


Annex to Solar Keymark Certificate					Licence Number		23.05.004							
					Date issued		2023-05-16							
					Issued by		EUROVENT CERTITA							
Licence holder		SYRIUS SOLAR INDUSTRY			Country		France							
Brand (optional)		D8C SERIES			Web		<a href="http://www.syrius-solar.fr">http://www.syrius-solar.fr</a>							
Street, Number		15, rue de Perpignan			E-mail		contact@syrius-solar.fr							
Postcode, City		34880 Lavérune			Tel		+33 467 820 018							
Collector Type					Flat plate collector									
Collector name					Power output per collector									
					Gb = 850 W/m <sup>2</sup> , Gd = 150 W/m <sup>2</sup> & u = 1.3 m/s $\vartheta_m - \vartheta_a$									
					0 K	10 K	30 K	50 K	70 K	92 K				
					W	W	W	W	W	W				
H2500 D8C					2,53	1 244	2 034	98	1 797	1 709	1 486	1 197	844	381
Power output per m <sup>2</sup> gross area					710	676	587	473	334	150				
Performance parameters test method		Steady state - outdoor												
Performance parameters (related to A <sub>G</sub> )		$\eta_{0, b}$	a1	a2	a3	a4	a5	a6	a7	a8	Kd			
Units		-	W/(m <sup>2</sup> K)	W/(m <sup>2</sup> K <sup>2</sup> )	J/(m <sup>3</sup> K)	-	J/(m <sup>2</sup> K)	s/m	W/(m <sup>2</sup> K <sup>4</sup> )	W/(m <sup>2</sup> K <sup>4</sup> )	-			
Test results		0,721	3,14	0,032	0,000	0,00	6 900	0,000	0,00	0,0E+00	0,90			
Incidence angle modifier test method		Steady state - outdoor												
Incidence angle modifier		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°			
Transversal		K <sub>θT, coll</sub>	1,00	0,99	0,98	0,97	0,94	0,89	0,78	0,46	0,00			
Longitudinal		K <sub>θL, coll</sub>	1,00	0,99	0,98	0,97	0,94	0,89	0,78	0,46	0,00			
Heat transfer medium for testing		Water-Glycole												
Flow rate for testing (per gross area, A <sub>G</sub> )		dm/dt	0,020		kg/(sm <sup>2</sup> )									
Maximum temperature difference during thermal performance test		( $\vartheta_m - \vartheta_a$ ) <sub>max</sub>	62		K									
Standard stagnation temperature (G = 1000 W/m <sup>2</sup> ; $\vartheta_a = 30$ °C)		$\vartheta_{stg}$	170		°C									
Maximum operating temperature		$\vartheta_{max, op}$	200		°C									
Maximum operating pressure		p <sub>max, op</sub>	100		kPa									
Testing laboratory		CESP			<a href="http://www.cesplab.univ-perp.fr">http://www.cesplab.univ-perp.fr</a>									
Test report(s)		PVFRES03004-1-5			Dated		28/05/2023							
Comments of testing laboratory		Datasheet version: 6.1, 2019-09-26												
														
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www.eurovent-certification.com														

Annex to Solar Keymark Certificate Supplementary Information	Licence Number	23.05.004
	Issued	2023-05-16

Annual collector output in kWh/collector at mean fluid temperature $\vartheta_m$													
Collector name	Standard Locations	Athens			Davos			Stockholm			Würzburg		
	$\vartheta_m$	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C
H2500 D8C		2 850	1 955	1 093	2 141	1 349	664	1 588	962	471	1 728	1 040	503
Annual output per m <sup>2</sup> gross area		1 127	773	432	846	533	262	627	380	186	683	411	199
Annual efficiency, $\eta_a$		64%	44%	24%	52%	33%	16%	54%	33%	16%	55%	33%	16%
Fixed or tracking collector													
Annual irradiation on collector plane		1765 kWh/m <sup>2</sup>			1630 kWh/m <sup>2</sup>			1166 kWh/m <sup>2</sup>			1244 kWh/m <sup>2</sup>		
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  $\vartheta_m$  (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		--
G (W/m <sup>2</sup> ) >	1000	$\vartheta_a$ (°C) >	20
		$H_x$ (MJ/m <sup>2</sup> ) >	600
Maximum tested positive load	3000		Pa
Maximum tested negative load	3000		Pa
Hail resistance using steel ball (maximum drop height)	1		m

Additional collector attribute(s)	
<input type="checkbox"/> Using external power source(s) for normal operation	<input type="checkbox"/> Active or passive measure(s) for self-protection
<input type="checkbox"/> Co-generating thermal and electrical power	<input type="checkbox"/> Façade collector(s)

Energy Labelling Information		Additional Informative Technical Data	
	Reference Area, $A_{sol}$ (m <sup>2</sup> )	Hydraulic Designation Code	Aperture Area, $A_a$ (m <sup>2</sup> )
H2500 D8C	2,53	20-V-1234S-A:7.2,21300-	2,34

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 ( $\eta_{col}$ )	53%	Zero-loss efficiency ( $\eta_0$ )	0,71
Remark: Collector efficiency ( $\eta_{col}$ ) 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 <sup>2</sup> , expressed in % and rounded to the nearest integer. Deviating from the regulation $\eta_{col}$ 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 ( $a_1$ )	3,14
		Second-order coefficient ( $a_2$ )	0,032
		Incidence angle modifier IAM (50°)	0,93
		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.	