

# M6 HIEFF TWIN MONO by SUNPRO

SPXXX-144M  
(XXX=435~455)

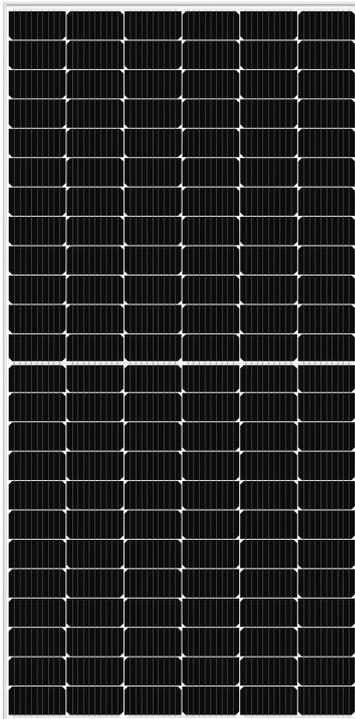
HIGH EFFICIENCY



ISO 14001

ISO 9001

ISO 45001



### POWER TOLERANCE

0~+3%



**WITHSTAND STRONG SNOW LOAD**  
5400 Pa/ WIND LOAD 2400 Pa



### NEW TECHNOLOGY:

**HIEFF UP TO 20,93%**

Higher yield per surface area,  
lower BOS costs, higher power classes,  
and an efficiency rate of up to 20.93%.

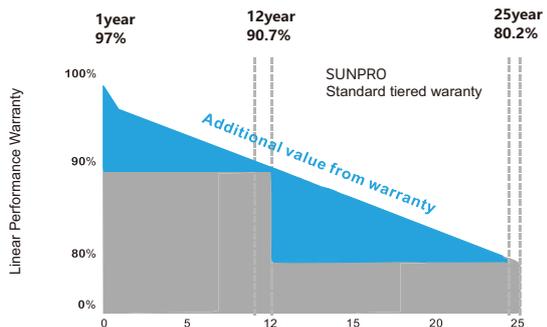


### PRODUCT WITH HIEFF BY SUNPRO TECHNOLOGY

SUNPRO DUO combines cutting edge cell  
separation and innovative 9-busbar design  
with SUNPRO Technology.

## Reliability & Certification

Product Guarantee: **12-year**  
Linear Performance Warranty  
**12-year:90.7%** power output  
**25-year:80.2%** power output



## Product Specification

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

Typical type	435W	440W	445W	450W	455W
Max power(Pmax)	435	440	445	450	455
Max power voltage(Vmp)	40.7	40.8	40.9	41.0	41.1
Max power current(Imp)	10.69	10.79	10.89	10.98	11.08
Open circuit voltage (Voc)	49.5	49.6	49.7	49.8	49.9
Short circuit current (Isc)	11.23	11.34	11.45	11.56	11.65
Module Efficiency(%)	20.08	20.31	20.54	20.77	20.93
Max system voltage	DC 1500V(TUV) / DC 1000V(TUV)				
Maximum Series Fuse Rating	20A				

## Mechanical Data

Item	Specification
Dimensions	2094x1038x35mm
Weight	24.2kgs
Front glass	3.2mm tempered glass
	4mm <sup>2</sup>
Output cables	symmetrical lengths 1100mm
Connectors	Mc4 compatible IP68
Cell type	Mono-Crystalline PERC Half-Cell 83mmx166mm
Number of cells	144 cells

## Temperature Characteristics

Item	Specification
Temp.Coeff.of Isc(TK Isc)	0.049%/°C
Temp.Coeff.of Voc(TK Voc)	-0.26%/°C
Temp.Coeff.of Pmax(TK Pmax)	-0.34%/°C
Operating temperature	-40~+85°C
Normal operating cell temperature	45±2°C

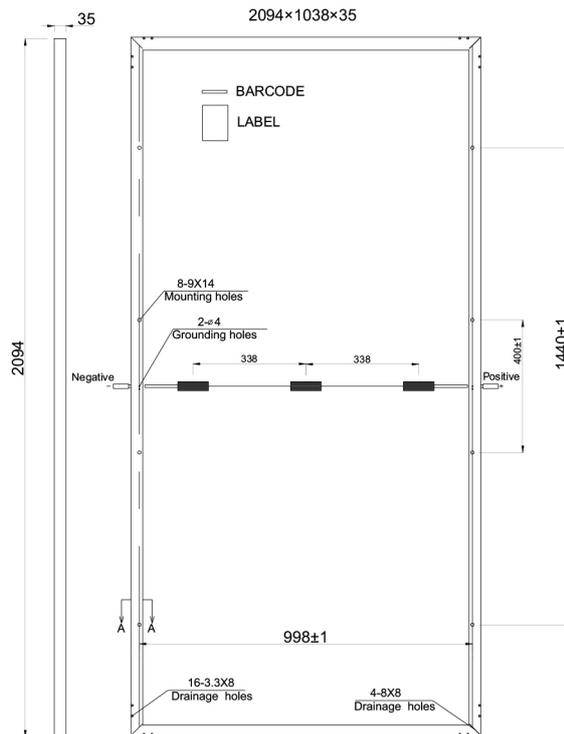
## Packing Configuration

Item	Specification
Container	20'GP      40'GP      40'HQ
Pieces per pallet	60            60            64
Pallets per container	5             11            11
Pieces per container	300          660          704

## Test, Certifications and Warranties

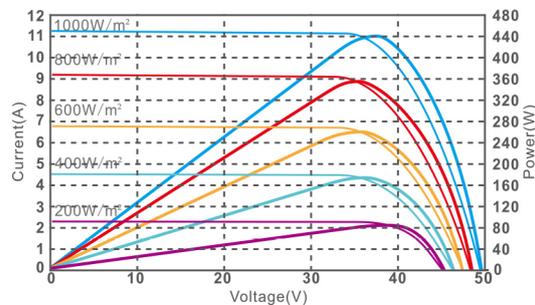
Item	Specification
Standard tests	IEC 61215, IEC 61730, EC 61701, IEC 62716, PPP 58042B
System certs	ISO 9001, ISO14001, ISO45001
Certifications	TUV, AMMONIA AND SALT MIST CORROSION, ANTI-PID, CE, WEEE, INMERTRO
Extreme wind and snow loads testing	Withstand extreme wind(2400 Pascal) and snow loads(5400 Pascal)
Power tolerance	0~+3%
Junction box	IP68
Warranties	12 years product warranty and 25 years 80% of power

## Dimensions and Structure



## I-V Curve

I-V characteristics at different irradiances



I-V characteristics at different temperature

