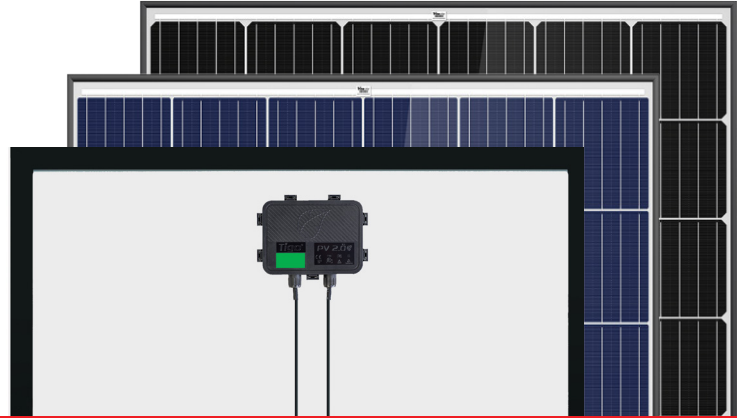


# Trina smart

## THE OPTIMIZED SOLUTION



### COMPATIBLE WITH MOST TRINA MODULES

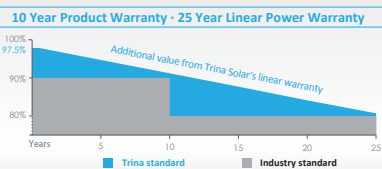
**255-295W**  
POWER OUTPUT RANGE

### FULLY INTEGRATED SMART SOLUTION

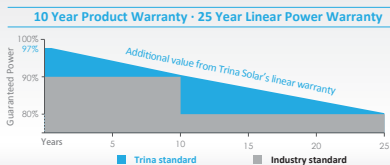
As a leading global manufacturer of next generation photovoltaic products, we believe close cooperation with our partners is critical to success. With local presence around the globe, Trina is able to provide exceptional service to each customer in each market and supplement our innovative, reliable 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 as the backbone of our shared success in driving Smart Energy Together.

Trina Solar Limited  
www.trinasolar.com

#### LINEAR PERFORMANCE WARRANTY



#### LINEAR PERFORMANCE WARRANTY



**Trina solar**  
Smart Energy Together



#### Safer Solar

- Panel-level disconnect to remotely deactivate modules
- Arc, fire and 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 bin



#### 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

## Comprehensive products and system certificates

- IEC 61215/ IEC 61730/ UL 1703/ IEC 61701/IEC 62716
- ISO 9001: Quality Management System
- ISO 14001: Environmental Management System
- ISO 14064: Greenhouse Gases Emissions Verification
- OHSAS 18001: Occupation Health and Safety Management System

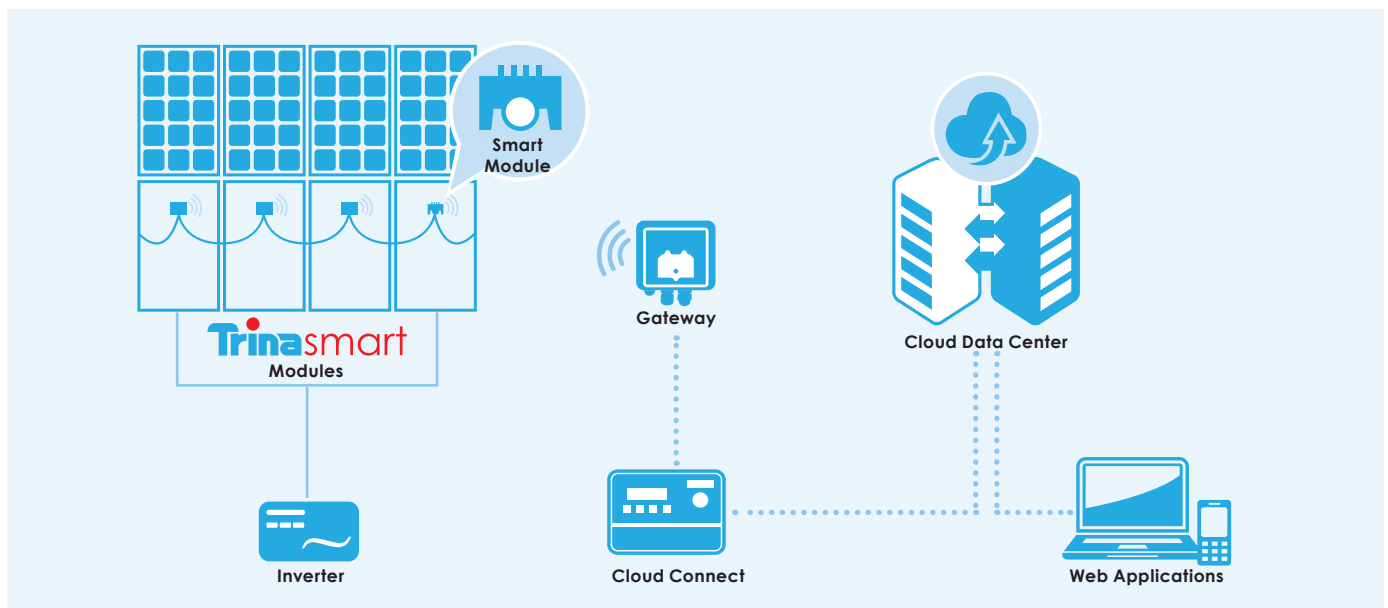


Trinasmart modules incorporate innovative power electronics from Tigo Energy to achieve module-level diagnostics, maximum energy harvest through module level DC power optimization, and reduction of arc, fire and safety hazards.

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.

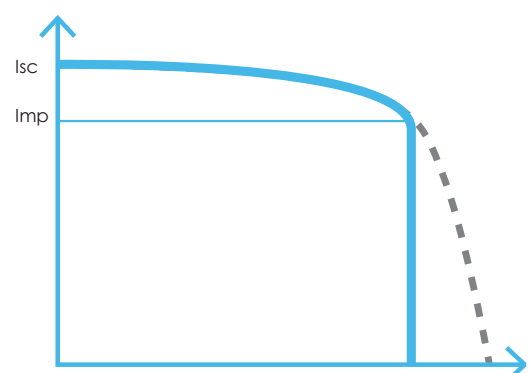


## SMART CURVE TECHNOLOGY

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

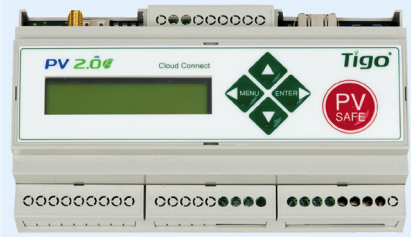
■ With Smart-Curve      ■ Without Smart-Curve



## CLOUD CONNECT

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

SPECIFICATIONS	ONE CC SUPPORTS UP TO 7 GATEWAYS, 360 TRINASMART MODULES	
Internet Connectivity Options	Ethernet Interface	10/100M
	Wireless Interface	Wi-Fi
	Other	Cellular LTE Modem
Electrical	Supply Voltage	24VDC +/-1V
	Power Consumption	Max 10W
	Power Supply	100-240VAC
	Din Rail	Terminal Block
	Socket	EU/UK/US/AU Interchangeable, 2-Pin Plug
Capacity (single CC)	Supports to Gateway	7 PCS
	Supports to Smart modules	360 PCS
Mechanical Specifications	Mounting Type	DIN Rail/Wall Mount
	Dimensions (L x W x H)	159.5 x 90.2 x 57.5 mm (6.28" x 3.55" x 2.26")
	Weight	0.5 kg (1.1 lb)
	Enclosure	Indoor NEMA 1
	Operating Temperature	-20°C +60°C



**Cloud Connect**  
An internet connection is required for full monitoring functionality.

## GATEWAY

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

SPECIFICATIONS	ONE GATEWAY SUPPORTS UP TO 120 TRINASMART MODULES	
Communication with modules	Wireless (802.15)	
Communication with CC	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)
	Weight	0.9kg (2.0 lb)
	Operating temperature range	-30°C +70°C
	Enclosure environmental rating	IP 65



**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](http://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		•
API access		•

## PRODUCTS

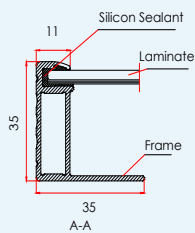
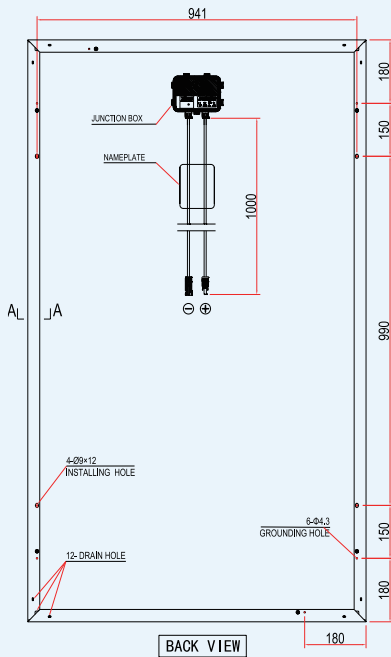
TSM-PD05.082

## POWER RANGE

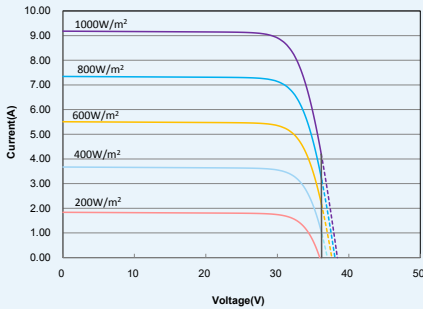
255-270W

### DIMENSIONS OF PV MODULE

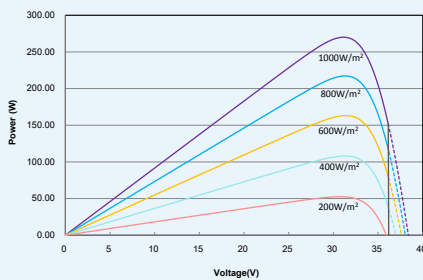
Unit:mm



### I-V CURVES OF PV MODULE (270W)



### P-V CURVES OF PV MODULE (270W)



### ELECTRICAL DATA (STC)

Peak Power Watts- $P_{MAX}$ (Wp)*	255	260	265	270
Power Output Tolerance- $P_{MAX}$ (W)	0 ~ +5			
Maximum Power Voltage- $V_{MPP}$ (V)	30.5	30.6	30.8	30.9
Maximum Power Current- $I_{MPP}$ (A)	8.37	8.50	8.61	8.73
Smart Voltage Output - $V_{oc}$ (V)	36.2			
Maximum PV string current (DC)- $I_M$ (A)	12.5			
Module Efficiency $\eta_m$ (%)	15.6	15.9	16.2	16.5

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.

\*Measuring tolerance: ±3%.

### ELECTRICAL DATA (NOCT)

Maximum Power- $P_{MAX}$ (Wp)	189	193	197	200
Maximum Power Voltage- $V_{MPP}$ (V)	28.2	28.4	28.6	28.7
Maximum Power Current- $I_{MPP}$ (A)	6.71	6.81	6.89	6.97
Smart Voltage Output - $V_{oc}$ (V)	36.2			
Maximum PV string current (DC)- $I_M$ (A)	12.5			

NOCT: Irradiance at 800 W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1 m/s.

### MECHANICAL DATA

Solar Cells	Multicrystalline 156 × 156 mm (6 inches)
Cell Orientation	60 cells (6 × 10)
Module Dimensions	1650 × 992 × 35 mm (65.0 x 39.1 x 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 4.0 mm <sup>2</sup> (0.006 inches <sup>2</sup> ), 1000 mm (39.4 inches)
Connector	MC4

### TEMPERATURE RATINGS

Nominal Operating Cell Temperature (NOCT)	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

### WARRANTY

10 year workmanship warranty

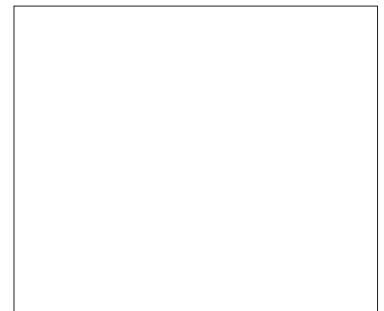
25 year linear performance warranty

(Please refer to product warranty for details)

### PACKAGING CONFIGURATION

Modules per box: 30 pieces

Modules per 40' container: 840 pieces



TSM\_EN\_2016\_A

## PRODUCTS

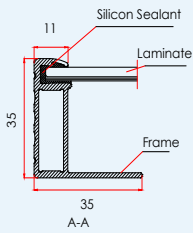
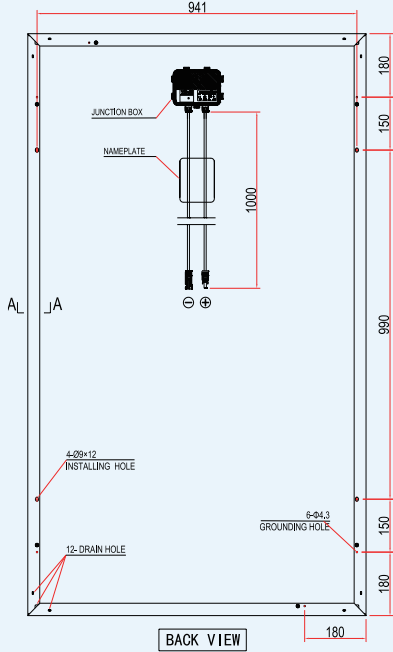
TSM-DD05A.082(II)  
TSM-DD05A.052(II)

## POWER RANGE

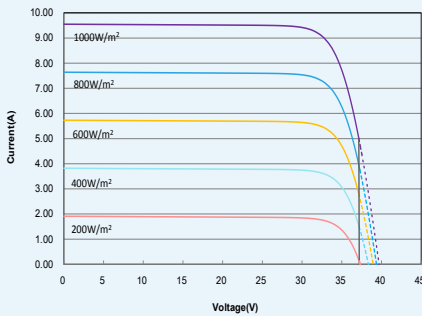
275-295W  
270-290W

## DIMENSIONS OF PV MODULE

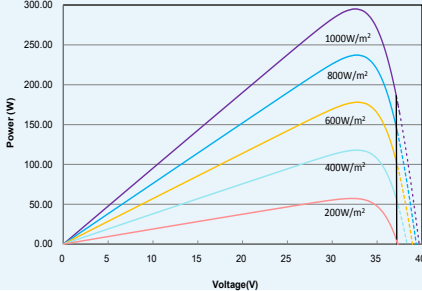
Unit:mm



## I-V CURVES OF PV MODULE (295W)



## P-V CURVES OF PV MODULE (295W)



## ELECTRICAL DATA (STC)

Peak Power Watts- $P_{MAX}$ (Wp)*	270	275	280	285	290	295
Power Output Tolerance- $P_{MAX}$ (W)	0 ~ +5					
Maximum Power Voltage- $V_{MPP}$ (V)	31.2	31.4	31.7	31.8	32.2	32.5
Maximum Power Current- $I_{MPP}$ (A)	8.66	8.76	8.84	8.97	9.01	9.08
Smart Voltage Output - $V_{oc}$ (V)	37.2					
Maximum PV string current (DC)- $I_M$ (A)	12.5					
Module Efficiency $\eta_m$ (%)	16.5	16.8	17.1	17.4	17.7	18.0

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.  
\*Measuring tolerance: ±3%.

## ELECTRICAL DATA (NOCT)

Maximum Power- $P_{MAX}$ (Wp)	201	205	209	212	216	220
Maximum Power Voltage- $V_{MPP}$ (V)	28.9	29.2	29.4	29.6	29.9	30.2
Maximum Power Current- $I_{MPP}$ (A)	6.96	7.02	7.10	7.17	7.23	7.28
Smart Voltage Output - $V_{oc}$ (V)	37.2					
Maximum PV string current (DC)- $I_M$ (A)	12.5					

NOCT: Irradiance at 800 W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1 m/s.

## MECHANICAL DATA

Solar Cells	Monocrystalline 156 × 156 mm (6 inches)
Cell Orientation	60 cells (6 × 10)
Module Dimensions	1650 × 992 × 35 mm (65.0 x 39.1 x 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 4.0 mm <sup>2</sup> (0.006 inches <sup>2</sup> ), 1000 mm (39.4 inches)
Connector	MC4

## TEMPERATURE RATINGS

Nominal Operating Cell Temperature (NOCT)	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

## WARRANTY

10 year workmanship warranty

25 year linear performance warranty

(Please refer to product warranty for details)

## PACKAGING CONFIGURATION

Modules per box: 30 pieces

Modules per 40' container: 840 pieces



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## PRODUCTS

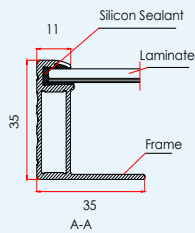
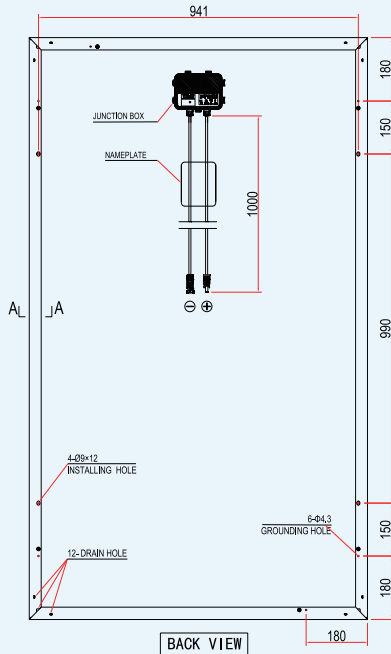
TSM-PD05.08U

## POWER RANGE

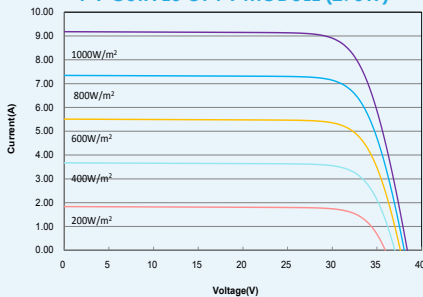
255-270W

### DIMENSIONS OF PV MODULE

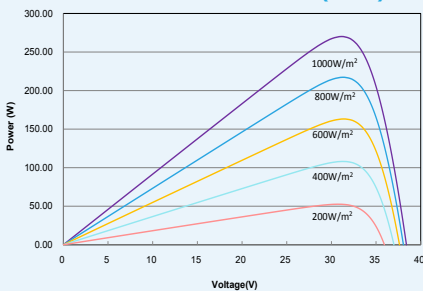
Unit:mm



### I-V CURVES OF PV MODULE (270W)



### P-V CURVES OF PV MODULE (270W)



### ELECTRICAL DATA (STC)

Parameter	255	260	265	270
Peak Power Watts- $P_{MAX}$ (Wp)*	255	260	265	270
Power Output Tolerance- $P_{MAX}$ (W)	0 ~ +5			
Maximum Power Voltage- $V_{MPP}$ (V)	30.5	30.6	30.8	30.9
Maximum Power Current- $I_{MPP}$ (A)	8.37	8.50	8.61	8.73
Open Circuit Voltage - $V_{oc}$ (V)	38.1	38.2	38.3	38.4
Short Circuit Current- $I_{sc}$ (A)	8.88	9.00	9.10	9.18
Module Efficiency $\eta_m$ (%)	15.6	15.9	16.2	16.5

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.  
\*Measuring tolerance: ±3%.

### ELECTRICAL DATA (NOCT)

Parameter	189	193	197	200
Maximum Power- $P_{MAX}$ (Wp)	189	193	197	200
Maximum Power Voltage- $V_{MPP}$ (V)	28.2	28.4	28.6	28.7
Maximum Power Current- $I_{MPP}$ (A)	6.71	6.81	6.89	6.97
Open Circuit Voltage - $V_{oc}$ (V)	35.3	35.4	35.5	35.5
Short Circuit Current- $I_{sc}$ (A)	7.17	7.27	7.35	7.41

NOCT: Irradiance at 800 W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1 m/s.

### MECHANICAL DATA

Solar Cells	Multicrystalline 156 × 156 mm (6 inches)
Cell Orientation	60 cells (6 × 10)
Module Dimensions	1650 × 992 × 35 mm (65.0 x 39.1 x 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 4.0 mm <sup>2</sup> (0.006 inches <sup>2</sup> ), 1000 mm (39.4 inches)
Connector	MC4

### TEMPERATURE RATINGS

Nominal Operating Cell Temperature (NOCT)	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

### WARRANTY

10 year workmanship warranty

25 year linear performance warranty

(Please refer to product warranty for details)

### PACKAGING CONFIGURATION

Modules per box: 30 pieces

Modules per 40' container: 840 pieces



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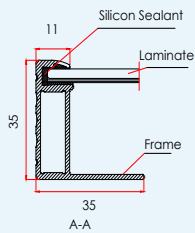
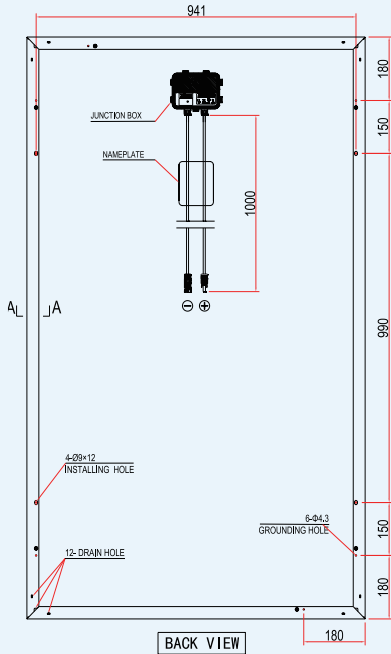
## PRODUCTS

TSM-DD05A.08U(II)  
TSM-DD05A.05U(II)

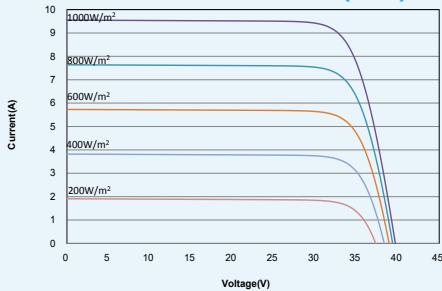
## POWER RANGE

275-295W  
270-290W

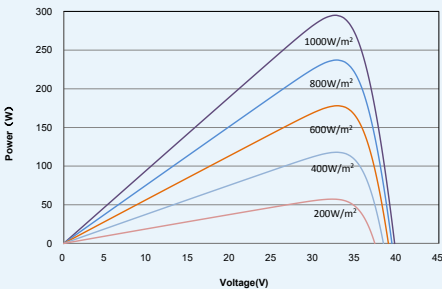
## DIMENSIONS OF PV MODULE Unit:mm



## I-V CURVES OF PV MODULE(295W)



## P-V CURVES OF PV MODULE(295W)



## ELECTRICAL DATA (STC)

Peak Power Watts-P <sub>MAX</sub> (Wp)*	270	275	280	285	290	295
Power Output Tolerance-P <sub>MAX</sub> (W)	0 ~ +5					
Maximum Power Voltage-V <sub>MPP</sub> (V)	31.2	31.4	31.7	31.8	32.2	32.5
Maximum Power Current-I <sub>MPP</sub> (A)	8.66	8.76	8.84	8.97	9.01	9.08
Open Circuit Voltage -Voc(V)	38.4	38.7	39.0	39.3	39.5	39.7
Short Circuit Current-Isc(A)	9.18	9.26	9.35	9.45	9.50	9.55
Module Efficiency η <sub>m</sub> (%)	16.5	16.8	17.1	17.4	17.7	18.0

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.  
\*Measuring tolerance: ±3%.

## ELECTRICAL DATA (NOCT)

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Maximum Power Voltage-V <sub>MPP</sub> (V)	28.9	29.2	29.4	29.6	29.9	30.2
Maximum Power Current-I <sub>MPP</sub> (A)	6.96	7.02	7.10	7.17	7.23	7.28
Open Circuit Voltage-Voc(V)	35.7	36.0	36.3	36.6	36.7	36.9
Short Circuit Current-Isc(A)	7.41	7.48	7.55	7.63	7.67	7.71

NOCT: Irradiance at 800 W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1 m/s.

## MECHANICAL DATA

Solar Cells	Monocrystalline 156 × 156 mm (6 inches)
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Module Dimensions	1650 × 992 × 35 mm (65.0 x 39.1 x 1.4 inches)
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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 65 or IP 67 rated
Cables	Photovoltaic Technology Cable 4.0 mm <sup>2</sup> (0.006 inches <sup>2</sup> ), 1000 mm (39.4 inches)
Connector	MC4

## TEMPERATURE RATINGS

Nominal Operating Cell Temperature (NOCT)	44°C(±2°C)
Temperature Coefficient of P <sub>MAX</sub>	- 0.39%/°C
Temperature Coefficient of Voc	- 0.29%/°C
Temperature Coefficient of Isc	0.05%/°C

## MAXIMUM RATINGS

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

## WARRANTY

10 year workmanship warranty

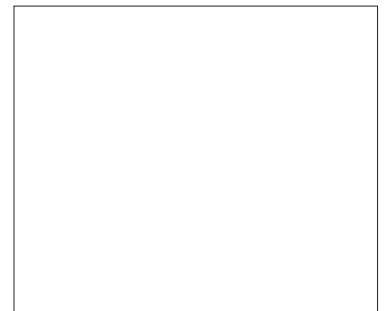
25 year linear performance warranty

(Please refer to product warranty for details)

## PACKAGING CONFIGURATION

Modules per box: 30 pieces

Modules per 40' container: 840 pieces



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