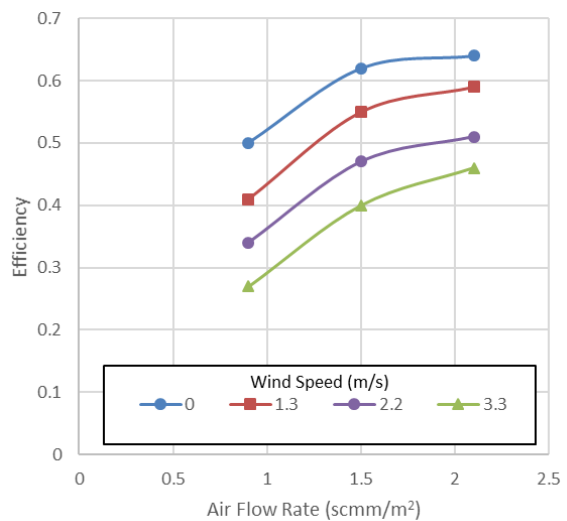
1: Thermal efficiency (η_a) is based on aperture area and includes back losses.
 2: Efficiency ratings are based on test data for the specific collector described in the "Collector Test Sample Details" section below. Performance values are only valid for collectors painted the same color as the test sample.
 3: Efficiency data calculated at 1.0, 2.0, 3.0 m/s speeds. Original data available in Testing Summary below.

LABORATORY TESTING SUMMARY

Test Lab	Bodycote Testing	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. These sections provide information on the sample tested for the purposes of OG-100 certification and the measured results.
Test Report Number	06-08-9157-A	
Test Report Date	May 15, 2007	
Test Standard	CSA F378-1987	

TEST SAMPLE DETAILS

Absorber	Coating	Black paint, 6068
	Absorptivity	0.94 (measured by lab)
	Emissivity	0.88 (measured by lab)
	Material	Steel, 24 gauge
	Porosity	Not Reported
Gross Area	4.72 m ² (50.8 ft ²)	
Aperture Area (Net)	4.72 m ² (50.8 ft ²)	
Gross Sample Dimensions (LXWXH)	2.47 m x 1.92 m x 22.9 cm (8.09 ft x 6.28 ft x 7.5 in)	



THERMAL EFFICIENCY TESTING DETAILS

Testing Location	Indoor solar simulator @ 25°C
Added Back/Side Insulation	2" rigid foam (R-16)

THERMAL EFFICIENCY DATA SUMMARY (908 W/m² average insolation)

Air Flow Rate	Wind Speed	1.3 m/s (2.9 mph)		2.2 m/s (4.9 mph)		3.3 m/s (7.4 mph)	
		η	ΔT (K)*	η	ΔT (K)*	η	ΔT (K)*
0.9 scmm/m ² (3 scfm/ft ²)		0.41	19.1	0.34	15.6	0.27	12.4
1.5 scmm/m ² (5 scfm/ft ²)		0.55	15.6	0.47	13.3	0.40	11.3
2.1 scmm/m ² (6.7 scfm/ft ²)		0.59	13.0	0.51	11.4	0.46	10.1

* 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.

CONDITIONS:

1. Collector must be installed and operated in accordance with the manufacturer's published instructions and local codes and regulations.
2. OG-100 Standard Performance Ratings have been calculated for the tested components using standardized conditions established by the OG-100 program and associated test standards. Actual performance will vary based on the specific usage, installation, and local environmental conditions. OG-100 Thermal performance values are valid only for collectors with the same absorber profile, perforation porosity, and color and where a pressure drop across the collector is less than 25 Pa.
3. Wind impact on efficiency should not be extrapolated to large-scale systems due to differences in the ratio of wind-blown edge loss to thermal gain across the surface area between large and small collectors.
4. The collector listed in this ICC-SRCC OG-100 certification must be labeled with the information listed above in accordance with the [ICC-SRCC Rules for Mark and Certificate Use](#).
5. OG-100 certifications do not include mounting hardware and fixtures.
6. Solar thermal collectors and mounting hardware and appurtenances must comply with all applicable local requirements for fire resistance. Solar thermal collectors must be mounted in accordance with the requirements of the collector and mounting hardware manufacturers to comply with local codes for structural loading for wind, seismic, snow and other loads.
7. Solar thermal collectors must be used with the heat transfer fluids listed in this document.
8. Solar thermal collector manufactured under a quality control program subject to periodic evaluation in accordance with the requirements of ICC-SRCC.
9. This document must be reproduced in its entirety.
10. Certification status should be confirmed on the ICC-SRCC Directory at www.solar-rating.org

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