

Annex to Solar Keymark Certificate		Licence Number		011-7S2976 F									
Supplementary Information		Issued		2020-07-02									
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			
KS 2600F TLP ACRm		3'360	2'454	1'645	2'595	1'834	1'186	1'898	1'273	792	2'063	1'377	843
Annual output per m ² gross area		1'283	937	628	990	700	453	724	486	302	787	525	322
Annual efficiency, η_a		73%	53%	36%	61%	43%	28%	62%	42%	26%	63%	42%	26%
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 Scenocalc Ver. 6.1 (September 2019). 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										5400		Pa	
Maximum tested negative load										2400		Pa	
Hail resistance using ice balls (diameter)										45		mm	
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 checked="" type="checkbox"/> Façade collector(s)									
Energy Labelling Information						Additional Informative Technical Data							
		Reference Area, A_{sol} (m ²)		Hydraulic Designation Code		Aperture Area, A_a (m ²)							
KS 2600F TLP ACRm		2.62		1-V-1234S-A:9,28220-C:16,1310-D		2.46							
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})		64%		Zero-loss efficiency (η_0)		0.80		--					
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)		3.49		W/(m ² K)					
				Second-order coefficient (a_2)		0.014		W/(m ² K ²)					
				Incidence angle modifier IAM (50°)		0.97		--					
						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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