

# AstroTwins™

Enjoy the Energy of the Universe

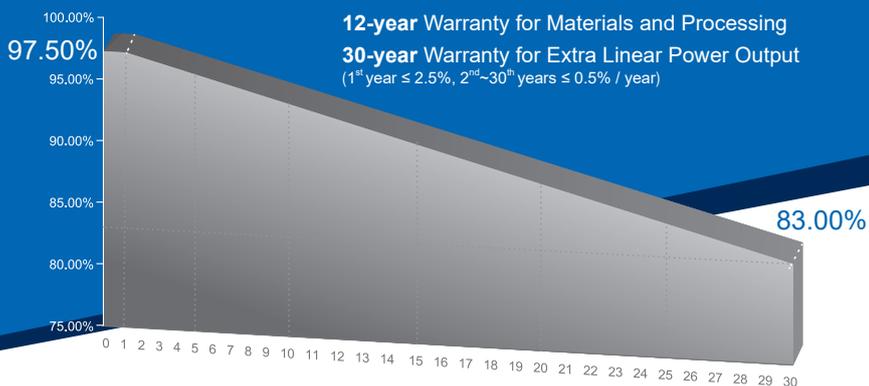


## 300W~310W

P-type Monocrystalline PV Module

CHSM60M(DGT)/F-B Series (156.75)

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



### KEY FEATURES

- 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.
- LOW-LIGHT IRRADIANCE**  
 The excellent performance at the haze, cloudy days and other low light conditions.
- 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.

### COMPREHENSIVE CERTIFICATES



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

For Global Market



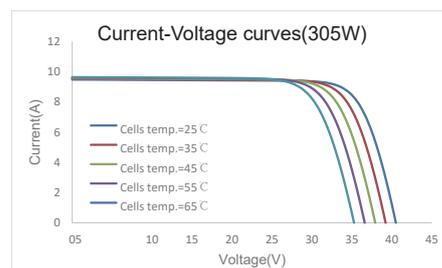
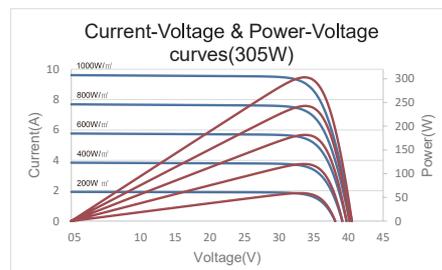
**ASTRONERGY**  
A CHNT COMPANY

## ELECTRICAL SPECIFICATIONS

Power rating (front)	300 Wp		305 Wp		310 Wp	
	Front	Back	Front	Back	Front	Back
Testing Condition	Front	Back	Front	Back	Front	Back
STC rated output ( $P_{mpp}/Wp$ )*	300	225	305	229	310	233
Rated voltage ( $V_{mpp}/V$ ) at STC	33.30	33.73	33.52	33.98	33.74	34.19
Rated current ( $I_{mpp}/A$ ) at STC	9.01	6.67	9.10	6.73	9.19	6.80
Open circuit voltage ( $V_{oc}/V$ ) at STC	40.08	38.88	40.28	39.07	40.48	39.27
Short circuit current ( $I_{sc}/A$ ) at STC	9.52	7.04	9.60	7.10	9.68	7.17
Module efficiency	18.1%	13.6%	18.4%	13.8%	18.7%	14.0%
Temperature coefficient ( $P_{mpp}$ )	- 0.380%/°C					
Temperature coefficient ( $I_{sc}$ )	+0.042%/°C					
Temperature coefficient ( $V_{oc}$ )	- 0.284%/°C					
Nominal module operating temperature (NMOT)	46±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%	320 Wp	33.52 V	9.55 A	40.28 V	10.08 A
10%	336 Wp	33.52 V	10.01 A	40.28 V	10.56 A
15%	351 Wp	33.42 V	10.50 A	40.38 V	11.04 A
20%	366 Wp	33.42 V	10.95 A	40.38 V	11.52 A
25%	381 Wp	33.42 V	11.41 A	40.38 V	12.00 A

Electrical characteristics with different rear power gain (reference to 305W)

## PACKING SPECIFICATIONS

① Weight (module only)	25.0 kg / 55.12 lbs
② Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	939 kg / 2070 lbs
Number of modules per 40'HQ container	1008 pcs

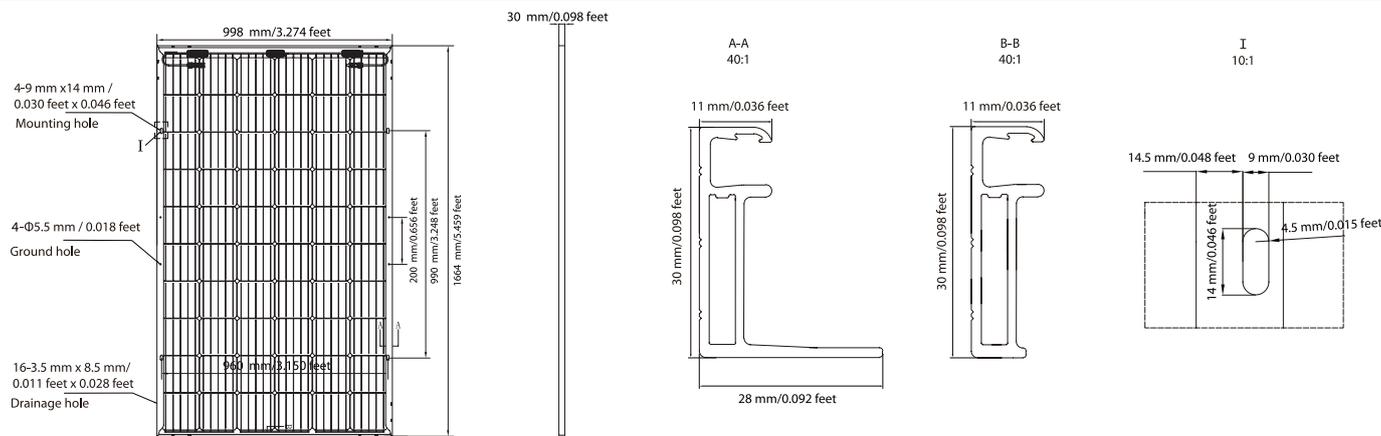
① Tolerance +/- 1.0kg  
② Subject to sales contract

## MECHANICAL SPECIFICATIONS

Outer dimensions (L x W x H)	1664 x 998 x 30 mm 65.51 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: 1000 mm (39.37 in)
Cable diameter (IEC/UL)	4 mm <sup>2</sup> / 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.

## MODULE DIMENSION DETAILS



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