

Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate						Licence Number		011-7S2489 F			
						Issued		2015-04-01			
Company holding the	ESC Energy Systems Company GmbH					Country	Österreich				
Brand (optional)						Website	www.esc-solar.at				
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Postal Code / City, province	9130	Poggersdorf				Tel/Fax	+43 4224 821 88-50 / 4224 821 88-27				
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					
Collector name	Aperture area (Aa) m ²	Gross length mm	Gross width mm	Gross height mm	Gross area (AG) m ²	Power output per collector module					
						G = 1000 W/m ²					
						Tm-Ta					
						0 K	10 K	30 K	50 K	70 K	
						W	W	W	W	W	
FK 6200 N	1.78	2 032	1 031	94	2.09	1 387	1 315	1 158	985	794	
Performance test method	Glazed liquid heating collector - steady state - indoor										
Performance parameters related to aperture	η_0	a1	a2								
Units	-	W/(m ² K)	W/(m ² K ²)								
Test results - Flow rate and fluid see note 1	0.779	3.914	0.012								
Bi-directional incidence angle modifiers?	No	K θ values are obligatory for 50°.									
Incidence angle modifiers Kθ(θ)	Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°	
	K θ (θ)	1.00	0.99	0.98	0.96	0.92	0.86	0.74	0.35	0.00	
Incidence angle modifier not bi-directional - leave fields blank											
Stagnation temperature - Weather conditions see note 2	T _{stg}					199	°C				
Effective thermal capacity	c _{eff} = C/Ag					8.58	kJ/(m ² K)				
Max. intended operation temperature - see note 3	T _{max,op}					-	°C				
Max. operation pressure - see note 3	p _{max,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	11COL1004OEM06, 11COL1002QOEM06					Date of test report	2015.04.01				
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										
										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	011-7S2489 F
	Issued	01.04.2015

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
FK 6200 N	2 171	1 514	966	1 631	1 106	680	1 202	770	456	1 307	829	483

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>.