

## Technical data of the large area flat solar collectors Ensol ES2R/2,51

Flat solar collector **ENSOL ES2R/2,51** is a large area solar collector for vertical montage on flat roofs, pitched roofs or on the ground.

Ensol solar collector type ES2R/2,51 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.

The main part of the large area collectors is a copper sheet covered with the high selective eta plus coat with an active surface of 2.54 m<sup>2</sup>. The sheet 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 meandric 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 made of mineral wool of low heat conduction.

It is possible to connect parallel up to 10 solar collectors ES2V/5.23 in one field.

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
width	A	mm	1800
depth	C	mm	85
weight	m	kg	50
Connection: copper tube	ø	mm	22
housing	Alu-profile		
cover	Prismatic solar glass, 4mm in thicknes		
<b>Absorber:</b>			
absorber's type	Copper sheet, 0,2 mm in thickness		
selective layer	Blue Tec eta plus		
production technology	ultrasonic welding		
absorption coefficient	α	%	95
emission coefficient	ε	%	5
width	a	mm	1746
height	b	mm	2,39
absorber's surface	S <sub>b</sub>	m <sup>2</sup>	2,39
active surface	S <sub>n</sub>	m <sup>2</sup>	2,1
liquid content	V	dm <sup>3</sup>	208
balance temperature	T <sub>r</sub>	°C	525
guaranteed minimal thermal output	kWh/m <sup>2</sup> ·rok		ok. 75-105 50-150
Flow: recommended permissible	l/h l/h		95
<b>Insulation</b>			
mineral wool			
conduction coefficient	λ	W/mK	0,035
thickness of the insulation layer:			
lower	d	mm	40
lateral	d <sub>1</sub>	mm	10