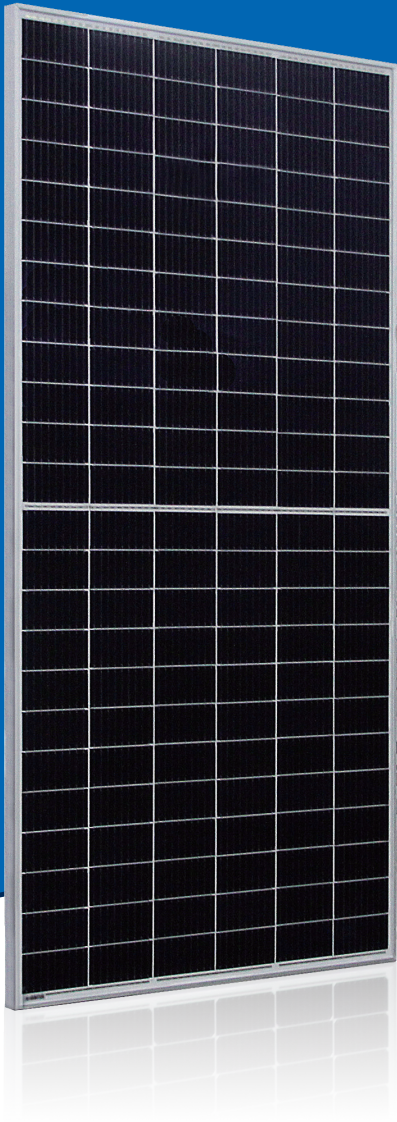


# AstroTwins™

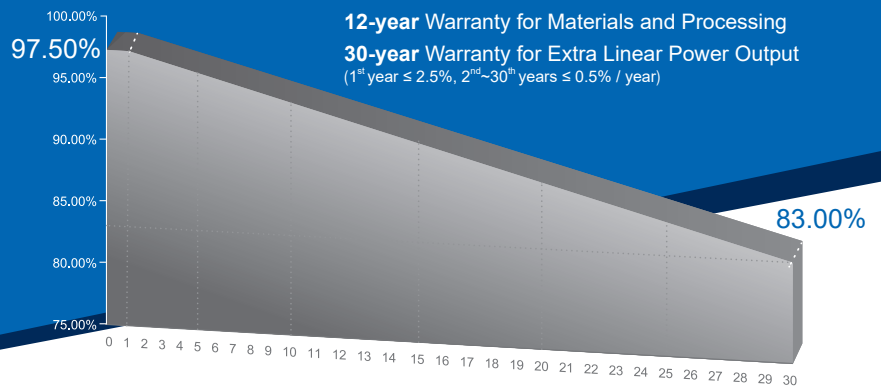
Enjoy the Energy of the Universe



## 400W~420W

P-type Monocrystalline PV Module  
CHSM72M(DG)/F-BH Series (158.75)

CHSM72M(DG)/F-BH is bifacial module with white glazed glass



### KEY FEATURES

- OUTPUT POSITIVE TOLERANCE**  
Guaranteed 0~+5W positive tolerance ensures power output reliability.
- ENHANCED FIRE PERFORMANCE**  
Fire Class A certified according to IEC standard.
- EXCELLENT WEATHER RESISTANCE**  
Reduces the cell micro-crack and extended product warranty.
- BIFACIAL POWER**  
The backside makes use of the reflected and scattered light from the surroundings, the modules can yield up to 5%~30% power more, depending on the albedo.
- REDUCE INTERNAL MISMATCH LOSS**  
Reduces mismatch loss and improves output.
- APPLICABLE FOR MULTI DIFFERENT ENVIRONMENTS**  
The wide range of applications, such as BIPV, vertical installation, snow area, high humidity area and strong sandstorm area, etc.
- SNAIL TRAIL RESISTANCE**  
Reduces the probability of snail trails with zero water vapor transmittance.

### COMPREHENSIVE CERTIFICATES



Special for Australian Market



**ASTRONERGY**  
A CHNT COMPANY

## ELECTRICAL SPECIFICATIONS

Power rating (front)	400 Wp		405 Wp		410 Wp		415 Wp		420 Wp	
Testing Condition	Front	Back	Front	Back	Front	Back	Front	Back	Front	Back
STC rated output ( $P_{mpp}/Wp$ )*	400	282	405	285	410	289	415	292	420	296
Rated voltage ( $V_{mpp}/V$ ) at STC	40.67	40.88	40.89	41.10	41.10	41.31	41.31	41.52	41.52	41.73
Rated current ( $I_{mpp}/A$ ) at STC	9.84	6.89	9.91	6.94	9.98	6.99	10.05	7.04	10.12	7.09
Open circuit voltage ( $V_{oc}/V$ ) at STC	48.24	46.82	48.42	46.99	48.60	47.17	48.78	47.34	48.96	47.51
Short circuit current ( $I_{sc}/A$ ) at STC	10.30	7.22	10.38	7.28	10.46	7.33	10.54	7.39	10.62	7.45
Module efficiency	19.4%	13.7%	19.7%	13.9%	19.9%	14.0%	20.2%	14.2%	20.4%	14.4%
Temperature coefficient ( $P_{mpp}$ )					- 0.3528%/°C					
Temperature coefficient ( $I_{sc}$ )					+0.0400%/°C					
Temperature coefficient ( $V_{oc}$ )					- 0.2769%/°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 68					
Maximum series fuse rating					20 A					

\* Measurement tolerance +/- 3%  
STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, AM=1.5

## ELECTRICAL SPECIFICATIONS (Integrated power)

$P_{mpp}$ gain	$P_{mpp}$	$V_{mpp}$	$I_{mpp}$	$V_{oc}$	$I_{sc}$
5%	425 Wp	40.89 V	10.40 A	48.42 V	10.90 A
10%	446 Wp	40.89 V	10.90 A	48.42 V	11.42 A
15%	466 Wp	40.79 V	11.42 A	48.52 V	11.94 A
20%	486 Wp	40.79 V	11.91 A	48.52 V	12.46 A
25%	506 Wp	40.79 V	12.41 A	48.52 V	12.98 A

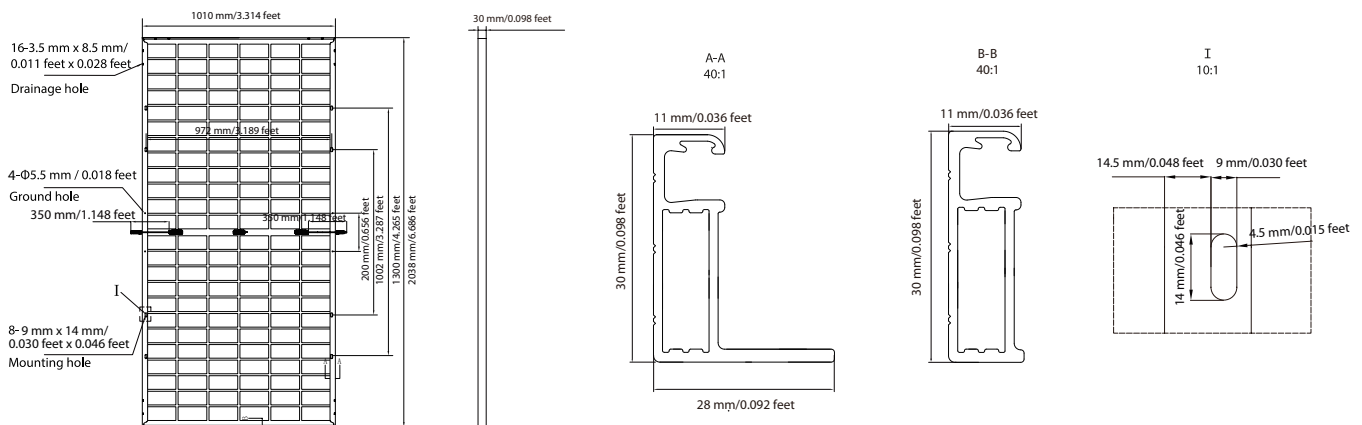
Measurement tolerance +/- 3%  
Electrical characteristics with different rear power gain (reference to 405W)

## MECHANICAL SPECIFICATIONS

Outer dimensions (L x W x H)	2038 x 1010 x 30 mm 80.24 x 39.76 x 1.18 in
Module composition	Glass / POE / Glass
Front glass thickness	2.5 mm / 0.098 in
Cable length (IEC/UL)	Portrait: 350 mm (13.78 in) Landscape: 1200 mm (47.24 in)
Cable diameter (IEC/UL)	4 mm <sup>2</sup> / 12 AWG
① Maximum mechanical test load	2400 Pa (front) / 2400 Pa (back)
Fire performance (IEC/UL)	Class A (IEC) or Type 3 (UL)
Connector type (IEC/UL)	PV-CY03L (Logo:CHUANG YUAN) or PV-HCB40(Logo:XINHUI) or MH5 (Logo:MINGHE) or PV-KST4-EVO2/XY-UR,PV-KBT4-EVO2/XY-UR(Logo:MC)

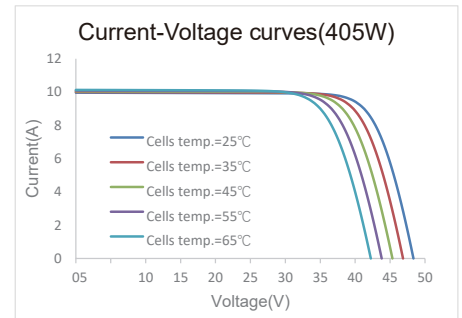
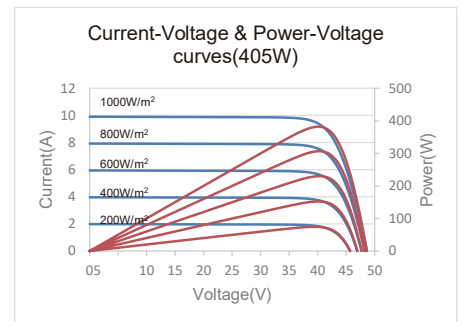
① Refer to Astronergy crystalline installation manual or contact technical department.  
Maximum Mechanical Test Load=1.5\*Maximum Mechanical Design Load.

## MODULE DIMENSION DETAILS



Made in Zhejiang, Jiangsu and Anhui of China, Made in Sincan/ Ankara of Turkey  
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<http://energy.chint.com>

## CURVE



## PACKING SPECIFICATIONS

① Weight (module only)	31.4 kg / 69.23 lbs
② Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	1177 kg / 2595 lbs
Number of modules per 40'HQ container	792 pcs

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