

**CERTIFIED SOLAR THERMAL COLLECTOR**

SUPPLIER:
Stiebel Eltron
17 West Street
West Hatfield, MA 01088 USA
www.stiebel-eltron-usa.com

MODEL: Sol 25 Plus
THERMAL COLLECTOR TYPE: Glazed Flat Plate
CERTIFICATION #: 00201
Original Certification: June 01, 2006
Expiration Date: June 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/m² (1600 Btu/ft²) distributed over a 10 hour period.

COLLECTOR THERMAL PERFORMANCE RATING

Kilowatt-hours (thermal) Per Panel Per Day				Thousands of Btu Per Panel 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	8.4	6.9	2.3	ENERGY OUTPUT	28.6	23.4	7.7

COLLECTOR SPECIFICATIONS

Gross Area:	2.734 m ²	29.43 ft ²	Dry Weight:	49 kg	108 lb
Net Aperture Area:	2.595 m ²	27.94 ft ²	Fluid Capacity:	1.6 liter	0.4 gal
Absorber Area:	0.000 m ²	0.00 ft ²	Test Pressure:	1103 kPa	160 psi

TECHNICAL INFORMATION

Tested in accordance with: ASHRAE 93

ISO Efficiency Equation [NOTE: Based on gross area and (P)=T_i-T_a]

SI UNITS:	$\eta = 0.649 - 3.130(P/G) - 16.190(P^2/G)$	Y Intercept:	0.660	Slope:	-4.290 W/m ² .°C
IP UNITS:	$\eta = 0.649 - 0.552(P/G) - 1.584(P^2/G)$	Y Intercept:	0.660	Slope:	-0.756 Btu/hr.ft ² .°F

IAM Coefficient:	1 - 0.25	
Test Fluid:		
Test Mass Flow Rate:	kg/(s m ²)	lb/(hr ft ²)

REMARKS:

Joseph Walters
Technical Director

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FSEC/UCF ♦ 1679 Clearlake Road ♦ Cocoa, Florida 32922 ♦ (321) 638-1426 ♦ Fax (321) 638-1010 ♦ www.fsec.ucf.edu





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ADDITIONAL INFORMATION ([click here to return to the rating page](#))

Test Lab:	Florida Solar Energy Center	Test Report Date:	June 22, 2006
Test Report Number:		Test conducted:	

SOLAR COLLECTOR CONSTRUCTION DETAILS

Gross Length:	2.232 m	Gross Width:	1.225 m	Gross Depth:	75.0 mm
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COLLECTOR MATERIALS

Outer Cover:	Other	Enclosure back:	Aluminum	Back Insulation:	Fiber, None
Inner Cover:	None	Enclosure side:	Aluminum	Side Insulation:	Fiber, None
Absorber Description:		Flow Pattern:			
Riser Tube:	Other	Fin:			
Absorber Coating:	Selective	Tube to fin connection			

Glazing	Outer Cover	Inner Cover
Material:	Other	None
Surface Characteristics:		
Thickness:		N/A
Transmissivity:		
Length:	0.000 m	
Width:	0.000 m	
Tube Glazing to Header Enclosure Seal:		

ABSORBER:	Absorber Coating:	Selective
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Header Material:		Header OD:		Header Wall:	
Riser Tube Material:	Other	Riser Tube OD:		Riser Tube Wall Thickness:	
Fin Material:		Fin Thickness:	0.00 mm		
Flow Pattern:					
Number of Riser Tubes:	14	Tube Spacing:		Number of times each riser crosses the absorber:	14
Length of Flow Path:	0.00 m	Riser to Fin/Plate Bond:			

INSULATION:					
Location	Type	Thickness	Location	Type	Thickness
Back – Top Layer:	Fiber		Sides – Inner Layer:	Fiber	
Back – Bottom Layer:	None		Sides – Outer Layer:	None	
Enclosure Fastening Methods:					

Power Output per Collector(W) [Ti-Ta, G = 1000 W/m ²]				
0	10	30	50	70

PRESSURE DROP	
SI UNITS:	ΔP = pressure drop (kpa), f = mass flow rate (kg/s) $\Delta P = 0.00 + 0.00f + f^2$
IP UNITS:	ΔP = pressure drop (psi), f = mass flow rate (lb/s) $\Delta P = 0.00 + 0.00f + f^2$

