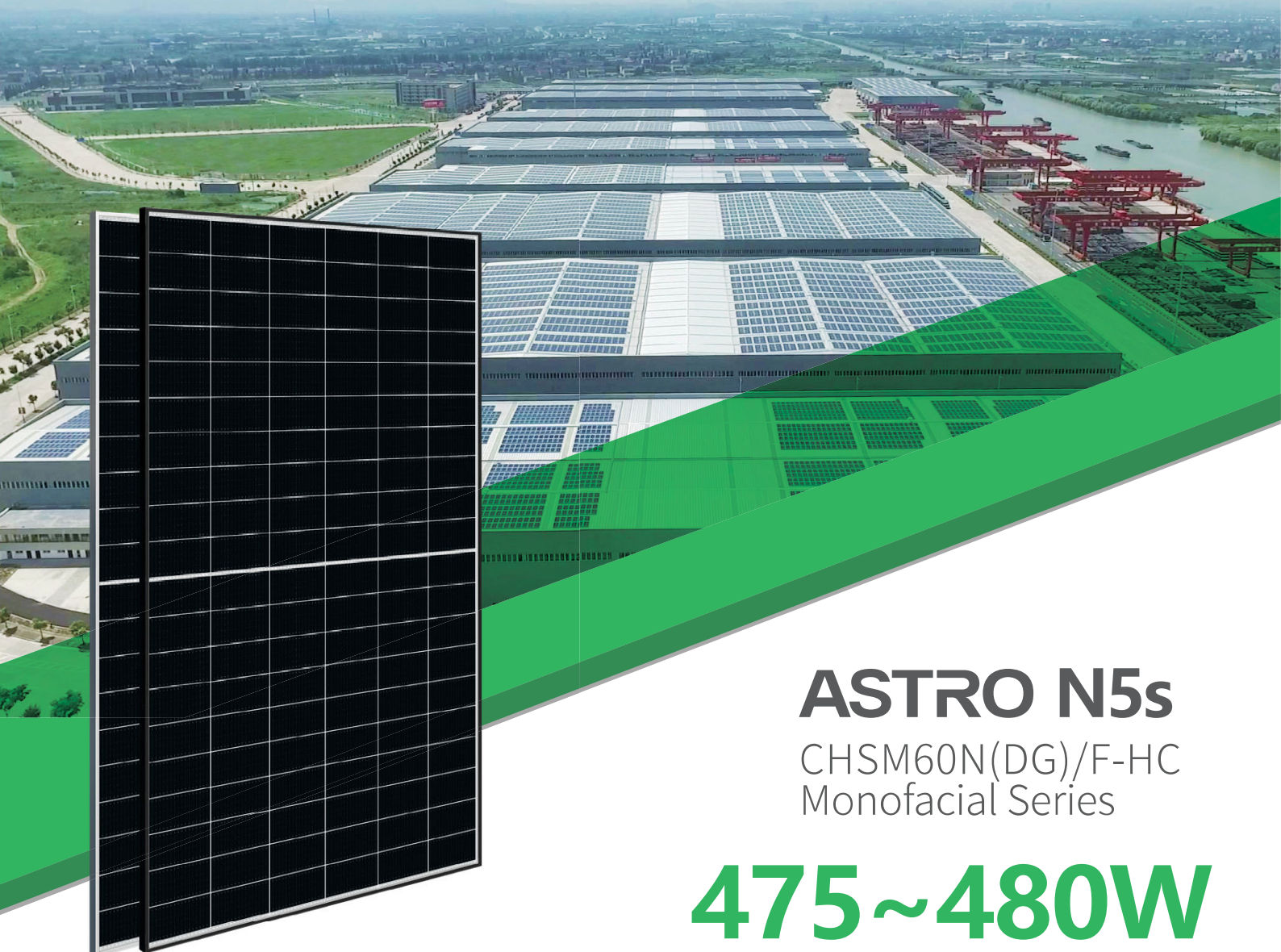




ASTRONERGY



ASTRO N5s

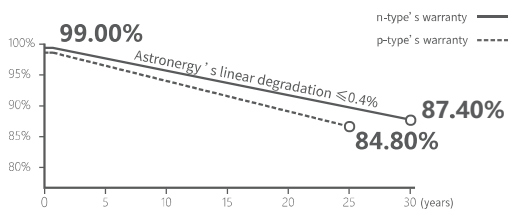
CHSM60N(DG)/F-HC
Monofacial Series

475~480W



Warranty

15 15-year Product Warranty **30** 30-year Linear Power Warranty



n-type TOPCon 4.0

Novel upgrade, enhancing module efficiency



SMBB Design

Enhancing current collection, minimizing power loss



Better Temperature Coefficient

$\leq -0.29\%/^{\circ}\text{C}$, adapting for high temperature



Double-layer High-transmittance Glass

Enhancing light transmittance, effectively isolating moisture



ISO 9001:2015 ISO Quality Management System
ISO 14001:2015 ISO Environment Management System
ISO 45001: Occupational Health and Safety



Tier 1
BloombergNEF



475~480W

POWER RANGE

0~+3%

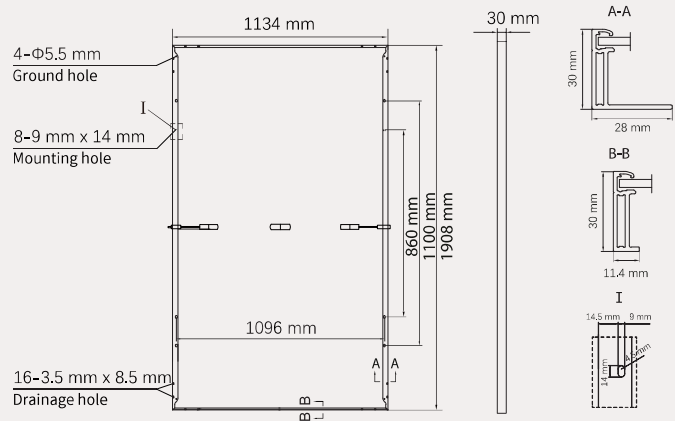
POWER SORTING

22.2%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)	PV-HCB40 (Astronergy) or PV-KST4-EVO2A/ xy, PV-KBT4-EVO2A/xy (Stäubli)
Module weight	23 kg
Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	875 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 CHSM60N(DG)/F-HC-XXX(XXX=475-480)

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

Rated output (P _{mpp} / W _p)	475	480
Rated voltage (V _{mpp} / V)	36.39	36.52
Rated current (I _{mpp} / A)	13.05	13.14
Open circuit voltage (V _{oc} / V)	43.31	43.46
Short circuit current (I _{sc} / A)	13.80	13.91
Module efficiency	22.0%	22.2%

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

Rated output (P _{mpp} / W _p)	357.2	361.0
Rated voltage (V _{mpp} / V)	34.26	34.37
Rated current (I _{mpp} / A)	10.43	10.50
Open circuit voltage (V _{oc} / V)	41.14	41.28
Short circuit current (I _{sc} / A)	11.14	11.23

Power tolerance: +/- 3.5%

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	25 A
Nominal module operating temperature (NMOT)	41±2° C	Max. system voltage (IEC/UL)	1500V _{DC}

Fire performance: Class A

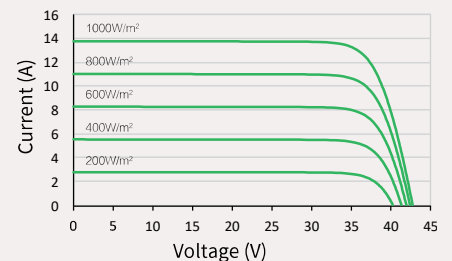
Made in China, Made in Thailand.

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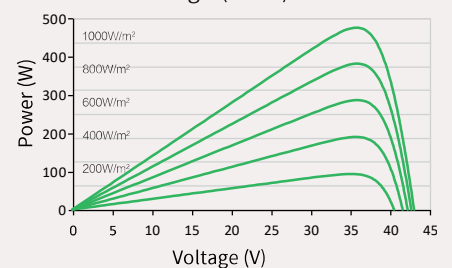
<http://www.astronergy.com.au>

Curve

Current-Voltage (475W)



Power-Voltage (475W)



Current-Voltage (475W)

