Spark™ Solar

*Powered By The Sun™*

# HIGH PERFORMANCE
# SUPERIOR QUALITY

SPARK 72 CELL | 6 Bus Bar Poly Crystalline Module

Positive power tolerance of 0/+5W

IEC certified products.

## QUALITY BY SPARK SOLAR

Solar Modules are at the core of solar power system. That is why you should rely on the best products available in the market when you select solar modules. There's only one right choice here: Spark Solar. Worldwide, our customers have embraced these panels for their excellent performance, superior reliability and enhanced value.

Spark Solar panels are designed and manufactured to the highest standards of quality, performance and durability. The foundation of Spark Solar is built on years of ongoing innovation, continuous optimization and technology expertise. All production steps are established at our production site ensuring the highest possible quality for our customers.

## SPARK SOLAR'S ADDED VALUE

### Latest Six Bus Bar Design

Thanks to improved temperature co-efficient caused by 6 busbar solar cell. A shorter distance for electrons to travel vastly reduces electrodes resistance and raise in conversion efficiency. Less residual stress, less micro-cracks and hotspot risks ensure more power generation in 27 years.

### A Reliable Investment

Inclusive 10-year product warranty and 27-year linear performance warranty*

### Excellent Module Efficiency

High module efficiency is achieved through advanced cell technology and manufacturing capabilities

### New All- Weather Technology

Optimal yields, with excellent low-light and temperature behavior.

### Hi Tech 40 mm Frame

40mm

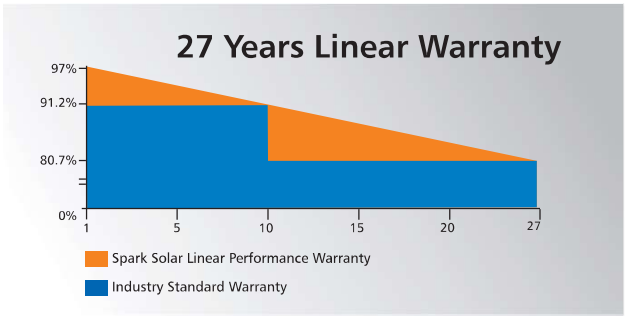
For faster module cooling. Reduces the thermal resistance and increased surface area for better heat convection.

### Advanced Glass

Our high-transmission glass features a unique anti-reflective coating that directs more light on the solar cells, resulting in a higher energy yield.

### 100% EL-Test

All modules pass through Electro-luminescence test, which ensures no micro- crack for more reliability.



# Spark 72 Cell | 6 Bus Bar - P Series

upto **17.8%** EFFICIENCY

**12** YEAR PRODUCT WARRANTY

**27** YEAR LINEAR POWER OUTPUT WARRANTY

## TEMPERATURE RATINGS

| | | |
|---|---|---|
| Nominal Module Operating Temperature (NMOT) | | 43°C (±3°C) |
| Temperature coefficient of $P_{MPP}$ | (γ) | -0.38 %/°C |
| Temperature coefficient of $V_{oc}$ | (β) | -0.29 %/°C |
| Temperature coefficient of $I_{SC}$ | (α) | 0.03 %/°C |

## GENERAL DATA

| | | |
|---|---|---|
| Cell type | : | Multi-crystalline / PERC |
| Cell Matrix | : | 72 cells (6 x 12) |
| Junction box | : | Protection class IP 68, with 3 bypass diodes |
| Cable | : | 4mm² solar cable, ≥ 1200 mm, |
| Frame | : | Silver anodized aluminum alloy |
| Glass | : | 3.2 mm low iron solar glass with anti-reflection technology |
| Connectors | : | UTX / TS4 / Multi-Contact MC4 (4 mm²) |

## MAXIMUM RATINGS

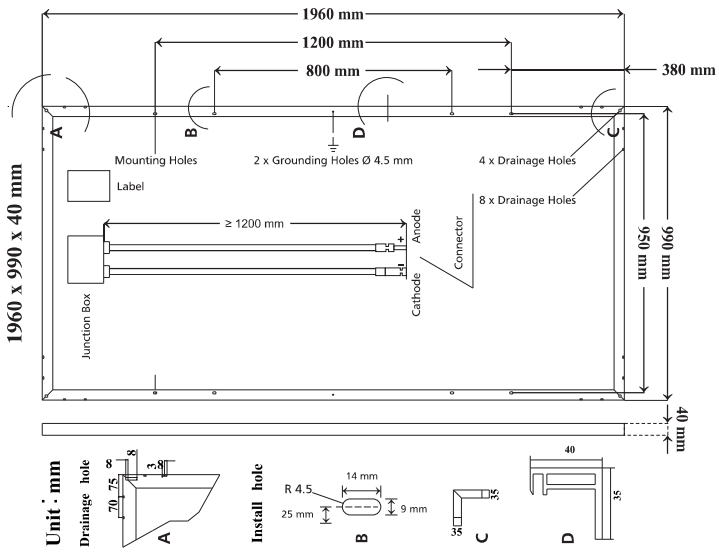
| | | |
|---|---|---|
| Operating temperature: (Permitted Module Temperature on Continuous Duty) | : | -40 upto +85°C |
| Maximum system voltage | : | 1000 VDC / 1500 VDC (IEC/UL) |
| Max series fuse rating | : | 20 A |
| Max reverse current | : | 20 A |
| Design load (+) | : | 367 kg/m² (3600 Pa)* |
| Maximum test load (+) | : | 550 kg/m² (5400 Pa) |
| Design load (-) wind | : | 163 kg/m² (1600 Pa)* |
| Maximum test load (-) | : | 244 kg/m² (2400 Pa) |
| Application Classification | : | Class A |
| Safety Class | : | II |
| Fire Rating | : | Class C |

## MECHANICAL SPECIFICATION

| | | |
|---|---|---|
| Dimensions | : | 1960 x 990 x 40 mm |
| Area | : | 1.94 m² |
| Weight | : | 22.5 kg (49.6 lbs) |

## PACKAGING INFORMATION

| Container Size | | 20' | 40'HC |
|---|---|---|---|
| Quantity Per Pallet | : | 22 | 24 |
| Pallets/Container | : | 12 | 24 |
| Quantity/Container | : | 264 | 576 |




## ELECTRICAL DATA@STC

Module code* : SSXXX72P 6BB

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Nominal Power | - $P_{MPP}$ (Wp) | 320 | 325 | 330 | 335 | 340 | 345 |
| Power Tolerance | - (W) | 0/+5 | 0/+5 | 0/+5 | 0/+5 | 0/+5 | 0/+5 |
| Nominal Power Voltage | - $V_{MPP}$ (V) | 36.5 | 36.9 | 37.3 | 37.7 | 38.1 | 38.48 |
| Nominal Power Current | - $I_{MPP}$ (A) | 8.78 | 8.82 | 8.85 | 8.89 | 8.93 | 8.97 |
| Open Circuit Voltage | - $V_{OC}$ (V) | 45.2 | 45.4 | 45.6 | 45.7 | 45.9 | 46.38 |
| Short Circuit Current | - $I_{SC}$ (A) | 9.25 | 9.29 | 9.33 | 9.37 | 9.41 | 9.44 |
| Panel Efficiency | - (%) | 16.5 | 16.8 | 17.0 | 17.3 | 17.5 | 17.8 |

Values at standard test conditions STC (airmass AM 1.5, irradiance 1000 W/m², cell temperature 25°C).
*Where xxx indicates the nominal power class ($P_{MPP}$) at STC indicated above.

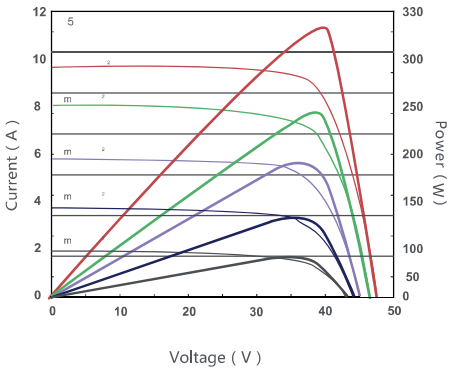
## ELECTRICAL DATA@NMOT

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Nominal Power | - $P_{MPP}$ (Wp) | 235.4 | 239.0 | 242.7 | 246.4 | 250.1 | 255 |
| Nominal Power Voltage | - $V_{MPP}$ (V) | 33.5 | 33.9 | 34.3 | 34.6 | 35.0 | 35.6 |
| Nominal Power Current | - $I_{MPP}$ (A) | 7.02 | 7.06 | 7.08 | 7.11 | 7.14 | 7.16 |
| Open Circuit Voltage | - $V_{OC}$ (V) | 42.0 | 42.2 | 42.4 | 42.5 | 42.6 | 44.03 |
| Short Circuit Current | - $I_{SC}$ (A) | 7.45 | 7.49 | 7.52 | 7.55 | 7.58 | 7.60 |

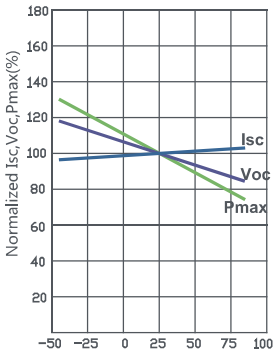
*Nominal Module operating temperature (NMOT : air mass AM 1.5, irradiance 8000 W/m², temperature 20°C), windspeed 1m/s.)*
**Where xxx indicates the nominal power class ($P_{MPP}$) at STC indicated above, and can be followed by the suffix XV for 1500 V rated modules.*

## Electrical Performance & Temperature Dependence

**Current-Voltage & Power-Voltage Curves**




**Temperature Dependence of Isc, Voc, Pmax**




**Note:** Specification subject to change without notice. Installation instructions must be followed. See the installation manual or contact technical service department for further information on approved installation. Atleast 97% of nominal power during first year. Thereafter max. degression in performance of 0.7% p.a. See warranty conditions for further details. Spark Solar reserve the right to make any adjustment to the information described herein at anytime without notice.

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