Technical data of the flat solar collectors
Ensol ES2V/2,0S AL and ES2V/2,0B AL for vertical installation

ES2V/2,0S AL – flat solar collector with meander absorber, made integrally of aluminium for vertical montage.

Ensol solar collector ES2V/2,0S AL is designed for changing energy of solar radiation into useful thermal energy used for preparing warm service water, heating swimming-pools or supporting heat source in heating system.

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

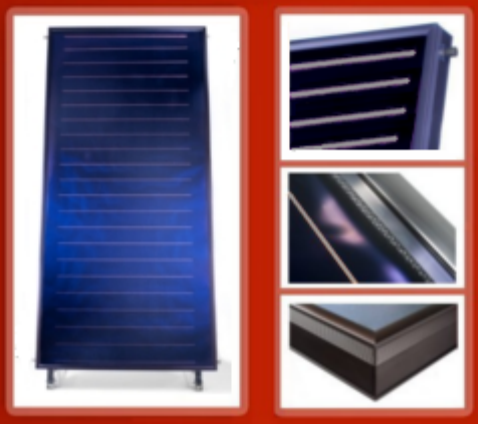
The main part of the collector is an absorber, the plate of which is made of aluminium sheet covered with the high selective eta plus coat in order to ensure high level of solar radiation absorption, which results in obtaining high efficiency of the energy conversion process.

Absorber's plate is welded by means of ultrasonic welding with the system of aluminium tubes, in which the medium circulates. Heat losses were minimized by application of lower and lateral insulation made of mineral wool of low heat conduction.

Specially designed assembly sets made of stainless steel are used for trouble free and secure mounting of collectors to roof constructions with different angle of roof slope inclination.

Aluminium collector ENSOL ES2V/2,0S AL is assigned to use a corrugated flexible hose in instalation made in technology of the acid-resistant steel.

Flat collectors with prismatic glass have certificate of compatibility with norm **DIN EN 12975-2:2006** conducted by TÜV Rheinland Immissionsschutz und Energiesysteme GmbH and **Solar Keymark** certificate.



Flat collector:	Symbol	Unit	Value
Breadth	A	mm	1006
Height	B	mm	2007
Depth	C	mm	85
Mass of collector	m	kg	38
Surface	S	m^2	2,02
optical efficiency	η_o	%	81
Coefficient	a1	$W/(m^2K)$	3,442
Coefficient	a2	$W/(m^2K^2)$	0,016
Service line: pipe AL	ø	mm	22
Enclosure	Aluminium profile		
Cover	Prismatic Solar glass, 4 mm in thickness		
Absorber:			
Kind of Absorber	Metal sheet AL thickness 0,3 mm		
High-selective layer	BlueTec eta plus		
Technology of execution	Ultrasonic welding		
Absorption coefficient	α	%	95
Emission coefficient	ε	%	5
Breadth	a	mm	953
Height	b	mm	1955
Surface of absorber	S_b	m^2	1,86
Netto surface	S_n	m^2	1,86
Contents of liquid	V	dm^3	1,8
Temperature balance	T_r	°C	208
Guaranteed minimal heat output	kWh/m^2/year		525
Flow: recommend	l/h		aprox. 40
Insulation	Rock wool		
Conduction coefficient	λ	W/mK	0,035
Thickness ofinsulation layer:			
lower	d	mm	40
lateral	d_1	mm	10
Research Report	TÜV Köln 212116395_EN_P/R		
Solar Keymark	011-7S1617F		

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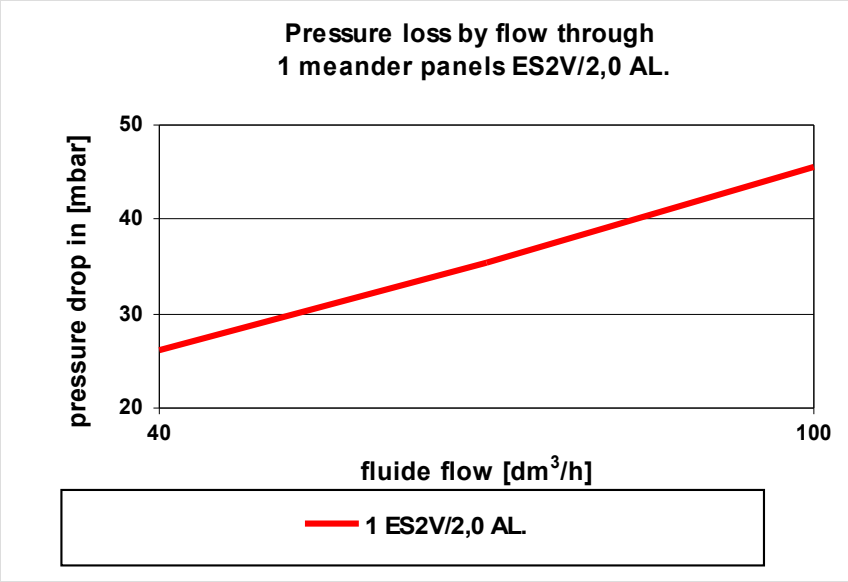

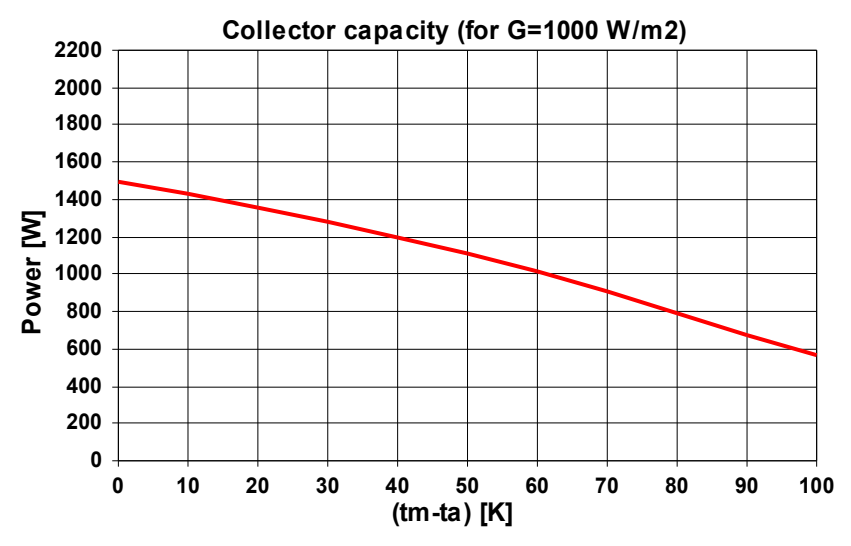

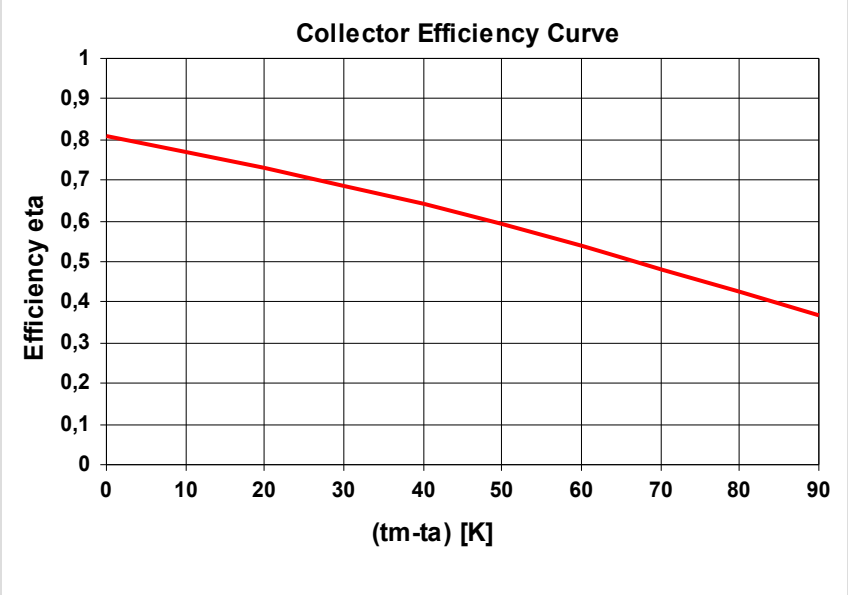

Legend:
tm - average temperature of liquid
ta - ambient temperature
G - solar irradiance