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Capitale Soc EUR. 260.000,00 int. versato ed esistente
C.F./P. IVA e Iscriz. Reg. Imprese di Milano n. 12908230159 - R.E.A. n. 1596292

Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate		**Licence Number**	118BN/0
		Issued	2013-06-28

Company holding the	Solar-Tec SA	**Country**	CH
Brand (optional)	solar-TEC	**Website**	www.pannellisolari.ch
Street, street number	Via Pico, 28	**E-mail**	www.pannellisolari.ch
Postal Code / City, province	6900 Cassarate, Lugano	**Tel/Fax**	41 91 971 45 25 /-26

Collector Type (flat plate glazed/un-glazed; evacuate tubular)	Flat plate collector - glazed
Thermal / photo voltaic hybid collector? (PVT collector)	No
Integration in the roof possible ? (manufacturers declaration)	No

						Power output per collector module				
						G = 1000 W/m²				
						Tm-Ta				
	Aperture area (Aa)	Gross length	Gross width	Gross height	Gross area (AG)	0 K	10 K	30 K	50 K	70 K
Collector name	m²	mm	mm	mm	**m²**	W	W	W	W	W
Sol-Tec 2.1	1,72	2.100	1.000	86	**2,10**	1.361	1.304	1.180	1.040	886

Performance test method	Glazed liquid heating collector - steady state - indoor									
Performance parameters related to aperture area	η0	a1	a2							
Units	-	W/(m²K)	W/(m²K²)							
Test results - Flow rate and fluid see note 1	0,791	3,174	0,011							

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°
	Kθ(θ)	--	--	--	--	0,96	--	--	--	0,00
Incidence angle modifier not bi-directional - leave fields blank										

Stagnation temperature - Weather conditions see note 2	Tstg	203,2	°C
Effective thermal capacity	ceff = C/Ag		kJ/(m²K)
Max. intende operation temperature - see note 3	Tmax,op	220	°C
Max. operation pressure - see note 3	pmax,op	600	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)	0,000	0,003	0,005	0,006	0,008	0,010	--	--	--	--
Pressure drop, ΔP	Pa	0	1200	2400	4000	6700	10200	--	--	--	--

Optional weather data	Location		Link	

Testing Laboratory	Istituto Giordano		
Website	www.giordano.it		
Test report id. number	293343	**Date of test report**	2012/04/12

During the test GDIF/GTOT was always between -- and --

Comments of testing laboratory:

Example comment.

Note 1	**Flow rate**	0,202 kg/(s m²)	**Fluid**	Water
Note 2	**Irradiance, G = 1000 W/m²; Ambient temperature , Ta=30 °C**			
Note 3	**Given by manufacturer**			

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47814 BELLARIA (RN)
Partita IVA: 00549540409

Datasheet version: 4.04, 2013-04-20

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Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate	**Licence Number**	**118BN/0**
	Issued	28/06/2013

Annual collector output kWh/module

	Location and collector temperature (Tm)												
	Athens			Davos			Stockholm			Würzburg			
Collector name	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	
Sol-Tec 2.1	2.084	1.549	1.077	1.634	1.190	814	1.183	819	538	1.281	879	570	

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

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.