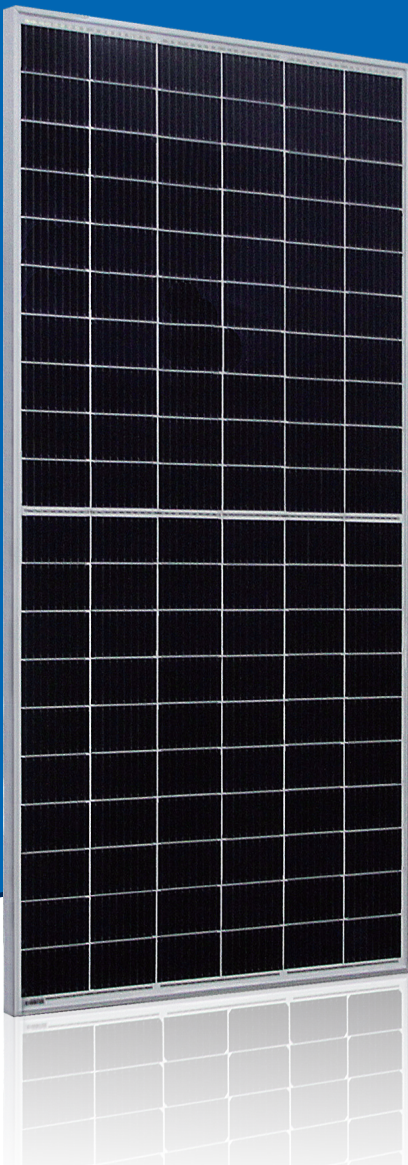


# AstroSemi™

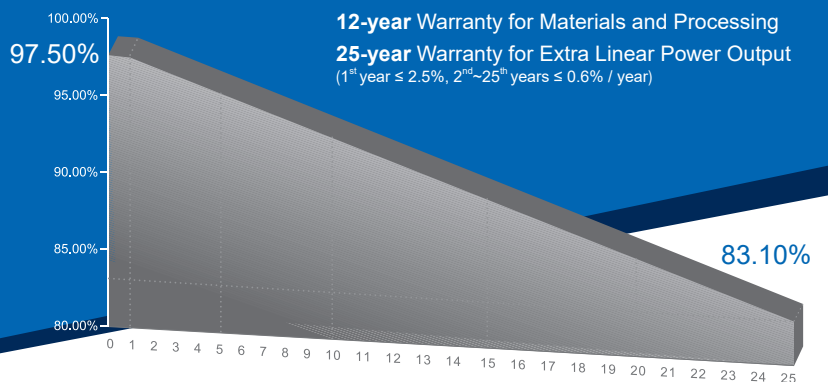
Incredible Power for Small Body



## 320W~330W

Polycrystalline PV Module

CHSM60P-HC Series (158.75)



### COMPREHENSIVE CERTIFICATES



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

### 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).
- Anti PID 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.

For Global Market



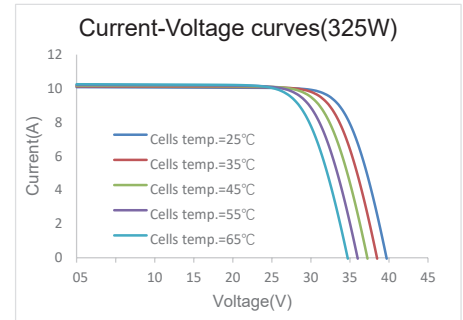
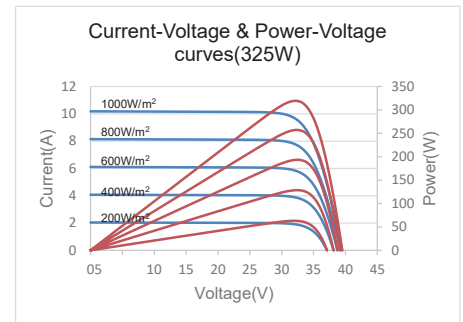
**ASTRONERGY**  
A CHNT COMPANY

## ELECTRICAL SPECIFICATIONS

STC rated output ( $P_{mpp}$ )*	320 Wp	325 Wp	330 Wp
Rated voltage ( $V_{mpp}$ ) at STC	32.98 V	33.32 V	33.57 V
Rated current ( $I_{mpp}$ ) at STC	9.71 A	9.76 A	9.83 A
Open circuit voltage ( $V_{oc}$ ) at STC	39.52 V	39.78 V	40.07 V
Short circuit current ( $I_{sc}$ ) at STC	10.17 A	10.21 A	10.23 A
Module efficiency	18.9%	19.2%	19.5%
Rated output ( $P_{mpp}$ ) at NMOT	238.4 Wp	242.1 Wp	245.8 Wp
Rated voltage ( $V_{mpp}$ ) at NMOT	30.61 V	30.93 V	31.16 V
Rated current ( $I_{mpp}$ ) at NMOT	7.79 A	7.83 A	7.89 A
Open circuit voltage ( $V_{oc}$ ) at NMOT	37.03 V	37.27 V	37.54 V
Short circuit current ( $I_{sc}$ ) at NMOT	8.21 A	8.24 A	8.26 A
Temperature coefficient ( $P_{mpp}$ )	- 0.3550%/°C		
Temperature coefficient ( $I_{sc}$ )	+0.0415%/°C		
Temperature coefficient ( $V_{oc}$ )	- 0.2729%/°C		
Nominal module operating temperature (NMOT)	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		

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

## CURVE



## MECHANICAL SPECIFICATIONS

Outer dimensions (L x W x H)	1692 x 1002 x 35 mm 66.61 x 39.45 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: 1100 mm (43.31 in)
Cable diameter (IEC/UL)	4 mm <sup>2</sup> / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Fire performance (IEC/UL)	Class C (IEC) or Type 1 (UL)
Connector type (IEC/UL)	MC4 compatible

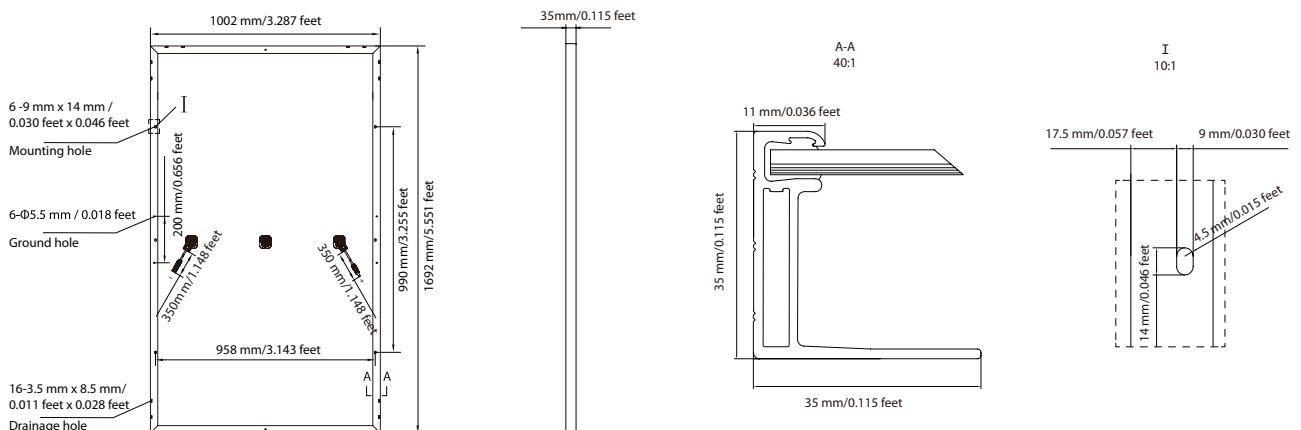
① Refer to Astronergy crystalline installation manual or contact technical department.  
 Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

## PACKING SPECIFICATIONS

① Weight (module only)	19.1 kg / 42.11 lbs
② Packing unit	31 pcs / box
Weight of packing unit (for 40'HQ container)	631 kg / 139 lbs
Number of modules per 40'HQ container	806 pcs

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

## MODULE DIMENSION DETAILS



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