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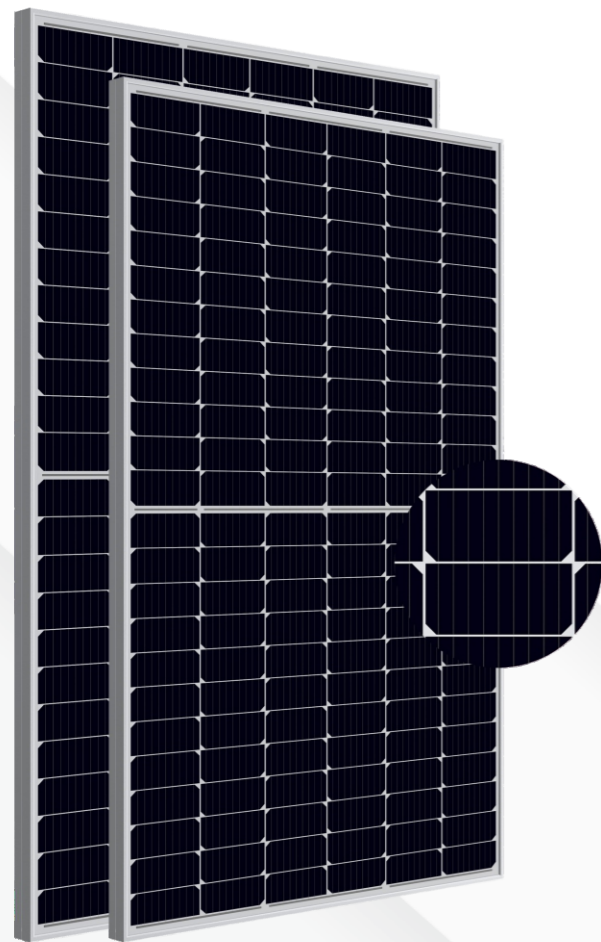
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EnergyPal

Solar Panel Guide Specification Data Sheet

**VSUN SOLAR
VSUN435-450-144MH
VSUN440-144MH**

Also available on the web at
EnergyPal.com/vsun-solar-solar-panels/vsun440-144mh

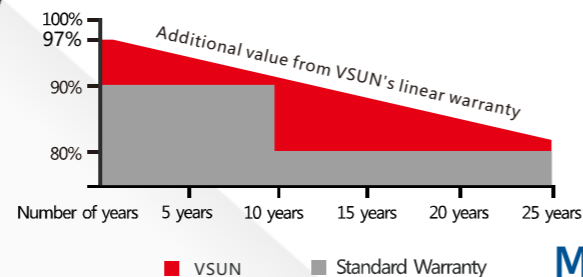


20.37%
Module efficiency

12 years
Material & Workmanship warranty

450W
Highest power output

25 years
Linear power output warranty



VSUN450-144MH

- 166mm Mono-PERC Cell
- Half-cell technology
- Lower LCOE and BOS
- MBB technology
- Lower risk of micro-crack
- Lower risk of hot spot
- Higher output power
- Positive tolerance offer
- Better shading tolerance

VSUN, a BNEF Tier-1 PV module manufacturer. Invested by Fuji Solar, VSUN is a Japanese solar module solutions provider.

Innovative & Smart – VSUN has been committed to providing greener, cleaner, and more intelligent renewable energy solutions. It is focusing on the new energy market and the development of customized and high-efficiency products.



Electrical Characteristics at Standard Test Conditions(STC)

| Module Type | VSUN450-144MH | VSUN445-144MH | VSUN440-144MH | VSUN435-144MH |
|----------------------------------|---------------|---------------|---------------|---------------|
| Maximum Power - Pmax (W) | 450 | 445 | 440 | 435 |
| Open Circuit Voltage - Voc (V) | 50 | 49.8 | 49.6 | 49.4 |
| Short Circuit Current - Isc (A) | 11.5 | 11.42 | 11.34 | 11.26 |
| Maximum Power Voltage - Vmpp (V) | 41.4 | 41.2 | 41 | 40.8 |
| Maximum Power Current - Imp (A) | 10.87 | 10.81 | 10.74 | 10.67 |
| Module Efficiency | 20.37% | 20.14% | 19.92% | 19.69% |

Standard Test Conditions (STC): irradiance 1,000 W/m²; AM 1.5; module temperature 25°C. Pmax Sorting : 0~5W. Measuring Tolerance: ±3%.
Remark: Electrical data do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

Electrical Characteristics at Normal Operating Cell Temperature(NOCT)

| Module Type | VSUN450-144MH | VSUN445-144MH | VSUN440-144MH | VSUN435-144MH |
|----------------------------------|---------------|---------------|---------------|---------------|
| Maximum Power - Pmax (W) | 333.8 | 330.4 | 326.6 | 322.2 |
| Open Circuit Voltage - Voc (V) | 46.3 | 46.2 | 46 | 46.1 |
| Short Circuit Current - Isc (A) | 9.3 | 9.24 | 9.17 | 9.08 |
| Maximum Power Voltage - Vmpp (V) | 38.2 | 38 | 37.9 | 37.7 |
| Maximum Power Current - Imp (A) | 8.75 | 8.69 | 8.62 | 8.56 |

Normal Operating Cell Temperature(NOCT) : irradiance 800W/m²; wind speed 1 m/s ; ambient temperature 20°C. Measuring Tolerance: ±3%.

Temperature Characteristics

| | |
|---------------------------------|-------------|
| NOCT | 45°C (±2°C) |
| Voltage Temperature Coefficient | -0.286%/°C |
| Current Temperature Coefficient | +0.057%/°C |
| Power Temperature Coefficient | -0.37%/°C |

Maximum Ratings

| | |
|----------------------------|------|
| Maximum System Voltage [V] | 1500 |
| Series Fuse Rating [A] | 20 |

Material Characteristics

| | |
|--------------------|--|
| Dimensions | 2108×1048×35mm (L×W×H) |
| Weight | 23.8kg |
| Frame | Anodized aluminum profile |
| Front Glass | White toughened safety glass, 3.2 mm |
| Cell Encapsulation | EVA (Ethylene-Vinyl-Acetate) |
| Back Sheet | Composite film |
| Cells | 12×12 pieces monocrystalline solar cells series strings |
| Junction Box | IP ₆₇ , 3 diodes |
| Cable&Connector | Potrait: 500 mm (cable length can be customized) , 1×4 mm ² , compatible with MC4 |

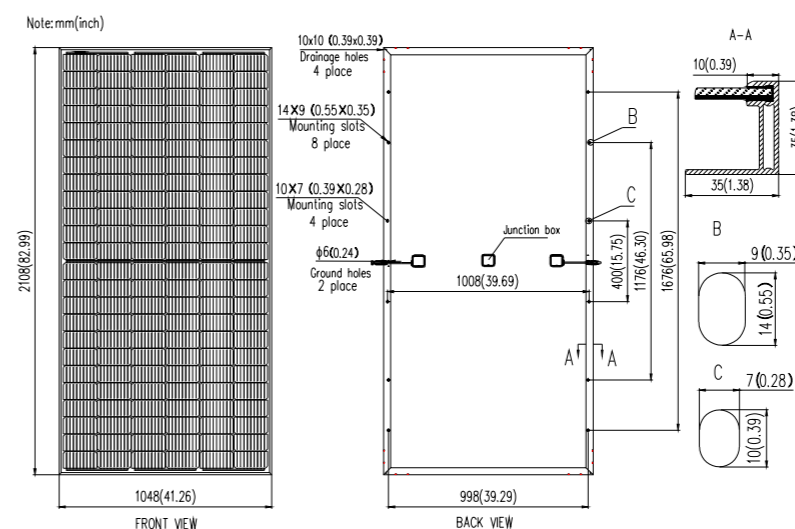
Packaging

| | |
|-------------------|------------------|
| Dimensions(L×W×H) | 2140×1105×1182mm |
| Container20' | 150 |
| Container40' | 660 |
| Container40'HC | 715 |

System Design

| | |
|----------------------|---|
| Temperature Range | -40 °C to + 85 °C |
| Withstanding Hail | Maximum diameter of 25 mm with impact speed of 23 m/s-1 |
| Maximum Surface Load | 5,400 Pa |
| Application class | class A |

Dimensions



IV-Curves

