Technical Data for flat solar collectors
EM2V/2,0S Al.-Cu EM2V/2,0B Al.-Cu
for vertical mounting

EM2V/2,0S Al.-Cu and EM2V/2,0B Al.-Cu – flat solar collector with meander absorber, made of copper and aluminum, designed for vertical mounting.

Solar collector ENSOL EM2V/2,0S Al.-Cu and EM2V/2,0B 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 aluminum sheet covered with a high selective eta plus coat in order to ensure a high level of solar radiation absorption, which results in obtaining high efficiency of the energy conversion process. The absorber's plate is connected by means of laser welding with the copper tubes system, 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 angles inclination.

Flat collectors EM2V/2,0S Al.-Cu and EM2V/2,0B Al.-Cu have certificate of compatibility with norm **DIN EN 12975-1:2011 and DIN EN ISO 9806:2014** conducted by TÜV Rheinland Immissionsschutz und Energiesysteme GmbH and the Solar Keymark certificate.

Flat collector:	Symbol	Unit	Value
Width	A	mm	1006
Height	B	mm	1988
Depth	C	mm	85
Weight	m	kg	40
Surface	S	m^2	2,0
Optical efficiency *	η_o	%	84,9
Coefficient *	a1	$W/(m^2K)$	3,778
Coefficient *	a2	$W/(m^2K^2)$	0,016
Coefficient of angle of incidence	IAM	-	0,88
Connection: copper tube	ø	mm	22
Housing	Aluminum profile		
Cover	Tempered solar glass, 4mm thick		
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	964
Height	b	mm	1946
Absorber's surface	S_b	m^2	1,865
Aperture surface	S_n	m^2	1,865
Liquid content	V	dm^3	1,8
Stagnation temperature	T_s	°C	190,3
Guaranteed minimal thermal output	kWh/m^2-year		525
Flow: Recommended Permissible	 l/h l/h		about 60-90 50-220
Lower insulation:	Mineral wool 40 mm thick		
Lateral insulation:	Melamine foam 8 mm thick		
Thickness of the insulation layer:			
Lower	d	mm	40
Lateral	d_1	mm	8

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*Data relative to the aperture area:	
Solarkeymark	011-7S2562 F

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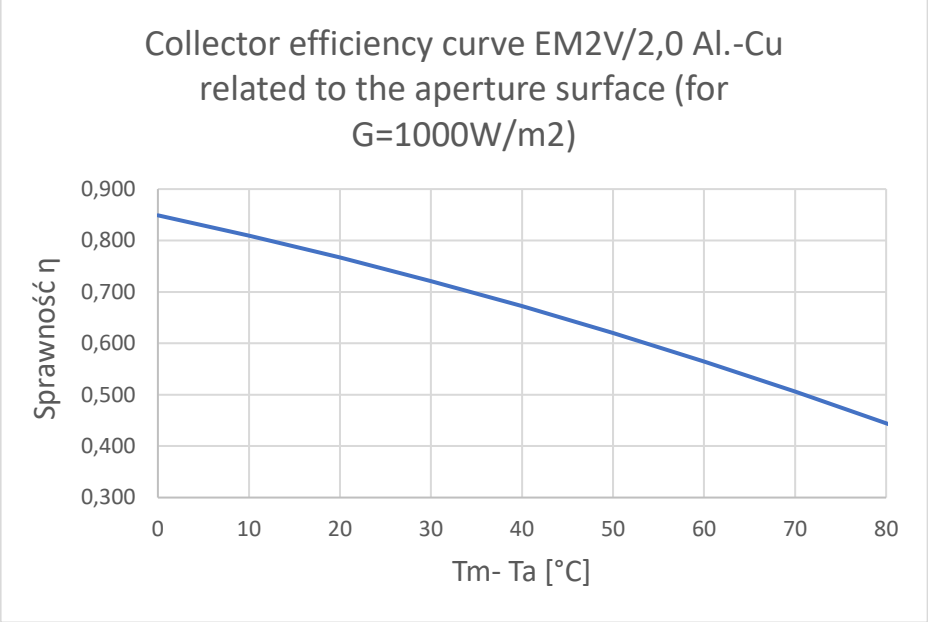

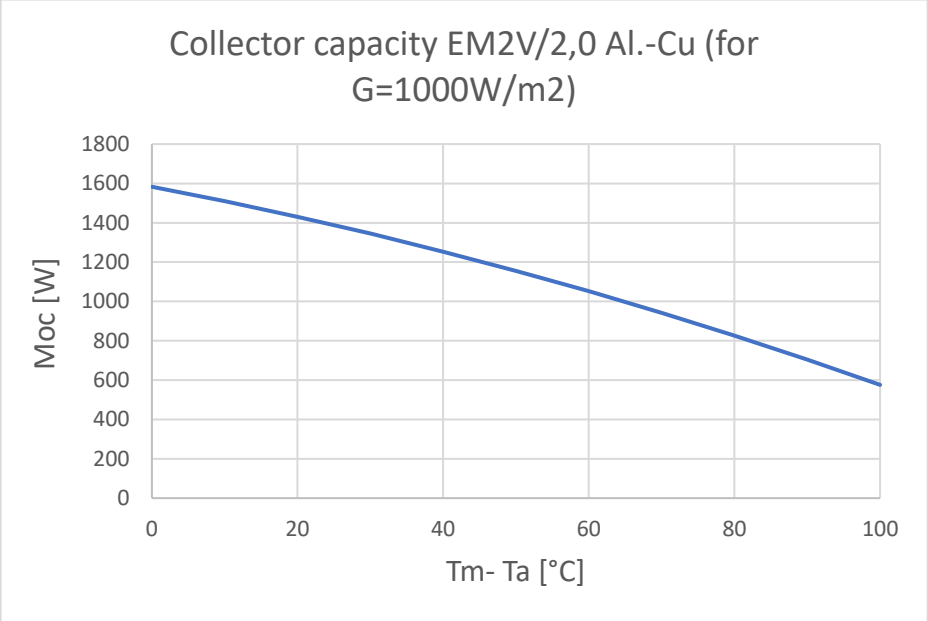

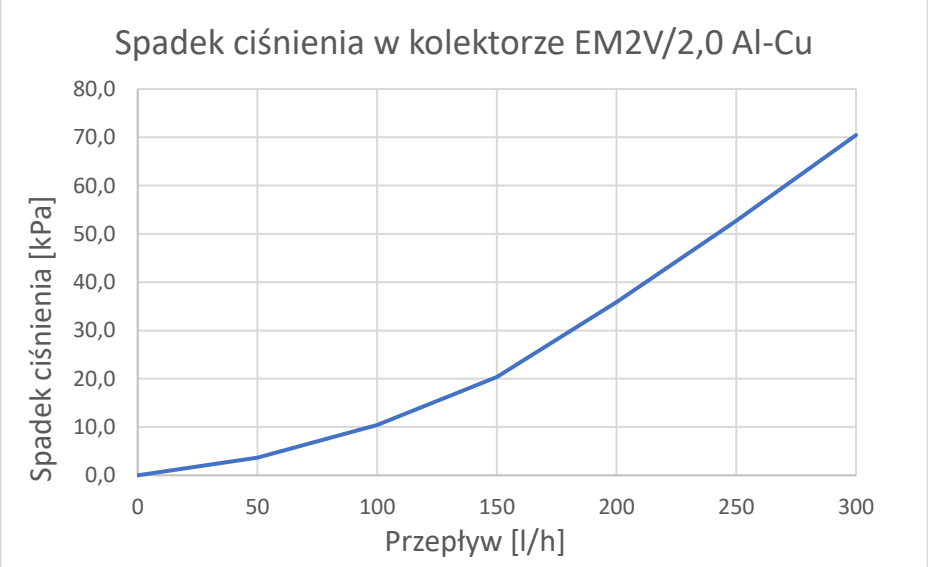

Pressure drop chart for water at temperature 15°C

The key:

tm – average liquid temperature;

ta – environment temperature;

G – intensity of solar radiation