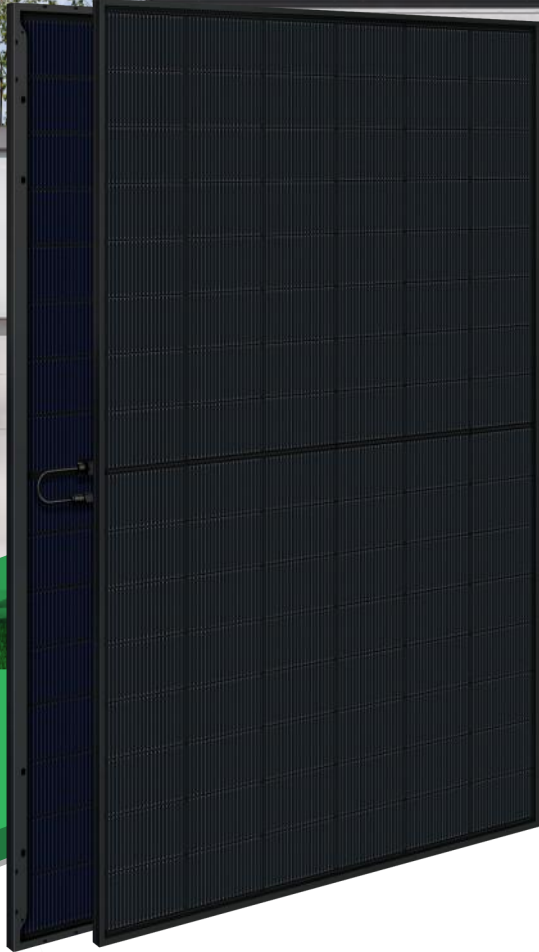




ASTRONERGY



# ASTRO N7s 2.0

CHSM48RN(DG)(BLH)/F-BH  
Bifacial Series

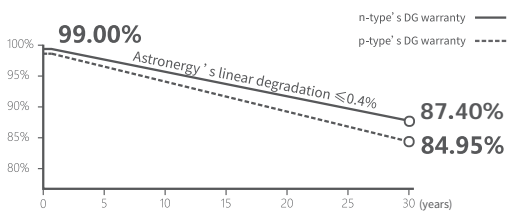
# 450~465W



## Warranty

**25** 25-year Product Warranty

**30** 30-year Linear Power Warranty



### n-type TOPCon 5.0

Newly upgraded cell technology, ultra-high product energy efficiency



### ZBB Design

Zero-busbar integrated interconnection



### Sleek Design

< 2 m<sup>2</sup> area, easy to transport and install



### All-black Technology

Sleek crystalline black appearance, seamlessly blending into rooftops



IEC 61215, IEC 61730  
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



**450~465W**

POWER RANGE

**0~+3%**

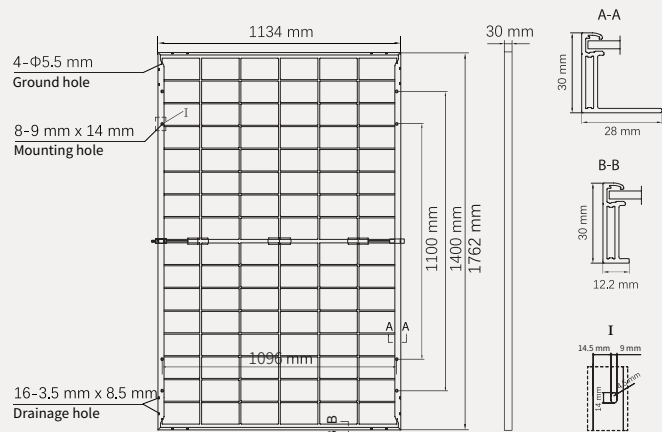
POWER SORTING

**23.3%**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	96 (6*16)
Frame technology	Aluminum, black anodized
Front / Back glass	2.0+2.0 mm
Cable length (Including connector)	Landscape: 1200 mm; or Customized length
Cable diameter (IEC/UL)	4 mm <sup>2</sup> / 12 AWG
① Maximum mechanical test load	6000 Pa (front) / 4000 Pa (back)
Connector type (IEC/UL)	MC4-EVO2A (Standard) / HCB40 (Optional)
Module weight	24.5 kg
Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	927 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, Power measurement tolerance: ±3%

	450	455	460	465
Rated output (P <sub>mpp</sub> / W <sub>p</sub> )				
Rated voltage (V <sub>mpp</sub> / V)	30.51	30.65	30.78	30.80
Rated current (I <sub>mpp</sub> / A)	14.75	14.85	14.94	15.10
Open circuit voltage (V <sub>oc</sub> / V)	36.59	36.75	36.91	36.93
Short circuit current (I <sub>sc</sub> / A)	15.61	15.71	15.81	15.84
Module efficiency	22.5%	22.8%	23.0%	23.3%

**BNPI:** Irradiance: front 1000W/m<sup>2</sup>, rear 135W/m<sup>2</sup>, Cell Temperature 25° C, AM=1.5

	495.9	501.4	506.9	512.4
Rated output (P <sub>mpp</sub> / W <sub>p</sub> )				
Rated voltage (V <sub>mpp</sub> / V)	30.52	30.66	30.79	30.81
Rated current (I <sub>mpp</sub> / A)	16.25	16.35	16.46	16.63
Open circuit voltage (V <sub>oc</sub> / V)	36.60	36.76	36.92	36.94
Short circuit current (I <sub>sc</sub> / A)	17.28	17.39	17.50	17.53

## Temperature Ratings (STC)

Temperature coefficient (P <sub>mpp</sub> )	-0.29%/°C
Temperature coefficient (I <sub>sc</sub> )	+0.043%/°C
Temperature coefficient (V <sub>oc</sub> )	-0.25%/°C

## Operating Parameters

Operating Temperature	-40°C ~+85°C
Bifaciality (P <sub>mpp</sub> )	80±5%
Junction box IP rating	IP 68
Max. series fuse rating	30 A
Max. system voltage (IEC/UL)	1500V <sub>DC</sub>

## Curve

