

marvel[®] Tech

MSP-470 W HJT B

30

30-year quality warranty with longer operational life

1500V

1500V high system voltage design



Fire class A, harsh environment adaptability

Consist of double-glass, with special design cells, Outstanding anti-PID performance.



30 -year power warranty

Bifacial module ensures 30-year outdoor operation, longer than the conventional type of normally 25 years.



Elegant appearance & high performance

The bifacial module is of high light transmittance to ensure good performance, an advanced solution that enables more energy generation, light capturing and elegant appearance.



1500V system voltage

Maximum 1500V DC system voltage , excellent insulation performance and lower total system cost.

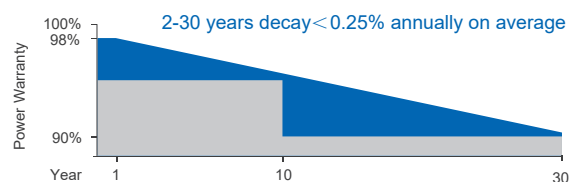
LINEAR PERFORMANCE WARRANTY

12 years

Product warranty on materials and workmanship

30 years

Linear power output warranty



CERTIFICATES

ISO 9001: 2015
Quality Management System

IEC 61215 / IEC 61730

ISO 14001: 2015
Environmental Management System

OHSAS 18001: 2007
Occupational Health &
Safety Management System

*Certification requirements vary in different markets, please consult with Marvel Optronics sales team for appropriate certification.



ELECTRICAL PARAMETERS @ STC

Parameter	455	460	465	470	475
Max. Power Output Pmax (W)	455	460	465	470	475
Power Tolerance	0~+3%	0~+3%	0~+3%	0~+3%	0~+3%
Max. Power Voltage Vmp (V)	45.10	45.30	45.50	45.70	45.90
Max. Power Current Imp (A)	10.09	10.15	10.22	10.28	10.35
Open Circuit Voltage Voc (V)	53.05	53.35	53.65	53.95	54.25
Short Circuit Current Isc (A)	10.90	10.94	10.98	11.02	11.06
Module Efficiency (%)	20.93	21.16	21.39	21.62	21.85

*STC (Standard Test Condition): Irradiance 1000W/m², Cell Temperature 25°C, Air Mass 1.5
 *Measurement Tolerance (±3.0%)

Inegrated Power @ STC (Reference to 465W front)

Power Gains	5%	10%	15%	20%	25%
Max. Power Output Pmax (W)	488	512	534	557	580
Max. Power Voltage Vmp (V)	45.50	45.50	45.40	45.40	45.40
Max. Power Current Imp (A)	10.73	11.24	11.75	12.26	12.77
Open Circuit Voltage Voc (V)	53.65	53.65	53.75	53.75	53.75
Short Circuit Current Isc (A)	11.53	12.08	12.63	13.18	13.73

TEMPERATURE COEFFICIENTS

Temperature Coefficients of Pmp	-0.24%/ °C
Temperature Coefficients of Voc	-0.22%/ °C
Temperature Coefficients of Isc	+0.047%/ °C

MECHANICAL PARAMETERS

Cell Type	HJT 166x83mm
Number of Cells	144pcs(6x24)
Dimensions (L*W*H)	2094x1038x30mm
Weight	27.5kg
Frame	Anodised Aluminum
Junction Box	IP68, 3 bypass diodes
Cable, Length	4.0mm ² , 300mm

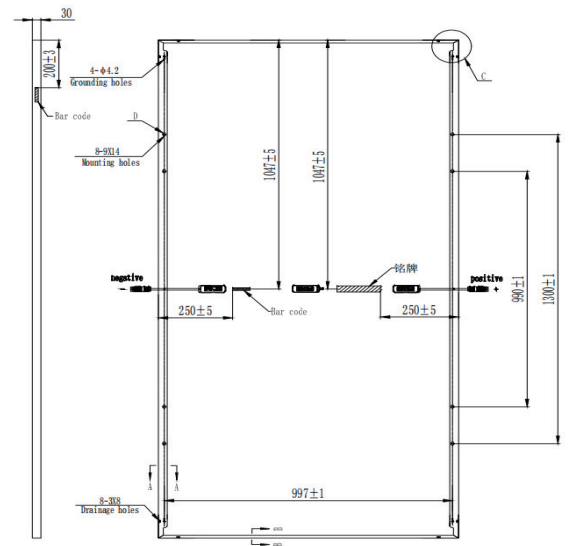
OPERATING CONDITION

Maximum System Voltage(V)	1500(DC)
Operating Temperature(°C)	-40~+85
Max. Wind Load / Snow Load(pa)	2400/5400
Max. Over Current(A)	25
Fire Rating	Class A
NOCT(°C)	45±2
Bifaciality	85±5%

PACKAGE INFORMATION

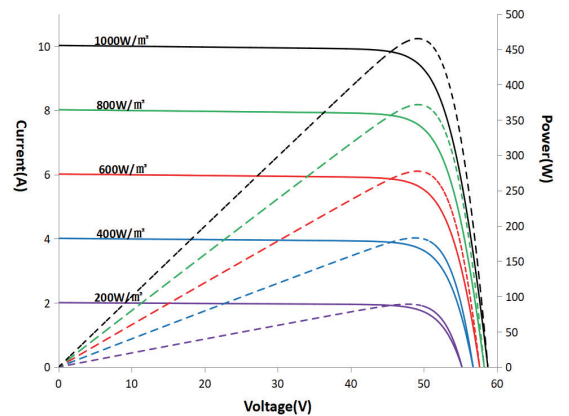
Container 40'HQ	814pcs
Quantity / Pallet	CTNR: 35, 35+4pcs

ASSEMBLY DRAWING (Unit:mm)



I-V CURVES

Test temperature 25°C



Irradiance: AM1.5, 1000W/m²

