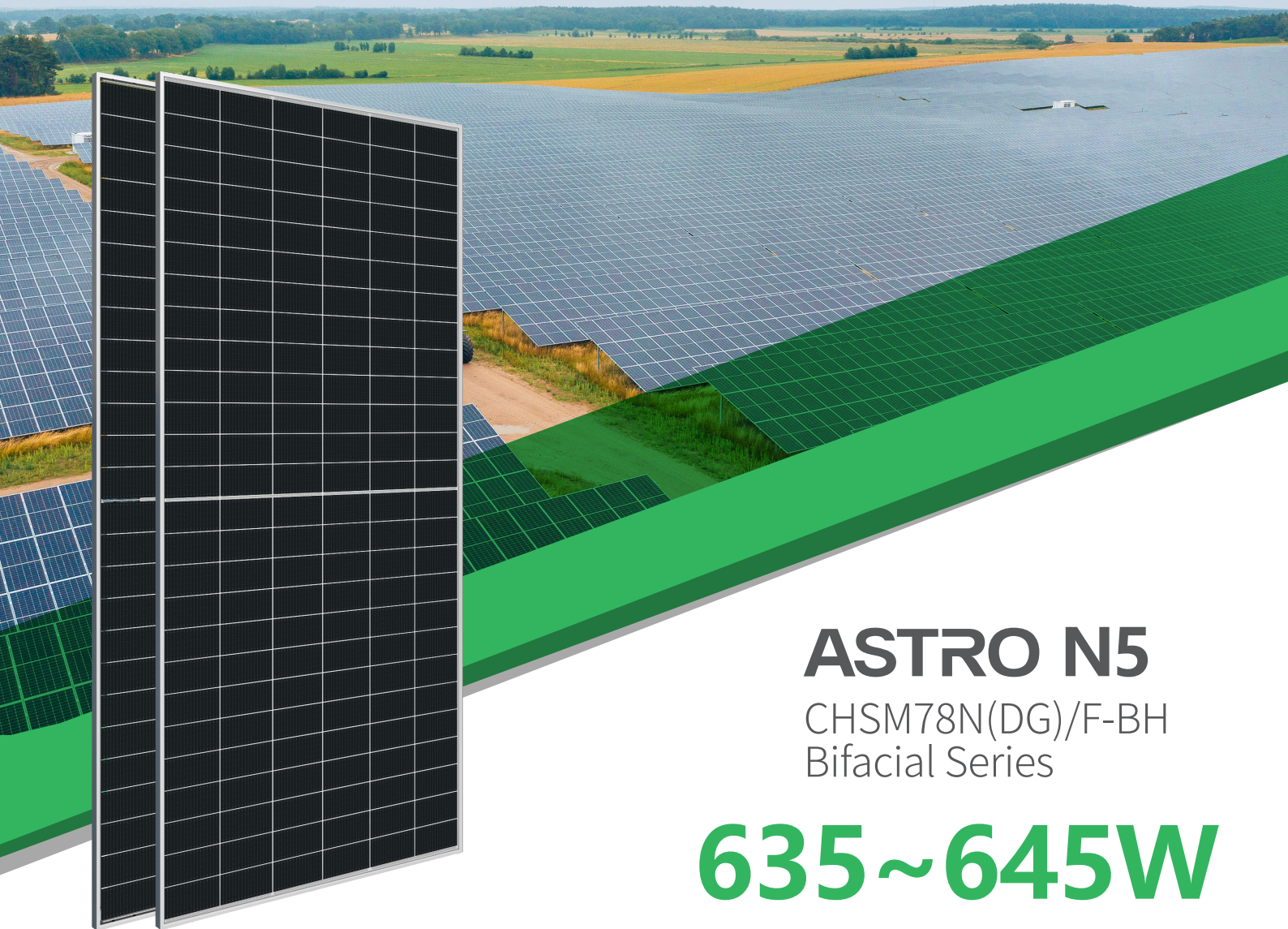




ASTRONERGY



ASTRO N5

CHSM78N(DG)/F-BH
Bifacial Series

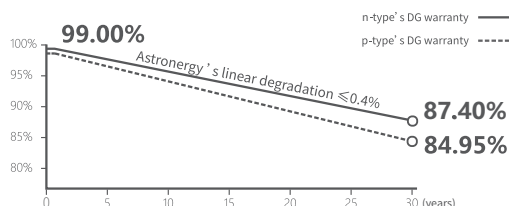
635~645W



Warranty

15 15-year Product Warranty

30 30-year Linear Power Warranty
(Only to the front-side of modules)



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



ISO 9001:2015:ISO Quality Management System
ISO 14001:2015:ISO Environment Management System
ISO 45001:Occupational Health and Safety



Tier 1
BloombergNEF



635~645W

POWER RANGE

0~+3%

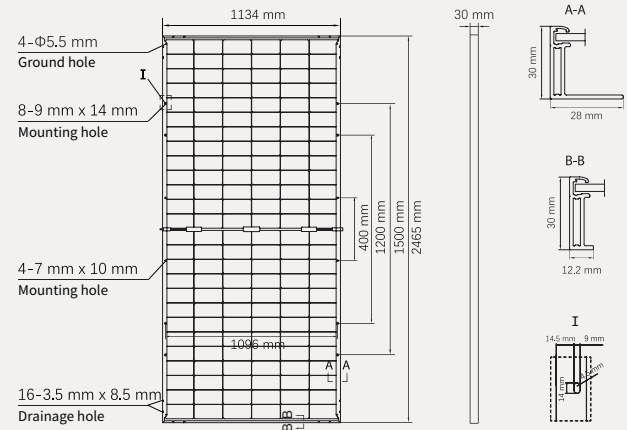
POWER SORTING

23.1%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 ² / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	PV-HCB40 (Chint New Energy) or PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy (Stäubli)
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 CHSM78N(DG)/F-BH-XXX(XXX=635~645)

STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

Rated output (P _{mpp} / Wp)	635	640	645
Rated voltage (V _{mpp} / V)	47.68	47.86	48.03
Rated current (I _{mp} / A)	13.32	13.37	13.43
Open circuit voltage (V _{oc} / V)	56.68	56.88	57.08
Short circuit current (I _{sc} / A)	14.08	14.14	14.20
Module efficiency	22.7%	22.9%	23.1%

Tolerance: P_{mpp} ±3%, V_{oc} ±3% and I_{sc} ±4%.**BNPI:** Irradiance: front 1000W/m², rear 135W/m², Cell Temperature 25° C, AM=1.5

Rated output (P _{mpp} / Wp)	695	700	705
Rated voltage (V _{mpp} / V)	47.74	47.89	48.05
Rated current (I _{mp} / A)	14.56	14.62	14.67
Open circuit voltage (V _{oc} / V)	56.82	57.00	57.17
Short circuit current (I _{sc} / A)	15.45	15.51	15.57

Bifaciality(P_{mpp}/I_{sc}) : 80±5 %, Bifaciality(V_{oc}) : 98±2 %

Electrical characteristics with 10% Bifacial Gains

Rated output (P _{mpp} / Wp)	699	704	710
Rated voltage (V _{mpp} / V)	47.68	47.86	48.03
Rated current (I _{mp} / A)	14.65	14.71	14.77
Open circuit voltage (V _{oc} / V)	56.69	56.89	57.09
Short circuit current (I _{sc} / A)	15.49	15.55	15.62

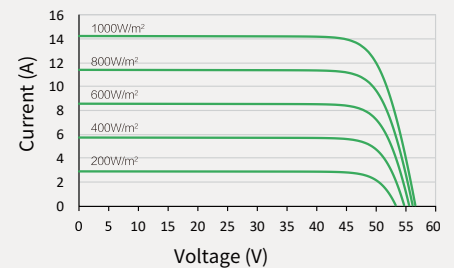
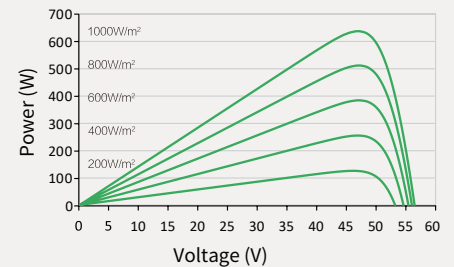
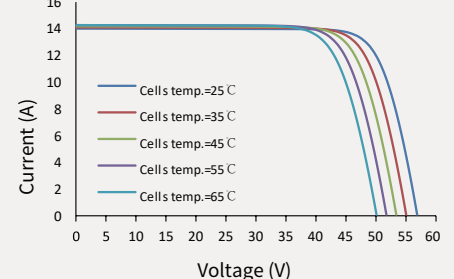
Operating Parameters

No. of diodes	3
Junction box IP rating	IP 68
Max. series fuse rating	30 A
Max. system voltage (IEC/UL)	1500V _{DC}
Fire performance:	Class A / Class C

Temperature Ratings (STC)

Temperature coefficient (P _{mpp})	-0.29%/°C
Temperature coefficient (I _{sc})	+0.043%/°C
Temperature coefficient (V _{oc})	-0.25%/°C

Curve

Current-Voltage (635W)**Power-Voltage (635W)****Current-Voltage (635W)**

Made in China, Made in Turkey.

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