



Annex to Solar Keymark Certificate - Summary of EN ISO 9806:2013 Test Results						Licence Number		011-7S2737 F																	
						Date issued		2017-02-14																	
						Issued by																			
Licence holder		Honeywell Technologies Sàrl				Country		Switzerland																	
Brand (optional)		--				Web		www.honeywell.com																	
Street, Number		Z.A. La Pièce 16				E-mail		info@honeywell.com																	
Postcode, City		CH-1180 Rolle				Tel		+42 (0) 532 111 772																	
Collector Type						Flat plate collector, glazed																			
					Power output per collector G _b = 850 W/m ² ; G _d = 150 W/m ² ϑ _m - ϑ _a																				
					0 K		10 K		30 K		50 K		70 K		130 K										
Collector name					W		W		W		W		W		W										
SWH-CBP					1'320		1'213		977		709		412		0										
Power output per m² gross area					667		613		494		359		208		0										
Performance parameters test method						Steady state - outdoor																			
Performance parameters (related to AG)						η _{0,hem}		a ₁		a ₂															
Units						-		W/(m ² K)		W/(m ² K ²)															
Test results						0.667		5.200		0.019															
Incidence angle modifier test method						Steady state - outdoor																			
Bi-directional incidence angle modifiers						No																			
Incidence angle modifier						Angle		10°		20°		30°		40°		50°		60°		70°		80°		90°	
Transversal						K _{GT, coll}		1.00		1.00		0.99		0.97		0.93		0.85		0.71		0.45		0.00	
Longitudinal						K _{GL, coll}		1.00		1.00		0.99		0.97		0.93		0.85		0.71		0.45		0.00	
Heat transfer medium for testing						Water-Glycole																			
Flow rate for testing (per gross area, A_G)						dm/dt		0.021		kg/(sm ²)															
Maximum temperature difference for thermal performance calculations						(ϑ _m -ϑ _a) _{max}		130		K															
Standard stagnation temperature (G = 1000 W/m²; ϑ_a = 30 °C)						ϑ _{stg}		125		°C															
Effective thermal capacity, incl. fluid (per gross area, A_G)						C/m ²		34		kJ/(Km ²)															
Maximum operating temperature						ϑ _{max, op}		200		°C															
Maximum operating pressure						p _{max, op}		1000		kPa															
Testing laboratory						SPF, CH-8640 Rapperswil						www.spf.ch													
Test report(s)						C1709LPEN C1709QPEN						Dated		09.02.2017 09.02.2017											
Comments of testing laboratory						--						Datasheet version: 5.01, 2016-03-01													
						 INSTITUT FÜR SOLARTECHNIK 																			
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Annex to Solar Keymark Certificate Supplementary Information	Licence Number	011-7S2737 F
	Issued	2017-02-14

Annual collector output in kWh/collector at mean fluid temperature ϑ_m , based on EN ISO 9806:2013 test results													
Collector name	Standard Locations ϑ_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
SWH-CBP		2'036	1'149	512	1'375	724	275	1'042	518	198	1'143	557	216
Annual output per m ² gross area		1'029	581	259	695	366	139	526	262	100	578	282	109
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)											
Annual irradiation on collector plane		1765 kWh/m ²			1714 kWh/m ²			1166 kWh/m ²			1244 kWh/m ²		
Mean annual ambient air temperature		18.5°C			3.2°C			7.5°C			9.0°C		
Collector orientation or tracking mode		South, 25°			South, 30°			South, 45°			South, 35°		

The collector is operated at constant temperature ϑ_m (mean of in- and outlet temperatures). The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool Scenocalc Ver. 5.01 (March 2016). A detailed description of the calculations is available at www.solarkeymark.org/scenocalc

Additional Information		
Collector heat transfer medium	Water-Glycole	
Hybrid Thermal and Photo Voltaic collector	No	
The collector is deemed to be suitable for roof integration	Yes	
The collector was tested successfully according to EN ISO 9806:2013 under the following conditions:		
Climate class (A, B or C)	A	--
Maximum tested positive load	2400	Pa
Maximum tested negative load	2400	Pa
Hail resistance using ice balls (diameter)	45	mm

Energy Labelling Information				
	Reference Area, A_{sol} (m ²)	Data required for CDR (EU) No 811/2013 - Reference Area A_{sol}		
SWH-CBP	1.98	Collector efficiency (η_{col})	43	%
		Remark: Collector efficiency (η_{col}) is defined in CDR (EU) No 811/2013 as collector efficiency of the solar collector at a temperature difference between the solar collector and the surrounding air of 40 K and a global solar irradiance of 1000 W/m ² , expressed in % and rounded to the nearest integer. Deviating from the regulation η_{col} is based on reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806:2013.		
		Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}		
		Zero-loss efficiency (η_0)	0.667	--
		First-order coefficient (a_1)	5.20	W/(m ² K)
		Second-order coefficient (a_2)	0.019	W/(m ² K ²)
		Incidence angle modifier IAM (50°)	0.93	--
		Remark: The data given in this section are related to collector reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806. Consistent data sets for either aperture or gross area can be used in calculations like in the regulation 811 and 812 and simulation programs.		