

Annex to Solar Keymark Certificate Supplementary Information	Licence Number	011-7S2913 R
	Issued	2019-03-01

Annual collector output in kWh/collector at mean fluid temperature ϑ_m													
Standard Locations		Athens			Davos			Stockholm			Würzburg		
Collector name	ϑ_m	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C
SC-H24-10		750	624	506	644	540	441	463	376	298	459	375	300
SC-H24-15		1 105	919	747	950	796	650	682	555	439	677	553	442
SC-H24-18		1 317	1 095	889	1 131	949	774	812	661	523	806	659	527
SC-H24-20		1 456	1 211	984	1 251	1 049	856	898	731	579	891	729	582
SC-H24-24		1 740	1 447	1 175	1 494	1 253	1 023	1 073	873	692	1 065	870	696
SC-H24-25		1 812	1 507	1 224	1 556	1 305	1 065	1 118	909	720	1 109	907	725
SC-H24-30		2 163	1 799	1 461	1 858	1 558	1 271	1 334	1 085	860	1 324	1 082	865
Annual output per m ² gross area		481	400	325	413	346	283	296	241	191	294	240	192
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. 6.0 (October 2018). A detailed description of the calculations is available at www.solarkeymark.org/scenocalc													

Additional Information					
Collector heat transfer medium	Water-Glycole				
The collector is deemed to be suitable for roof integration	No				
The collector was tested successfully under the following conditions:					
Climate class (A+, A, B or C)				C	--
G (W/m ²) >	800	ϑ_a (°C) >	10	H_x (MJ/m ²) >	420
Maximum tested positive load				3500	Pa
Maximum tested negative load				-	Pa
Hail resistance using steel ball (maximum drop height)				0.8	m
Additional collector attribute(s)					
<input type="checkbox"/> Using external power source(s) for normal operation	<input type="checkbox"/> Active or passive measure(s) for self-protection				
<input type="checkbox"/> Co-generating thermal and electrical power	<input type="checkbox"/> Wind and/or infrared sensitive collector(s) (WISC)				
<input type="checkbox"/> Façade collector(s)					

Energy Labelling Information		
	Reference Area, A_{sol} (m ²)	Hydraulic Designation Code
SC-H24-10	1.56	{F}-{O}-{CL}-{A:Ø,L}-{C:Ø,L}-{D}
SC-H24-15	2.30	{F}-{O}-{CL}-{A:Ø,L}-{C:Ø,L}-{D}
SC-H24-18	2.74	
SC-H24-20	3.03	
SC-H24-24	3.62	
SC-H24-25	3.77	
SC-H24-30	4.50	

Data required for CDR (EU) No 811/2013 - Reference Area A_{sol}		Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}	
Collector efficiency (η_{col})	29%	Zero-loss efficiency (η_0)	0.34
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		First-order coefficient (a_1)	1.03
		Second-order coefficient (a_2)	0.003
		Incidence angle modifier IAM (50°)	1.12
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		Remark: The data given in this section are related to collector reference area	

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 9806:2017.

(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.

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