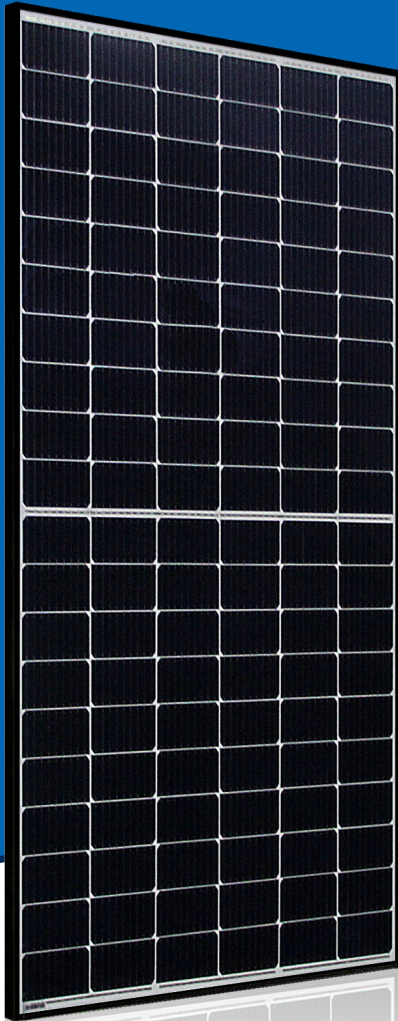


PENTA⁺ PremiumTM

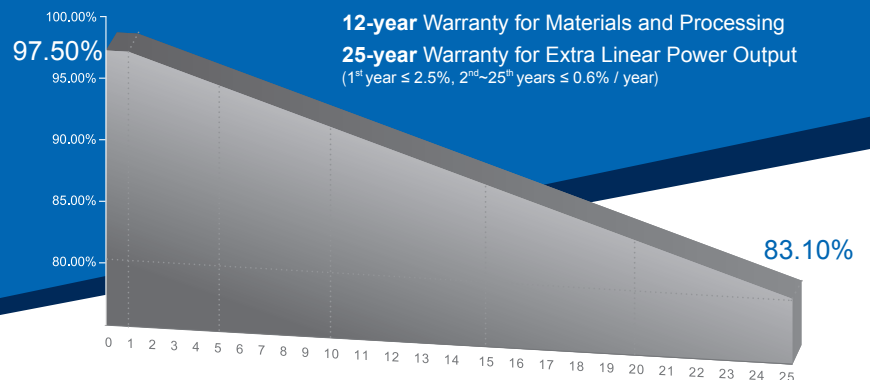
High Tech Leads Industry



310W~330W

Monocrystalline PV Module

CHSM60M-HC Series



*Optional: silver frame

COMPREHENSIVE CERTIFICATES



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

KEY FEATURES

- +5W 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.
- PASSED HAIL TEST**
Certified to hail resistance: ice ball size (d=45mm) and ice ball velocity (v=30.7m/s).
- Anti 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.



ASTRONERGY
A CHNT COMPANY

ELECTRICAL SPECIFICATIONS

STC rated output (P_{mpp})*	310 Wp	315 Wp	320 Wp	325 Wp	330 Wp
Rated voltage (V_{mpp}) at STC	33.15 V	33.44 V	33.68 V	33.93 V	34.17 V
Rated current (I_{mpp}) at STC	9.35 A	9.42 A	9.50 A	9.58 A	9.66 A
Open circuit voltage (V_{oc}) at STC	40.11 V	40.42 V	40.72 V	41.03 V	41.32 V
Short circuit current (I_{sc}) at STC	9.82 A	9.90 A	9.98 A	10.06 A	10.14 A
Module efficiency	18.8%	19.1%	19.4%	19.7%	20.0%
Rated output (P_{mpp}) at NOCT	227.8 Wp	231.5 Wp	235.1 Wp	238.8 Wp	242.5 Wp
Rated voltage (V_{mpp}) at NOCT	30.54 V	30.80 V	31.02 V	31.25 V	31.47 V
Rated current (I_{mpp}) at NOCT	7.46 A	7.52 A	7.58 A	7.64 A	7.71 A
Open circuit voltage (V_{oc}) at NOCT	37.21 V	37.50 V	37.77 V	38.06 V	38.33 V
Short circuit current (I_{sc}) at NOCT	7.90 A	7.96 A	8.03 A	8.09 A	8.16 A
Temperature coefficient (P_{mpp})	- 0.380%/°C				
Temperature coefficient (I_{sc})	+0.042%/°C				
Temperature coefficient (V_{oc})	- 0.284%/°C				
Normal operating cell temperature (NOCT)	46±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 tolerance +/- 3%

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

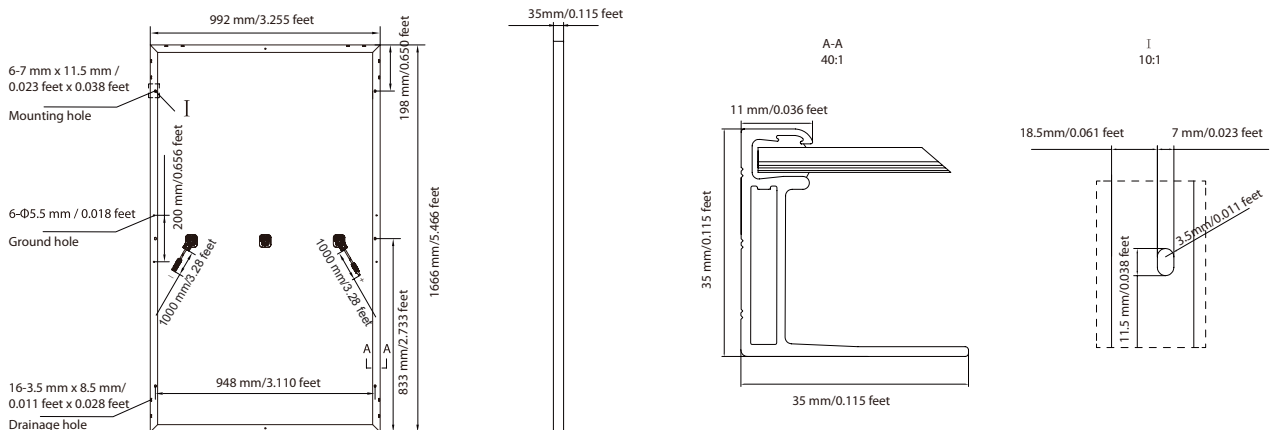
NOCT: Irradiance 800W/m², Ambient Temperature 20°C, AM=1.5, Wind Speed 1m/s

MECHANICAL SPECIFICATIONS

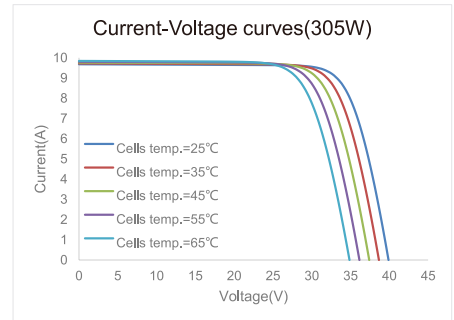
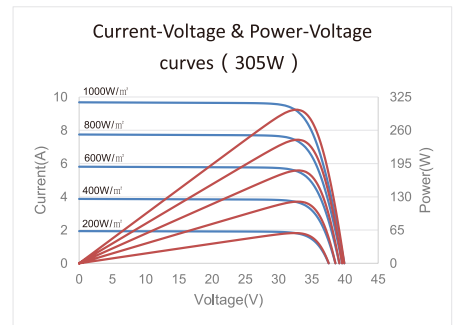
Outer dimensions (L x W x H)	1666 x 992 x 35 mm 65.59 x 39.06 x 1.38 in
Frame technology	Aluminum, silver / black anodized
Module composition	Glass / EVA / Backsheet (white)
Front glass thickness	3.2 mm / 0.13 in
Cable length (IEC/UL)	1000 mm / 39.37 in
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
① Maximum mechanical test load	6000 Pa
Fire performance (IEC/UL)	Class C (IEC) or Type 1 (UL)
Connector type (IEC/UL)	MC4 (Stäubli) original

① Refer to Astronergy Crystalline Silicon PV Module Installation Manual or contact technical department.
Maximum Mechanical Test Load=1.5*Maximum Mechanical Design Load.

MODULE DIMENSION DETAILS



CURVE



PACKING SPECIFICATIONS

① Weight (module only)	18.6 kg / 41.01 lbs
② Packing unit	31 pcs / box
Weight of packing unit (for 40'HQ container)	616 kg / 1358 lbs
Number of modules per 40'HQ container	868 pcs

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

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