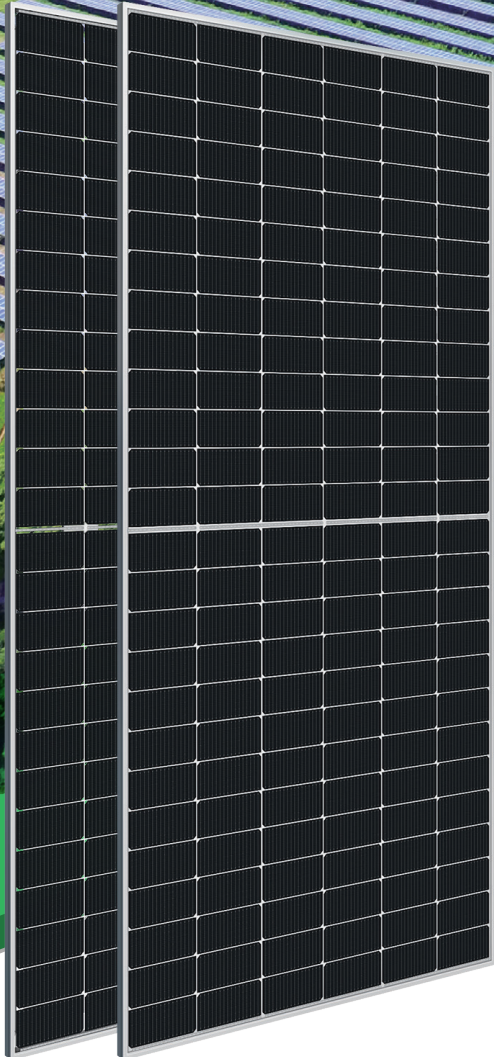
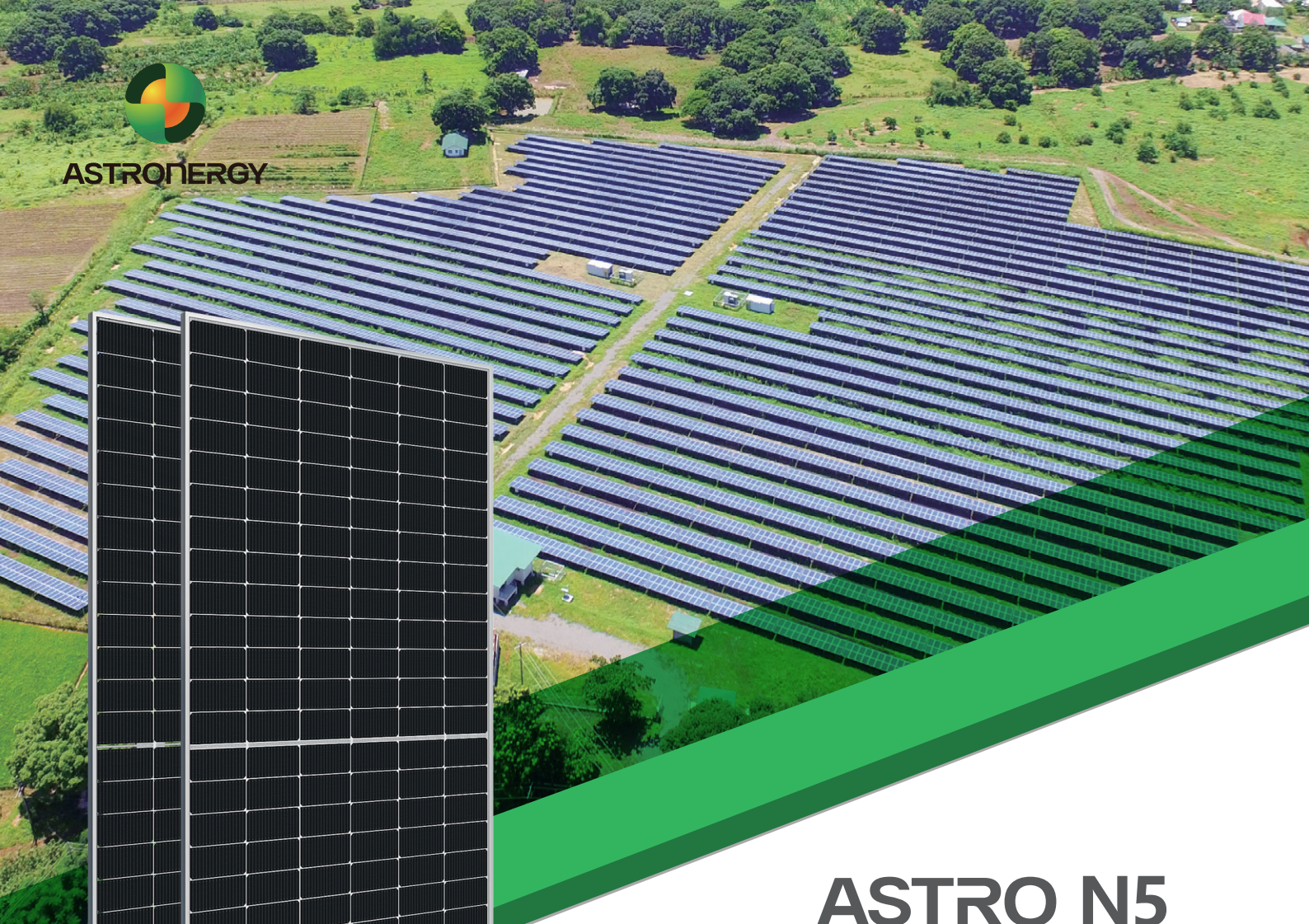




ASTRONERGY



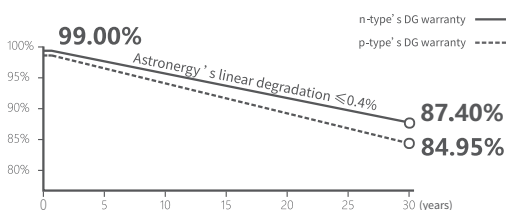
# ASTRO N5

CHSM78N(DG)/F-BH  
Bifacial Series(182)

# 610~630W

## Warranty

- 15** 15-year Product Warranty
- 30** 30-year Linear Power Warranty



## Key Features

- TOPCon / Half-cut
- Low temperature coefficient (Pmpp)
- Non-destructive cutting
- PID resistance
- Low BOS cost & LCOE
- Bifacial gain



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



**610~630W**

POWER RANGE

**0~+5W**

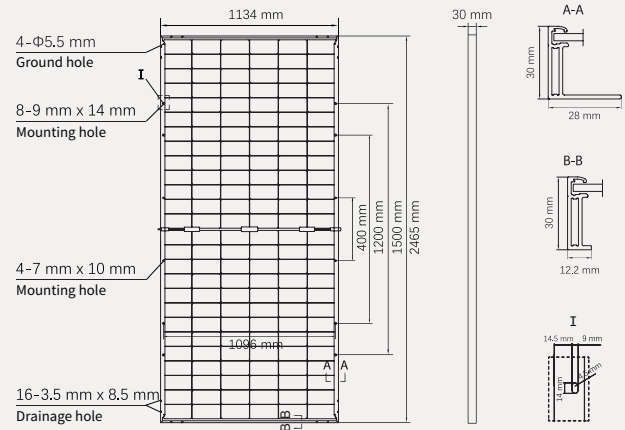
POWER SORTING

**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)	2465 x 1134 x 30 mm
Cell type	n-type mono-crystalline
No. of cells	156 (6*26)
Frame technology	Aluminum, silver anodized
Front / Back glass	2.0+2.0 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	34.7 kg
Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	1304 kg
Modules per 40' HQ container	576 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

Rated output (Pmpp / Wp)	610	615	620	625	630
Rated voltage (Vmpp / V)	45.79	45.96	46.12	46.29	46.45
Rated current (Impp / A)	13.32	13.38	13.44	13.50	13.56
Open circuit voltage (Voc / V)	55.41	55.61	55.81	56.01	56.21
Short circuit current (Isc / A)	13.87	13.95	14.03	14.11	14.19
Module efficiency	21.8%	22.0%	22.2%	22.4%	22.5%

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

Rated output (Pmpp / Wp)	458.7	462.5	466.2	470.0	473.8
Rated voltage (Vmpp / V)	43.10	43.26	43.41	43.57	43.73
Rated current (Impp / A)	10.64	10.69	10.74	10.79	10.83
Open circuit voltage (Voc / V)	52.63	52.82	53.01	53.20	53.39
Short circuit current (Isc / A)	11.19	11.26	11.32	11.39	11.45

## Electrical Specifications (Integrated power)

Pmpp gain	Pmpp / Wp	Vmpp / V	Impp / A	Voc / V	Isc / A
5%	651	46.12	14.11	55.81	14.73
10%	682	46.12	14.79	55.81	15.43
15%	713	46.13	15.45	55.82	16.13
20%	744	46.13	16.13	55.82	16.83
25%	775	46.13	16.80	55.83	17.53

Electrical characteristics with different rear power gain (reference to 620W)

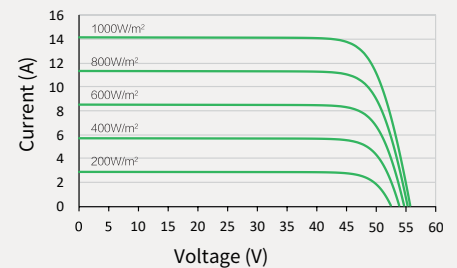
## Temperature Ratings (STC)

## Operating Parameters

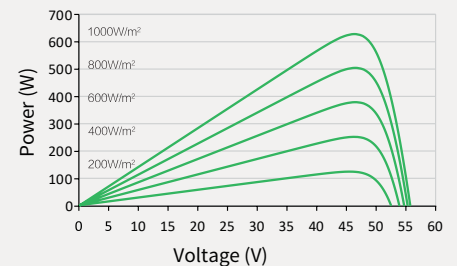
Temperature coefficient (Pmpp)	-0.29%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.043%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.25%/°C	Max. series fuse rating	30 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V <sub>DC</sub>

## Curve

Current-Voltage (620W)



Power-Voltage (620W)



Current-Voltage (620W)

