



# M10 HIEFF TWIN MONO by SUNPRO

SPDGxxx-108M10

(xxx=390~410)

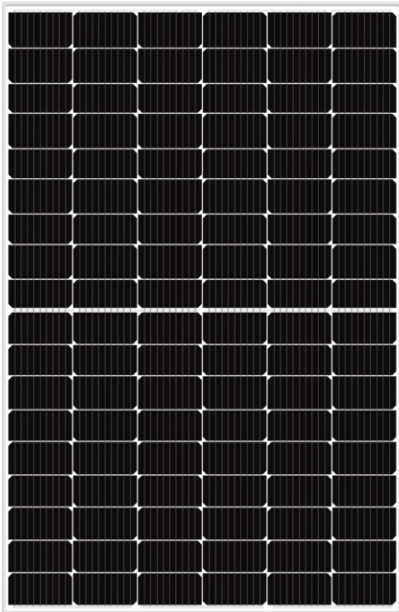
HIGH EFFICIENCY



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 20,97%

Higher yield per surface area,  
lower BOS costs, higher power classes,  
and an efficiency rate of up to 20.97%.

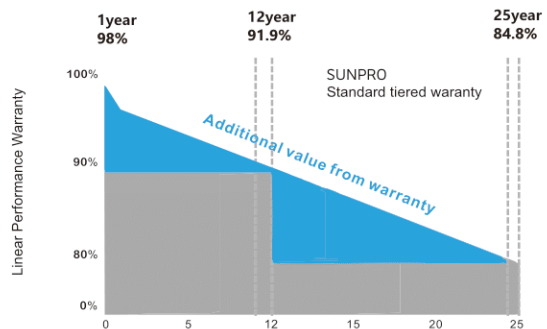


## PRODUCT WITH HIEFF BY SUNPRO TECHNOLOGY

SUNPRO DUO combines cutting edge cell  
separation and innovative 10-busbar design  
with SUNPRO Technology.

## Reliability & Certification

Product Guarantee: **12-year**  
Linear Performance Warranty  
**12-year: 91.9%** power output  
**25-year: 84.8%** 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	390W	395W	400W	405W	410W
Max power(Pmax)	390	395	400	405	410
Max power voltage(Vmp)	30.41	30.62	30.83	31.04	31.25
Max power current(Imp)	12.83	12.90	12.98	13.05	13.12
Open circuit voltage (Voc)	36.53	36.73	36.93	37.13	37.33
Short circuit current (Isc)	13.62	13.69	13.76	13.83	13.90
Module Efficiency(%)	19.95	20.20	20.46	20.72	20.97
Max system voltage	DC 1500V(TUV) / DC 1000V(TUV)				
Maximum Series Fuse Rating	30A				

## Electrical parameters at NMOT test conditions

(NMOT:Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s)

Item					
Max power(Pmax)	291.50	295.20	299.00	302.70	306.30
Max power voltage(Vmp)	28.30	28.50	28.70	28.90	29.10
Max power current(Imp)	10.28	10.34	10.41	10.47	10.54
Open circuit voltage (Voc)	34.30	34.50	34.70	34.80	35.00
Short circuit current (Isc)	10.94	11.00	11.06	11.13	11.19

## Electrical Characteristics with 25% Rear Side Power Gain

Item					
Front power Pmax/W	390	395	400	405	410
Total power Pmax/W	488	494	500	506	513
Vmp/V(Total)	30.60	30.80	31.00	31.20	31.40
Imp/A(Total)	15.93	16.03	16.13	16.23	16.32
Voc/V(Total)	36.80	37.00	37.20	37.40	37.60
Isc/A(Total)	16.87	16.97	17.06	17.16	17.27

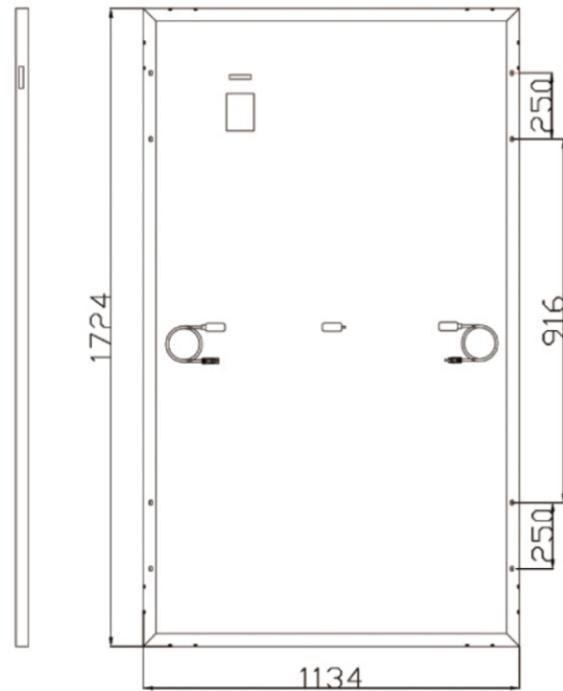
## Mechanical Data

Item	Specification
Dimensions	1724x1134x30mm
Weight	24.5kg
Glass	2.0mm+2.0mm High Transmission, AR Coated Heat Strengthened Glass
Output cables	4mm <sup>2</sup> symmetrical lengths 1100mm
Connectors	MC4 compatible IP68
Cell type	Mono-Crystalline PERC Half-Cell 10BB
Number of cells	108 cells in series

## Test, Certifications and Warranties

Item	Specification
Standard tests	IEC 61215, IEC 61730, IEC 61701, IEC 62716, PPP 58042B
System certs	ISO 9001, ISO14001, ISO45001
Certifications	TUV, 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 84.8% of power

## Dimensions and Structure



## Temperature Characteristics

Item	Specification
Temp.Coeff.of Isc(TK Isc)	0.05%/°C
Temp.Coeff.of Voc(TK Voc)	-0.29%/°C
Temp.Coeff.of Pmax(TK Pmax)	-0.34%/°C
Operating temperature	-40~+85°C
Normal operating cell temperature	44±2°C

## Packing Configuration

Item	Specification
Container	40'HQ
Pieces per pallet	72
Pallets per container	13
Pieces per container	936

## I-V Curve

I-V characteristics at different temperature

