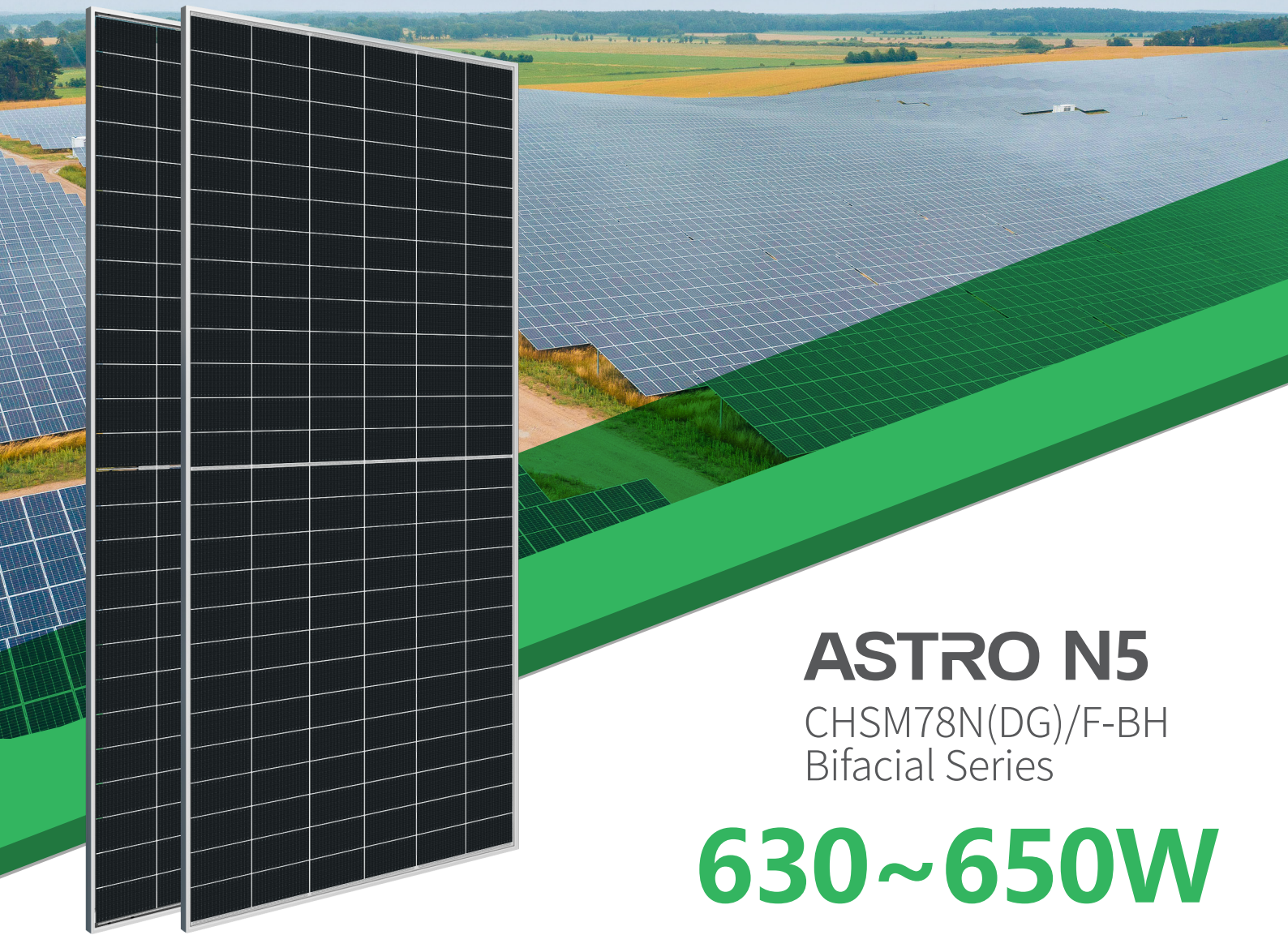




ASTRONERGY



ASTRO N5

CHSM78N(DG)/F-BH
Bifacial Series

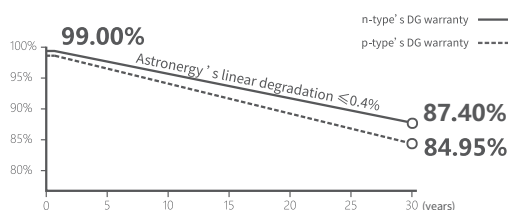
630~650W



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

$\leq -0.29\%/^{\circ}\text{C}$, 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



630~650W

POWER RANGE

0~+3%

POWER SORTING

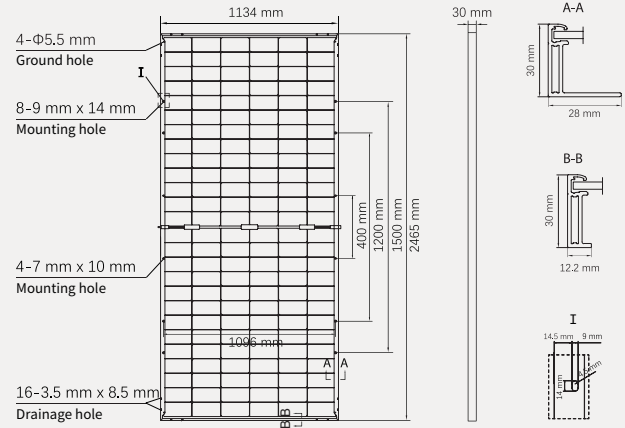
23.3%

MAX MODULE
EFFICIENCY $\leq 1.0\%$ FIRST YEAR
POWER DEGRADATION $\leq 0.4\%$ 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)	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/m², Cell Temperature 25° C, AM=1.5, Power measurement tolerance: ±3%

Rated output (P _{mpp} / W _p)	630	635	640	645	650
Rated voltage (V _{mpp} / V)	47.51	47.68	47.86	48.03	48.20
Rated current (I _{mp} / A)	13.26	13.32	13.37	13.43	13.49
Open circuit voltage (V _{oc} / V)	56.48	56.68	56.88	57.08	57.28
Short circuit current (I _{sc} / A)	14.02	14.08	14.14	14.20	14.26
Module efficiency	22.5%	22.7%	22.9%	23.1%	23.3%

BNPI: Irradiance: front 1000W/m², rear 135W/m², Cell Temperature 25° C, AM=1.5

Rated output (P _{mpp} / W _p)	692.7	698.2	703.7	709.2	714.7
Rated voltage (V _{mpp} / V)	47.52	47.70	47.87	48.04	48.22
Rated current (I _{mp} / A)	14.58	14.64	14.70	14.76	14.82
Open circuit voltage (V _{oc} / V)	56.50	56.70	56.90	57.10	57.30
Short circuit current (I _{sc} / A)	15.45	15.52	15.59	15.65	15.72

Temperature Ratings (STC)

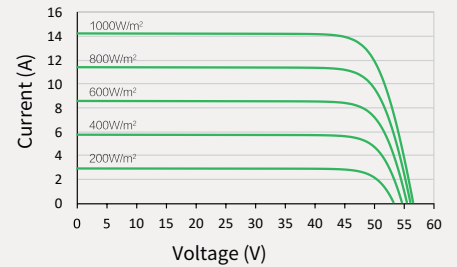
Temperature coefficient (P _{mpp})	-0.29%/°C
Temperature coefficient (I _{sc})	+0.043%/°C
Temperature coefficient (V _{oc})	-0.25%/°C

Operating Parameters

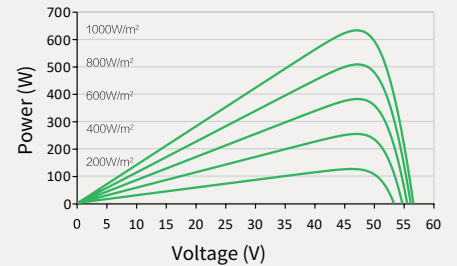
Operating Temperature	-40°C ~+85°C
Bifaciality (P _{mpp})	80±5%
Junction box IP rating	IP 68
Max. series fuse rating	30 A
Max. system voltage (IEC/UL)	1500V _{DC}

Curve

Current-Voltage (635W)



Power-Voltage (635W)



Current-Voltage (635W)

