


<b>SOLAR COLLECTOR CERTIFICATION AND RATING</b>    <b>SRCC OG-100</b>	<b>CERTIFIED SOLAR COLLECTOR</b>  <b>SUPPLIER:</b> <b>Roth Industries, Inc.</b> PO Box 245 Syracuse, NY 13211 USA  <b>MODEL:</b> Heliostar 252  <b>COLLECTOR TYPE:</b> Glazed Flat-Plate  <b>CERTIFICATION#:</b> 2008003A
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<b>COLLECTOR THERMAL PERFORMANCE RATING</b>							
Megajoules Per Panel Per Day				Thousands of BTU Per Panel Per Day			
CATEGORY	CLEAR DAY	MILDLY CLOUDY	CLOUDY DAY	CATEGORY	CLEAR DAY	MILDLY CLOUDY	CLOUDY DAY
A (-5 °C)	38.6	29.1	19.6	A (-9 °F)	36.6	27.5	18.6
B (5 °C)	35.5	25.9	16.5	B (9 °F)	33.6	24.6	15.6
C (20 °C)	30.5	21.1	11.9	C (36 °F)	28.9	20.0	11.2
D (50 °C)	20.7	12.1	3.9	D (90 °F)	19.6	11.5	3.7
E (80 °C)	11.6	4.1	0.0	E (144 °F)	11.0	4.1	0.0

Original Certification Date: 20-AUG-09

**COLLECTOR SPECIFICATIONS**

**Gross Area:**                   2.528 m<sup>2</sup>                   27.21 ft<sup>2</sup>  
**Dry Weight:**                   38.1 kg                    84. lb  
**Test Pressure:**                1103. KPa                160. psg

**Net Aperature Area:** 2.29 m<sup>2</sup> 24.65 ft<sup>2</sup>  
**Fluid Capacity:**            1.5 liter 0.4 gal

**COLLECTOR MATERIALS**

**Frame:**                            Polycarbonate  
**Cover (Outer):**                    Low Iron Tempered Glass  
**Cover (Inner):**                    None  
**Absorber Material:**            Tube - Copper Tube on Aluminum / Plate - Aluminum  
**Absorber Coating:**             Selective Coating  
**Insulation Side:**                 Rock Wool  
**Insulation back:**                Rock Wool

**Pressure Drop**

Flow		ΔP	
ml/s	gpm	gpm	in H <sub>2</sub> O
20.00	0.32	349.00	1.40
50.00	0.79	1174.0	4.7
80.00	1.27	2359.00	9.48

**TECHNICAL INFORMATION**

Efficiency Equation [NOTE: Based on gross area and (P)=Ti-Taj]

**S I UNITS:**     $\eta = 0.7311 - 3.13000 (P)/I - 0.01261 (P)^2/I$   
**I P UNITS:**     $\eta = 0.7311 - 0.5513 (P)/I - 0.0012 (P)^2/I$

Y INTERCEPT

0.7

SLOPE

-3.9 W/m<sup>2</sup>.°C-0.7 Btu/hr.ft<sup>2</sup>.°F

Incident Angle Modifier [(S)=1/cosθ - 1, 0°&lt;θ&lt;=60°]

**K<sub>a</sub> = 1**           -0.126 (S)           -0.201 (S)<sup>2</sup>  
**K<sub>a</sub> = 1**           -0.34 (S)            Linear Fit

**Model Tested:**

2008003A

**Test Fluid:**

Water

**Test Flow Rate:**

50 ml/s 0.79 gpm

REMARKS:

August, 2009

Certification must be renewed annually, For current status contact:

SOLAR RATING &amp; CERTIFICATION CORPORATION

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