



ASTRONERGY
A CHNT COMPANY

ASTRO N5s

Create Sustainable and Efficient Green Energy

CHSM54N(BL)-HC
Monofacial Series (182)

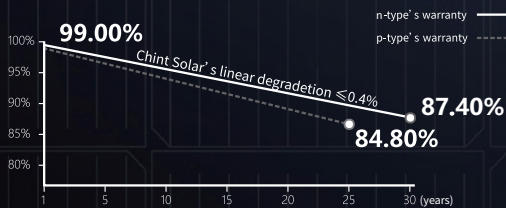
405~420W

TOPCon / Multi-busbar / Half-cut

Non-destructive cutting

PID resistance

Lower BOS cost & LCOE



12-year Product Warranty

30-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



405~420W

POWER RANGE

0~+5W

POWER TOLERANCE

21.5%

MAX MODULE EFFICIENCY

≤ 1.0%

FIRST YEAR POWER DEGRADATION

≤ 0.4%

YEAR 2-30 POWER DEGRADATION

Electrical Specifications

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

Rated output (P _{mpp} / W _p)	405	410	415	420
Rated voltage (V _{mpp} / V)	31.73	31.75	31.76	31.93
Rated current (I _{mpp} / A)	12.76	12.91	13.06	13.15
Open circuit voltage (V _{oc} / V)	37.76	37.78	37.80	38.00
Short circuit current (I _{sc} / A)	13.41	13.58	13.76	13.87
Module efficiency	20.7%	21.0%	21.3%	21.5%

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

Rated output (P _{mpp} / W _p)	304.6	308.3	312.1	315.8
Rated voltage (V _{mpp} / V)	29.87	29.88	29.90	30.06
Rated current (I _{mpp} / A)	10.20	10.32	10.44	10.51
Open circuit voltage (V _{oc} / V)	35.87	35.89	35.91	36.10
Short circuit current (I _{sc} / A)	10.82	10.96	11.11	11.20

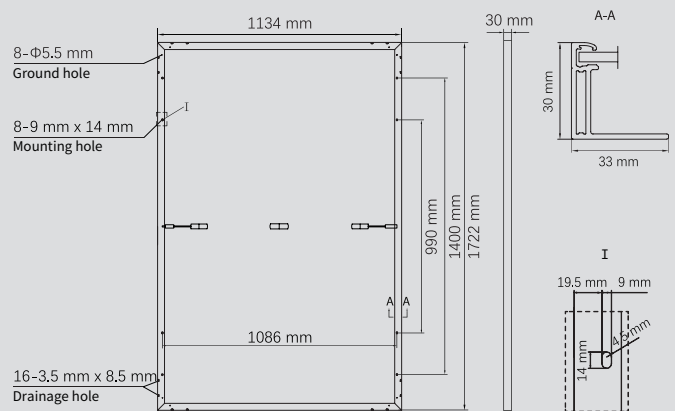
Temperature Ratings (STC)

Temperature coefficient (P _{mpp})	-0.30%/°C	No. of diodes	3
Temperature coefficient (I _{sc})	+0.043%/°C	Junction box IP rating	IP 68
Temperature coefficient (V _{oc})	-0.24%/°C	Max. series fuse rating	25 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

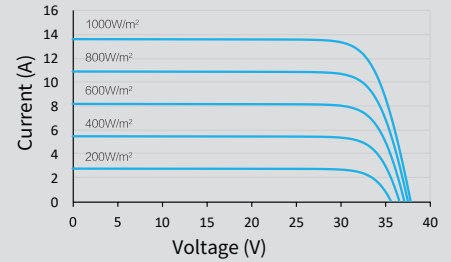
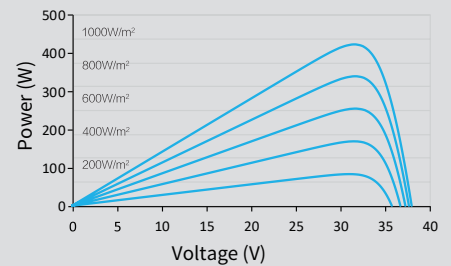
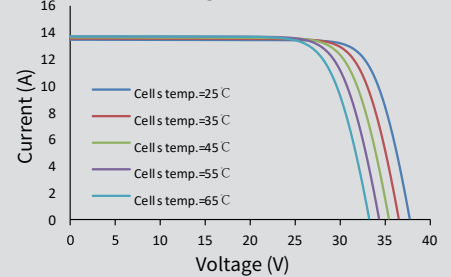
Operating Parameters

Mechanical Specifications

Outer dimensions (L x W x H)	1722 x 1134 x 30 mm
Cell Type	n-type Mono-crystalline
No. of cells	108 (6*18)
Frame technology	Aluminum, black anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 300 mm; Landscape: 1200 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	21.6 kg
Packing unit	36 pcs / box (Subject to sales contract)
Weight of packing unit (for 40' HQ container)	821 kg
Modules per 40' HQ container	936 pcs



Curve

Current-Voltage (415W)**Power-Voltage (415W)****Current-Voltage (415W)**

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