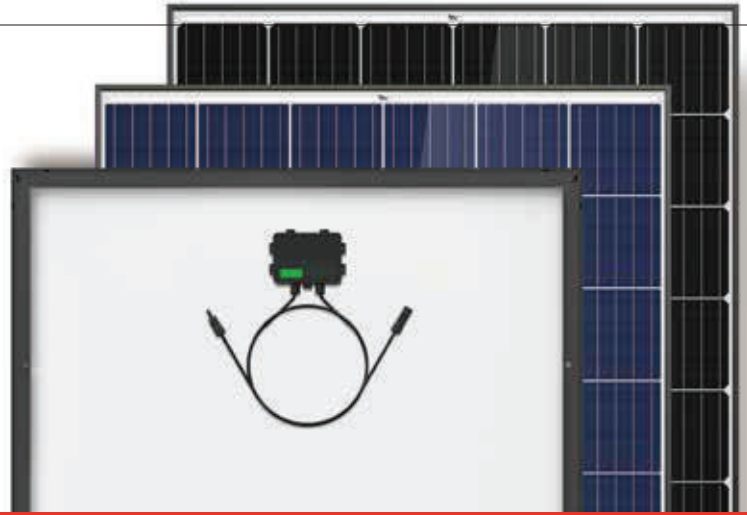


TrinaSmart

THE OPTIMIZED SOLUTION



COMPATIBLE WITH MOST TRINA MODULES

270-315W POWER OUTPUT RANGE

SMART SOLUTION Ready

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

- Panel-level disconnect to remotely deactivate modules
- Safety hazard mitigation



More Efficient O&M

- Panel-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

- 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

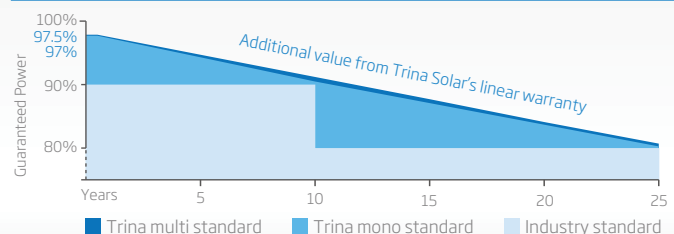


Fully Integrated

- Compatible with major inverter brands
- No additional boxes to mount on module

LINEAR PERFORMANCE WARRANTY

10 Year Product Warranty · 25 Year Linear Power Warranty



THE OPTIMIZED SOLUTION

Trinasmart

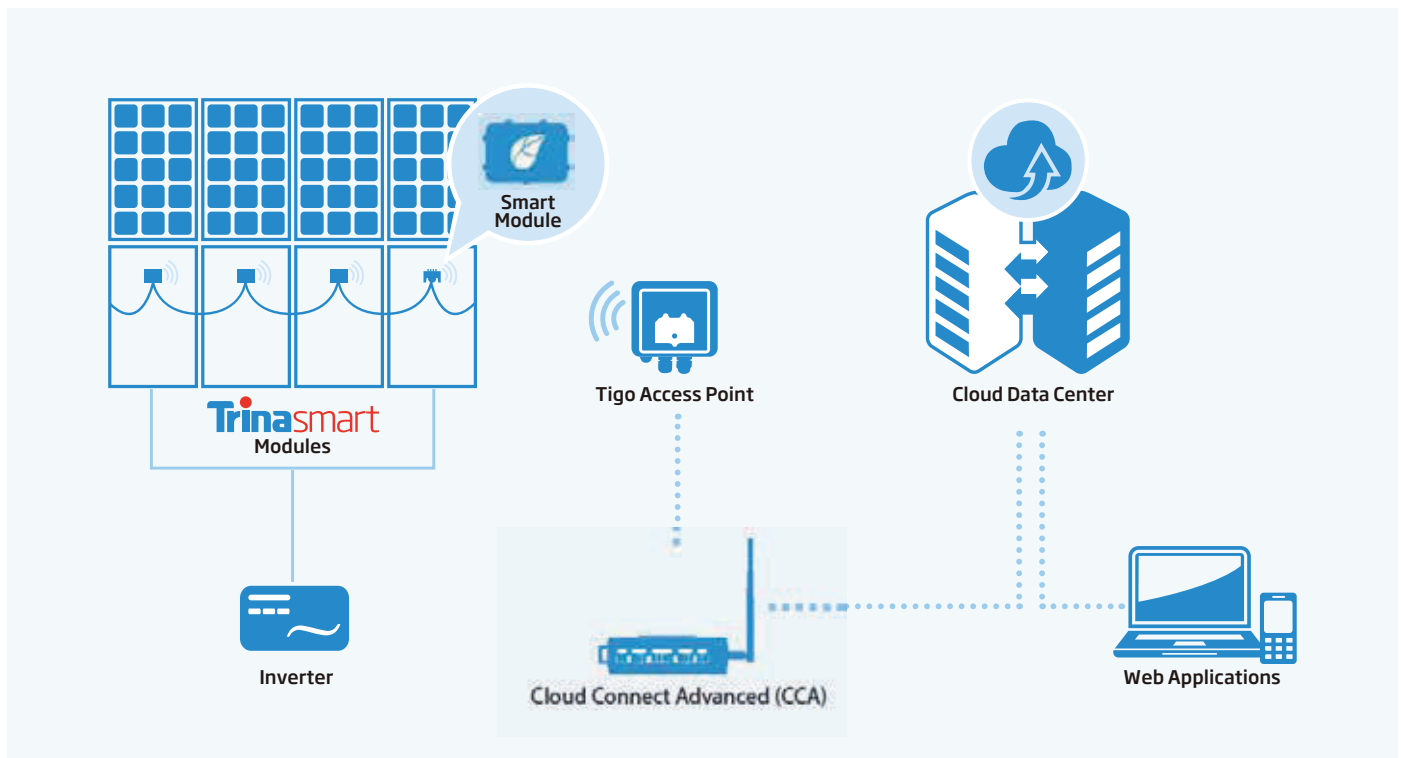
Trinasmart modules incorporate innovative power electronics from Tigo Energy to achieve module-level diagnostics, maximum energy harvest through module level DC power optimization, and reduction of safety hazards.

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

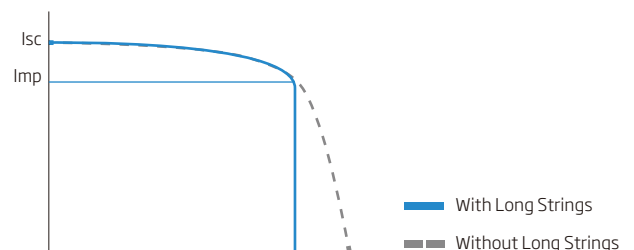
Trinasmart system components work together with most inverter to maximize energy harvest. Trinasmart modules communicate wirelessly through the Tigo Access Point (TAP), allowing users to monitor system performance in real time.



Long Strings 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 CCA is a universal datalogger that controls processes in real time and sends data to a remote sever for monitoring.

SPECIFICATIONS	ONE CCA SUPPORTS UP TO 7 TAP's, 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	6VDC - 25VDC
	Power Consumption	Max 16W
	Power Supply	100-240VAC, 50-60 Hz
	Din Rail	Mountable Enclosure
	Socket	EU/UK/US/AU Interchangeable, 2-Pin Plug
Capacity(single CCA)	Supports to TAP	7 PCS
	Supports to Smart Modules	360 PCS
Mechanical Specifications	Mounting Type	DIN Rail, mountable enclosure
	Dimensions (L x W x H)	31 × 115.51 × 71.54 mm (1.22 × 4.55 × 2.82 inches)
	Weight	0.126 kg (0.278 lbs); 0.158 kg (0.348 lb) w/ modem
	Enclosure	IP68, Type 4R (in outdoor enclosure)
	Operating Temperature	-20°C ~ +70°C



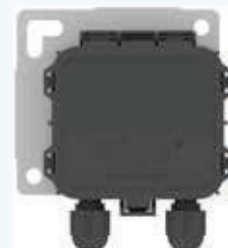
Cloud Connect Advanced

An internet connection is required for full monitoring functionality.

Tigo Access Point (TAP)

Radio transceiver that communicates with Trinasmart modules and relays data to the CCA.

SPECIFICATIONS	ONE CCA SUPPORTS UP TO 300 TRINASMART MODULES	
Communication with modules	Wireless Mesh Communication	
Communication with CCA	RS-485 cable connection; 18-22AWG	
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	300 smart modules	
Mechanical Specifications	Dimensions	126.2mm x 130.0mm x 26.8mm (with bracket) (4.96 × 5.11 × 1.05 inches)
	Weight	227g (.05 lb)
	Operating temperature range	-20°C to +85°C (-4°F to 185°F)
	Enclosure environmental rating	IP69, Type 4R



TAP

Tigo Access Point (TAP)
The wireless communications system is FCC and CE Class 2 certified.

MONITORING SERVICE

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

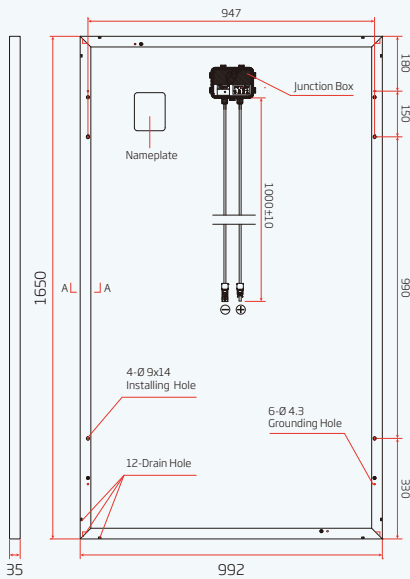


Explore the monitoring portal at www.trinasmart.com

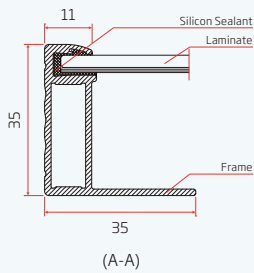
FEATURES	FREE	PREMIUM
Reports	Monthly	Daily
1-min data granularity	current&previous month	Full History
Full history	•	•
Safety alerts	•	•
Dashboard showing enviomental impact	•	•
Trending data charts	•	•
Performance analytics		•
Ability to download		•
Device Integration		•
Performance alerts		•

PRODUCTS | **POWER RANGE**
 TSM-PD05.08U | 270-285W

DIMENSIONS OF PV MODULE(mm)

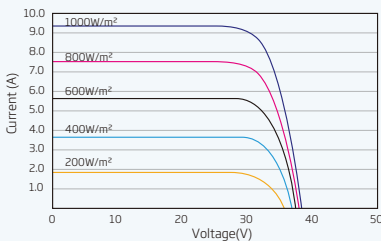


Back View

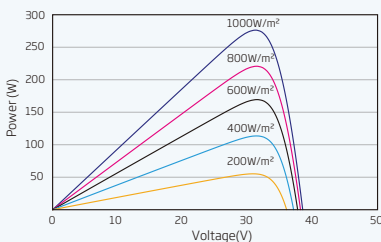


(A-A)

I-V CURVES OF PV MODULE(280W)



P-V CURVES OF PV MODULE(280W)



ELECTRICAL DATA (STC)

Peak Power Watts- P_{MAX} (Wp)*	270	275	280	285
Power Output Tolerance- P_{MAX} (W)	0 ~ +5			
Maximum Power Voltage- V_{MPP} (V)	30.9	31.1	31.4	31.6
Maximum Power Current- I_{MPP} (A)	8.73	8.84	8.92	9.02
Open Circuit Voltage- V_{OC} (V)	37.9	38.1	38.2	38.3
Short Circuit Current- I_{SC} (A)	9.22	9.32	9.40	9.49
Module Efficiency η_m (%)	16.5	16.8	17.1	17.4

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

ELECTRICAL DATA (NMOT)

Maximum Power- P_{MAX} (Wp)	203	207	211	214
Maximum Power Voltage- V_{MPP} (V)	29.0	29.2	29.3	29.5
Maximum Power Current- I_{MPP} (A)	7.01	7.09	7.17	7.26
Open Circuit Voltage- V_{OC} (V)	35.5	35.7	35.8	35.9
Short Circuit Current- I_{SC} (A)	7.43	7.51	7.58	7.65

NMOT: 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 67 or IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²), 1000 mm (39.4 inches)
Connector	MC4

TEMPERATURE RATINGS

NMOT (Nominal Module Operating Temperature)	41°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)

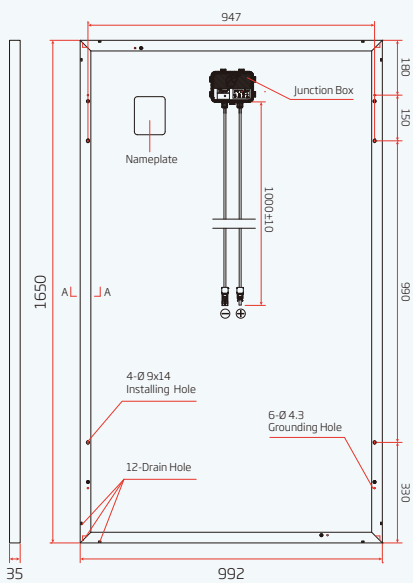
PACKAGING CONFIGURATION

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

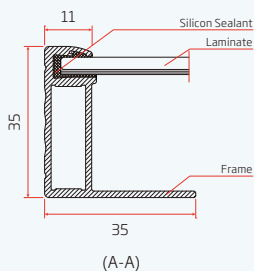
PRODUCTS POWER RANGE

TSM-DD05A.08U(II)	280-315W
TSM-DD05A.05U(II)	280-310W

DIMENSIONS OF PV MODULE(mm)

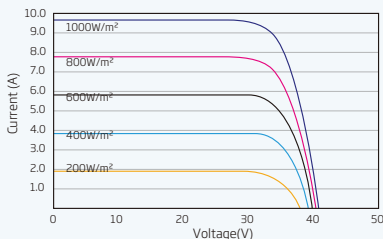


Back View

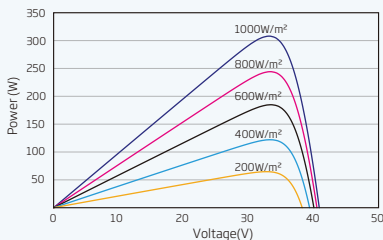


(A-A)

I-V CURVES OF PV MODULE(305W)



P-V CURVES OF PV MODULE(305W)



ELECTRICAL DATA (STC)

Peak Power Watts- P_{MAX} (Wp)*	280	285	290	295	300	305	310	315
Power Output Tolerance- P_{MAX} (W)	0 ~ +5							
Maximum Power Voltage- V_{MPP} (V)	31.7	31.8	32.2	32.5	32.6	32.9	33.2	33.3
Maximum Power Current- I_{MPP} (A)	8.84	8.97	9.01	9.08	9.10	9.28	9.37	9.46
Open Circuit Voltage- V_{OC} (V)	38.4	38.5	38.9	39.6	39.8	40.0	40.2	40.5
Short Circuit Current- I_{SC} (A)	9.42	9.51	9.66	9.68	9.77	9.85	9.94	10.0
Module Efficiency η_m (%)	17.1	17.4	17.7	18.0	18.3	18.6	18.9	19.2

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

ELECTRICAL DATA (NMOT)

Maximum Power- P_{MAX} (Wp)	212	215	219	223	226	231	234	238
Maximum Power Voltage- V_{MPP} (V)	29.5	29.7	29.9	30.3	30.5	30.7	30.9	31.1
Maximum Power Current- I_{MPP} (A)	7.17	7.26	7.35	7.35	7.42	7.50	7.58	7.64
Open Circuit Voltage- V_{OC} (V)	36.1	36.2	36.6	37.2	37.4	37.6	37.8	38.0
Short Circuit Current- I_{SC} (A)	7.60	7.67	7.79	7.81	7.88	7.94	8.02	8.09

NMOT: 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	18.6 kg (41.0 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Tempered Glass
Backsheet	White [DD05A.08U(II)]; Black [DD05A.05U(II)]
Frame	Black Anodized Aluminium Alloy
J-Box	IP 67 or IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²), 1000 mm (39.4 inches)
Connector	MC4

TEMPERATURE RATINGS

NMOT (Nominal Module Operating Temperature)	41°C (±2°C)
Temperature Coefficient of P_{MAX}	- 0.39%/°C
Temperature Coefficient of V_{OC}	- 0.29%/°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 (≤285W), 20A (≥290W)

(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