



**CERTIFIED SOLAR THERMAL COLLECTOR**

SUPPLIER:  
**Techno-Solis, Inc.**  
 301 20th Street South  
 St. Petersburg, FL 33712 USA  
 www.techno-solis.com

MODEL: C20ts20-2  
 THERMAL COLLECTOR TYPE: Unglazed Flat Plate  
 CERTIFICATION #: 93016  
 Original Certification: September 01, 2006  
 Expiration Date: September 01, 2026

This solar collector was evaluated by the Florida Solar Energy Center (FSEC) in accordance with prescribed methods and was found to meet the minimum standards established by FSEC. This evaluation was based on solar collector tests performed by an FSEC approved laboratory. The purpose of the tests is to verify initial performance conditions and quality of construction only. The resulting certification is not a guarantee of long term performance or durability. This collector has been rated for energy output on measured performance and an assumed standard day. Total solar energy available for the standard day is 5045 Watt-hour/m<sup>2</sup> (1600 Btu/ft<sup>2</sup>) distributed over a 10 hour period.

| COLLECTOR THERMAL PERFORMANCE RATING (Collector Tested per ASHRAE 96) |          |                   |            |  |          |                    |            |
|---|----------|-------------------|------------|--|----------|--------------------|------------|
| Kilowatt-hours (thermal) Per m <sup>2</sup> Per Day                   |          |                   |            | Thousands of Btu Per ft <sup>2</sup> Per Day |          |                    |            |
| Category Inlet  | Low 30°C | Intermediate 50°C | High 100°C | Category Inlet                               | Low 86°F | Intermediate 122°F | High 212°F |
| ENERGY OUTPUT   | 3.0      | 1.3               | 0.0        | ENERGY OUTPUT                                | 1.0      | 0.4                | 0.0        |

| COLLECTOR SPECIFICATIONS |                      |                       |                 |            |         |
|--------------------------|----------------------|-----------------------|-----------------|------------|---------|
| Gross Area:              | 3.964 m <sup>2</sup> | 42.67 ft <sup>2</sup> | Dry Weight:     | 12 kg      | 27 lb   |
| Net Aperture Area:       | 3.964 m <sup>2</sup> | 42.67 ft <sup>2</sup> | Fluid Capacity: | 12.5 liter | 3.3 gal |
| Absorber Area:           | 3.964 m <sup>2</sup> | 42.67 ft <sup>2</sup> | Test Pressure:  | 241 kPa    | 35 psi  |

| TECHNICAL INFORMATION   |  | Tested in accordance with: ASHRAE 96 |
|---|--|--------------------------------------|
| Efficiency Equation [NOTE: Based on gross area and (P)=Ti-Ta] |  |                                      |
| SI UNITS:   | Wind speed (u) < 1.5 m/s, Temperature (Ti - Ta) in °C, Radiation (G) in W/m <sup>2</sup><br>$\eta = 0.804 - 15.480(P/G) - 43.720(P^2/G)$   |                                      |
| IP UNITS:   | Wind speed (u) < 3 mph, Temperature (Ti - Ta) in °F, Radiation (G) in Btu/hr-ft <sup>2</sup><br>$\eta = 0.804 - 2.728(P/G) - 4.277(P^2/G)$ |                                      |

|                      |                        |                          |
|----------------------|------------------------|--------------------------|
| IAM Coefficient:     | 1 - 0.12               |                          |
| Test Fluid:          |                        |                          |
| Test Mass Flow Rate: | kg/(s m <sup>2</sup> ) | lb/(hr ft <sup>2</sup> ) |

REMARKS:

*Joseph Walters*  
 Technical Director

