# SKYMAX series
## VL-450W-182M/120 BIFACIAL

**Bifacial Monocrystalline PERC Module**


| | |
|---|---|
| **1908×1134×35** | **182×91** |
| Module dimensions (mm) | Cell size (mm) |
| **120 CELL** | **425-450Wp** |
| Mono PERC module | Power output |
| **1500V DC** | **20.80%** |
| Max. system voltage | Max. efficiency |

## KEY FEATURES

**Higher Power Output**
Module power increases by 5-25% generally, bringing significantly lower LCOE and higher IRR. 0-5w positive tolerance output warranty.

**Most Advanced Production Technologies**
Optimize module current profile, improve system-side power generation.

**Multi Busbar Technology**
By improving optical utilization rate, power increases by 2~3% and efficiency increases by 0.4~0.6%.

**PID Resistance**
Excellent Anti-PID performance guarantee via optimized mass-production process and material control.

**Low-light Performance**
Excellent performance in low light.

**Enhanced Mechanical Load**
Certified to withstand: wind load (2400 Pa) and snow load (5400 Pa).

**Durability Against Extreme Environmental Conditions**
High salt mist and ammonia resistance certified by TUV NORD.

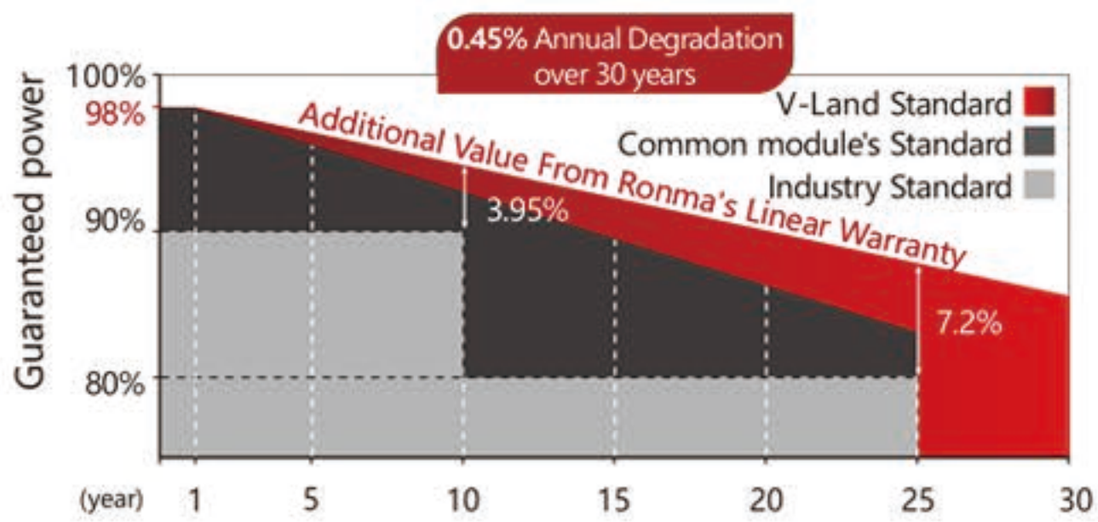
**EL Full Inspection**
Dual stage 100% EL Inspection warranting defect-free product.

**Comprehensive Products and System Certificates**

IEC61215/IEC61730/IEC61701/IEC62716
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse Gases Emissions Verification
OHSAS 18001: Occupational Health and Safety Management System

## LINEAR PERFORMANCE WARRANTY

12-year product warranty / 30-year linear power warranty



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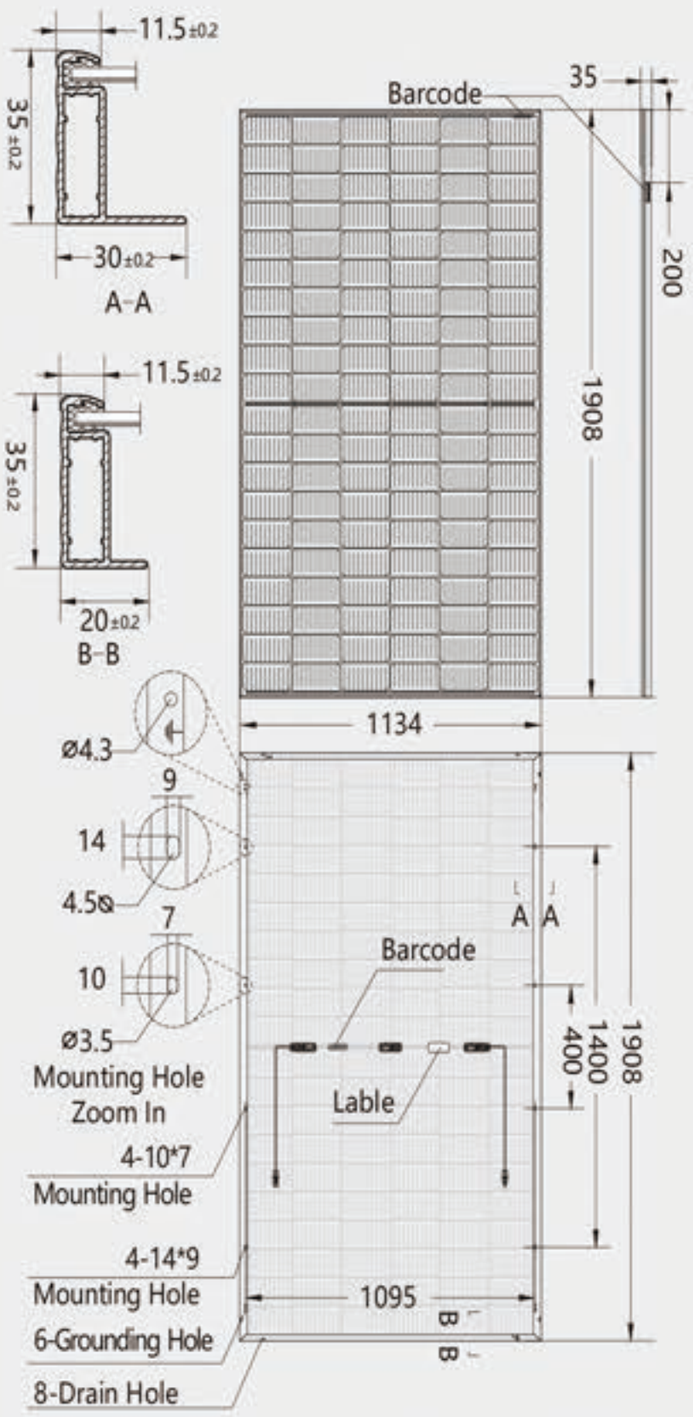
Bifacial Monocrystalline PERC Module

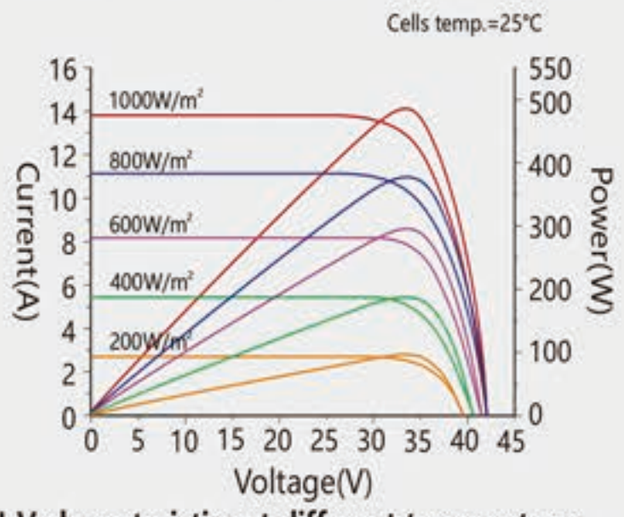
## Dimensions of PV Module

Unit: mm

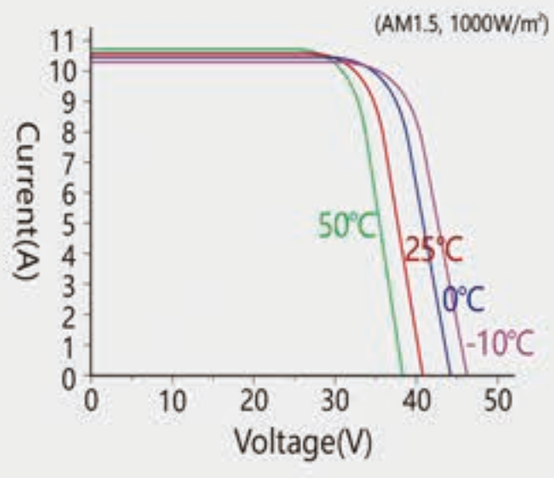



## VL-450W-182M/120B

**I-V characteristics at different irradiations**




**I-V characteristics at different temperatures**




## ELECTRICAL DATA(STC)

| Model Number | VL-425W-182M/120B | VL-430W-182M/120B | VL-435W-182M/120B | VL-440W-182M/120B | VL-445W-182M/120B | VL-450W-182M/120B |
|---|---|---|---|---|---|---|
| Rated Power in Watts-Pmax(Wp) | 425 | 430 | 435 | 440 | 445 | 450 |
| Open Circuit Voltage-Voc(V) | 40.42 | 40.63 | 40.86 | 41.02 | 41.21 | 41.40 |
| Short Circuit Current-Isc(A) | 13.48 | 13.56 | 13.65 | 13.73 | 13.81 | 13.89 |
| Max. Power Voltage-Vmpp(V) | 33.13 | 33.33 | 33.52 | 33.72 | 33.93 | 34.12 |
| Max. Power Current-Impp(A) | 12.83 | 12.91 | 12.98 | 13.05 | 13.12 | 13.19 |
| Module Efficiency(%) | 19.64 | 19.87 | 20.10 | 20.34 | 20.57 | 20.80 |

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM 1.5,
NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

**Electrical characteristics with different rear side power gain (reference to 450Wp front)**

| Bifacial Gain * | Pmax/W | Voc/V | Isc/A | Vmpp/V | Impp/A |
|---|---|---|---|---|---|
| 5% | 473 | 41.40 | 14.58 | 34.12 | 13.85 |
| 10% | 495 | 41.40 | 15.28 | 34.12 | 14.51 |
| 15% | 518 | 41.40 | 15.97 | 34.12 | 15.17 |
| 20% | 540 | 41.40 | 16.67 | 34.12 | 15.79 |
| 25% | 563 | 41.40 | 17.36 | 34.12 | 16.49 |
| 30% | 585 | 41.40 | 18.06 | 34.12 | 17.15 |

* Bifacial Gain: The additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

## MECHANICAL DATA

| | |
|---|---|
| Solar Cells | Monocrystalline |
| Cell Size | 182mm×91mm |
| Cell Configuration | 120 Cells (6×10+6×10) |
| Module Dimensions | 1908×1134×35mm |
| Weight | 28.5kg |
| Front Glass | High Transmission, Low Lron, Tempered Arc Glass 2.0mm |
| Back Glass | High Transmission, Low Lron, Tempered Arc Glass 2.0mm |
| Frame | Anodized Aluminium Alloy Type 6005 T6 , Silver Color |
| J-box | PV-RM01, IP68, 1500V DC, 3 Diodes |
| Cables | 4.0mm², (+) 300mm, (-) 300mm (connector Included) |
| Connector | MC4-compatible |

## TEMPERATURE & MAXIMUM RATINGS

| | |
|---|---|
| Nominal Operating Cell Temperature (NOCT) | 44℃ ± 2℃ |
| Temperature Coefficient of Voc | -0.27%/℃ |
| Temperature Coefficient of Isc | 0.04%/℃ |
| Temperature Coefficient of Pmax | -0.36%/℃ |
| Operational Temperature | -40℃ ~ +85℃ |
| Max. System Voltage | 1500V DC |
| Max. Series Fuse Rating | 25A |

## PACKAGING CONFIGURATION

| | 40ft (HQ) |
|---|---|
| Number of Modules Per Container | 744 |
| Number of Modules Per Pallet | 31 |
| Number of Pallets Per Container | 24 |
| Packaging Box Dimensions (l×w×h) (mm) | 1940×1120×1260 |
| Box Gross Weight (kg) | 764 |