

# KV-180/24M type photovoltaic terrestrial module PRODUCT DATA SHEET



ISO 9001:2000

Certified Management System

## Module data KV 180/24M

Type of module: KV-170/24M, KV-175/24M, KV-180/24M, KV-185/24M, KV-190/24M

Solar modules of types KV-180/24M are designed to convert the solar radiation energy into electrical energy. Modules generate DC voltage which may be converted into AC voltage by means of inverter.

Solar modules of types KV-180/24M have nominal voltage 24V which indicate their ability to charge storage batteries with 24V Voltage during the operation as an autonomous power supply source.

Solar modules of types KV-180/24M can be used as autonomous power supply source or for making module system which makes it possible to generate high voltages.

Solar modules of types KV-180/24M manufactured by JSC "Kvazar" are based on the solar cells which manufacturing technology is developed by JSC "Kvazar" employees. The manufacturing of solar cells and modules is performed with product quality control which complies to the ISO 9001 standard.

The advantageous feature of JSC "Kvazar" modules is the fact the solar cells they are made of are manufactured of the silicon with specific resistance 1 Ohm x cm which ensures their reliable operation in the real conditions and longevity.

### General information

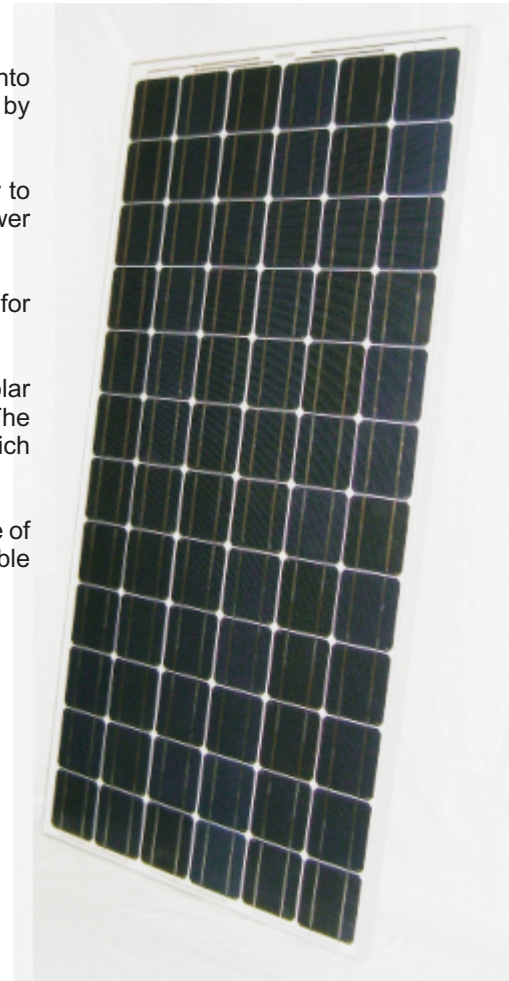
Module class: crystalline photovoltaic module.

Solar elements: 72 monocrystalline 5 inches silicon solar cells.

Solar cells connection: series, 6 strings each containing 12 solar cells.

### Module structure:

- fire-hard glass;
- EVA film;
- solar cells matrix;
- EVA film;
- protective back sheet.



Allowable wind load: Wind speed 130 km/h with safety coefficient 3 (pressure up to 2400 Pa)

Maximum system voltage: 1000V;

Maximum number of the modules connected in series within the system: 18

Allowable temperature: - 40...+85°C

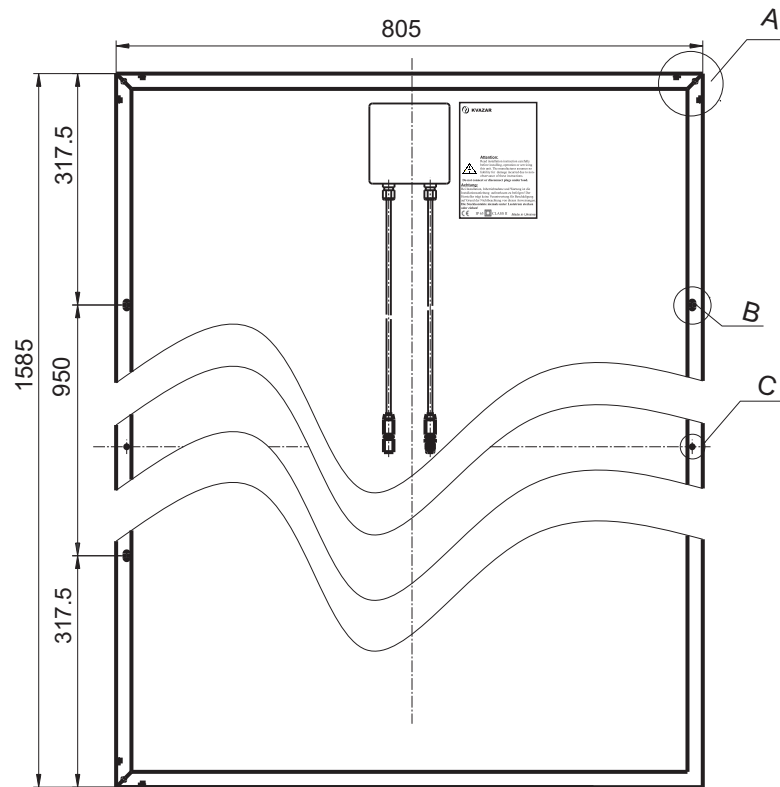
Modules have been manufactured as per the standards requirements:

IEC 61215: 2005 2nd Edition, IEC 61730 -1 ed.1, IEC 61730-2 ed.1

**Electrical data under STC** (Irradiance = 1000 W/m<sup>2</sup>; air mass = AM 1,5; Nominal operating temperature T = 25 °C)  
 (The average statistical module parameters)

Module type	KV-170	KV-175	KV-180	KV-185	KV-190
Nominal power Pmax, Wp	170	175	180	185	190
Sorting limits, W	-0/+5	-0/+5	-0/+5	-0/+5	-0/+5
Open circuit voltage Voc, V	44,3	44,5	44,9	45	45
Short circuit current Isc, A	5,36	5,4	5,52	5,53	5,55
Voltage at maximum power Vmpp, V	35,25	35,5	36	36,05	37
Current at maximum power Impp, A	4,82	4,93	5	5,14	5,15
Module Efficiency, %	13,3	13,7	14,1	14,5	14,9
Wp/m <sup>2</sup>	133	137	141	145	149
Tolerance of power, %	±3	±3	±3	±3	±3
Series Fuse Rating, A	15	15	15	15	15

**Temperature coefficients** TC(Voc) = -0,34 %/°C; TC(Isc) = +0,028 %/°C; TC(P) = -0,48 %/°C; NOCT: 44 °C



#### Intensity Dependence:

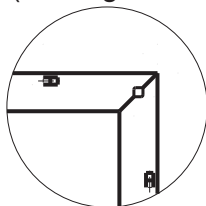
Intensity W/m <sup>2</sup>	Vmpp*	Impp*
1000	1,00	1,0
800	0,99	0,8
200	0,95	0,2

\*Ratio of Vmpp/Impp at reduced intensity to Vmpp/Impp at 1000 W/m<sup>2</sup>

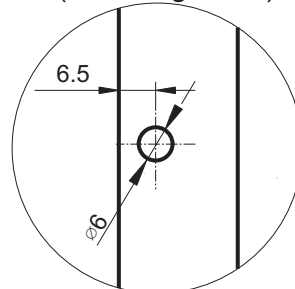
#### Technical Characteristics

Dimensions (mm)	1585x805x34.5
Connection box	Tyco with 3 bypass diodes IP 65
Cable	Length: 100 cm each
Connector	Tyco solarlok
Weight	16,2
Front glass	4 mm

View A  
(drainage holes)



View B  
(mounting holes)



View C  
(grounding holes)

