



1.6℃

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



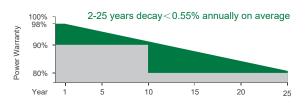
# LINEAR PERFORMANCE WARRANTY

12 years

Product warranty on materials and workmanship

25 years

Linear power output warranty



# **CERTIFICATES**

ISO 9001: 2015 Quality Management System

ISO 14001: 2015 Environmental Management System IEC 61215 / IEC 61730

OHSAS 18001: 2007 Occupational Health & Safety Managemnet System

<sup>\*</sup>Certification requirements vary in different markets, please consult with Maysun Optronics sales team for appropriate certification.







# MONO 10BB HALF-CUT MODULE

# MS-M60(H) 445-465W

MONO 10BB HALF-CUT MODULE

# **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)    | 34.85 | 34.94 | 35.03 | 35.12 | 35.21 |
| Max. Power Current Imp (A)    | 12.77 | 12.88 | 12.99 | 13.10 | 13.21 |
| Open Circuit Voltage Voc (V)  | 41.21 | 41.30 | 41.39 | 41.48 | 41.57 |
| Short Circuit Current Isc (A) | 13.63 | 13.75 | 13.87 | 13.99 | 14.11 |
| Module Efficiency (%)         | 20.57 | 20.80 | 21.03 | 21.26 | 21.50 |

<sup>\*</sup>STC (Standard Test Condition): Irradiance 1000W/m² , Cell Temperature 25  $^{\circ}\!C$ , Air Mass 1.5

# **ELECTRICAL PARAMETERS @ NOCT**

| Max. Power Output Pmax (W)    | 331   | 335   | 339   | 342   | 344   |
|-------------------------------|-------|-------|-------|-------|-------|
| Max. Power Voltage Vmp (V)    | 31.79 | 31.87 | 31.94 | 32.02 | 32.10 |
| Max. Power Current Imp (A)    | 10.42 | 10.51 | 10.60 | 10.70 | 10.72 |
| Open Circuit Voltage Voc (V)  | 38.32 | 38.41 | 38.49 | 38.57 | 38.60 |
| Short Circuit Current Isc (A) | 11.01 | 11.10 | 11.20 | 11.30 | 11.39 |

<sup>\*</sup>NOCT(Nominal Operating Cell Temperature): Irradiance 80 0W/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 182x91mm              |
|----------------------|----------------------------|
| Number of Cells      | 120pcs(6x18)               |
| Dimensions ( L*W*H ) | 1908x1134x35mm             |
| Weight               | 24.5kg                     |
| Frame                | Anodised Aluminum          |
| Junction Box         | IP68, 3 bypass diodes      |
| Cable, Length        | 4.0mm <sup>2</sup> , 300mm |

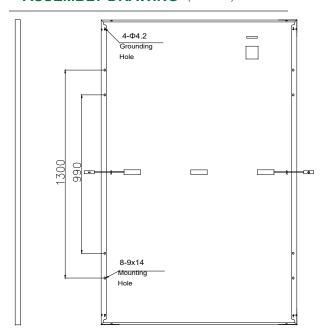
# **OPERATING CONDITION**

| Maximum System Voltage(V)      | 1000(DC)  | 1500(DC) |  |
|--------------------------------|-----------|----------|--|
| Operating Temperature(C)       | -40~+85   |          |  |
| Max. Wind Load / Snow Load(pa) | 2400/5400 |          |  |
| Max. Series Fuse Rating(A)     | 25        |          |  |
| Fire Rating                    | Cla       | ss C     |  |
| NOCT(°C)                       | 45        | ±2       |  |

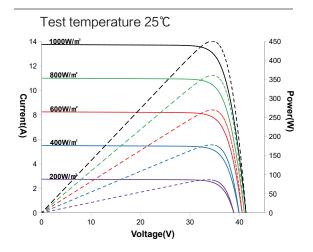
# **PACKAGE INFORMATION**

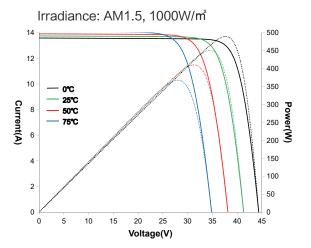
| Container 40'HQ   | 744pcs      |
|-------------------|-------------|
| Quantity / Pallet | CTNR: 31pcs |

# ASSEMBLY DRAWING (Unit:mm)



#### **I-V CURVES**







<sup>\*</sup>Measurement Tolerance (±3.0%)