

SP415-144M HALF-CUT

405W/410W/415W

High Efficiency Mono Half-cut Photovoltaic Module



Power tolerance

0~±3%



Withstand strong snow load

5400 Pa / wind load 2400 Pa



Excellent low light performance

3.5% relative eff.reduction at low-irradiance(200W/m²)

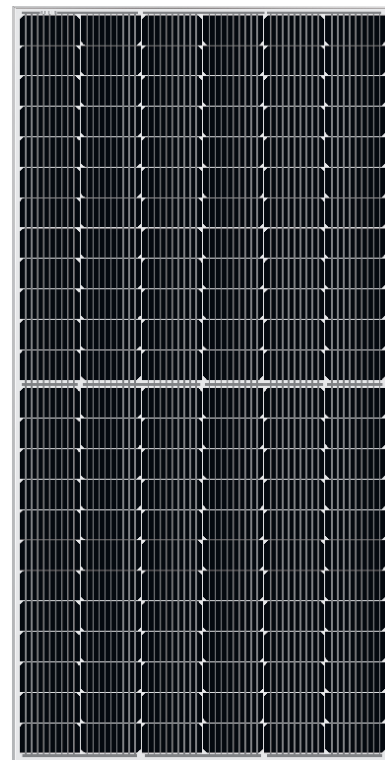


100% EL online Inspection

Better module reliability



AMMONIA & SALT RESISTANCE PID FREE



Reliability & Certification

Product Guarantee: 10-year

Linear Performance Warranty

10-year : 90.7% power output

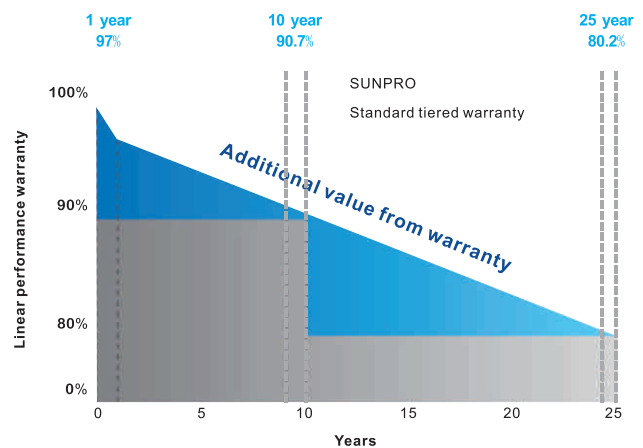
25-year : 80.2% power output



ISO 14001

ISO 9001

OHSAS 18001



Product Specification

Electrical parameters at standard test conditions
(STC:AM=1.5,1000W/m²,Cells Temperature 25°C)

Typical type	405W	410W	415W
Max power(Pmax)	405	410	415
Max power voltage(Vmp)	40.6	40.8	41.0
Max power current(Imp)	9.98	10.05	10.13
Open circuit voltage(Voc)	49.5	49.7	49.9
Short circuit current(Isc)	10.48	10.55	10.64
Module Efficiency(%)	19.93	20.18	20.42
Max system voltage	DC 1500V(TUV) / DC 1000V(TUV)		
Maximum Series Fuse Rating	15A		

Mechanical Data

Item	Specification
Dimensions	2024x1004x40mm
Weight	22.5kgs
Front glass	3.2mm tempered glass
Output cables	4mm² symmetrical lengths 900mm
Connectors	MC4 compatible IP67
Cell type	Mono-Crystalline PERC Half-Cut 5BB 9BB 12BB 78mm x 156mm
Number of cells	144 cells in series

Temperature Characteristics

Item	Specification
Temp.Coeff.of Isc(TK Isc)	0.049%/°C
Temp.Coeff.of Voc(TK Voc)	-0.29%/°C
Temp.Coeff.of Pmax(TK Pmax)	-0.39%/°C
Operating temperature	-40~+85°C
Normal operating cell temperature	45±2°C

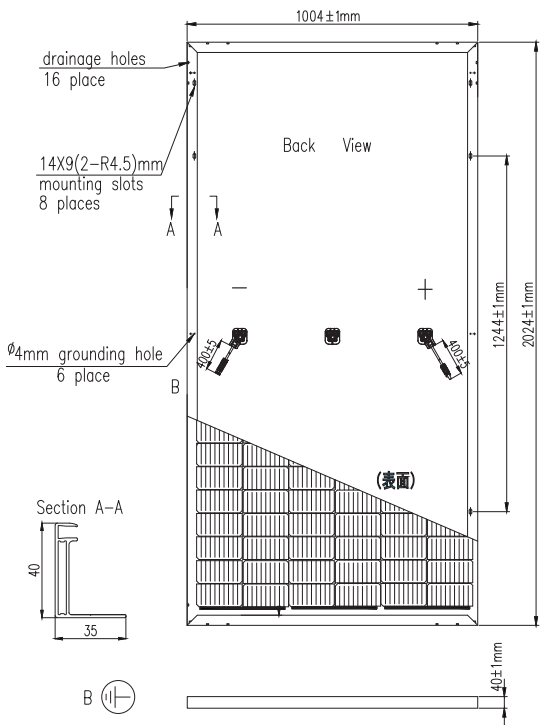
Packing Configuration

Item	Specification
Container	40'HQ
Pieces per pallet	56
Pallets per container	11
Pieces per container	616

Tests, Certifications and Warranties

Item	Specification
Standard tests	IEC 61215, IEC 61730
System certs	ISO 9001, ISO14001, OHSAS 18001
Certifications	TUV,CE,WEEE,INMETRO
Extreme wind and snow loads testing	Withstand extreme wind(2400 Pascal) and snow loads(5400 Pascal)
Power tolerance	0~±3%
Junction box	IP67
Warranties	10 years product warranty and 25 years 80% of power

Dimensions and Structure



I-V Curve

