



ASTRONERGY

ASTRO N7s

CHSM48RN(DG)(BLH)/F-BH
Bifacial Series

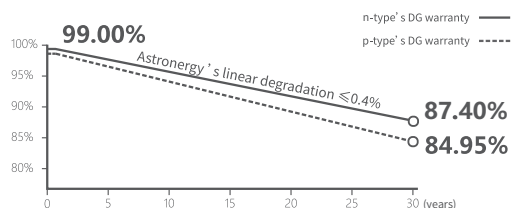
440~455W



Warranty

25 25-year Product Warranty

30 30-year Linear Power Warranty



n-type TOPCon 4.0

Novel upgrade, enhancing module efficiency



ZBB Design

Zero-busbar integrated interconnection



Sleek Design

≤ 2 m² area, easy to transport and install



All-black Technology

Sleek crystalline black appearance, seamlessly blending into rooftops



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



440~455W

POWER RANGE

0~+3%

POWER SORTING

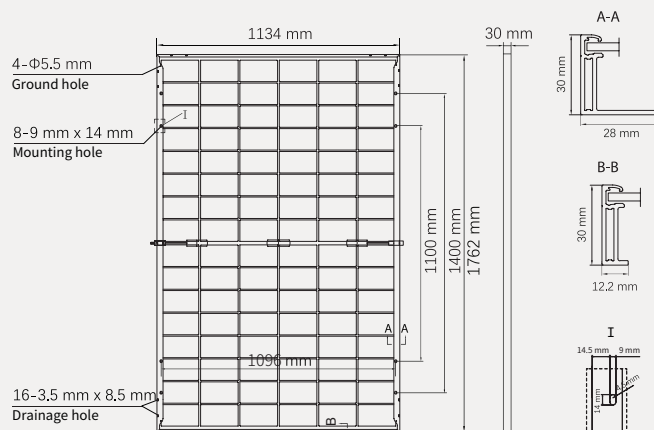
22.8%

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)	1762 x 1134 x 30 mm
Cell type	n-type mono-crystalline
No. of cells	96 (6*16)
Frame technology	Aluminum, black anodized
Front / Back glass	2.0+2.0 mm
Cable length (Including connector)	Landscape: 1200 mm; or Customized length
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
① Maximum mechanical test load	6000 Pa (front) / 4000 Pa (back)
Connector type (IEC/UL)	MC4-EVO2A (Standard) / HCB40 (Optional)
Module weight	24.5 kg
Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	927 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 (Pmpp / Wp)	440	445	450	455
Rated voltage (Vmpp / V)	30.24	30.38	30.51	30.65
Rated current (Impp / A)	14.55	14.65	14.75	14.85
Open circuit voltage (Voc / V)	36.26	36.42	36.59	36.75
Short circuit current (Isc / A)	15.40	15.50	15.61	15.71
Module efficiency	22.0%	22.3%	22.5%	22.8%

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

Rated output (Pmpp / Wp)	484.9	490.4	495.9	501.4
Rated voltage (Vmpp / V)	30.25	30.39	30.52	30.66
Rated current (Impp / A)	16.03	16.14	16.25	16.35
Open circuit voltage (Voc / V)	36.27	36.44	36.60	36.76
Short circuit current (Isc / A)	17.05	17.16	17.28	17.39

Temperature Ratings (STC)

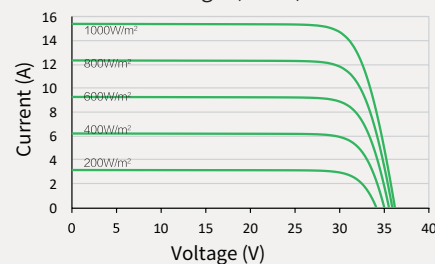
Temperature coefficient (Pmpp)	-0.29%/°C
Temperature coefficient (Isc)	+0.043%/°C
Temperature coefficient (Voc)	-0.25%/°C

Operating Parameters

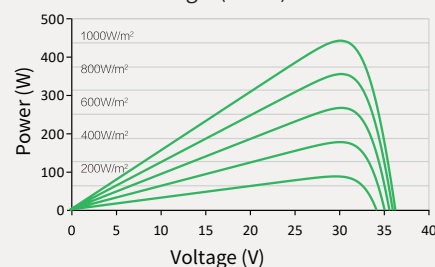
Bifaciality (Pmpp)	80±5%
Junction box IP rating	IP 68
Max. series fuse rating	35 A
Max. system voltage (IEC/UL)	1500V _{DC}

Curve

Current-Voltage (445W)



Power-Voltage (445W)



Current-Voltage (445W)

