TÜVRheinland®
DIN CERTCO
Genau. Richtig.

Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate		Licence Number	011-7S756 F
		Issued	2015-12-15

Company holding the	Solarbayer GmbH	Country	Germany
Brand (optional)	Solarbayer	Website	www.solarbayer.de
Street, street number	Am Dörrenhof 22	E-mail	info@solarbayer.de
Postal Code / City, province	85131 Pollenfeld-Preith	Tel/Fax	49 8421 93598 -0 / -29

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)	Yes

Collector name	Aperture area (Aa)	Gross length	Gross width	Gross height	Gross area (AG)	Power output per collector module Gb = 850 W/m²; Gd = 150 W/m² Tm-Ta 0 K	10 K	30 K	50 K	70 K
	m²	mm	mm	mm	**m²**	W	W	W	W	W
PremiumPlus 2.01	1.86	1 600	1 260	98	**2.01**	1 446	1 376	1 229	1 071	904
PremiumPlus 2.86	2.69	2 269	1 260	98	**2.86**	2 091	1 990	1 777	1 550	1 307

Performance test method	Liquid heating collector - quasi-dynamic - outdoor							
Performance parameters related to aperture	η0b	c1	c2	c3	c4	c6	Kθd		
Units	-	W/(m²K)	W/(m²K²)	J/(m³K)	-	s/m	-		
Test results - Flow rate and fluid see note 1	0.782	3.675	0.007	0.000	0.000	0.000	0.960		

Bi-directional incidence angle	No	*Kϑ values are obligatory for 50°.*								
Incidence angle modifiers Kθ(θ)	Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
	Kθ(θ)	1.00	0.99	0.97	0.95	0.90	0.82	0.66		0.00
Incidence angle modifier not bi-directional - leave fields blank										

Stagnation temperature - Weather conditions see note 2	Tstg	185	°C
Effective thermal capacity	ceff = C/Ag	9.631	kJ/(m²K)
Max. intende operation temperature - see note 3	Tmax,op		°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)									
Pressure drop, ΔP	Pa									

Optional weather data	Location		Link
Testing Laboratory	TÜV Rheinland Energie- und Umwelt		
Website	www.tuv.com/st		
Test report id. number	21210097_2.86_SB; 21210097_2.01_SB	Date of test report	2009.07.07

During the test GDIF/GTOT was always between 0.1 and 0.9

Comments of testing laboratory:

Note 1	**Flow rate**	0.024	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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Datasheet version: 4.05, 2013-11-07

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Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate	Licence Number	011-7S756 F
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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
PremiumPlus 2.01	2 307	1 667	1 135	1 757	1 244	829	1 291	863	551	1 409	937	589
PremiumPlus 2.86	3 337	2 411	1 642	2 542	1 799	1 198	1 867	1 249	797	2 038	1 354	851

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.

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ScenoCalc version: Ver. 4.05 (Nov, 2013)