



NEW MONOCRYSTALLINE MODULES



PHOTOWATT PWM1650 - 12/24V PHOTOVOLTAIC MODULE – JBOX

APPLICATIONS

- Grid connected system
- Water pumping
- Telecommunications
- Battery charging system
- Cathodic protection system
- Building integrated power system

- High efficiency modules
- 8x9 5' inch monocrystalline cells (125,50 x 125,50 mm)
- Reinforced anodised aluminium frame
- 12V and UL versions available on request
- **Product warranty : 5 years***
- **Efficiency warranty : 25 years***
- **Power tolerance : +/- 3%**
- **Quality insurance : ESTI (61215), TÜV ** (Safety Class II), ISO 9001...**

PACKING INFORMATION

Module weight	Kg	18
Module size	mm	1237 x 1082 x 38
Packing configuration	modules	2 per cartons
Packing size	mm	1350 x 1130 x 102
Modules packed weight	Kg	39
Maximum pallet size (34 modules)	mm	1360 x 1130 x 1770
Maximum pallet weight	Kg	678



The PWM1650 is Photowatt's 5 inch high efficiency module. Thanks to its optimum size it is easy to handle and specifically dedicated to large scale grid connected applications.

The PWM1650 module uses Photowatt's monocrystalline technology. The solar cells are individually characterized and electronically matched prior to interconnection. Encapsulation is realised between the high transmission tempered glass and the resistant thermal setting Tedlar®. The encapsulant, ethylene vinyl acetate, cushions the solar cells within the laminate and protect the cells from etching. The rear surface of the module is completely sealed from moisture and mechanical damage by a continuous high strength polymer sheet.

With a tolerance improvement to +/- 3%, the PWM1650 modules ensure more power homogeneity in installations, and a financial investment corresponding to the real power produced.

PWM1650		cells 125 X 125 Ø 150	
Typical power	W	165	175
Minimum power	W	160	170
Voltage at typical power	V	35,2	35,4
Current at typical power	A	4,7	4,95
Short circuit current	A	5,1	5,3
Open circuit voltage	V	44,4	44,6
Maximum system voltage	V	770 DC	
Temperature coefficient		$\alpha = +1,46 \text{ mA}/^\circ\text{C}$; $\beta = -158 \text{ mV}/^\circ\text{C}$; $\gamma \text{ P/ P} = -0,43 \text{ \%}/^\circ\text{C}$	
Power specifications at 1000 W/m² : 25 °C : AM 1,5			

* According to general warranty conditions
** Pending

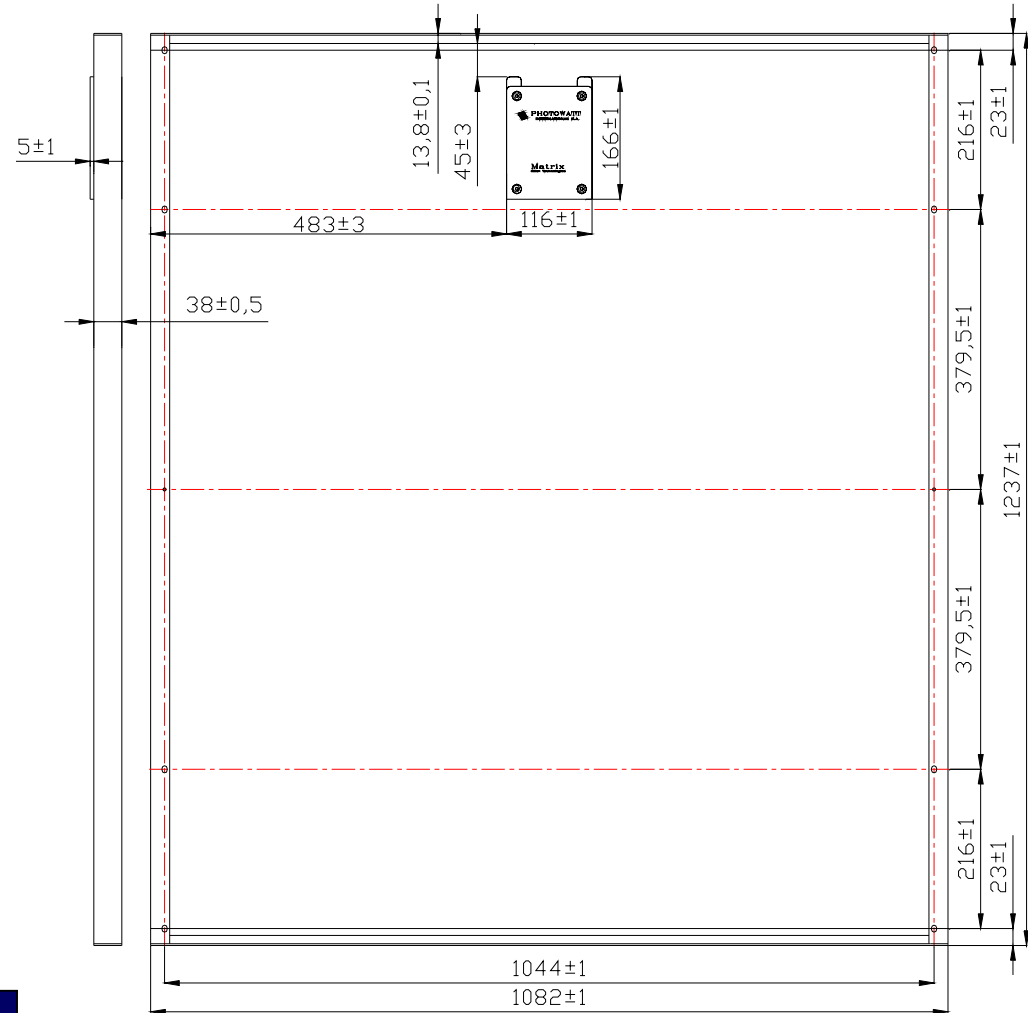
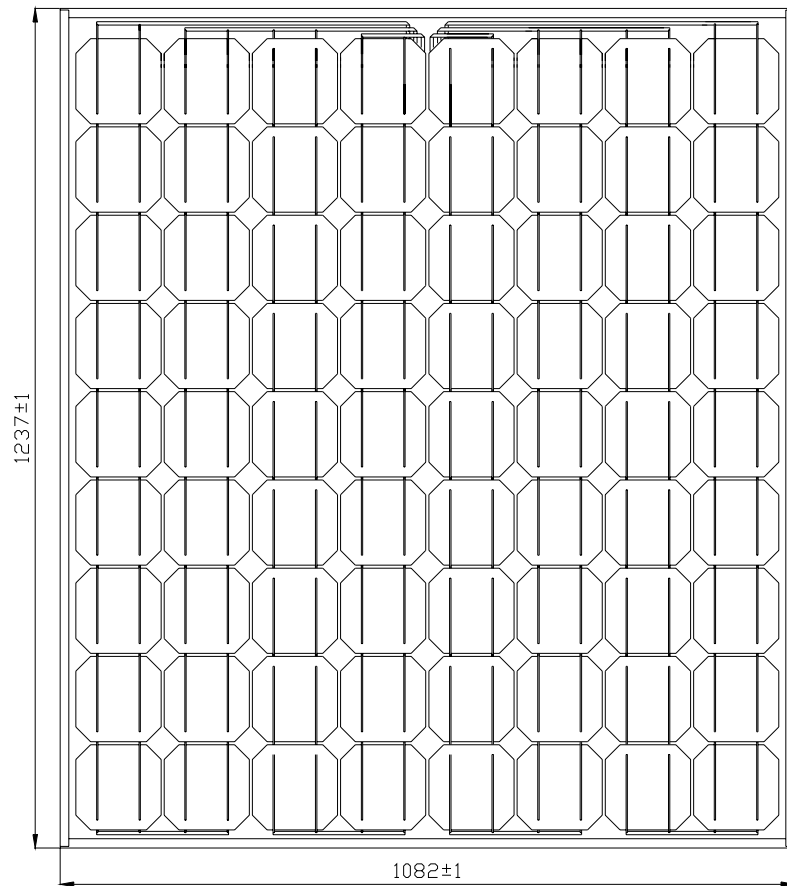


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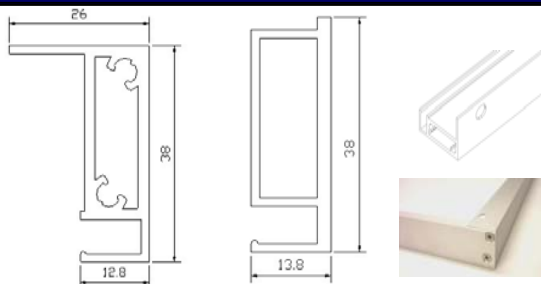
Solutions for natural power

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FRAME DETAILS

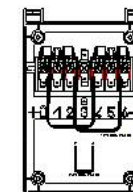


The mounting frame screw not passing beyond the frame

CABLES DETAILS



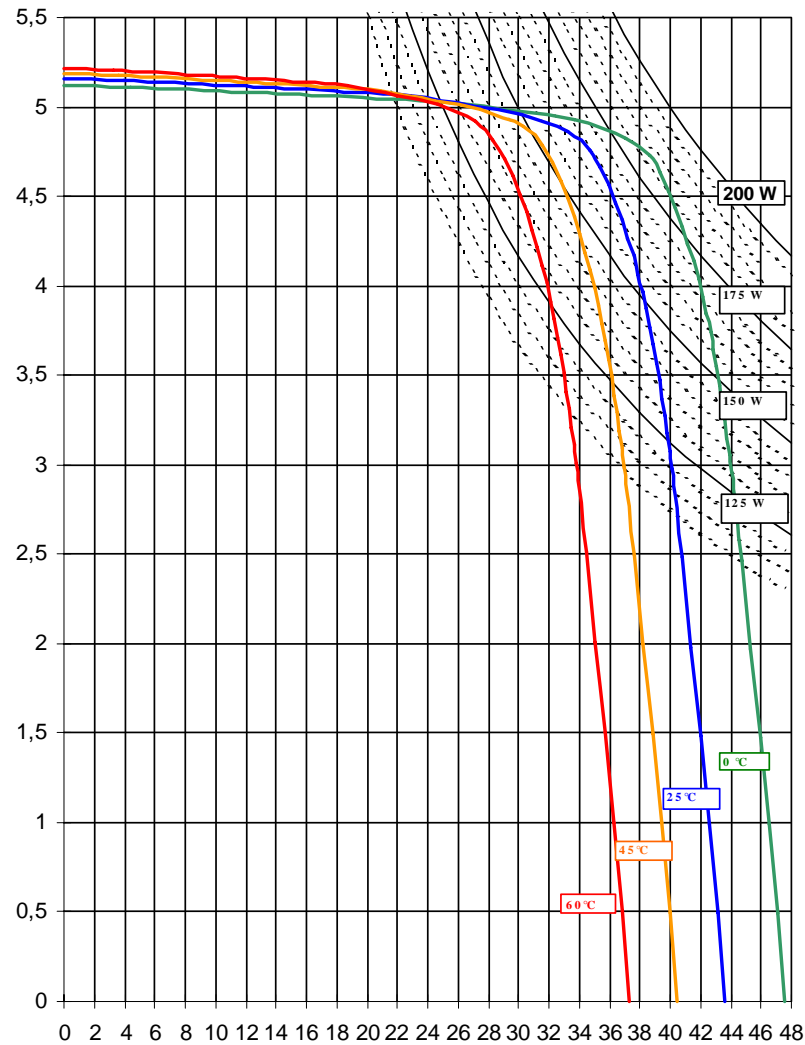
The universal junction box accepts cables as large as 1,5mm² to 4mm² (AWG16 to AWG11)



Module protected by 4 bypass diodes (1 bypass diode per 18 cells)

$I=F(V)$ à $E=1 \text{ kW/m}^2$, $AM=1,5$ as a function of the junction temperature

Amperes



$I=F(V)$ à $T = 25^\circ\text{C}$ as a function of this irradiance E (kW / m^2), $AM 1,5$.

Amperes

