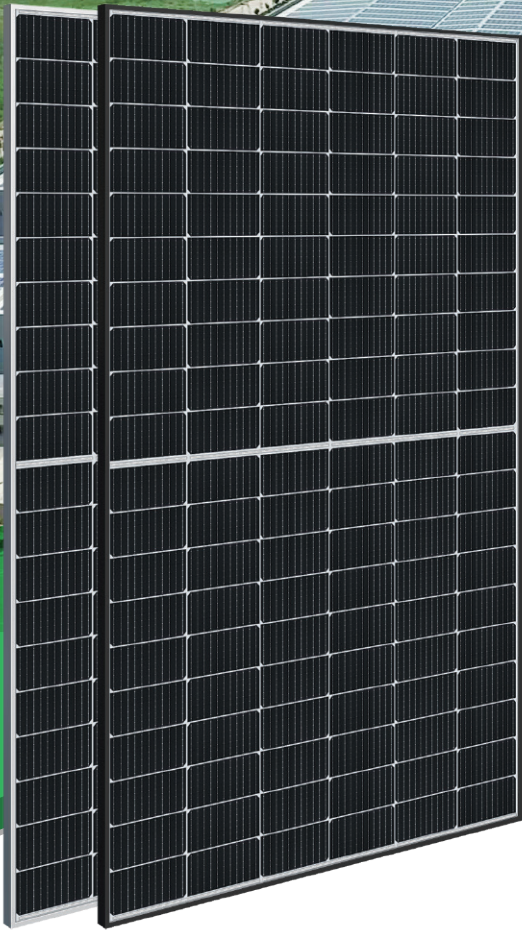
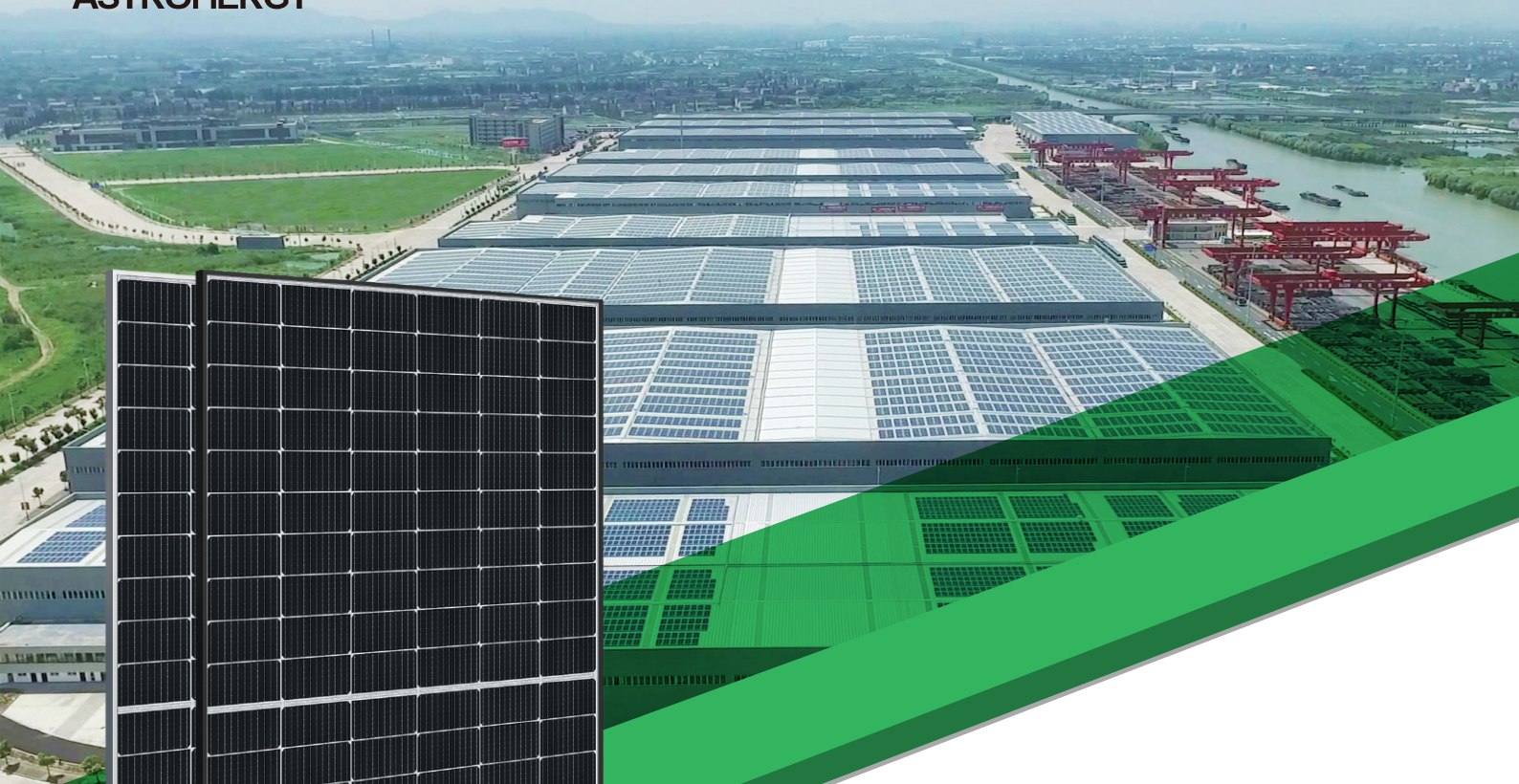




ASTRONERGY



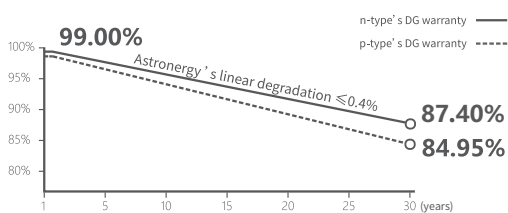
ASTRO N5

CHSM60N(DG)/F-HC
Monofacial Series(182)

465~485W

Warranty

- 15/25** 15-year Product Warranty
25-year Product Warranty (Optional, special for rooftop market)
- 30** 30-year Linear Power Warranty



Key Features

- TOPCon / Half-cut
- Low temperature coefficient (Pmpp)
- Non-destructive cutting
- PID resistance



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



465~485W

POWER RANGE

0~+5W

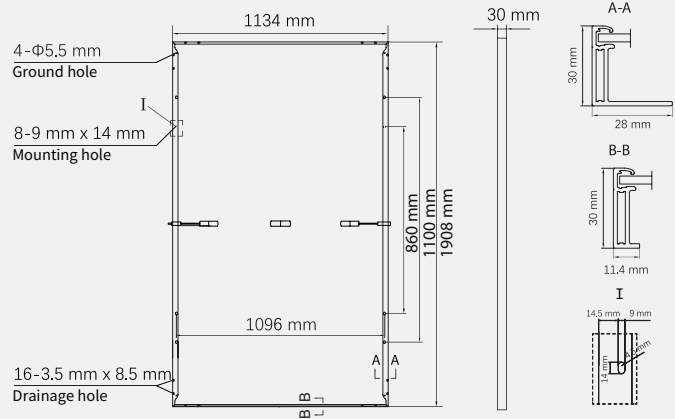
POWER SORTING

22.4%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)	1908 x 1134 x 30 mm
Cell type	n type mono-crystalline
No. of cells	120 (6*20)
Frame technology	Aluminum, black or 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	23 kg
Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	874 kg
Modules per 40' HQ container	864 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

	465	470	475	480	485
Rated output (Pmpp / Wp)	465	470	475	480	485
Rated voltage (Vmpp / V)	36.14	36.27	36.39	36.52	36.65
Rated current (Impp / A)	12.87	12.96	13.05	13.14	13.23
Open circuit voltage (Voc / V)	43.01	43.16	43.31	43.46	43.61
Short circuit current (Isc / A)	13.57	13.68	13.80	13.91	14.02
Module efficiency	21.5%	21.7%	22.0%	22.2%	22.4%

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

	349.7	353.4	357.2	361.0	364.7
Rated output (Pmpp / Wp)	349.7	353.4	357.2	361.0	364.7
Rated voltage (Vmpp / V)	34.02	34.14	34.26	34.37	34.49
Rated current (Impp / A)	10.28	10.35	10.43	10.50	10.57
Open circuit voltage (Voc / V)	40.85	40.99	41.14	41.28	41.42
Short circuit current (Isc / A)	10.95	11.04	11.14	11.23	11.32

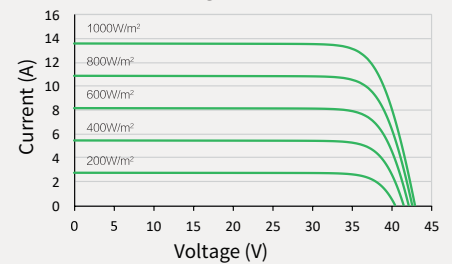
Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.29%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.043%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.25%/°C	Max. series fuse rating	25 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

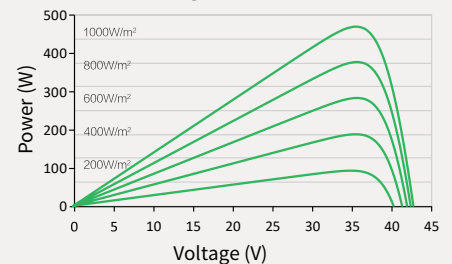
Operating Parameters

Curve

Current-Voltage (475W)



Power-Voltage (475W)



Current-Voltage (475W)

