


Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate							Licence Number		011-7S2436 F							
							Issued		2014-11-26							
Company holding the			WIKORA GmbH				Country		Deutschland							
Brand (optional)							Website		www.wikora.de							
Street, street number			Friedrichstraße 9				E-mail		jooss@wikora.de							
Postal Code / City, province			89568		Hermaringen		Tel/Fax		49 7322960521 / 7322960540							
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)							Yes									
							Power output per collector module									
							G _b = 850 W/m ² ; G _d = 150 W/m ²									
							T _m -T _a									
							0 K	10 K	30 K	50 K	70 K					
Collector name							m ²	mm	mm	mm	m ²	W	W	W	W	W
WIKOSUN 2010							1.87	1 740	1 140	75	1.98	1 380	1 303	1 135	945	735
WIKOSUN 2510							2.32	2 170	1 140	75	2.47	1 712	1 617	1 408	1 173	912
Performance test method			Liquid heating collector - quasi-dynamic - outdoor													
Performance parameters related to aperture			η _{0b}	c ₁	c ₂	c ₃	c ₄	c ₆	Kθ _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			0.744	3.945	0.014	0.000	0.000	0.000	0.944							
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°				
			Kθ(θ)	1.00	0.99	0.98	0.95	0.92	0.85	0.71	0.29	0.00				
Incidence angle modifier not bi-directional - leave fields blank																
Stagnation temperature - Weather conditions see note 2							T _{stg}		179		°C					
Effective thermal capacity							ceff = C/Ag		10163		kJ/(m ² K)					
Max. intended operation temperature - see note 3							T _{max,op}		200		°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			14COL1220/1OEM01, 14COL1221/1OEM01, 14COL1221Q/1OEM01					Date of test report			20.11.2014					
During the test GDIF/GTOT was always between			0		and		1									
Comments of testing laboratory:																
Note 1	Flow rate		0.020	kg/(s m ²)	Fluid		Water									
Note 2	Irradiance, G = 1000 W/m²; Ambient temperature, T_a=30 °C															
Note 3	Given by manufacturer															
												 Forschungs- und Testzentrum für Solaranlagen Institut für Photovoltaik & Solarthermie Universität Stuttgart Hürttenstraße 6, 70569 Stuttgart (Dohringstr.)				
												Datasheet version: 4.06, 2014-01-15				
DIN CERTCO • Alboinstraße 56 • 12103 Berlin																
Tel: +49 30 7562-1131 • Fax: +49 30 7562-1141 • E-Mail: info@dincertco.de • www.dincertco.de																

Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate	Licence Number	011-7S2436 F
	Issued	26.11.2014

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		
WIKOSUN 2010	2 190	1 490	906	1 620	1 058	607	1 200	742	413	1 312	803	440		
WIKOSUN 2510	2 717	1 848	1 124	2 009	1 313	753	1 489	921	513	1 628	996	545		

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

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>.