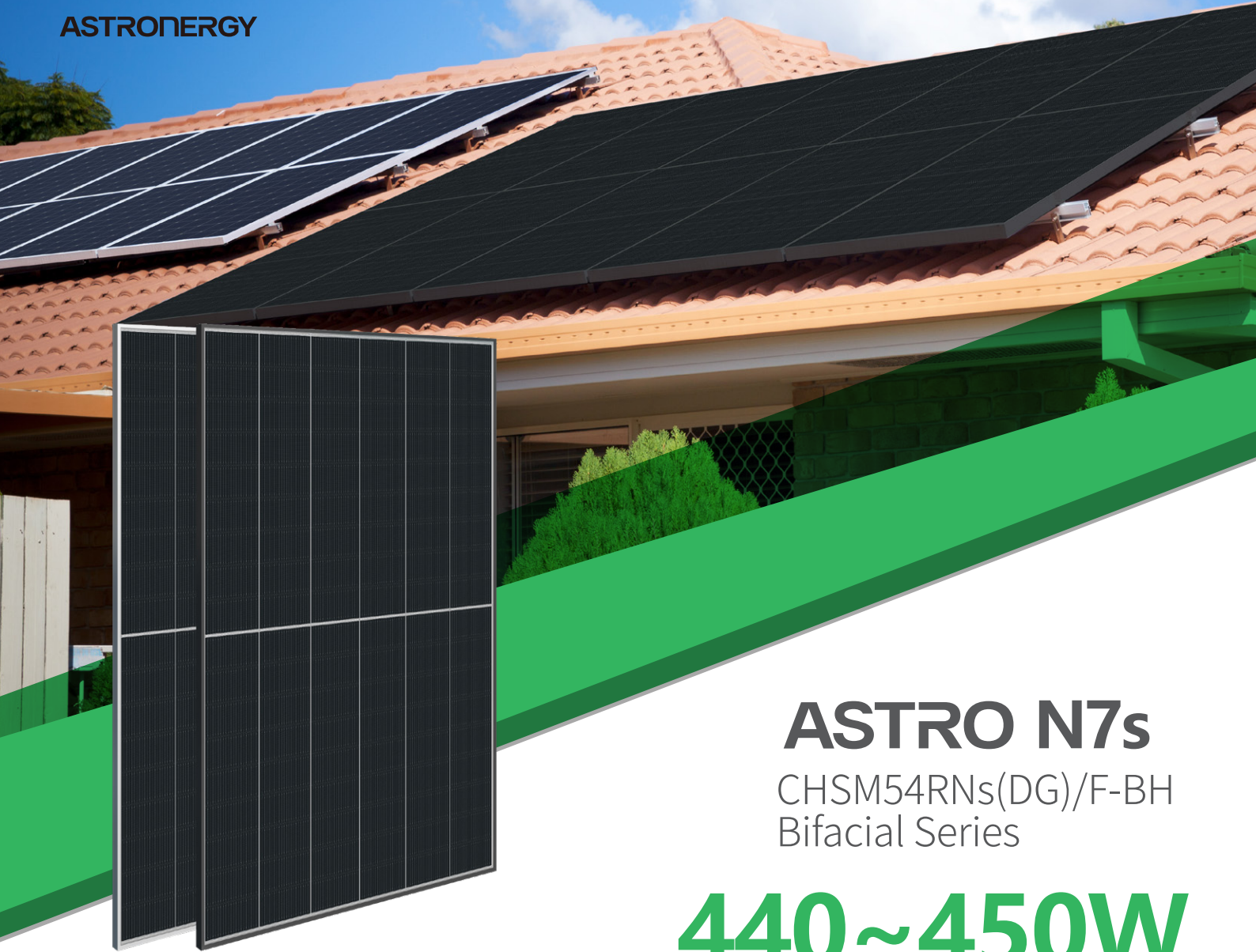




ASTRONERGY



ASTRO N7s

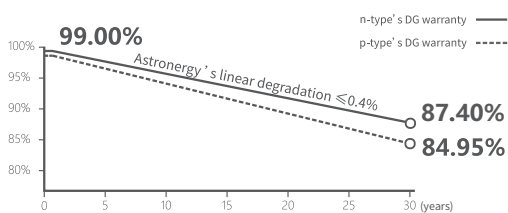
CHSM54RN_s(DG)/F-BH
Bifacial Series

440~450W

Warranty

30 30-year Product Warranty
(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



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

TOP PERFORMER
member of group
PVELkiwa

Tier 1
BloombergNEF

Underwritten by
International Insurer



440~450W

POWER RANGE

0~+3%

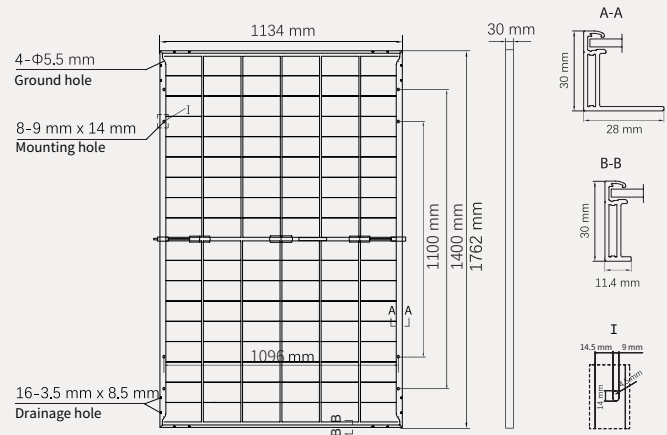
POWER SORTING

22.5%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)	1762 x 1134 x 30 mm
Cell type	n-type mono-crystalline
No. of cells	108 (6*18)
Frame technology	Aluminum, silver or 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)	PV-HCB40 (Astronergy) or PV-KST4-EVO2A/ xy, PV-KBT4-EVO2A/xy (Stäubli)
Module weight	21.5 kg
Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	819 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 CHSM54RNs(DG)/F-BH-XXX(XXX=440-450)

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

	440	445	450
Rated output (P _{mpp} / Wp)	440	445	450
Rated voltage (V _{mpp} / V)	32.61	32.77	32.94
Rated current (I _{mpp} / A)	13.49	13.58	13.66
Open circuit voltage (V _{oc} / V)	38.80	39.00	39.20
Short circuit current (I _{sc} / A)	14.18	14.26	14.35
Module efficiency	22.0%	22.3%	22.5%

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

	330.9	334.6	338.4
Rated output (P _{mpp} / Wp)	330.9	334.6	338.4
Rated voltage (V _{mpp} / V)	30.69	30.85	31.01
Rated current (I _{mpp} / A)	10.78	10.85	10.91
Open circuit voltage (V _{oc} / V)	36.85	37.04	37.23
Short circuit current (I _{sc} / A)	11.44	11.51	11.58

Refer to the installation manual for BNPI electrical ratings and bifaciality coefficients for V_{oc}, I_{sc}, and P_{max}.
Power tolerance: +/- 3.5%

Electrical Specifications (Integrated power)

Pmpp gain	Pmpp / Wp	Vmpp / V	I _{mpp} / A	V _{oc} / V	I _{sc} / A
5%	467	33.05	14.14	39.00	14.98
10%	490	33.05	14.81	39.00	15.69
15%	512	33.05	15.48	39.00	16.40
20%	534	33.05	16.16	39.00	17.12
25%	556	33.05	16.83	39.00	17.83

Electrical characteristics with different rear power gain (reference to 445W)

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

Fire performance: Class A

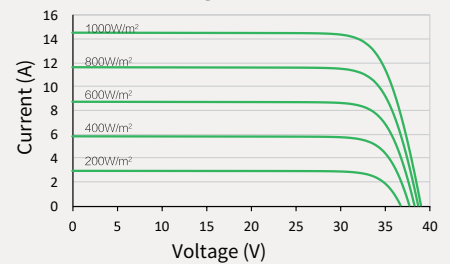
Made in China, Made in Thailand.

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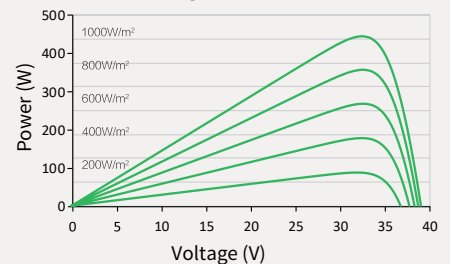
<http://www.astronergy.com.au>

Curve

Current-Voltage (445W)



Power-Voltage (445W)



Current-Voltage (445W)

