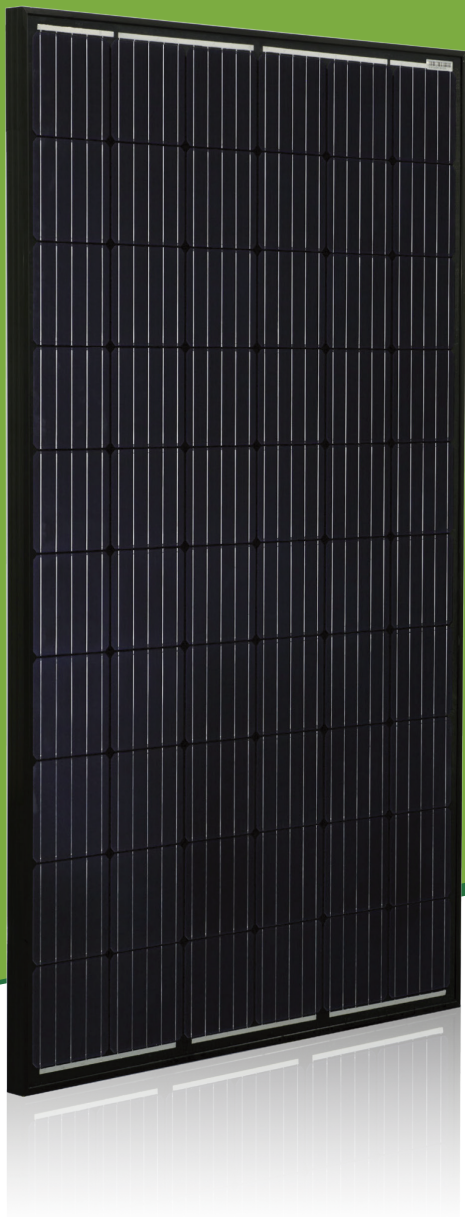


For Global Market

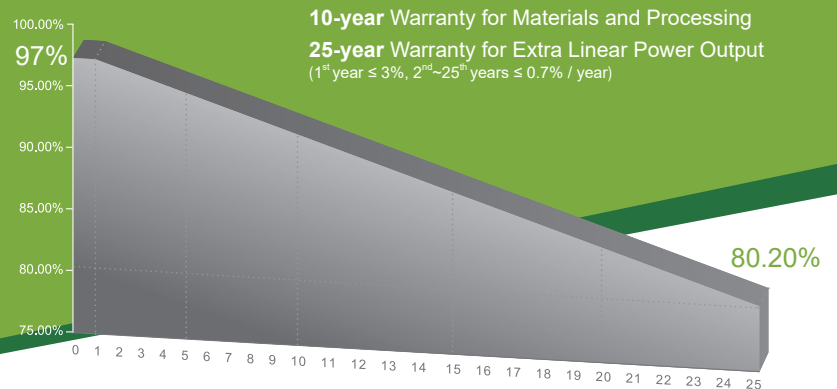


AstroAtom™ 290W~310W

5BB-Monocrystalline PV Module

CHSM6610M(BL) Series

Tier 1 Bloomberg	No.1 PHOTON	MunichRe Insured	DNV GL 2017 TOP Performance
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KEY FEATURES

- +5W OUTPUT POSITIVE TOLERANCE**
Guaranteed 0~+5W positive tolerance ensures power output reliability.
- INNOVATIONAL 5-BUSBAR CELLS**
Reduces the cell series resistance and internal stress, decreases the risk of micro-crack and improves the module output.
- INNOVATIVE PERC CELL TECHNOLOGY**
Excellent cell efficiency and output.
- LOWER TEMPERATURE COEFFICIENT**
Improved temperature coefficient decreases power loss in the high temperature application.
- THE-STATE-OF-THE-ART APPEARANCE**
Full black designed for a better aesthetic appearance and building integration.
- 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.

COMPREHENSIVE CERTIFICATES



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



ELECTRICAL SPECIFICATIONS

STC rated output (P_{mpp})*	290 Wp	295 Wp	300 Wp	305 Wp	310 Wp
Rated voltage (V_{mpp}) at STC	32.15 V	32.38 V	32.59 V	32.80 V	32.96 V
Rated current (I_{mpp}) at STC	9.03 A	9.12 A	9.21 A	9.30 A	9.42 A
Open circuit voltage (V_{oc}) at STC	39.45 V	39.81 V	39.90 V	40.05 V	40.18 V
Short circuit current (I_{sc}) at STC	9.54 A	9.59 A	9.68 A	9.72 A	9.86 A
Module efficiency	17.8%	18.1%	18.4%	18.7%	19.0%
Rated output (P_{mpp}) at NOCT	213.1 Wp	216.8 Wp	220.5 Wp	224.1 Wp	227.8 Wp
Rated voltage (V_{mpp}) at NOCT	29.58 V	29.79 V	30.00 V	30.21 V	30.31 V
Rated current (I_{mpp}) at NOCT	7.20 A	7.28 A	7.35 A	7.42 A	7.52 A
Open circuit voltage (V_{oc}) at NOCT	36.60 V	36.93 V	37.01 V	37.15 V	37.27 V
Short circuit current (I_{sc}) at NOCT	7.67 A	7.71 A	7.79 A	7.82 A	7.93 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)	1000V _{DC}				
Number of diodes	3				
Junction box IP rating	IP 67				
Maximum series fuse rating	15 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

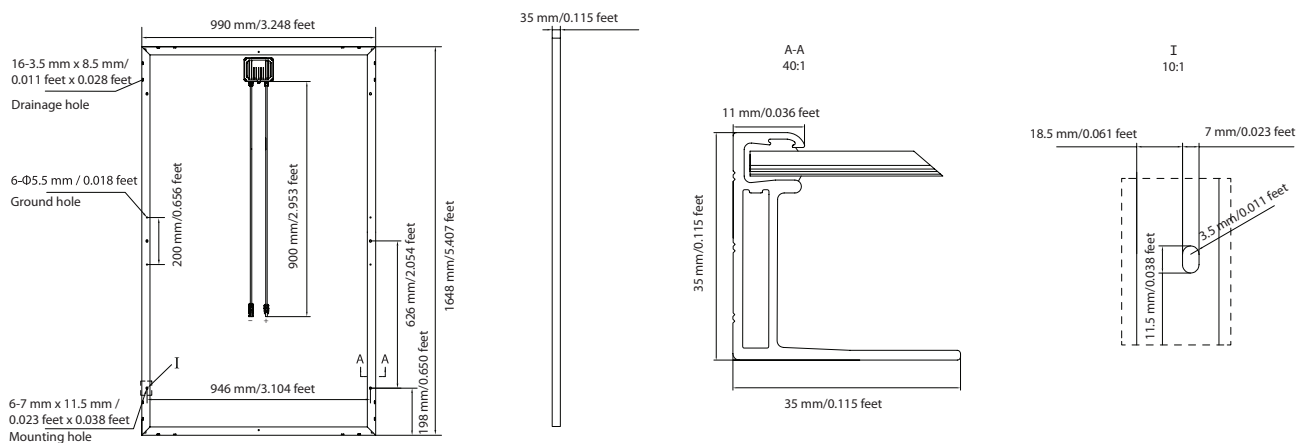
MECHANICAL SPECIFICATIONS

Outer dimensions (L x W x H)	1648 x 990 x 35 mm 64.88 x 38.98 x 1.38 in
Frame technology	Aluminum, black anodized
Module composition	Glass / EVA / Backsheet (black)
Front glass thickness	3.2 mm / 0.13 in
① Cable length (IEC/UL)	900 mm / 35.43 in
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
② Maximum mechanical test load	6000 Pa
Fire performance (IEC/UL)	Class C (IEC) or Type 1 (UL)
Connector type (IEC/UL)	MC4 compatible

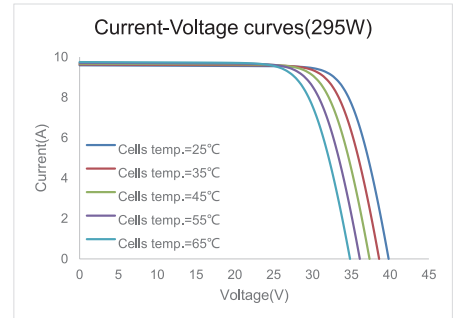
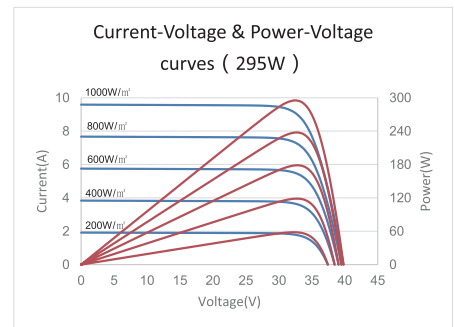
① Option: 900(+)/600(-) mm or 1000 mm for defined projects in advance.

② 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)	18.3 kg / 40.34 lbs
② Packing unit	31 pcs / box
Weight of packing unit (for 40'HQ container)	606 kg / 1336 lbs
Number of modules per 40'HQ container	868 pcs

① Tolerance +/- 1.0kg

② Subject to sales contract