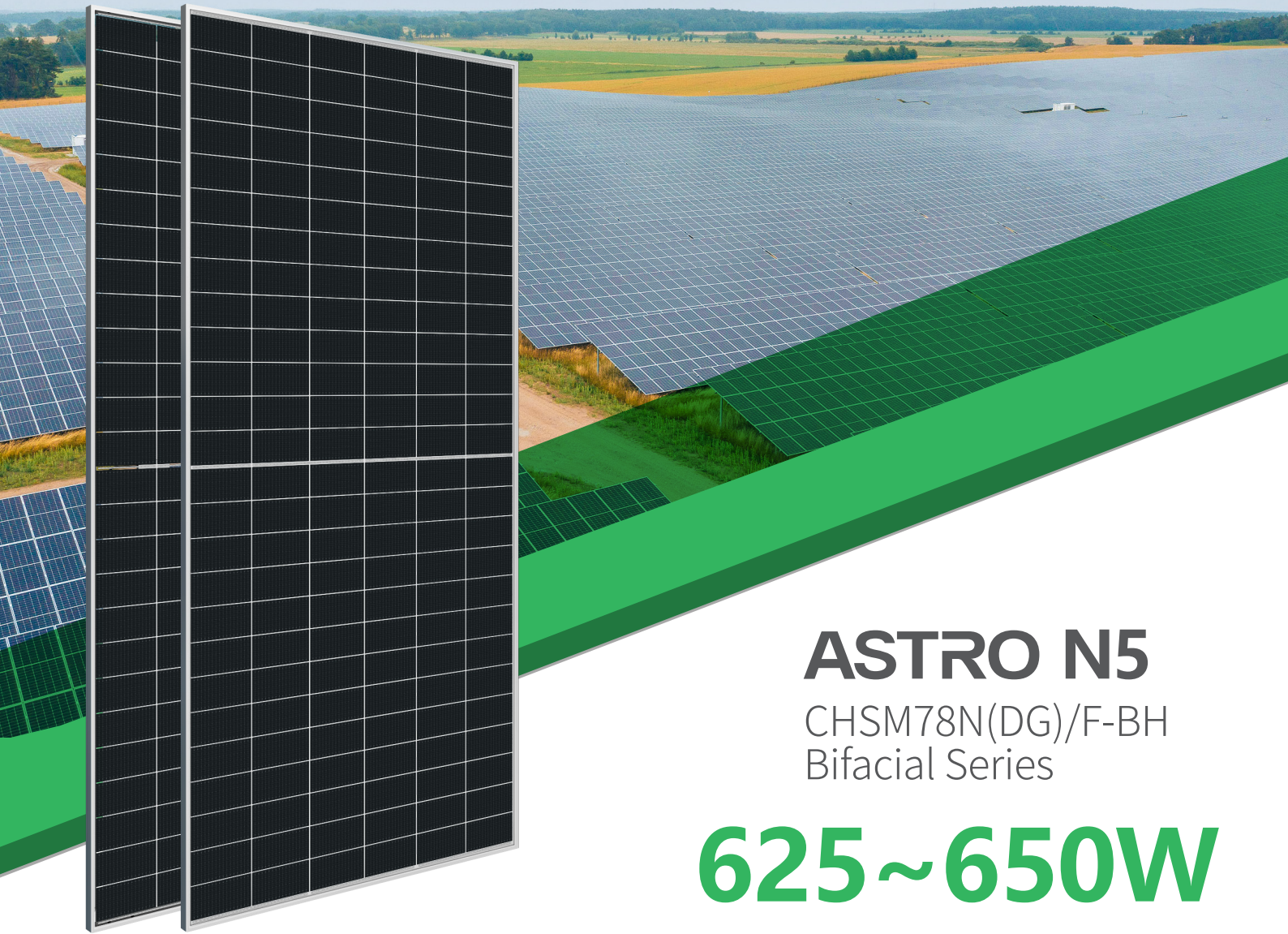




ASTRONERGY



ASTRO N5

CHSM78N(DG)/F-BH
Bifacial Series

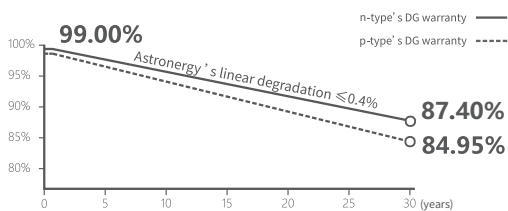
625~650W



Warranty

15 15-year Product Warranty

30 30-year Linear Power Warranty



n-type TOPCon 4.0

Novel upgrade, enhancing module efficiency



SMBB Design

Enhancing current collection, minimizing power loss



Better Temperature Coefficient

≤ -0.29%/°C, adapting for high temperature



Bifacial Power Generation

Maximizing bifaciality, boosting backside power output



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



625~650W

POWER RANGE

0~+3%

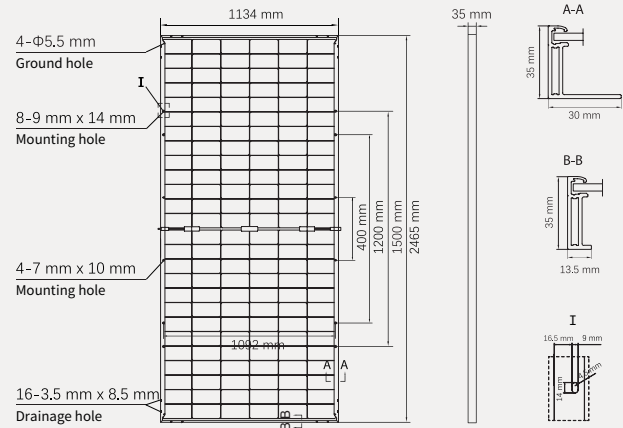
POWER SORTING

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)	2465 x 1134 x 35 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 ² / 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	31 pcs / box
Weight of packing unit (for 40'HQ container)	1131 kg
Modules per 40' HQ container	496 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/m², Cell Temperature 25° C, AM=1.5

Rated output (Pmpp / Wp)	625	630	635	640	645	650
Rated voltage (Vmpp / V)	46.29	46.45	46.62	46.79	46.95	47.12
Rated current (Impp / A)	13.50	13.56	13.62	13.68	13.74	13.80
Open circuit voltage (Voc / V)	56.01	56.21	56.41	56.61	56.81	57.01
Short circuit current (Isc / A)	14.11	14.19	14.27	14.35	14.43	14.51
Module efficiency	22.4%	22.5%	22.7%	22.9%	23.1%	23.3%

NMOT: Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

Rated output (Pmpp / Wp)	470.0	473.8	477.5	481.3	485.0	488.8
Rated voltage (Vmpp / V)	43.57	43.73	43.88	44.03	44.19	44.35
Rated current (Impp / A)	10.79	10.83	10.88	10.93	10.98	11.02
Open circuit voltage (Voc / V)	53.20	53.39	53.58	53.77	53.96	54.15
Short circuit current (Isc / A)	11.39	11.45	11.52	11.58	11.65	11.71

Electrical Specifications (Integrated power)

Pmpp gain	Pmpp / Wp	Vmpp / V	Impp / A	Voc / V	Isc / A
5%	667	46.62	14.30	56.41	14.98
10%	699	46.62	14.98	56.41	15.69
15%	730	46.63	15.66	56.42	16.41
20%	762	46.63	16.34	56.42	17.12
25%	794	46.63	17.03	56.42	17.83

Electrical characteristics with different rear power gain (reference to 635W)

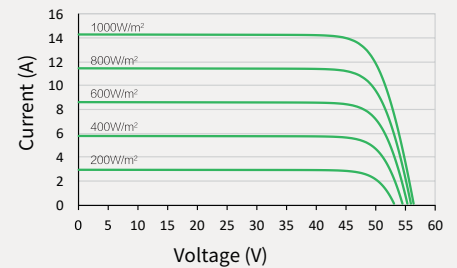
Temperature Ratings (STC)

Operating Parameters

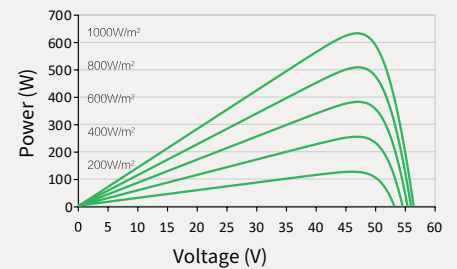
Temperature coefficient (Pmpp)	-0.29%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.043%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.25%/°C	Max. series fuse rating	30 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

Curve

Current-Voltage (635W)



Power-Voltage (635W)



Current-Voltage (635W)

