



ASTRONERGY

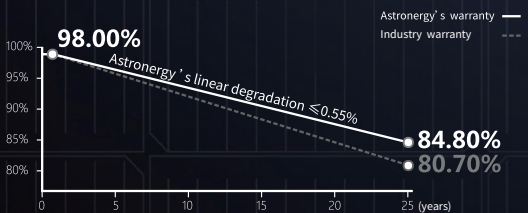
# ASTRO 5s

Create Sustainable and Efficient Green Energy

CHSM54M(BL)-HC  
CHSM54M(BLH)-HC  
Monofacial Series (182)

## 390~405W

PERC+ / Multi-busbar / Half-cut  
Non-destructive cutting  
PID resistance



- 12-year Product Warranty (Standard)
- 15-year Product Warranty (Optional, special for rooftop market)
- 25-year Linear Power Warranty



ISO 9001:2015:ISO Quality Management System  
 ISO 14001:2015:ISO Environment Management System  
 ISO 45001:Occupational Health and Safety  
 The first solar company which passed the Nord IEC/TS 62941 certification audit.



Tier 1  
BloombergNEF



**390~405W**

POWER RANGE

**0~+5W**

POWER SORTING

**20.7%**MAX MODULE  
EFFICIENCY**≤ 2.0%**FIRST YEAR  
POWER DEGRADATION**≤ 0.55%**YEAR 2-25  
POWER DEGRADATION

## Electrical Specifications

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

|                                 |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|
| Rated output (Pmpp / Wp)        | 390   | 395   | 400   | 405   |
| Rated voltage (Vmpp / V)        | 30.76 | 30.92 | 31.09 | 31.26 |
| Rated current (Impp / A)        | 12.68 | 12.77 | 12.86 | 12.96 |
| Open circuit voltage (Voc / V)  | 36.60 | 36.80 | 37.00 | 37.20 |
| Short circuit current (Isc / A) | 13.40 | 13.52 | 13.65 | 13.76 |
| Module efficiency               | 20.0% | 20.2% | 20.5% | 20.7% |

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

|                                 |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|
| Rated output (Pmpp / Wp)        | 291.5 | 295.2 | 298.9 | 302.7 |
| Rated voltage (Vmpp / V)        | 28.66 | 28.82 | 28.98 | 29.13 |
| Rated current (Impp / A)        | 10.17 | 10.24 | 10.32 | 10.39 |
| Open circuit voltage (Voc / V)  | 34.59 | 34.78 | 34.97 | 35.15 |
| Short circuit current (Isc / A) | 10.87 | 10.97 | 11.07 | 11.17 |

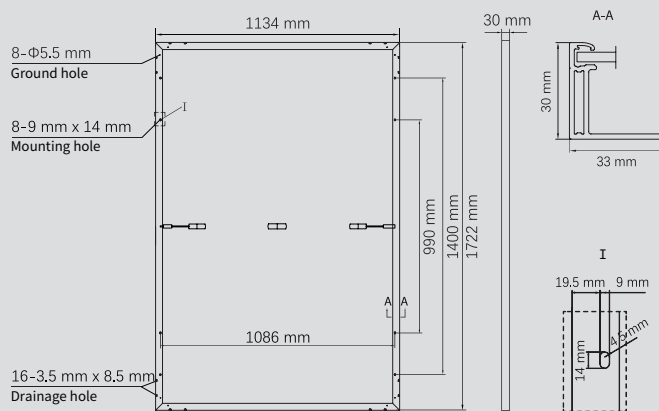
## Temperature Ratings (STC)

|   |           |                              |  |
|---|-----------|------------------------------|--|
| Temperature coefficient (Pmpp)              | -0.34%/°C | No. of diodes                | 3  |
| Temperature coefficient (Isc)               | +0.04%/°C | Junction box IP rating       | IP 68                                      |
| Temperature coefficient (Voc)               | -0.25%/°C | Max. series fuse rating      | 25 A                                       |
| Nominal module operating temperature (NMOT) | 41±2°C    | Max. system voltage (IEC/UL) | 1000V <sub>DC</sub> or 1500V <sub>DC</sub> |

## Operating Parameters

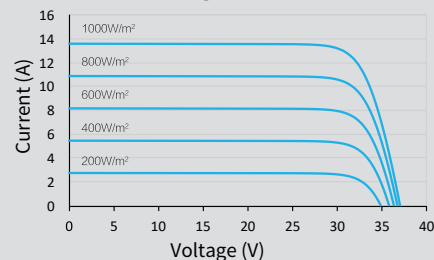
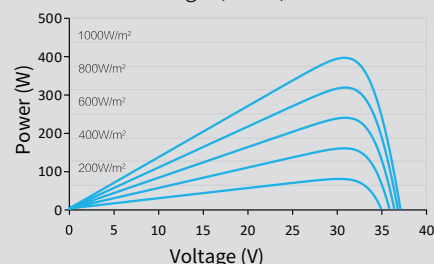
## Mechanical Specifications

|   |  |
|---|--|
| Outer dimensions (L x W x H)                  | 1722 x 1134 x 30 mm                                  |
| Cell type                                     | P type mono-crystalline                              |
| No. of cells                                  | 108 (6*18)   |
| Frame technology                              | Aluminum, black anodized                             |
| Front glass thickness                         | 3.2 mm   |
| Cable length (Including connector)            | Portrait: (+)350 mm, (-)250 mm;<br>Customized length |
| Cable diameter (IEC/UL)                       | 4 mm <sup>2</sup> / 12 AWG                           |
| ① Maximum mechanical test load                | 5400 Pa (front) / 2400 Pa (back)                     |
| Connector type (IEC/UL)                       | HCB40 (Standard) / MC4, MC4-EVO2A (Optional)         |
| Module weight                                 | 21.3 kg  |
| Packing unit                                  | 36 pcs / box (Subject to sales contract)             |
| Weight of packing unit (for 40' HQ container) | 811 kg   |
| Modules per 40' HQ container                  | 936 pcs  |



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

## Curve

**Current-Voltage (400W)****Power-Voltage (400W)****Current-Voltage (400W)**