



Annex to Solar Keymark Certificate	Licence Number	SKM 9965/6
Supplementary Information	Issued	2022-08-30

Gross Thermal Yield in kWh/collector at mean fluid temperature ϑ_m																	
Collector name	Standard Locations					Athens			Davos			Stockholm			Würzburg		
					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
AEIOS CuS 1500						1.598	1.091	663	1.187	778	447	879	546	307	958	589	323
AEIOS CuS 1500HOR						1.598	1.091	663	1.187	778	447	879	546	307	958	589	323
AEIOS CuS 2000						2.113	1.443	877	1.571	1.029	591	1.163	722	405	1.268	779	427
AEIOS CuS 2000HOR						2.113	1.443	877	1.571	1.029	591	1.163	722	405	1.268	779	427
AEIOS CuS 2600						2.629	1.796	1.091	1.954	1.280	735	1.446	898	504	1.577	969	531
AEIOS CuS 2600HOR						2.629	1.796	1.091	1.954	1.280	735	1.446	898	504	1.577	969	531
AEIOS CuS 1500																	
Gross Thermal Yield per m ² gross area						1.011	691	420	751	492	283	556	345	194	607	373	204
Annual efficiency, η_a						57%	39%	24%	46%	30%	17%	48%	30%	17%	49%	30%	16%
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. 6.2 (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							No			
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							1000		Pa	
Maximum tested negative load							1000		Pa	
Hail resistance using steel ball (maximum drop height)									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)			
AEIOS CuS 1500				1,58				8-V-1234S-A:7.2,1342-C:20.6,1060-D				1,40			
AEIOS CuS 1500HOR				1,58								1,40			
AEIOS CuS 2000				2,09				8-V-1234S-A:7.2,1842-C:20.6,1060-D				1,88			
AEIOS CuS 2000HOR				2,09								1,88			
AEIOS CuS 2600				2,60				11-V-1234S-A:7.2,1342-C:20.6,1320-D				2,37			
AEIOS CuS 2600HOR				2,60								2,37			

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})	50%	Zero-loss efficiency (η_0)	0,66 --
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)	3,33 W/(m ² K)
		Second-order coefficient (a_2)	0,014 W/(m ² K ²)
		Incidence angle modifier IAM (50°)	0,85 --
		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.	