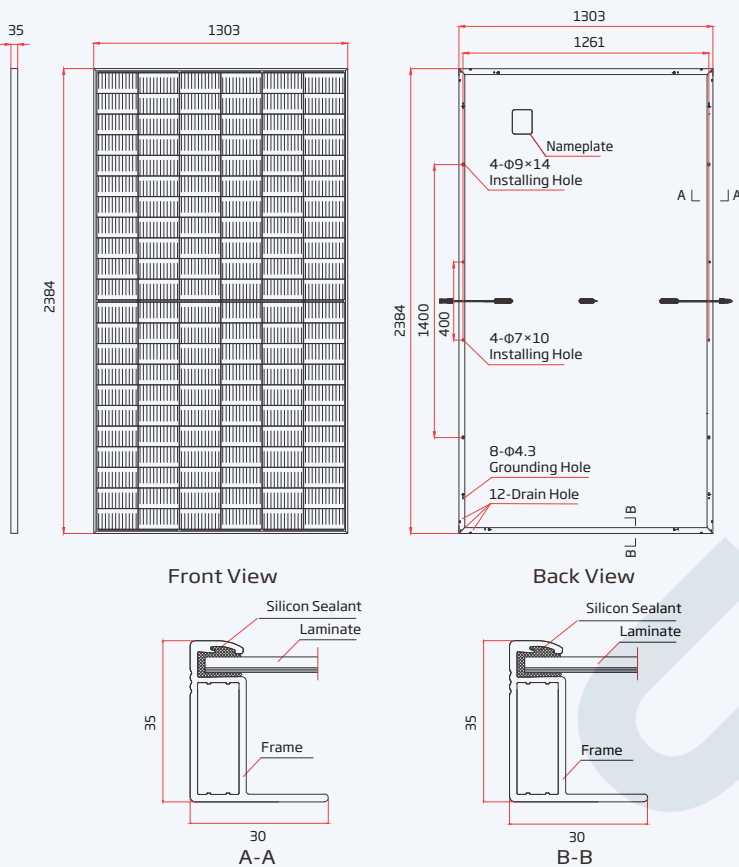
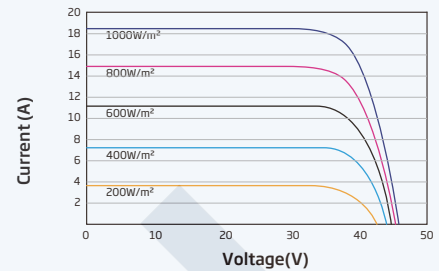
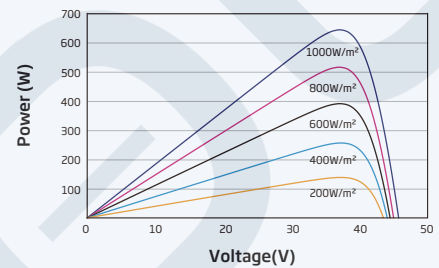
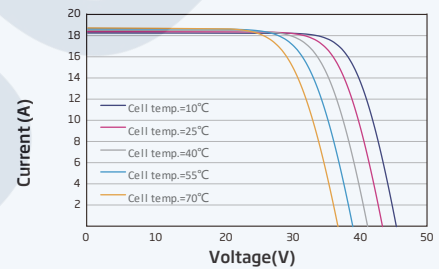


DIMENSIONS OF PV MODULE(mm)

I-V CURVES OF PV MODULE(650 W)

P-V CURVES OF PV MODULE(650W)

I-V CURVES OF PV MODULE(650 W)

ELECTRICAL DATA (STC)

Peak Power Watts -P _{MAX} (Wp)*	645	650	655	660	665	670
Power Tolerance -P _{MAX} (W)	0 ~ +5					
Maximum Power Voltage -V _{MPP} (V)	37.2	37.4	37.6	37.8	38.0	38.2
Maximum Power Current -I _{MPP} (A)	17.35	17.39	17.43	17.47	17.51	17.55
Open Circuit Voltage -V _{OC} (V)	45.1	45.3	45.5	45.7	45.9	46.1
Short Circuit Current -I _{SC} (A)	18.39	18.44	18.48	18.53	18.57	18.62
Module Efficiency η_m (%)	20.8	20.9	21.1	21.2	21.4	21.6

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. *Measuring tolerance: \pm 3%.

ELECTRICAL DATA (NOCT)

Maximum Power -P _{MAX} (Wp)	488	492	496	500	504	508
Maximum Power Voltage -V _{MPP} (V)	34.8	34.9	35.1	35.3	35.4	35.6
Maximum Power Current -I _{MPP} (A)	14.05	14.09	14.13	14.17	14.22	14.26
Open Circuit Voltage -V _{OC} (V)	42.5	42.7	42.9	43.0	43.2	43.4
Short Circuit Current -I _{SC} (A)	14.82	14.86	14.89	14.93	14.96	15.01

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	132 cells
Module Dimensions	2384 \times 1303 \times 35 mm (93.86 \times 51.30 \times 1.38 inches)
Weight	33.6 kg (74.1 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA
Backsheet	White
Frame	35mm(1.38 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²), Portrait: 280/280 mm(11.02/11.02 inches) Length can be customized
Connector	MC4 EV02 / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (\pm 2°C)
Temperature Coefficient of P _{MAX}	-0.34%/°C
Temperature Coefficient of V _{OC}	-0.25%/°C
Temperature Coefficient of I _{SC}	0.04%/°C

MAXIMUM RATINGS

Operational Temperature	-40 ~ +85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	30A

WARRANTY

12 year Product Workmanship Warranty
 25 year Power Warranty
 2% first year degradation
 0.55% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 31 pieces
 Modules per 40' container: 558 pieces