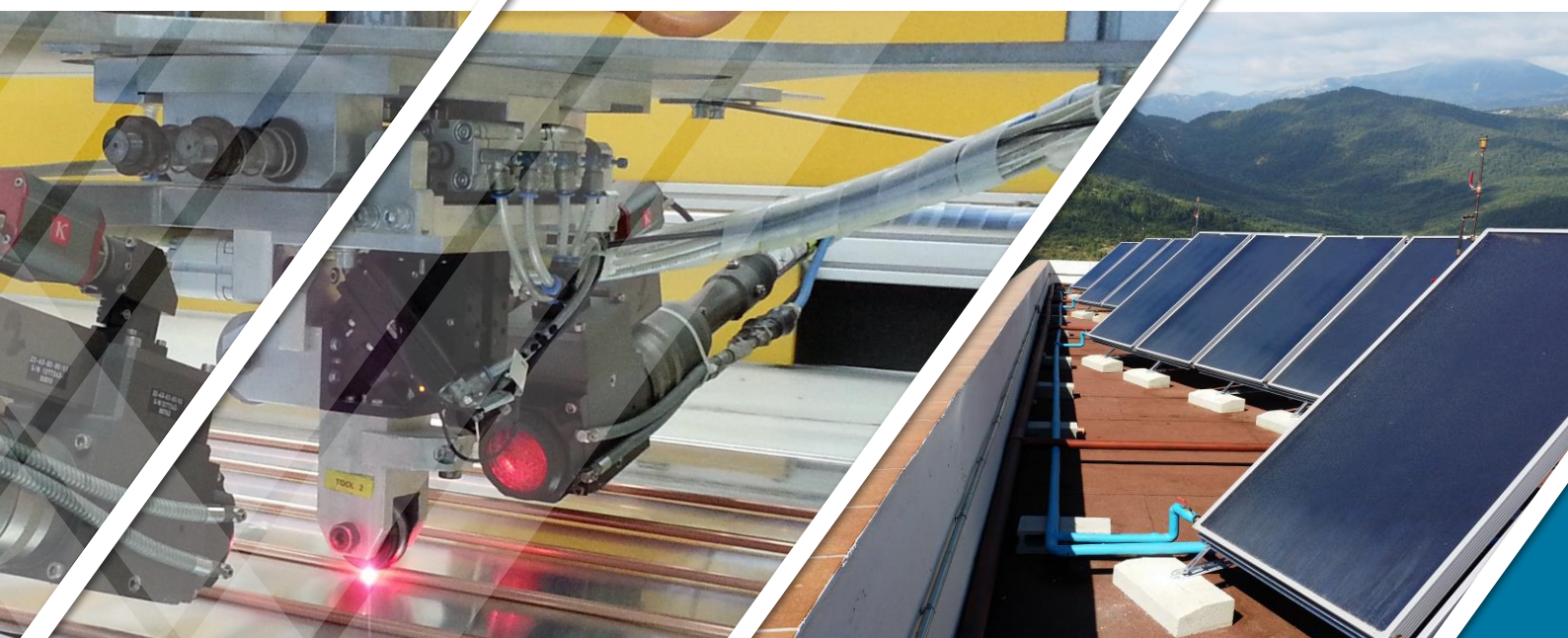


We start where the rest aim

solar flame

solar collectors

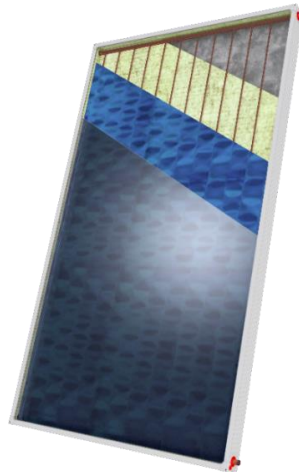
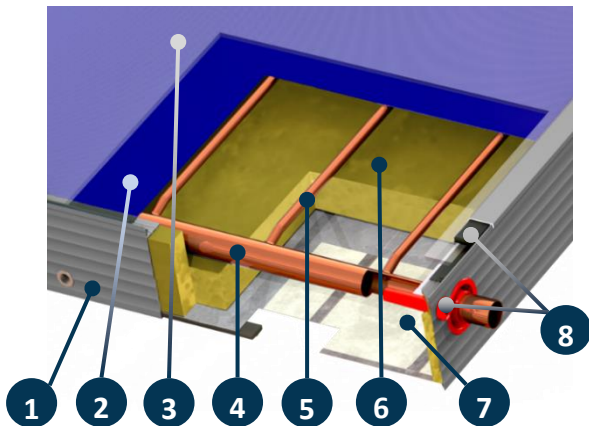
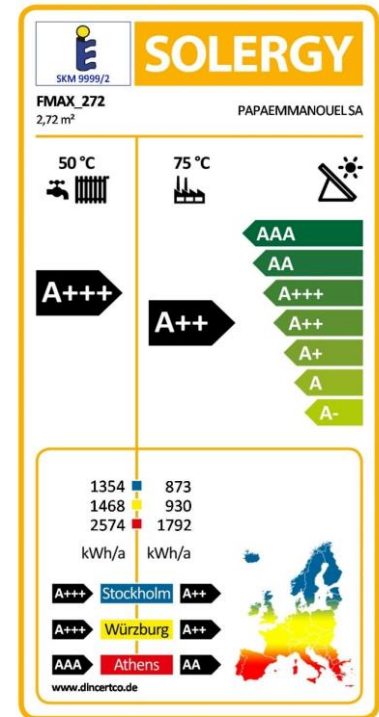


FMAX series



BFMX001082022EN-v.1.1

- Harp type
- Ø8mm risers – closed loop
- Annual collector output:
2.72m²→537 kWh/m² (Würzburg, 50°C)
Series:→487 kWh/m² (Würzburg, 50°C)



Model FMAX is a superior flat plate collector encasing harp type absorber with very high efficiency level. It is best suited for closed loop /natural or forced circulation systems, small or large scale, great choice for mild and colder climates, where its great insulation properties are desired for minimizing thermal losses and maximizing efficiency. Overall FMAX lies in the top 3 most powerful certified collectors produced in Greece, in terms of annual output (the other 2 are our MTEC-27 and our FMAX-TOP) and one among the best harp type collectors worldwide. This collector has been tested in NSCR DEMOKRITOS laboratory in Greece and is certified with SOLAR KEYMARK and soon with SRCC.

Description:

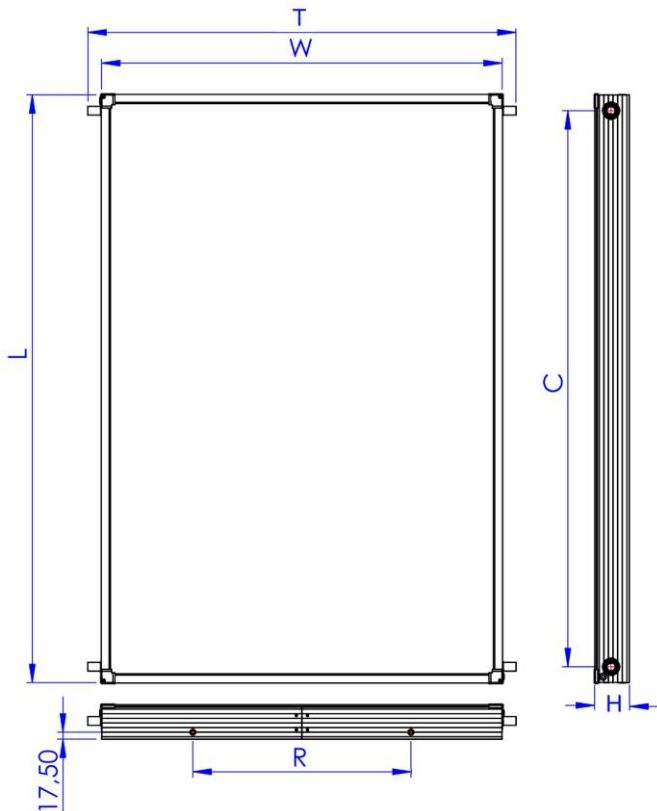
1. **Frame of the collector:** Aluminium profile powder coated for maximum protection in seaside areas.
2. **Absorbing surface:** Aluminium surface with blue titanium high selective treatment with high absorption and low emission ($\alpha=95\%$, $\epsilon=4\%$), laser welded on the copper water frame.
3. **Transparent cover:** Security-Tempered prismatic solar glass for maximum protection against extreme weather conditions and temperature changes.
4. **Header of water frame:** Copper tubes Ø22, which are welded to the vertical tubes with hard silver solder. Each water frame is tested at the pressure of 15 bars. Headers are punched with upper expansion for perfect fitting with vertical tubes and minimum pressure drop in the collector.
5. **Vertical tubes:** Copper tubes in diameter Ø8mm.
6. **Thermal insulation:** 40mm thick layer of prepressed mineral wool special for solar panels for minimum thermal loss. Thermal conductivity: $\lambda=0.035$ W/m²K (EN 13162) and heat capacity 0.84 kJ/kgK.
7. **Back cover:** Aluzinc 0,4mm thick. Aluzinc stands for aluminium and zinc, fused in almost equal proportions, as a coating for the steel sheet that is coated with a silvery spangle composed of Aluminium (55%), Zinc (43,4%) and a touch of Silicon (1,6%). Great mechanical strength and 7 times more resistant to corrosion than common galvanized steel.
8. **Sealing materials:** For perfect waterproof finish and proper ventilation of collectors casing, all materials used (EPDM, polyurethane sealant, silicon air vents and silicon header flanges) resist to extreme weather conditions and temperature changes.

The collector can be installed on a flat roof or tiled roof.

FMAX SERIES COLLECTORS TECHNICAL DATA / SPECIFICATIONS

Model	1.50 V	1.50 H	1.82 V	1.82 H	2.00 V	2.00 H	2.37 V	2.37 H	2.72 V	2.72 H
Gross area [m ²]	1.50	1.50	1.82	1.82	2.00	2.00	2.37	2.37	2.72	2.72
Total Dimensions [mm]	L:1480	L:1010	L:1480	L:1230	L:1980	L:1010	L:1930	L:1230	L:2160	L:1260
	W:1010	W:1480	W:1230	W:1480	W:1010	W:1980	W:1230	W:1930	W:1260	W:2160
	H:86	H:86	H:86	H:86	H:86	H:86	H:86	H:86	H:86	H:86
Weight empty [kg]	26.4	26.8	31.9	32.2	34.6	35.4	40.6	41.2	46.1	46.7
Max. operating Pressure [bar]	10									
Thermal Liquid Capacity [lt]	1.22	1.56	1.48	1.68	1.41	2.04	1.69	2.17	1.81	2.30
Collector front Cover-Thickness	LOW IRON TEMPERED GLASS 3.2mm									
Insulation	40mm MINERAL WOOL, $\lambda=0.035$ [W/(mK)]									
Casing Material	ALUMINUM POWDER COATED									
Sealing Materials	POLYURETHANE - SILICON - EPDM									
Absorber Area [m ²]	1.38	1.38	1.72	1.72	1.86	1.86	2.23	2.23	2.57	2.57
Water-frame type/material/diameter	Harp type, copper, $\varnothing 22$ headers- $\varnothing 8$ risers									
Nr. Of risers	9	14	11	14	9	18	11	18	11	18
Absorber Material-Treatment	ALUMINUM / PVD COATING / HIGH SELECTIVE – A=0.95±0.02 / e=0.05±0.02									
Absorber construction Type	LASER									
Heat transfer Medium	POLYPROPYLENE OR TRIETHYLENE GLYCOL + WATER MIXTURE									
Tests and Certifications	SOLAR KEYMARK									
EFFICIENCY VALUES BASED ON EN ISO 9806:2013 STANDARD (BASED ON GROSS AREA)										
SKM9999.1										
SKM9999.2										
Efficiency $\eta_{0,b}$	For the FMAX family: 0.771					For the FMAX 2.72: 0.784				
Thermal loss a_1 [w/(m ² K)]	For the FMAX family: 3.59					For the FMAX 2.72: 3.15				
IAM (K_{θ} at 50°)	0.96					0.96				
Thermal loss a_2 (w/(m ² K ²)	For the FMAX family: 0.014					For the FMAX 2.72: 0.012				
Stagnation temp. [°C]	190.5					190.5				
η_{col}	For the FMAX family: 60%					For the FMAX 2.72: 63%				

Layout



Critical dimensions						
model	L	W	H	C	T	R
1.50V	1480	1010	86	1400	1080	550
1.50H	1010	1480	86	930	1560	1000
1.82V	1480	1230	86	1400	1300	550
1.82H	1230	1480	86	1150	1560	1000
2.00V	1980	1010	86	1900	1080	550
2.00H	1010	1980	86	930	2050	1000
2.37V	1930	1230	86	1850	1300	550
2.37H	1230	1930	86	1150	2010	1000
2.72V	2160	1260	86	2080	1340	550
2.72H	1260	2160	86	1180	2240	1000

*R: M8 blind rivets position and spacing for mounting on a support structure. Located on both top and bottom side of the collector (2+2 rivets)



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