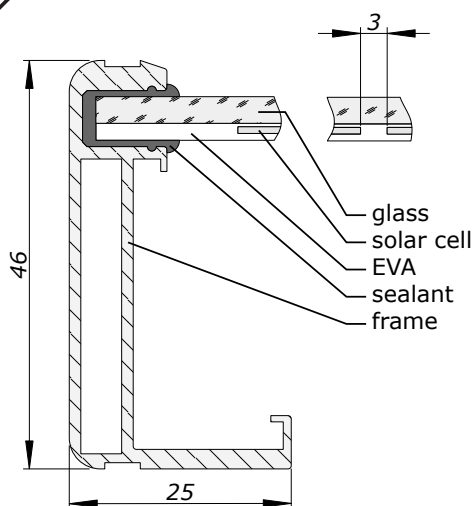


MSW-170/85(12/24)

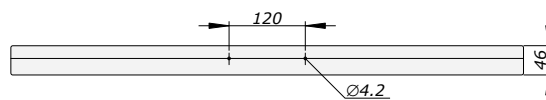
A-A



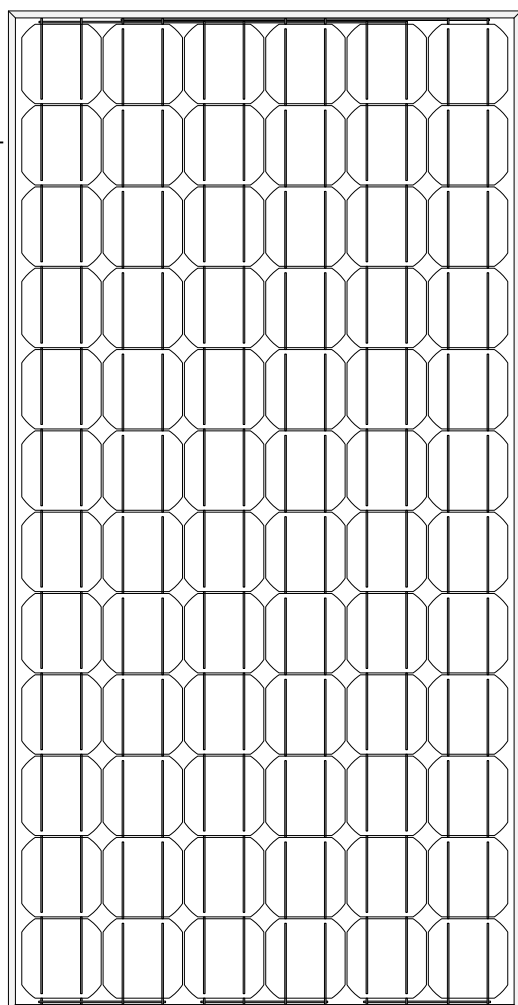
MSW-170/85(12/24) solar module

dimensional parameters:

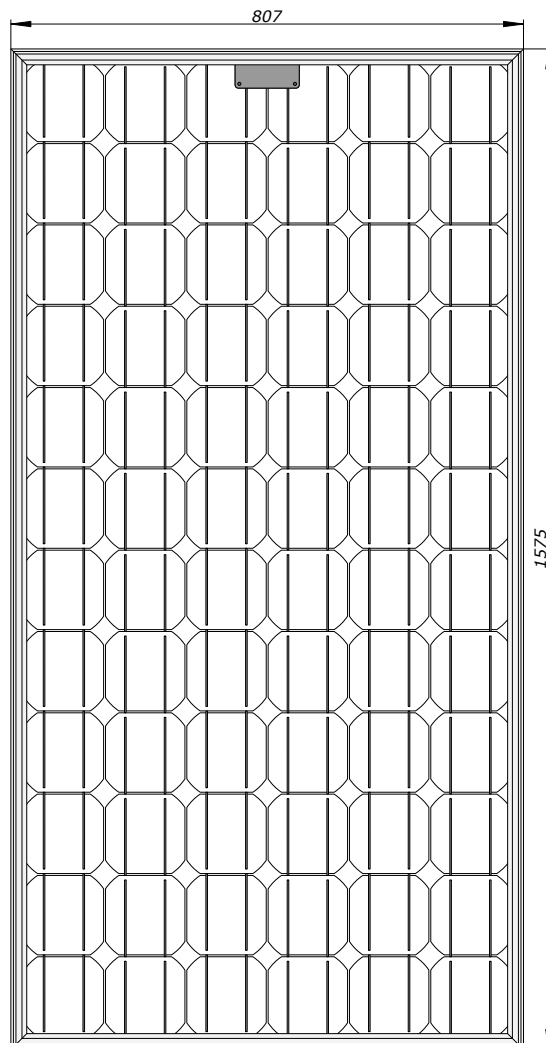
module dimensions	[mm]	807×1575×46
glass dimensions	[mm]	801×1569×4
area	[m ²]	1.27
weight	[kg]	17.3
solar cell type		ps125 125×125 mm
number of cells		72 (6×12)
distance between cells	[mm]	3

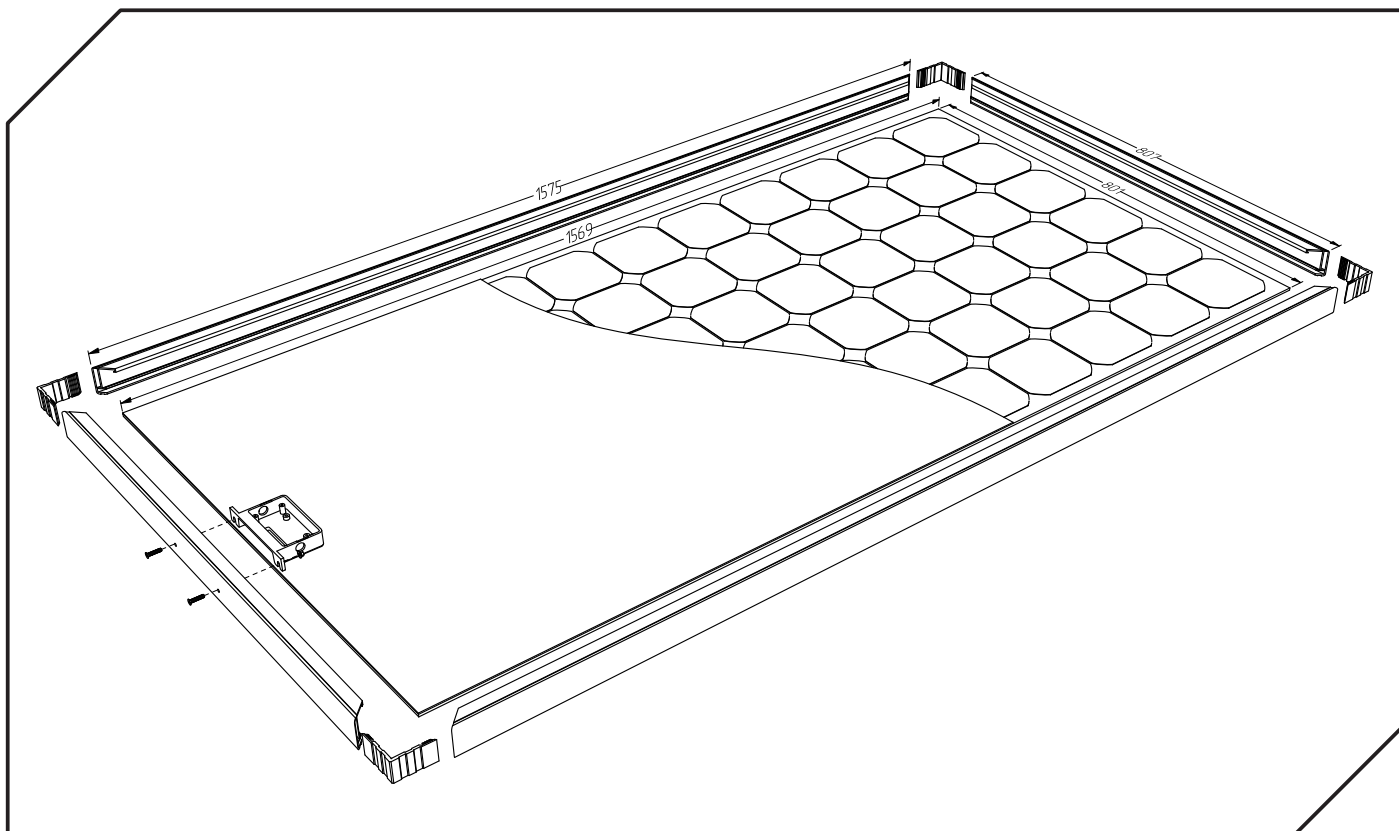


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MSW-170/85(12/24) solar module

electrical parameters:		front	back
rated power, P_{nom} ($\pm 5\%$)	[W]	170	85
rated voltage, V_{nom}	[V]	12/24	
maximum power current, I_{mp}	[A]	10.0/5.00	5.00/2.50
maximum power voltage, V_{mp}	[V]	17/34	
shortcut current, I_{sc}	[A]	11.77/5.88	5.88/2.94
open circuit voltage, V_{oc}	[V]	21.4/42.8	21.0/42.0
power per area, p	[W/m ²]	133.8	
module efficiency	[%]	13.4	
current temper. coeff. α	[1/°C]	$(0.44 \pm 0.05) \times 10^{-3}$	
voltage temper. coeff. β	[V/°C]	$-(7.6 \pm 0.4) \times 10^{-2} / -(1.52 \pm 0.08) \times 10^{-1}$	
power temper. coeff. γ	[1/°C]	$-(0.5 \pm 0.1) \times 10^{-2}$	
NOCT	[°C]	41 \pm 3	

Data represent values under Standard Test Conditions (STC): temperature 25°C, insolation 1000 W/m², spectrum of solar irradiation AM1.5.

NOCT — Normal Operating Cell Temperature measured at insolation 800 W/m², air temperature 20°C and wind speed 1 m/s blown along the plane of module under test.

Solar cell temperature under insolation G [W/m²] and air temperature t [°C] calculates as:

$$T_c(G, t) = t + (G/800) \times (\text{NOCT} - 20^\circ\text{C}).$$

Shortcut current:

$$I_{sc}(G, T_c) = I_{sc}^{STC} \times (G/1000) \times [1 + \alpha(T_c - 25^\circ\text{C})].$$

Open circuit voltage:

$$V_{oc}(G, T_c) = V_{oc}^{STC} - \beta(T_c - 25^\circ\text{C}).$$

Maximum output power:

$$P_m(G, T_c) = P_{nom} \times (G/1000) \times [1 - \gamma(T_c - 25^\circ\text{C})].$$

Current-voltage and power-voltage curves under different temperature and insolation (from both sides for bifacial modules).

- 1 – 25°C (front)
- 2 – 60°C (front)
- 3 – NOCT (front)
- 4 – 25°C (back)

back side curves are given by direct measurement data.

