



Annex to Solar Keymark Certificate					Licence Number		OEM 10086.1							
					Date issued		2023-10-30							
					Issued by		DQS Hellas							
Licence holder		NEW ENERGY SYSTEMS LTD			Country		Bulgaria							
Brand (optional)					Web		www.sunssystem.bg							
Street, Number		12 'Madara' BLVD			E-mail		office@sunssystem.bg							
Postcode, City		9700 Shumen			Tel		+359 54874555							
Collector Type					Flat plate collector									
Collector name					Power output per collector									
					G _b = 850 W/m ² , G _d = 150 W/m ² & u = 1.3 m/s $\vartheta_m - \vartheta_a$									
					0 K	10 K	30 K	50 K	70 K	89 K				
					m ²	mm	mm	mm	mm	mm	mm			
SUNSYSTEM PK SL FP 1.50					1,50	1.485	1.013	87	1.097	1.040	919	791	654	519
SUNSYSTEM PK SL FP 1.50HOR					1,50	1.485	1.013	87	1.097	1.040	919	791	654	519
SUNSYSTEM PK SL FP 1.82					1,82	1.480	1.230	86	1.331	1.261	1.116	960	794	630
SUNSYSTEM PK SL FP 1.82HOR					1,82	1.230	1.480	86	1.331	1.261	1.116	960	794	630
SUNSYSTEM PK SL FP 2.00					2,00	1.980	1.010	86	1.462	1.386	1.226	1.055	872	692
SUNSYSTEM PK SL FP 2.00HOR					2,00	1.010	1.980	86	1.462	1.386	1.226	1.055	872	692
SUNSYSTEM PK SL FP 2.40					2,37	1.930	1.230	86	1.733	1.643	1.453	1.250	1.034	820
SUNSYSTEM PK SL FP 2.40HOR					2,37	1.230	1.930	86	1.733	1.643	1.453	1.250	1.034	820
SUNSYSTEM PK SL FP 2.72					2,73	2.162	1.264	87	1.996	2 (13.01)	1.673	1.440	1.191	944
SUNSYSTEM PK SL FP 2.72HOR					2,73	2.162	1.264	87	1.996	1.892	1.673	1.440	1.191	944
Power output per m ² gross area					731	693	613	527	436	346				
Performance parameters test method		Steady state - outdoor												
Performance parameters (related to A _G)		η_0, b	a1	a2	a3	a4	a5	a6	a7	a8	Kd			
Units		-	W/(m ² K)	W/(m ² K ²)	J/(m ³ K)	-	J/(m ² K)	s/m	W/(m ² K ⁴)	W/(m ² K ⁴)	-			
Test results		0,739	3,73	0,007	0,000	0,00	8.630	0,000	0,00	0,0E+00	0,93			
Incidence angle modifier test method		Steady state - outdoor												
Incidence angle modifier		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°			
Transversal		K _{GT, coll}	1,00	0,99	0,98	0,95	0,89	0,80	0,65	0,40	0,00			
Longitudinal		K _{GL, coll}	1,00	0,99	0,98	0,95	0,89	0,80	0,65	0,40	0,00			
Heat transfer medium for testing					Water									
Flow rate for testing (per gross area, A _G)					dm/dt	0,021	kg/(sm ²)							
Maximum temperature difference during thermal performance test					($\vartheta_m - \vartheta_a$) _{max}	58,7	K							
Standard stagnation temperature (G = 1000 W/m ² ; $\vartheta_a = 30$ °C)					ϑ_{stg}	185	°C							
Maximum operating temperature					$\vartheta_{max, op}$	210	°C							
Maximum operating pressure					p _{max, op}	1000	kPa							
Testing laboratory		NCSR Demokritos / Solar & other Energy System					www.solar.demokritos.gr							
Test report(s)		4251 DE1 4252 DQ1 4253 DE1					Dated		2/7/2019 1/8/2019 2/7/2019					
Comments of testing laboratory					Ver. 6.2 (13.01.2022)									
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