



**ASTRONERGY**  
A CHINT COMPANY

# ASTRO N5

Create Sustainable and Efficient Green Energy

CHSM72N-HC  
Monofacial Series (182)

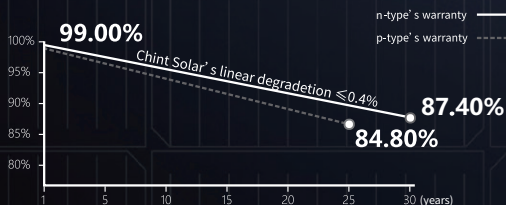
## 555~570W

TOPCon / Multi-busbar / Half-cut

Non-destructive cutting

PID resistance

Lower BOS cost & LCOE



12-year Product Warranty

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



555~570W

POWER RANGE

0~+5W

POWER  
TOLERANCE

22.1%

MAX MODULE  
EFFICIENCY

≤ 1.0%

FIRST YEAR  
POWER DEGRADATION

≤ 0.4%

YEAR 2-30  
POWER DEGRADATION

## Electrical Specifications

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

Rated output (P <sub>mpp</sub> / W <sub>p</sub> )	555	560	565	570
Rated voltage (V <sub>mpp</sub> / V)	41.75	41.92	42.08	42.25
Rated current (I <sub>mpp</sub> / A)	13.29	13.36	13.43	13.49
Open circuit voltage (V <sub>oc</sub> / V)	50.10	50.30	50.50	50.70
Short circuit current (I <sub>sc</sub> / A)	13.88	13.97	14.06	14.14
Module efficiency	21.5%	21.7%	21.9%	22.1%

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

Rated output (P <sub>mpp</sub> / W <sub>p</sub> )	417.4	421.1	424.9	428.6
Rated voltage (V <sub>mpp</sub> / V)	39.30	39.45	39.61	39.77
Rated current (I <sub>mpp</sub> / A)	10.62	10.67	10.73	10.78
Open circuit voltage (V <sub>oc</sub> / V)	47.59	47.78	47.97	48.16
Short circuit current (I <sub>sc</sub> / A)	11.21	11.28	11.35	11.42

## Temperature Ratings (STC)

Temperature coefficient (P <sub>mpp</sub> )	-0.30%/°C	No. of diodes	3
Temperature coefficient (I <sub>sc</sub> )	+0.043%/°C	Junction box IP rating	IP 68
Temperature coefficient (V <sub>oc</sub> )	-0.24%/°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

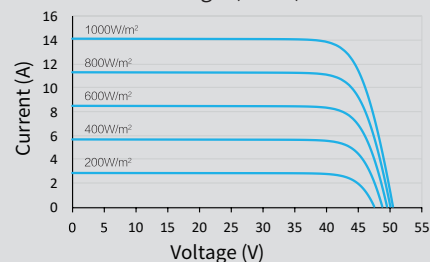
## Mechanical Specifications

Outer dimensions (L x W x H)	2278 x 1134 x 30 mm
Cell Type	n-type Mono-crystalline
No. of cells	144 (6*24)
Frame technology	Aluminum, silver anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 300 mm; Landscape: 1400 mm
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 / MC4-EVO2 (optional)
Module weight	26.6 kg
Packing unit	36 pcs / box (Subject to sales contract)
Weight of packing unit (for 40' HQ container)	1017 kg
Modules per 40' HQ container	720 pcs

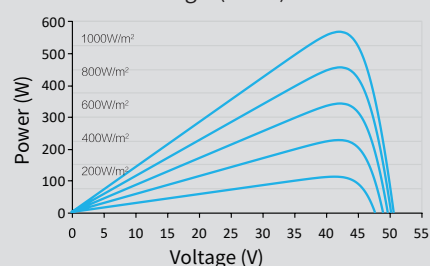
① Refer to Astronergy crystalline installation manual or contact technical department.  
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

## Curve

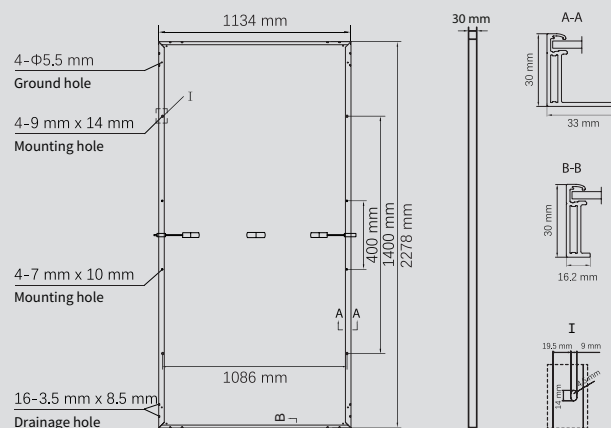
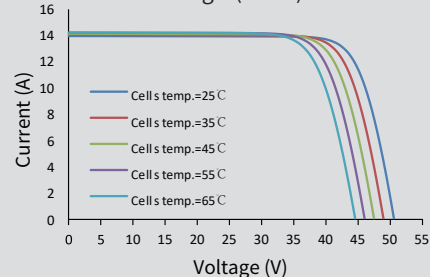
Current-Voltage (565W)



Power-Voltage (565W)



Current-Voltage (565W)







ASTRONERGY

# ASTRO N5

Create Sustainable and Efficient Green Energy

CHSM72N(DG)/F-BH  
Bifacial Series (182)

555~575W

TOPCon / Half-cut

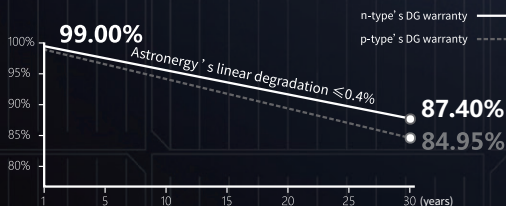
Low temperature coefficient (Pmpp)

Non-destructive cutting

PID resistance

Bifacial gain

Low BOS cost & LCOE



12-year Product Warranty

30-year Linear Power Warranty



ISO 9001:2015:ISO Quality Management System  
ISO 14001:2015:ISO Environment Management System  
ISO 45001:2018:Occupational Health and Safety  
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Tier 1  
BloombergNEF





555~575W

POWER RANGE

0~+5W

POWER SORTING

22.3%

MAX MODULE  
EFFICIENCY

≤ 1.0%

FIRST YEAR  
POWER DEGRADATION

≤ 0.4%

YEAR 2-30  
POWER DEGRADATION

## Electrical Specifications

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

	555	560	565	570	575
Rated output (P <sub>mpp</sub> / Wp)	555	560	565	570	575
Rated voltage (V <sub>mpp</sub> / V)	42.27	42.44	42.61	42.77	42.94
Rated current (I <sub>mpp</sub> / A)	13.13	13.20	13.26	13.33	13.39
Open circuit voltage (V <sub>oc</sub> / V)	50.30	50.50	50.70	50.90	51.10
Short circuit current (I <sub>sc</sub> / A)	13.84	13.93	14.02	14.10	14.19
Module efficiency	21.5%	21.7%	21.9%	22.1%	22.3%

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

	417.4	421.1	424.9	428.6	432.4
Rated output (P <sub>mpp</sub> / Wp)	417.4	421.1	424.9	428.6	432.4
Rated voltage (V <sub>mpp</sub> / V)	39.79	39.94	40.10	40.26	40.42
Rated current (I <sub>mpp</sub> / A)	10.49	10.54	10.60	10.65	10.70
Open circuit voltage (V <sub>oc</sub> / V)	47.78	47.97	48.16	48.35	48.54
Short circuit current (I <sub>sc</sub> / A)	11.18	11.25	11.32	11.39	11.46

## Electrical Specifications (Integrated power)

Pmpp gain	Pmpp / Wp	Vmpp / V	I <sub>mpp</sub> / A	Voc / V	Isc / A
5%	593	42.61	13.92	50.7	14.72
10%	622	42.61	14.59	50.7	15.42
15%	650	42.61	15.25	50.71	16.12
20%	678	42.61	15.91	50.71	16.82
25%	706	42.61	16.57	50.71	17.52

Electrical characteristics with different rear power gain (reference to 565W)

## Temperature Ratings (STC)

Temperature coefficient (P <sub>mpp</sub> )	-0.30%/°C	No. of diodes	3
Temperature coefficient (I <sub>sc</sub> )	+0.043%/°C	Junction box IP rating	IP 68
Temperature coefficient (V <sub>oc</sub> )	-0.24%/°C	Max. series fuse rating	30 A
Nominal module operating temperature (NMOT)	41 ± 2°C	Max. system voltage (IEC/UL)	1500V <sub>DC</sub>

## Operating Parameters

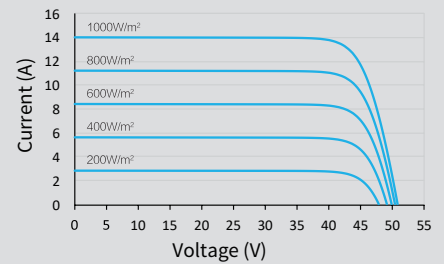
## Mechanical Specifications

Outer dimensions (L x W x H)	2278 x 1134 x 30 mm
Cell type	n-type mono-crystalline
No. of cells	144 (6*24)
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	32.1 kg
Packing unit	36 pcs / box (Subject to sales contract)
Weight of packing unit (for 40' HQ container)	1215 kg
Modules per 40' HQ container	720 pcs

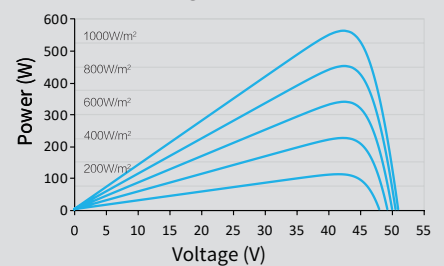
① Refer to Astronergy crystalline installation manual or contact technical department.  
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

## Curve

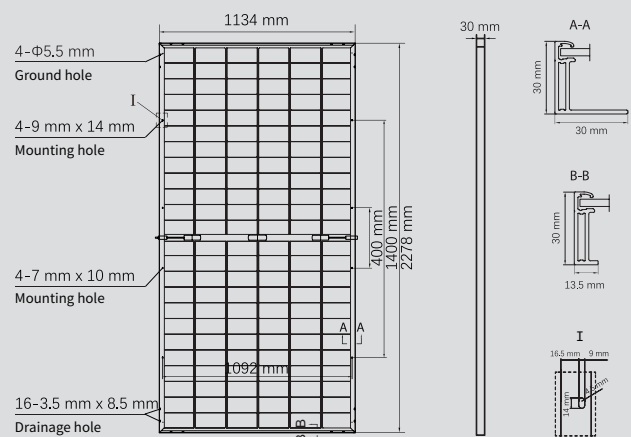
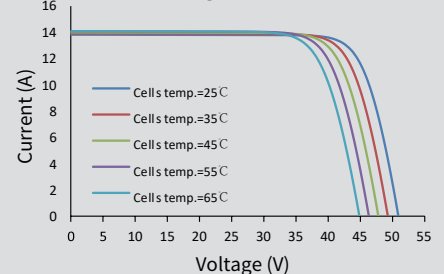
Current-Voltage (565W)



Power-Voltage (565W)

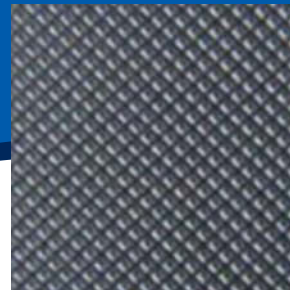


Current-Voltage (565W)



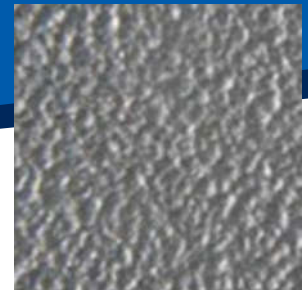


# Anti-Glare Module



Glass surface structure of Anti-Glare PV Module

Regular arrangement of pyramidal three-dimensional structure



Glass surface structure of conventional PV Module

Simple use of the diffuse reflection principle

## KEY FEATURES

- The application of regular arrays of pyramidal structure on the glass surface makes it possible to convert part of the reflection light into transmission light.
- Diffuse reflection enhanced due to large size embossing which increase the roughness of glass surface.
- Large area of light spot on module; soft reflection light.
- Excellent performance in low light environment, improvement on photovoltaic module power generation under low light conditions such as during sunrise and sunset, and in hazy and cloudy days.

## APPLICATION SCENARIOS

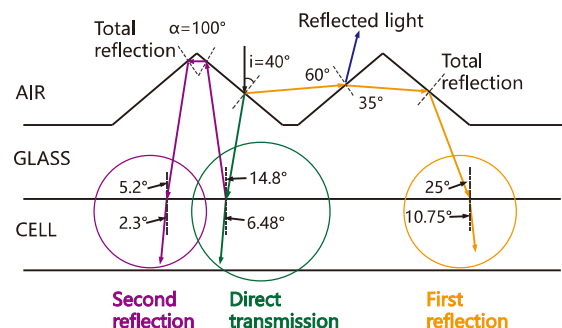
Applicable for areas where "light pollution" is strictly regulated, such as airports, highways, waterways railways and Building Integrated Photovoltaic(BIPV) regions.



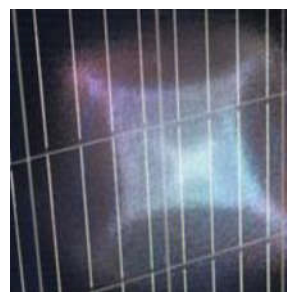
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## THE PRINCIPLE OF ANTI-GLARE

The principle of the Anti-Glare pyramidal design is shown as below: when the incident light is normal to the surface, the first reflection strikes the neighboring slope, making use of the first reflection. The light waves entering the glass is reflected onto the upper surface, and reflected back again, making use of the second reflection. At the same time the effect of diffuse reflection is enhanced and controlled.



## ANTI-GLARE EFFECT COMPARISON



Anti-Glare PV Module



Conventional PV Module

The reflective spot area of the Anti-Glare PV Module is noticeably 5 to 8 times larger than that of conventional PV Module, with softer brightness.



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