



ASTRONERGY

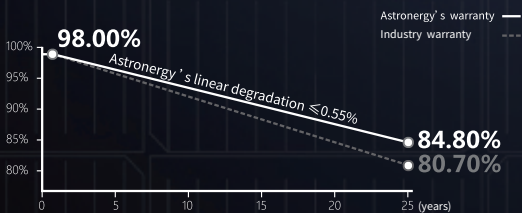
# ASTRO 5s

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



25-year Product Warranty (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

| Type                            | CHSM54M(BL)<br>-HC-390 | CHSM54M(BL)<br>-HC-395 | CHSM54M(BL)<br>-HC-400 | CHSM54M(BL)<br>-HC-405 |
|---------------------------------|------------------------|------------------------|------------------------|------------------------|
| 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 |

Power Sorting: 0~+5W Measurement tolerance +/- 3%

## 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     | 1000V <sub>DC</sub> (BL) or 1500V <sub>DC</sub> (BLH) |
| Fire performance                            | Class C   |                         |   |

## Operating Parameters

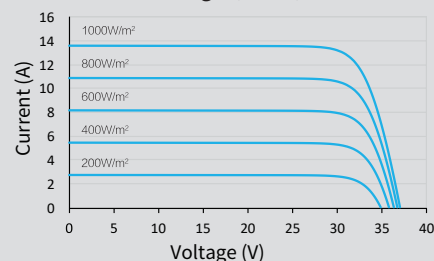
## Mechanical Specifications

|   |  |
|---|--|
| 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)                       | PV-HCB40 (Astronergy) or PV-KST4/xy-UR, PV-KBT4/xy-UR,<br>PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy (Stäubli) |
| 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  |

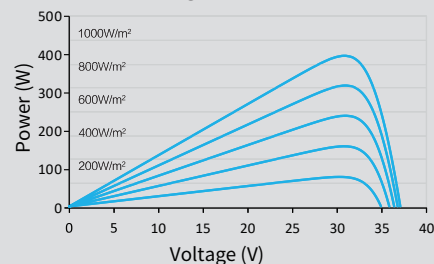
① Refer to Astronergy crystalline installation manual or contact technical department.  
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

## Curve

Current-Voltage (400W)



Power-Voltage (400W)



Current-Voltage (400W)

