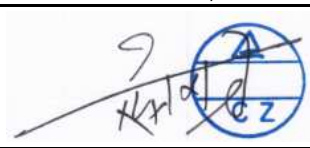


Annex to Solar Keymark Certificate - Summary of EN ISO 9806:2013 Test Results					Licence Number		011-7S2800 F				
					Date issued		2018-05-21				
					Issued by		DIN CERTCO				
Licence holder	Zhejiang Jiajiare New Energy Co., Ltd.				Country	China					
Brand (optional)	Jiajiare				Web	www.jiajiare.com					
Street, Number	No. 68 Yuanxi Road, Yuanhua Industrial Estate				E-mail	info@jiajiare.com					
Postcode, City	314416, Haining				Tel	+86 (0)573 87865578					
Collector Type					Flat plate collector, glazed						
Collector name	Gross area (A_G) m ²	Gross length mm	Gross width mm	Gross height mm	Power output per collector G _b = 850 W/m ² ; G _d = 150 W/m ² ; u = 3 m/s θ _m - θ _a						
					0 K W	10 K W	30 K W	50 K W	70 K W	64 K W	
JJR/NAT-FPT-01	2.00	2 000	1 000	80	1 411	1 333	1 160	963	742	811	
JJR/NAT-FPT-02	2.50	2 000	1 250	80	1 764	1 667	1 451	1 204	928	1 014	
Power output per m² gross area					705	667	580	482	371	406	
Performance parameters test method		Quasi dynamic									
Performance parameters (related to AG)		η _{0,b}	c1	c2	c3	c4	c6	K _d			
Units		-	W/(m ² K)	W/(m ² K)	J/(m ³ K)	-	s/m	-			
Test results		0.729	3.726	0.015	0.000	0.000	0.000	0.785			
Incidence angle modifier test method		Quasi dynamic - outdoor									
Bi-directional incidence angle modifiers		No									
Incidence angle modifier		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
Transversal		K _{θT, coll}	1.00	0.99	0.98	0.95	0.91	0.84	0.70	0.00	0.00
Longitudinal		K _{θL, coll}	1.00	0.99	0.98	0.95	0.91	0.84	0.70	0.00	0.00
Heat transfer medium for testing					Water-Glycole						
Flow rate for testing (per gross area, A_G)					dm/dt	0.020	kg/(sm ²)				
Maximum temperature difference for thermal performance calculations					(θ _m -θ _a) _{max}	64	K				
Standard stagnation temperature (G = 1000 W/m²; θ_a = 30 °C)					θ _{stg}	197	°C				
Effective thermal capacity, incl. fluid (per gross area, A_G)					C/m ²	13.28	kJ/(Km ²)				
Maximum operating temperature					θ _{max, op}	100	°C				
Maximum operating pressure					p _{max, op}	1000	kPa				
Testing laboratory		TÜV Rheinland (Shanghai) Co., Ltd.				www.tuv.com					
Test report(s)		154250318_Jiajiare_JJR-NAT-FPT-01_ISO_Report_Chen 154250318_Jiajiare_JJR-NAT-FPT-02_ISO_Report_Chen 50147926-001				Dated		10/19/2017 10/19/2017 5/18/2018			
Comments of testing laboratory					Datasheet version: 5.01, 2016-03-01						
No comment											
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Annex to Solar Keymark Certificate		Licence Number		011-7S2800 F									
Supplementary Information		Issued		2018-05-21									
Annual collector output in kWh/collector at mean fluid temperature ϑ_m, based on ISO 9806:2013 test results													
	Standard Locations	Athens			Davos			Stockholm			Würzburg		
Collector name	ϑ_m	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C
JJR/NAT-FPT-01		2 123	1 425	852	1 577	1 026	582	1 161	717	395	1 259	763	415
JJR/NAT-FPT-02		2 654	1 781	1 065	1 971	1 282	728	1 451	896	494	1 573	953	519
Annual output per m ² gross area		1 062	713	426	789	513	291	580	358	198	629	381	207
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)											
Annual irradiation on collector plane		1765 kWh/m ²			1714 kWh/m ²			1166 kWh/m ²			1244 kWh/m ²		
Mean annual ambient air temperature		18.5°C			3.2°C			7.5°C			9.0°C		
Collector orientation or tracking mode		South, 25°			South, 30°			South, 45°			South, 35°		
The collector is operated at constant temperature ϑ_m (mean of in- and outlet temperatures). The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool Scenocalc Ver. 5.01 (March 2016). A detailed description of the calculations is available at www.solarkeymark.org/scenocalc													
Additional Information													
Collector heat transfer medium		Water-Glycole											
Hybrid Thermal and Photo Voltaic collector		No											
The collector is deemed to be suitable for roof integration		Yes											
The collector was tested successfully according to EN ISO 9806:2013 under the following conditions:													
Climate class (A, B or C)		C			--								
Maximum tested positive load		2400			Pa								
Maximum tested negative load		2400			Pa								
Hail resistance using steel ball (maximum drop height)		2			m								
Energy Labelling Information													
	Reference Area, A_{sol} (m ²)	Data required for CDR (EU) No 811/2013 - Reference Area A_{sol}											
JJR/NAT-FPT-01	2.00	Collector efficiency (η_{col})			53			%					
JJR/NAT-FPT-02	2.50	Remark: Collector efficiency (η_{col}) is defined in CDR (EU) No 811/2013 as collector efficiency of the solar collector at a temperature difference between the solar collector and the surrounding air of 40 K and a global solar irradiance of 1000 W/m ² , expressed in % and rounded to the nearest integer. Deviating from the regulation η_{col} is based on reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806:2013.											
		Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}											
		Zero-loss efficiency (η_0)			0.705			--					
		First-order coefficient (a_1)			3.73			W/(m ² K)					
		Second-order coefficient (a_2)			0.015			W/(m ² K ²)					
		Incidence angle modifier IAM (50°)			0.91			--					
		Remark: The data given in this section are related to collector reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806. Consistent data sets for either aperture or gross area can be used in calculations like in the regulation 811 and 812 and simulation programs.											
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