

## Special benefits based on SMART DC Module

### Smart Module

Suntech SMART DC modules use integrated power IC from Maxim. With breakthrough technology performing MPPT optimization on each cell-string, single IC generates more energy at lower cost than discrete panel solutions. Choose the Maxim power IC platform for your next PV module to streamline operations and hedge against the future.

### Simple System Architecture

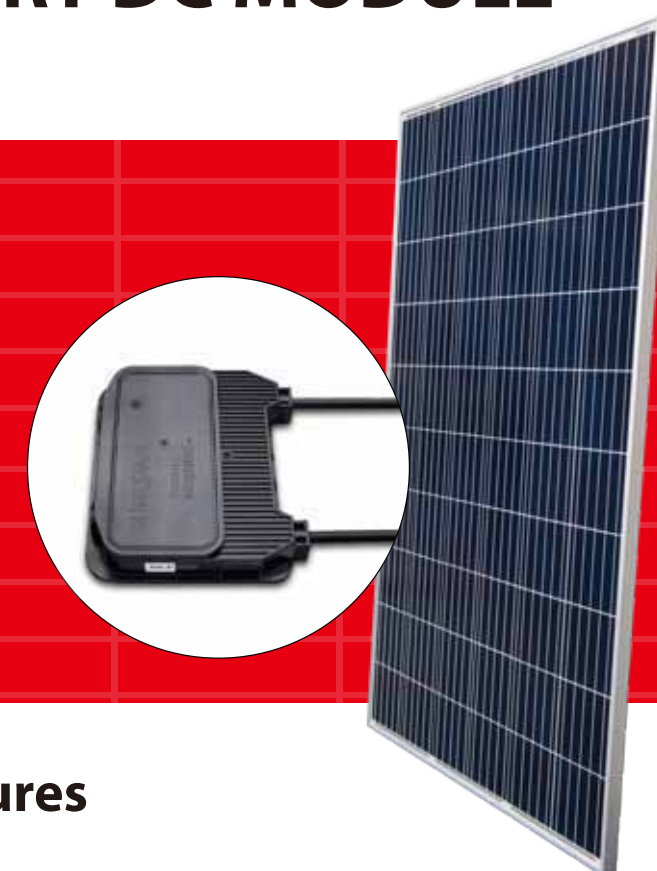
Suntech SMART system components work together with any inverter to maximize energy harvest and no change in PV array design. Also no additional hardware or data services.

### Greener Future

Deploying the SUNTECH Smart Module onto (commercial) rooftops maximize the customer value by more power yield generation and by less carbon emission.

The brilliant Maxim smart solution offers advanced safety and optimization functionality to follow the development paces of distributed smart power grid for better future.

## SMART DC MODULE



EXCELLENT  
QUALITY

RELIABLE  
SECURITY

### Features



The most flexible solution for any rooftop condition and orientation.



Built-in intelligent cell-string optimizer IC avoids negative consequences of any type of mismatch within a panel caused by shading, soiling, aging, unfavorable house orientation, etc. to ensure greatest power output possible.



Best-in-class shade tolerance by performing MPPT on individual cell-strings to maximize energy harvest.



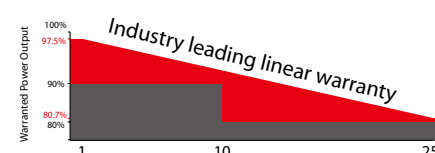
Elimination of hot spots, which results in minimized panel degradation.



Module certified to withstand extreme wind loads (3800 Pascal) and snow loads (5400 Pascal).

### Warranty

#### Industry-leading Warranty based on nominal power



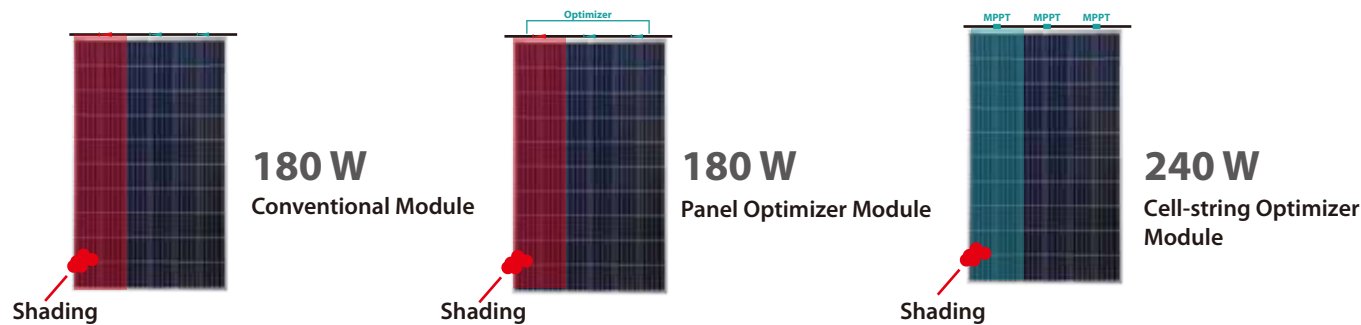
- 97.5% in the first year, thereafter, for years two (2) through twenty-five (25), 0.7% maximum decrease from MODULE's nominal power output per year, ending with the 80.7% in the 25th year after the defined WARRANTY STARTING DATE.

- 12- year product warranty
- 25- year linear performance warranty

Information on how to install and operate this product is available in the installation instruction. All values indicated in this data sheet are subject to change without prior announcement. The specifications may vary slightly. All specifications are in accordance with standard EN 50380. Color differences of the modules relative to the figures as well as discolorations of/in the modules which do not impair their proper functioning are possible and do not constitute a deviation from the specification.

## INCREASE POWER HARVEST UP to 30%

Suntech Cell-string Optimizer Module allows each cell-string to deliver maximum power under all conditions.  
Improve power density with closer row spacing as modules resist effect of cross-bank shading.



### Electrical Data

STP275-20/Wfw-MX

#### Electrical Characteristics

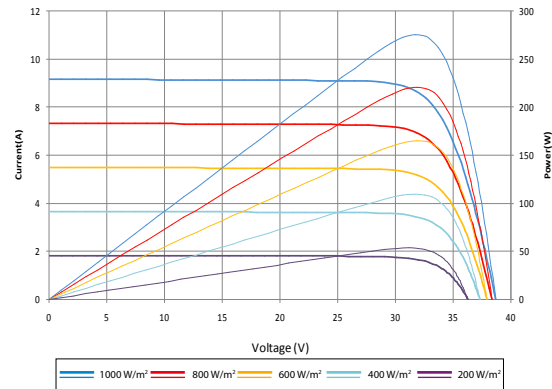
| STC                             | STP275-20/Wfw-MX |
|---------------------------------|------------------|
| Maximum Power at STC (Pmax)     | 275 W            |
| Optimum Operating Voltage (Vmp) | 31.2V            |
| Optimum Operating Current (Imp) | 8.82 A           |
| Open Circuit Voltage (Voc)      | 38.1V            |
| Short Circuit Current (Isc)     | 9.27 A           |
| Module Efficiency               | 16.8 %           |
| Operating Module Temperature    | -40 °C to +85 °C |
| Maximum System Voltage          | 1000 V DC (IEC)  |
| Maximum Series Fuse Rating      | 20 A             |
| Power Tolerance                 | 0/+5 W           |

STC: Irradiance 1000 W/m<sup>2</sup> module temperature 25 °C, AM=1.5;  
Best in Class AAA solar simulator (IEC 60904-9) used, power measurement uncertainty is within +/- 3%

| NOCT                            | STP275-20/Wfw-MX |
|---------------------------------|------------------|
| Maximum Power at NOCT (Pmax)    | 200.6 W          |
| Optimum Operating Voltage (Vmp) | 28.5 V           |
| Optimum Operating Current (Imp) | 7.05 A           |
| Open Circuit Voltage (Voc)      | 34.8 V           |
| Short Circuit Current (Isc)     | 7.50 A           |

NOCT: Irradiance 800 W/m<sup>2</sup> ambient temperature 20 °C, AM=1.5, wind speed 1 m/s;  
Best in Class AAA solar simulator (IEC 60904-9) used, power measurement uncertainty is within +/- 3%

Current- Voltage & Power- Voltage Curve (275 -20)



STP270-20 /Wfw-MX

#### Electrical Characteristics

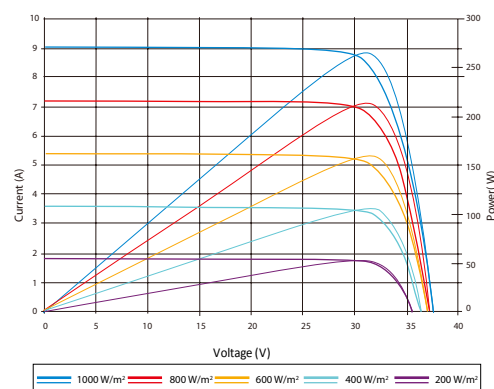
| STC                             | STP270-20/Wfw-MX |
|---------------------------------|------------------|
| Maximum Power at STC (Pmax)     | 270 W            |
| Optimum Operating Voltage (Vmp) | 31.1V            |
| Optimum Operating Current (Imp) | 8.69 A           |
| Open Circuit Voltage (Voc)      | 37.9 V           |
| Short Circuit Current (Isc)     | 9.15 A           |
| Module Efficiency               | 16.5%            |
| Operating Module Temperature    | -40 °C to +85 °C |
| Maximum System Voltage          | 1000 V DC (IEC)  |
| Maximum Series Fuse Rating      | 20 A             |
| Power Tolerance                 | 0/+5 W           |

STC: Irradiance 1000 W/m<sup>2</sup> module temperature 25 °C, AM=1.5;  
Best in Class AAA solar simulator (IEC 60904-9) used, power measurement uncertainty is within +/- 3%.

| NOCT                            | STP270-20/Wfw-MX |
|---------------------------------|------------------|
| Maximum Power at NOCT (Pmax)    | 198 W            |
| Optimum Operating Voltage (Vmp) | 28.4 V           |
| Optimum Operating Current (Imp) | 6.97 A           |
| Open Circuit Voltage (Voc)      | 34.9 V           |
| Short Circuit Current (Isc)     | 7.42 A           |

NOCT: Irradiance 800 W/m<sup>2</sup> ambient temperature 20 °C, AM=1.5, wind speed 1 m/s;  
Best in Class AAA solar simulator (IEC 60904-9) used, power measurement uncertainty is within +/- 3%.

Current- Voltage & Power- Voltage Curve (270 -20)



## LOWER COST of ENERGY

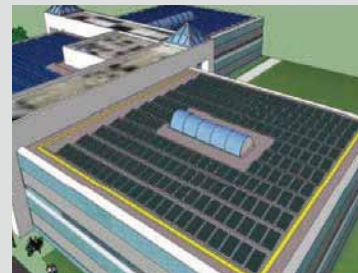
Improved performance with partially shaded modules yields significant energy gains.

#### ANNUALIZED ENERGY IMPROVEMENT

Enables 10-20% tighter row pitch at same energy production per panel.

Enables 1-3% more energy output per panel at same row pitch than conventional panel.

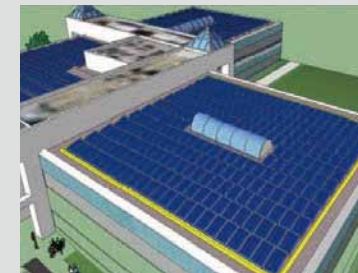
#### Conventional Design with Standard Array



|                         |          |
|-------------------------|----------|
| Panel Count             | 2,000    |
| Nameplate Capacity      | 500 kW   |
| GCR / Row Spacing       | 0.80     |
| Annual AC kWh / kW      | 1,588    |
| Annual AC Energy        | 794 MWh  |
| Cost of Energy \$ / kWh | \$ 0.124 |
| Internal Rate of Return | 11.2%    |

#### Cell-string Optimizer Module

##### Solar Cell-string Optimizer Design with High Density Array



|                         |          |
|-------------------------|----------|
| Panel Count             | 2,300    |
| Nameplate Capacity      | 575 kW   |
| GCR / Row Spacing       | 0.92     |
| Annual AC kWh / kW      | 1,588    |
| Annual AC Energy        | 913 MWh  |
| Cost of Energy \$ / kWh | \$ 0.105 |
| Internal Rate of Return | 13.1%    |

### Electrical Data

#### Temperature Characteristics

|  |            |
|--|------------|
| Nominal Operating Cell Temperature(NOCT) | 45±2°C     |
| Temperature Coefficient of Pmax          | -0.41 %/°C |
| Temperature Coefficient of Voc           | -0.33 %/°C |
| Temperature Coefficient of Isc           | 0.067 %/°C |

#### Mechanical Characteristics

|               |   |
|---------------|---|
| Solar Cell    | Polycrystalline silicon 6 inches  |
| No. of Cells  | 60 (6 × 10)   |
| Dimensions    | 1650 × 992 × 35mm (65.0 × 39.1 × 1.4 inches)  |
| Weight        | 18.3 kgs (40.3 lbs.)  |
| Front Glass   | 3.2 mm (0.13 inches) tempered glass   |
| Frame         | Anodized aluminium alloy  |
| Junction Box  | IP68 rated (3 bypass diodes)  |
| Output Cables | TUV (2Pfg1169:2007)<br>4.0 mm <sup>2</sup> (0.006 inches <sup>2</sup> ), symmetrical lengths (-) 1000mm (39.4 inches) and (+) 1000 mm (39.4 inches) |
| Connectors    | Genuine MC4   |

#### Packing Configuration

| Container             | 20'GP | 40'HC |
|-----------------------|-------|-------|
| Pieces per pallet     | 30    | 30    |
| Pallets per container | 6     | 28    |
| Pieces per container  | 180   | 840   |

#### Dealer information

