

# SUMMARY INFORMATION SHEET

## FLORIDA SOLAR ENERGY CENTER

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



September 1995

FSEC # 95016C

### MANUFACTURER

Revised April 2004

### Collector Model

PT-40-CN

Thermal Conversion Technology  
101 Copeland Street  
Jacksonville, Florida 32204

This integral collector 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 integral collector storage system 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	2.475 meters	8.12 feet
Gross Width	1.203 meters	3.95 feet
Gross Depth	0.198 meters	0.65 feet
Gross Area	2.982 square meters	32.10 square feet
Transparent Frontal Area	2.772 square meters	29.84 square feet
Volumetric Capacity	155.6 liters	41.1 gallons
Weight (empty)	97.7 kilograms	215.0 pounds
Recommended Flow Rate	On Demand Only	
Maximum Operating Pressure	1034 kPag	150 psig
Maximum Wind Load	2.6 kPa	55 psf
Number of Cover Plates	Two	
Flow Pattern	Series	
Number of Flow Tubes	Eight	

### MATERIALS

Enclosure	Aluminum frame, aluminum 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 this one 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 this 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/m<sup>2</sup> (1500 Btu/ft<sup>2</sup>) 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 ( $Q_{NET}$ ): 8.33 kWh 28,400 Btu