


Annex to Solar Keymark Certificate					Licence Number		011-7S3027 F											
					Date issued		2021-07-23											
					Issued by		DIN CERTCO											
Licence holder		Zhejiang Jiadele Technology Co., Ltd.			Country		CHINA											
Brand (optional)		Jiadele			Web		http://www.sh-jiadele.com											
Street, Number		No.12 Fenghuang Rd, Dingqiao Town			E-mail		webmaster@sh-jiadele.com											
Postcode, City		314413/Haining City, Zhejiang Province			Tel		+86 573-87797662											
Collector Type					Flat plate collector													
Collector name					Gross area (A_G)		Gross length		Gross width		Gross height		Power output per collector					
					m ²		mm		mm		mm		G _b = 850 W/m ² , G _d = 150 W/m ² & u = 1.3 m/s $\vartheta_m - \vartheta_a$					
JDL-PG2.0-80					2.00	2,000	1,000	80	1,318	1,251	1,068	821	510	314				
JDL-PG2.5-80					2.50	2,000	1,250	80	1,648	1,564	1,335	1,026	637	393				
Power output per m² gross area					659	625	534	410	255	157								
Performance parameters test method		Steady state - outdoor																
Performance parameters (related to A_G)		η_0, b	a1	a2	a3	a4	a5	a6	a7	a8	Kd							
Units		-	W/(m ² K)	W/(m ² K ²)	J/(m ³ K)	-	J/(m ² K)	s/m	W/(m ² K ⁴)	W/(m ² K ⁴)	-							
Test results		0.671	2.98	0.040	0.00	0.00	5,500	0.00	0.00	0.00	0.88							
Incidence angle modifier test method		Steady state - outdoor																
Incidence angle modifier		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°							
Transversal		K _{θT, coll}	1.00	1.00	0.99	0.96	0.92	0.84	0.69	0.44	0.00							
Longitudinal		K _{θL, coll}	1.00	1.00	0.99	0.96	0.92	0.84	0.69	0.44	0.00							
Heat transfer medium for testing					Water													
Flow rate for testing (per gross area, A_G)					dm/dt		0.02	kg/(sm ²)										
Maximum temperature difference during thermal performance test					$(\vartheta_m - \vartheta_a)_{max}$		50.86	K										
Standard stagnation temperature (G = 1000 W/m²; $\vartheta_a = 30$ °C)					ϑ_{stg}		170	°C										
Maximum operating temperature					$\vartheta_{max, op}$		120	°C										
Maximum operating pressure					p _{max, op}		1000	kPa										
Testing laboratory		Intertek Testing Services Shenzhen Ltd. Guangzhou Branch					http://www.intertek.com											
Test report(s)		160311011GZU-001 R2					Dated		2021/7/20									
Comments of testing laboratory					Datasheet version: 6.1, 2019-09-26													
1. Tests were performed based on ISO 9806:2013. 2. Above efficiency parameters come from test type JDL-PG2.0-80.																		
DIN CERTCO ● Alboinstraße 56 ● D-12103 Berlin Tel: +49 30 7562-1131 ● Fax: +49 30 7562-1141 ● E-Mail: info@dincertco.de ● www.dincertco.de																		

Annex to Solar Keymark Certificate Supplementary Information	Licence Number	011-7S3027 F
	Issued	2021-07-23

Annual collector output in kWh/collector at mean fluid temperature ϑ_m													
Collector name	Standard Locations ϑ_m	Athens			Davos			Stockholm			Würzburg		
		25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C
JDL-PG2.0-80		2,066	1,363	683	1,531	904	376	1,139	651	277	1,240	702	297
JDL-PG2.5-80		2,582	1,704	853	1,913	1,130	469	1,424	814	346	1,551	878	371
Annual output per m ² gross area		1,033	682	341	765	452	188	570	326	139	620	351	148
Annual efficiency, η_a		59%	39%	19%	47%	28%	12%	49%	28%	12%	50%	28%	12%
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)											
Annual irradiation on collector plane		1765 kWh/m ²			1630 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. 6.1 (September 2019). A detailed description of the calculations is available at <http://www.estif.org/solarkeymarknew/>

Additional Information			
Collector heat transfer medium	Water-Glycole		
The collector is deemed to be suitable for roof integration	No		
The collector was tested successfully under the following conditions:			
Climate class (A+, A, B or C)	B		--
G (W/m ²) >	900	ϑ_a (°C) >	15
		H_x (MJ/m ²) >	540
Maximum tested positive load	2400		Pa
Maximum tested negative load	2400		Pa
Hail resistance using steel ball (maximum drop height)	2		m

Additional collector attribute(s)			
<input type="checkbox"/> Using external power source(s) for normal operation	<input type="checkbox"/> Active or passive measure(s) for self-protection		
<input type="checkbox"/> Co-generating thermal and electrical power	<input type="checkbox"/> Façade collector(s)		

Energy Labelling Information		Additional Informative Technical Data	
	Reference Area, A_{sol} (m ²)	Hydraulic Designation Code	Aperture Area, A_a (m ²)
JDL-PG2.0-80	2.00	9-VH-1234S-A:8,1887-C:22,1060-D	1.81
JDL-PG2.5-80	2.50	11-VH-1234S-A:8,1887-C:22,1264-D	2.31

Data required for CDR (EU) No 811/2013 - Reference Area A_{sol}		Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}	
Collector efficiency (η_{col})	48%	Zero-loss efficiency (η_0)	0.66
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 9806:2017.		First-order coefficient (a_1)	2.98
		Second-order coefficient (a_2)	0.040
		Incidence angle modifier IAM (50°)	0.92
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		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.	