

Technical Data for flat solar collectors ES2V/2,52S AL-CU i ES2V/2,52B AL-CU for vertical mounting

ES2V/2,52S AL-CU and ES2V/2,52B AL-CU – flat solar collector with meander absorber, made of copper and aluminum, designed for vertical mounting.

ENSOL Solar collector type ES2V/2,52S AL-CU i ES2V/2,52B AL-CU is designed for changing energy of solar radiation into useful thermal energy used for providing warm service water, heating swimming pools or supporting a heat source in a heating system.

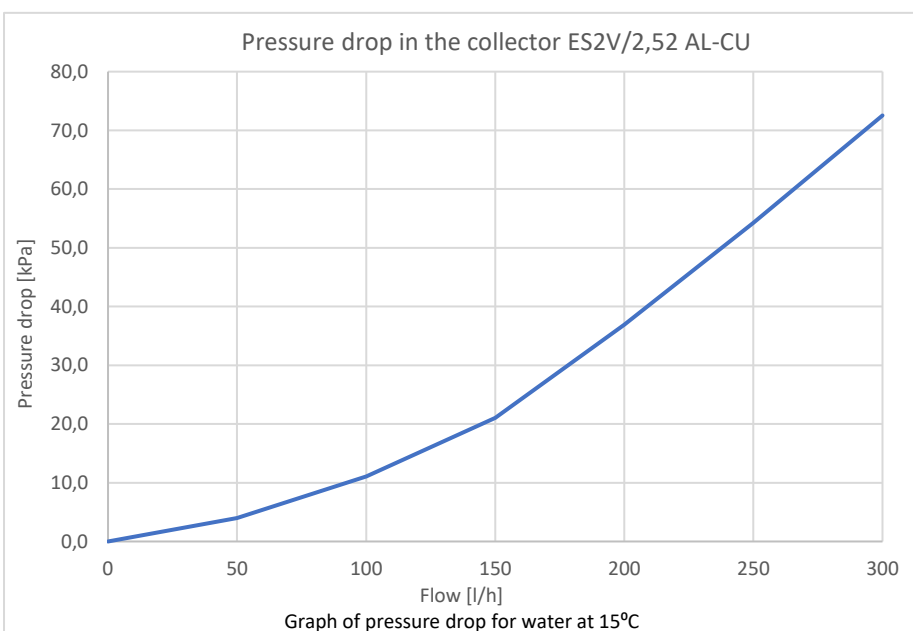
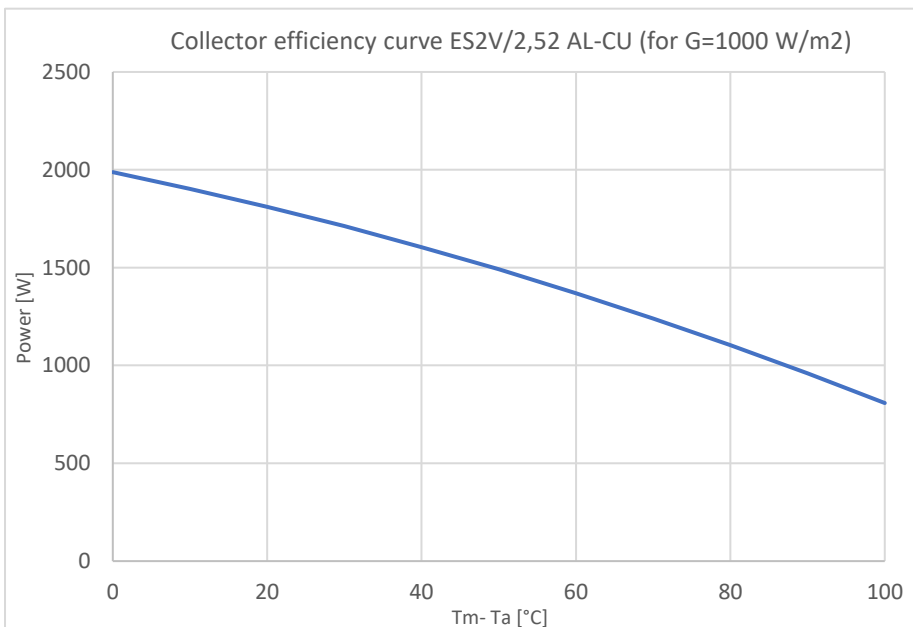
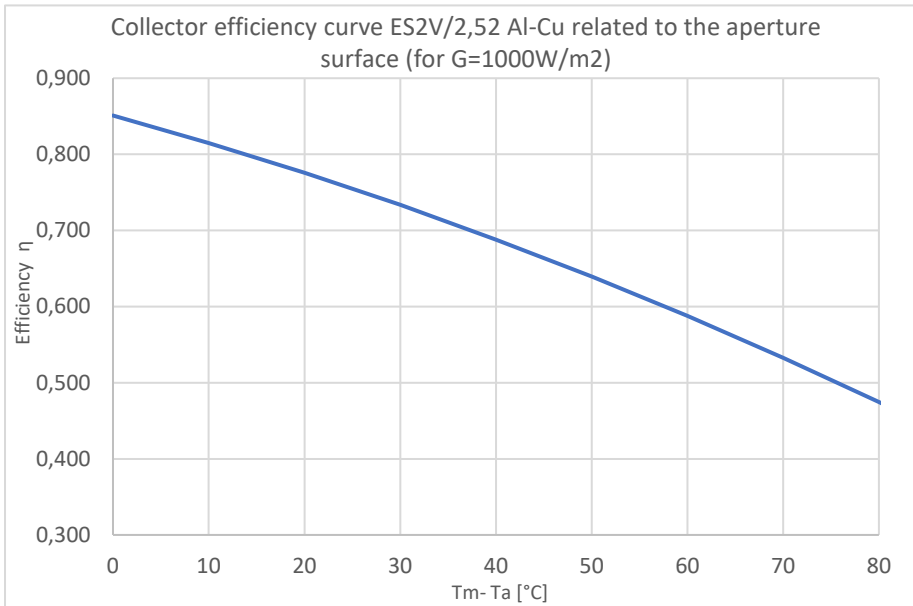
Collector's housing construction is based on a rigid frame bent from a special aluminum profile patented by ENSOL company. At the bottom the housing is closed with an aluminum sheet, whereas the cover is made of special, high-transmission solar glass. The manner of fixing the glass ensures tightness of housing and minimizes thermal tensions.

The main part of the collector is an absorber, the plate of which is made of aluminium sheet covered with the high selective coat in order to ensure high level of solar radiation absorption, which results in obtaining high efficiency of the energy conversion process). Absorber's plate is welded by means of laser welding with the system of copper tubes, in which the medium circulates. Meander absorber ensures steady heat removal through the circulating medium.

Heat losses were minimized by application of lower and lateral insulation. Specially designed assembly sets made of aluminium and stainless steel are used for trouble-free and secure mounting of collectors to roof constructions with different angles inclination.



Flat collector:		Symbol	Unit	Value		
Width		A	mm	1120		
Height		B	mm	2250		
Depth		C	mm	85		
Weight		m	kg	47		
Surface		S	m ²	2,52		
Collector efficiency ES2V/2,52 Al-Cu (for G=1000W/m2)						
Tm-Ta	0 K	10 K	30 K	50 K	70 K	100 K
Moc	1988W	1903W	1712W	1491W	1240W	808 W
Parameters relative to the area of the aperture						
Optical efficiency		η_0 , hem	%	85,1		
Coefficient		a1	W/(m ² K)	3,441		
Coefficient		a2	W/(m ² K ²)	0,0158		
Parameters relative to the gross area						
Optical efficiency		η_0 , b	%	79,6		
Coefficient		a1	W/(m ² K)	3,21		
Coefficient		a2	W/(m ² K ²)	0,015		
Coefficient of angle of incidence		IAM ($K_d=50^\circ$)	-	0,94		
Connection: copper tube		\emptyset	mm	22		
Housing		Aluminum profile				
Cover		Tempered solar glass, 4mm thick with anti-reflective coating				
Absorber:						
Absorber's type		Hydraulic system Cu - Al sheet				
Absorber sheet coating		High selective layer				
Execution technology		Laser welding				
Absorption coefficient		α	%	95		
Emission coefficient		ϵ	%	5		
Width		a	mm	1066		
Height		b	mm	2197		
Absorber's surface		S_b	m ²	2,34		
Aperture surface		S_n	m ²	2,34		
Liquid content		V	dm ³	2,1		
Stagnation temperature		T_s	°C	210,0		
Flow:						ok.
Recommended		l/h				75-105
Permissible		l/h				50-150
Lower insulation :		Mineral wool 50 mm thick				
Lateral insulation		Melamine foam 8 mm thick				
Guarantee		10 years				
Solar Keymark		011-752939 F (till 2024-06-30)				



The key:

t_m – average liquid temperature;

t_a – environment temperature;

G – intensity of solar radiation