



Annex to Solar Keymark Certificate					Licence Number		OEM 10115.1.4					
					Date issued		2024-04-20					
					Issued by		DQS Hellas					
Licence holder		FONDERIE SIME S.p.A.			Country		Italy					
Brand (optional)					Web		www.sime.it					
Street, Number		Via Garbo 27			E-mail		info@sime.it					
Postcode, City		37045 Legnago (VR)			Tel		+39 0442 631.111					
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	88 K		
					m ²	mm	mm	mm	W	W	W	
SimeLux Plus 2.1					2,09	1.696	1.230	86	1.640	1.559	1.375	
SimeLux Plus 2.6					2,60	2.111	1.230	86	2.041	1.939	1.711	
SimeLux Plus 2.6 HRZ					2,60	1.230	2.111	86	2.041	1.939	1.711	
SimeLux Plus 3.0					3,00	1.996	1.500	86	2.355	2.237	1.974	
SimeLux Plus 3.0 HRZ					3,00	1.500	1.996	86	2.355	2.237	1.974	
Power output per m ² gross area					785	746	658	557	444	332		
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		0,795	3,75	0,016	0,000	0,00	0	0,000	0,00	0,0E+00	0,92	
Incidence angle modifier test method		Steady state - outdoor										
Incidence angle modifier		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°	
Transversal		K _{θT, coll}	1,00	1,00	1,00	0,98	0,96	0,89	0,76	0,51	0,00	
Longitudinal		K _{θL, coll}	1,00	1,00	1,00	0,98	0,96	0,89	0,76	0,51	0,00	
Heat transfer medium for testing		Water										
Flow rate for testing (per gross area, A _G)		dm/dt	0,022		kg/(sm ²)							
Maximum temperature difference during thermal performance test		($\vartheta_m - \vartheta_a$) _{max}	57,8		K							
Standard stagnation temperature (G = 1000 W/m ² ; $\vartheta_a = 30$ °C)		ϑ_{stg}	175,7		°C							
Maximum operating temperature		$\vartheta_{max, op}$	°C									
Maximum operating pressure		p _{max, op}	1000		kPa							
Testing laboratory		NCSR Demokritos / Solar & other Energy System					www.solar.demokritos.gr					
Test report(s)		4295 DQ1 4301 DE1 4302 DE1					Dated		4/12/2020 4/12/2020 4/12/2020			
Comments of testing laboratory		Datasheet version: 6.1, 2019-09-26										
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Annex to Solar Keymark Certificate Supplementary Information	Licence Number	OEM 10115.1.4
	Issued	2024-04-20

Annual collector output 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
SimeLux Plus 2.1		2.637	1.867	1.190	1.999	1.361	826	1.472	948	555	1.602	1.026	591
SimeLux Plus 2.6		3.281	2.323	1.480	2.487	1.693	1.027	1.832	1.180	690	1.993	1.277	736
SimeLux Plus 2.6 HRZ		3.281	2.323	1.480	2.487	1.693	1.027	1.832	1.180	690	1.993	1.277	736
SimeLux Plus 3.0		3.785	2.680	1.708	2.870	1.953	1.185	2.113	1.361	797	2.300	1.473	849
SimeLux Plus 3.0 HRZ		3.785	2.680	1.708	2.870	1.953	1.185	2.113	1.361	797	2.300	1.473	849
Annual output per m ² gross area		1.262	893	569	957	651	395	704	454	266	767	491	283
Annual efficiency, η_a		71%	51%	32%	59%	40%	24%	60%	39%	23%	62%	39%	23%
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	No		
The collector was tested successfully under the following conditions:			
Climate class (A+, A, B or C)	A		--
<input type="checkbox"/> G (W/m ²) >	1000	ϑ_a (°C) >	20
<input type="checkbox"/> H _x (MJ/m ²) >	600		
<input type="checkbox"/> Maximum tested positive load	3000		Pa
<input type="checkbox"/> Maximum tested negative load	3000		Pa
<input type="checkbox"/> Hail resistance using steel ball (maximum drop height)	1,6		m
Additional collector attribute(s)			
Using external power source(s) for normal operation		Active or passive measure(s) for self-protection	
Co-generating thermal and electrical power		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)
SimeLux Plus 2.1	2,09	14-VH-1234S-A:7.2,1600-C:20.6,1295-	1,96
SimeLux Plus 2.6	2,60	14-VH-1234S-A:7.2,2009-C:20.6,1295-	2,44
SimeLux Plus 2.6 HRZ	2,60	18-H-1234S-A:7.2,1131-C:20.6,2170-	2,44
SimeLux Plus 3.0	3,00	17-VH-1234S-A:7.2,1900-C:20.6,1563-	2,84
SimeLux Plus 3.0 HRZ	3,00	18-H-1234S-A:7.2,1400-C:20.6,2060-	2,84

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})	61%	Zero-loss efficiency (η_0)	0,78
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)	3,75
		Second-order coefficient (a ₂)	0,016
		Incidence angle modifier IAM (50°)	0,96
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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.			