



## GPNE-S144/FNH 166 Half Cell Series

# 435-460w

144-CELL HALF CUT MONOCRYSTALLINE SOLAR MODULE



### Product Advantages



#### High Power Output

Compared to 158.75mm module, the power output can increase 25W-30W



#### High Reliability

Passed 3\*IEC standard test



#### Low Hot-spot Risk

1/2 current, reducing the hot spot temperature



#### Excellent loading capability

2400Pa wind loads, 5400Pa snow loads, 8000Pa extra support



#### Low NMOT

As low as 43°C, improving the power generation efficiency



#### Half Cell, MBB Technology

Series-then-parallel cell connection design, more reliable soldering technology

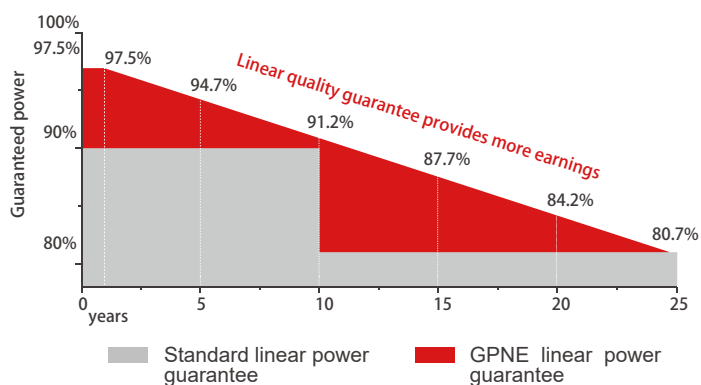
20.8%

Module efficiency

460W

Highest power output

### Product Guarantee



-2.50%

First year power degradation

-0.50%

Annual degradation

12  
Years

Materials and  
workmanship warranty

25  
Years

Linear power  
warranty

### Product Certification



# GPNE-S144/FNH

## Electrical Characteristics

| STC                             | 460              | 455    | 450    | 445    | 440    | 435    |
|---------------------------------|------------------|--------|--------|--------|--------|--------|
| Maximum Power at STC (Pmax)     | 460W             | 455W   | 450W   | 445W   | 440W   | 435W   |
| Optimum Operating Voltage (Vmp) | 41.8V            | 41.6V  | 41.4V  | 41.2V  | 41.V   | 40.8V  |
| Optimum Operating Current (Imp) | 11.01A           | 10.94A | 10.87A | 10.81A | 10.74A | 10.67A |
| Open Circuit Voltage (Voc)      | 49.6V            | 49.4V  | 49.2V  | 49.0V  | 48.8V  | 48.6V  |
| Short Circuit Current (Isc)     | 11.25A           | 11.68A | 11.61A | 11.54A | 11.47A | 11.4A  |
| Module Efficiency               | 20.8%            | 20.6%  | 20.4%  | 20.1%  | 19.9%  | 19.7%  |
| Operating Module Temperature    | -40 °C to +85 °C |        |        |        |        |        |
| Maximum System Voltage          | 1500 V DC (IEC)  |        |        |        |        |        |
| Maximum Series Fuse Rating      | 20 A             |        |        |        |        |        |
| Power Tolerance                 | 0/+5W            |        |        |        |        |        |

STC: Irradiance 1000 W/m<sup>2</sup>, module temperature 25 °C, AM=1.5; Tolerances of Pmax, Voc and Isc are all within +/- 5%.

| NMOT                            | 460     | 455     | 450     | 445   | 440    | 435    |
|---------------------------------|---------|---------|---------|-------|--------|--------|
| Maximum Power at NMOT (Pmax)    | 356.80W | 352.24W | 348.10W | 335W  | 331.2W | 327.5W |
| Optimum Operating Voltage (Vmp) | 39.6V   | 39.4V   | 39.2V   | 38.5V | 38.3V  | 38.1V  |
| Optimum Operating Current (Imp) | 9.01A   | 8.94A   | 8.88A   | 8.7A  | 8.65A  | 8.59A  |
| Open Circuit Voltage (Voc)      | 47.8V   | 47.6V   | 47.4V   | 46.8V | 46.6V  | 46.4V  |
| Short Circuit Current (Isc)     | 8.96A   | 9.42A   | 9.36A   | 9.19A | 9.14A  | 9.08A  |

NMOT: Irradiance 800 W/m<sup>2</sup>, ambient temperature 20 °C, AM=1.5, wind speed 1 m/s;

## Temperature Characteristics

|                                            |            |
|--------------------------------------------|------------|
| Nominal Module Operating Temperature(NMOT) | 42 ± 2 °C  |
| Temperature Coefficient of Pmax            | -0.37 %/°C |
| Temperature Coefficient of Voc             | -0.304%/°C |
| Temperature Coefficient of Isc             | 0.050 %/°C |

## Mechanical Characteristics

|               |                                                                      |
|---------------|----------------------------------------------------------------------|
| Solar Cell    | Monocrystalline silicon 166 mm (9BB)                                 |
| No. of Cells  | 144 (6 × 24)                                                         |
| Dimensions    | 2108 × 1048 × 40 mm                                                  |
| Weight        | 24 kgs                                                               |
| Front Glass   | 3.2 mmtempered glass                                                 |
| Frame         | Anodized aluminium alloy                                             |
| Junction Box  | IP68 rated (3 bypass diodes)                                         |
| Output Cables | 4.0 mm <sup>2</sup> , symmetrical lengths (-) 1400mm and (+) 1400 mm |

## Packing Configuration

| Container             | 20' GP | 40' HC |
|-----------------------|--------|--------|
| Pieces per pallet     | 26     | 26+1   |
| Pallets per container | 5      | 22     |
| Pieces per container  | 130    | 594    |

