



ASTRONERGY



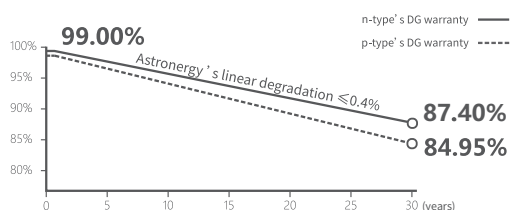
# ASTRO N7s

CHSM54RN<sub>s</sub>(DG)(BLH)/F-BH  
Bifacial Series

# 430~450W

## Warranty

- 15-year Product Warranty  
25-year Product Warranty (Optional, special for rooftop market)
- 30-year Linear Power Warranty



## Key Features

- 0BB design , elegant appearance
- Suitable for distributed projects
- High power
- High reliability
- Easy to install and transport



**430~450W**

POWER RANGE

**0~+3%**

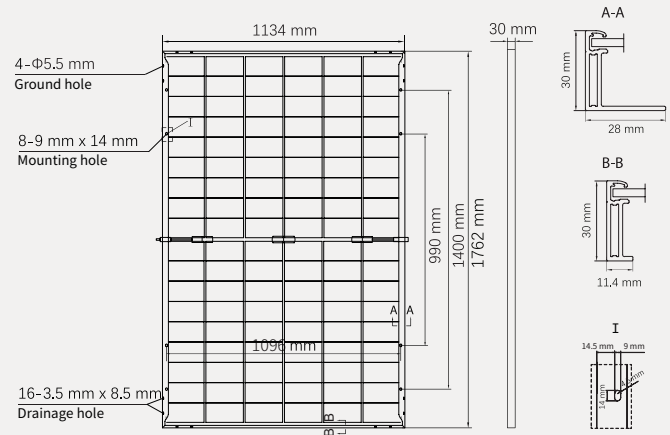
POWER SORTING

**22.5%**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)	1762 x 1134 x 30 mm
Cell type	n-type mono-crystalline
No. of cells	108 (6*18)
Frame technology	Aluminum, black anodized
Front / Back glass	1.6+1.6 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	21.8 kg
Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	831 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

	430	435	440	445	450
Rated output (Pmpp / Wp)					
Rated voltage (Vmpp / V)	32.18	32.35	32.52	32.69	32.86
Rated current (Impp / A)	13.36	13.45	13.53	13.61	13.70
Open circuit voltage (Voc / V)	38.30	38.50	38.70	38.90	39.10
Short circuit current (Isc / A)	14.30	14.41	14.52	14.62	14.72
Module efficiency	21.5%	21.8%	22.0%	22.3%	22.5%

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

	323.4	327.1	330.9	334.6	338.4
Rated output (Pmpp / Wp)					
Rated voltage (Vmpp / V)	30.29	30.45	30.61	30.77	30.93
Rated current (Impp / A)	10.67	10.74	10.81	10.88	10.94
Open circuit voltage (Voc / V)	36.38	36.57	36.76	36.95	37.14
Short circuit current (Isc / A)	11.54	11.63	11.72	11.80	11.88

## Electrical Specifications (Integrated power)

Pmpp gain	Pmpp / Wp	Vmpp / V	Impp / A	Voc / V	Isc / A
5%	467	36.04	13.61	40.85	15.35
10%	490	39.55	13.61	42.79	16.08
15%	512	43.23	13.61	44.74	16.82
20%	534	47.07	13.61	46.68	17.55
25%	556	51.08	13.61	48.63	18.28

Electrical characteristics with different rear power gain (reference to 445W)

## Temperature Ratings (STC)

## Operating Parameters

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	30 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V <sub>DC</sub>

## Curve

