



Licence Number	OEM 9999/2/4/1
Date issued	2022-07-27
Issued by	DQS Hellas

Collector Type	Flat plate collector
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Power output per m ² gross area	775	742	669	587	495	402
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Incidence angle modifier test method	Steady state - outdoor
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Heat transfer medium for testing	Water
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Testing laboratory	NCSR Demokritos / Solar & other Energy System	www.solar.demokritos.gr	
Test report(s)	4196DE2 4197DQ3	Dated	16/11/2016 2-6-20217

Comments of testing laboratory Ver. 6.2 (13.01.2022)

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Annex to Solar Keymark Certificate							Licence Number		OEM 9999/2/4/1					
Supplementary Information							Issued		2022-07-27					
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	
SIME PLANO 272		3.422	2.564	1.786	2.673	1.943	1.310	1.954	1.349	874	2.121	1.461	932	
SIME PLANO 272 HRZ		3.422	2.564	1.786	2.673	1.943	1.310	1.954	1.349	874	2.121	1.461	932	
Gross Thermal Yield per m ² gross area		1.258	942	657	983	714	482	718	496	321	780	537	343	
Annual efficiency, η_a		71%	53%	37%	60%	44%	30%	62%	43%	28%	63%	43%	28%	
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											3000		Pa	
Maximum tested negative load											3000		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														
	Reference Area, A _{sol} (m ²)													
SIME PLANO 272	2,72													
SIME PLANO 272 HRZ	2,72													
Data required for CDR (EU) No 811/2013 - Reference Area A_{sol}														
Collector efficiency (η_{col})											63%			
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.														
Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}														
Zero-loss efficiency (η_0)											0,77		--	
First-order coefficient (a_1)											3,15		W/(m ² K)	
Second-order coefficient (a_2)											0,012		W/(m ² K ²)	
Incidence angle modifier IAM (50°)											0,96		--	
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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