

SUMMARY INFORMATION SHEET

FLORIDA SOLAR ENERGY CENTER®

1679 CLEARLAKE ROAD, COCOA, FLORIDA 32922-5703 (321)638-1000



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FSEC # 00164C

MANUFACTURER

Collector Model

Thermal Conversion Technology
101 Copeland Street
Jacksonville, Florida 32204

PT-20-CN

This integral thermal storage system 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 tests performed at the Florida Solar Energy Center, Cocoa, Florida. 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.

INTEGRAL COLLECTOR STORAGE SOLAR SYSTEM DESCRIPTION

Gross Length	2.124 meters	6.97 feet
Gross Width	0.549 meters	1.80 feet
Gross Depth	0.197 meters	0.65 feet
Gross Area	1.167 square meters	12.56 square feet
Transparent Frontal Area	1.001 square meters	10.77 square feet
Volumetric Capacity	67.2 liters	17.9 gallons
Weight (empty)	41.7 kilograms	92.0 pounds
Recommended Flow Rate	On demand only	
Test Pressure	1103 kPag	160 psig
Number of Cover Plates	Two	
Flow Pattern	Series	Forced circulation
Number of Flow Tubes	Four	

MATERIALS

Enclosure	Aluminum frame, fiberglass back
Glazing	Tempered low iron glass, 3.4 mm thick; Teflon film, 0.02 mm thick
Absorber	Copper tubing
Absorber Coating	Moderately selective black paint
Insulation	Foil faced polyisocyanurate, 5.1 cm thick

SYSTEM THERMAL PERFORMANCE

System consists of one unit as described above.

A performance test was conducted outdoors on a system similar to the above unit except for size. The test was conducted in accordance with the FSEC Solar System Test Method. The data was used to develop a TRNSYS model for the Integral Collector Storage system. The model was then used to calculate the system's performance under a set of standard weather conditions and loads. The standard day had 0.49 kilowatt hours/m² (1500 Btu/ft²) of solar energy, a 22°C (71.6°F) air and water temperature and a 11.75 kilowatt hour (40120 Btu) load.

Net Energy Delivered (Q_{NET}):	3.4 kWh	11,600 Btu
Heat Loss Coefficient (L):	3.9 W/°C	7.5 Btu/hr°F