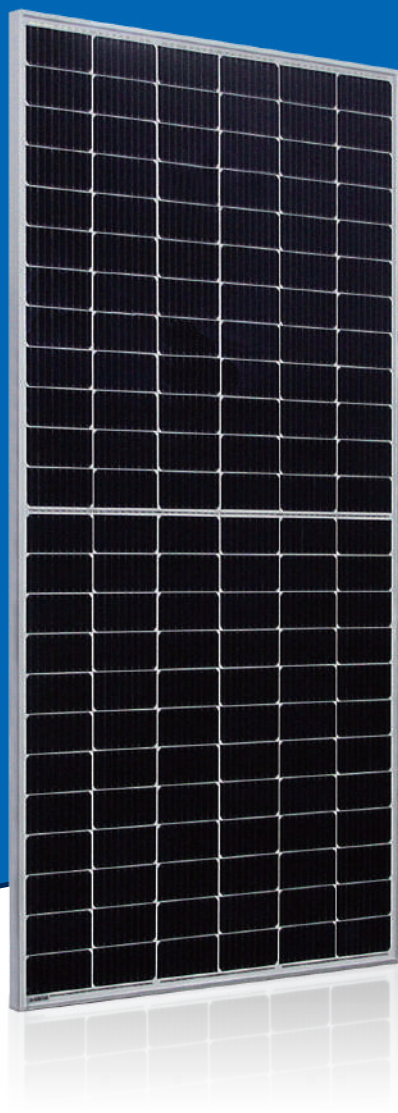


AstroSemi™

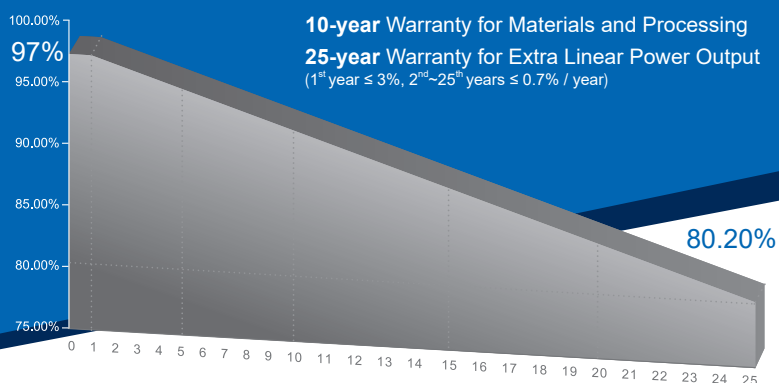
Incredible Power for Small Body



430W~450W

Monocrystalline PV Module

CHSM72M-HC Series



KEY FEATURES

- 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.
- 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.

Preliminary
For Global Market



ASTROENERGY
A CHNT COMPANY

ELECTRICAL SPECIFICATIONS

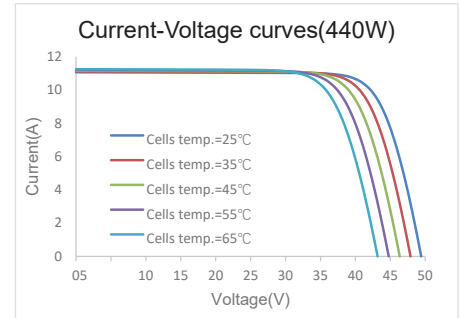
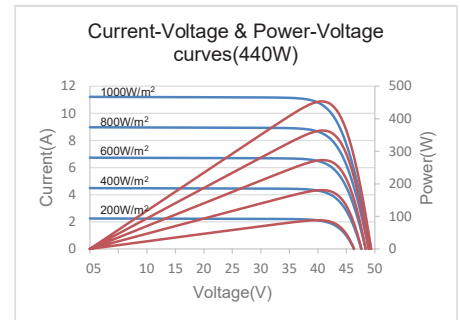
STC rated output (P_{mpp})*	430 Wp	435 Wp	440 Wp	445 Wp	450 Wp
Rated voltage (V_{mpp}) at STC	40.45 V	40.65 V	40.85 V	41.05 V	41.32 V
Rated current (I_{mpp}) at STC	10.63 A	10.70 A	10.77 A	10.84 A	10.89 A
Open circuit voltage (V_{oc}) at STC	47.99 V	48.25 V	48.50 V	48.80 V	49.05 V
Short circuit current (I_{sc}) at STC	11.10 A	11.16 A	11.24 A	11.30 A	11.37 A
Module efficiency	19.5%	19.7%	20.0%	20.2%	20.4%
Rated output (P_{mpp}) at NOCT	319.7 Wp	323.4 Wp	327.1 Wp	330.8 Wp	334.5 Wp
Rated voltage (V_{mpp}) at NOCT	37.56 V	37.75 V	37.93 V	38.12 V	38.37 V
Rated current (I_{mpp}) at NOCT	8.51 A	8.57 A	8.62 A <td 8.68 A	8.72 A	
Open circuit voltage (V_{oc}) at NOCT	44.94 V	45.19 V	45.42 V	45.70 V	45.94 V
Short circuit current (I_{sc}) at NOCT	8.94 A	8.99 A	9.06 A	9.10 A	9.16 A
Temperature coefficient (P_{mpp})	- 0.3528%/°C				
Temperature coefficient (I_{sc})	+0.0400%/°C				
Temperature coefficient (V_{oc})	- 0.2769%/°C				
Normal operating cell temperature (NOCT)	44±2°C				
Maximum system voltage (IEC/UL)	1500V _{DC}				
Number of diodes	3				
Junction box IP rating	IP 67				
Maximum series fuse rating	20 A				

* measurement uncertainty +/- 3%

STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5

NOCT: Irradiance 800W/m², Ambient Temperature 20°C, AM=1.5, Wind Speed 1m/s

CURVE



MECHANICAL SPECIFICATIONS

Outer dimensions (L x W x H)	2108 x 1046 x 40 mm 82.99 x 41.18 x 1.57 in
Frame technology	Aluminum, silver anodized
Module composition	Glass / EVA / Backsheet (white)
Front glass thickness	3.2 mm / 0.13 in
① Cable length (IEC/UL)	350 mm / 13.78 in
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
② 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 Length can be customized.

② Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

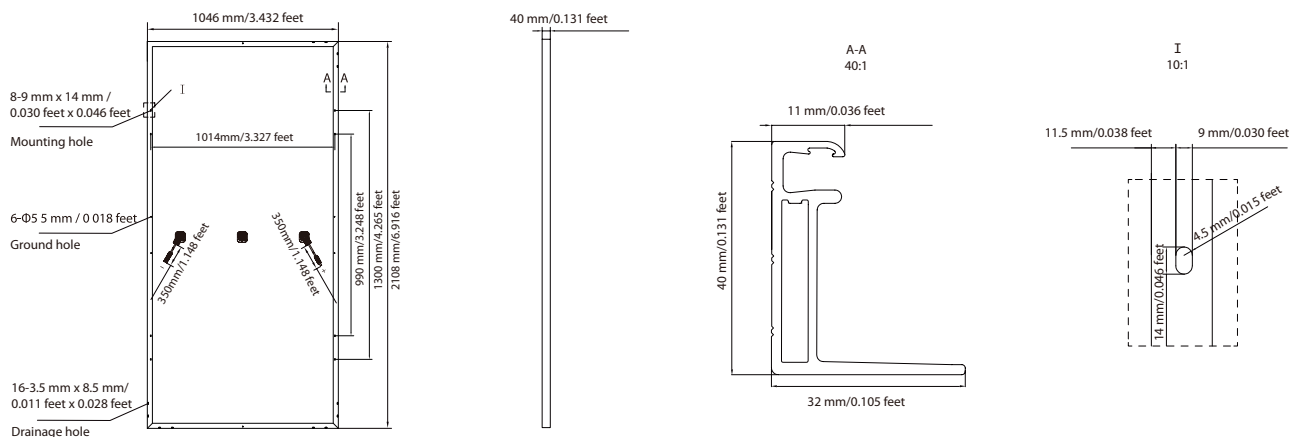
PACKING SPECIFICATIONS

① Weight (module only)	24.0 kg / 52.91 lbs
② Packing unit	27 pcs / box
Weight of packing unit (for 40'HQ container)	693 kg / 1528 lbs
Number of modules per 40'HQ container	594 pcs

① Tolerance +/- 1.0kg

② Subject to sales contract

MODULE DIMENSION DETAILS



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