

# **Panourile solare**

# **BAXI**

**SB21, SB25, SB25IN, AR20, AR30**

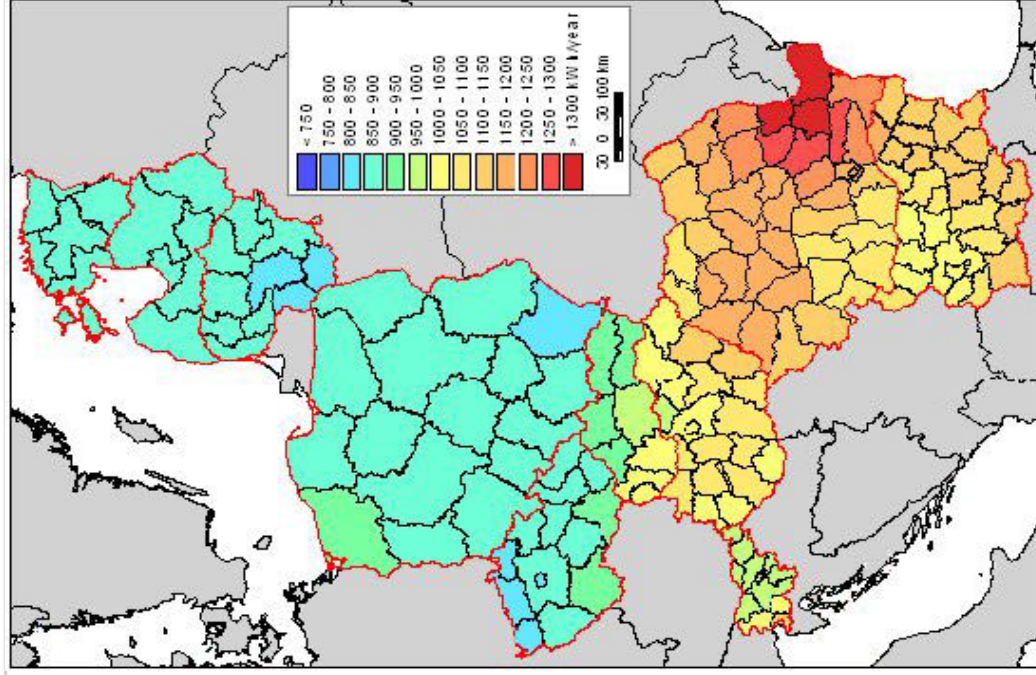
**BAXI ROMANIA**

# De ce ?

## Romania, zona propice utilizarii panourilor solare

Romania se afla in zona europeana B de insorire, iar zona Constantei este plasata in cea mai buna zona de insorire a Romaniei. Instalatia solara poate produce apa calda si ajutor la caldura necesara încălzirii locuintei, in functie de proiectare.

Uzual se folosesc instalatiile solare la incalzirea apei menajere sau a piscinei.



# Nivelul de insolație



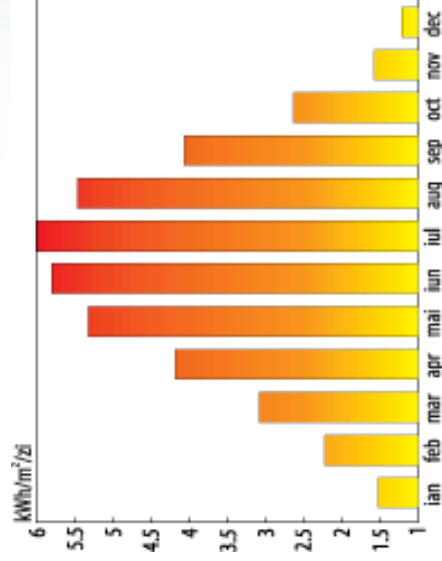
## Zonele de insorire:

zona 0 (>1650 kWh/m<sup>2</sup>/an),

zona I (1550-1650 kWh/m<sup>2</sup>/an)

zona II (1350-1550 kWh/m<sup>2</sup>/an)

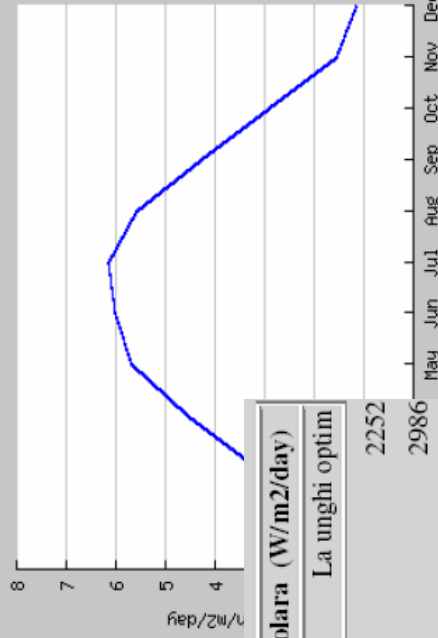
Pentru o dimensionare economică a instalațiilor solare pentru apă caldă, este indicat să se folosească nivelul mediu de insolație a lunilor martie - octombrie.



# Radiatia solara

44°20'49"North, 26°13'32"East, nearest city: Bucuresti, Romania

— Horizontal irradiation



## Radiatia solara (W/m2/day)

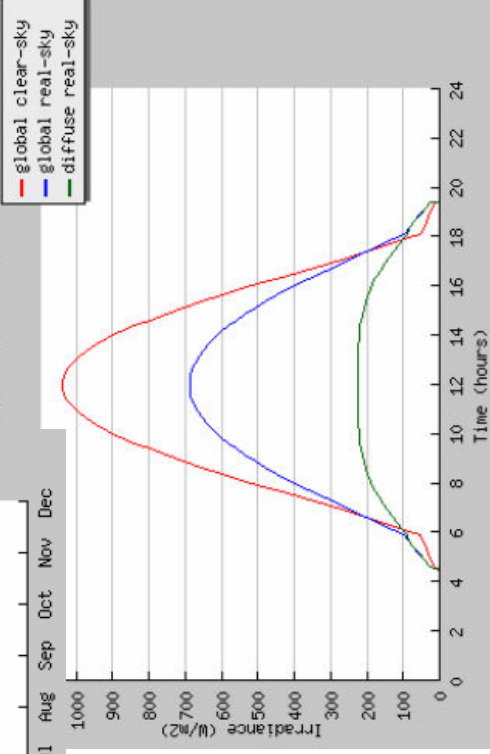
La unghi optim

Jan	2252
Feb	2986
Mar	3908
Apr	4938
May	5572
Jun	5652
Jul	5927
Aug	5876
Sep	5239
Oct	4236
Nov	2394
Dec	1874
<b>Annual</b>	<b>4245</b>

**Radiatia solara medie zilnica (Rmz) se determina in functie de locatia sistemului solar.**

**Radiatia solara medie anuala: RmA = Rmz x 365**

st, nearest city: Bucuresti, Romania  
n.=35 deg., Orient.=0 deg.



# Energia preluata de un panou solar

Nivelul radiatiei solare care ajunge la colector dupa ce au fost eliminate „pierderile” generate de reflexie si absorbtie reprezinta randamentul optic  $\eta_0$ . In urma incalzirii panourilor solare acestea transmit prin radiatie termica, conductie termica si convecție o parte a caldurii ambientale. Factorii de corectie  $\alpha_1$  si  $\alpha_2$  se refera la pierderile de caldura aparute. Eficienta unui colector este determinata in baza caracteristicilor prezentate anterior prin formula:

$$\eta = \eta_0 - \alpha_1 \times \frac{(T_m - T_a)}{G} - \alpha_2 \frac{(T_m - T_a)^2}{G}$$

G – nivelul radiatiei globale

$T_m$  – temperatura medie a colectorului

$T_a$  – temperatura ambientala

$\alpha_1, \alpha_2$  - factori corectie pierderi caldura

Astfel, energia medie preluata anual de un panousolar se poate calcula prin formula:

$$\mathbf{E = RmA \times S \times \eta}$$

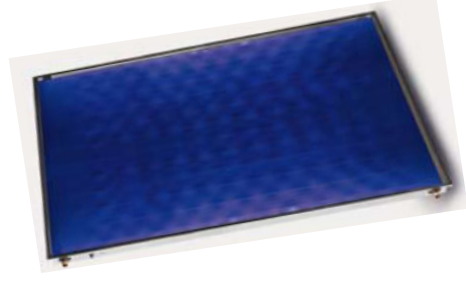
RmA– radiatia solara medie anuala

S – suprafata utila a colectorului

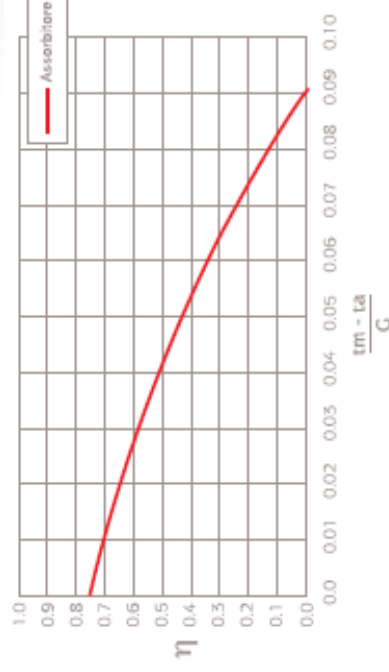
$\eta$  – randament panou solar

# SB 21

- Suprafata totala: 2.0 m<sup>2</sup>
- Suprafata utila: 1,8 m<sup>2</sup>
- Temperatura maxima: 200 °C
- Capacitate: 1,5 l
- Presiunea nominala: 10 bar
- Factor corectie pierderi caldura  $\alpha_1$ : 4,01 W/m<sup>2</sup>K
- Factor corectie pierderi caldura  $\alpha_2$ : 0,010 W/m<sup>2</sup>K
- Randament optic  $\eta_0$  : 79,4%
- Material absorber: Al + Selective
- Lungime: 1730 mm
- Latime: 1170 mm
- Grosime: 95 mm
- Greutate: 32 kg

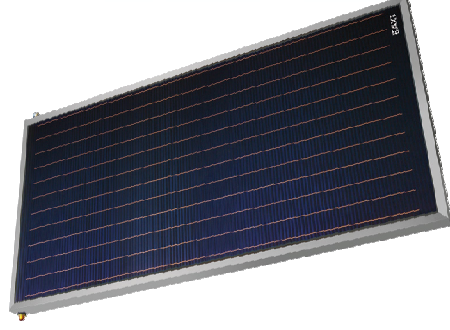


Eficienta colector la  $G=800\text{W}/\text{m}^2$

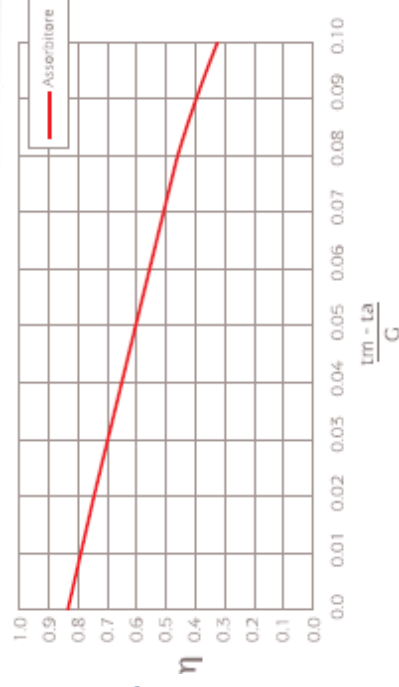


# SB 25

- Suprafata totala: 2.5 m<sup>2</sup>
- Suprafata utila: 2,3 m<sup>2</sup>
- Temperatura maxima: 210 °C
- Capacitate: 1,7 l
- Presiunea nominala: 10 bar
- Factor corectie pierderi caldura  $\alpha_1$ : 3,125 W/m<sup>2</sup>K
- Factor corectie pierderi caldura  $\alpha_2$ : 0,022 W/m<sup>2</sup>K
- Randament optic  $\eta_0$  : 81,9%
- Material absorber: Cu + Selective
- Lungime: 2150 mm
- Latime: 1170 mm
- Grosime: 83 mm
- Greutate: 47 kg



Eficienta colector la  $G=800\text{W}/\text{m}^2$

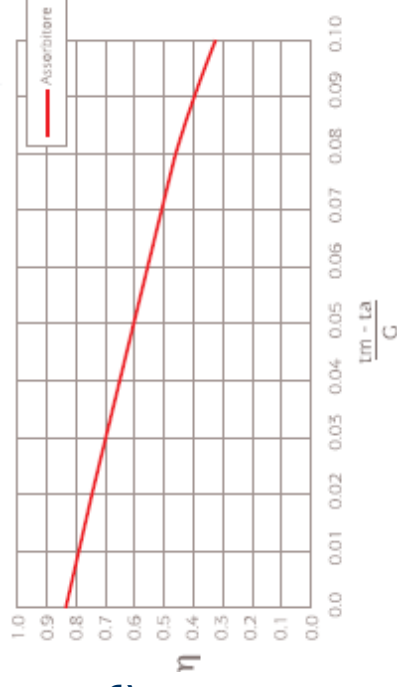


# SB 25 IN

- Suprafata totala: 2.5 m<sup>2</sup>
- Suprafata utila: 2,3 m<sup>2</sup>
- Temperatura maxima: 210 °C
- Capacitate: 1,7 l
- Presiunea nominala: 10 bar
- Factor corectie pierderi caldura  $\alpha_1$ : 3,125 W/m<sup>2</sup>K
- Factor corectie pierderi caldura  $\alpha_2$ : 0,022 W/m<sup>2</sup>K
- Randament optic  $\eta_0$  : 81,9%
- Material absorber: Cu + Selective
- Lungime: 2058 mm
- Latime: 1227 mm
- Grosime: 105 mm
- Greutate: 54 kg



Eficienta colector la  $G=800W/m^2$

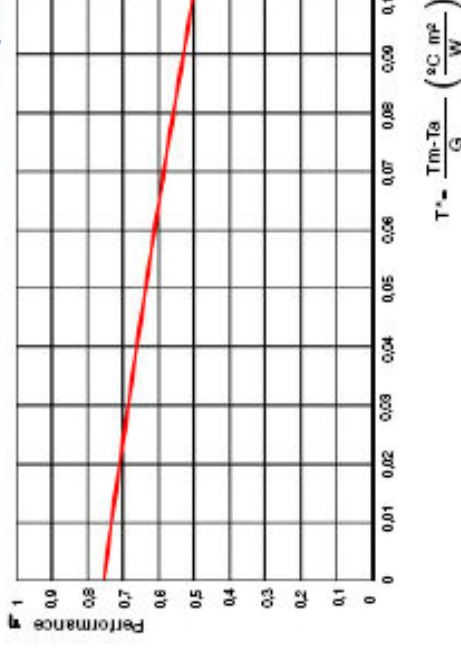


# AR 20

- Suprafata totala: 2,83 m<sup>2</sup>
- Suprafata utila: 2,00 m<sup>2</sup>
- Temperatura maxima: 298 °C
- Capacitate: 1,1 l
- Presiunea nominala: 10 bar
- Factor corectie pierderi caldura  $\alpha_1$ : 1,63 W/m<sup>2</sup>K
- Factor corectie pierderi caldura  $\alpha_2$ : 0,006 W/m<sup>2</sup>K
- Randament optic  $\eta_0$  : 83,2%
- Absorber: Aluxid Selective
- Suprafata reflexiva: Ag
- Lungime: 1996 mm
- Latime: 1418 mm
- Grosime: 97 mm
- Greutate: 54,8 kg



Eficienta colector la  $G=800\text{W}/\text{m}^2$



# AR 30

- Suprafata totala: 4,24 m<sup>2</sup>
- Suprafata utila: 3,02 m<sup>2</sup>
- Temperatura maxima: 306 °C
- Capacitate: 1,7 l
- Presiunea nominala: 10 bar
- Factor corectie pierderi caldura  $\alpha_1$ : 1,14 W/m<sup>2</sup>K
- Factor corectie pierderi caldura  $\alpha_2$ : 0,014 W/m<sup>2</sup>K
- Randament optic  $\eta_0$  : 83,2%
- Absorber: Aluxid Selective
- Suprafata reflexiva: Ag
- Lungime: 1996 mm
- Latime: 2127 mm
- Grosime: 97 mm
- Greutate: 75,8 kg



Eficienta colector la  $G=800\text{W}/\text{m}^2$

