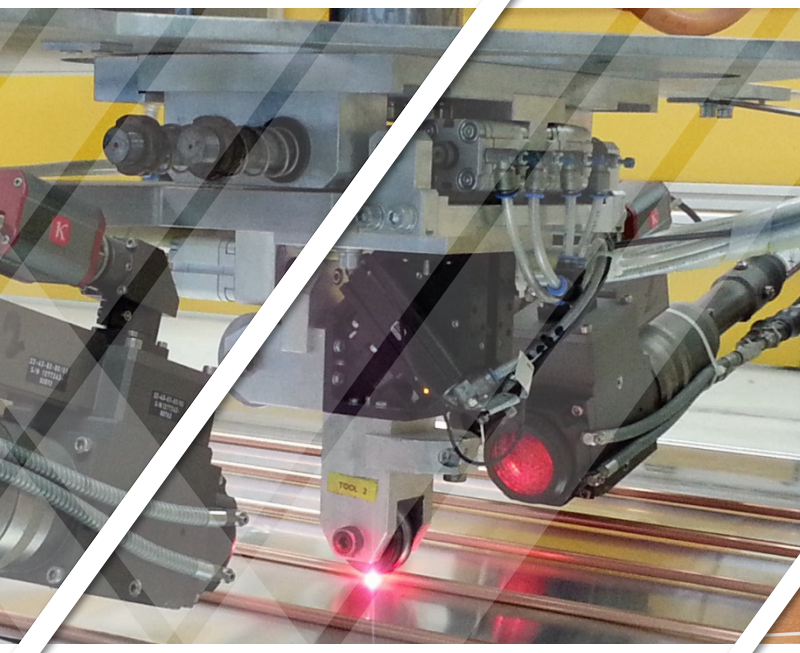
We start where the rest aim

solar flame
solar collectors

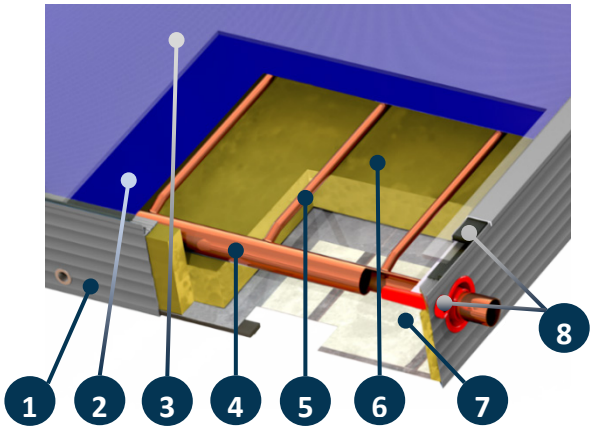


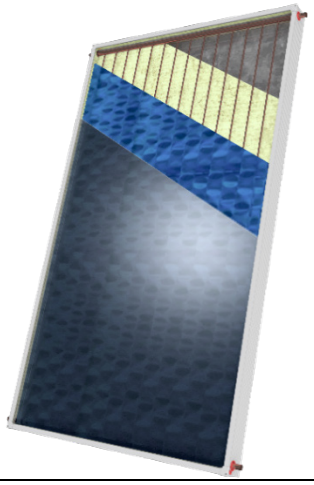
FMAX-TOP series

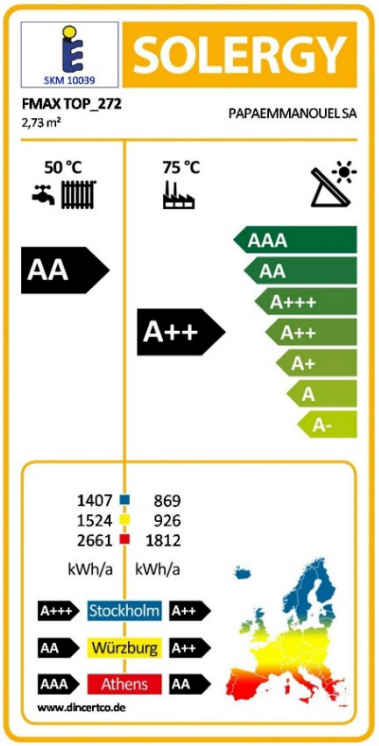
papaemmanouel S.A. solar energy

BFMT001082022EN-v.1.1

- Harp type
- Ø8mm risers – closed loop
- Annual collector output:
  556 kWh/m² (Würzburg, 50°C)







Model FMAX-TOP 272 is a superior flat plate collector encasing harp type absorber with very high efficiency level. It is best suited for closed loop / forced circulation systems, small or large scale, great choice for colder climates, where its great insulation properties are desired for minimizing thermal losses and maximizing efficiency. Overall FMAX-TOP 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) 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.

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 (α=95%, ε=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:** 50mm thick layer of prepressed mineral wool special for solar panels for minimum thermal loss. Thermal conductivity: 0=0.035 W/m°K (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.

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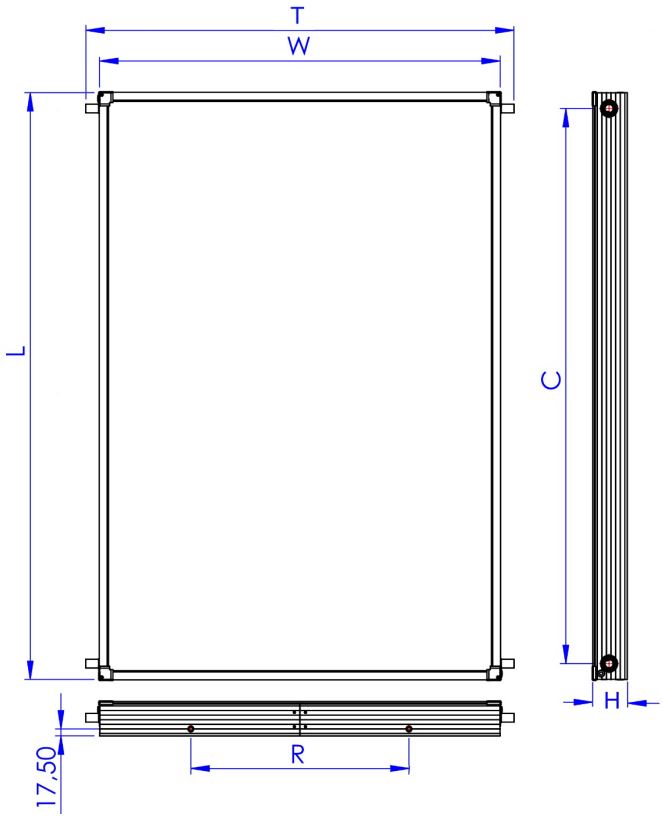
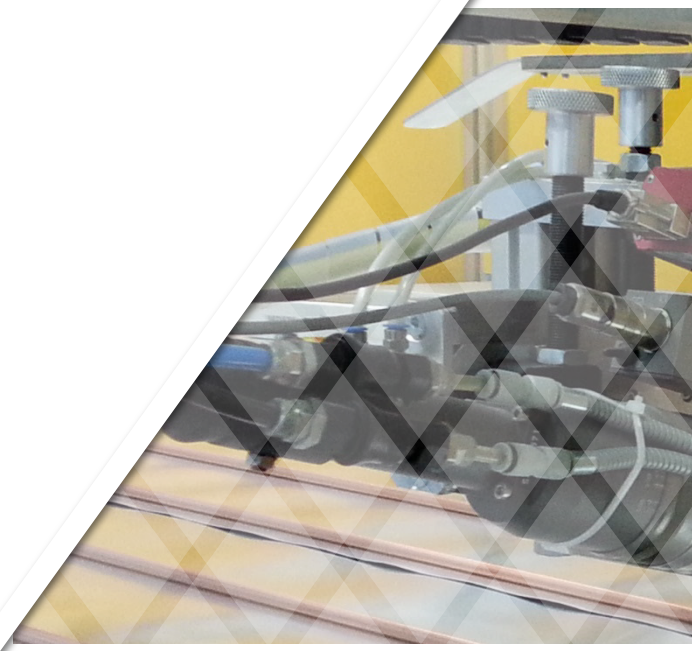
FMAX-TOP 272 COLLECTORS TECHNICAL DATA / SPECIFICATIONS		
Model	**2.72 V**	**2.72 H**
Gross area [m²]	2.72	2.72
Total Dimensions [mm]	L:2160 W:1260 H:100	L:1260 W:2160 H:100
Weight empty [kg]	54.6	55.2
Max. operating Pressure [bar]	10	
Thermal Liquid Capacity [lt]	2.05	2.67
Collector front Cover-Thickness	LOW IRON TEMPERED GLASS 3.2mm	
Insulation	50mm MINERAL WOOL, λ=0.035 [W/(mK)]	
Casing Material	ALUMINUM POWDER COATED	
Sealing Materials	POLYURETHANE - SILICON - EPDM	
Absorber Area [m²]	2.57	2.57
Water-frame type/material/diameter	HARP TYPE, COPPER, Ø22 HEADERS-Ø8 RISERS	
Nr. Of risers	14	25
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	PROPYLENE GLYCOL + WATER MIXTURE	
Tests and Certifications	SOLAR KEYMARK	
	EFFICIENCY VALUES BASED ON EN ISO 9806:2013 STANDARD (SKM10039)	
Efficiency η_0	0.799	
Thermal loss a_1 [w/(m²K)]	2.48	
IAM (K_θ at 50°)	0.94	
Thermal loss a_2 (w/(m²K²)	0.025	
Stagnation temp. [°C]	187	
η_{col}	65%	

Layout



Critical dimensions						
model	**L**	**W**	**H**	**C**	**T**	**R**
2.72V	2160	1260	100	2080	1340	550
2.72H	1260	2160	100	1180	2230	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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