



ASTRONERGY



ASTRO N5s

CHSM54N(DGT)/F-BH
Bifacial Series(182)

410~425W

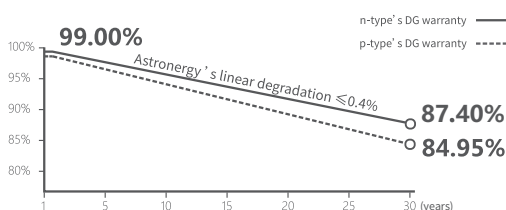
Warranty



15-year Product Warranty
25-year Product Warranty
(Optional, special for rooftop market)



30-year Linear Power Warranty



Key Features

- Suitable for distributed projects
- High power
- High reliability
- Easy to install and transport
- Bifacial gain



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



410~425W

POWER RANGE

0~+5W

POWER SORTING

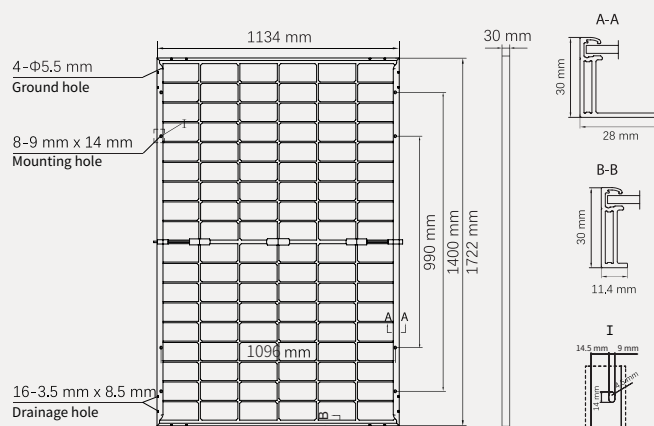
21.8%

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)	1722 x 1134 x 30 mm
Cell type	n-type Mono-crystalline
No. of cells	108 (6*18)
Frame technology	Aluminum, silver anodized
Front / Back glass	1.6+1.6 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 / MC4-EVO2A (optional)
Module weight	20.8 kg
Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	793 kg
Modules per 40' HQ container	936 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 (P _{mpp} / Wp)	410	415	420	425
Rated voltage (V _{mpp} / V)	31.85	32.02	32.18	32.35
Rated current (I _{mpp} / A)	12.87	12.96	13.05	13.14
Open circuit voltage (V _{oc} / V)	37.90	38.10	38.30	38.50
Short circuit current (I _{sc} / A)	13.59	13.70	13.81	13.92
Module efficiency	21.0%	21.3%	21.5%	21.8%

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

Rated output (P _{mpp} / Wp)	308.3	312.1	315.8	319.6
Rated voltage (V _{mpp} / V)	29.98	30.14	30.29	30.45
Rated current (I _{mpp} / A)	10.29	10.36	10.43	10.50
Open circuit voltage (V _{oc} / V)	36.00	36.19	36.38	36.57
Short circuit current (I _{sc} / A)	10.97	11.06	11.15	11.24

Electrical Specifications (Integrated power)

P _{mpp} gain	P _{mpp} / Wp	V _{mpp} / V	I _{mpp} / A	V _{oc} / V	I _{sc} / A
5%	441	32.18	13.70	38.30	14.47
10%	462	32.18	14.36	38.30	15.15
15%	483	32.19	15.00	38.31	15.84
20%	504	32.19	15.66	38.31	16.53
25%	525	32.20	16.30	38.32	17.21

Electrical characteristics with different rear power gain (reference to 420W)

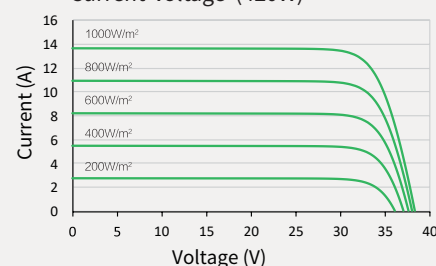
Temperature Ratings (STC)

Operating Parameters

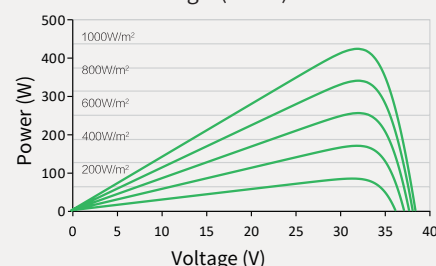
Temperature coefficient (P _{mpp})	-0.29%/°C	No. of diodes	3
Temperature coefficient (I _{sc})	+0.043%/°C	Junction box IP rating	IP 68
Temperature coefficient (V _{oc})	-0.25%/°C	Max. series fuse rating	30 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

Curve

Current-Voltage (420W)



Power-Voltage (420W)



Current-Voltage (420W)

