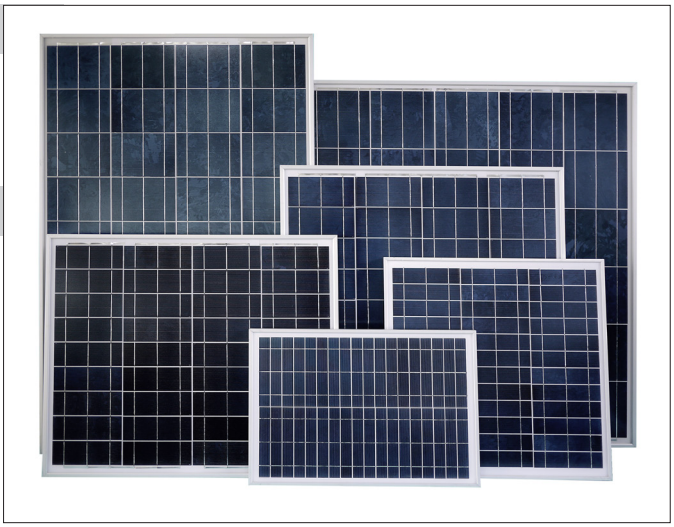
Sollatek product information

# SP20-PB, SP30-PB, SP45-PB, SP60-PB, SP90-PB, SP120-PB, SP195-PB

## SOLLATEK POLYCRYSTALLINE 12V PHOTOVOLTAIC MODULE RANGE

**Models :**

SP20-PB, SP30-PB, SP45-PB, SP60-PB, SP90-PB, SP120-PB, SP195-PB



*The PB range*

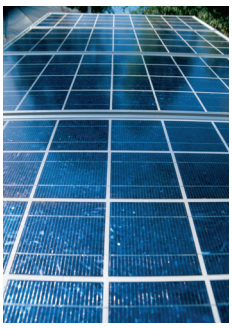
**General:**

Solar cells directly convert sunlight into electricity by means of the photovoltaic effect. This occurs when photons are absorbed by a solar cell which generates a voltage across it terminals. Cells are connected in series within a solar module to provide sufficient voltage to operate a system. Modules can be connected in series and parallel to increase the system power. This solid state process provides a clean, silent, non-polluting and reliable source of electrical energy.

Sollatek's high efficiency solar modules are constructed for 36 polycrystalline, (12V modules) or 72 cells (24V modules) cells. The cells are individually tested and matched for optimum performance before being built into the protective module structure. A Tedlar® base is used and ethylene vinyl acetate encapsulant. High transmission tempered glass protects the cells from the front and a high strength polymer sheet at the rear. A reinforced aluminium frame completes the laminate structure which is fully sealed against moisture and protected from environmental and mechanical damage.

**Features:**

- High efficiency modules
- Reinforced anodised aluminium frame
- Protected by 2 schottky by-pass diodes
- Universal junction box
- Pre-drilled frame for easy mounting
- Product warranty : 2 years*
- Efficiency warranty : 25 years*
- Power tolerance : +/- 5%
- Kenyan Standard: KS 1674:2003



**Applications:**

- Telecommunications
- Rural electrification
- Grid connected large scale system
- Power plants
- Buildings integration
- Water pumping

**According to general warranty conditions*

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# SP20-PB, SP30-PB, SP45-PB, SP60-PB, SP90-PB, SP120-PB, SP195-PB

**Specifications**

| Sizes | SP20-PB | SP30-PB | SP45-PB | SP60-PB | SP90-PB | SP120-PB | SP195-PB |
|---|---|---|---|---|---|---|---|
| Cell | Polycrystalline silicon solar cells | | | | | | |
| No. of cells and connections | 36 | | | | | | 72 |
| Dimensions of modules (mm) | 510x350x25 | 510x510x25 | 670x565x35 | 720x670x35 | 1056x67x35 | 995x945x35 | 1485x995x45 |
| Weight (kg) | 2.1 | 3.1 | 4.7 | 5.8 | 8.7 | 11.3 | 17.5 |

**Characteristics**

| Nominal voltage | 12 | | | | | | 24 |
|---|---|---|---|---|---|---|---|
| Open circuit Voltage (Voc) | 21.3 | 21.4 | 21.4 | 21.4 | 21.5 | 21.6 | 43.2 |
| Optimum operating voltage (Vmp) | 17.3 | 17.3 | 17.4 | 17.4 | 17.4 | 17.4 | 34.8 |
| Short circuit current (Isc) | 1.27 | 1.88 | 2.8 | 3.76 | 5.58 | 7.4 | 6.01 |
| Optimum operating current (Imp) | 1.16 | 1.74 | 2.58 | 3.45 | 5.17 | 6.9 | 5.6 |
| Power at STC (Pm) | 20 | 30 | 45 | 60 | 90 | 120 | 195 |
| Tolerance | 5% | | | | | | |

**Limits**

| Operating temperature | -40°C-85°C |
|---|---|
| Maximum system voltage | 1000V |

**Temperature and coefficients**

| Nominal operation cell temperature | 47°C |
|---|---|
| Current temperature coefficient | $(3.18x10^{-3})$A/°C |
| Voltage temperature coefficient | $(-1.23x10^{-1})$V/°C |
| Power temperature coefficient | $(-4.7x10^{-1)W}$/°C |

**Output**

| Type of output terminal | Junction Box |
|---|---|

**Performance warranty**

| Material and workmanship | 2 years |
|---|---|
| Efficiency warranty* | 25 years |

*Electrical specifications based under irradiance 1000W/m², spectrum of 1.5 air mass and cell temperature 25°C*

Long term output warranty shall guarantee that loss of output is not greater than 10% of minimum warranty value of the product specifications within 12 years and is not greater than 20% within 25 years after purchase.

**Junction box**

Dimensions