

## NEOSUN™ Ultra 144

NEOSUN™ Ultra is the top performance reference solar module series. Based on the advanced mono wafer and PERC Half-cut technology, Ultra offers as much power as 420W with outstanding cell efficiency up to 23.2% and 20.8% module efficiency.

Thanks to the Half-Cut technology, the cell internal resistance is reduced, which provides an additional module power even while shading, cloudy weather, and in low light conditions.

23.2%

### EXCELLENT CELLS EFFICIENCY

Advanced 9BB solar cells with PERC technology provide efficiency up to 23.2% (up to 20.8% module efficiency)



Weak Sunlight

### EXCELLENT WEAK LIGHT PERFORMANCE

Solar modules from NEOSUN Energy have excellent weak light performance (morning, evening and cloudy days)

+3%

### POSITIVE POWER TOLERANCE

Guarantee from 0 to +3% as power tolerance, you can obtain more power than conventional output



### SAND AND SALT PROTECTION

Reliable quality leads to a better sustainability even in harsh environment like desert or coastline

25

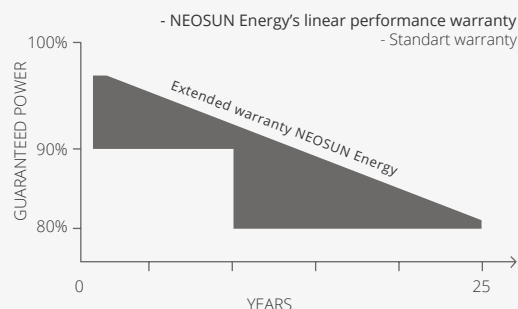
### YEARS POWER WARRANTY

Even after 25 years our solar panel keeps at least 80% of its initial power output – because it's NEOSUN



### HIGH WIND AND SNOW RESISTANCE

NEOSUN Energy modules withstand snow load of up to 550 kg/m<sup>2</sup> and wind speed of up to 162km/h



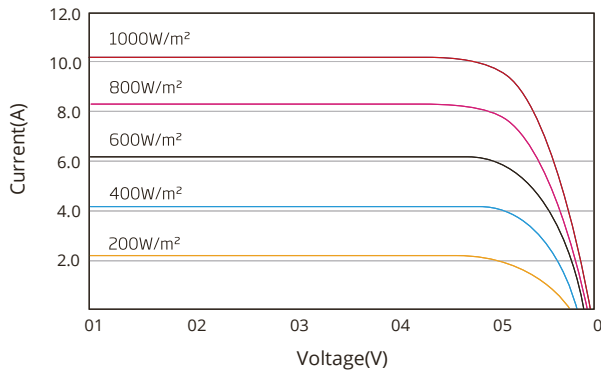
For a period of twenty-five (25) years commencing on the Warranty Start Date, loss of power output of the nominal power output measured at Standard Test Conditions (STC) for the Product(s) shall not exceed:

1. For Polycrystalline Products: 2% in the first year, thereafter 0.67% per year ending with 82% in the 25th year after the Warranty Start Date.
2. For Monocrystalline Products: 3% in the first year, thereafter 0.67% per year, ending with 81% in the 25th year after the Warranty Start Date.

The Warranty Start Date shall be defined as the date of the Bill of Lading date

### I-V curves

I-V Curves of PV module NEOSUN 410W at different light power

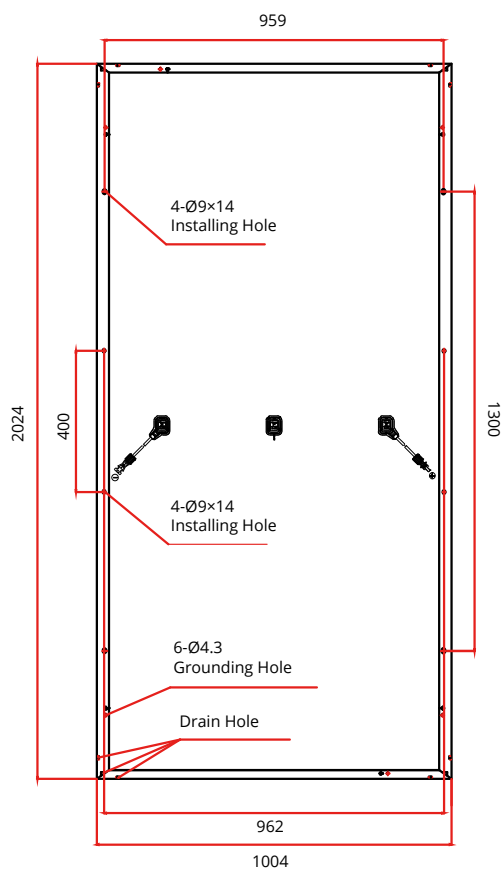


### Electrical characteristics

Solar cells:	Mono PERC 144 cells 9BB, 6x24 pcs		
Max Power	410W	415W	420W
Power Tolerance	+5W		
Voltage at Pmax (Vmp)	41.0V	41.2V	41.4V
Current at Pmax (Imp)	10.00A	10.07A	10.15A
Open-Circuit Voltage (Voc)	50.2V	50.4V	50.7V
Short-Circuit Current (Isc)	10.47A	10.56A	10.64A
Module Efficiency	20.18%	20.42%	20.67%
Max-System Voltage (VDC)	1500V(IEC), 1500V(UL)		
No. of Bypass Diodes (pcs.)	3		
Max Series Fuse (A)	20A		
Temperature Coefficient of Pmax	-0.36% / °C		
Temperature Coefficient of Voc	-0.29% / °C		
Temperature Coefficient of Isc	0.05% / °C		
Nominal Operating Cell t°C	45 ± 2°C		

\*STC Conditions (1000W/m<sup>2</sup>; 1.5 AM and 25°C Cell temperature)

### Dimensions



### Mechanical Characteristics

Cable type, Diameter and Length	Ø =4mm <sup>2</sup> , L=300±5mm
Type of Connector	Compatible type MC4
Dimension AxBxC	2024x1004x35mm
Weight	23 kg
Front Glass	Tempered with AR coating
Junction Box (protection degree)	IP68 Rated
Frame	Clear anodized aluminum alloy

### Qualification Test Parameters

Dielectric Insulation Voltage	6000VDC max
Operating Temperature	-40°C to +85°C
Max load	5400Pa
Hailstone impact	25mm at 23m/s
Fire safety class	Class C

### Packaging Configuration

Container	20'GP	40'HQ
Pieces per pallet	30	30
Pallets per container	10	22
Pieces per container	300	660

**Caution: read safety and installation instructions before using this product**