



Sunpro **Max** Series

N-type High Efficiency Bifacial Module

Module efficiency

23.04%

Power Output

435-450W



Lower levelized cost of energy



Superior high-temperature stability

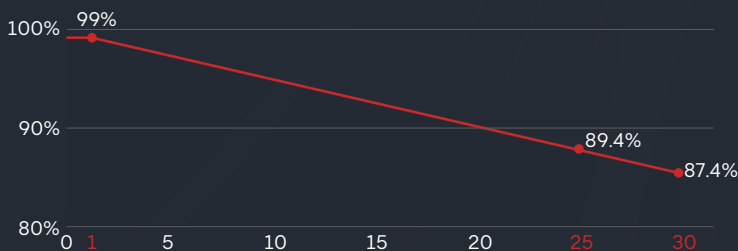


Enhanced low-irradiance performance



Excellent bifacial power gain performance

Linear power output warranty for 30 years



WARRANTY

Extended warranty available upon request at additional cost

Quality Guarantee **15** years

Power Warranty **30** years

CERTIFICATE



ELECTRICAL CHARACTERISTICS

SPDG (435/450W)-N108M10

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/m², Cells Temperature25°C)

NMOT (Irradiance 800W/m², 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, 182x91mm(7.17x3.58in)
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 ²
Wire length	Line length 1100mm (43.31in) /customized
Connector	Stäubli MC4
Packing Specification	36 pcs/Pallet; 936pcs/40' HQ

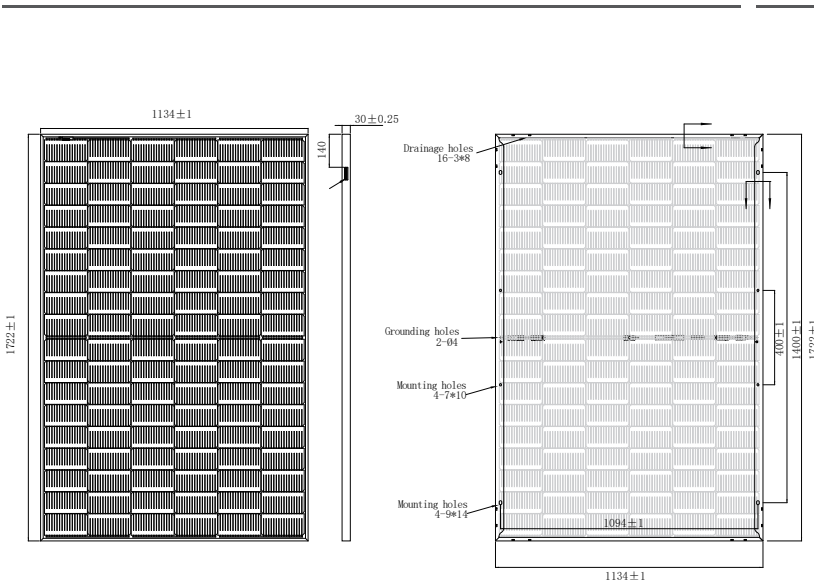
OPERATING PARAMETERS

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

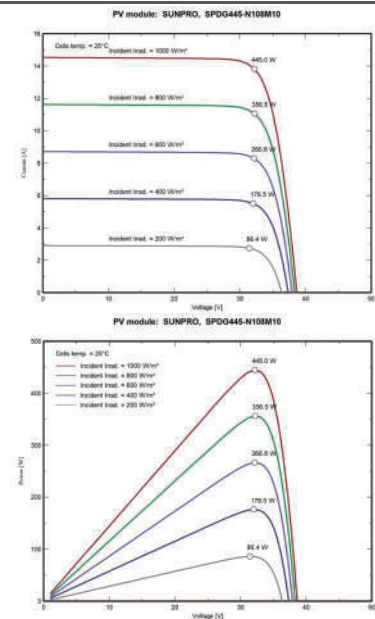
TEMPERATURE CHARACTERISTICS

Temp. Coefficient of Isc(TK Isc)	0.046% / °C
Temp. Coefficient of Voc (TK Voc)	-0.25% / °C
Temp. Coefficient of Pmax (TK Pmax)	-0.30% / °C
Operating temperature range	45±2°C

MODULE DIMENSIONS(MM)



I-V CHARACTERISTICS AT DIFFERENT IRRADIATION



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*All data are subject to slight deviations and are for reference only. Sunpro reserves the right of final interpretation.