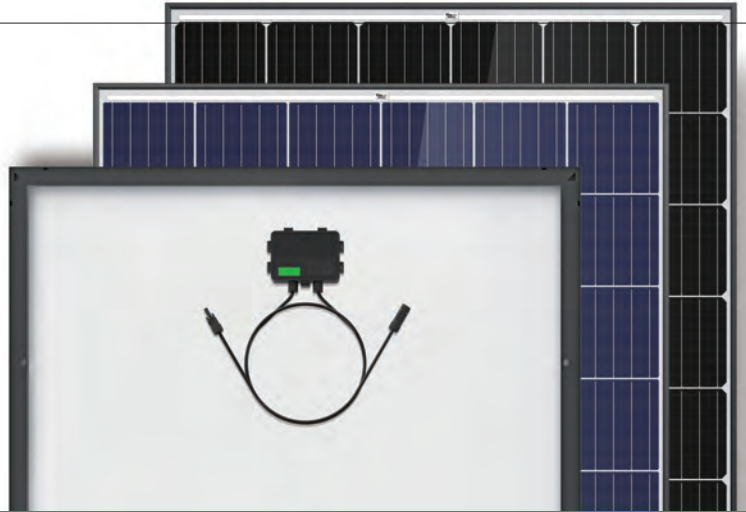


Trina smart

THE OPTIMIZED SOLUTION



COMPATIBLE
WITH MOST
TRINA MODULES

265-305W
POWER OUTPUT RANGE

FULLY
INTEGRATED
SMART SOLUTION

Founded in 1997, Trina Solar is the world's leading comprehensive solutions provider for solar energy. We believe close cooperation with our partners is critical to success. Trina Solar now distributes its PV products to over 60 countries all over the world. Trina is able to provide exceptional service to each customer in each market and supplement our innovative, reliable products with the backing of Trina as a strong, bankable partner. We are committed to building strategic, mutually beneficial collaboration with installers, developers, distributors and other partners.

Comprehensive Products And System Certificates

IEC61215/IEC61730/UL1703/IEC61701/IEC62716
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse gases Emissions Verification
OHSAS 18001: Occupation Health and Safety
Management System



Safer Solar

- Module-level disconnect to remotely deactivate modules
- Fire and safety hazard mitigation
- Module-level rapid shutdown for NEC 690.12 compliance



More Efficient O&M

- Module-level monitoring to pinpoint problems
- Detailed real-time alerts and analytics



Highest Power Density

- Install more modules on any roof
- Uneven string lengths enables design flexibility



Maximized Energy Harvest

- Predictive IV and Impedance Matching technology eliminates mismatch losses
- More power from each module



Lower BOS Costs from Smart Curve Technology

- 30% lower max open circuit voltage, 30% longer strings
- Fewer combiners, fuses and copper wiring required

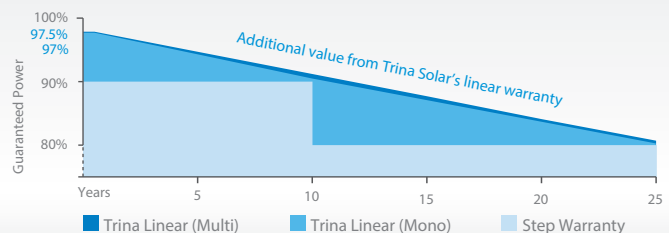


Fully Integrated

- Compatible with any inverter
- No additional boxes to mount on module, faster installation times

LINEAR PERFORMANCE WARRANTY

10 Year Product Warranty · 25 Year Linear Power Warranty

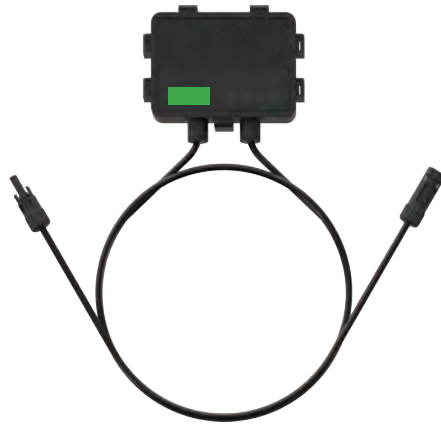


THE OPTIMIZED SOLUTION

TrinaSmart

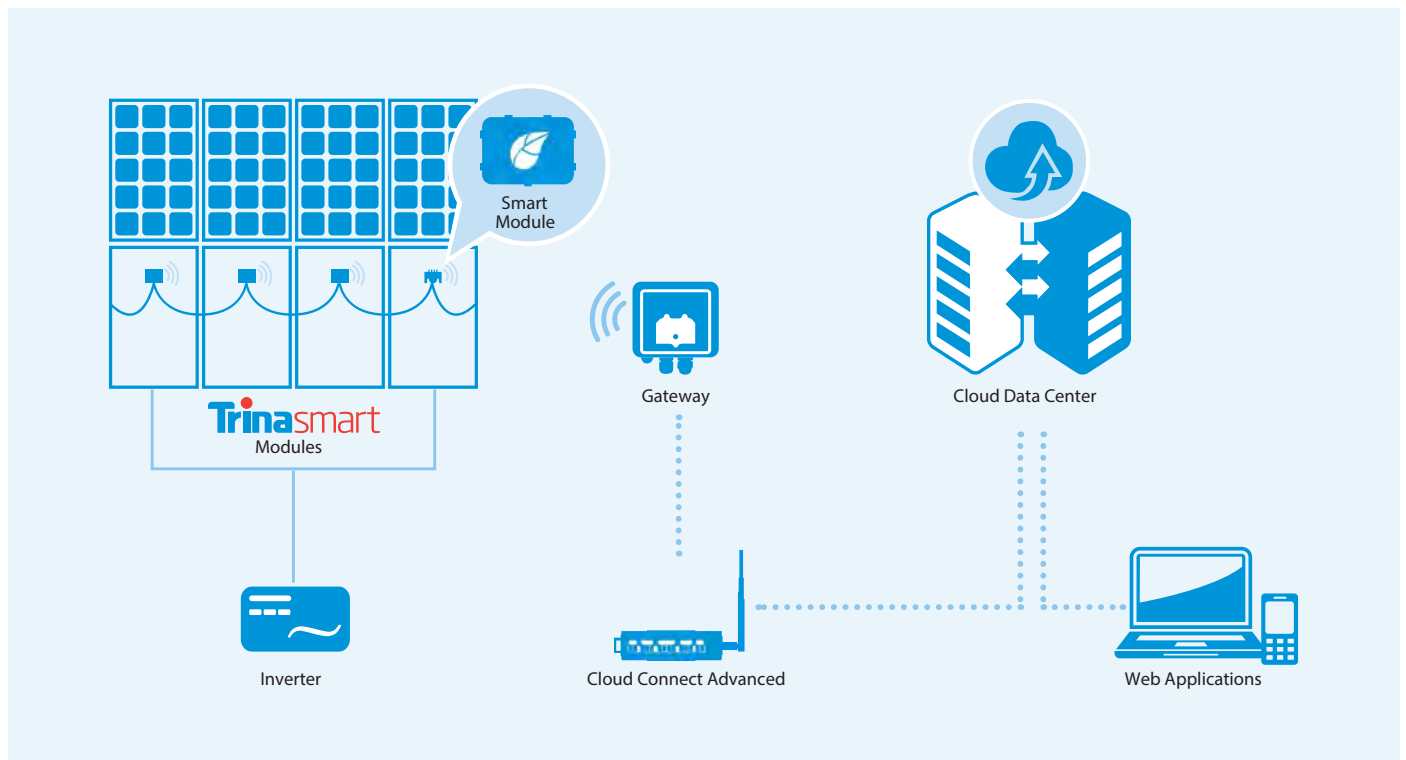
Trinasmart modules incorporate innovative power electronics from Tigo Energy to achieve module-level diagnostics, maximum energy harvest through module level DC power optimization, and uses module-level rapid shutdown technology to reduce fire and safety hazards..

Integration of the module optimizer into the junction-box enables patented Smart Curve technology, which allows up to 30% longer strings and significant balance-of-system (BOS) savings.



SYSTEM ARCHITECTURE

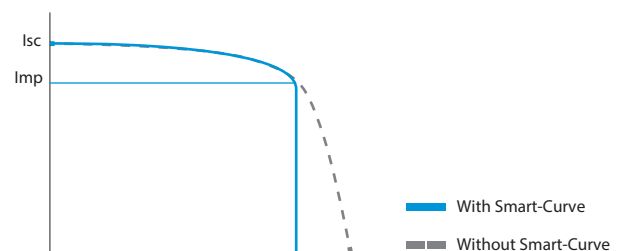
Trinasmart system components work together with any inverter to maximize energy harvest. Trinasmart modules communicate wirelessly through the Gateway, allowing users to monitor system performance in real time. The Cloud Connect Advanced works as a data-logger so you can track the performance of the system across time.



SMART CURVE TECHNOLOGY

Module-integrated Trinasmart technology reduces the open circuit voltage range for each module and allows longer strings to be designed. The maximum voltage is programmed by Trina Solar in the factory.

- Hardware voltage clamp prevents over-voltage
- Design up to 30% longer strings
- Fewer combiner boxes, fuses and wiring



CLOUD CONNECT ADVANCED

The Cloud Connect Advanced controls processes in real time and sends data to a remote sever for monitoring.

SPECIFICATIONS		ONE CCA SUPPORTS UP TO 7 GATEWAYS, 360 TRINASMART MODULES
Internet	Ethernet Interface	10/100-BaseT w/ Straight-Through or Crossover cable detection
Connectivity	Wireless Interface	Wi-Fi, IEEE 802.11 b/g/n 2.4 GHz
Options	Other	Verizon LTE (USA ONLY. Optional, sold separately)
Electrical	Supply Voltage	24VDC +/-1V
	Power Consumption	Max 16W
	Power Supply	100-240VAC, 50-60 Hz
	Din Rail	Terminal Block
	Socket	EU/UK/US/AU Interchangeable, 2-Pin Plug
Capacity (single CCA)	Supports to Gateway	7 PCS
	Supports to Smart Modules	360 PCS
Mechanical Specifications	Mounting Type	DIN Rail, mountable enclosure
	Dimensions (L x W x H)	31 x 115.51 x 71.54 mm (1.22 x 4.55 x 2.82 inches)
	Weight	0.126 kg (0.278 lbs); 0.158 kg (0.348 lb) w/ modem
	Enclosure	Indoor NEMA 1
	Operating Temperature	-20°C ~ +70°C



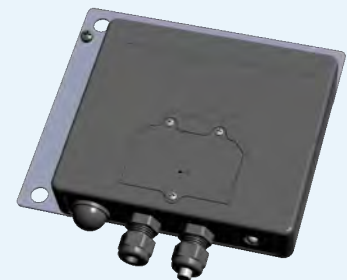
Cloud Connect Advanced

An internet connection is required for full monitoring functionality.

GATEWAY

Radio transceiver that communicates with Trinasmart modules and relays data to the Cloud Connect Advanced.

SPECIFICATIONS		ONE GATEWAY SUPPORTS UP TO 120 TRINASMART MODULES
Communication with modules	Wireless (802.15)	
Communication with CCA	RS-485 cable connection; in series with other Gateways	
Mounting Location	Center of array	
Mounting Method	Mounted to module frame or rack clips included for frame mounting	
Wireless Range	15m line-of-sight	
Capacity (single GW)	120 smart modules	
Mechanical Specifications	Dimensions	141.3 x 48.5 x 33.3 mm (with bracket) (5.56 x 1.91 x 1.31 inches)
	Weight	0.9kg (2.0 lb)
	Operating temperature range	-30°C ~ +70°C
	Enclosure environmental rating	IP 65 rated



Gateway

The wireless communications system is FCC and CE Class 2 certified. Fixing hole comes with a M3.5X6 SST pan head screw.

MONITORING SERVICE

Trinasmart monitoring provides total insight into the performance of any system. You can choose to upgrade online once your system is installed.

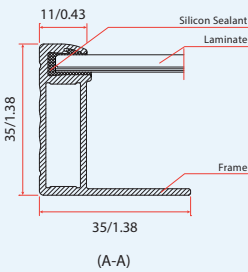
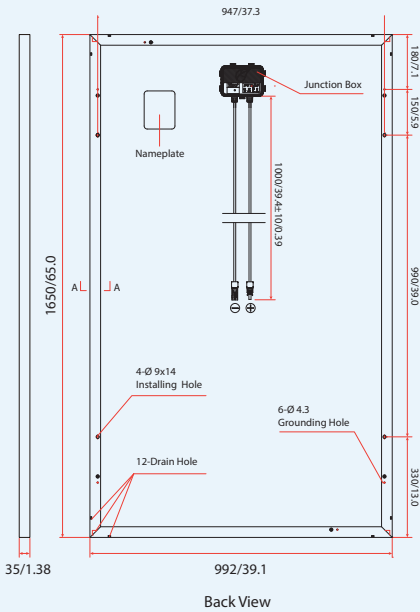


Explore the monitoring portal at www.trinasmart.com

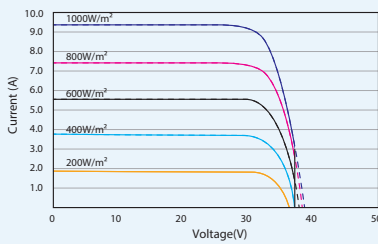
FEATURES	FREE	PREMIUM
Reports	Monthly	Daily
1-min data granularity	30 days	Full History
Device Integration	•	•
Safety alerts	•	•
Dashboard showing enviomental impact	•	•
Trending data charts	•	•
Full history		•
Ability to download		•
Performance analytics		•
Performance alerts		•

PRODUCTS	POWER RANGE
TSM-PD05.082	265-280W
TSM-PD05.052	265-280W

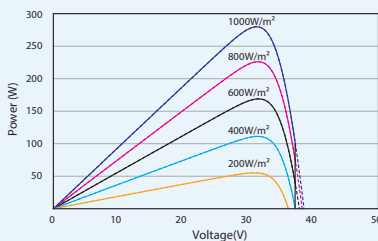
DIMENSIONS OF PV MODULE(mm/inches)



I-V CURVES OF PV MODULE(280W)



P-V CURVES OF PV MODULE(280W)



ELECTRICAL DATA (STC)

Peak Power Watts- P_{MAX} (Wp)*	265	270	275	280
Power Output Tolerance- P_{MAX} (W)	0 ~ +5			
Maximum Power Voltage- V_{MPP} (V)	30.8	30.9	31.1	31.4
Maximum Power Current- I_{MPP} (A)	8.61	8.73	8.84	8.92
Open Circuit Voltage- V_{OC} (V)	36.2			
Short Circuit Current- I_{SC} (A)	12.5			
Module Efficiency η_p (%)	16.2	16.5	16.8	17.1

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

ELECTRICAL DATA (NOCT)

Maximum Power- P_{MAX} (Wp)	197	200	204	207
Maximum Power Voltage- V_{MPP} (V)	28.6	28.7	29.0	29.2
Maximum Power Current- I_{MPP} (A)	6.89	6.97	7.03	7.10
Open Circuit Voltage- V_{OC} (V)	36.2			
Short Circuit Current- I_{SC} (A)	12.5			

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

MECHANICAL DATA

Solar Cells	Multicrystalline 156.75 × 156.75 mm (6 inches)
Cell Orientation	60 cells (6 × 10)
Module Dimensions	1650 × 992 × 35 mm (65.0 × 39.1 × 1.4 inches)
Weight	19.0 kg (41.9 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Tempered Glass
Backsheet	White
Frame	Black Anodized Aluminium Alloy
J-Box	IP 65 or IP 67 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²), 1000 mm (39.4 inches)
Connector	MC4 or Amphenol H4/UTX
Fire Type	Type 1 or Type 2

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	44°C (±2°C)
Temperature Coefficient of P_{MAX}	-0.41%/°C
Temperature Coefficient of V_{OC}	0%/°C
Temperature Coefficient of I_{SC}	0.05%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1000V DC (IEC) 1000V DC (UL)
Max Series Fuse Rating	15A

(DO NOT connect Fuse in Combiner Box with two or more strings in parallel connection)

WARRANTY

10 year Product Workmanship Warranty
25 year Linear Power Warranty

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

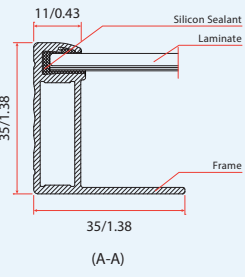
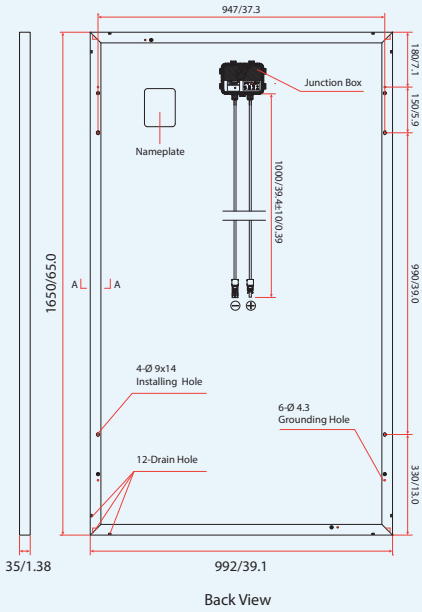
Modules per box: 30 pieces
Modules per 40' container: 840 pieces

PRODUCTS

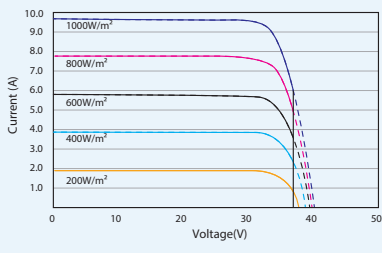
POWER RANGE

TSM-DD05A.082(II)	280-305W
TSM-DD05A.052(II)	275-300W

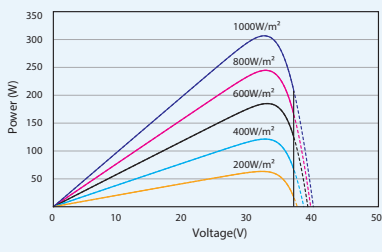
DIMENSIONS OF PV MODULE(mm/inches)



I-V CURVES OF PV MODULE(305W)



P-V CURVES OF PV MODULE(305W)



ELECTRICAL DATA (STC)

Peak Power Watts- P_{MAX} (Wp)*	275	280	285	290	295	300	305
Power Output Tolerance- P_{MAX} (W)	0 ~ +5						
Maximum Power Voltage- V_{MPP} (V)	31.4	31.7	31.8	32.2	32.5	32.6	32.9
Maximum Power Current- I_{MPP} (A)	8.76	8.84	8.97	9.01	9.08	9.19	9.28
Open Circuit Voltage- V_{oc} (V)	37.2						
Short Circuit Current- I_{sc} (A)	12.5						
Module Efficiency η_p (%)	16.8	17.1	17.4	17.7	18.0	18.3	18.6

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

ELECTRICAL DATA (NOCT)

Maximum Power- P_{MAX} (Wp)	205	209	212	216	220	223	227
Maximum Power Voltage- V_{MPP} (V)	29.2	29.4	29.6	29.9	30.2	30.4	30.6
Maximum Power Current- I_{MPP} (A)	7.02	7.10	7.17	7.23	7.28	7.35	7.42
Open Circuit Voltage- V_{oc} (V)	37.2						
Short Circuit Current- I_{sc} (A)	12.5						

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

MECHANICAL DATA

Solar Cells	Monocrystalline 156.75 × 156.75 mm (6 inches)
Cell Orientation	60 cells (6 × 10)
Module Dimensions	1650 × 992 × 35 mm (65.0 × 39.1 × 1.4 inches)
Weight	19.0 kg (41.9 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Tempered Glass
Backsheet	White [DD05A.082(II)]; Black [DD05A.052(II)]
Frame	Black Anodized Aluminium Alloy
J-Box	IP 65 or IP 67 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²), 1000 mm (39.4 inches)
Connector	MC4 or Amphenol H4/UTX
Fire Type	Type 1 or Type 2

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	44°C (±2°C)
Temperature Coefficient of P_{MAX}	-0.39%/°C
Temperature Coefficient of V_{oc}	0%/°C
Temperature Coefficient of I_{sc}	0.05%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1000V DC (IEC) 1000V DC (UL)
Max Series Fuse Rating	15A

(DO NOT connect Fuse in Combiner Box with two or more strings in parallel connection)

WARRANTY

10 year Product Workmanship Warranty
25 year Linear Power Warranty

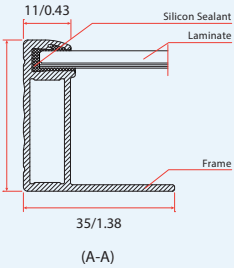
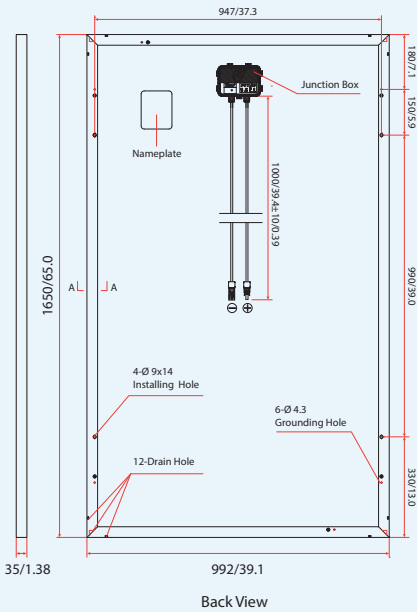
(Please refer to product warranty for details)

PACKAGING CONFIGURATION

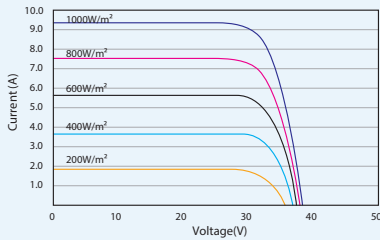
Modules per box: 30 pieces
Modules per 40' container: 840 pieces

PRODUCTS	POWER RANGE
TSM-PD05.08U	265-280W
TSM-PD05.05U	265-280W

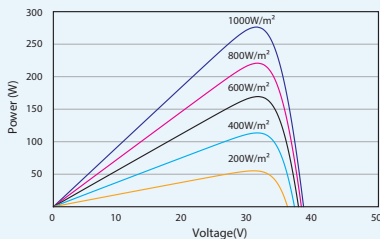
DIMENSIONS OF PV MODULE(mm/inches)



I-V CURVES OF PV MODULE(280W)



P-V CURVES OF PV MODULE(280W)



ELECTRICAL DATA (STC)

Parameter	265	270	275	280
Peak Power Watts- P_{MAX} (Wp)*	265	270	275	280
Power Output Tolerance- P_{MAX} (W)	0 ~ +5			
Maximum Power Voltage- V_{MPP} (V)	30.8	30.9	31.1	31.4
Maximum Power Current- I_{MPP} (A)	8.61	8.73	8.84	8.92
Open Circuit Voltage- V_{OC} (V)	38.3	38.4	38.5	38.7
Short Circuit Current- I_{SC} (A)	9.10	9.18	9.25	9.34
Module Efficiency η (%)	16.2	16.5	16.8	17.1

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

ELECTRICAL DATA (NOCT)

Parameter	197	200	204	207
Maximum Power- P_{MAX} (Wp)	197	200	204	207
Maximum Power Voltage- V_{MPP} (V)	28.6	28.7	29.0	29.2
Maximum Power Current- I_{MPP} (A)	6.89	6.97	7.03	7.10
Open Circuit Voltage- V_{OC} (V)	35.5	35.5	35.6	35.8
Short Circuit Current- I_{SC} (A)	7.35	7.41	7.47	7.55

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

MECHANICAL DATA

Solar Cells	Multicrystalline 156.75 × 156.75 mm (6 inches)
Cell Orientation	60 cells (6 × 10)
Module Dimensions	1650 × 992 × 35 mm (65.0 × 39.1 × 1.4 inches)
Weight	18.6 kg (41.0 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Tempered Glass
Backsheet	White
Frame	Black Anodized Aluminium Alloy
J-Box	IP 65 or IP 67 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²), 1000 mm (39.4 inches)
Connector	MC4 or Amphenol H4/UTX
Fire Type	Type 1 or Type 2

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	44°C (±2°C)
Temperature Coefficient of P_{MAX}	-0.41%/°C
Temperature Coefficient of V_{OC}	-0.32%/°C
Temperature Coefficient of I_{SC}	0.05%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1000V DC (IEC) 1000V DC (UL)
Max Series Fuse Rating	15A

(DO NOT connect Fuse in Combiner Box with two or more strings in parallel connection)

WARRANTY

10 year Product Workmanship Warranty
25 year Linear Power Warranty

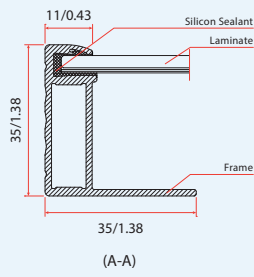
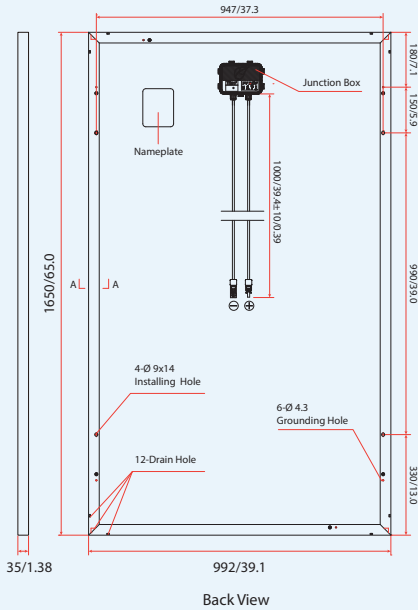
(Please refer to product warranty for details)

PACKAGING CONFIGURATION

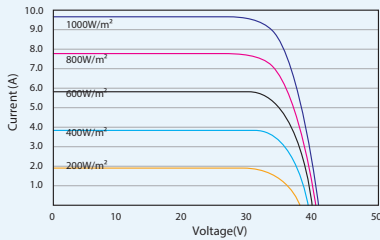
Modules per box: 30 pieces
Modules per 40' container: 840 pieces

PRODUCTS	POWER RANGE
TSM-DD05A.08U(II)	280-305W
TSM-DD05A.05U(II)	275-300W

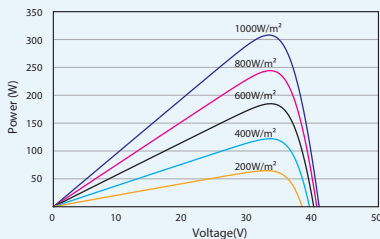
DIMENSIONS OF PV MODULE(mm/inches)



I-V CURVES OF PV MODULE(305W)



P-V CURVES OF PV MODULE(305W)



ELECTRICAL DATA (STC)

Parameter	275	280	285	290	295	300	305
Peak Power Watts- P_{MAX} (Wp)*	275	280	285	290	295	300	305
Power Output Tolerance- P_{MAX} (W)	0 ~ +5						
Maximum Power Voltage- V_{MPP} (V)	31.4	31.7	31.8	32.2	32.5	32.6	32.9
Maximum Power Current- I_{MPP} (A)	8.76	8.84	8.97	9.01	9.08	9.19	9.28
Open Circuit Voltage- V_{OC} (V)	38.7	39.0	39.3	39.5	39.7	39.9	40.2
Short Circuit Current- I_{SC} (A)	9.26	9.35	9.45	9.50	9.55	9.64	9.72
Module Efficiency η (%)	16.8	17.1	17.4	17.7	18.0	18.3	18.6

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

ELECTRICAL DATA (NOCT)

Parameter	205	209	212	216	220	223	227
Maximum Power- P_{MAX} (Wp)	205	209	212	216	220	223	227
Maximum Power Voltage- V_{MPP} (V)	29.2	29.4	29.6	29.9	30.2	30.4	30.6
Maximum Power Current- I_{MPP} (A)	7.02	7.10	7.17	7.23	7.28	7.35	7.42
Open Circuit Voltage- V_{OC} (V)	36.0	36.3	36.6	36.7	36.9	37.1	37.3
Short Circuit Current- I_{SC} (A)	7.48	7.55	7.63	7.67	7.71	7.78	7.84

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

MECHANICAL DATA

Solar Cells	Monocrystalline 156.75 × 156.75 mm (6 inches)
Cell Orientation	60 cells (6 × 10)
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