



M6 HIEFF TWIN MONO by SUNPRO

SPDGXXX-120M6
(XXX=360~380)

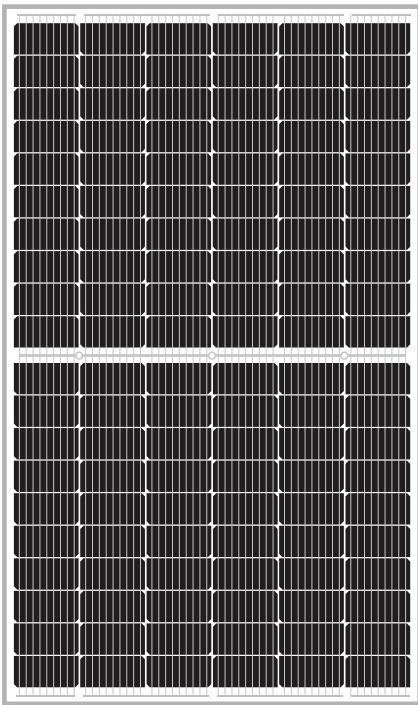
HIGH EFFICIENCY



ISO 14001

ISO 9001

ISO 45001



POWER TOLERANCE

0~+3%



WITHSTAND STRONG SNOW LOAD
5400 Pa/ WIND LOAD 2400 Pa



NEW TECHNOLOGY: HIEFF UP TO 20,86%

Higher yield per surface area,
lower BOS costs, higher power classes,
and an efficiency rate of up to 20.86%.

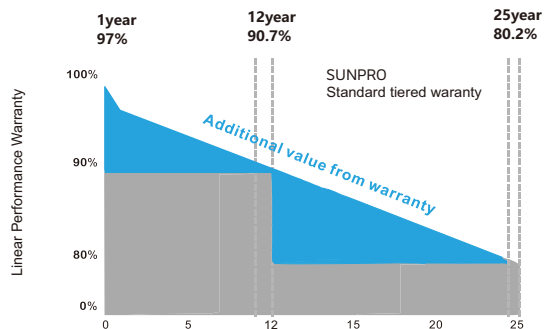


PRODUCT WITH HIEFF BY SUNPRO TECHNOLOGY

SUNPRO DUO combines cutting edge cell separation and innovative 9-busbar design with SUNPRO Technology.

Reliability & Certification

Product Guarantee: **12-year**
Linear Performance Warranty
12-year:90.7% power output
25-year:80.2% power output



Product Specification

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

| Typical type | 360W | 365W | 370W | 375W | 380W |
|-----------------------------|-------------------------------|-------|-------|-------|-------|
| Max power(Pmax) | 360 | 365 | 370 | 375 | 380 |
| Max power voltage(Vmp) | 33.80 | 34.00 | 34.20 | 34.40 | 34.60 |
| Max power current(Imp) | 10.66 | 10.74 | 10.82 | 10.91 | 10.99 |
| Open circuit voltage (Voc) | 40.60 | 40.80 | 41.00 | 41.20 | 41.40 |
| Short circuit current (Isc) | 11.20 | 11.27 | 11.34 | 11.43 | 11.51 |
| Module Efficiency(%) | 19.76 | 20.04 | 20.31 | 20.59 | 20.86 |
| Max system voltage | DC 1500V(TUV) / DC 1000V(TUV) | | | | |
| Maximum Series Fuse Rating | 25A | | | | |

Electrical parameters at NMOT test conditions

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

| Item | | | | | |
|-----------------------------|--------|--------|--------|--------|--------|
| Max power(Pmax) | 268.60 | 272.10 | 275.80 | 279.60 | 283.30 |
| Max power voltage(Vmp) | 31.50 | 31.70 | 31.90 | 32.10 | 32.30 |
| Max power current(Imp) | 8.52 | 8.58 | 8.64 | 8.71 | 8.77 |
| Open circuit voltage (Voc) | 37.90 | 38.00 | 38.20 | 38.40 | 38.60 |
| Short circuit current (Isc) | 9.05 | 9.10 | 9.16 | 9.23 | 9.30 |

Electrical Characteristics with 25% Rear Side Power Gain

| Item | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| Front power Pmax/W | 360 | 365 | 370 | 375 | 380 |
| Total power Pmax/W | 450 | 456 | 463 | 469 | 475 |
| Vmp/V(Total) | 33.90 | 34.10 | 34.30 | 34.50 | 34.70 |
| Imp/A(Total) | 13.27 | 13.38 | 13.48 | 13.59 | 13.69 |
| Voc/V(Total) | 40.70 | 40.90 | 41.10 | 41.30 | 41.50 |
| Isc/A(Total) | 13.81 | 13.91 | 14.00 | 14.23 | 14.34 |

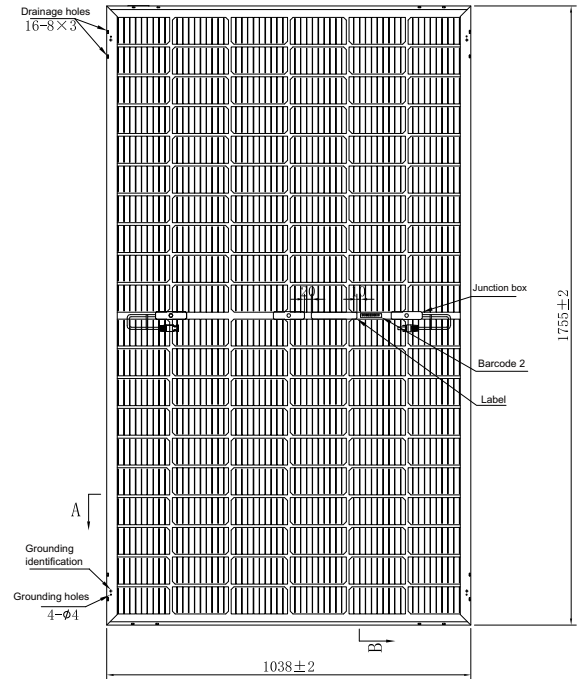
Mechanical Data

| Item | Specification |
|-----------------|---|
| Dimensions | 1755x1038x30mm |
| Weight | 22.5kg |
| Glass | 2.0mm+2.0mm High Transmission, AR Coated Heat Strengthened Glass |
| Output cables | 4mm ² symmetrical lengths 350mm |
| Connectors | MC4 compatible IP68 |
| Cell type | Mono-Crystalline PERC Half-Cell 9BB |
| Number of cells | 120 cells in series |

Test, Certifications and Warranties

| Item | Specification |
|-------------------------------------|--|
| Standard tests | IEC 61215, IEC 61730, IEC 61701, IEC 62716, PPP 58042B |
| System certs | ISO 9001, ISO14001, ISO45001 |
| Certifications | TUV, AMMONIA AND SALT MIST CORROSION, ANTI-PID, CE, WEEE, INMERTRO |
| Extreme wind and snow loads testing | Withstand extreme wind(2400 Pascal) and snow loads(5400 Pascal) |
| Power tolerance | 0~+3% |
| Junction box | IP68 |
| Warranties | 12 years product warranty and 25 years 80% of power |

Dimensions and Structure



Temperature Characteristics

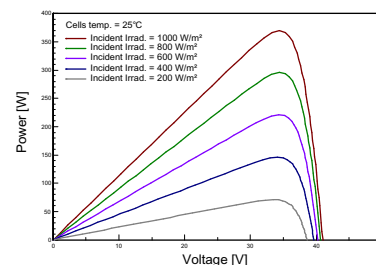
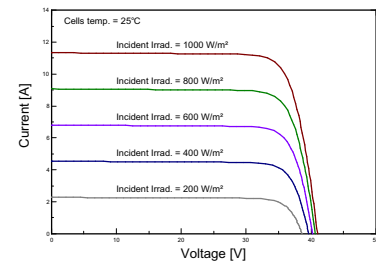
| Item | Specification |
|-----------------------------------|---------------|
| Temp.Coeff.of Isc(TK Isc) | 0.05%/°C |
| Temp.Coeff.of Voc(TK Voc) | -0.29%/°C |
| Temp.Coeff.of Pmax(TK Pmax) | -0.36%/°C |
| Operating temperature | -40~+85°C |
| Normal operating cell temperature | 44±2°C |

Packing Configuration

| Item | Specification |
|-----------------------|---------------|
| Container | 40'HQ |
| Pieces per pallet | 36 |
| Pallets per container | / |
| Pieces per container | 936 |

I-V Curve

I-V characteristics at different temperature





M6HIEFF TWIN MONO by SUNPRO

SP-DGXXX-144M6

(XXX=430~455)

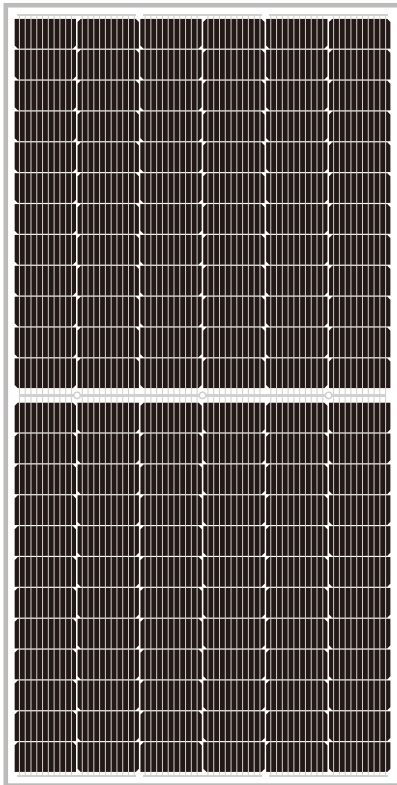
HIGH EFFICIENCY



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POWER TOLERANCE

0~+3%



WITHSTAND STRONG SNOW LOAD 5400 Pa/ WIND LOAD 2400 Pa



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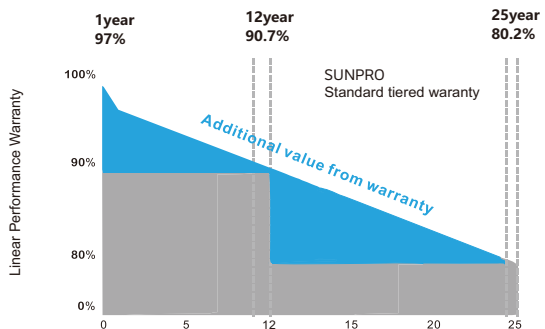


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12-year:90.7% power output
25-year:80.2% power output



Product Specification

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

| Typical type | 430W | 435W | 440W | 445W | 450W | 455W |
|-----------------------------|-------------------------------|-------|-------|-------|-------|-------|
| Max power(Pmax) | 430 | 435 | 440 | 445 | 450 | 455 |
| Max power voltage(Vmp) | 41.30 | 41.50 | 41.70 | 41.90 | 42.10 | 42.30 |
| Max power current(Imp) | 10.42 | 10.49 | 10.56 | 10.63 | 10.69 | 10.76 |
| Open circuit voltage (Voc) | 49.70 | 49.90 | 50.10 | 50.30 | 50.50 | 50.70 |
| Short circuit current (Isc) | 11.30 | 11.37 | 11.44 | 11.51 | 11.58 | 11.65 |
| Module Efficiency(%) | 19.78 | 20.01 | 20.24 | 20.47 | 20.70 | 20.93 |
| Max system voltage | DC 1500V(TUV) / DC 1000V(TUV) | | | | | |
| Maximum Series Fuse Rating | 25A | | | | | |

Electrical parameters at NMOT test conditions

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

| Item | | | | | | |
|-----------------------------|--------|--------|--------|--------|--------|--------|
| Max power(Pmax) | 322.60 | 326.30 | 329.90 | 333.60 | 337.10 | 340.80 |
| Max power voltage(Vmp) | 37.90 | 38.00 | 38.20 | 38.40 | 38.60 | 38.70 |
| Max power current(Imp) | 8.52 | 8.58 | 8.63 | 8.69 | 8.74 | 8.80 |
| Open circuit voltage (Voc) | 46.40 | 46.60 | 46.80 | 46.90 | 47.10 | 47.30 |
| Short circuit current (Isc) | 9.13 | 9.18 | 9.24 | 9.30 | 9.35 | 9.41 |

Electrical Characteristics with 25% Rear Side Power Gain

| Item | | | | | | |
|--------------------|-------|-------|-------|-------|-------|-------|
| Front power Pmax/W | 430 | 435 | 440 | 445 | 450 | 455 |
| Total power Pmax/W | 538 | 544 | 550 | 556 | 563 | 569 |
| Vmp/V(Total) | 41.40 | 41.60 | 41.80 | 42.00 | 42.20 | 42.40 |
| Imp/A(Total) | 13.00 | 13.08 | 13.16 | 13.24 | 13.33 | 13.41 |
| Voc/V(Total) | 49.80 | 50.00 | 50.20 | 50.40 | 50.60 | 50.80 |
| Isc/A(Total) | 13.65 | 13.73 | 13.81 | 13.89 | 14.44 | 14.52 |

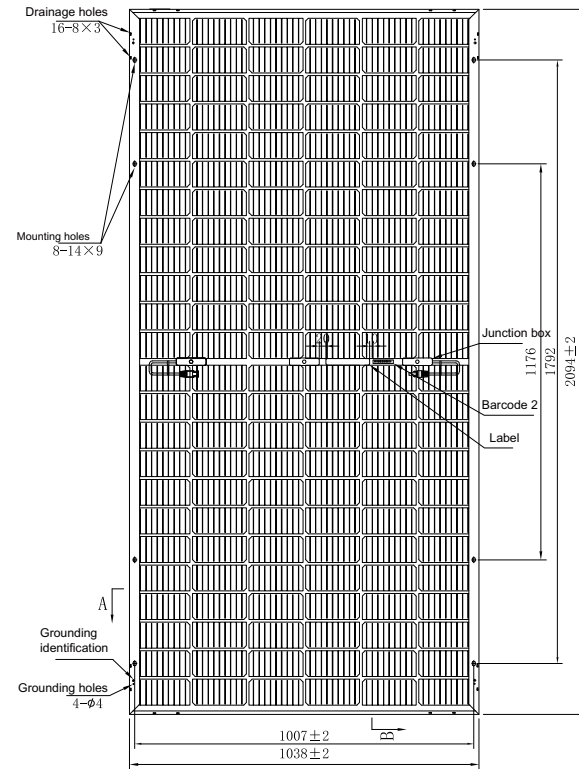
Mechanical Data

| Item | Specification |
|-----------------|---|
| Dimensions | 2094x1038x30mm |
| Weight | 28kgs |
| Glass | 2.0mm+2.0mm High Transmission, AR Coated Heat Strengthened Glass |
| Output cables | 4mm ² symmetrical lengths 350mm |
| Connectors | MC4 compatible IP68 |
| Cell type | Mono-Crystalline PERC Half-Cell 9BB |
| Number of cells | 144 cells in series |

Test, Certifications and Warranties

| Item | Specification |
|-------------------------------------|--|
| Standard tests | IEC 61215, IEC 61730, IEC 61701, IEC 62716, PPP 58042B |
| System certs | ISO 9001, ISO14001, ISO45001 |
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| Power tolerance | 0~+3% |
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| Operating temperature | -40~+85°C |
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Packing Configuration

| Item | Specification |
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| Container | 40'HQ |
| Pieces per pallet | 36 |
| Pallets per container | / |
| Pieces per container | 792 |

I-V Curve

I-V characteristics at different temperature

