

# ASTRO 5s

Create Sustainable and Efficient Green Energy



**ASTRONERGY**  
A CHINT COMPANY

## 390W~405W

Monocrystalline PV Module  
CHSM54M(BL)-HC Series (182)



### KEY FEATURES



**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.

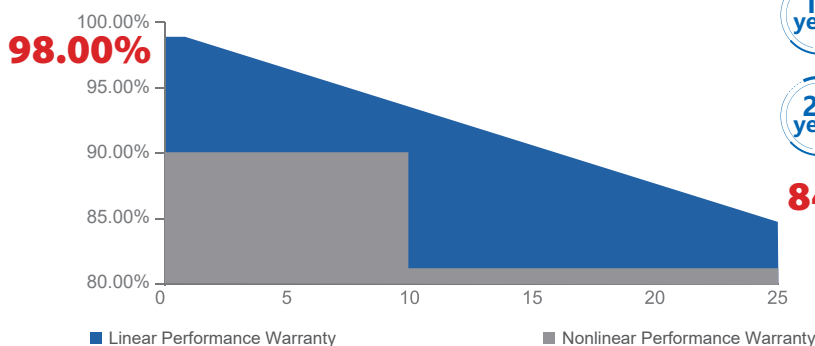


**THE-STATE-OF-THE-ART APPEARANCE**  
Full black designed for a better aesthetic appearance and building integration.



**PID RESISTANCE**  
Excellent PID resistance.

### WARRANTY



Warranty for Materials and Processing  
(Standard)



Warranty for Materials and Processing  
(Optional, special for rooftop market)



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

**84.80%**

Preliminary  
For Global Market



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

## ELECTRICAL SPECIFICATIONS

|                                             |                     |          |          |          |
|---------------------------------------------|---------------------|----------|----------|----------|
| STC rated output ( $P_{mpp}$ )              | 390 Wp              | 395 Wp   | 400 Wp   | 405 Wp   |
| Rated voltage ( $V_{mpp}$ ) at STC          | 30.76 V             | 30.92 V  | 31.09 V  | 31.26 V  |
| Rated current ( $I_{mpp}$ ) at STC          | 12.68 A             | 12.77 A  | 12.86 A  | 12.96 A  |
| Open circuit voltage ( $V_{oc}$ ) at STC    | 36.60 V             | 36.80 V  | 37.00 V  | 37.20 V  |
| Short circuit current ( $I_{sc}$ ) at STC   | 13.40 A             | 13.52 A  | 13.65 A  | 13.76 A  |
| Module efficiency                           | 20.0%               | 20.2%    | 20.5%    | 20.7%    |
| Rated output ( $P_{mpp}$ ) at NMOT          | 291.5 Wp            | 295.2 Wp | 298.9 Wp | 302.7 Wp |
| Rated voltage ( $V_{mpp}$ ) at NMOT         | 28.66 V             | 28.82 V  | 28.98 V  | 29.13 V  |
| Rated current ( $I_{mpp}$ ) at NMOT         | 10.17 A             | 10.24 A  | 10.32 A  | 10.39 A  |
| Open circuit voltage ( $V_{oc}$ ) at NMOT   | 34.59 V             | 34.78 V  | 34.97 V  | 35.15 V  |
| Short circuit current ( $I_{sc}$ ) at NMOT  | 10.87 A             | 10.97 A  | 11.07 A  | 11.17 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)             | 1000V <sub>DC</sub> |          |          |          |
| Number of diodes                            | 3                   |          |          |          |
| Junction box IP rating                      | IP 68               |          |          |          |
| Maximum series fuse rating                  | 25 A                |          |          |          |

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, AM=1.5

NMOT: Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, AM=1.5, Wind Speed 1m/s

## MECHANICAL SPECIFICATIONS

|                                           |                                        |
|-------------------------------------------|----------------------------------------|
| Outer dimensions (L x W x H)              | 1722 x 1134 x 30 mm                    |
| Frame technology                          | Aluminum, black anodized               |
| Front glass thickness                     | 3.2 mm                                 |
| Cable length (IEC/UL)                     | Portrait: 300 mm<br>Landscape: 1200 mm |
| Cable diameter (IEC/UL)                   | 4 mm <sup>2</sup> / 12 AWG             |
| <sup>①</sup> 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 / MC4 (optional)                 |

<sup>①</sup> Refer to Astronergy crystalline installation manual or contact technical department.

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

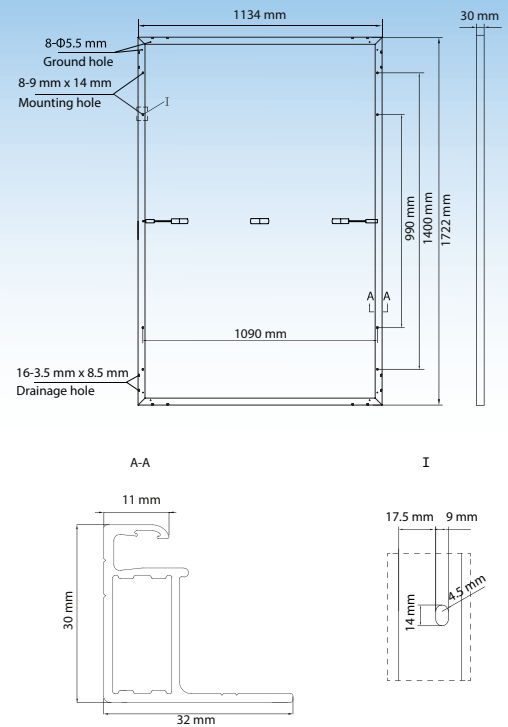
## PACKING SPECIFICATIONS

|                                              |              |
|----------------------------------------------|--------------|
| <sup>①</sup> Module Weight                   | 21.5 kg      |
| <sup>②</sup> Packing unit                    | 36 pcs / box |
| Weight of packing unit (for 40'HQ container) | 813 kg       |
| Number of modules per 40'HQ container        | 936 pcs      |

<sup>①</sup> Tolerance +/- 1.0kg

<sup>②</sup> Subject to sales contract

## MODULE DIMENSION DETAILS



## CURVE

