Spark™ Solar

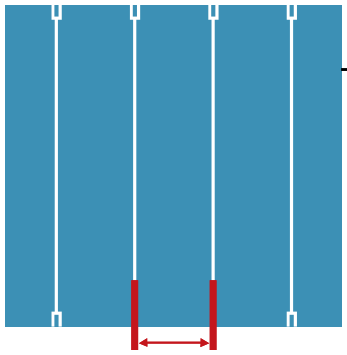
Powered By The Sun™

SS 144 CELL 6 BB SERIES

Next Generation 6 BusBar Solar Modules

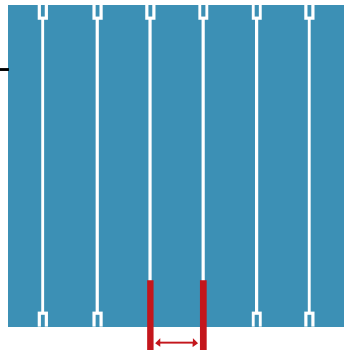
SUPERIOR PERFORMANCE
EXCELLENT QUALITY

Standard 4 busbar technology



Cell

Advanced 6 busbar technology



Wider distance between busbar for electrons to travel, leads to higher electrodes resistance and reduces the conversion efficiency. More residual stress and Micro-cracks

A shorter distance for Electrons to travel vastly reduces electrodes resistance and raise the conversion efficiency. Less residual stress, less Micro-cracks.

- Wider Distance Between Bus Bars
- Lower Power, Less Reliability
- Shorter Distance Between Bus Bars
- Higher Power, Better Reliability

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RAPID

144 Cell Series

SMART MODULE

FEATURES

Remarkable performance in shaded condition

Low-light Behaviour

High yields with low radiation intensity

Higher Performance

6 busbar technology offer more power per square meter, resulting in higher yields at lower BOS cost.

Temperature Coefficient

Even on hot days, Spark Solar modules produce reliable yields and lose less efficiency than standard solar modules.

HOW IT WORKS

Spark Rapid 144 Cell Series module produces energy even if part of the module is shaded. Whereas if standard module is partially shaded minimum one string will completely stop producing power, this accounts to one third reduction in power generation. Moreover, it can even completely stop generating power if shaded across its breadth. Rapid 144 Cell Series module is split into two parts. Each section of 72 half cut cells generates power on standalone basis but combines again before current exits the module. This structure results in power generation in non-shaded area of the module even if one of the section is partially or completely shaded, resulting in higher overall energy yield as compared to standard module.

PENTATECH | SMART TECHNOLOGY

New 6 busbar cell design

For more power and better reliability. Shorter distance between busbar allows better flow of electrons and reduces power loss. Less residual stress, less micro-cracks and hotspot risks.

Half cut cells

With high-precision laser cut cells, the current (I) flowing in each busbar is halved resulting in lower electrical resistance and an increased overall efficiency of about 2.5%

Three piece junction box

The unique three piece design lowers series resistance avoids diode heating and enable quicker heat dissipation, which guarantees long-term stable performance and improved power efficiency.

Passivated Emitter Rear Cell (PERC)

Higher efficiency is achieved with the option of latest cell technology which captures more wavelengths of light through mirror like reflector behind the solar cell

High Tech 45mm Frame

For faster module cooling. Reduces the thermal resistance and increases the surface area for convection.

SS 144 PPR | 6 Bus Bar Series

upto **17.8%** EFFICIENCY

12 YEAR PRODUCT WARRANTY

27 YEAR LINEAR POWER OUTPUT WARRANTY

TEMPERATURE RATINGS*

Nominal Module Operating Temperature	:	42.0°C (±3°C)
Temperature coefficient of P_{MPP}	(Y)	-0.36 %/°C
Temperature coefficient of V_{oc}	(β)	-0.29 %/°C
Temperature coefficient of I_{SC}	(α)	0.067 %/°C

*The temperature coefficients stated are linear values

GENERAL DATA

Cell type	:	6 BB half multicrstalline / PERC cells
Cell matrix	:	144 [2 X (12 X 6)]
Junction box	:	3-part, 3 bypass diodes, IP 67/68 rated
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 V_{DC} / 1500 $V_{DC(IEC/UL)}$
Max series fuse rating	:	15 A
Max reverse current	:	15 A
Design load (+) snow	:	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	:	A
Safety Class	:	II
Fire Rating	:	Class C

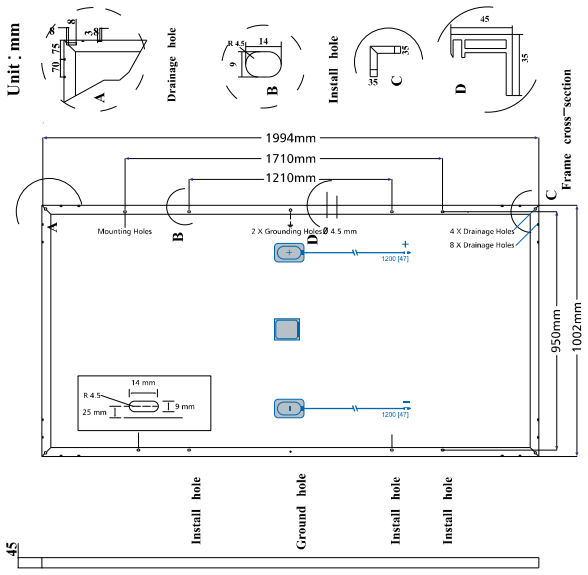
MECHANICAL SPECIFICATION

Dimensions	:	1994 x 1002 x 45 mm
Area	:	1.99 m²
Weight	:	25 kg (55.12 lbs)

PACKAGING INFORMATION

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

*Due to continuous innovation, research and product improvement the specifications in this product information sheet are subject to change without prior notice. Installation instructions must be followed. See the installation manual or contact technical service department for further information on approved installation. Atleast 97.5% of nominal power during first year. Thereafter max. degression in performance of 0.7% p.a. See warranty conditions for further details.



ELECTRICAL DATA@STC

Module code* : SSXXX144PPR 6BB

Nominal Power - P_{MPP} (Wp)	355	350	345	340	335	330	325
Power Tolerance - (W)	0/+5	0/+5	0/+5	0/+5	0/+5	0/+5	0/+5
Nominal Power Voltage - V_{MPP} (V)	39.07	38.95	38.48	38.25	37.99	37.78	37.48
Nominal Power Current - I_{MPP} (A)	9.09	8.99	8.97	8.91	8.82	8.74	8.68
Open Circuit Voltage - V_{OC} (V)	46.67	46.5	46.38	46.13	45.8	45.57	45.31
Short Circuit Current - I_{SC} (A)	9.79	9.73	9.44	9.38	9.30	9.22	9.14
Panel Efficiency - (%)	17.8	17.5	17.3	17.0	16.8	16.5	16.3

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.

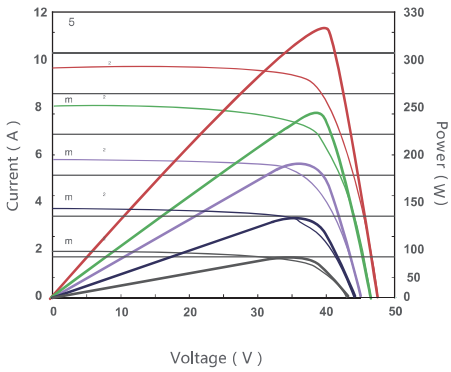
ELECTRICAL DATA@NMOT

Nominal Power - P_{MPP} (Wp)	268.9	264.4	260.9	256.8	248	244	241
Nominal Power Voltage - V_{MPP} (V)	36.1	35.87	35.64	35.42	35.21	35.03	34.82
Nominal Power Current - I_{MPP} (A)	7.45	7.37	7.32	7.25	7.04	6.97	6.91
Open Circuit Voltage - V_{OC} (V)	43.99	43.9	43.81	43.72	43.63	43.41	43.24
Short Circuit Current - I_{SC} (A)	7.95	7.9	7.84	7.79	7.73	7.67	7.60

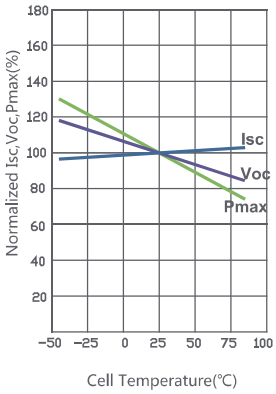
Nominal Module Operating Temperature NMOT (800 W/m², AM 1.5, windspeed 1 m/s, ambient temperature 20°C). Typical values, actual values may differ. *Where xxx indicates the nominal power class (P_{MPP}) at STC indicated above.

Electrical Performance & Temperature Dependence

Current-Voltage & Power-Voltage Curves



Temperature Dependence of Isc, Voc, Pmax



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