

Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate						Licence Number		011-7S2510 F							
						Issued		2015-06-10							
Company holding the			SOLISART			Country		France							
Brand (optional)			Batiment Neptune			Website		www.solisart.fr							
Street, street number			50. voie Albert Einstein - Alpespace			E-mail		contact@solisart.fr							
Postal Code / City, province			73800 Francin			Tel/Fax		+33 (0) 4 79 60 42 06							
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									
						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					
SKH 2.1						1.78	2 030	1 031	97	2.09	1 388	1 311	1 146	965	769
Performance test method						Liquid heating collector - quasi-dynamic - outdoor									
Performance parameters related to aperture area						η_{0b}	c1	c2	c3	c4	c6	K θ d			
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						0.784	4.198	0.011	0.000	0.000	0.000	0.962			
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°
						K θ (θ)	1.00	0.99	0.98	0.97	0.94	0.90	0.81	0.52	0.00
Incidence angle modifier not bi-directional - leave fields blank															
Stagnation temperature - Weather conditions see note 2						Tstg		199		°C					
Effective thermal capacity						ceff = C/Ag		9.94		kJ/(m ² K)					
Max. intended operation temperature - see note 3						Tmax,op		-		°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 m² 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						11COL1003OEM01, 11COL1002QOEM07				Date of test report		2015.06.10			
During the test GDIF/GTOT was always between						0		and		1					
Comments of testing laboratory:															
none															
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													
Datashet 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	011-7S2510 F
	Issued	10.06.2015

Annual collector output kWh/module															
Collector name	Location and collector temperature (T _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			
SKH 2.1	2 240	1 542	968	1 661	1 106	663	1 232	773	446	1 347	839	476			

Collector mounting: Fixed or tracking	Fixed; slope = latitude - 15° (rounded to nearest 5°)
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Overview of locations				
Location	Latitude °	G _{tot} kWh/m ²	T _a °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°

G _{tot}	Annual total irradiation on collector plane	kWh/m ²
T _a	Mean annual ambient air temperature	°C
T _m	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 (T_m). 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)