

**520 Watt**

**144 Half Cell Monocrystalline Module**



**Ultra-light:** Glass free module weighs 8.6 kg, 70% lighter than conventional glass modules.



**Fast-Installation:** Through "Quick-Bonding" installation, SUNO requires no penetration, reduces time on roof by 40% and eliminates the use of mounting hardware.



**Safety:** Seamless integration with underlying installation surface, ensuring the waterproof performance and safety performance of the roof.



**Durable:** SUNO-UL is the first glassless module to pass the same durability tests as conventional glass modules, including IEC 61215:2016, IEC61730:2016 and UL1703 (USA). SUNO-UL has also passed PID, salt mist 8 level tests.

POWER OUTPUT RANGE 520 W

POWER TOLERANCE 0-5 W

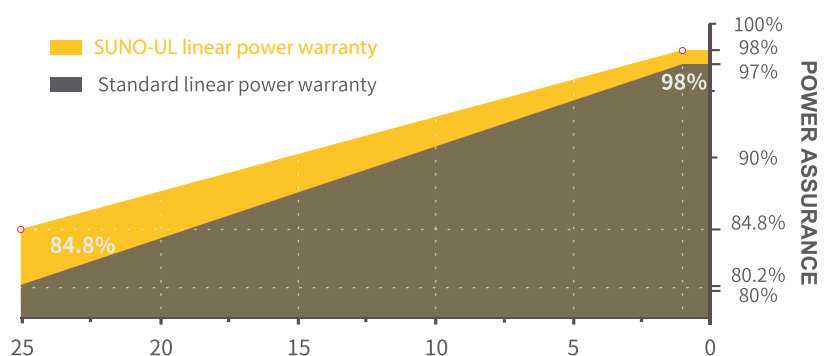
**12 Year Product Warranty**

**25 Year Linear Power Warranty**

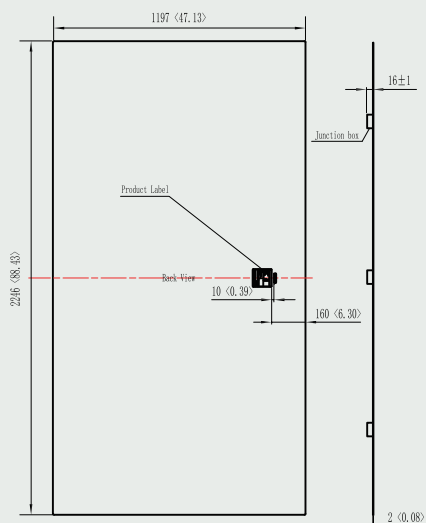


**LINEAR PERFORMANCE WARRANTY**

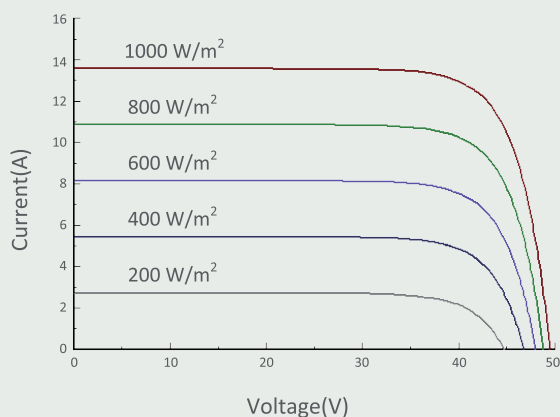
CAUTION: Read installation manual before using the product.  
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## DIMENSIONS



## I-V CURVE (520)



## TEMPERATURE CHARACTERISTICS

Nominal Module Operating Temperature(NMOT)	41
Temperature Coefficient of $P_{max}$	-0.38 ±2 °C
Temperature Coefficient of $V_{oc}$	-0.28 %/°C
Temperature Coefficient of $I_{sc}$	0.020 %/°C



## ELECTRICAL CHARACTERISTICS

STC	SUNO-U520F-12X12UW
Maximum Power ( $P_{max}$ )	520
Maximum Power Voltage ( $V_{mp}$ )	42.3
Maximum Power Current ( $I_{mp}$ )	12.31
Open-circuit Voltage ( $V_{oc}$ )	49.5
Short-circuit Current ( $I_{sc}$ )	13.56
Module Efficiency (%)	19.3
Operating Temperature	-40 °C to 85 °C
Maximum System Voltage	1500 V DC (IEC)
Maximum Series Fuse Rating	25 A
Application Class	Class A
Power Tolerance	0/+5 W

STC: Irradiance 1000W/m<sup>2</sup>, Cell temperature 25 °C, AM=1.5.

Tolerances of  $P_{max}$ ,  $V_{oc}$  and  $I_{sc}$  are within ±5%

NMOT	SUNO-U520F-12X12UW
Maximum Power ( $P_{max}$ )	429.2
Maximum Power Voltage ( $V_{mp}$ )	41.8
Maximum Power Current ( $I_{mp}$ )	10.26
Open-circuit Voltage ( $V_{oc}$ )	49.8
Short-circuit Current ( $I_{sc}$ )	10.82

NMOT: Irradiance 800W/m<sup>2</sup>, Ambient temperature 20 °C, AM=1.5, Wind speed 1 m/s.

## MECHANICAL CHARACTERISTICS

Solar Cell	Monocrystalline silicon (182mm half cell)
No. of Cells	144 (12×12)
Module Dimensions	2246×1197×2 mm
Weight	8.6kg
Backsheet	White
Frame	Frameless
J-box	IP 68 rated
Output Cables	Photovoltaic technology cable 4.0 mm 2, (+)450 / (-)450 mm
Connector	MC4 compatible

## PACKAGING CONFIGURATION

	20' GP	40' HC
Module per pallet	66	66
Pieces per container	264	1122