



ASTRONERGY



ASTRO 5s

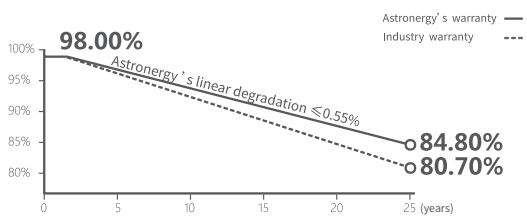
CHSM54M-HC
Monofacial Series(182)

400~415W

Warranty

12 12-year Product Warranty
15 15-year Product Warranty
(Optional, special for rooftop market)

25 25-year Linear Power Warranty



Key Features

- Suitable for distributed projects
- High Power
- High Reliability
- Easy to install and transport



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



400~415W

POWER RANGE

0~+5W

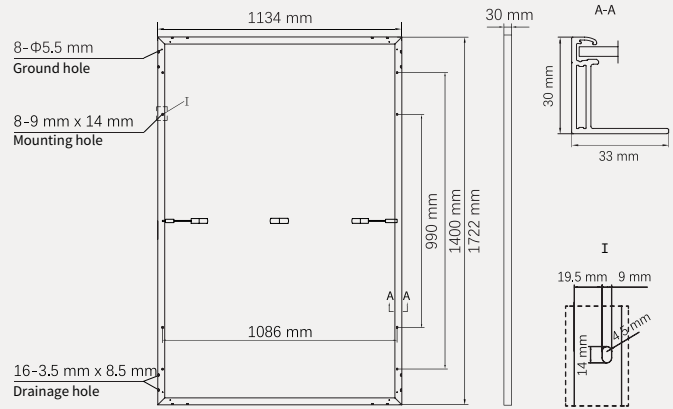
POWER SORTING

21.3%MAX MODULE
EFFICIENCY**≤ 2.0%**FIRST YEAR
POWER DEGRADATION**≤ 0.55%**YEAR 2-25
POWER DEGRADATION

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 or silver anodized
Front glass thickness	3.2 mm
Cable length (Including connector)	Portrait: (+)350 mm, (-)250 mm; Customized length
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 (Standard) / 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.



Electrical Specifications

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

	400	405	410	415
Rated output (Pmpp / Wp)	400	405	410	415
Rated voltage (Vmpp / V)	31.09	31.26	31.43	31.60
Rated current (Impp / A)	12.86	12.96	13.05	13.13
Open circuit voltage (Voc / V)	37.00	37.20	37.40	37.60
Short circuit current (Isc / A)	13.65	13.76	13.88	13.99
Module efficiency	20.5%	20.7%	21.0%	21.3%

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

	298.9	302.7	306.4	310.1
Rated output (Pmpp / Wp)	298.9	302.7	306.4	310.1
Rated voltage (Vmpp / V)	28.98	29.13	29.29	29.45
Rated current (Impp / A)	10.32	10.39	10.46	10.53
Open circuit voltage (Voc / V)	34.97	35.15	35.34	35.53
Short circuit current (Isc / A)	11.07	11.17	11.26	11.35

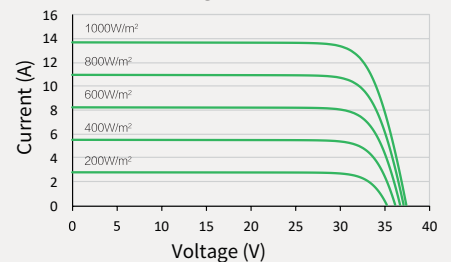
Temperature Ratings (STC)

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)	1500V _{DC}

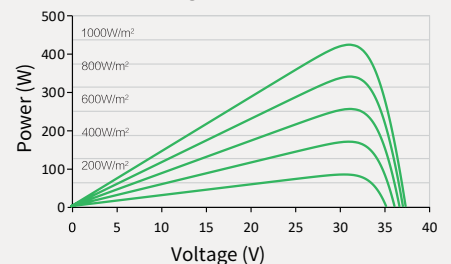
Operating Parameters

Curve

Current-Voltage (410W)



Power-Voltage (410W)



Current-Voltage (410W)

