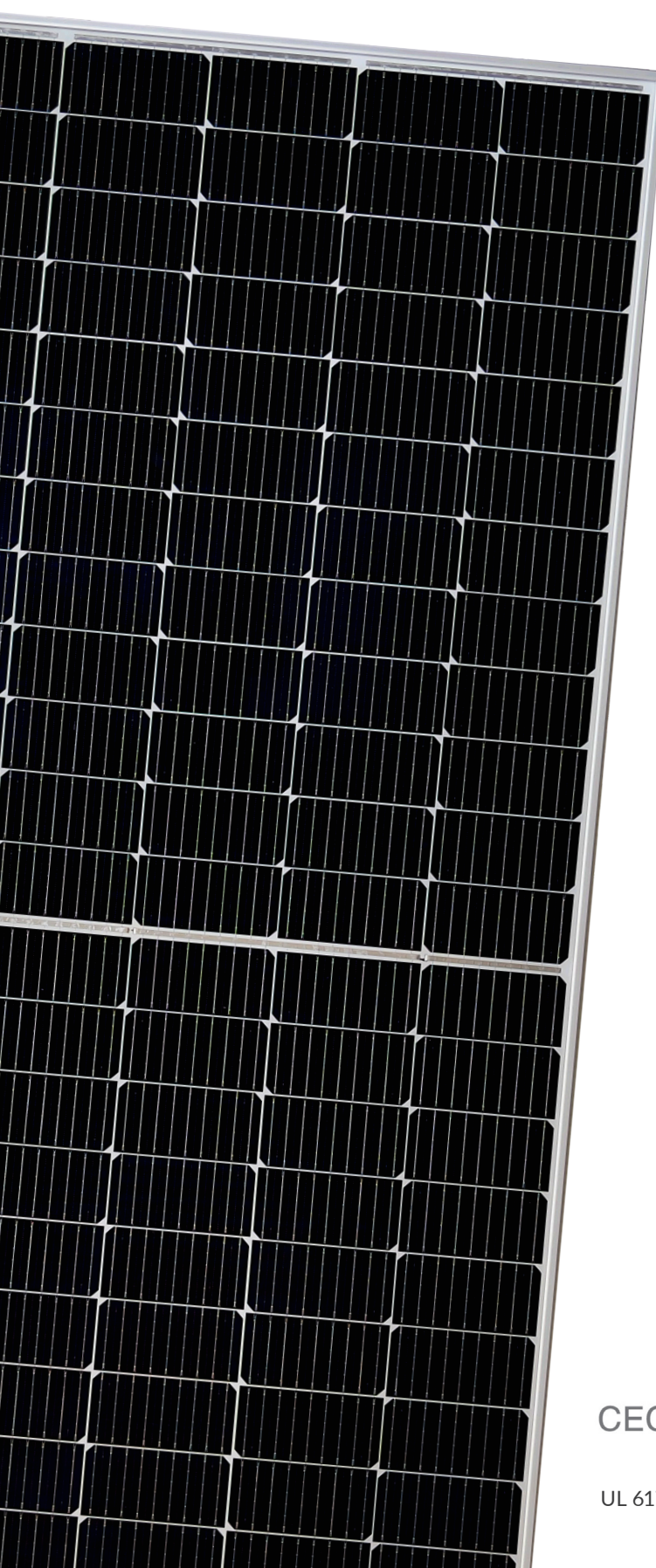




# 144BW 445W HC Series

mSolar 9BB Half-Cell  
Monocrystalline PERC PV Module



### Excellent efficiency

9 busbar technology increases power by decreasing the distance between busbars and the finger grid line



### Improved weak illumination response

More power output even in lower light conditions such as overcast days or off-peak sunlight hours



### Anti PID

Panels rigorously tested to limit power degradation caused by 'stray' currents



### High wind and snow resistance

5,400Pa Snow Load  
2,400Pa Wind Load



### 25-year warranty

M Solar modules are guaranteed to retain at least 84.3% of the initial power output



### Graphene Coating

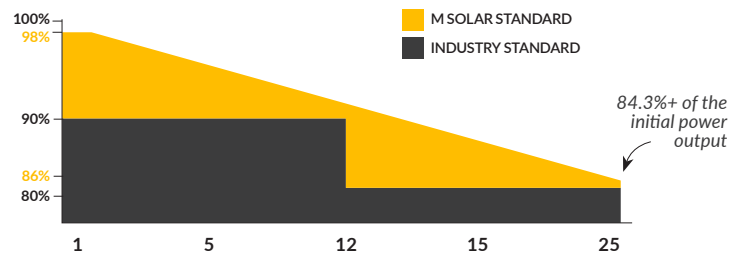
Optional graphene coating can increase power generation and lower maintenance



25-year product warranty, 25-year output warranty



0.5% annual degradation over 25 years



CEC



UL 61730 | IEC 61215 | IEC 61730

[www.msolarenergy.us](http://www.msolarenergy.us)

# 144BW 445W HC Series

msolar 9BB Half-Cell Black  
Monocrystalline PERC PV Module

## Electrical Characteristics | STC\*

| Module Type                     | TXS6-440144BW | TXS6-445144BW | TXS6-450144BW |
|---------------------------------|---------------|---------------|---------------|
| Nominal Power Watt Pmax (W)*    | 440           | 445           | 450           |
| Power Output Tolerance Pmax (%) | 0~+3          | 0~+3          | 0~+3          |
| Maximum Power Voltage Vmp (V)   | 41.0          | 41.2          | 41.4          |
| Maximum Power Current Imp (A)   | 10.74         | 10.81         | 10.88         |
| Open Circuit Voltage (V)        | 49.9          | 50.1          | 50.3          |
| Short Circuit Current Isc (A)   | 11.33         | 11.40         | 11.47         |
| Module Efficiency (%)           | 20.24         | 20.47         | 20.70         |

\*STC (Standard Test Condition): Irradiance 1000W/m<sup>2</sup>, Module Temperature 25°C, AM 1.5

## Electrical Characteristics | NMOT\*

|                                |       |       |       |
|--------------------------------|-------|-------|-------|
| Maximum Power Watt Pmax (Wp)   | 328.9 | 332.7 | 336.4 |
| Maximum Power Voltage Vmpp (V) | 38.2  | 38.4  | 38.6  |
| Maximum Power Current Impp (A) | 8.60  | 8.66  | 8.72  |
| Open Circuit Voltage Voc (V)   | 46.6  | 46.7  | 46.9  |
| Short Circuit Current Isc (A)  | 9.15  | 9.21  | 9.27  |

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

## Mechanical Data

|                   |  |
|-------------------|--|
| Solar Cells       | Mono PERC  |
| Cells orientation | 144 (6x24)   |
| Module dimension  | 2,094x1,038x35mm (with frame)                      |
| Weight            | 24kg   |
| Glass             | 3.2mm, High Transmission, AR Coated Tempered Glass |
| Junction Box      | IP 68, 3 Diodes                                    |
| Cables            | 4mm <sup>2</sup> ; 1,200mm                         |
| Connectors        | MC4-compatible                                     |

## Temperature Ratings

|                                 |           |
|---------------------------------|-----------|
| NMOT                            | 44°C±2°C  |
| Temperature coefficient of Pmax | -0.36%/°C |
| Temperature coefficient of Voc  | -0.29%/°C |
| Temperature coefficient of Isc  | 0.05%/°C  |

## Working Conditions

|                          |                   |
|--------------------------|-------------------|
| Maximum System Voltage   | 1500 V DC         |
| Operating Temperature    | -40°C ~+85°C      |
| Maximum Series Fuse      | 20 A              |
| Maximum Load (Snow/Wind) | 5,400Pa / 2,400Pa |

## Fire Rating

Type 1\*\*

\*Do not connect Fuse in Combiner Box with two or more strings in parallel connection

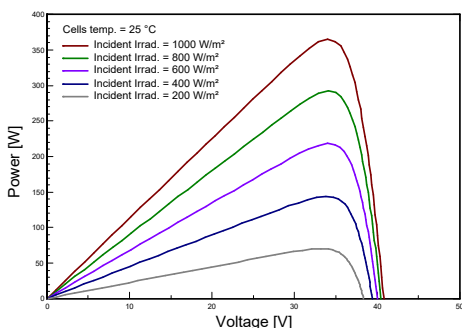
\*\*Remark: Electrical data in this catalog do not refer to a single module and they are not part

of the offer. They only serve for comparison among different module types.

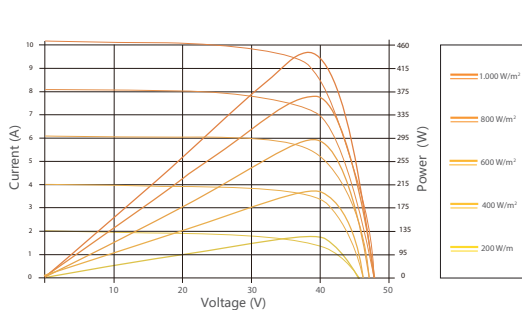
\*\*Please note, the 'Fire Class' Rating is designated for the full installed PV system,

which includes, but is not limited to, the module, the type of mounting used, pitch and roof composition.

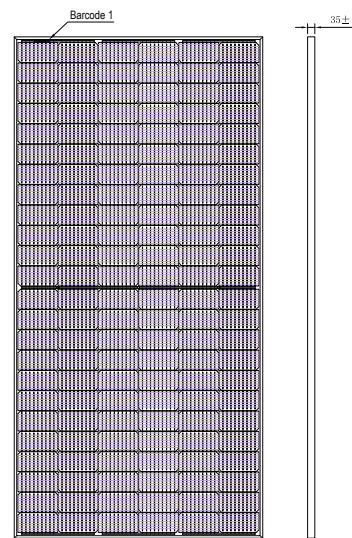
## P-V Curves of PV Module (365W)



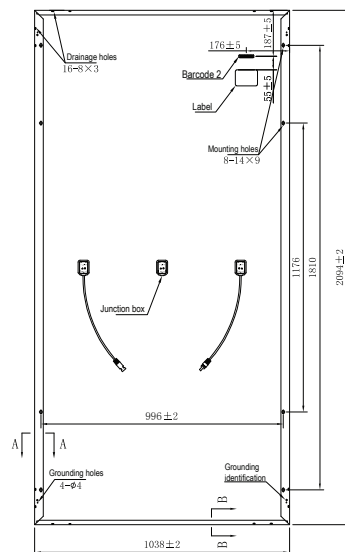
## I-V Curves of PV Module (365W)



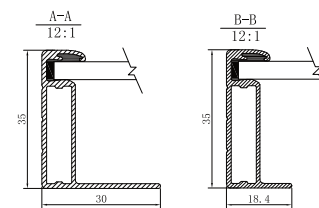
## Dimensions (MM)



Front View



Back View



## Packaging Details

|                      |   |  |
|----------------------|---|--|
| 30 Panels per pallet | Pallet Weight<br>1,650 lbs.<br>(748 kg) | Truck Weight<br>36,300 lbs.<br>(16,465 kg) |
| 22 Pallets per truck |   |  |