



ASTRONERGY



# ASTRO N5s

CHSM54N-HC  
Monofacial Series

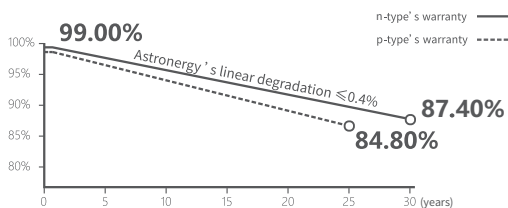
# 425~445W



## Warranty

**15** 15-year Product Warranty

**30** 30-year Linear Power Warranty



### n-type TOPCon 4.0

Novel upgrade, enhancing module efficiency



### SMBB Design

Enhancing current collection, minimizing power loss



### Better Temperature Coefficient

$\leq -0.29\%/^{\circ}\text{C}$ , adapting for high temperature



### Sleek Design

Tailored for rooftops allowing one-person installation



IEC 61215, IEC 61730  
ISO 9001:2015:ISO Quality Management System  
ISO 14001:2015:ISO Environment Management System  
ISO 45001:2018:Occupational Health and Safety  
The first solar company which passed the Nord IEC/TS 62941 certification audit



Tier 1  
BloombergNEF



**425~445W**

POWER RANGE

**0~+3%**

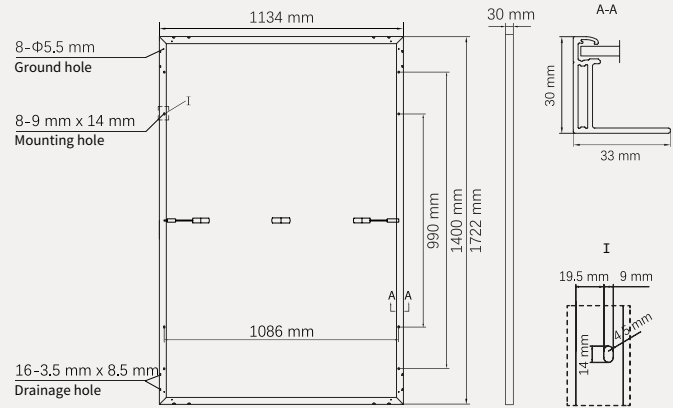
POWER SORTING

**22.8%**MAX MODULE  
EFFICIENCY**≤ 1.0%**FIRST YEAR  
POWER DEGRADATION**≤ 0.4%**YEAR 2-30  
POWER DEGRADATION

## 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 <sup>2</sup> / 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
Weight of packing unit (for 40'HQ container)	811 kg
Modules per 40' HQ container	936 pcs (Subject to sales contract)

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



## Electrical Specifications

**STC:** Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25° C, AM=1.5

	425	430	435	440	445
Rated output (Pmpp / Wp)	425	430	435	440	445
Rated voltage (Vmpp / V)	32.10	32.27	32.44	32.61	32.77
Rated current (Impp / A)	13.24	13.33	13.41	13.49	13.58
Open circuit voltage (Voc / V)	38.20	38.40	38.60	38.80	39.00
Short circuit current (Isc / A)	13.98	14.09	14.19	14.30	14.41
Module efficiency	21.8%	22.0%	22.3%	22.5%	22.8%

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

	319.6	323.4	327.1	330.9	334.6
Rated output (Pmpp / Wp)	319.6	323.4	327.1	330.9	334.6
Rated voltage (Vmpp / V)	30.21	30.37	30.53	30.70	30.84
Rated current (Impp / A)	10.58	10.65	10.71	10.78	10.85
Open circuit voltage (Voc / V)	36.29	36.48	36.67	36.85	37.04
Short circuit current (Isc / A)	11.28	11.37	11.46	11.54	11.63

## Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.29%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.043%/°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

## Curve

