



Solar Keymark
Certification Body
CEN 025

Certificazione di Prodotto Product Certification

Certificato N. **ICIM-CLS-000182-00**
Certificate No.

ALL'AZIENDA / TO THE FIRM

SARETTI PELLEGRINO S.r.l.

Via Lungo Gesso Giovanni XXIII, n.7
12100, Cuneo (CN) – IT

UNITÀ OPERATIVE / OPERATIVES UNITS

F12021051801-IT

PER I SEGUENTI PRODOTTI / FOR THE FOLLOWING PRODUCTS

Collettore solare
Solar thermal collector

CON DENOMINAZIONE COMMERCIALE / WITH TRADE NAME/S

THERMOMAX HP 20
THERMOMAX HP 30

Caratteristiche: vedi Allegato / Characteristics: see Annex

CONFORMEMENTE ALLA NORMA ED AL DOCUMENTO NORMATIVO ICIM
IN COMPLIANCE WITH THE STANDARD AND WITH ICIM NORMATIVE DOCUMENT

UNI EN 12975-1:2006+A1:2010, UNI EN ISO 9806:2017
Specific CEN Keymark Scheme Rules for Solar Thermal Products, ICIM 0062CS

RAPPORTI DI PROVA ACCREDITATI EN 17025 / REFERENCE TEST REPORT ACCREDITED EN 17025

C1873ISO, C1874ISO

Il presente Certificato è da ritenersi valido solo se accompagnato dal relativo Allegato / This Certificate is valid only with the relative Annex

Vincenzo Delacqua
Rappresentante Direzione / Management Representative

ICIM S.p.A.

PRIMA EMISSIONE
FIRST ISSUE

18/04/2025

EMISSIONE CORRENTE
CURRENT ISSUE

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DATA DI SCADENZA
EXPIRING DATE

17/04/2030



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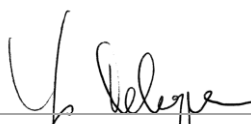
Certificazione di Prodotto

Product Certification

ALLEGATO AL / ANNEX TO

Certificato N. **ICIM-CLS-000182-00**
Certificate No.

DATI TECNICI / TECHNICAL DATA			
<i>Tipo di collettore</i> Collector type	Evacuated tubula collector	<i>Materiale struttura</i> Frame material	steel, galvanized zinc- magnesium
<i>Massa a vuoto</i> Dry weight	52,0 kg	<i>Dimensioni</i>	2210 x 1410 x 117 mm
	75,5 kg	<i>Dimensions</i>	2210 x 2110 x 117 mm
<i>Area totale</i> Gross area	3,12 m ²	<i>Area di apertura</i>	2,03 m ²
	4,66 m ²	<i>Aperture area</i>	3,04 m ²
		<i>Area dell'assorbitore</i> Absorber area	1,84 m ² 2,76 m ²
<i>Numero coperture</i> Number of Coverings	--	<i>Materiale copertura</i> Covering material	--
		<i>Spessore copertura</i> Covering thickness	--
<i>Numero di tubi</i> Tubes number	20	<i>Diametro tubi</i>	56,0 mm
	30	<i>Tubes diameter</i>	
		<i>Spessore tubi</i> Tubes thickness	1,8 mm
<i>Fluido termovettore</i> Heat transfer fluid	Water	<i>Fluido alternativ</i> Alternate fluid	Water Glycol
<i>Materiale assorbitore</i> Absorber material	Copper	<i>Trattam. Superficiale</i> Coating	Selective coating
<i>Costruzione</i> Type of assembly	Heat pipe	<i>Fluido contenuto</i> Absorber fluid volume	1,2 l 1,8 l
<i>Peso a vuoto assorbitore</i> Absorber dry weight	--		
<i>Materiale isolante</i> Thermal insulation	Rock wool	<i>Spessore</i> Thickness	Compression moulded
<i>Temperat. nominale</i> Nom. temperature	160 °C	<i>Pressione nominale</i> Nominal pressure	6 bar



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ICIM S.p.A. a socio unico

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 Capitale Soc EUR. 260.000,00 int. versato ed esistente
 C.F./P. IVA e Iscriz. Reg. Imprese di Milano n. 12908230159 - R.E.A. n. 1596292

Annex to Solar Keymark Certificate					Licence Number		ICIM-CLS-000182-00				
					Date issued		2025-04-18				
					Issued by		ICIM S.p.A.				
Licence holder		Saretti Pellegrino S.r.l.			Country	Italy					
Brand (optional)					Web	www.sarettipellegrino.it					
Street, Number		Via Lungo Gesso Giovanni XXIII, n.7			E-mail	info@sarettipellegrino.it					
Postcode, City		IT-12100, Cuneo (CN)			Tel	+39 0171 41 33 58					
Collector Type					Evacuated tubular 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 ϑ _m - ϑ _a						
					0 K W	10 K W	30 K W	50 K W	70 K W	112 K W	
THERMOMAX HP 20	3,12	2.210	1.410	117	1.400	1.373	1.303	1.214	1.105	811	
THERMOMAX HP 30	4,66	2.210	2.110	117	2.091	2.050	1.947	1.813	1.650	1.211	
Power output per m ² gross area					449	440	418	389	354	260	
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		0,452	0,79	0,008	0,000	0,00	2.648	0,000	0,00	0,0E+00	0,95
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}	1,01	1,02	1,02	1,04	1,05	1,02	0,84	0,49	0,00
Longitudinal		K _{θL, coll}	1,00	1,00	0,99	0,98	0,94	0,87	0,73	0,48	0,00
Heat transfer medium for testing		Water-Glycole									
Flow rate for testing (per gross area, A _G)		dm/dt		0,013	kg/(sm ²)						
Maximum temperature difference during thermal performance test		(ϑ _m -ϑ _a) _{max}		82	K						
Standard stagnation temperature (G = 1000 W/m ² ; ϑ _a = 30 °C)		ϑ _{stg}		160	°C						
Maximum operating temperature		ϑ _{max op}		160	°C						
Maximum operating pressure		p _{max, op}		600	kPa						
Testing laboratory		SPF Institute for Solar Technology					www.spf.ch				
Test report(s)		C1873ISO C1874ISO					Dated		01/12/2021 01/12/2021		
Comments of testing laboratory		Datashet version: 6.1, 2019-09-26									
For collector temperatures ϑ _m > 80°C the thermal performance must be computed using dQ/dt = dQ/dt(ϑ _m = 80°C) - 4.51 · A _G · (ϑ _m - ϑ _{amb})											


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Annex to Solar Keymark Certificate Supplementary Information							Licence Number			ICIM-CLS-000182-00				
							Issued			2025-04-18				
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	
THERMOMAX HP 20		2.392	2.072	1.693	2.033	1.697	1.343	1.464	1.194	918	1.577	1.289	989	
THERMOMAX HP 30		3.572	3.094	2.529	3.036	2.534	2.006	2.187	1.783	1.371	2.355	1.926	1.477	
Annual output per m ² gross area		767	664	543	652	544	431	469	383	294	505	413	317	
Annual efficiency, η_a		43%	38%	31%	40%	33%	26%	40%	33%	25%	41%	33%	25%	
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										1000		Pa		
Maximum tested negative load										1000		Pa		
Hail resistance using ice balls (diameter)										25		mm		
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 ²)					Hydraulic Designation Code				Aperture Area, A _a (m ²)				
THERMOMAX HP 20	3,12					1-H-12S-C:16,1450				2,03				
THERMOMAX HP 30	4,66					1-H-12S-C:16,2140				3,04				
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})						40%		Zero-loss efficiency (η_0)			0,45		--	
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)			0,79		W/(m ² K)			
						Second-order coefficient (a ₂)			0,008		W/(m ² K ²)			
						Incidence angle modifier IAM (50°)			1,01		--			
						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.								