



ASTRONERGY

Special for Australian Market



ASTRO N7s

CHSM48RN(DG)/F-BH
Bifacial Series

440~455W

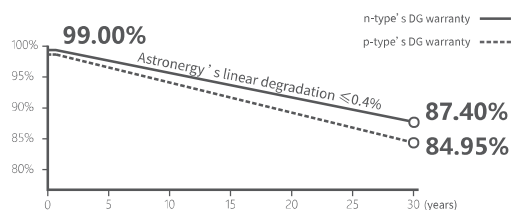
Warranty



30-year Product Warranty
(Specified for rooftop market)



30-year Linear Power Warranty
(Only to the front-side of modules)



Key Features

- High efficiency n-type TOPCon cells
- Elegant Zero Busbar design
- Dual glass for improved durability
- Manufacturing with AI technology
- Suitable for residential systems
- Easy to install and transport



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



Tier 1
BloombergNEF



440~455W

POWER RANGE

0~+3%

POWER SORTING

22.8%

MAX MODULE
EFFICIENCY

≤ 1.0%

FIRST YEAR
POWER DEGRADATION

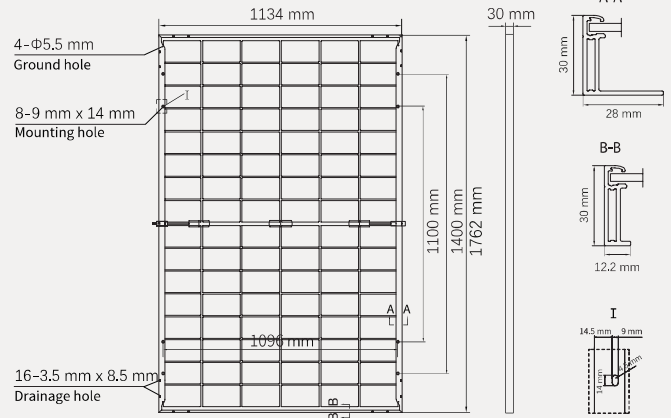
≤ 0.4%

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 | 96 (6*16) |
| Frame technology | Aluminum, black or silver anodized |
| Front / Back glass | 2.0+2.0 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 (Chint New Energy) or PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy (Stäubli) |
| Module weight | 24.4 kg |
| Packing unit | 36 pcs / box |
| Weight of packing unit (for 40'HQ container) | 923 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 CHSM48RN(DG)/F-BH-XXX(XXX=440~455)

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

| | | | | |
|---------------------------------|-------|-------|-------|-------|
| Rated output (Pmpp / Wp) | 440 | 445 | 450 | 455 |
| Rated voltage (Vmpp / V) | 30.06 | 30.20 | 30.33 | 30.47 |
| Rated current (Impp / A) | 14.64 | 14.74 | 14.83 | 14.93 |
| Open circuit voltage (Voc / V) | 36.09 | 36.25 | 36.42 | 36.58 |
| Short circuit current (Isc / A) | 15.47 | 15.57 | 15.68 | 15.78 |
| Module efficiency | 22.0% | 22.3% | 22.5% | 22.8% |

Tolerance: Pmpp ±3%, Voc ±3% and Isc ±4%.

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

| | | | | |
|---------------------------------|-------|-------|-------|-------|
| Rated output (Pmpp / Wp) | 485 | 490 | 495 | 500 |
| Rated voltage (Vmpp / V) | 30.07 | 30.20 | 30.34 | 30.47 |
| Rated current (Impp / A) | 16.13 | 16.22 | 16.32 | 16.41 |
| Open circuit voltage (Voc / V) | 36.10 | 36.26 | 36.42 | 36.58 |
| Short circuit current (Isc / A) | 17.13 | 17.23 | 17.33 | 17.42 |

Bifaciality(Pmpp/Isc) : 80±5 %, Bifaciality(Voc): 98±2 %

Electrical characteristics with 10% Bifacial Gains

| | | | | |
|---------------------------------|-------|-------|-------|-------|
| Rated output (Pmpp / Wp) | 484 | 490 | 495 | 501 |
| Rated voltage (Vmpp / V) | 30.06 | 30.20 | 30.33 | 30.47 |
| Rated current (Impp / A) | 16.10 | 16.21 | 16.32 | 16.43 |
| Open circuit voltage (Voc / V) | 36.10 | 36.26 | 36.42 | 36.58 |
| Short circuit current (Isc / A) | 17.02 | 17.13 | 17.24 | 17.36 |

Operating Parameters

| | |
|------------------------------|---------------------|
| No. of diodes | 3 |
| Junction box IP rating | IP 68 |
| Max. series fuse rating | 25 A |
| Max. system voltage (IEC/UL) | 1500V _{DC} |

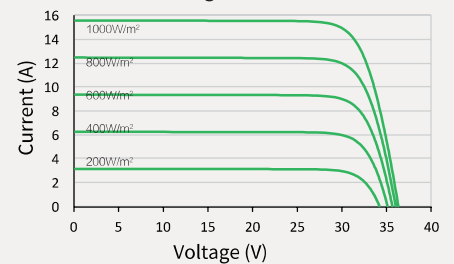
Fire performance: Class C

Temperature Ratings (STC)

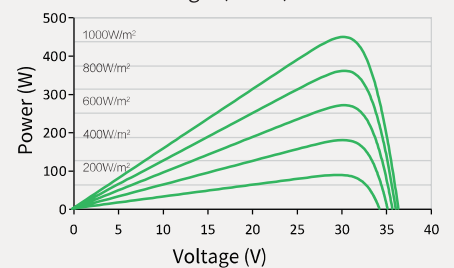
| | |
|--------------------------------|------------|
| Temperature coefficient (Pmpp) | -0.29%/°C |
| Temperature coefficient (Isc) | +0.043%/°C |
| Temperature coefficient (Voc) | -0.25%/°C |

Curve

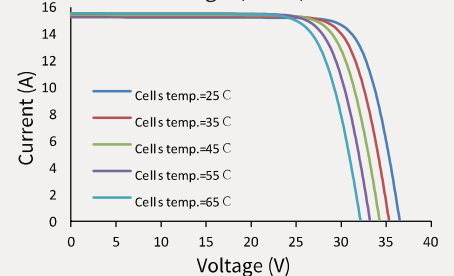
Current-Voltage (450W)



Power-Voltage (450W)



Current-Voltage (450W)



Made in China, Made in Turkey.

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