ASTRONERGY



# ASTRO N7s 2.0

## CHSM48RN(DG)/F-BH
## Bifacial Series

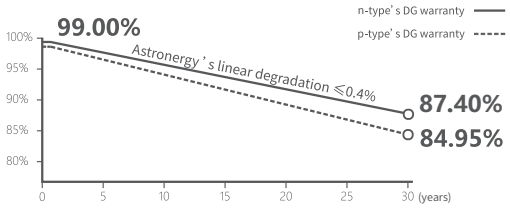
# 450~470W

Assist carbon neutrality

## Warranty

25 25-year Product Warranty

30 30-year Linear Power Warranty




### n-type TOPCon 5.0
Newly upgraded cell technology, ultra-high product energy efficiency

### ZBB Design
Zero-busbar integrated interconnection

### Sleek Design
⩽ 2 ㎡ area, easy to transport and install

### Integrated Appearance
Streamlined design without busbars or harpoon-like ribbons, perfect for upscale zero-carbon buildings

IEC 61215, IEC 61730
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

TOP PERFORMER 2025 kiwa PV MODULE RELIABILITY SCORECARD

Tier 1 BloombergNEF

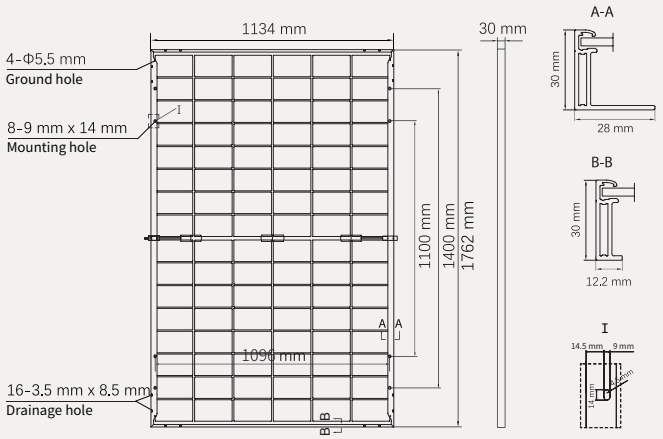
Underwritten by International Insurer

| 450~470W | 0~+3% | 23.5% | ≤ 1.0% | ≤ 0.4% |
|---|---|---|---|---|
| POWER RANGE | POWER SORTING | MAX MODULE EFFICIENCY | FIRST YEAR POWER DEGRADATION | 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 anodized |
| Front / Back glass | 2.0+2.0 mm |
| Cable length (Including connector) | Landscape: 1200 mm; or Customized length |
| Cable diameter (IEC/UL) | 4 $mm^2$ / 12 AWG |
| ① Maximum mechanical test load | 6000 Pa (front) / 4000 Pa (back) |
| Connector type (IEC/UL) | MC4-EVO2A (Standard) / HCB40 (Optional) |
| Module weight | 24.5 kg |
| Packing unit | 36 pcs / box |
| Weight of packing unit (for 40'HQ container) | 927 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

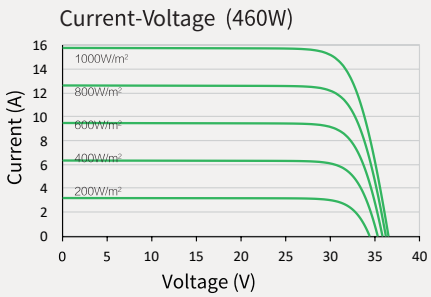
**STC:** Irradiance 1000W/$m^2$, Cell Temperature 25° C, AM=1.5, Power measurement tolerance: ±3%

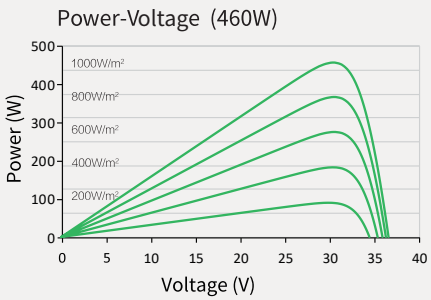
| Rated output (Pmpp / Wp) | 450 | 455 | 460 | 465 | 470 |
|---|---|---|---|---|---|
| Rated voltage (Vmpp / V) | 30.33 | 30.47 | 30.60 | 30.73 | 30.75 |
| Rated current (Impp / A) | 14.83 | 14.93 | 15.03 | 15.13 | 15.28 |
| Open circuit voltage (Voc / V) | 36.42 | 36.58 | 36.74 | 36.90 | 36.92 |
| Short circuit current (Isc / A) | 15.68 | 15.78 | 15.88 | 15.98 | 15.99 |
| Module efficiency | 22.5% | 22.8% | 23.0% | 23.3% | 23.5% |

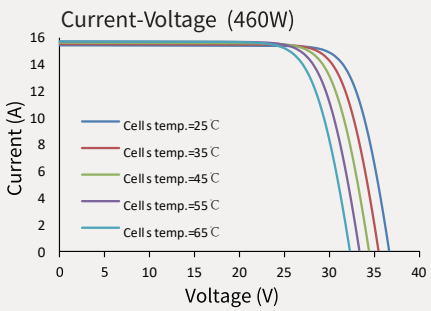
**BNPI:** Irradiance: front 1000W/$m^2$, rear 135W/$m^2$, Cell Temperature 25° C, AM=1.5

| Rated output (Pmpp / Wp) | 495.9 | 501.4 | 506.9 | 512.4 | 517.9 |
|---|---|---|---|---|---|
| Rated voltage (Vmpp / V) | 30.34 | 30.48 | 30.61 | 30.74 | 30.76 |
| Rated current (Impp / A) | 16.34 | 16.45 | 16.56 | 16.67 | 16.84 |
| Open circuit voltage (Voc / V) | 36.43 | 36.59 | 36.75 | 36.91 | 36.93 |
| Short circuit current (Isc / A) | 17.36 | 17.47 | 17.58 | 17.69 | 17.70 |

## Curve




## Temperature Ratings (STC)

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

## Operating Parameters

| | |
|---|---|
| Operating Temperature | -40°C ~+85°C |
| Bifaciality (Pmpp) | 80±5% |
| Junction box IP rating | IP 68 |
| Max. series fuse rating | 30 A |
| Max. system voltage (IEC/UL) | 1500$V_{DC}$ |

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