



Lumina II



Super Power Output

SolarSpace advanced N-Type cells combined with MBB and high-density encapsulation provides ultra-high power output



High Reliability

Excellent harsh tests results and advanced half-cell tech improve product reliability for long-term life cycle



Extra Power Generation

N-type wafers and cells bring ultralow LID&LeTID degradation, less than 1% 1st year degradation guaranteed, in addition lower temperature coefficient and better weak-light response provide extra power generation



High ROI

Bifacial power generation reduces BOS and system LCOE dramatically, promoting the project ROI

SolarSpace Technology Co., Ltd. was established in 2011, as a world leading solar cell and module manufacturer, concentrating on high efficient solar-technology production with 55GW+ capacity of solar cell and ~8GW capacity of solar module in China and overseas.

*Please refer to SolarSpace for details

SSA-48HDB 430-450N

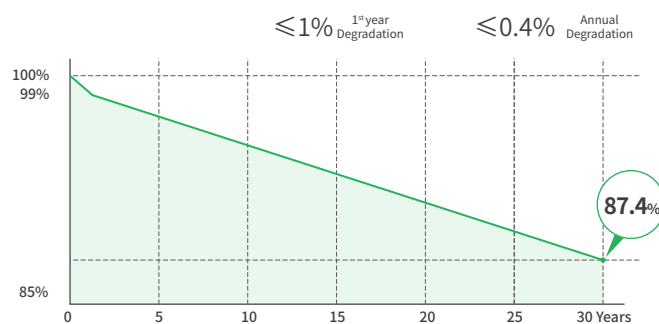
All Black Module

450W

Maximum Power Output

22.52%

Maximum Module Efficiency



25Years Product Warranty **30**Years Linear Power Warranty

Comprehensive Certificates

- IEC61215 •IEC61730
- IEC61701: Salt Mist Corrosion Test •IEC62716: Ammonia Corrosion Test
- IEC60068: Dust and Sand Test
- ISO9001: 2015: Quality Management System
- ISO14001: 2015: Environment Management System
- ISO45001: 2018: Occupational Health and Safety Management Systems



Electric Characteristics (STC)

| Module Type | SSA-48HDB | SSA-48HDB | SSA-48HDB | SSA-48HDB | SSA-48HDB |
|---------------------------------|-----------|-----------|-----------|-----------|-----------|
| | -430N | -435N | -440N | -445N | -450N |
| Maximum Power (Pmax) [W] | 430 | 435 | 440 | 445 | 450 |
| Open-Circuit Voltage (Voc) [V] | 34.48 | 34.66 | 34.84 | 35.02 | 35.20 |
| Maximum Power Voltage (Vmp) [V] | 29.37 | 29.55 | 29.73 | 29.91 | 30.09 |
| Short-Circuit Current (Isc) [A] | 15.84 | 15.89 | 15.94 | 15.99 | 16.04 |
| Maximum Power Current (Imp) [A] | 14.65 | 14.73 | 14.81 | 14.89 | 14.97 |
| Module Efficiency | 21.52% | 21.77% | 22.02% | 22.27% | 22.52% |

Irradiation 1000W/m², Cell Temperature 25°C, AM=1.5

Electric Characteristics (NMOT)

| Module Type | SSA-48HDB | SSA-48HDB | SSA-48HDB | SSA-48HDB | SSA-48HDB |
|---------------------------------|-----------|-----------|-----------|-----------|-----------|
| | -430N | -435N | -440N | -445N | -450N |
| Maximum Power (Pmax) [W] | 323 | 327 | 332 | 335 | 339 |
| Open-Circuit Voltage (Voc) [V] | 32.60 | 32.80 | 33.00 | 33.10 | 33.30 |
| Maximum Power Voltage (Vmp) [V] | 27.20 | 27.50 | 27.70 | 27.90 | 28.00 |
| Short-Circuit Current (Isc) [A] | 12.80 | 12.90 | 12.90 | 12.90 | 13.00 |
| Maximum Power Current (Imp) [A] | 11.90 | 11.90 | 12.00 | 12.00 | 12.10 |

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

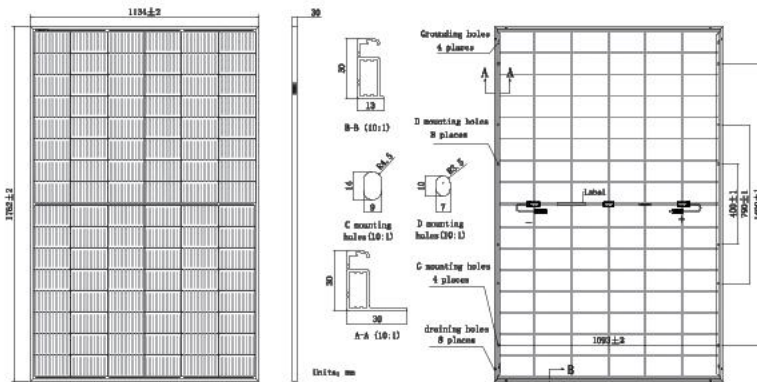
Bifacial Output-Rearside Power Gain (445W)

| Power Gain | 5% | 10% | 15% | 20% | 25% |
|---------------------------------|-------|-------|-------|-------|-------|
| Maximum Power (Pmax) [W] | 467 | 490 | 512 | 534 | 556 |
| Open-Circuit Voltage (Voc) [V] | 35.02 | 35.02 | 35.02 | 35.12 | 35.12 |
| Maximum Power Voltage (Vmp) [V] | 29.91 | 29.91 | 29.91 | 30.01 | 30.01 |
| Short-Circuit Current (Isc) [A] | 16.79 | 17.59 | 18.39 | 19.19 | 19.99 |
| Maximum Power Current (Imp) [A] | 15.62 | 16.37 | 17.11 | 17.79 | 18.54 |

Temperature Coefficients

| | |
|---------------------------------|------------|
| Temperature Coefficient of Isc | +0.045%/°C |
| Temperature Coefficient of Voc | -0.260%/°C |
| Temperature Coefficient of Pmax | -0.290%/°C |
| NMOT | 45 ± 2°C |

Engineering Design

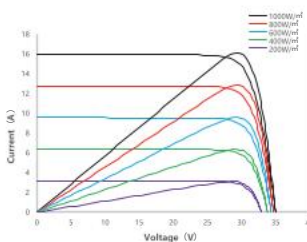


Mechanical Characteristics

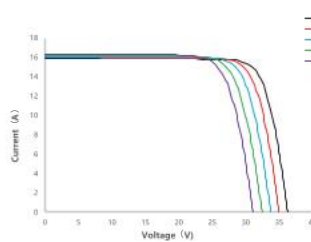
| | |
|-----------------|---|
| Cell Type | N-Type |
| Number of Cells | 96 (6x16) |
| Dimensions | 1762X1134X30mm |
| Weight | 24.5kg |
| Glass | Front glass, 2.0mm coated semi-tempered glass Back Glass, 2.0mm glazed semi-tempered glass |
| Frame | Black, Anodized Aluminum Alloy |
| Output Cables | 4mm ² (IEC), 300mm (including connector) |
| Junction Box | IP68 Rated, 3 diodes |
| Connector | PC-SS01 / PC-SS02 / MC4-EVO2 / MC4-EVO2A |
| Packaging | 36 Pieces / Pallet, 936 Pieces / 40' HQ Container |

Characteristics

I-V/P-V Curve at Different Irradiation
SSA-48HDB-445N



I-V Curve at Different Temperature
SSA-48HDB-445N



Operating Conditions

| | |
|----------------------------|----------------|
| Maximum System Voltage | 1500V DC (IEC) |
| Power Tolerance | 0~+3% |
| Operating Temperature | -40°C~+85°C |
| Maximum Series Fuse Rating | 35A |
| Mechanical Load Front Rear | 5400Pa |
| Mechanical Load Back Rear | 2400Pa |
| Bifaciality | 80 ± 10% |

