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Annex to Solar Keymark Certificate					Licence Number		011-7S2586 F							
Summary of EN ISO 9806 Test Results					Issued		2015-10-08							
Collector test standard			EN ISO 9806											
Licence holder		One Sun One World GmbH			Country		Austria							
Brand (optional)					Web									
Street, Number		Technologiepark 17			E-mail		onesunoneworld@gmail.com							
Postcode, City		A-4320 Perg			Tel		+43 7262 9396-4019							
Collector Type					Flat plate collector, glazed									
Collector name					Power output per collector G <sub>b</sub> = 850 W/m <sup>2</sup> ; G <sub>d</sub> = 150 W/m <sup>2</sup> ; u = 3 m/s ∂ <sub>m</sub> - ∂ <sub>a</sub>									
					0 K	10 K	30 K	50 K	70 K	80 K				
					W	W	W	W	W	W				
The Collector					0,95	1.200	790	50	626	548	371	169	0	0
Power output per m <sup>2</sup> gross area					661	578	392	178	0	0				
Performance parameters test method			Quasi dynamic											
Performance parameters (related to AG)			η <sub>0,b</sub>	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	c <sub>6</sub>	K <sub>d</sub>					
Units			-	W/(m <sup>2</sup> K)	W/(m <sup>2</sup> K <sup>2</sup> )	J/(m <sup>3</sup> K)	-	s/m	-					
Test results			0,666	6,370	0,034	0,524	0,042	0	0,987					
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 <sub>GT, coll</sub>	1,00	0,99	0,99	0,97	0,95	0,91	0,83	0,57	0,00		
Longitudinal			K <sub>GL, coll</sub>	1,00	0,99	0,99	0,97	0,95	0,91	0,83	0,57	0,00		
Fluid for testing					Water									
Flow rate for testing (per gross area, AG)					dm/dt	0,020	kg/(sm <sup>2</sup> )							
Maximum temperature difference for thermal performance calculations					(∂ <sub>m</sub> -∂ <sub>a</sub> ) <sub>max</sub>	80	K							
Standard stagnation temperature (G = 1000 W/m <sup>2</sup> ; ∂ <sub>a</sub> = 30 °C)					∂ <sub>stg</sub>	115	°C							
Effective thermal capacity (per gross area, AG)					C/m <sup>2</sup>	27,44	kJ/(Km <sup>2</sup> )							
Maximum operating temperature					∂ <sub>max, op</sub>	110	°C							
Maximum operating pressure					p <sub>max, op</sub>	200	kPa							
Testing laboratory			AIT Austrian Institute of Technology GmbH			www.ait.ac.at								
Test report(s)			2.04.01276.1.0-LT 2.04.01276.1.0-QT			Dated		05.10.2015 05.10.2015						
Comments of testing laboratory														
										<b>AIT Austrian Institute of Technology GmbH</b> Donau-City-Strasse 1   1220 Wien, Austria T +43 (0) 50550-0   F +43 (0) 50550-0 office@ait.ac.at   www.ait.ac.at				



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Annex to Solar Keymark Certificate Supplementary Information	Licence Number	011-7S2586 F
	Issued	2015-10-08

Annual collector output in kWh/collector at mean fluid temperature $\vartheta_m$ , based on ISO 9806 Test Results													
Collector name	Standard Locations $\vartheta_m$	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
The Collector		988	415	91	591	212	26	466	165	24	521	183	31
Annual output per m <sup>2</sup> gross area		1.042	438	96	624	223	27	492	174	25	549	193	33
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)											
Annual irradiation on collector plane		1765 kWh/m <sup>2</sup>			1714 kWh/m <sup>2</sup>			1166 kWh/m <sup>2</sup>			1244 kWh/m <sup>2</sup>		
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  $\vartheta_m$  (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 (July 2015). A detailed description of the calculations is available at [www.solarkeymark.org/scenocalc](http://www.solarkeymark.org/scenocalc)

Additional Information		
Collector heat transfer medium	Liquid	
Hybrid Thermal and Photo Voltaic collector	No	
The collector is deemed to be suitable for roof integration	No	
The collector was tested successfully according to EN ISO 9806 under the following conditions:		
Climate class (A, B or C)	B	--
Positive Mechanical Load	5405	Pa
Negative Mechanical Load	1186	Pa
Hail resistance using ice balls (diameter)	-	mm

Energy Labelling Information			
	Reference Area, $A_{sol}$ (m <sup>2</sup> )	Data required for CDR (EU) No 811/2013 - Reference Area $A_{sol}$	
The Collector	0,95	Collector efficiency ( $\eta_{col}$ )	29 %
		<i>Remark: Collector efficiency (<math>\eta_{col}</math>) 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<sup>2</sup>, expressed in % and rounded to the nearest integer. Deviating from the regulation <math>\eta_{col}</math> is based on reference area (<math>A_{sol}</math>) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806.</i>	
		Data required for CDR (EU) No 812/2013 - Reference Area $A_{sol}$	
		Zero-loss efficiency ( $\eta_0$ )	0,666 --
		First-order coefficient ( $a_1$ )	7,94 W/(m <sup>2</sup> K)
		Second-order coefficient ( $a_2$ )	0,034 W/(m <sup>2</sup> K <sup>2</sup> )
		Incidence angle modifier IAM (50°)	0,95 --
		<i>Remark: The data given in this section are related to collector reference area (<math>A_{sol}</math>) 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.</i>	