

Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate						Licence Number		011-7S2697 F				
						Issued		2016-09-05				
Company holding the		Hong Kong RTEC Electric Appliance sale Limited				Country		China				
Brand (optional)						Website		www.icat.ma				
Street, street number		Unit 2205, 22/F China Merchants Building 303-307, Des Voeux Road Central				E-mail		o.alami@icat.ma				
Postal Code / City, province		999077		Hong Kong		Tel/Fax		212 522354877				
Collector Type (flat plate glazed/un-glazed; evacuate tubular)						Flat plate collector - glazed						
Thermal / photo voltaic hybrid collector? (PVT collector)						No						
Integration in the roof possible? (manufacturers declaration)						No						
Collector name	Aperture area (Aa)	Gross length	Gross width	Gross height	Gross area (AG)	Power output per collector module						
	m <sup>2</sup>	mm	mm	mm		m <sup>2</sup>	G = 1000 W/m <sup>2</sup>					
							Tm-Ta					
						0 K	10 K	30 K	50 K	70 K		
						W	W	W	W	W		
PGT2.0-2	1.86	2 002	1 027	80	2.06	1 362	1 287	1 129	958	776		
Performance test method		Glazed liquid heating collector - steady state - outdoor										
Performance parameters related to aperture		$\eta_0$	a1	a2								
Units		-	W/(m <sup>2</sup> K)	W/(m <sup>2</sup> K <sup>2</sup> )								
Test results - Flow rate and fluid see note 1		0.732	3.934	0.008								
Bi-directional incidence angle		Yes	K $\theta$ values are obligatory for 50°.									
Incidence angle modifiers K $\theta$ ( $\theta$ T)		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°	
transversal direction		K $\theta$ ( $\theta$ T)					0.88				0.00	
Incidence angle modifiers K $\theta$ ( $\theta$ L)		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°	
longitudinal direction		K $\theta$ ( $\theta$ L)					0.88				0.00	
Stagnation temperature - Weather conditions see note 2						Tstg	191 °C					
Effective thermal capacity						ceff = C/Ag	5.74 kJ/(m <sup>2</sup> K)					
Max. intende operation temperature - see note 3						Tmax,op	120 °C					
Max. operation pressure - see note 3						pmax,op	100 kPa					
Pressure drop table - for a collector family, the values shall be for the module with highest $\Delta P$ per m <sup>2</sup> aperture area												
Flow rate	kg/(s m <sup>2</sup> )											
Pressure drop, $\Delta P$	Pa											
Optional weather data		Location				Link						
Testing Laboratory		TÜV Rheinland (Shanghai) Co., Ltd.										
Website		www.tuv.com										
Test report id. number		KT09_09				Date of test report		2009/12/07				
During the test GDIF/GTOT was always between		0.1	and	0.3								
Comments of testing laboratory:												
All reliability and perofrmance tests were prepared in Goebenstr. 40, Saarbrucken,Germany.												
Note 1	Flow rate	0.019	kg/(s m <sup>2</sup> )	Fluid	Water							
Note 2	Irradiance, G = 1000 W/m <sup>2</sup> ; Ambient temperature , Ta=30 °C											
Note 3	Given by manufacturer											
Datasheet version: 4.06, 2014-01-15												
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<b>Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate</b>	<b>Licence Number</b>	<b>011-7S2697 F</b>
	<b>Issued</b>	<b>9/5/2016</b>

<b>Annual collector output kWh/module</b>												
<b>Collector name</b>	<b>Location and collector temperature (Tm)</b>											
	<b>Athens</b>			<b>Davos</b>			<b>Stockholm</b>			<b>Würzburg</b>		
	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C
PGT2.0-2	1 923	1 279	786	1 418	934	560	1 044	646	379	1 132	689	392

**Collector mounting: Fixed or tracking** **Fixed; slope = latitude - 15° (rounded to nearest 5°)**

<b>Overview of locations</b>				
<b>Location</b>	<b>Latitude °</b>	<b>Gtot kWh/m²</b>	<b>Ta °C</b>	<b>Collector orientation or tracking mode</b>
Athens	38	1 765	18.5	South, 25°
Davos	47	1 714	3.2	South, 30°
Stockholm	59	1 166	7.5	South, 45°
Würzburg	50	1 244	9.0	South, 35°

Gtot	Annual total irradiation on collector plane	kWh/m²
Ta	Mean annual ambient air temperature	°C
Tm	Constant collector operating temperature (mean of in- and outlet temperatures)	°C

The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool ScenoCalc. The collector output is calculated hour by hour according to the efficiency parameters from the Keymark test using constant collector operating temperature (Tm). A detailed description of the calculations is available at <http://www.sp.se/en/index/services/solar/ScenoCalc/Sidor/default.aspx>.