

Technical data of flat solar collectors Ensol EM2V/2,0S i EM2V/2,0B for vertical installation

EM2V/2,0S – flat solar collector with meander absorber, made integrally of copper for vertical montage.

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 copper 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 copper 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.

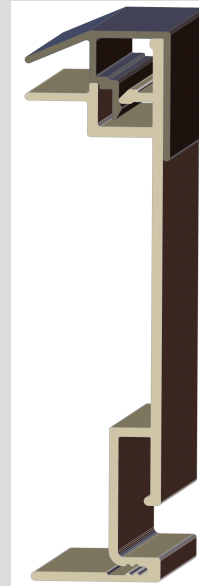
Specially designed assembly sets made of stainless steel are used for trouble free and secure mounting of collectors to roof constructions with different angle of roof slope inclination.

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

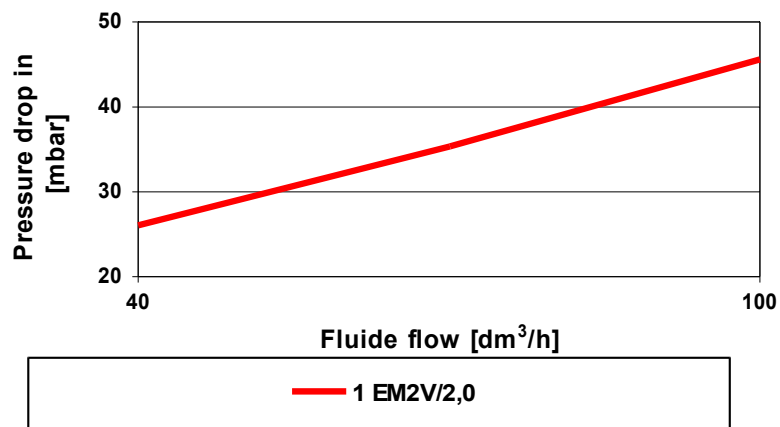


	Symbol	Unit	Value
Flat collector:			
Width	A	mm	1006
Height	B	mm	1988
Depth	C	mm	85
Mass of collector	m	kg	38
Surface	S	m ²	2
Optical efficiency	η_0	%	82,3
Coefficient	a1	W/(m ² K)	3,922
Coefficient	a2	W/(m ² K)	0,013
Service line: pipe Cu	\varnothing	mm	22
Enclosure	Aluminum profile		
Cover	Prismatic Solar glass, 4mm in thickness		
Absorber:			
Kind of absorber	Metal sheet Cu thickness 0,2 mm		
High-selective layer	BlueTec		
Technology of execution	Ultrasonic welding		
Absorption coefficient	α	%	95
Emission coefficient	ε	%	5
Breadth	a	mm	961
Height	b	mm	1941
Surface of absorber	S _b	m ²	1,87
Netto surface	S _n	m ²	1,87
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 l/h		aprox. 60-90 50-220
Insulation			
Rock wool			
Conduction coefficient	λ	W/mK	0,035
Thickness of insulation layer:			
lower	d	mm	40
lateral	d ₁	mm	10
Solar Keymark	011-7S2115 F		

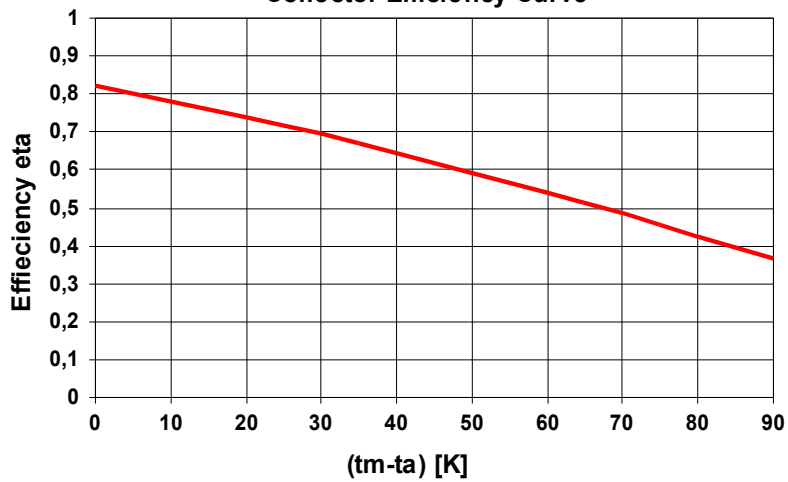
NEW PROFILE



Pressure loss by flow through 1 meander panel EM2V/2,0



Collector Efficiency Curve



Legend:

tm – average temperature of liquid

ta – ambient temperature

G – solar irradiance