



CERTIFICATION LICENCE TO USE KEYMARK

Certificate No OEM 10115.1.2

DQS Hellas grants the present certificate to the enterprise:

FERROLI S.p.A.

Via Ritonda 78/A, 37047 San Bonifacio (VR) 37047, Italy

for the product:

Flat plate Solar Collectors type:

**SOLEXTECH 2.1 V, SOLEXTECH 2.6 V, SOLEXTECH 2.6 H, SOLEXTECH 3 V,
SOLEXTECH 3 H**

which is produced in conformity with the normative document:

**EN 12975-1:2011
EN ISO 9806:2017**



at the following location:

Kyra Vrasi Korinthias, Korinthos

The present certificate is granted in accordance with:

- *the DQS Hellas General Rules for the Certification of Products,*
- *the Specific Rule for Certification EKIII.001 «Specific Rule for Certification of Solar Collectors, and Thermal Solar Heating Systems for Domestic Hot Water»,*
- *the Specific CEN Keymark Scheme Rules for Solar Thermal Products,*

and is ruled by the terms of the relevant contract between DQS Hellas and the enterprise.

Date of issue: **2024-05-30**

Date of valid: **2026-05-30**

Ioannis Alexiou
Head of Products Certification

Panagiotis Giannoutsos
Director of Certification



Annex to Solar Keymark Certificate					Licence Number		OEM 10115.1.2				
					Date issued		2023-04-20				
					Issued by		DQS Hellas				
Licence holder		FERROLI S.p.A.			Country		Italy				
Brand (optional)		SOLEXTECH			Web		www.ferroli.com				
Street, Number		Via Ritonda 78/A			E-mail		info@ferroli.it				
Postcode, City		37047 San Bonifacio (VR) 37047			Tel		+39 0456139411				
Collector Type					Flat plate collector						
Collector name	Gross area (A _G) m ²	Gross length mm	Gross width mm	Gross height mm	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	
					W	W	W	W	W	W	
SOLEXTECH 2.1 V	2,09	1.696	1.230	86	1.640	1.559	1.375	1.165	928	694	
SOLEXTECH 2.6 V	2,60	2.111	1.230	86	2.041	1.939	1.711	1.449	1.154	864	
SOLEXTECH 2.6 H	2,60	1.230	2.111	86	2.041	1.939	1.711	1.449	1.154	864	
SOLEXTECH 3 V	3,00	1.996	1.500	86	2.355	2.237	1.974	1.672	1.332	997	
SOLEXTECH 3 H	3,00	1.500	1.996	86	2.355	2.237	1.974	1.672	1.332	997	
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						
Central Offices: Kalavriton 2, 145 64 kifisia, Athens, Tel: +301 6233493-4 , Fax: +301 6233495, http://www.dqs.gr, e-mail: i.alexiou@dqs.gr											



Annex to Solar Keymark Certificate		Licence Number		OEM 10115.1.2									
Supplementary Information		Issued		2023-04-20									
Annual collector output in kWh/collector at mean fluid temperature ϑ_m													
Standard Locations		Athens		Davos		Stockholm		Würzburg					
Collector name	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
SOLEXTECH 2.1 V		2.637	1.867	1.190	1.999	1.361	826	1.472	948	555	1.602	1.026	591
SOLEXTECH 2.6 V		3.281	2.323	1.480	2.487	1.693	1.027	1.832	1.180	690	1.993	1.277	736
SOLEXTECH 2.6 H		3.281	2.323	1.480	2.487	1.693	1.027	1.832	1.180	690	1.993	1.277	736
SOLEXTECH 3 V		3.785	2.680	1.708	2.870	1.953	1.185	2.113	1.361	797	2.300	1.473	849
SOLEXTECH 3 H		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	--	
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)											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)							
SOLEXTECH 2.1 V	2,09	14-VH-1234S-A:7.2,1600-C:20.6,1295-				1,96							
SOLEXTECH 2.6 V	2,60	14-VH-1234S-A:7.2,2009-C:20.6,1295-				2,44							
SOLEXTECH 2.6 H	2,60	18-H-1234S-A:7.2,1131-C:20.6,2170-				2,44							
SOLEXTECH 3 V	3,00	17-VH-1234S-A:7.2,1900-C:20.6,1563-				2,84							
SOLEXTECH 3 H	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			W/(m ² K)			
						Second-order coefficient (a_2)	0,016			W/(m ² K ²)			
						Incidence angle modifier IAM (50°)	0,96			--			
						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.							
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