



Annex to Solar Keymark Certificate Supplementary Information	Licence Number	OEM 10039.3
	Issued	2024-09-30

Gross Thermal Yield in kWh/collector at mean fluid temperature ϑ_m													
Collector name	ϑ_m	Athens			Davos			Stockholm			Würzburg		
		25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C
CRONUS 2.7		3.459	2.654	1.803	2.759	1.998	1.274	2.011	1.400	866	2.178	1.517	924
CRONUS 2.7H		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 m ² 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		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		Additional Informative Technical Data	
Collector name	Reference Area, A _{sol} (m ²)	Hydraulic Designation Code	Aperture Area, A _a (m ²)
CRONUS 2.7	2,73	14-V-1234S-A:7.2,2060-C:20.6,1320-	2,57
CRONUS 2.7H	2,73	25-V-1234S-A:7.2,1158-C:20.6,2240-	2,57

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})	65%	Zero-loss efficiency (η_0)	0,79
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)	2,48
		Second-order coefficient (a_2)	0,025
		Incidence angle modifier IAM (50°)	0,94
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.			