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						Licence	e Numb	er	SKM10	039	_			
Annex to Solar Keymark Certificate							sued	ued		2022-07-28				
•						Issued			DQS Hellas					
Licence holder	DADAEMMANOLIEL C.A.						Country Greece							
Brand (optional)														
Street, Number	10 Km Inofita St. Thomas Inofita Vistia					Web E-mail	exports@papaemmanouel.gr							
	10 Km Inofyta – St. Thomas, Inofyta Viotia					Tel	+30 22620 31931							
Postcode, City 32011, Viotia						LO								
Collector Type							Flat plate collector							
						Dower output nor collector								
						Power output per collector Gb = 850 W/m2, Gd = 150 W/m2 & u = 1.3 m/s								
Collector name		Gross area (A _G) Gross length Gross width Gross					$\vartheta_{\rm m} - \vartheta_{\rm a}$							
		Gross area (/	Gross	Gross	Gross height	0 K	10 K	30 K	50 K	70 K	88 K			
	ŀ	m²				W	W	W	W	W	88 K			
FMAX TOP 2.72			mm	mm	mm									
FMAX TOP_2.72		2.73	2,161	1,263	102	2,148	2,073	1,884	1,640	1,343 1,343	1,028			
FIVIAX TOP_2.72H		2.73	1,263	2,161	102	2,148	2,073	1,884	1,640	1,343	1,028			
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			<u> </u>			707	750	600	604	400	277			
Power output per m ² gross area						787	759	690	601	492	377			
Performance parameters test met			tate - out	door										
Performance parameters (related to A _G)		η0, b	a1	a2	a3	a4	a5	a6	a7	a8	Kd			
Units		-		$W/(m^2K^2)$	J/(m³K)	-	J/(m²K)	s/m	W/(m²K⁴)	W/(m²K⁴)	-			
Test results		0.799	2.48	0.025	0.000	0.00	9797	0.000	0.00	0.0E+00	0.90			
Incidence angle modifier test meth	Steady s	tate - out	door											
Incidence angle modifier		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°			
Transversal		K _{θT,coll}	1.00	1.00	0.99	0.98	0.94	0.87	0.73	0.48	0.00			
Longitudinal		K _{θL,coll}	1.00	1.00	0.99	0.98	0.94	0.87	0.73	0.48	0.00			
						•	Water		•	'				
Heat transfer medium for testing							dm/dt		0.022 kg//cm²)					
Flow rate for testing (per gross area, A _G) Maximum temperature difference during thermal performance test							$(\vartheta_{\rm m}-\vartheta_{\rm a})_{\rm r}$		0.022 kg/(sm²) 58 K					
Standard stagnation temperature (G = 1000 W/m ² ; ϑ_a = 30 °C)							ϑ_{stg}	nax	187 °C					
Maximum operating temperature									210 °C					
							ϑ _{max_op}		1000 kPa					
Maximum operating pressure								1. manyee						
Testing laboratory	NCSR Demokritos / Solar & other Energy System							www.solar.demokritos.gr						
Test report(s)	4196DE2 4197DQ3						Dated		16/11/1					
	419/DQ	S							2-6-2023	L/				
Commonts of tractical library	<u> </u>						1	17	C 2 /42 01	2022)				
Comments of testing laboratory							Ver. 6.2 (13.01.2022)							
							N.C.S.R. "DEMOKRITOS"							
							SOLAR ENERGY LABORATORY Tel: +210 6503815 - Fax: +210 6544592							
							P.O. BOX 60037, 15310 Ag. Paraskevi, Greece							
l														

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Annex to Solar Keymark Certific	_	_		ce Nur	nber	SKM10039							
Supplementary Information			Issue	d		2022-	07-28						
Gross Thermal Yield in kWh/collect	or at m	ean flu	ıid tem	peratu	re ປີ _m								
Standard Locations	Athens		Davos		Stockhol			m	V	Vürzbur	urg		
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	
FMAX TOP_2.72	_	2,654		_		_		1,400	866	2,178	-	924	
FMAX TOP_2.72H	3,459	2,654	1,803	2,759	1,998	1,274	2,011	1,400	866	2,178	1,517	924	
Gross Thermal Yield per m² gross area	1,267	972	660	1,011	732	467	737	513	317	798	556	338	
Annual efficiency, η _a	72%	55%	37%	62%	45%	29%	63%	44%	27%	64%	45%	27%	
Fixed or tracking collector						ude - 1	_					, ,	
Annual irradiation on collector plane	1765 kWh/m²			163	1630 kWh/m²			1166 kWh/m²			1244 kWh/m²		
Mean annual ambient air temperature Collector orientation or tracking mode	18.5°C South, 25°			5	3.2°C South, 30°			7.5°C South, 45°			9.0°C South, 35°		
The collector is operated at constant te													
collector performance is performed wit													
description of the calculations is availab									`		,		
		Add	litiona	l Info	matio	n							
Collector heat transfer medium						·				Water-	Glycole		
The collector is deemed to be suitable f	or roof i	ntegrat	ion							N	•		
The collector was tested successfully un	der the	followin	ng cond	litions:									
, , ,	mate class (A+, A, B or C)										A		
G (W/m²) > 1000 9 _a (°C) > Maximum tested positive load					20			H _X (IVI)	I/m²) >	000	60 P		
Maximum tested positive load Maximum tested negative load											P		
Hail resistance using steel ball (maximus	m drop	height)								2	n		
,		ddition	nal col	lector	attrib	ute(s)							
Using external power source(s) for norm			No			ve mea	sure(s) f	or self-	protect	ion		No	
Co-generating thermal and electrical po			No	Façade	collect							No	
Energy Labelling Information				Additional Informative									
	Reference Area, A _{sol} (m ²)			Hydraulic Designation Code					Aperture Area, A _a (m ²)				
FMAX TOP_2.72	2.73			14-V-1234S-A:7.2,2060-C:20.6,1320-					2.57				
FMAX TOP_2.72H	2.73			25-V-1234S-A:7.2,1158-C:20.6,2240-					2.57				
Data required for CDR (EU) No 811/203	13 - Refe	erence A	Area	Data re	quired	for CDI	R (EU) N	o 812/2	2013 - R	Referenc	e Area	A_{sol}	
Collector efficiency (η_{col})		65%		Zero-lo	ss effici	ency (η	o)		0.	79	-	-	
December College of Control Control	' . CDD //	-11\ A1-				efficient				48	1)/W		
Remark: Collector efficiency (ncol) is defined in CDR (EU) No 811/2013 as collector efficiency of the solar collector at a temperature			Second-order coefficient (a ₂)						025	W/(n	n²K²)		
difference between the solar collector and the surrounding air of 40 K				incluence angle mounter iAW (50)						or refere	-		
and a global solar irradiance of 1000 W/m², expressed in % and					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								
rounded to the nearest integer. Deviating from the regulation ηcol is					gross area for ISO 9806. Consistent data sets for either aperture or gross								
based on reference area (Asol) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806:2017.				area can be used in calculations like in the regulation 811 and 812 and									
according to FIA 152/3-5 of BLO22 gleg lot 120	, 5000.20	1.		simulati	on progr	ams.							
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