



ASTRONERGY

preliminary

ASTRO N5s

Create Sustainable and Efficient Green Energy

CHSM54N-HC Monofacial Series (182)

415~430W

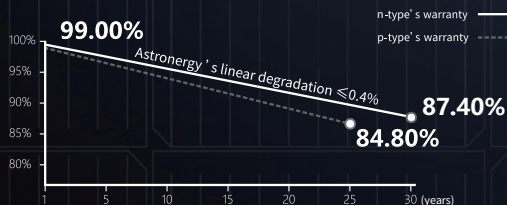
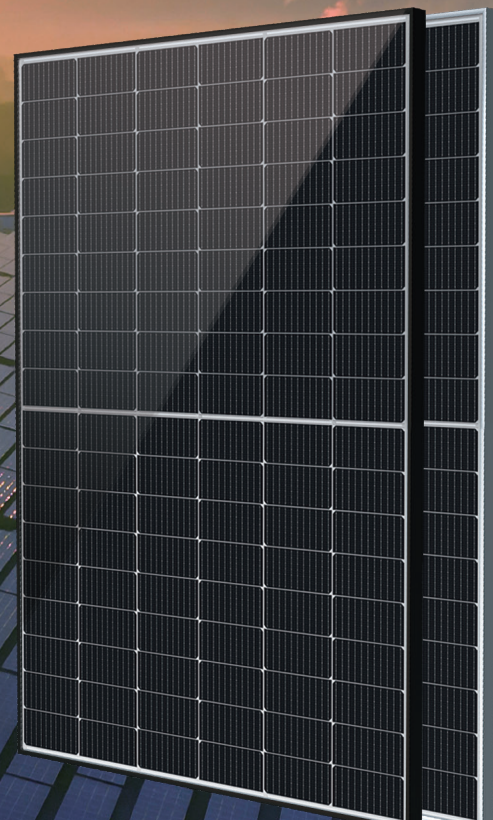
TOPCon / Half-cut

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



415~430W

POWER RANGE

0~+5W

POWER SORTING

22.0%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)	415	420	425	430
Rated voltage (V _{mpp} / V)	31.76	31.93	32.10	32.27
Rated current (I _{mpp} / A)	13.06	13.15	13.24	13.33
Open circuit voltage (V _{oc} / V)	37.80	38.00	38.20	38.40
Short circuit current (I _{sc} / A)	13.76	13.87	13.98	14.09
Module efficiency	21.3%	21.5%	21.8%	22.0%

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

Rated output (P _{mpp} / W _p)	312.1	315.8	319.6	323.4
Rated voltage (V _{mpp} / V)	29.90	30.06	30.21	30.37
Rated current (I _{mpp} / A)	10.44	10.51	10.58	10.65
Open circuit voltage (V _{oc} / V)	35.91	36.10	36.29	36.48
Short circuit current (I _{sc} / A)	11.11	11.20	11.28	11.37

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}

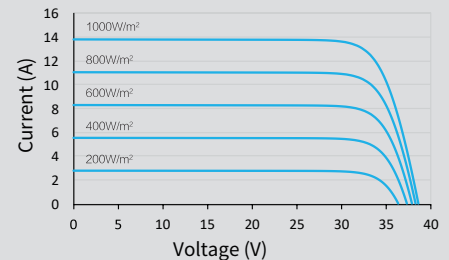
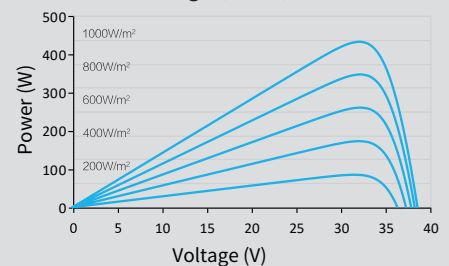
Operating Parameters

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 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.

Curve

Current-Voltage (425W)**Power-Voltage (425W)****Current-Voltage (425W)**