

# ASTRO 3 Semi

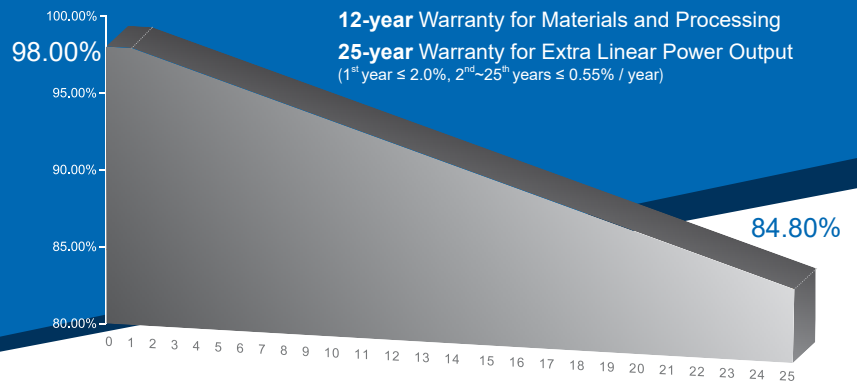
Create Sustainable and Efficient Green Energy



## 405W~420W

Monocrystalline PV Module

CHSM72M-HC Series (158.75)



### KEY FEATURES

- +5W OUTPUT POSITIVE TOLERANCE**  
Guaranteed 0~+5W positive tolerance to ensure power output.
- INNOVATIONAL HALF-CUT TECHNOLOGY**  
Better shading tolerance, higher reliability.
- INNOVATIONAL MULTI-BUSBAR TECHNOLOGY**  
Higher light absorption, lower risk of microcrack.
- SUPER PERC+ CELL TECHNOLOGY**  
Higher module power and module efficiency, lower power degradation.
- Anti PID RESISTANCE**  
Excellent PID resistance.

### COMPREHENSIVE CERTIFICATES



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

For Global Market



**ASTRONERGY**  
A CHNT COMPANY

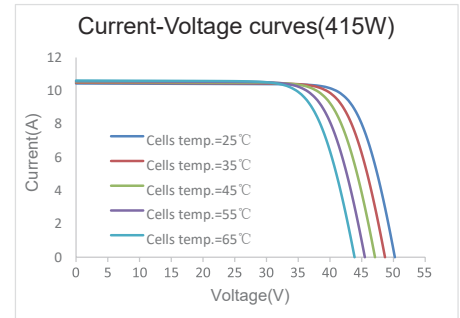
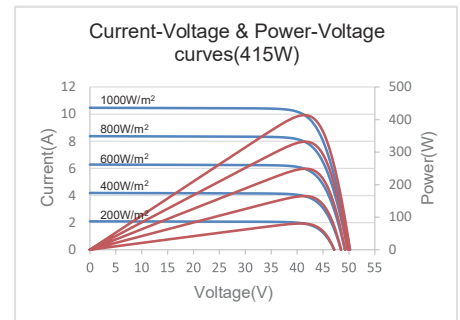
## ELECTRICAL SPECIFICATIONS

STC rated output ( $P_{mpp}$ )	405 Wp	410 Wp	415 Wp	420 Wp
Rated voltage ( $V_{mpp}$ ) at STC	41.59 V	41.85 V	42.11 V	42.35 V
Rated current ( $I_{mpp}$ ) at STC	9.74 A	9.80 A	9.86 A	9.92 A
Open circuit voltage ( $V_{oc}$ ) at STC	49.53 V	49.80 V	50.06 V	50.32 V
Short circuit current ( $I_{sc}$ ) at STC	10.31 A	10.38 A	10.45 A <td 10.52 A	
Module efficiency	20.0%	20.3%	20.5%	20.8%
Rated output ( $P_{mpp}$ ) at NMOT	301.1 Wp	304.8 Wp	308.5 Wp	312.2 Wp
Rated voltage ( $V_{mpp}$ ) at NMOT	38.61 V	38.84 V	39.08 V	39.31 V
Rated current ( $I_{mpp}$ ) at NMOT	7.80 A	7.85 A	7.89 A	7.94 A
Open circuit voltage ( $V_{oc}$ ) at NMOT	46.38 V	46.64 V	46.88 V	47.12 V
Short circuit current ( $I_{sc}$ ) at NMOT	8.31 A	8.36 A	8.42 A	8.48 A
Temperature coefficient ( $P_{mpp}$ )	- 0.35%/°C			
Temperature coefficient ( $I_{sc}$ )	+0.035%/°C			
Temperature coefficient ( $V_{oc}$ )	- 0.28%/°C			
Nominal module operating temperature (NMOT)	41±2°C			
Maximum system voltage (IEC/UL)	1500V <sub>DC</sub>			
Number of diodes	3			
Junction box IP rating	IP 68			
Maximum series fuse rating	20 A			

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

NMOT: 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)	2018 x 1002 x 35 mm
Frame technology	Aluminum, silver anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 350 mm Landscape: 1200 mm
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 4 (UL)
Connector type (IEC/UL)	HCB40 / MC4-EVO2

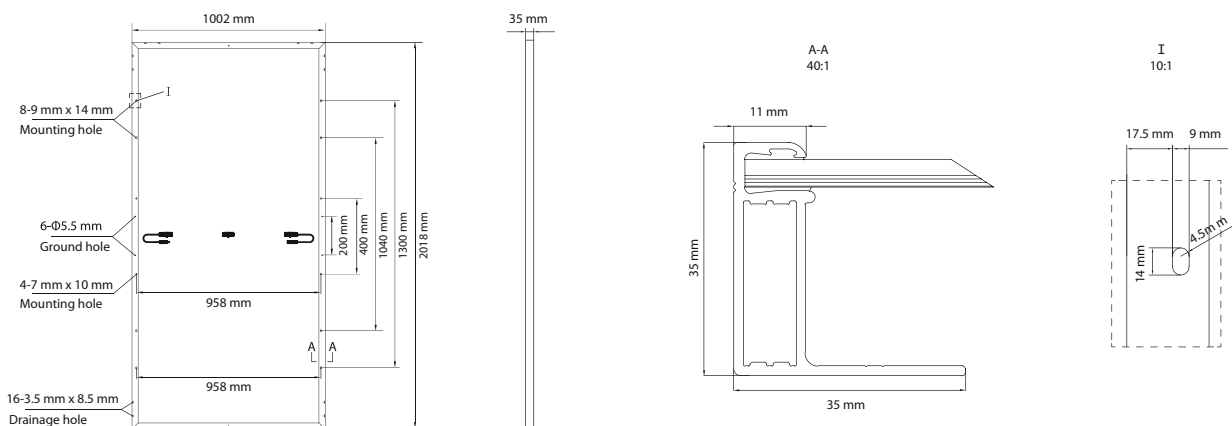
① Refer to Astronergy crystalline installation manual or contact technical department.  
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

## PACKING SPECIFICATIONS

① Module Weight	22.6 kg
② Packing unit	31 pcs / box
Weight of packing unit (for 40'HQ container)	746 kg
Number of modules per 40'HQ container	682 pcs

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

## MODULE DIMENSION DETAILS



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