


Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate					Licence Number		011-7S2446 F					
					Issued		2014-11-10					
Company holding the		Solahart Australia Pty Ltd				Country		Australia				
Brand (optional)						Website		www.solahart.com.au				
Street, street number		112 Pilbara Street				E-mail		solahart@solahart.com				
Postal Code / City, province		WA 6106		Welshpool		Tel/Fax		61 08 9351 46 -00 / -98				
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						
						G_b = 850 W/m²; G_d = 150 W/m²						
						T_m-T_a						
						0 K	10 K	30 K	50 K	70 K		
Collector name						W	W	W	W	W		
CSA2013 Collector						1 479	1 406	1 245	1 061	854		
Aperture area (A_a)		Gross length		Gross width		Gross height		Gross area (A_G)				
m²		mm		mm		mm		m²				
1.88		1 996		1 043		82		2.08				
Performance test method		Liquid heating collector - quasi-dynamic - outdoor										
Performance parameters related to aperture area		η_{0b} c₁ c₂ c₃ c₄ c₆ Kθ_d										
Units		- W/(m²K) W/(m²K²) J/(m³K) - s/m -										
Test results - Flow rate and fluid see note 1		0.797 3.698 0.015 0.000 0.000 0.000 0.913										
Bi-directional incidence angle modifiers?		No Kθ values are obligatory for 50°.										
Incidence angle modifiers Kθ(θ)		Angle 10° 20° 30° 40° 50° 60° 70° 80° 90°										
Incidence angle modifier not bi-directional - leave fields blank		Kθ(θ) 1.00 0.98 0.96 0.91 0.84 0.72 0.46 0.00 0.00										
Stagnation temperature - Weather conditions see note 2							T_{stg}		184 °C			
Effective thermal capacity							ceff = C/Ag		13.752 kJ/(m²K)			
Max. intended operation temperature - see note 3							T_{max,op}		T_{stg} °C			
Max. operation pressure - see note 3							p_{max,op}		1400 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 m²) - - - - - - - - - - - -										
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					14COL1223, 14COL1223Q			Date of test report		2014.11.10		
During the test GDIF/GTOT was always between		0		and		1						
Comments of testing laboratory:												
none												
Note 1		Flow rate		0.020 kg/(s m²)		Fluid		Water				
Note 2		Irradiance, G = 1000 W/m²; Ambient temperature, T_a=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	011-7S2446 F
	Issued	10.11.2014

Annual collector output kWh/module														
Collector name	Location and collector temperature (T _m)													
	Athens			Davos			Stockholm			Würzburg			0	
	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C		
CSA2013 Collector	2 259	1 584	1 006	1 705	1 153	699	1 252	806	476	1 368	872	503		

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>.