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|--|---|
| <b>SOLAR COLLECTOR<br/>CERTIFICATION AND RATING</b><br><br><br><br><b>SRCC OG-100</b> | <b>CERTIFIED SOLAR COLLECTOR</b><br><br><b>SUPPLIER:</b> <b>Apricus Inc.</b><br>965 West Main Street Branford, CT06405<br>USA<br><b>MODEL:</b> AP-20<br><b>COLLECTOR TYPE:</b> Tubular<br><b>CERTIFICATION#:</b> 2007033B |
|--|---|

### COLLECTOR THERMAL PERFORMANCE RATING

| 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)                    | 31.4      | 23.7          | 16.0       | A (-9 °F)                          | 29.8      | 22.5          | 15.2       |
| B (5 °C)                     | 30.0      | 22.3          | 14.6       | B (9 °F)                           | 28.4      | 21.1          | 13.8       |
| C (20 °C)                    | 27.7      | 20.0          | 12.2       | C (36 °F)                          | 26.2      | 18.9          | 11.6       |
| D (50 °C)                    | 23.3      | 15.6          | 8.0        | D (90 °F)                          | 22.1      | 14.8          | 7.6        |
| E (80 °C)                    | 18.4      | 10.8          | 4.0        | E (144 °F)                         | 17.5      | 10.8          | 4.0        |

Original Certification Date: 24-AUG-09

### COLLECTOR SPECIFICATIONS

|                       |                      |                       |   |
|-----------------------|----------------------|-----------------------|---|
| <b>Gross Area:</b>    | 2.960 m <sup>2</sup> | 31.86 ft <sup>2</sup> | <b>Net Aperture Area:</b> 1.88 m <sup>2</sup> 20.24 ft <sup>2</sup> |
| <b>Dry Weight:</b>    | 63.5 kg              | 140. lb               | <b>Fluid Capacity:</b> .5 liter 0.1 gal                             |
| <b>Test Pressure:</b> | 1103. KPa            | 160. psg              |   |

### COLLECTOR MATERIALS

|                       |                   |
|-----------------------|-------------------|
| <b>Frame:</b>         | Stainless Steel   |
| <b>Cover (Outer):</b> | Glass Vacuum Tube |
| <b>Cover (Inner):</b> | None              |

### Pressure Drop

| Flow |     | ΔP |                     |
|------|-----|----|---------------------|
| ml/s | gpm | PA | in H <sub>2</sub> O |
|      |     |    |                     |
|      |     |    |                     |
|      |     |    |                     |

|                           |                                     |
|---------------------------|-------------------------------------|
| <b>Absorber Material:</b> | Tube - Copper /<br>Plate - Aluminum |
| <b>Absorber Coating:</b>  | Aluminum Nitride                    |

|                         |        |
|-------------------------|--------|
| <b>Insulation Side:</b> | Vacuum |
| <b>Insulation Back:</b> | Vacuum |

### TECHNICAL INFORMATION

|   |                |                         |                        |                    |                                       |
|---|----------------|-------------------------|------------------------|--------------------|---------------------------------------|
| <b>Efficiency Equation [NOTE: Based on gross area and (P)=Ti-Taj]</b> |                |                         |                        | <b>Y INTERCEPT</b> | <b>SLOPE</b>                          |
| <b>S I UNITS:</b>   | $\eta = 0.456$ | $-1.35090 (P)/I$        | $-0.00381 (P)^2/I$     | <b>0.458</b>       | <b>-1.58 W/m<sup>2</sup>.°C</b>       |
| <b>I P UNITS:</b>   | $\eta = 0.456$ | $-0.23796 (P)/I$        | $-0.00037 (P)^2/I$     | <b>0.458</b>       | <b>-0.30 Btu/hr.ft<sup>2</sup>.°F</b> |
| <b>Incident Angle Modifier [(S)=1/cosθ - 1, 0°&lt;θ&lt;=60°]</b>      |                |                         | <b>Model Tested:</b>   | 2007033A           |                                       |
| <b>Kα = 1</b>   | 1.306 (S)      | -1.034 (S) <sup>2</sup> | <b>Test Fluid:</b>     | Water              |                                       |
| <b>Kα = 1</b>   | 0.23 (S)       | Linear Fit              | <b>Test Flow Rate:</b> | 83 ml/s 1.32 gpm   |                                       |

**REMARKS:** Tested with long axis of tubes oriented north-south. IAM perpendicular to the tubes is listed above. IAM parallel to the tubes = 1.0 - 0.09(S)

December, 2009  
Certification must be renewed annually, For current status contact:  
**SOLAR RATING & CERTIFICATION CORPORATION**  
c/o FSEC ♦ 1679 Clearlake Road ♦ Cocoa, FL 32922 ♦ (321) 638-1537 ♦ Fax (321) 638-1010

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