

ASTRO 5 Semi

Create Sustainable and Efficient Green Energy



ASTRONERGY
A CHINT COMPANY

435W~460W

Monocrystalline PV Module
CHSM60M-HC Series (182)



KEY FEATURES

+5W

OUTPUT POSITIVE TOLERANCE
Guaranteed 0~+5W positive tolerance to ensure power output.



NON-DESTRUCTIVE CUTTING
Higher bending strength of cells and mechanical properties of modules.



INNOVATIONAL MULTI-BUSBAR TECHNOLOGY
Higher light absorption, lower risk of microcrack.

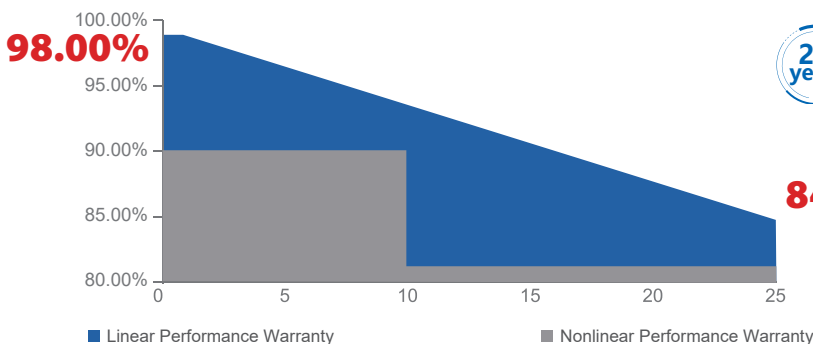


INNOVATIONAL HALF-CUT TECHNOLOGY
Better shading tolerance, higher reliability.



THE-STATE-OF-THE-ART APPEARANCE
Full black designed for a better aesthetic appearance and building integration.

WARRANTY



Warranty for Materials and Processing



Warranty for Extra Linear Power Output
(1st year ≤ 2.0%, 2nd~25th years ≤ 0.55% / year)

84.80%

Designed for the Australian Market



ELECTRICAL SPECIFICATIONS

STC rated output (P_{mpp})	435 Wp	440 Wp	445 Wp	450 Wp	455 Wp	460 Wp
Rated voltage (V_{mpp}) at STC	34.33 V	34.50 V	34.66 V	34.83 V	35.00 V	35.17 V
Rated current (I_{mpp}) at STC	12.67 A	12.76 A	12.84 A	12.92 A	13.00 A	13.08 A
Open circuit voltage (V_{oc}) at STC	40.85 V	41.05 V	41.25 V	41.45 V	41.65 V	41.85 V
Short circuit current (I_{sc}) at STC	13.38 A	13.48 A	13.59 A	13.71 A	13.81 A	13.91 A
Module efficiency	20.3%	20.5%	20.8%	21.0%	21.2%	21.5%
Rated output (P_{mpp}) at NMOT	325.1 Wp	328.8 Wp	332.6 Wp	336.3 Wp	340.0 Wp	343.8 Wp
Rated voltage (V_{mpp}) at NMOT	31.99 V	32.15 V	32.31 V	32.46 V	32.62 V	32.78 V
Rated current (I_{mpp}) at NMOT	10.16 A	10.23 A	10.29 A	10.36 A	10.42 A	10.49 A
Open circuit voltage (V_{oc}) at NMOT	38.60 V	38.79 V	38.98 V	39.17 V	39.36 V	39.55 V
Short circuit current (I_{sc}) at NMOT	10.85 A	10.94 A	11.02 A	11.12 A	11.20 A	11.29 A
Temperature coefficient (P_{mpp})	- 0.35%/°C					
Temperature coefficient (I_{sc})	+ 0.045%/°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	25 A					

Power Sorting: 0~+5W

* Measurement tolerance +/- 3%

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

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

MECHANICAL SPECIFICATIONS

Outer dimensions (L x W x H)	1890 x 1133 x 30 mm
Frame technology	Aluminum, silver anodized
Front glass thickness	3.2 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)
Fire performance (IEC/UL)	Class C (IEC) or Type 4 (UL)
Connector type (IEC/UL)	HCB40 or PV-KST4-EVO2/XY-UR, PVKBT4-EVO2/XY-UR(optional)

① Refer to Astronergy crystalline installation manual or contact technical department.

Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

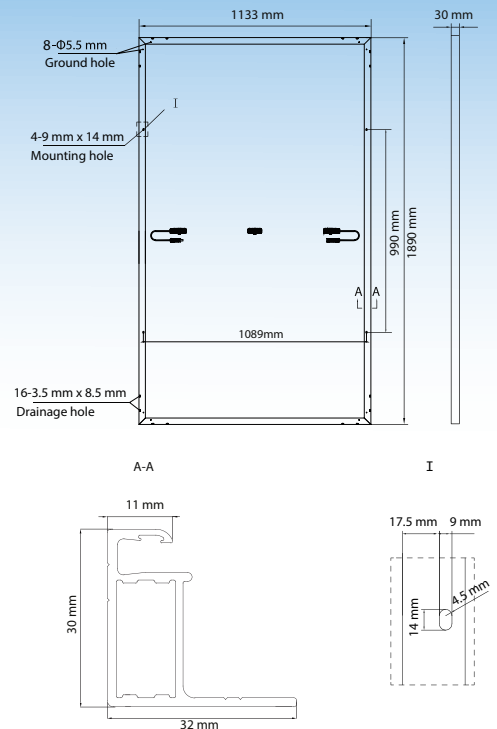
PACKING SPECIFICATIONS

① Module Weight	23.8 kg
② Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	892 kg
Number of modules per 40'HQ container	864 pcs

① Tolerance +/- 1.0kg

② Subject to sales contract

MODULE DIMENSION DETAILS



CURVE

