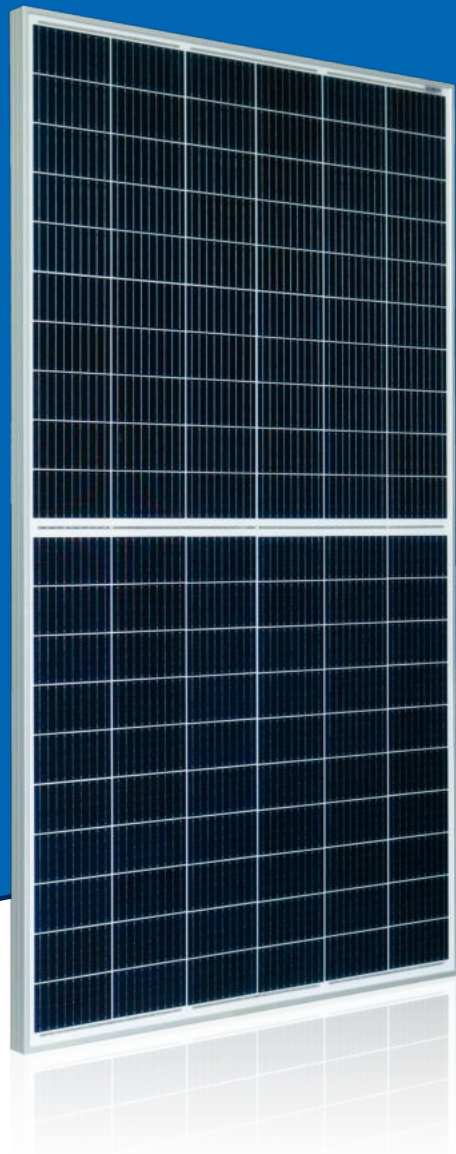


# ASTRO 3 Twins

Create Sustainable and Efficient Green Energy

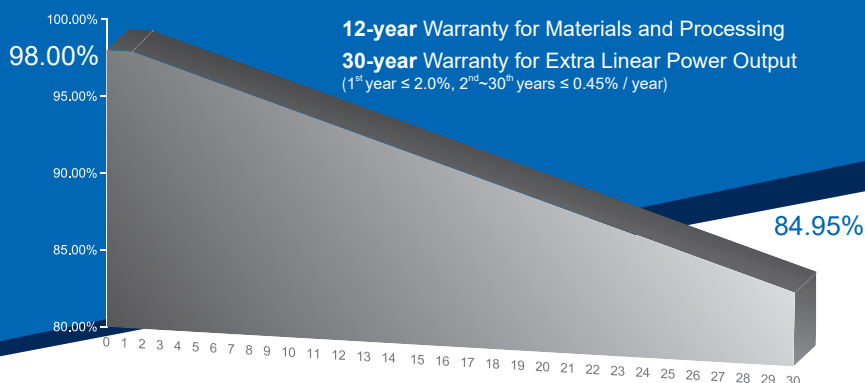


## 335W~350W

### Monocrystalline PV Module

#### CHSM60M(DG)/F-BH Series (158.75)

CHSM60M(DG)/F-BH is bifacial module with white glazed glass



#### KEY FEATURES



##### OUTPUT POSITIVE TOLERANCE

Guaranteed 0~+5W positive tolerance to ensure power output.



##### INNOVATIONAL HALF-CUT TECHNOLOGY

Better shading tolerance, higher reliability.



##### INNOVATIONAL MULTI-BUSBAR TECHNOLOGY

Higher light absorption, lower risk of microcrack.



##### SUPER PERC+ CELL TECHNOLOGY

Higher module power and module efficiency, lower power degradation.



##### BIFACIAL POWER

Up to 25% additional power gain from rear side.



##### APPLICABLE FOR MULTI DIFFERENT ENVIRONMENTS

Wide range of applications, such as snow areas, high humidity areas and strong sandstorm areas, etc.

#### COMPREHENSIVE CERTIFICATES



The first solar company which passed the TUV Nord IEC/TS 62941 certification audit.

For Global Market



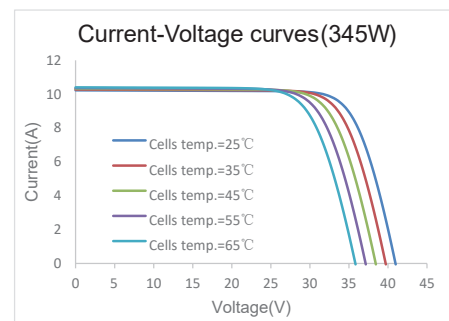
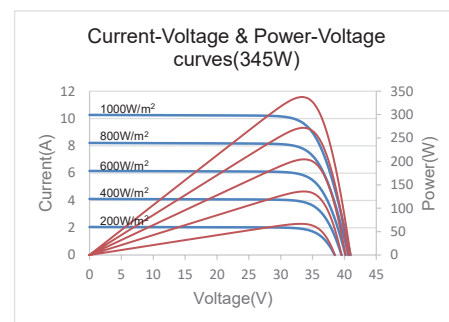
**ASTRONERGY**  
A CHNT COMPANY

## ELECTRICAL SPECIFICATIONS

| Power rating (front)                        | 335 Wp              |       | 340 Wp |       | 345 Wp |       | 350 Wp |       |
|---------------------------------------------|---------------------|-------|--------|-------|--------|-------|--------|-------|
| Testing Condition                           | Front               | Back  | Front  | Back  | Front  | Back  | Front  | Back  |
| STC rated output ( $P_{mpp}/Wp$ )           | 335                 | 236   | 340    | 239   | 345    | 243   | 350    | 247   |
| Rated voltage ( $V_{mpp}/V$ ) at STC        | 34.44               | 34.62 | 34.67  | 34.85 | 34.90  | 35.08 | 35.13  | 35.31 |
| Rated current ( $I_{mpp}/A$ ) at STC        | 9.73                | 6.82  | 9.81   | 6.87  | 9.89   | 6.93  | 9.97   | 6.98  |
| Open circuit voltage ( $V_{oc}/V$ ) at STC  | 40.80               | 39.60 | 40.99  | 39.78 | 41.18  | 39.96 | 41.37  | 40.15 |
| Short circuit current ( $I_{sc}/A$ ) at STC | 10.14               | 7.11  | 10.21  | 7.16  | 10.28  | 7.21  | 10.35  | 7.26  |
| Module efficiency                           | 19.4%               | 13.6% | 19.6%  | 13.8% | 19.9%  | 14.0% | 20.2%  | 14.3% |
| Temperature coefficient ( $P_{mpp}$ )       | - 0.34%/°C          |       |        |       |        |       |        |       |
| Temperature coefficient ( $I_{sc}$ )        | +0.035%/°C          |       |        |       |        |       |        |       |
| Temperature coefficient ( $V_{oc}$ )        | - 0.27%/°C          |       |        |       |        |       |        |       |
| Nominal module operating temperature (NMOT) | 44±2°C              |       |        |       |        |       |        |       |
| Maximum system voltage (IEC/UL)             | 1500V <sub>DC</sub> |       |        |       |        |       |        |       |
| Number of diodes                            | 3                   |       |        |       |        |       |        |       |
| Junction box IP rating                      | IP 68               |       |        |       |        |       |        |       |
| Maximum series fuse rating                  | 20 A                |       |        |       |        |       |        |       |

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, AM=1.5

## CURVE



## ELECTRICAL SPECIFICATIONS (Integrated power)

| $P_{mpp}$ gain | $P_{mpp}$ | $V_{mpp}$ | $I_{mpp}$ | $V_{oc}$ | $I_{sc}$ |
|----------------|-----------|-----------|-----------|----------|----------|
| 5%             | 362 Wp    | 34.90 V   | 10.38 A   | 41.18 V  | 10.79 A  |
| 10%            | 380 Wp    | 34.90 V   | 10.87 A   | 41.18 V  | 11.31 A  |
| 15%            | 397 Wp    | 34.80 V   | 11.40 A   | 41.28 V  | 11.82 A  |
| 20%            | 414 Wp    | 34.80 V   | 11.90 A   | 41.28 V  | 12.34 A  |
| 25%            | 431 Wp    | 34.80 V   | 12.39 A   | 41.28 V  | 12.85 A  |

Electrical characteristics with different rear power gain (reference to 345W)

## MECHANICAL SPECIFICATIONS

|                                |                                        |
|--------------------------------|----------------------------------------|
| Outer dimensions (L x W x H)   | 1714 x 1010 x 30 mm                    |
| Frame technology               | Aluminum, silver anodized              |
| Glass thickness                | 2.0 mm                                 |
| Cable length (IEC/UL)          | Portrait: 350 mm<br>Landscape: 1100 mm |
| Cable diameter (IEC/UL)        | 4 mm <sup>2</sup> / 12 AWG             |
| ① Maximum mechanical test load | 5400 Pa (front) / 2400 Pa (back)       |
| Connector type (IEC/UL)        | HCB40 / MC4-EVO2                       |

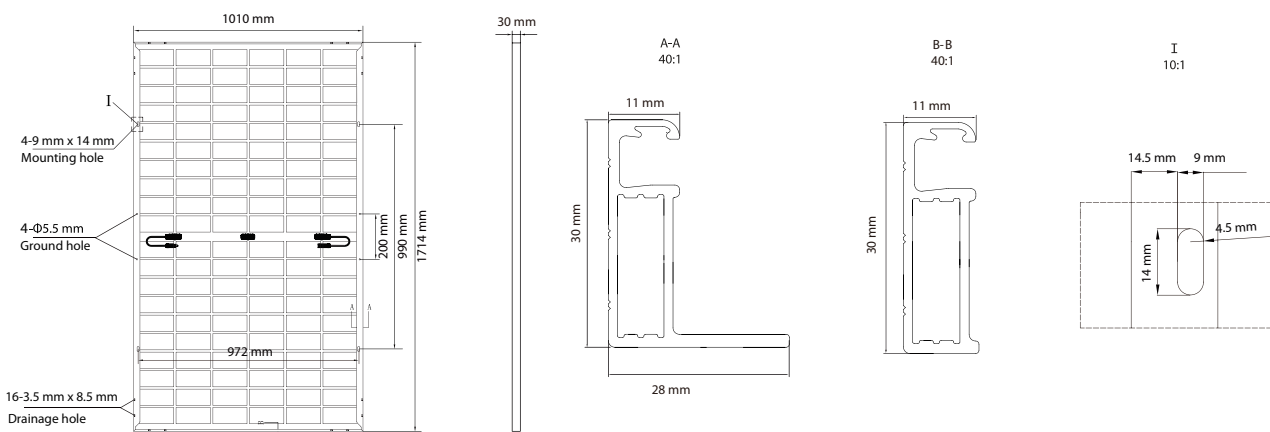
① Refer to Astronergy crystalline installation manual or contact technical department.  
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

## PACKING SPECIFICATIONS

|                                              |              |
|----------------------------------------------|--------------|
| ① Module Weight                              | 22.1 kg      |
| ② Packing unit                               | 36 pcs / box |
| Weight of packing unit (for 40'HQ container) | 838 kg       |
| Number of modules per 40'HQ container        | 936 pcs      |

① Tolerance +/- 1.0kg  
② Subject to sales contract

## MODULE DIMENSION DETAILS



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