



**ASTRONERGY**  
A CHNT COMPANY

# ASTRO 5 Twins

Create Sustainable and Efficient Green Energy

CHSM72M(DG)/F-BH  
Bifacial Series (182)

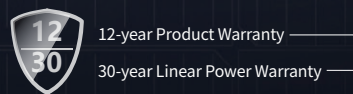
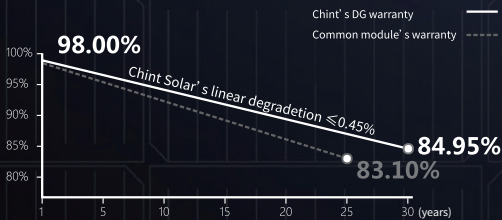
## 525~545W

PERC+ / Multi-busbar / Half-cut

Non-destructive cutting

Bifacial gain

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



**525~545W**

POWER RANGE

**0~+5W**POWER  
TOLERANCE**21.1%**MAX MODULE  
EFFICIENCY**≤ 2.0%**FIRST YEAR  
POWER DEGRADATION**≤ 0.45%**YEAR 2-30  
POWER DEGRADATION

## Electrical Specifications

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

	525	530	535	540	545
Rated output (Pmpp / Wp)	525	530	535	540	545
Rated voltage (Vmpp / V)	41.43	41.60	41.76	41.93	42.10
Rated current (Impp / A)	12.67	12.74	12.81	12.88	12.95
Open circuit voltage (Voc / V)	49.30	49.50	49.70	49.90	50.10
Short circuit current (Isc / A)	13.40	13.48	13.57	13.66	13.75
Module efficiency	20.3%	20.5%	20.7%	20.9%	21.1%

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

	392.3	396.1	399.8	403.5	407.3
Rated output (Pmpp / Wp)	392.3	396.1	399.8	403.5	407.3
Rated voltage (Vmpp / V)	38.61	38.77	38.92	39.08	39.24
Rated current (Impp / A)	10.16	10.22	10.27	10.33	10.38
Open circuit voltage (Voc / V)	46.59	46.78	46.97	47.16	47.34
Short circuit current (Isc / A)	10.87	10.94	11.01	11.08	11.16

Power Sorting: 0~+5W

Measurement tolerance +/- 3%

## Electrical Specifications (Integrated power)

Pmpp gain	Pmpp / Wp	Vmpp / V	Impp / A	Voc / V	Isc / A
5%	567	41.93	13.52	49.90	14.35
10%	594	41.93	14.17	49.90	15.03
15%	621	41.94	14.81	49.91	15.71
20%	648	41.94	15.45	49.91	16.39
25%	675	41.95	16.09	49.92	17.07

Electrical characteristics with different rear power gain (reference to 540W)

Measurement tolerance +/- 3%

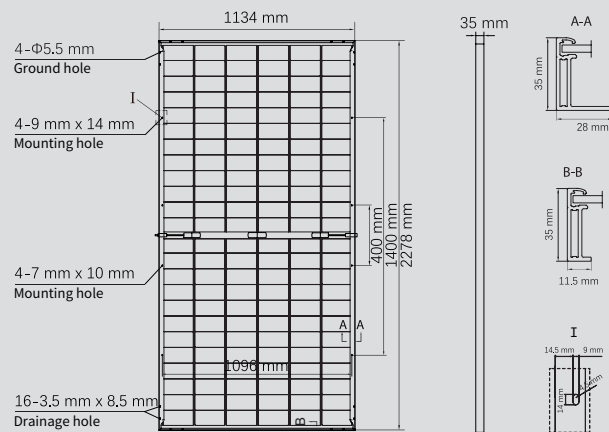
## Temperature Ratings (STC)

## Operating Parameters

Temperature coefficient (Pmpp)	-0.35%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.045%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.27%/°C	Max. series fuse rating	30 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V <sub>DC</sub>

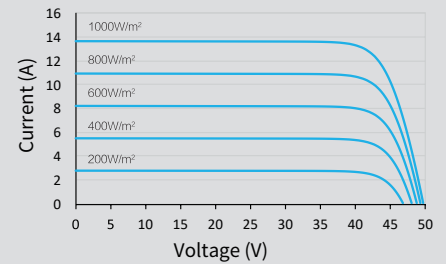
## Mechanical Specifications

Outer dimensions (L x W x H)	2278 x 1134 x 35 mm
Cell Type	P type Mono-crystalline
No. of cells	144 (6*24)
Frame technology	Aluminum, silver anodized
Front glass thickness	2.0 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 or PV-KST4-EVO2/XY-UR, PVKBT4-EVO2/XY-UR(optional)
Module weight	32.6 kg (Tolerance +/- 1.0kg)
Packing unit	31 pcs / box (Subject to sales contract)
Weight of packing unit (for 40' HQ container)	1070 kg
Modules per 40' HQ container	620 pcs

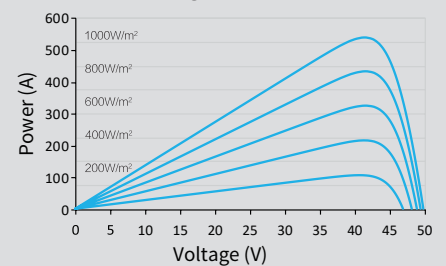
① Refer to Astronergy crystalline installation manual or contact technical department.  
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

## Curve

Current-Voltage (540W)



Power-Voltage (540W)



Current-Voltage (540W)

