

# VSUN415-132BMH

**415W**

Highest power output

**20.54%**

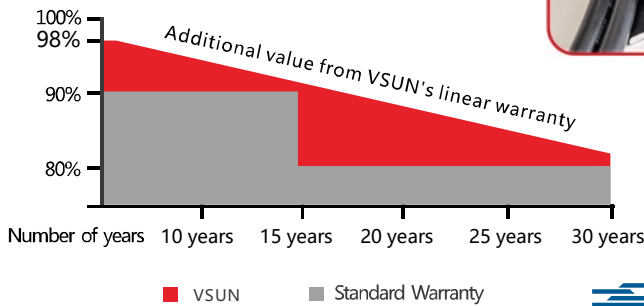
Module efficiency

**25years**

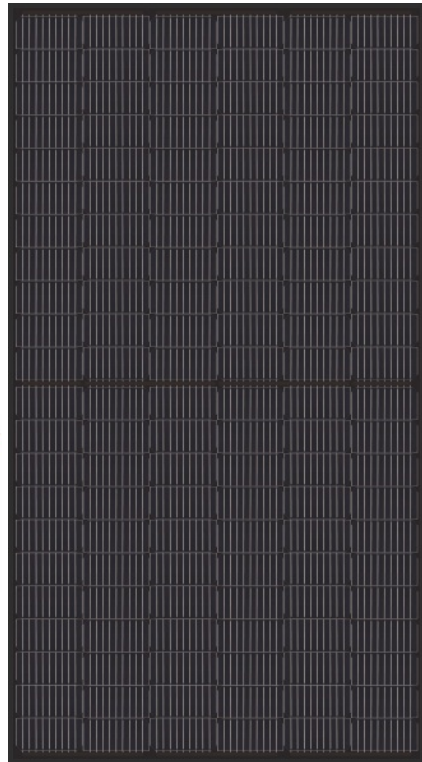
Material & Workmanship warranty

**30years**

Linear power output warranty



Integrated Wire Management



Munich RE



PERC Cell Technology



Higher output power



Lower risk of micro-crack



Positive tolerance offer



Lower risk of hot spot



Better shading tolerance



IEC61215 IEC61730  
UL61730 certificate



Certified for salt/ammonia  
corrosion resistance



Lower LCOE

VSUN, a BNEF Tier-1 PV module manufacturer invested by Fuji Solar, has been committed to providing greener, cleaner and more intelligent renewable energy solutions. VSUN is dedicated to bringing reliable, customized and high-efficient products into various markets and customers worldwide



Engineered in Japan  
[www.vsun-solar.com](http://www.vsun-solar.com)

## Electrical Characteristics at Standard Test Conditions(STC)

| Module Type                      | VSUN415-132BMH | VSUN410-132BMH | VSUN405-132BMH | VSUN400-132BMH |
|----------------------------------|----------------|----------------|----------------|----------------|
| Maximum Power - Pmax (W)         | 415            | 410            | 405            | 400            |
| Open Circuit Voltage - Voc (V)   | 45.5           | 45.3           | 45.1           | 44.9           |
| Short Circuit Current - Isc (A)  | 11.57          | 11.5           | 11.42          | 11.35          |
| Maximum Power Voltage - Vmpp (V) | 37.6           | 37.4           | 37.2           | 37             |
| Maximum Power Current - Impp (A) | 11.04          | 10.97          | 10.89          | 10.82          |
| Module Efficiency                | 20.54%         | 20.29%         | 20.04%         | 19.80%         |

Standard Test Conditions (STC): irradiance 1,000 W/m<sup>2</sup>; 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 with different rear side power gain(reference to 410 front)

| Pmax (W) | Voc (V) | Isc (A) | Vmpp (V) | Impp (A) | Pmax gain |
|----------|---------|---------|----------|----------|-----------|
| 431      | 45.3    | 12.08   | 37.4     | 11.52    | 5%        |
| 451      | 45.3    | 12.65   | 37.4     | 12.07    | 10%       |
| 492      | 45.4    | 13.80   | 37.30    | 13.16    | 20%       |
| 513      | 45.4    | 14.38   | 37.30    | 13.71    | 25%       |

## Temperature Characteristics

|                                 |            |
|---------------------------------|------------|
| NOCT                            | 45°C(±2°C) |
| Voltage Temperature Coefficient | -0.26%/°C  |
| Current Temperature Coefficient | +0.054%/°C |
| Power Temperature Coefficient   | -0.32%/°C  |

## Maximum Ratings

|                            |         |
|----------------------------|---------|
| Maximum System Voltage [V] | 1500    |
| Series Fuse Rating [A]     | 20      |
| Bifaciality                | 70%±10% |

## Material Characteristics

|                         |  |
|-------------------------|--|
| Dimensions (L*W*H)      | 1928 x 1048 x 35mm / 75.91 x 41.26 x 1.38 in   |
| Weight                  | 21.9kg / 48.28lbs  |
| Frame                   | Black anodized aluminum profile  |
| Front Glass             | AR-Coating toughened glass, 3.2 mm   |
| Cell Encapsulation Back | EVA or POE   |
| Sheet                   | Transparent black-mesh backsheet   |
| Cells                   | 11×12 pieces bifacial monocrystalline solar cells series strings                       |
| Junction Box            | IP68, 3 diodes,  |
| Cable&Connector Wire    | Cable length 2400 mm, Staubli MC4 connector  |
| Management              | Wire management system fits 6.1-6.7 mm OD wires including Solaredge and Enphase Cables |

## Packaging

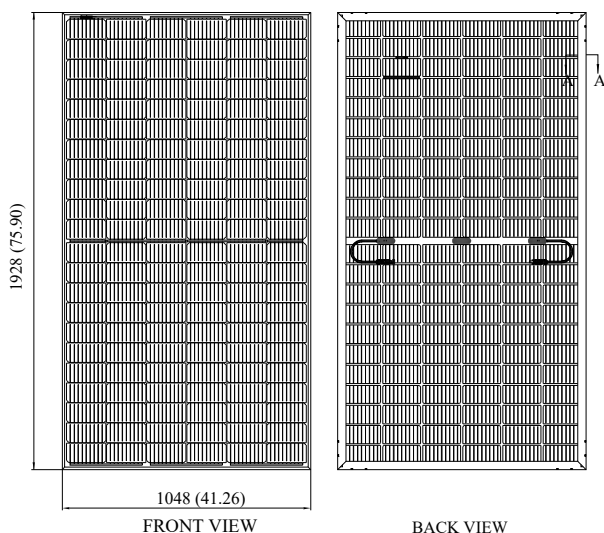
|                    |                      |
|--------------------|----------------------|
| Dimensions (L*W*H) | 1950×1125×1181mm     |
|                    | 76.77x44.29x46.50 in |
| Container 20'      | 155                  |
| Container 40'      | 744                  |
| Container 40'HC    | 744                  |

## System Design

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

## Dimensions

Note:mm (inch)



## IV-Curves

