ASTRONERGY

ASTRO N7s

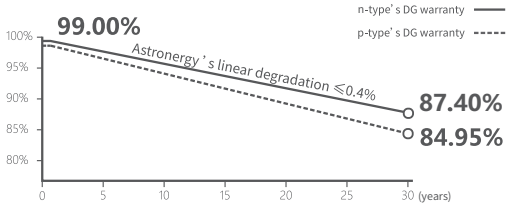
CHSM54RNs(DG)(BLH)/F-BH
Bifacial Series

430~450W

Warranty

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

30 30-year Linear Power Warranty



Key Features

- ZBB design , elegant appearance
- Suitable for distributed projects
- High power
- High reliability
- Easy to install and transport

Assist carbon neutrality

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

TOP PERFORMER PVEL member of group kiwa

Tier 1 BloombergNEF

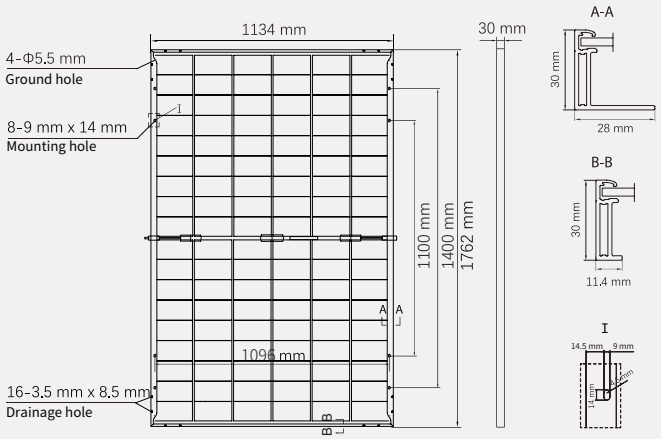
Underwritten by International Insurer

430~450W	0~+3%	22.5%	≤ 1.0%	≤ 0.4%
POWER RANGE	POWER SORTING	MAX MODULE EFFICIENCY	FIRST YEAR POWER DEGRADATION	YEAR 2-30 POWER DEGRADATION

Mechanical Specifications

Outer dimensions (L x W x H)	1762 x 1134 x 30 mm
Cell type	n-type mono-crystalline
No. of cells	108 (6*18)
Frame technology	Aluminum, black 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 (Standard) / MC4-EVO2A (Optional)
Module weight	21.5 kg
Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	831 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/m^2, Cell Temperature 25° C, AM=1.5

Rated output (Pmpp / Wp)	430	435	440	445	450
Rated voltage (Vmpp / V)	32.71	32.88	33.05	33.22	33.39
Rated current (Impp / A)	13.15	13.23	13.31	13.40	13.48
Open circuit voltage (Voc / V)	38.60	38.80	39.00	39.20	39.40
Short circuit current (Isc / A)	13.92	14.01	14.10	14.19	14.28
Module efficiency	21.5%	21.8%	22.0%	22.3%	22.5%

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

Rated output (Pmpp / Wp)	323.4	327.1	330.9	334.6	338.4
Rated voltage (Vmpp / V)	30.79	30.95	31.11	31.27	31.43
Rated current (Impp / A)	10.50	10.57	10.64	10.70	10.77
Open circuit voltage (Voc / V)	36.67	36.85	37.04	37.23	37.42
Short circuit current (Isc / A)	11.24	11.31	11.38	11.46	11.53

Electrical Specifications (Integrated power)

Pmpp gain	Pmpp / Wp	Vmpp / V	Impp / A	Voc / V	Isc / A
5%	462	33.05	13.98	39.00	14.81
10%	484	33.05	14.64	39.00	15.51
15%	506	33.05	15.31	39.00	16.22
20%	528	33.05	15.98	39.00	16.92
25%	550	33.05	16.64	39.00	17.63

Electrical characteristics with different rear power gain (reference to 440W)

Temperature Ratings (STC)

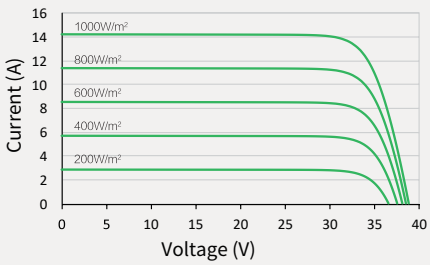
Temperature coefficient (Pmpp)	-0.29%/°C
Temperature coefficient (Isc)	+0.043%/°C
Temperature coefficient (Voc)	-0.25%/°C
Nominal module operating temperature (NMOT)	41±2°C

Operating Parameters

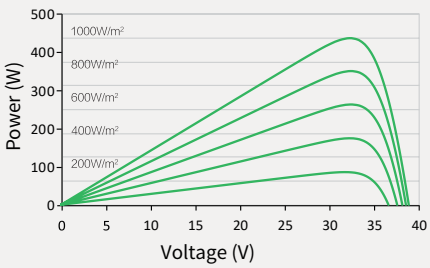
No. of diodes	3
Junction box IP rating	IP 68
Max. series fuse rating	30 A
Max. system voltage (IEC/UL)	1500V_{DC}

Curve

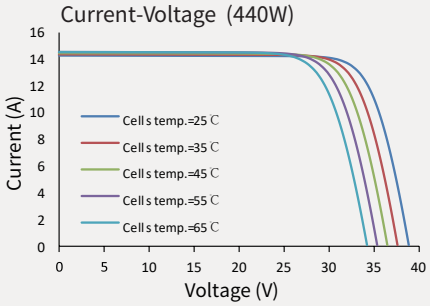
Current-Voltage (440W)



Power-Voltage (440W)



Current-Voltage (440W)



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