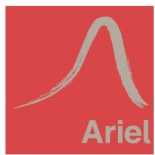


Tier1

BloombergNEF



Lloyd's Syndicate 1910



ISO14001

ISO9001

ISO45001



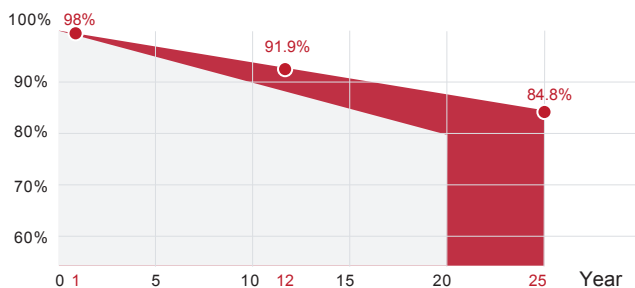
M6 HIEFF TWIN MONO

SPxxx-144M

- Full black (xxx=430~460W)
- Silver frame
- Black frame
- Bifacial

12Yr quality guarantee | 25Yr power warranty

■ SUNPRO Standard (Additional value from 25-year warranty)
 ■ Industry Standard



*SUNPRO Standard tiered warranty



WARRANTY & GUARANTEE

Linear output power guarantee
12 years: 91.9% power output
25 years: 84.8% power output



WITHSTAND STRONG

Snow load 5400Pa
Wind load 2400Pa



R&D AND PRODUCTION

Advanced production line. The leading solar cell cutting process and multi busbar design with SUNPRO Technology.



HIGH EFFICIENCY

Efficiency can reach 21.16%. Excellent low light performance. Higher power output under the conditions of haze, overcast, etc.



POWER TOLERANCE

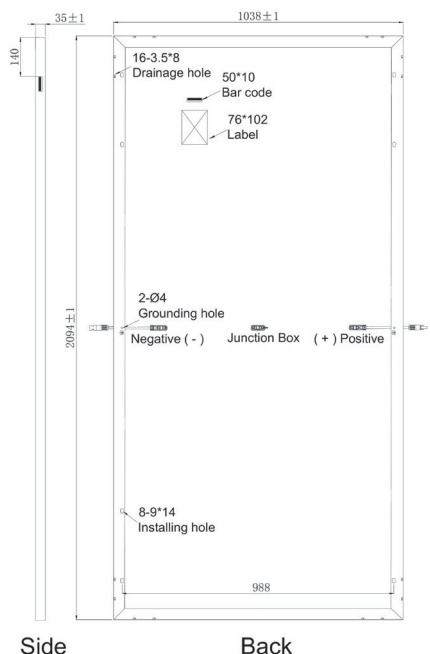
Power positive tolerance: 0~+3%

Electrical parameters at standard test conditions (STC:AM=1.5, 1000W/m², Cells Temperature 25°C)

Typical type

| | 430W | 435W | 440W | 445W | 450W | 455W | 460W |
|----------------------------|---------------|-------|-------|-------|-------|-------|-------|
| Max power(Pmax) | 430 | 435 | 440 | 445 | 450 | 455 | 460 |
| Max power voltage(Vmp) | 40.60 | 40.70 | 40.80 | 40.90 | 41.00 | 41.10 | 41.20 |
| Max power current(Impp) | 10.59 | 10.69 | 10.79 | 10.89 | 10.98 | 11.08 | 11.17 |
| Open circuit voltage(Voc) | 49.40 | 49.50 | 49.60 | 49.70 | 49.80 | 49.90 | 50.00 |
| Short circuit current(Isc) | 11.11 | 11.23 | 11.34 | 11.45 | 11.56 | 11.65 | 11.69 |
| Module Efficiency(%) | 19.78 | 20.01 | 20.24 | 20.47 | 20.70 | 20.93 | 21.16 |
| Max system voltage | DC 1500V(TUV) | | | | | | |
| Maximum Series Fuse Rating | 20A | | | | | | |

DIMENSIONS AND STRUCTURE



Electrical parameters at NMOT test conditions

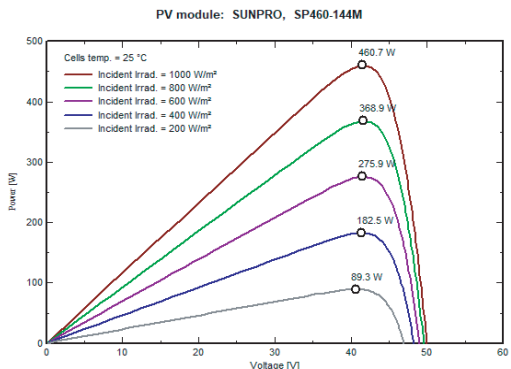
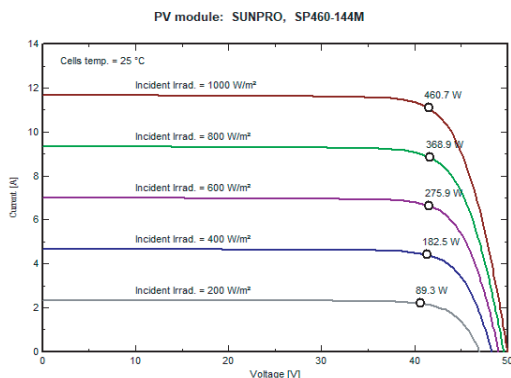
(Irradiance 800W/m², Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s)

| Typical type | 430W | 435W | 440W | 445W | 450W | 455W | 460W |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Max power(Pmax) | 349.8 | 353.9 | 358.0 | 362.2 | 366.0 | 370.2 | 374.3 |
| Max power voltage(Vmp) | 41.70 | 41.70 | 41.80 | 41.90 | 42.00 | 42.10 | 42.30 |
| Max power current(Impp) | 8.40 | 8.49 | 8.56 | 8.64 | 8.72 | 8.80 | 8.85 |
| Open circuit voltage(Voc) | 49.60 | 49.70 | 49.80 | 49.90 | 50.00 | 50.10 | 50.20 |
| Short circuit current(Isc) | 8.87 | 8.96 | 9.05 | 9.14 | 9.23 | 9.30 | 9.33 |

Mechanical Data

| | |
|-----------------|---|
| Dimensions | 2094x1038x35mm |
| Weight | 23.5 kg |
| Glass | 3.2mm tempered glass |
| Output cables | 4mm ² , symmetrical lengths 1300mm |
| Connectors | MC4 compatible IP68 |
| Cell type | Mono-Crystalline PERC, 9BB, 166x83mm |
| Number of cells | 144 cells (Half-Cell) |

I-V CHARACTERISTICS AT DIFFERENT IRRADIATION



Temperature Characteristics

Packing Configuration

| | | | |
|-----------------------------------|-----------|-----------------------|-------|
| Temp.Coeff.of Isc(TK Isc) | 0.05%/°C | Container | 40'HQ |
| Temp.Coeff.of Voc(TK Voc) | -0.29%/°C | Pieces per pallet | 66 |
| Temp.Coeff.of Pmax(TK Pmax) | -0.34%/°C | Pallets per container | 11 |
| Operating temperature | -40~+85°C | Pieces per container | 726 |
| Normal operating cell temperature | 44±2°C | | |

Tests, Certifications and Warranties

| | |
|-------------------------------------|---|
| Standard tests | IEC 61215, IEC 61730, IEC 61701, IEC 62716, PPP 58042 |
| System certs | ISO 9001, ISO14001, ISO45001 |
| Certifications | TUV, CE, WEEE, INMETRO FIRE CERTIFICATE C1 |
| Extreme wind and snow loads testing | Withstand extreme wind(2400 Pascal) and snow loads(5400 Pascal) |
| Power tolerance | 0~+3% |
| Junction box | IP 68 |
| Warranties | 12 years product warranty and 25 years 84.8% of power |