



MSP-455W

1.6°C

It's temperature is 1.6°C lower than that of the conventional module

4%

4% more energy generation



Half-Cut technique leads to increased power output

When the cells are cut into halves, the current are also halved, which enables less internal loss. Series-parallel wiring improves power performance. The working temperature of module and junction box are lower than that of conventional types, which effectively reduces the hot spot risk and reduces overall module damage.



Series-parallel wiring mode results in reduced shading loss

Series-parallel wiring will not only reduce power lows from shade but also improves the effective use of supports and space.



Excellent temperature performance

The temperature of HC module is 1.6 °C lower than that of the conventional module under the same working condition, which results less power loss.



Reduced encapsulation loss due to reduced current

HC module is of lower current and lower CTM loss at around 0.2%, while the CTM loss of conventional module is 1%.



1500V high system voltage design

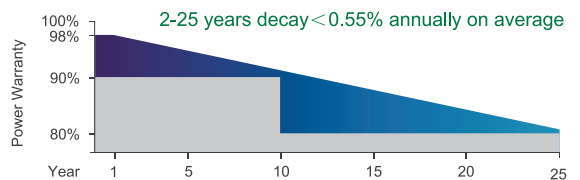
LINEAR PERFORMANCE WARRANTY

12 years

Product warranty on materials and workmanship

25 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

Max. Power Output Pmax (W)	445	450	455	460	465
Power Tolerance	0~+3%	0~+3%	0~+3%	0~+3%	0~+3%
Max. Power Voltage Vmp (V)	41.02	41.33	41.63	41.94	42.25
Max. Power Current Imp (A)	10.85	10.89	10.93	10.97	11.01
Open Circuit Voltage Voc (V)	49.50	49.70	49.89	50.09	50.29
Short Circuit Current Isc (A)	11.37	11.41	11.45	11.49	11.53
Module Efficiency (%)	20.47	20.71	20.93	21.17	21.40

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

ELECTRICAL PARAMETERS @ NOCT

Max. Power Output Pmax (W)	331	334	337	341	345
Max. Power Voltage Vmp (V)	38.20	38.47	38.73	38.99	39.06
Max. Power Current Imp (A)	8.65	8.68	8.71	8.75	8.84
Open Circuit Voltage Voc (V)	46.01	46.18	46.35	46.52	46.74
Short Circuit Current Isc (A)	9.18	9.22	9.25	9.28	9.31

*NOCT(Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20 °C, Wind Speed 1m/s

TEMPERATURE COEFFICIENTS

Temperature Coefficients of Pmp	-0.36%/ °C
Temperature Coefficients of Voc	-0.29%/ °C
Temperature Coefficients of Isc	+0.048%/ °C

MECHANICAL PARAMETERS

Cell Type	Mono 166x83mm
Number of Cells	144pcs(6x24)
Dimensions (L*W*H)	2094x1038x30mm
Weight	23.8kg
Frame	Anodised Aluminum
Junction Box	IP68, 3 bypass diodes
Cable, Length	4.0mm ² , 300mm

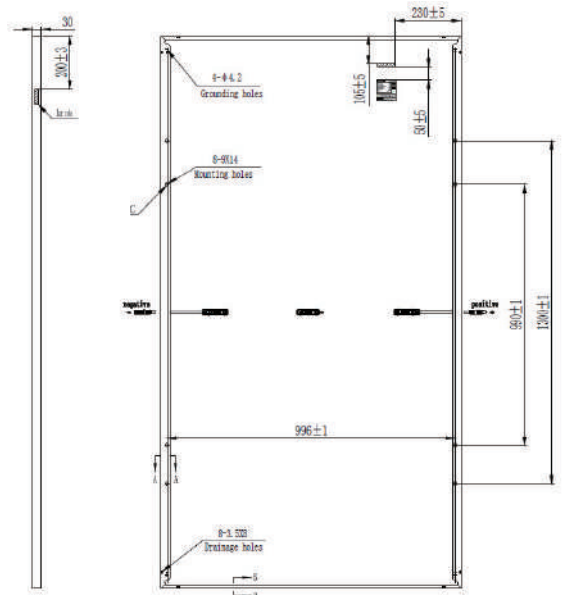
OPERATING CONDITION

Maximum System Voltage(V)	1000(DC)	1500(DC)
Operating Temperature(C)	-40~+85	
Max. Wind Load / Snow Load(pa)	2400/5400	
Max. Over Current(A)	20	
Application Class	Class A	
Fire Rating	Class C	
NOCT(°C)	45±2	

PACKAGE INFORMATION

Container 40'HQ	836pcs
Quantity / Pallet	CTNR: 36pcs

ASSEMBLY DRAWING (Unit:mm)



I-V CURVES

