

Annex to Solar Keymark Certificate						Licence Number		011-7S1770 F							
Supplementary Information						Issued		2022-09-21							
Gross Thermal Yield 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		
SBK25SA		3 053	2 147	1 371	2 300	1 561	951	1 693	1 086	637	1 851	1 180	682		
Gross Thermal Yield per m ² gross area		1 211	852	544	913	619	378	672	431	253	734	468	271		
Annual efficiency, η_a		69%	48%	31%	56%	38%	23%	58%	37%	22%	59%	38%	22%		
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)													
Annual irradiation on collector plane		1765 kWh/m ²			1630 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 Senocalc Ver. 6.2 (13.01.2022). A detailed description of the calculations is available at http://www.estif.org/solarkeymarknew/															
Additional Information															
Collector heat transfer medium											Water-Glycole				
The collector is deemed to be suitable for roof integration											Yes				
The collector was tested successfully under the following conditions:															
Climate class (A+, A, B or C)											A		--		
G (W/m ²) >		1000		ϑ_a (°C) >		20		H _x (MJ/m ²) >			600				
Maximum tested positive load											3000		Pa		
Maximum tested negative load											2500		Pa		
Hail resistance using steel ball (maximum drop height)											2		m		
Additional collector attribute(s)															
Using external power source(s) for normal operation						No		Active or passive measure(s) for self-protection				No			
Co-generating thermal and electrical power						No		Façade collector(s)				No			
Energy Labelling Information						Additional Informative Technical Data									
Reference Area, A _{sol} (m ²)						Hydraulic Designation Code				Aperture Area, A _a (m ²)					
SBK25SA						2.52				12-V-12S-A:7.2,1988- C:20.4,1215				2.31	
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})						57%		Zero-loss efficiency (η_0)				0.74		--	
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 9806:2017.						First-order coefficient (a ₁)				3.72		W/(m ² K)			
						Second-order coefficient (a ₂)				0.013		W/(m ² K ²)			
						Incidence angle modifier IAM (50°)				0.98		--			
						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.									
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