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# **EnergyPal**

## **Solar Panel Guide Specification Data Sheet**

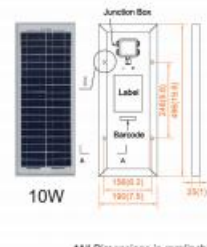
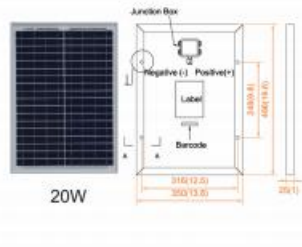
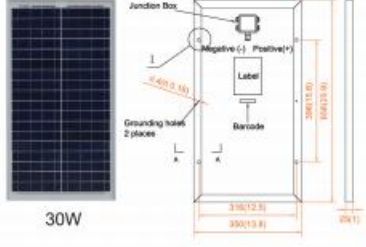
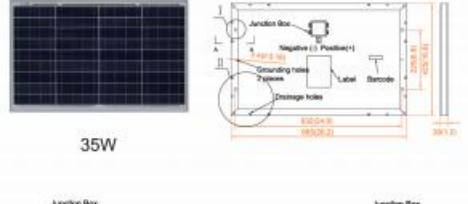
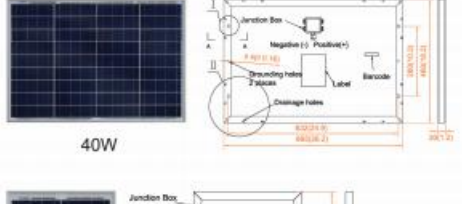
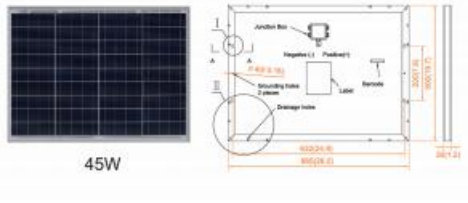
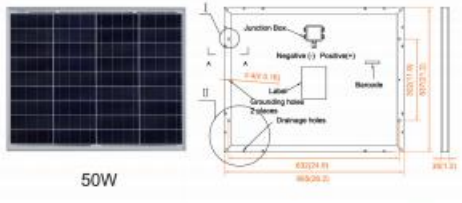
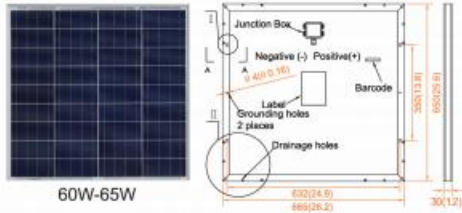
**Guangdong Haotech New Energy Technology Co.,  
Ltd.  
HT-P-10-65  
50P-12**

Also available on the web at  
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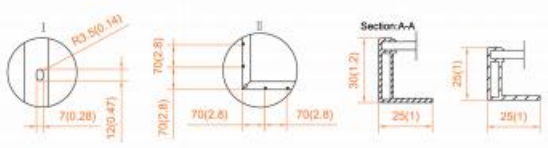
# 10~65 Watt



\*BLACK FRAME/BLACK BACK-SHEET PRODUCTS ARE AVAILABLE UPON REQUEST



\*All Dimensions in mm(inch)



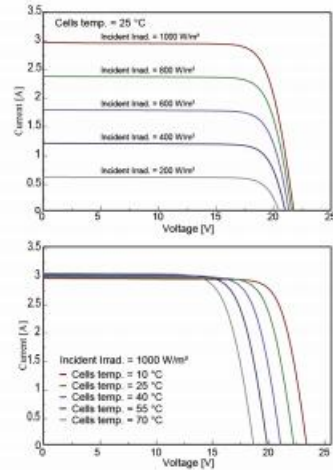
### Electrical Characteristics (STC)

| Module Type                      | CST10P-12 | CST20P-12 | CST30P-12 | CST35P-12 | CST40P-12 |
|----------------------------------|-----------|-----------|-----------|-----------|-----------|
| Maximum Power- Pmax(W)           | 10        | 20        | 30        | 35        | 40        |
| Open Circuit Voltage - Voc(V)    | 22.1      | 22.1      | 22.6      | 22.0      | 22.1      |
| Short-Circuit Current - Isc(A)   | 0.60      | 1.19      | 1.76      | 2.10      | 2.39      |
| Voltage at Pmax - Vmp(V)         | 18.1      | 18.1      | 18.4      | 18.0      | 18.1      |
| Current at Pmax - Imp(A)         | 0.55      | 1.10      | 1.63      | 1.94      | 2.21      |
| Module Efficiency - $\eta$ m (%) | 10.61     | 11.52     | 13.07     | 12.36     | 13.08     |

| Module Type                      | CST45P-12 | CST50P-12 | CST55P-12 | CST60P-12 | CST65P-12 |
|----------------------------------|-----------|-----------|-----------|-----------|-----------|
| Maximum Power- Pmax(W)           | 45        | 50        | 55        | 60        | 65        |
| Open Circuit Voltage - Voc(V)    | 22.2      | 22.3      | 22.2      | 22.2      | 22.4      |
| Short-Circuit Current - Isc(A)   | 2.67      | 2.95      | 3.26      | 3.56      | 3.82      |
| Voltage at Pmax - Vmp(V)         | 18.2      | 18.3      | 18.2      | 18.2      | 18.4      |
| Current at Pmax - Imp(A)         | 2.47      | 2.73      | 3.02      | 3.30      | 3.53      |
| Module Efficiency - $\eta$ m (%) | 13.53     | 14.00     | 13.78     | 13.86     | 15.04     |

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25 °C, Air Mass 1.5  
Power measurement tolerance 0→3%

### I-V Curve (CST50P-12)



### Mechanical Specifications

| Module Type      | CST60P/65P-12    | CST55P-12          | CST50P-12        | CST45P-12        |
|------------------|------------------|--------------------|------------------|------------------|
| Dimensions       | 650*665*30mm     | 600*665*30mm       | 537*665*30mm     | 500*665*30mm     |
| Weight           | 5.2kg            | 4.8kg              | 4.3kg            | 4.0kg            |
| Poly Solar Cells | 66*156mm (36pcs) | 58.5*156mm (36pcs) | 52*156mm (36pcs) | 48*156mm (36pcs) |

| Module Type      | CST40P-12        | CST35P-12        | CST30P-12          | CST20P-12           | CST10P-12          |
|------------------|------------------|------------------|--------------------|---------------------|--------------------|
| Dimensions       | 460*665*30mm     | 425*665*30mm     | 656*350*25mm       | 496*350*25mm        | 496*190*25mm       |
| Weight           | 3.7kg            | 3.4kg            | 2.5kg              | 2.0kg               | 1.2kg              |
| Poly Solar Cells | 45*156mm (36pcs) | 39*156mm (36pcs) | 31.2*156mm (36pcs) | 22.28*156mm (36pcs) | 22.28*78mm (36pcs) |

|              |                                |                 |                         |
|--------------|--------------------------------|-----------------|-------------------------|
| Front glass  | 3.2 mm low iron tempered glass | Frame           | Anodized aluminum alloy |
| Junction Box | IP67                           | Mechanical Load | 5400 Pa                 |

### Packing Configuration

| Module Type       | CST60P/65P-12    | CST55P-12        | CST50P-12        | CST45P-12        |
|-------------------|------------------|------------------|------------------|------------------|
| Carton Dimensions | 665*680*175mm    | 615*680*175mm    | 552*680*175mm    | 515*680*175mm    |
| Pallet Dimensions | 1370*1100*2170mm | 1270*1100*2170mm | 1400*1130*2170mm | 1400*1100*2190mm |
| Pallet Weight     | 1012.8kg         | 940.8kg          | 1110kg           | 1038kg           |
| Pieces/Pallet     | 180(5pcs/carton) | 180(5pcs/carton) | 240(5pcs/carton) | 240(5pcs/carton) |

| Module Type       | CST40P-12        | CST35P-12        | CST30P-12         | CST20P-12         | CST10P-12          |
|-------------------|------------------|------------------|-------------------|-------------------|--------------------|
| Carton Dimensions | 475*680*175mm    | 440*680*175mm    | 670*280*365mm     | 510*390*365mm     | 510*390*400mm      |
| Pallet Dimensions | 1400*1100*2030mm | 1360*1100*2170mm | 1370*1150*1960mm  | 1600*1050*1960mm  | 1600*1050*2135mm   |
| Pallet Weight     | 961.2kg          | 898.8kg          | 1070kg            | 1190kg            | 1414kg             |
| Pieces/Pallet     | 240(5pcs/carton) | 270(5pcs/carton) | 400(10pcs/carton) | 560(14pcs/carton) | 1120(28pcs/carton) |