



ASTRONERGY

Special for Australian Market

# ASTRO 5 Semi

Create Sustainable and Efficient Green Energy

## CHSM60M-HC Monofacial Series (182)

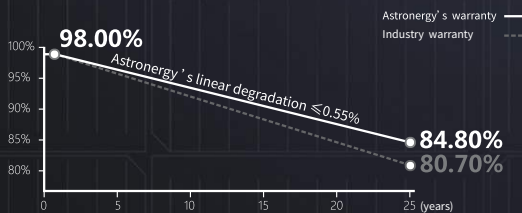
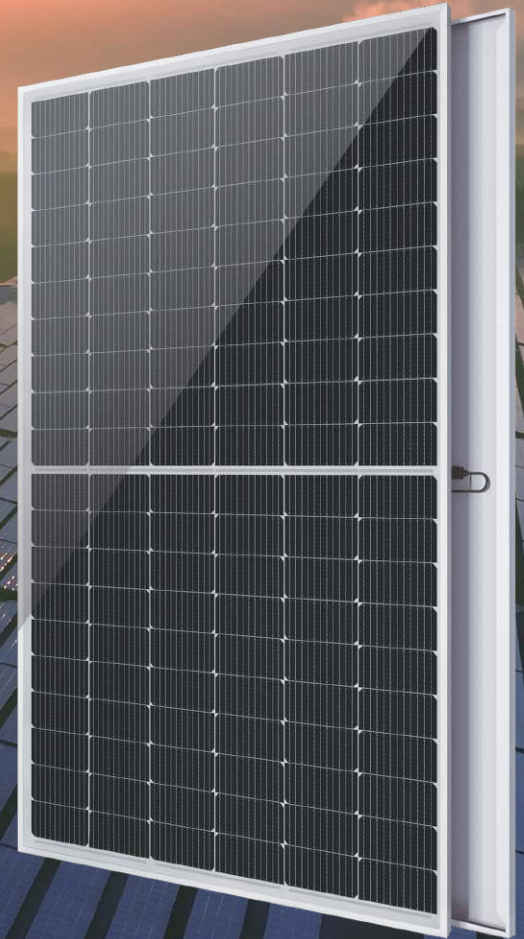
# 445~460W

PERC+ / Multi-busbar / Half-cut

Non-destructive cutting

PID resistance

Lower BOS cost & LCOE



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



**445~460W**

POWER RANGE

**0~+5W**

POWER SORTING

**21.3%**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)	445	450	455	460
Rated voltage (Vmpp / V)	34.66	34.83	35.00	35.17
Rated current (Impp / A)	12.84	12.92	13.00	13.08
Open circuit voltage (Voc / V)	41.25	41.45	41.65	41.85
Short circuit current (Isc / A)	13.59	13.71	13.81	13.91
Module efficiency	20.6%	20.9%	21.1%	21.3%

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

Rated output (Pmpp / Wp)	332.6	336.3	340.0	343.8
Rated voltage (Vmpp / V)	32.31	32.46	32.62	32.78
Rated current (Impp / A)	10.29	10.36	10.42	10.49
Open circuit voltage (Voc / V)	38.98	39.17	39.36	39.55
Short circuit current (Isc / A)	11.02	11.12	11.20	11.29

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

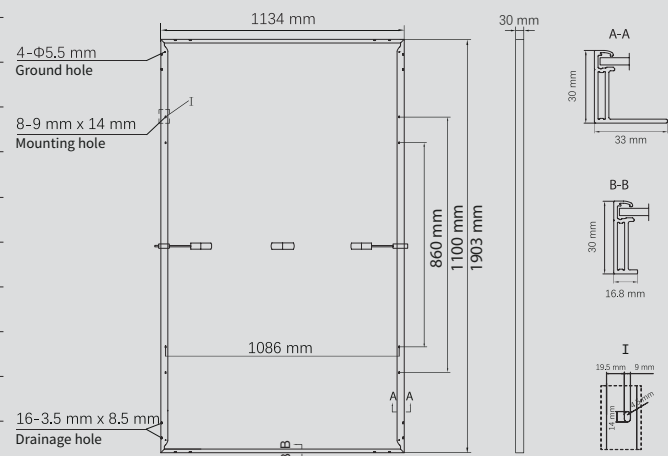
## Temperature Ratings (STC)

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 (IEC/UL)	1500V <sub>DC</sub>

## Operating Parameters

## Mechanical Specifications

Outer dimensions (L x W x H)	1903 x 1134 x 30 mm
Cell type	P type mono-crystalline
No. of cells	120 (6*20)
Frame technology	Aluminum, 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 <sup>2</sup> / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 (Standard) or PV-KST4-EVO2A/XY-UR, PVKBT4-EVO2A/XY-UR (optional)
Module weight	23.8 kg
Packing unit	36 pcs / box (Subject to sales contract)
Weight of packing unit (for 40' HQ container)	901 kg
Modules per 40' HQ container	864 pcs



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

## Curve

