



ASTRONERGY

ASTRO N5s

Create Sustainable and Efficient Green Energy

CHSM54N(BL)-HC
CHSM54N(BLH)-HC
Monofacial Series (182)

405~420W

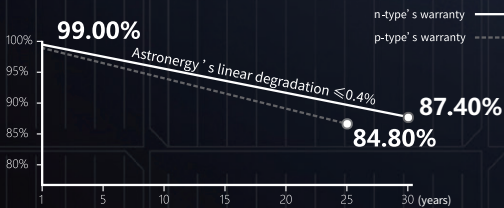
TOPCon / Half-cut

Low temperature coefficient (Pmpp)

Non-destructive cutting

PID resistance

Low BOS cost & LCOE



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

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 (Pmpp / Wp)	405	410	415	420
Rated voltage (Vmpp / V)	31.43	31.60	31.76	31.93
Rated current (Impp / A)	12.89	12.98	13.06	13.15
Open circuit voltage (Voc / V)	37.40	37.60	37.80	38.00
Short circuit current (Isc / A)	13.54	13.65	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 (Pmpp / Wp)	304.6	308.3	312.1	315.8
Rated voltage (Vmpp / V)	29.58	29.74	29.90	30.06
Rated current (Impp / A)	10.30	10.37	10.44	10.51
Open circuit voltage (Voc / V)	35.53	35.72	35.91	36.10
Short circuit current (Isc / A)	10.93	11.02	11.11	11.20

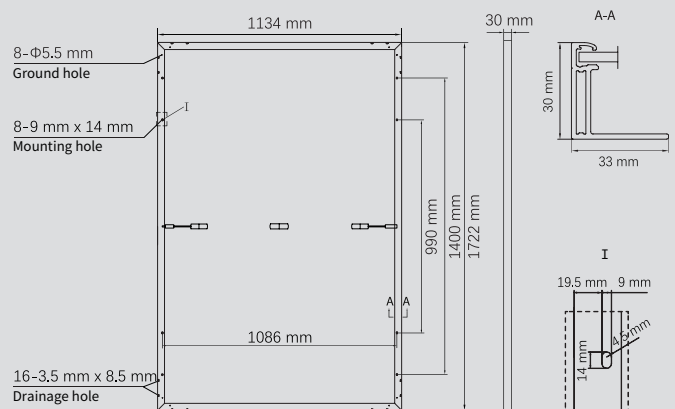
Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.30%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.043%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.24%/°C	Max. series fuse rating	25 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1000V _{DC} or 1500V _{DC}

Operating Parameters

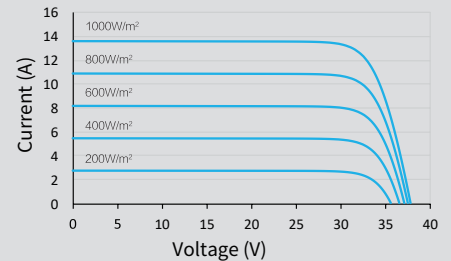
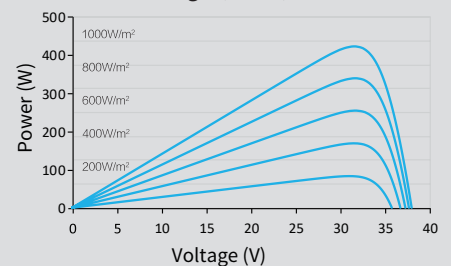
Mechanical Specifications

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 (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, 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.

Curve

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