

# SUMMARY INFORMATION SHEET

## FLORIDA SOLAR ENERGY CENTER

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



July 1995  
FSEC # 95003

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### MANUFACTURER

Thermal Conversion Technology  
101 Copeland Street  
Jacksonville, Florida 32204

Revised April 2004

### Collector Model

PT-30-CN

This integral collector storage system was tested by the Florida Solar Energy Center (FSEC) in accordance with prescribed methods and was found to meet the minimum standards established by FSEC. 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.

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### INTEGRAL COLLECTOR STORAGE SOLAR SYSTEM DESCRIPTION

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Gross Length	2.475 meters	8.12 feet
Gross Width	0.902 meters	2.96 feet
Gross Depth	0.222 meters	0.73 feet
Gross Area	2.232 square meters	24.02 square feet
Transparent Frontal Area	2.043 square meters	21.99 square feet
Volumetric Capacity	115.2 liters	30.4 gallons
Weight (empty)	78.9 kilograms	174.0 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	Forced Circulation
Number of Flow Tubes	Six	

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### MATERIALS

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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

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### SYSTEM THERMAL PERFORMANCE

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System consists of one unit as described above.

A performance test was conducted outdoors in accordance with the FSEC Integral Collector Storage 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 ( $Q_{NET}$ ):	6.48 kWh	22,100 Btu
Heat Loss Coefficient (L):	6.95 W/°C	13.2 Btu/hr°F