

ASTRO 4 Twins

Create Sustainable and Efficient Green Energy



ASTRONERGY
A CHINT COMPANY

435W~450W

Monocrystalline PV Module
CHSM72M(DG)/F-BH Series (166)



+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.

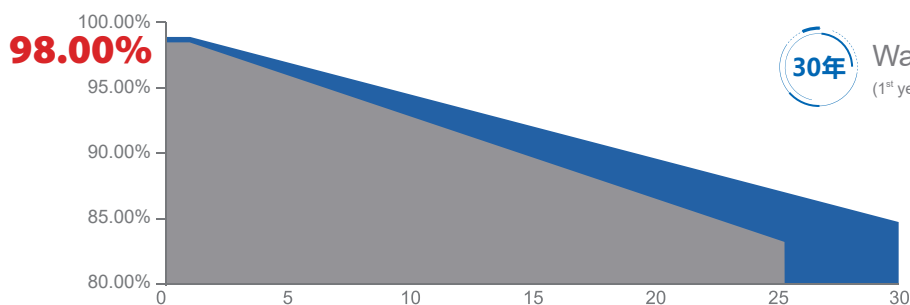


BIFACIAL POWER
Up to 25% additional power gain from rear side.



APPLICABLE FOR MULTI DIFFERENT ENVIRONMENTS
Wide range of applications, such as snow areas, high humidity areas and strong sandstorm areas, etc.

WARRANTY



■ Double glass Product Linear Performance Warranty ■ Regular Product Linear Performance Warranty



Warranty for Materials and Processing



Warranty for Extra Linear Power Output
(1st year ≤ 2.0%, 2nd~30th years ≤ 0.45% / year)

For Global Market



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

ELECTRICAL SPECIFICATIONS

Power rating (front)	435 Wp		440 Wp		445 Wp		450 Wp	
Testing Condition	Front	Back	Front	Back	Front	Back	Front	Back
STC rated output (P_{mpp}/Wp)	435	304	440	308	445	311	450	315
Rated voltage (V_{mpp}/V) at STC	40.85	41.64	41.12	41.85	41.36	42.03	41.59	42.28
Rated current (I_{mpp}/A) at STC	10.65	7.30	10.70	7.36	10.76	7.40	10.82	7.45
Open circuit voltage (V_{oc}/V) at STC	48.90	47.56	49.11	47.83	49.44	47.99	49.78	48.25
Short circuit current (I_{sc}/A) at STC	11.12	7.99	11.20	8.05	11.25	8.10	11.3	8.16
Module efficiency	20.0%	14.0%	20.2%	14.2%	20.5%	14.3%	20.7%	14.5%
Temperature coefficient (P_{mpp})	- 0.35%/°C							
Temperature coefficient (I_{sc})	+ 0.050%/°C							
Temperature coefficient (V_{oc})	- 0.27%/°C							
Nominal module operating temperature (NMOT)	41±2°C							
Maximum system voltage (IEC/UL)	1500V _{DC}							
Number of diodes	3							
Junction box IP rating	IP 68							
Maximum series fuse rating	20 A							

STC: Irradiance 1000W/m², 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%	467 Wp	41.36 V	11.29 A	49.44 V	11.73 A
10%	489 Wp	41.36 V	11.82 A	49.44 V	12.29 A
15%	511 Wp	41.36 V	12.35 A	49.44 V	12.84 A
20%	534 Wp	41.26 V	12.94 A	49.54 V	13.39 A
25%	556 Wp	41.26 V	13.48 A	49.54 V	13.94 A

Electrical characteristics with different rear power gain (reference to 445W)

MECHANICAL SPECIFICATIONS

Outer dimensions (L x W x H)	2094 x 1038 x 30 mm
Frame technology	Aluminum, silver anodized
Front glass thickness	2.0 mm
Cable length (IEC/UL)	Portrait: 300 mm Landscape: 1300 mm
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 / MC4-EVO2 (optional)

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

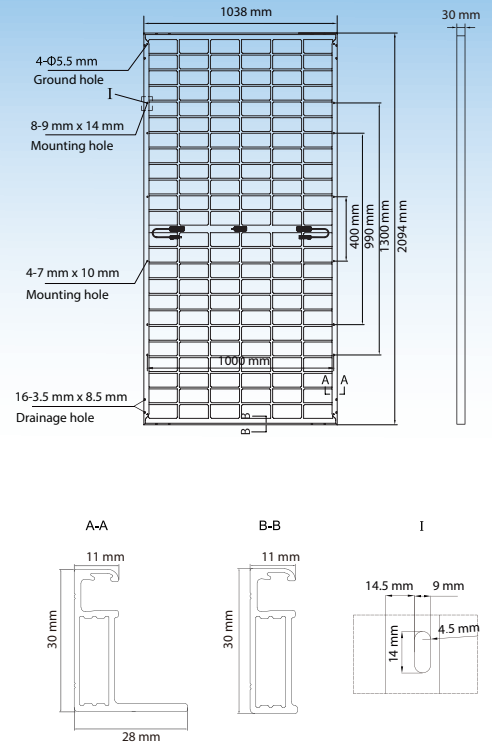
PACKING SPECIFICATIONS

① Module Weight	27.5 kg
② Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	1038 kg
Number of modules per 40'HQ container	792 pcs

① Tolerance +/- 1.0kg

② Subject to sales contract

MODULE DIMENSION DETAILS



CURVE

