

# **VSUN310-60M-BB**

VSUN310-60M-BB VSUN300-60M-BB VSUN290-60M-BB VSUN305-60M-BB VSUN295-60M-BB

19.09% Module efficiency

10 years

Material & Workmanship warranty

310W

Highest power output

25<sub>years</sub>

Linear power output warranty



PID-free



World class mono efficiency



Tighter product performance distribution and current sorting reduces the mismatch power loss in system operation



Positive tolerance offer



Good temperature coefficient enables higher output in high temperature regions



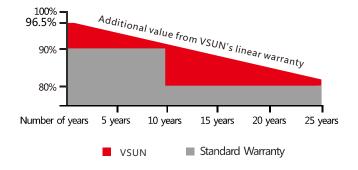
Excellent performance under low light conditions



Certified for salt/ammonia corrosion resistance



Load certificates: wind to 2400Pa and snow to 5400Pa



- 10-year product warranty
- 25-year linear power output warranty

Vietnam Sunergy Company Limited, founded in 2015 in Vietnam, is a high efficiency photovoltaic module manufacturer with its core business in manufacturing high quality solar modules and providing best services to customers.

With an elaborate plan on capacity, VSUN will deliver more than 500MW/year solar products to residential, commercial, utility and off-grid projects all around the world.

Through strict selection of raw materials, stringent quality control and rigorous tests, VSUN has always committed to higher efficiency, more stable and better cost effective products supply.

#### Note:

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# **Electrical Characteristics at Standard Test Conditions(STC)**

Module Type	VSUN310-60M-BB	VSUN305-60M-BB	VSUN300-60M-BB	VSUN295-60M-BB	VSUN290-60M-BB
Maximum Power - Pmax (W)	310	305	300	295	290
Open Circuit Voltage - Voc (V)	40.2	39.9	39.8	39.1	38.9
Short Circuit Current - Isc (A)	9.8	9.72	9.6	9.44	9.36
Maximum Power Voltage - Vmpp (V)	32.6	32.4	32.2	31.8	31.7
Maximum Power Current - Impp (A)	9.51	9.42	9.31	9.27	9.14
Module Efficiency	19.09%	18.79%	18.48%	18.17%	17.86%

Standard Test Conditions (STC): irradiance 1,000 W/m²; AM 1,5; module temperature 25°C. Tolerance of Pmpp: 0~+3%.

Measuring uncertainty of power: ±3%. Certified in accordance with IEC 61215, IEC 61730-1/2 and UL 1703.

### **Electrical Characteristics at Normal Operating Cell Temperature(NOCT)**

Module Type	VSUN310-60M-BB	VSUN305-60M-BB	VSUN300-60M-BB	VSUN295-60M-BB	VSUN290-60M-BB
Maximum Power - Pmax (W)	232	228	224	221	218
Open Circuit Voltage - Voc (V)	37.4	37.1	37	36.6	36.4
Short Circuit Current - Isc (A)	7.91	7.85	7.75	7.62	7.56
Maximum Power Voltage - Vmpp (V)	31	30.8	30.7	30.6	30.5
Maximum Power Current - Impp (A)	7.48	7.41	7.31	7.21	7.15
Normal Operating Cell Temperature (NOCT): irradiance 800W/m <sup>2</sup> ; wind speed 1 m/s: cell temperature 45°C; ambient temperature 20°C.					

Measuring uncertainty of power: ±3%. Certified in accordance with IEC 61215, IEC 61730-1/2 and UL 1703.

**Temperature Characteristics** 

#### **Maximum Ratings**

NOCT	45°C ( ±2°C )	Maximum System Voltage [V]	1000
Voltage Temperature Coefficient	-0.29%/K	Series Fuse Rating [A]	20
Current Temperature Coefficient	+0.05%/K		
Power Temperature Coefficient	-0.39%/K		

#### **Material Characteristics**

Dimensions	1640×990×35mm (L×W×H)
Weight	18.3kg
Frame	Black anodized aluminum profile
Front Glass	White toughened safety glass, 3.2 mm
Cell Encapsulation	EVA (Ethylene-Vinyl-Acetate)
Back Glass	Composite film
Cells	6×10 pieces monocrystalline solar cells series strings (156.75mm×156.75mm)
Junction Box	Rated current≥13A, IP≥67, TUV&UL
Cable&Connector	Length 1200 mm 1×4 mm <sup>2</sup> compatible with MC4

**Packaging** 

## **System Design**

Dimensions(LÔWÔH)	1680×1110×112mm	Temperature Range	-40 °C to + 85 °C
Container 20'	360	Withstanding Hail	Maximum diameter of 25 mm with impact
Container 40'	840		speed of 23 m/s
Container 40'HC	896	Maximum Surface Load 5,400 Pa	
		Application class	class A
		Safety class	class II

