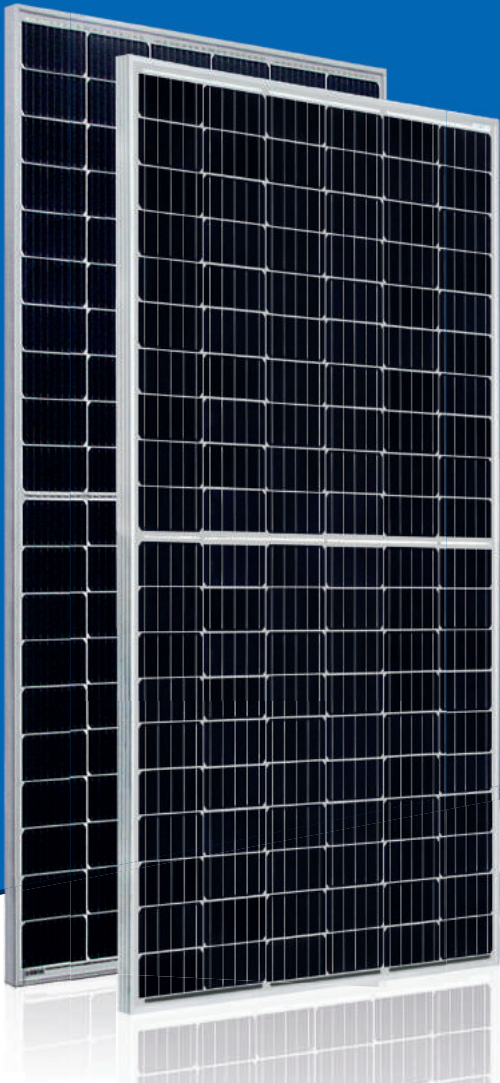


# AstroSemi™

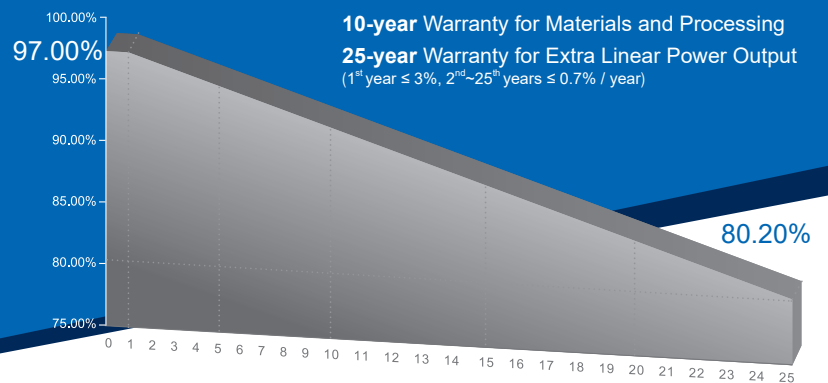
Incredible Power for Small Body



Multi-Busbar Module could be the option

## 310W~330W

Monocrystalline PV Module  
CHSM60M-HC Series



### KEY FEATURES

- +5W OUTPUT POSITIVE TOLERANCE**  
Guaranteed 0~+5W positive tolerance ensures power output reliability.
- INNOVATIONAL HALF-CELL TECHNOLOGY**  
Improves the module output, decreases the risk of micro-crack, enhances the module reliability.
- INNOVATIVE PERC CELL TECHNOLOGY**  
Excellent cell efficiency and output.
- REDUCE SHADOW LOSS**  
Effectively reduces the effect of shadow on the module surface.
- REDUCE INTERNAL MISMATCH LOSS**  
Reduces mismatch loss and improves output.
- PASSED HAIL TEST**  
Certified to hail resistance: ice ball size (d=45mm) and ice ball velocity (v=30.7m/s).
- PID RESISTANCE**  
Excellent PID resistance at 96 hours (@85°C /85%) test, and also can be improved to meet higher standards for the particularly harsh environment.

### COMPREHENSIVE CERTIFICATES



First solar company which passed the TUV Nord IEC/TS 62941 certification audit.

For Global Market



## ELECTRICAL SPECIFICATIONS

STC rated output ( $P_{mpp}$ )*	310 Wp	315 Wp	320 Wp	325 Wp	330 Wp
Rated voltage ( $V_{mpp}$ ) at STC	33.15 V	33.44 V	33.68 V	33.93 V	34.17 V
Rated current ( $I_{mpp}$ ) at STC	9.35 A	9.42 A	9.50 A	9.58 A	9.66 A
Open circuit voltage ( $V_{oc}$ ) at STC	40.11 V	40.42 V	40.72 V	41.03 V	41.32 V
Short circuit current ( $I_{sc}$ ) at STC	9.82 A	9.90 A	9.98 A	10.06 A	10.14 A
Module efficiency	18.7%	19.0%	19.3%	19.6%	19.9%
Rated output ( $P_{mpp}$ ) at NOCT	231.2 Wp	234.9 Wp	238.6 Wp	242.4 Wp	246.1 Wp
Rated voltage ( $V_{mpp}$ ) at NOCT	30.91 V	31.18 V	31.39 V	31.63 V	31.85 V
Rated current ( $I_{mpp}$ ) at NOCT	7.48 A	7.53 A	7.60 A	7.66 A	7.73 A
Open circuit voltage ( $V_{oc}$ ) at NOCT	37.71 V	38.00 V	38.28 V	38.57 V	38.85 V
Short circuit current ( $I_{sc}$ ) at NOCT	7.90 A	7.96 A	8.03 A	8.09 A	8.16 A
Temperature coefficient ( $P_{mpp}$ )			- 0.3438%/°C		
Temperature coefficient ( $I_{sc}$ )			+0.0353%/°C		
Temperature coefficient ( $V_{oc}$ )			- 0.2722%/°C		
Normal operating cell temperature (NOCT)			44±2°C		
Maximum system voltage (IEC/UL)			1500V <sub>DC</sub>		
Number of diodes			3		
Junction box IP rating			IP 67		
Maximum series fuse rating			20 A		

\* Measurement tolerance +/- 3%

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, AM=1.5

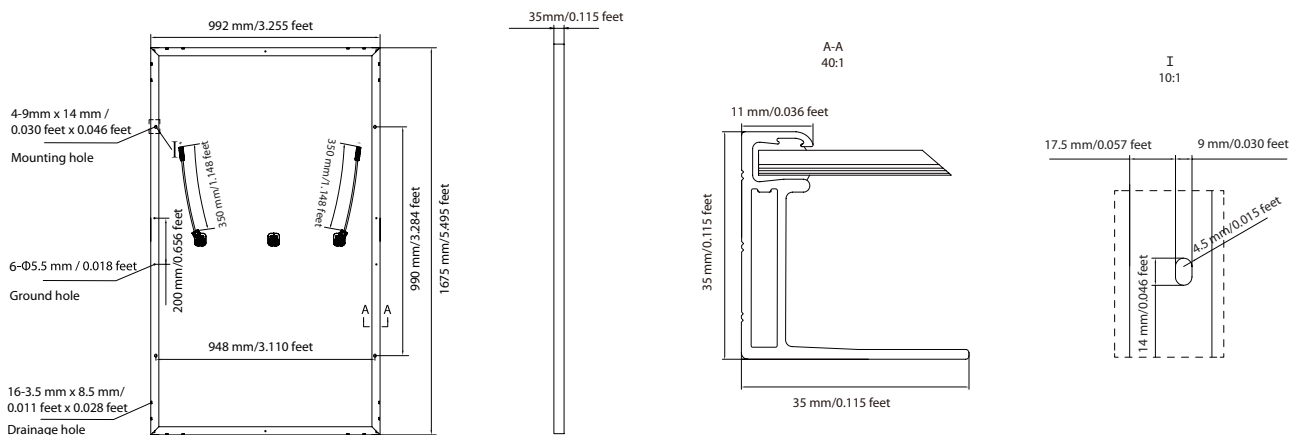
NOCT: Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, AM=1.5, Wind Speed 1m/s

## MECHANICAL SPECIFICATIONS

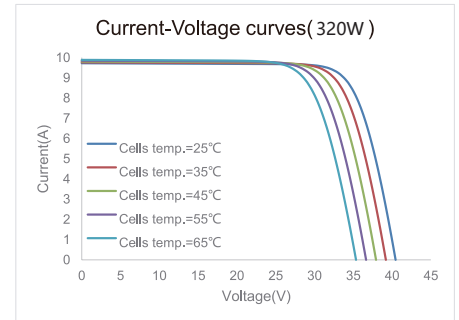
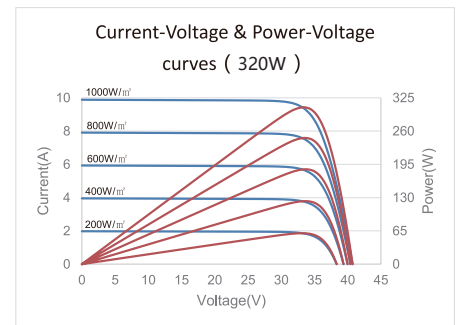
Outer dimensions (L x W x H)	1675 x 992 x 35 mm 65.94 x 39.06 x 1.38 in
Frame technology	Aluminum, silver anodized
Module composition	Glass / EVA / Backsheet (white)
Front glass thickness	3.2 mm / 0.13 in
Cable length (IEC/UL)	Portrait: 350 mm (13.78 in) Landscape: 1000 mm (39.37 in)
Cable diameter (IEC/UL)	4 mm <sup>2</sup> / 12 AWG
① Maximum mechanical test load	6000 Pa (front) / 3600 Pa (back)
Fire performance (IEC/UL)	Class C (IEC) or Type 1 (UL)
Connector type (IEC/UL)	MC4 compatible

① Refer to Astronergy crystalline installation manual or contact technical department.  
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

## MODULE DIMENSION DETAILS



## CURVE



## PACKING SPECIFICATIONS

① Weight (module only)	18.7 kg / 41.23 lbs
② Packing unit	31 pcs / box
Weight of packing unit (for 40'HQ container)	619 kg / 1365 lbs
Number of modules per 40'HQ container	806 pcs

① Tolerance +/- 1.0kg  
② Subject to sales contract

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