



CERTIFIKAT

Solar Keymark Certificate No. SP SC0021-16

Holder/Issued to

Company: Beijing Sunda Solar Energy Technology Co., Ltd.
Address: No.3 Huayuan Road, Haidian District, Beijing 100191, China

Product name and description

Vacuum tube thermal collectors. For technical information see Appendix (2 pages).

Models:	SEIDO2-6 SEIDO2-8 SEIDO2-12
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Certificate

The product is found to comply with the requirements in EN 12975-1:2006+A1:2010 Solar collectors Part 1: General requirements and the Specific CEN Keymark Scheme Rules for Solar Thermal Products, and are based on test results according to EN ISO 9806:2013 Solar thermal collectors – Test methods.

Marking

Products conforming to this certificate shall be marked in accordance with the requirements in the Specific CEN Keymark Scheme Rules for Solar Thermal Products. The marking shall, together with the Keymark logo, show the identification code of the empowered certification body (SP Technical Research Institute of Sweden, No. 012), also see CEN-CENELEC Internal Regulations Part 4 Certification, Annex A.

Validity

This certificate is valid until 2021-03-23 provided that the conditions in the Solar Keymark Rules are fulfilled and the standard or rules are not modified significantly. The validity of the certificate can be checked in the database, see Solar Keymark website <http://www.solarkeymark.org>

Miscellaneous

The manufacturer's factory production control procedures are under surveillance by the responsibility of SP. This is the first version of this certificate.

Borås, Sweden 2016-03-23

SP Technical Research Institute of Sweden Certification

Lennart Aronsson
Product Certification Manager

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SP Technical Research Institute of Sweden

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SWEDEN

Certificate page 1 (1)

Empowered Certification Body No. 012: SP Certification, Sweden
For more information of Solar Keymark visit: www.solarkeymar.org
This certificate may not be reproduced other than in full, except with the prior written approval by SP. SP Certification rules SPCR402 applies. 6P00537

Summary of ISO 9806:2013 Test Results, annex to Solar KEYMARK Certificate						Licence Number		SP SC0021-16													
						Issued		2016-03-23													
Company holding the		Beijing Sunda Solar Energy Technology Co., Ltd.				Country		China													
Brand (optional)		SUNDA				Website		www.sundasolar.com													
Street, street number		No.3, Huayuan Road, Haidian District				E-mail		info@sundasolar.com													
Postal Code / City, province		100191		Beijing		Tel/Fax		+86		10-57930251/10-57930220											
Collector Type (flat plate glazed/un-glazed; evacuate tubular)						Evacuated tubular collector															
Thermal / photo voltaic hybrid collector? (PVT collector)						No															
Integration in the roof possible? (manufacturers declaration)						No															
						Power output per collector module															
						G = 1000 W/m ²															
						T _m -T _a															
						0 K		10 K		30 K		50 K		70 K							
Collector name						m ²		mm		mm		mm		m ²							
		Aperture area (A _a)		Gross length		Gross width		Gross height		Gross area (A _G)		W		W							
SEIDO 2-6		1,09		2 192		695		126		1,52		822		805							
SEIDO 2-8		1,45		2 192		935		126		2,05		1 093		1 071							
SEIDO 2-12		2,18		2 192		1 415		126		3,10		1 644		1 610							
Performance test method						Glazed liquid heating collector - steady state - outdoor															
Performance parameters related to aperture						η ₀		a ₁		a ₂											
Units						-		W/(m ² K)		W/(m ² K ²)											
Test results - Flow rate and fluid see note 1						0,754		1,439		0,012											
Bi-directional incidence angle modifiers?						Yes		<i>K_θ values are obligatory for 50°.</i>													
Incidence angle modifiers K_θ(θ_T) transversal direction		Angle		10°		20°		30°		40°		50°		60°		70°		80°		90°	
		K _θ (θ _T)				1,01				1,05				0,99				0,00			
Incidence angle modifiers K_θ(θ_L) longitudinal direction		Angle		10°		20°		30°		40°		50°		60°		70°		80°		90°	
		K _θ (θ _L)				1,00				1,00				0,90				0,00			
Stagnation temperature - Weather conditions see note 2								T _{stg}		270		°C									
Effective thermal capacity								c _{eff} = C/Ag		5,47		kJ/(m ² K)									
Max. intended operation temperature - see note 3								T _{max,op}		150		°C									
Max. operation pressure - see note 3								p _{max,op}		600		kPa									
Pressure drop table - for a collector family, the values shall be for the module with highest ΔP per m² aperture area																					
Flow rate		kg/(s m ²)		0,005		0,010		0,015		0,020		0,025		0,030							
Pressure drop, ΔP		Pa		295		647		1021		1439		1895		2430							
Optional weather data		Location				Link															
Testing Laboratory						Intertek Testing Services Shenzhen Ltd. Guangzhou Branch															
Website						www.intertek.com															
Test report id. number						150831007-001				Date of test report		2016-01-22									
During the test GDIF/GTOT was always between						0,07		and		0,09											
Comments of testing laboratory:																					
No comment																					
Note 1		Flow rate		0,020		kg/(s m ²)		Fluid		Water											
Note 2		Irradiance, G = 1000 W/m ² ; Ambient temperature, T _a =30 °C																			
Note 3		Given by manufacturer																			
6P00537												Datasheet version: 4.06, 2014-01-15									
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