

# Sunpro Max Series

N-Type 182 High Efficiency Bifacial Module

Module efficiency

**23.04%**

Power Output

**435-450W**



Better leveled cost of energy



Better high temperature stability

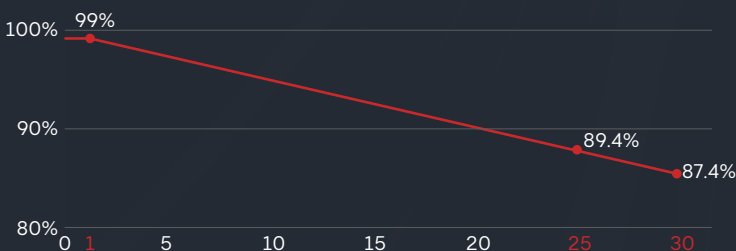


Improved low-light performance



Excellent bifacial performance

Linear performance guarantee for 30 years



## WARRANTY

Extended warranty is available at additional cost

Quality Guarantee **15** years

Power Warranty **30** years

## CERTIFICATE



Model of modules	SPDG435-N108M10		SPDG440-N108M10		SPDG445-N108M10		SPDG450-N108M10	
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Power ( Pmax/W )	435	325.00	440	329.00	445	332.4	450	336.2
Maximum power voltage ( Vmp )	31.94	29.80	32.09	29.90	32.25	30	32.41	30.1
Maximum power current ( Imp )	13.62	10.91	13.72	11.00	13.8	11.08	13.89	11.16
Open circuit voltage ( Voc )	38.43	36.00	38.53	36.10	38.64	36.2	38.75	36.3
Short circuit current ( Isc )	14.34	11.56	14.43	11.63	14.53	11.71	14.63	11.79
Module efficiency	22.28%		22.53%		22.79%		23.04%	

STC ( Electrical parameters at standard test conditions (STC:AM=1.5, 1000W/m<sup>2</sup>, Cells Temperature 25°C )

NMOT ( Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, AM1.5, Wind Speed 1m/s )

**ELECTRICAL CHARACTERISTICS WITH 15% REAR SIDE POWER GAIN**

Front power Pmax/W	500.25	506.00	511.75	517.50
Maximum power voltage ( Vmp )	31.94	32.09	32.25	32.41
Maximum power current ( Imp )	15.66	15.77	15.87	15.97
Open circuit voltage ( Voc )	38.43	38.53	38.64	38.75
Short circuit current ( Isc )	16.49	16.59	16.71	16.82

**STRUCTURAL CHARACTERISTICS**

Module size (L*W*H)	1722x1134x30mm (67.80x44.65x1.18in)
Weight	23.3kg (51.37lb)
Cell	108 cells, N type Mono-Crystalline , 182mm×91mm (7.17in×3.58in)
Front glass	2.0mm , Anti-Reflection Coating
Back glass	2.0mm , Heat Strengthened Glass
Frame	Anodized aluminum alloy
Junction box	IP68 , 3 bypass diodes
Output wire	4mm <sup>2</sup>
Wire length	Line length 1100mm (43.31in) /customized
Connector	Stäubli MC4
Packing Specification	36 pcs/Pallet ; 936pcs/40' HQ

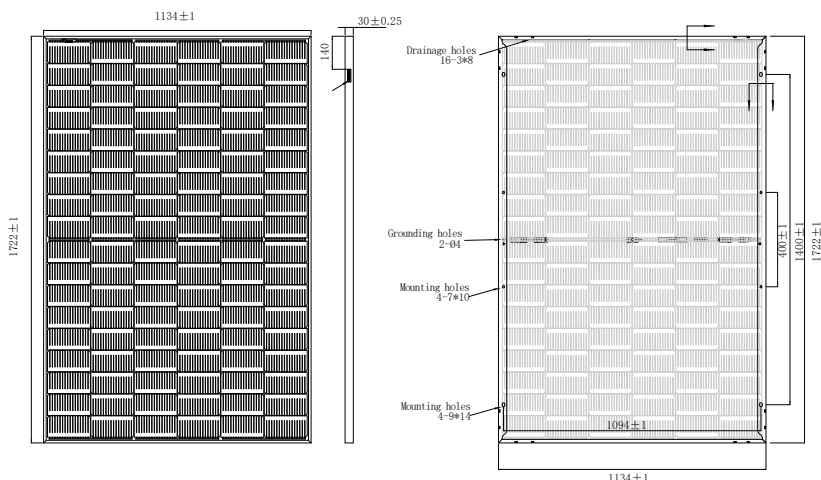
**OPERATING PARAMETERS**

Power tolerance (W)	(0~+5W)
Maximum system voltage (V)	1500V
Maximum rated fuse current (A)	30A
Current operating temperature (C)	-40~+85°C
Mechanical load	+8000Pa/-5400Pa

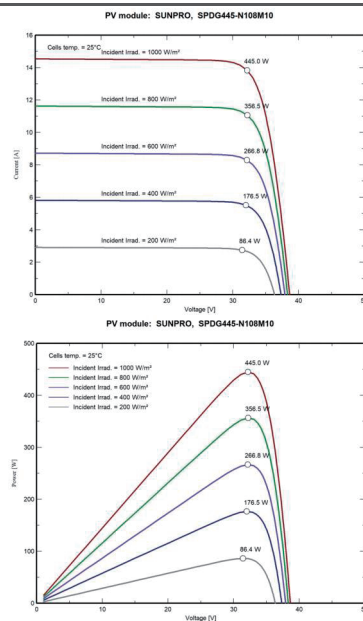
**TEMPERATURE CHARACTERISTICS**

Temp. Coeff. of Isc (TK Isc)	0.046% / °C
Temp. Coeff. of Voc (TK Voc)	-0.25% / °C
Temp. Coeff. of Pmax (TK Pmax)	-0.30% / °C
Normal Operating Cell Temperature	45±2°C

**MODULE DIMENSIONS(MM)**



**I-V CHARACTERISTICS AT DIFFERENT IRRADIATION**



**SUNPRO POWER NORTH AMERICA INC.**

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\*All data may have a lag, for reference only. Sunpro has the final right of interpretation.