

Annex to Solar Keymark Certificate				Licence Number		7723 Rev.1							
				Date issued		2025-02-10							
				Issued by		Kiwa Cermet Italia S.p.A.							
Licence holder	Soblue AG			Country	Switzerland								
Brand (optional)				Web	https://www.soblue.com/								
Street, Number	Dufourstrasse 31			E-mail	info@soblue.com								
Postcode, City	CH-8008 Zürich			Tel	+49 (0)177 349 04 27								
Collector Type				WISC (Wind and/or infrared sensitive collector)									
Collector name	Gross area (A _G)	Gross length	Gross width	Gross height	Power output per collector								
					G _b = 850 W/m ² , G _d = 150 W/m ² & u = 1.3 m/s θ _m - θ _a								
	m ²	mm	mm	mm	0 K	10 K	30 K	50 K	70 K	46 K			
					W	W	W	W	W	W			
Multi NRG collector	2.24	2,124	1,053	64	1,192	716	0	--	--	0			
Power output per m ² gross area					532	319	0	--	--	0			
Performance parameters test method				Quasi dynamic									
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				0.509	26.95	0.000	3.351	0.68	47,120	0.055	0.00	0.0E+00	0.97
Incidence angle modifier test method				Quasi dynamic - outdoor									
Incidence angle modifier				Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
Transversal				K _{θT, coll}	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.00
Longitudinal				K _{θL, coll}	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.00
Heat transfer medium for testing				Water									
Flow rate for testing (per gross area, A _G)				dm/dt		0.020		kg/(sm ²)					
Maximum temperature difference during thermal performance test				(θ _m - θ _a) _{max}		16		K					
Standard stagnation temperature (G = 1000 W/m ² ; θ _a = 30 °C)				θ _{stg}		80		°C					
Maximum operating temperature				θ _{max, op}		85		°C					
Maximum operating pressure				ρ _{max, op}		4.5		kPa					
Testing laboratory		Institut für Gebäudeenergetik, Thermotechnik und Energiespeicherung (IGTE)				http://www.igte.uni-stuttgart.de							
Test report(s)		23COL1727 23COL1727Q/1				Dated		25.11.2024 10.02.2025					
Comments of testing laboratory						Ver. 6.2 (13.01.2022)							
This Solar Keymark data sheet replaces the Solar Keymark data sheet dated 25.11.2024. The reason for the replacement is the update of test report 23COL1727Q.						 Forschungs- und Testzentrum für Solaranlagen Institut für Thermodynamik und Wärmetechnik Universität Stuttgart Pfaffenwaldring 6, 70560 Stuttgart (Vaihingen)							
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Annex to Solar Keymark Certificate Supplementary Information	Licence Number	7723 Rev.1
	Issued	2025-02-10

Gross Thermal Yield in kWh/collector at mean fluid temperature ϑ_m

Collector name	Standard Locations 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
Multi NRG collector		1,369			290			383			476		
Gross Thermal Yield per m ² gross area		611	--	--	130	--	--	171	--	--	212	--	--
Annual efficiency, η_a		35%	--	--	8%	--	--	15%	--	--	17%	--	--
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
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		4000 Pa
Maximum tested negative load		3000 Pa
Hail resistance using steel ball (maximum drop height)		1.4 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	Yes	Façade collector(s)	No

Energy Labelling Information
Additional Informative Technical Data

	Reference Area, A_{sol} (m ²)	Hydraulic Designation Code	Aperture Area, A_a (m ²)
Multi NRG collector	2.24	X-H-13R-X-X	2.24

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})	-32%	Zero-loss efficiency (η_0)	0.53	--
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)	21.25	W/(m ² K)
		Second-order coefficient (a_2)	0.000	W/(m ² K ²)
		Incidence angle modifier IAM (50°)	0.99	--
		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.		