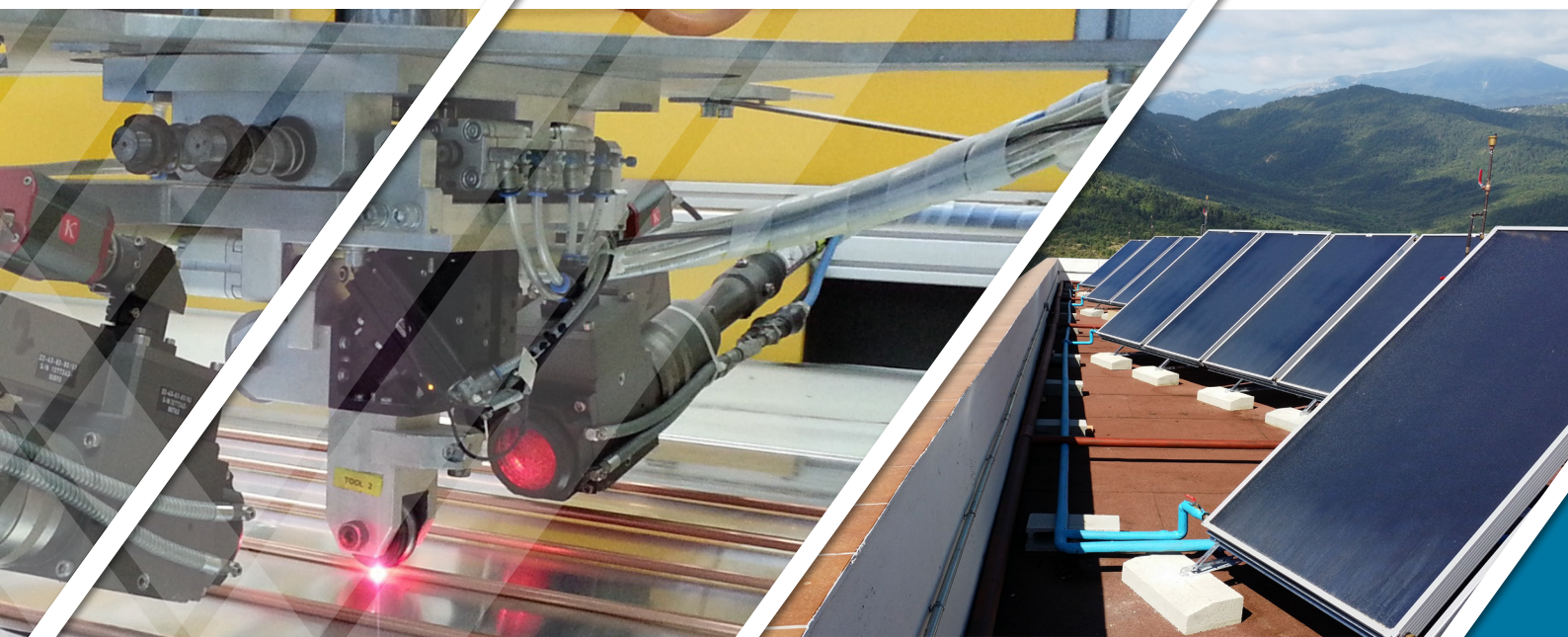


We start where the rest aim

# solar flame

solar collectors

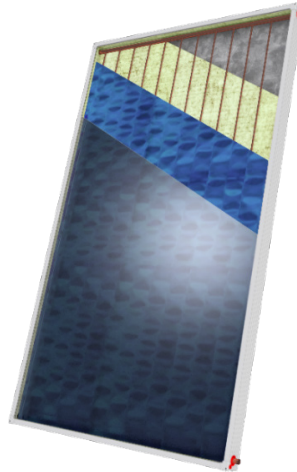
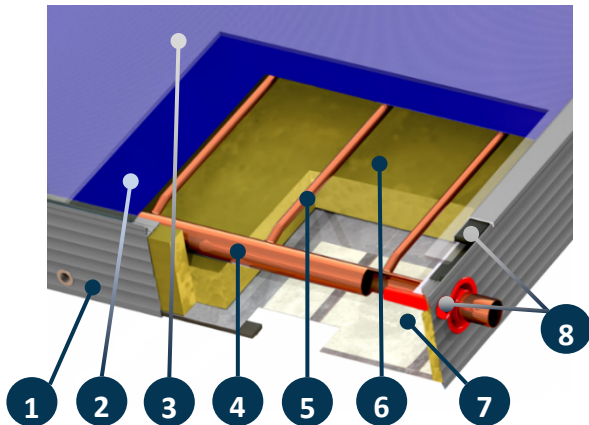
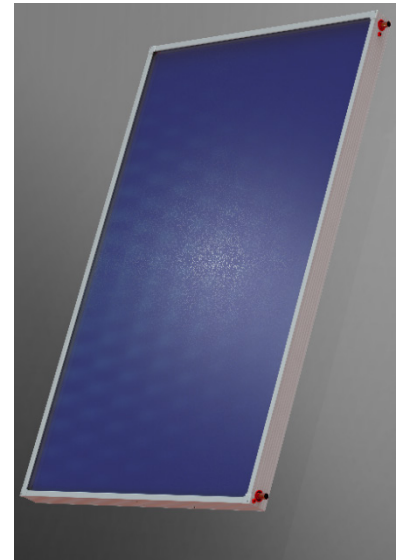


## ASL series



BASL001082022EN-v.1.1

- Harp type
- Ø8mm risers – closed loop
- Annual collector output:  
Series:→457 kWh/m<sup>2</sup> (Würzburg, 50°C)



Model ASL 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. This collector has been tested in NSCR DEMOKRITOS laboratory in Greece and is certified with SOLAR KEYMARK.

The ASL series of collectors is used in the ABL certified series of solar water heaters, the most powerful solar water heaters in the Greek market and among the most powerful worldwide (source: solar Keymark database, 10/2021)

#### Description:

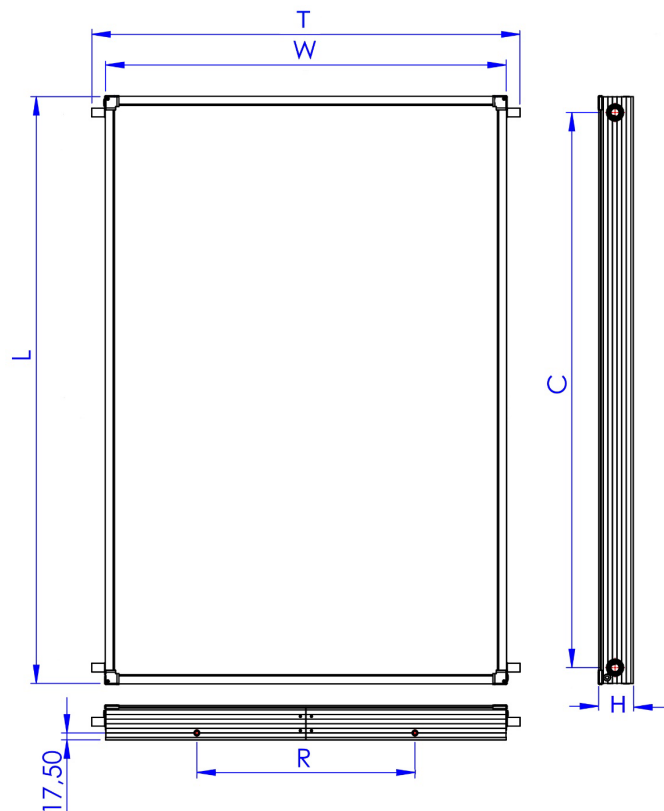
1. **Frame of the collector:** Aluminium profile powder coated for maximum protection in seaside areas.
2. **Absorbing surface:** Aluminium surface with blue titanium high selective treatment with high absorption and low emission ( $\alpha=95\%$ ,  $\epsilon=4\%$ ), laser welded on the copper water frame.
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/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 or tiled roof.

## ASL 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 W:1010H:86	L:1480 W:1230H:86	L:1980 W:1010H:86	L:1930 W:1230H:86	L:2160 W:1260H:86
Weight empty [kg]	26.50	32.10	34.80	40.80	46.30
Max. operating Pressure [bar]	10				
Thermal Liquid Capacity [lt]	1.28	1.54	1.48	1.76	1.90
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 <sup>2</sup> ]	1.38	1.72	1.86	2.23	2.57
Water-frame type/material/diameter	Harp type, copper, $\varnothing 22$ headers- $\varnothing 8$ risers				
Nr. Of risers	10	12	10	12	12
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	POLYPROPYLENE OR TRIETHYLENE GLYCOL + WATER MIXTURE				
Tests and Certifications	SOLAR KEYMARK				
<b>EFFICIENCY VALUES BASED ON EN ISO 9806:2013 STANDARD (SKM10126.1)</b>					
Efficiency $\eta_{0,b}$	0.784				
Thermal loss $a_1$ [w/(m <sup>2</sup> K) ]	3.90				
IAM ( $K_{\theta}$ at 50°)	0.93				
Thermal loss $a_2$ (w/(m <sup>2</sup> K <sup>2</sup> )	0.017				
Stagnation temp. [°C]	187				
$\eta_{col}$	59%				

### Layout



Critical dimensions						
model	L	W	H	C	T	R
1.50V	1480	1010	86	1400	1080	550
1.82V	1480	1230	86	1400	1300	550
2.00V	1980	1010	86	1900	1080	550
2.37V	1930	1230	86	1850	1300	550
2.72V	2160	1260	86	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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