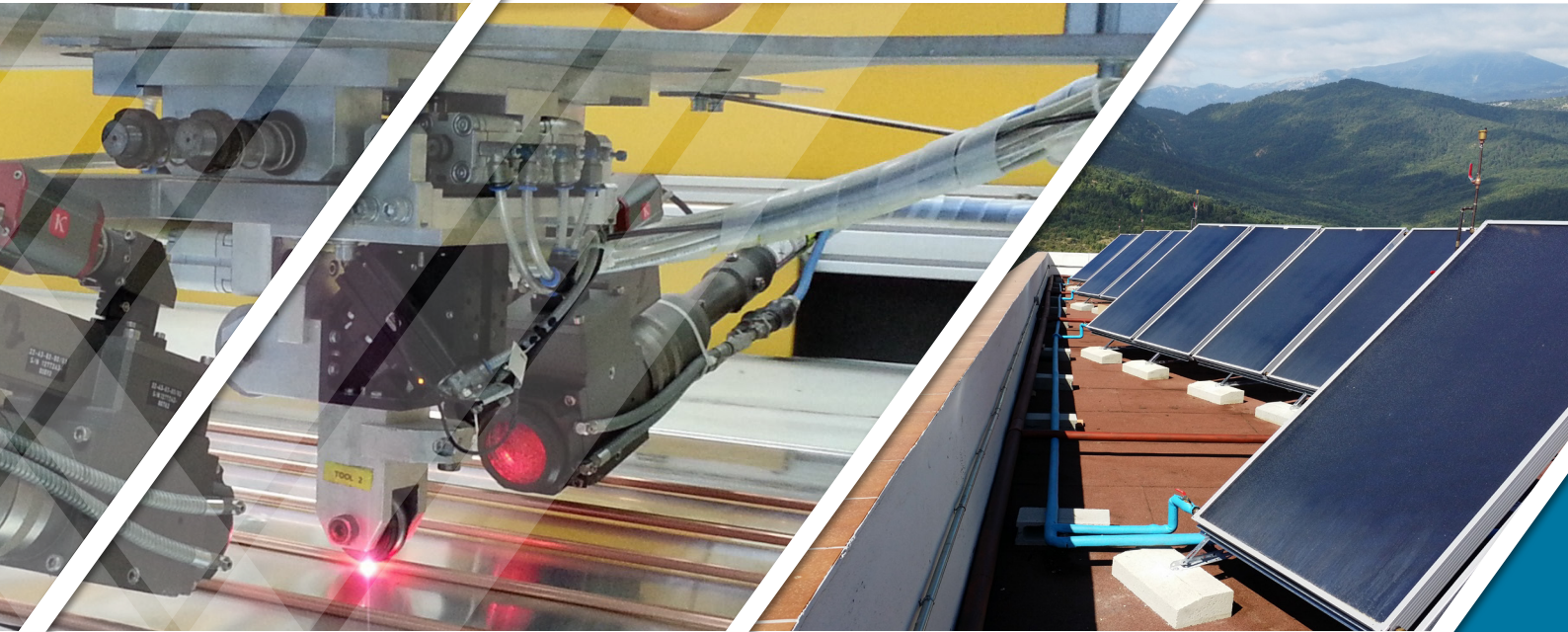


We start where the rest aim

solar flame  
solar collectors

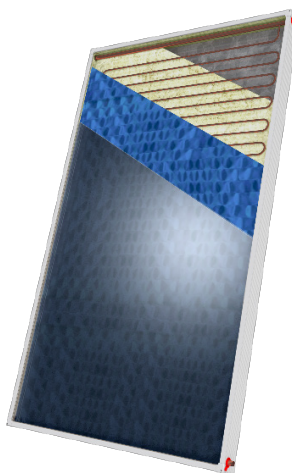
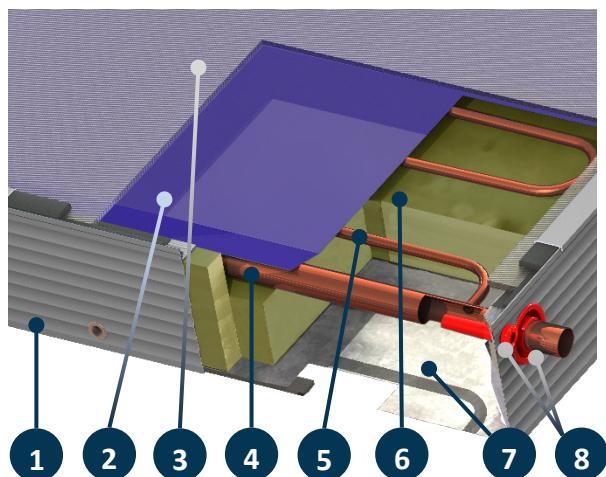
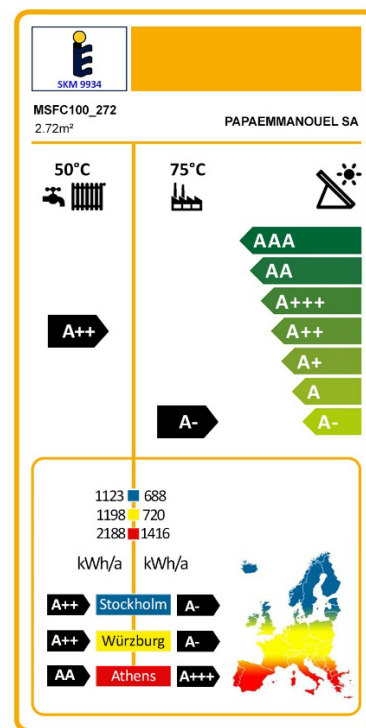


MSCF100  
series



BMSFC26092022EN-v.1.1

- Meander type
- Ø8mm serpentine – closed loop
- Annual collector output:  
2.72→1198 kWh (Würzburg, 50°C)



Model MSFC100 is a superior flat plate collector encasing meander absorber with very high efficiency level. It is best suited for closed loop / forced circulation systems, small or large scale, great choice for mild and cold climates. The efficiency factor of MSFC100 is  $\eta_0=0.83$  (based on aperture area), making MSFC100 a powerful collector. This collector has been tested in SPF laboratory and is certified with SOLAR KEYMARK.

#### Description:

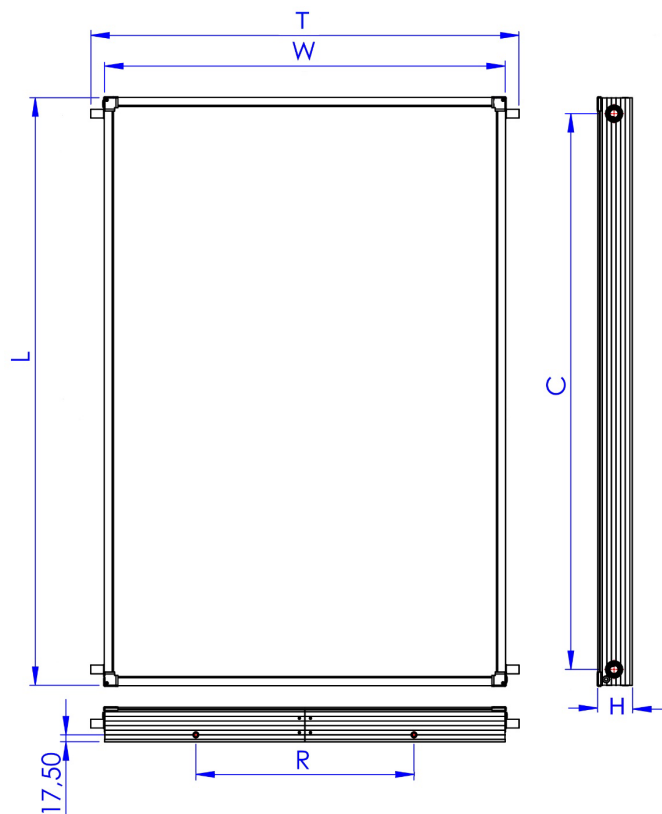
- 1. Frame of the collector:** Aluminium profile powder coated for maximum protection in seaside areas.
- 2. Absorbing surface:** Aluminium surface with blue titanium high selective treatment with high absorption and low emission ( $\alpha=95\%$ ,  $\epsilon=4\%$ ), laser welded on the copper water frame.
- 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 is welded to the serpentine tube 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. Meander:** Single serpentine, Copper tube in diameter Ø8mm.
- 6. Thermal insulation:** 50mm thick layer of prepressed mineral wool special for solar panels for minimum thermal loss. Thermal conductivity:  $\lambda=0.035$  W/m<sup>2</sup>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, tiled roof and in-roof.

## MSFC100 SERIES COLLECTORS TECHNICAL DATA / SPECIFICATIONS

Model	1.50 V	1.82 V	2.00 V	2.37 V	2.72 V
Gross area [m <sup>2</sup> ]	1.50	1.82	2.00	2.37	2.72
Total Dimensions [mm]	L:1480	L:1480	L:1980	L:1930	L:2160
	W:1010	W:1230	W:1010	W:1230	W:1260
	H:100	H:100	H:100	H:100	H:100
Weight empty [kg]	29.50	31.0	36.0	46.0	53.0
Max. operating Pressure [bar]	10				
Thermal Liquid Capacity [lt]	1.40	1.70	1.64	2.00	2.20
Collector front Cover-Thickness	LOW IRON TEMPERED GLASS 3.2mm				
Insulation	50mm MINERAL WOOL, $\lambda=0.035$ [W/(mK)]				
Casing Material	ALUMINUM POWDER COATED				
Sealing Materials	POLYURETHANE - SILICON - EPDM				
Absorber Area [m <sup>2</sup> ]	1.38	1.72	1.86	2.23	2.57
Water-frame type/material/diam.	Meander type, copper, $\phi 22$				
Number of passes	18	18	24	24	26
Absorber Material-Treatment	ALUMINUM / PVD COATING / HIGH SELECTIVE – $A=0.95\pm 0.02$ / $e=0.05\pm 0.02$				
Absorber construction Type	LASER				
Heat transfer Medium	PROPYLENE GLYCOL + WATER MIXTURE				
Tests and Certifications	SOLAR KEYMARK				
<b>EFFICIENCY VALUES BASED ON EN12975 STANDARD (SKM9934)</b>					
Efficiency $\eta_0$	0.83				
Thermal loss $a_1$ [w/(m <sup>2</sup> K) ]	4.15				
IAM ( $K_{\theta}$ at 50°)	0.85				
Thermal loss $a_2$ (w/(m <sup>2</sup> K <sup>2</sup> )	0.008				
Stagnation temp. [°C]	205				
$\eta_{col}$	-				

### Layout



Critical dimensions						
model	L	W	H	C	T	R
1.50V	1480	1010	100	1400	1080	550
1.82V	1480	1230	100	1400	1300	550
2.00V	1980	1010	100	1900	1080	550
2.37V	1930	1230	100	1850	1300	550
2.72V	2160	1260	100	2080	1340	550

\*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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