SOLAR RATING & CERTIFICATION CORPORATION

AWARD OF COLLECTOR CERTIFICATION

The solar collector listed below has been evaluated by the Solar Rating and Certification Corporation (SRCC) in accordance with SRCC Document OG-100, *Operating Guidelines and Minimum Standards for Certifying Solar Collectors*, and has been certified by the SRCC as specified in SRCC Standard 100-94, *Test Methods and Minimum Standards for Certifying Solar Collectors*. Certification and thermal performance ratings are based on the successful durability and performance testing of a sample unit where said tests have been conducted by an independent laboratory accredited by the SRCC.

Collector Certification Number: **100-2009006A**

Date Certified: **May 4, 2009** Expiration Date: **May 4, 2021**

Test Laboratory: **FSEC** Report Number: **00065** Report Date: **8/23/2003**

Product: **Unglazed Flat-Plate** Certified Model: **16104** Model Tested: **16104-12**

Supplier: **Aquatherm Industries, Inc.**
1940 Rutgers University Blvd.
Lakewood, NJ 08701 USA
(732) 905-9002

Description: **Polypropylene with UV Stabilization absorber tube. Water was the fluid for performance tests. Gross Area: 4.37 m^2 (47.00 ft^2). Aperture Area: 4.37 m^2 (47.00 ft^2)**

UNGLAZED COLLECTOR THERMAL PERFORMANCE RATING

Megajoules Per Square Meter Per Day				Thousands of Btu Per Square Foot Per Day			
Category (Ti-Ta)	CLEAR 23 MJ/m^2-d	MILDLY CLOUDY 17 MJ/m^2-d	CLOUDY 11 MJ/m^2-d	Category (Ti-Ta)	CLEAR 2 kBtu/ft^2-d	MILDLY CLOUDY2 1.5 kBtu/ft^2-d	CLOUDY 1 kBtu/ft^2-d
A (-5 °C)	20.0	15.5	11.1	A (-9 °F)	1.8	1.4	1.0
B (5 °C)	14.6	10.3	5.9	B (9 °F)	1.3	0.9	0.5
C (20 °C)	6.9	3.0	0.2	C (36 °F)	0.6	0.3	0.0
D (50 °C)				D (90 °F)			
E (80 °C)				E (144 °F)			

A-Pool Heating (Warm Climate) **B**-Pool Heating (Cool Climate) **C**-Water Heating (Warm Climate) **D**-Water Heating (Cool Climate) **E**-Air Conditioning

Efficiency Equation [NOTE: (P) = Ti-Ta]

						Y Intercept	Slope	
S I Units:	$\eta =$ 0.820	-13.5264	(P)/I	-0.1353	$(P)^2/I$	0.816	-15.76	$W/m^2 \cdot °C$
I P Units:	$\eta =$ 0.820	-2.3837	(P)/I	-0.0132	$(P)^2/I$	0.816	-2.778	$Btu/hr \cdot ft^2 \, °F$

Incident Angle Modifier [NOTE: (S) = 1/cos θ - 1]

$K_{\alpha\tau} =$ 1.0 -0.0715 (S) -0.0061 $(S)^2$ $K_{\alpha\tau} =$ 1.0 -0.06 (S) (Linear Fit)

This award of certification is subject to all terms and conditions of the Program Agreement and the documents incorporated therein by reference. It must be renewed annually. Any change in collector design, materials, specifications, parts, or construction must be reported to SRCC for evaluation of continued certification

Technical Director May 4, 2009

SOLAR RATING & CERTIFICATION CORPORATION

AWARD OF COLLECTOR CERTIFICATION

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Collector Certification Number: **100-2009006B**

Date Certified: **May 4, 2009** Expiration Date: **May 4, 2021**

Test Laboratory: **FSEC** Report Number: **00065** Report Date: **8/28/2003**

Product: **Unglazed Flat-Plate** Certified Model: **16204** Model Tested: **16104-12**

Supplier: **Aquatherm Industries, Inc.**
1940 Rutgers University Blvd.
Lakewood, NJ 08701 USA
(732) 905-9002

Description: **Polypropylene with UV Stabilization absorber tube. Water was the fluid for performance tests. Gross Area: 4.37 m^2 (47.00 ft^2). Aperture Area: 4.37 m^2 (47.00 ft^2)**

UNGLAZED COLLECTOR THERMAL PERFORMANCE RATING

Megajoules Per Square Meter Per Day				Thousands of Btu Per Square Foot Per Day			
Category (Ti-Ta)	CLEAR 23 MJ/m^2-d	MILDLY CLOUDY 17 MJ/m^2-d	CLOUDY 11 MJ/m^2-d	Category (Ti-Ta)	CLEAR 2 kBtu/ft^2-d	MILDLY CLOUDY2 1.5 kBtu/ft^2-d	CLOUDY 1 kBtu/ft^2-d
A (-5 °C)	20.0	15.5	11.1	A (-9 °F)	1.8	1.4	1.0
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C (20 °C)	6.9	3.0	0.2	C (36 °F)	0.6	0.3	0.0
D (50 °C)				D (90 °F)			
E (80 °C)				E (144 °F)			

A-Pool Heating (Warm Climate) **B**-Pool Heating (Cool Climate) **C**-Water Heating (Warm Climate) **D**-Water Heating (Cool Climate) **E**-Air Conditioning

Efficiency Equation [NOTE: (P) = Ti-Ta]

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S I Units:	$\eta =$ 0.820	-13.5264	(P)/I	-0.1353	$(P)^2/I$	0.816	-15.76	$W/m^2 \cdot °C$
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Incident Angle Modifier [NOTE: (S) = 1/cos θ - 1]

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Technical Director May 8, 2009