


Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate						Licence Number		011-7S2322F								
						Issued		2016-05-30								
Company holding the			Solimpeks Solar Energy Corp.			Country		Turkey								
Brand (optional)						Website		www.solimpeks.com								
Street, street number			Fevzi Çakmak Mah. 10753 Sk. No:3			E-mail		yusuf.akay@solimpeks.com								
Postal Code / City, province			42050 Karatay Konya			Tel/Fax		+90 444060 -2 / -8								
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)						Yes										
						Power output per collector module										
						Gb = 850 W/m ² ; Gd = 150 W/m ²										
						Tm-Ta										
						0 K	10 K	30 K	50 K	70 K						
Collector name						W	W	W	W	W						
Wunder ANSG 2510						2.23	1988	1219	90	2.42	1661	1576	1391	1188	968	
Wunder ANSG 2108*						1.92	1988	1041	90	2.07	1430	1357	1198	1023	834	
Wunder ANSG 1808						1.62	1927	927	90	1.79	1207	1145	1010	863	703	
Performance test method						Liquid heating collector - quasi-dynamic - outdoor										
Performance parameters related to aperture area						η0b	c1	c2	c3	c4	c6	Kθd				
Units						-	W/(m ² K)	W/(m ² K ²)	J/(m ³ K)	-	s/m	-				
Test results - Flow rate and fluid see note 1						0.751	3.740	0.010	0.000	0.000	0.000	0.946				
Bi-directional incidence angle modifiers?						No						<i>Kθ values are obligatory for 50°.</i>				
Incidence angle modifiers Kθ(θ)						Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°	
						Kθ(θ)	1.00	0.99	0.97	0.93	0.88	0.78	0.57	0.00	0.00	
Incidence angle modifier not bi-directional - leave fields blank																
Stagnation temperature - Weather conditions see note 2						Tstg		190		°C						
Effective thermal capacity						ceff = C/Ag		10.017		kJ/(m ² K)						
Max. intende operation temperature - see note 3						Tmax,op		120		°C						
Max. operation pressure - see note 3						pmax,op		1000		kPa						
Pressure drop table - for a collector family, the values shall be for the module with highest ΔP per m ² aperture area																
Flow rate	kg/(s m ²)	-	-	-	-	-	-	-	-	-	-	-	-			
Pressure drop, ΔP	Pa	-	-	-	-	-	-	-	-	-	-	-	-			
Optional weather data			Location		Link											
Testing Laboratory			TZS, ITW University Stuttgart													
Website			http://www.itw.uni-stuttgart.de													
Test report id. number			13COL1188, 13COL1187			Date of test report			2014.04.04							
During the test GDIF/GTOT was always between			0		and		1									
Comments of testing laboratory:																
*dimensions according to manufacturer																
This data sheet replaces the data sheet issued on 13.08.2014.																
The calculation was re-done and Tel/Fax was updated.																
Note 1						Flow rate	0.020	kg/(s m ²)	Fluid	Water						
Note 2						Irradiance, G = 1000 W/m ² ; Ambient temperature, Ta=30 °C										
Note 3						Given by manufacturer										
																
Datasheet version: 4.06, 2014-01-15																
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Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate	Licence Number	011-7S2322F
	Issued	30.05.2016

Annual collector output kWh/module														
Collector name	Location and collector temperature (Tm)													
	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		
Wunder ANSG 2510	2 603	1 821	1 175	1 955	1 330	828	1 438	927	557	1 573	1 004	592		
Wunder ANSG 2108	2 241	1 568	1 012	1 683	1 145	713	1 238	798	480	1 354	864	510		
Wunder ANSG 1808	1 891	1 323	854	1 420	966	601	1 044	674	405	1 143	729	430		

Collector mounting: Fixed or tracking	Fixed; slope = latitude - 15° (rounded to nearest 5°)
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Overview of locations				
Location	Latitude °	Gtot kWh/m²	Ta °C	Collector orientation or tracking mode
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>.

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	ScenoCalc version: Ver. 4.06 (Jan, 2014)