



ASTRONERGY
A CHNT COMPANY

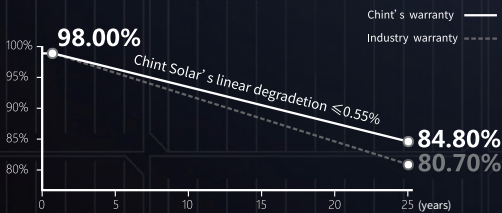
ASTRO 4 Semi

Create Sustainable and Efficient Green Energy

CHSM72M-HC
Monofacial Series (166)

445~460W

PERC+ / Multi-busbar / Half-cut
PID resistance



12-year Product Warranty
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 TOLERANCE

21.2%

MAX MODULE EFFICIENCY

≤ 2.0%

FIRST YEAR POWER DEGRADATION

≤ 0.55%

YEAR 2-25 POWER DEGRADATION

Electrical Specifications

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

Rated output (P _{mpp} / W _p)	445	450	455	460
Rated voltage (V _{mpp} / V)	41.05	41.32	41.51	41.70
Rated current (I _{mpp} / A)	10.84	10.89	10.96	11.03
Open circuit voltage (V _{oc} / V)	48.80	49.05	49.35	49.62
Short circuit current (I _{sc} / A)	11.30	11.37	11.44	11.51
Module efficiency	20.5%	20.7%	20.9%	21.2%

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

Rated output (P _{mpp} / W _p)	330.8	334.5	338.2	342.0
Rated voltage (V _{mpp} / V)	38.12	38.37	38.55	38.72
Rated current (I _{mpp} / A)	8.68	8.72	8.78	8.83
Open circuit voltage (V _{oc} / V)	45.70	45.94	46.22	46.47
Short circuit current (I _{sc} / A)	9.10	9.16	9.22	9.27

Temperature Ratings (STC)

Temperature coefficient (P _{mpp})	-0.35%/°C	No. of diodes	3
Temperature coefficient (I _{sc})	+0.05%/°C	Junction box IP rating	IP 68
Temperature coefficient (V _{oc})	-0.27%/°C	Max. series fuse rating	20 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

Operating Parameters

Mechanical Specifications

Outer dimensions (L x W x H)	2094 x 1038 x 35 mm
Cell Type	P type Mono-crystalline
No. of cells	144 (6*24)
Frame technology	Aluminum, silver anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 300 mm; Landscape: 1300 mm
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 / MC4-EVO2 (optional)
Module weight	23 kg (Tolerance +/- 1.0kg)
Packing unit	31 pcs / box (Subject to sales contract)
Weight of packing unit (for 40' HQ container)	749 kg
Modules per 40' HQ container	682 pcs

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

Curve

