



ASTRONERGY

Special for Australian Market
(preliminary)

ASTRO N5

Create Sustainable and Efficient Green Energy

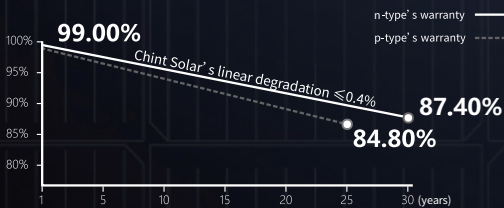
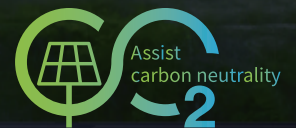
CHSM60N-HC
Monofacial Series (182)

450~470W

TOPCon / Multi-busbar / Half-cut

Non-destructive cutting

Lower BOS cost & LCOE



25-year Product Warranty (special for rooftop market)

30-year Linear Power Warranty



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



450~470W

POWER RANGE

0~+5W

POWER TOLERANCE

21.8%

MAX. MODULE EFFICIENCY

≤ 1.0%

FIRST YEAR POWER DEGRADATION

≤ 0.4%

YEAR 2-30 POWER DEGRADATION

Electrical Specifications

STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

Type	CHSM60N-HC -450	CHSM60N-HC -455	CHSM60N-HC -460	CHSM60N-HC -465	CHSM60N-HC -470
Rated output (Pmpp / Wp)	450	455	460	465	470
Rated voltage (Vmpp / V)	34.75	34.92	35.08	35.25	35.42
Rated current (Impp / A)	12.95	13.03	13.11	13.19	13.27
Open circuit voltage (Voc / V)	41.35	41.55	41.75	41.95	42.15
Short circuit current (Isc / A)	13.60	13.71	13.81	13.91	14.01
Module efficiency	20.9%	21.1%	21.3%	21.5%	21.8%

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

Rated output (Pmpp / Wp)	338.4	342.2	345.9	349.7	353.4
Rated voltage (Vmpp / V)	32.71	32.86	33.02	33.18	33.34
Rated current (Impp / A)	10.35	10.41	10.48	10.54	10.60
Open circuit voltage (Voc / V)	39.28	39.47	39.66	39.85	40.04
Short circuit current (Isc / A)	10.98	11.06	11.15	11.23	11.31

Power Sorting: 0~+5W Measurement tolerance +/- 3%

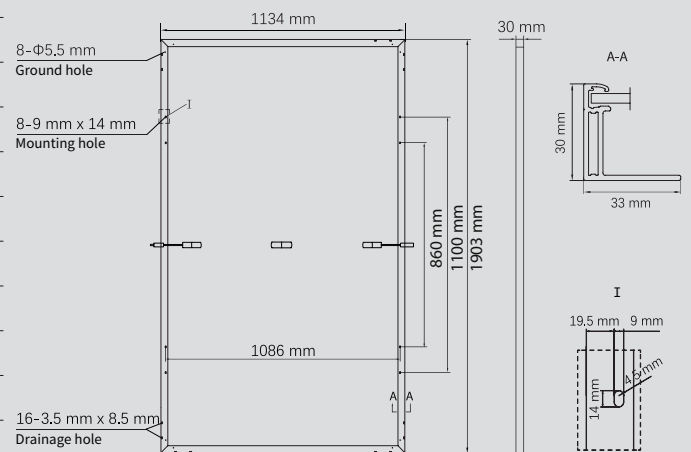
Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.30%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.043%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.24%/°C	Max. series fuse rating	25 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}
Fire performance	Class C		

Operating Parameters

Mechanical Specifications

Outer dimensions (L x W x H)	1903 x 1134 x 30 mm
Cell Type	n type Mono-crystalline
No. of cells	120 (6*20)
Frame technology	Aluminum, silver anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	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)	PV-HCB40 (Astronergy) or PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy (Stäubli)
Module weight	23.8 kg
Packing unit	36 pcs / box (Subject to sales contract)
Weight of packing unit (for 40'HQ container)	901 kg
Modules per 40' HQ container	864 pcs



① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

Curve

