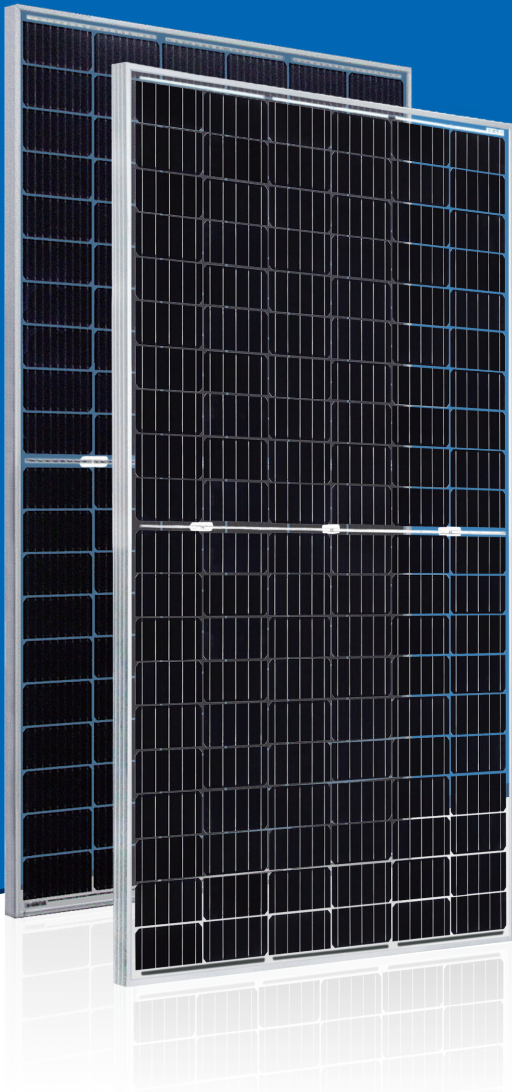


AstroTwins™

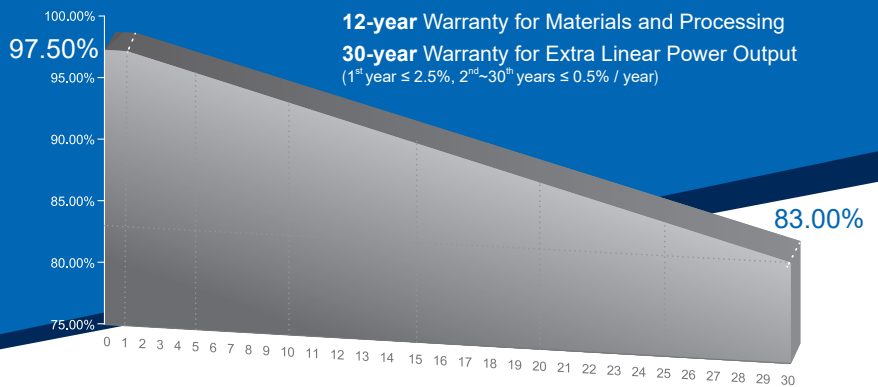
Enjoy the Energy of the Universe



310W~330W

P-type Monocrystalline PV Module
CHSM60M(DGT)/F-BH Series (156.75)

CHSM60M(DGT)/F-BH is bifacial module with high transparent glass



KEY FEATURES

- +5W OUTPUT POSITIVE TOLERANCE**
Guaranteed 0~+5W positive tolerance ensures power output reliability.
- ENHANCED FIRE PERFORMANCE**
Fire Class A certified according to IEC standard.
- EXCELLENT WEATHER RESISTANCE**
Reduces the cell micro-crack and extended product warranty.
- BIFACIAL POWER**
The backside makes use of the reflected and scattered light from the surroundings, the modules can yield up to 5%~30% power more, depending on the albedo.
- REDUCE INTERNAL MISMATCH LOSS**
Reduces mismatch loss and improves output.
- APPLICABLE FOR MULTI DIFFERENT ENVIRONMENTS**
The wide range of applications, such as BIPV, vertical installation, snow area, high humidity area and strong sandstorm area, etc.
- SNAIL TRAIL RESISTANCE**
Reduces the probability of snail trails with zero water vapor transmittance.

Multi-Busbar Module could be the option

COMPREHENSIVE CERTIFICATES



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

For Global Market



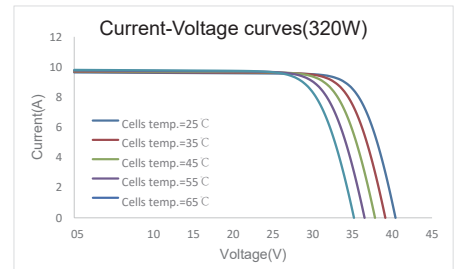
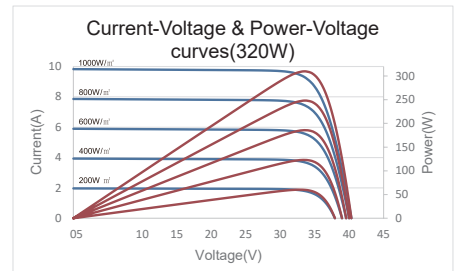
ASTRONERGY
A CHNT COMPANY

ELECTRICAL SPECIFICATIONS

| Power rating (front) | 310 Wp | | 315 Wp | | 320 Wp | | 325 Wp | | 330 Wp | |
|---|--------|-------|--------|-------|---------------------|-------|--------|-------|--------|-------|
| Testing Condition | Front | Back | Front | Back | Front | Back | Front | Back | Front | Back |
| STC rated output (P_{mpp}/Wp)* | 310 | 233 | 315 | 236 | 320 | 240 | 325 | 244 | 330 | 248 |
| Rated voltage (V_{mpp}/V) at STC | 33.41 | 33.86 | 33.66 | 34.12 | 33.91 | 34.37 | 34.15 | 34.61 | 34.39 | 34.86 |
| Rated current (I_{mpp}/A) at STC | 9.28 | 6.87 | 9.36 | 6.93 | 9.44 | 6.99 | 9.52 | 7.04 | 9.60 | 7.10 |
| Open circuit voltage (V_{oc}/V) at STC | 40.06 | 38.86 | 40.25 | 39.04 | 40.44 | 39.22 | 40.63 | 39.41 | 40.82 | 39.59 |
| Short circuit current (I_{sc}/A) at STC | 9.72 | 7.19 | 9.79 | 7.24 | 9.86 | 7.30 | 9.93 | 7.35 | 10.00 | 7.40 |
| Module efficiency | 18.3% | 13.7% | 18.6% | 14.0% | 18.9% | 14.2% | 19.2% | 14.4% | 19.5% | 14.7% |
| Temperature coefficient (P_{mpp}) | | | | | - 0.3438%/°C | | | | | |
| Temperature coefficient (I_{sc}) | | | | | +0.0353%/°C | | | | | |
| Temperature coefficient (V_{oc}) | | | | | - 0.2722%/°C | | | | | |
| Nominal module operating temperature (NMOT) | | | | | 44±2°C | | | | | |
| Maximum system voltage (IEC/UL) | | | | | 1500V _{DC} | | | | | |
| Number of diodes | | | | | 3 | | | | | |
| Junction box IP rating | | | | | IP 68 | | | | | |
| Maximum series fuse rating | | | | | 20 A | | | | | |

STC: Irradiance 1000W/m², 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% | 336 Wp | 33.91 V | 9.91 A | 40.44 V | 10.35 A |
| 10% | 352 Wp | 33.91 V | 10.38 A | 40.44 V | 10.85 A |
| 15% | 368 Wp | 33.81 V | 10.88 A | 40.54 V | 11.34 A |
| 20% | 384 Wp | 33.81 V | 11.36 A | 40.54 V | 11.83 A |
| 25% | 400 Wp | 33.81 V | 11.83 A | 40.54 V | 12.32 A |

Electrical characteristics with different rear power gain (reference to 320W)

MECHANICAL SPECIFICATIONS

| | |
|--------------------------------|--|
| Outer dimensions (L x W x H) | 1696 x 998 x 30 mm 66.77 x 39.29 x 1.18 in |
| Module composition | Glass / POE / Glass |
| Glass thickness | 2.5 mm / 0.098 in |
| Cable length (IEC/UL) | Portrait: 350 mm (13.78 in) Landscape: 1100 mm (43.31 in) |
| Cable diameter (IEC/UL) | 4 mm ² / 12 AWG |
| ① Maximum mechanical test load | 5400 Pa (front) / 2400 Pa (back) |
| Fire performance (IEC/UL) | Class A (IEC) or Type 3 (UL) |
| Connector type (IEC/UL) | MC4 compatible |

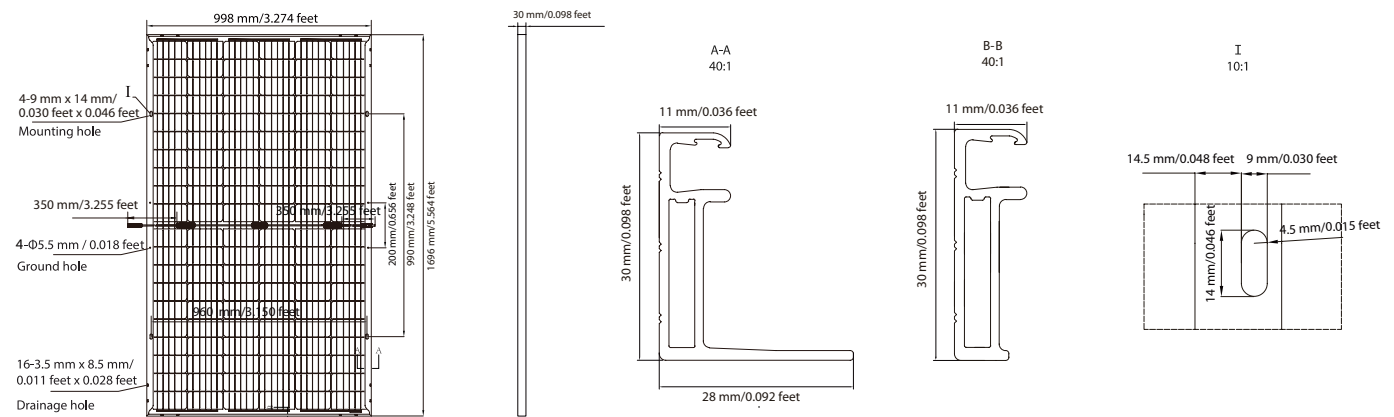
① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

PACKING SPECIFICATIONS

| | |
|--|---------------------|
| ① Weight (module only) | 25.3 kg / 55.78 lbs |
| ② Packing unit | 36 pcs / box |
| Weight of packing unit (for 40'HQ container) | 953 kg / 2101 lbs |
| 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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