CERTIFIED SOLAR THERMAL COLLECTOR

SUPPLIER:
Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804 USA
www.heliodyne.com

MODEL:	Gobi 410 002
THERMAL COLLECTOR TYPE:	Glazed Flat Plate
CERTIFICATION #:	00376D
Original Certification:	March 01, 2009
Expiration Date:	March 01, 2029

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^2 (1600 Btu/ft^2) 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	12.7	9.7	2.3	ENERGY OUTPUT	43.2	33.2	8.0

COLLECTOR SPECIFICATIONS					
Gross Area:	3.744 m²	40.30 ft²	**Dry Weight:**	69 kg	153 lb
Net Aperture Area:	3.481 m²	37.47 ft²	**Fluid Capacity:**	5.1 liter	1.3 gal
Absorber Area:	0.000 m²	0.00 ft²	**Test Pressure:**	1034 kPa	150 psi

TECHNICAL INFORMATION			**Tested in accordance with:** ASHRAE 96		
ISO Efficiency Equation [NOTE: Based on gross area and (P)=Ti-Ta]					
SI UNITS:	η= 0.725 - 5.360(P/G) - 8.860(P^2/G)	**Y Intercept:**	0.733	**Slope:**	-6.110 W/m².°C
IP UNITS:	η= 0.725 - 0.945(P/G) - 0.867(P^2/G)	**Y Intercept:**	0.733	**Slope:**	-1.077 Btu/hr.ft².°F

IAM Coefficient:	1 - 0.12	
Test Fluid:		
Test Mass Flow Rate:	kg/(s m²)	lb/(hr ft²)

REMARKS:

Joseph Walters
Technical Director

Print Date: May, 2020

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:	DSET	Test Report Date:	June 21, 1984
Test Report Number:		Test conducted:	

SOLAR COLLECTOR CONSTRUCTION DETAILS					
Gross Length:	3.088 m	**Gross Width:**	1.208 m	**Gross Depth:**	98.5 mm

COLLECTOR MATERIALS					
Outer Cover:	Other	**Enclosure back:**	Aluminum	**Back Insulation:**	Foam, None
Inner Cover:	None	**Enclosure side:**	Aluminum	**Side Insulation:**	,
Absorber Description:		**Flow Pattern:**			
Riser Tube:	Other	**Fin:**			
Absorber Coating:	Moderately 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:**	Moderately 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:	11	**Tube Spacing:**		**Number of times each riser crosses the absorber:**	11
Length of Flow Path:	0.00 m	**Riser to Fin/Plate Bond:**			

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

Power Output per Collector(W) **[Ti-Ta, G = 1000 W/m²]**				
0	**10**	**30**	**50**	**70**

PRESSURE DROP	
SI UNITS:	ΔP = pressure drop (kpa), f = mass flow rate (kg/s) **ΔP**= 0.00 + 0.00f + f²
IP UNITS:	ΔP = pressure drop (psi), f = mass flow rate (lb/s) **ΔP**= 0.00 + 0.00f + f²

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