



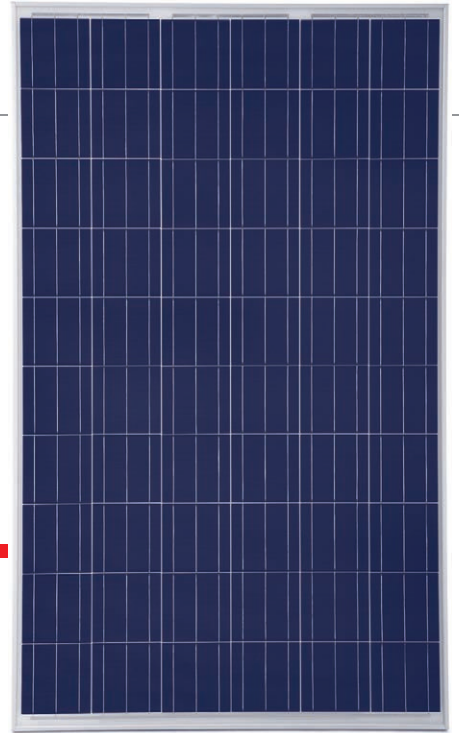
### **Origin - Solar System Panel Specifications**

Your Origin system will be supplied with the following set of panels:

<b>Manufacturer</b>	<b>Mono Or Poly</b>	<b>Size (Watts)</b>
Trina Solar	Poly	230

Please note all solar panels supplied are CEC accredited and compliant with IEC/EN61730 and IEC/EN61215 or IEC/EN61646.

Please see the following specification sheet for further details and panel specifications.



# TSM-PC05 TSM-PA05

## THE UNIVERSAL SOLUTION

**15.0%**  
MAX EFFICIENCY

**245W**  
MAX POWER OUTPUT

**10 YEAR**  
PRODUCT WARRANTY

**25 YEAR**  
LINEAR POWER WARRANTY

Founded in 1997, Trina Solar is one of the world's leading PV companies. Since its IPO on the NYSE in 2006, Trina Solar has developed a vertically integrated business model, with in-house production of ingots, wafers, cells and solar panels in both mono and multicrystalline technologies. Its manufacturing capacity for solar panels will be 2.4GW by the end of 2012, making it one of the largest solar manufacturers in the world. Trina Solar's extensive portfolio includes panels for all kinds of applications- residential, utility, offgrid, BIPV as well as innovative system solutions.

With 20 branch offices around the world, Trina Solar is serving leading installers, distributors, utilities and developers in all major PV markets. Trina Solar is committed to driving down the cost of solar and making it more affordable for all.

Trina Solar Limited  
[www.trinasolar.com](http://www.trinasolar.com)



Module can bear snow loads up to **5400Pa** and wind loads up to **2400Pa**



Guaranteed power output **0~+3%**



High performance under low light conditions  
**Cloudy days, mornings and evenings**



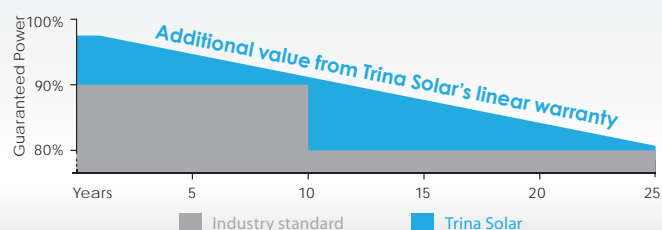
Manufactured according to International Quality and Environment Management System Standards  
**ISO9001, ISO14001**



Approved **original MC4** Photovoltaic connector used with highest reliability

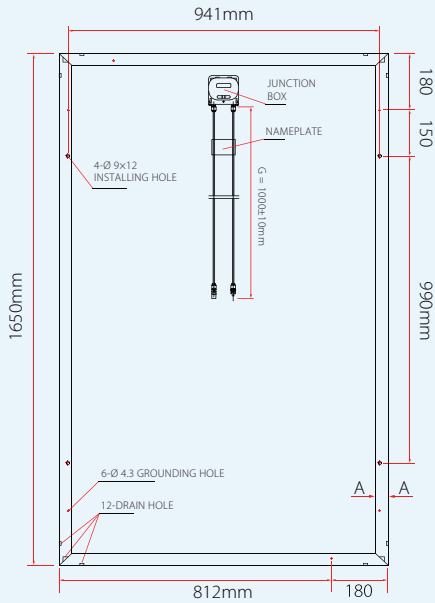
### LINEAR PERFORMANCE WARRANTY

10 Year Product Warranty • 25 Year Linear Power Warranty

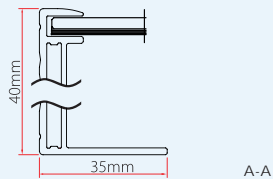


# TSM-PC05 / TSM-PA05 THE UNIVERSAL SOLUTION

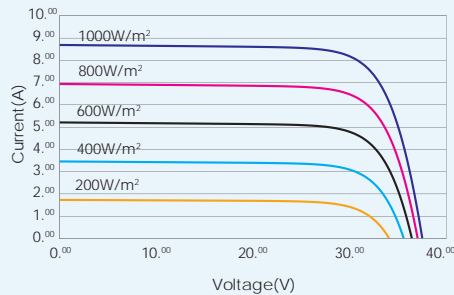
## DIMENSIONS OF PV MODULE TSM-PC/PA05



Back View



## I-V CURVES OF PV MODULE TSM-245 PC/PA05



Average efficiency reduction of 4.5% at 200W/m<sup>2</sup> according to EN 60904-1.

## CERTIFICATION




ELECTRICAL DATA @ STC	TSM-230 PC/PA05	TSM-235 PC/PA05	TSM-240 PC/PA05	TSM-245 PC/PA05
Peak Power Watts-P <sub>MAX</sub> (Wp)	230	235	240	245
Power Output Tolerance-P <sub>MAX</sub> (%)	0/+3	0/+3	0/+3	0/+3
Maximum Power Voltage-V <sub>MPP</sub> (V)	29.2	29.3	29.7	30.2
Maximum Power Current-I <sub>MPP</sub> (A)	7.90	8.03	8.10	8.13
Open Circuit Voltage-V <sub>OC</sub> (V)	37.1	37.2	37.3	37.5
Short Circuit Current-I <sub>SC</sub> (A)	8.53	8.55	8.62	8.68
Module Efficiency η <sub>m</sub> (%)	14.1	14.4	14.7	15.0

Values at Standard Test Conditions STC (Air Mass AM1.5, Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C). Power measurement tolerance: ±3%

ELECTRICAL DATA @ NOCT	TSM-230 PC/PA05	TSM-235 PC/PA05	TSM-240 PC/PA05	TSM-245 PC/PA05
Maximum Power-P <sub>MAX</sub> (Wp)	167	171	174	178
Maximum Power Voltage-V <sub>MPP</sub> (V)	26.3	26.4	26.6	26.8
Maximum Power Current-I <sub>MPP</sub> (A)	6.35	6.48	6.55	6.64
Open Circuit Voltage (V)-V <sub>OC</sub> (V)	33.9	34.0	34.1	34.2
Short Circuit Current (A)-I <sub>SC</sub> (A)	6.95	6.97	7.04	7.10

NOCT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s. Power measurement tolerance: ±3%

## MECHANICAL DATA

Solar cells	Multicrystalline 156 × 156mm (6 inches)
Cell orientation	60 cells (6 × 10)
Module dimensions	1650 × 992 × 40mm (64.95 × 39.05 × 1.57 inches)
Weight	19.5kg (43.0 lb)
Glass	High transparency solar glass 3.2mm (0.13 inches)
Frame	Anodized aluminium alloy
J-Box	IP 65 rated
Cables	Photovoltaic Technology cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ), 1000mm (39.4 inches)
Connector	MC4 

## TEMPERATURE RATINGS

Nominal Operating Cell Temperature (NOCT)	45°C (±2°C)
Temperature Coefficient of P <sub>MAX</sub>	-0.43%/°C
Temperature Coefficient of V <sub>OC</sub>	-0.32%/°C
Temperature Coefficient of I <sub>SC</sub>	0.047%/°C

## MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1000V DC(IEC)/600V DC(UL)
Max Series Fuse Rating	15A

## WARRANTY

10 year workmanship warranty

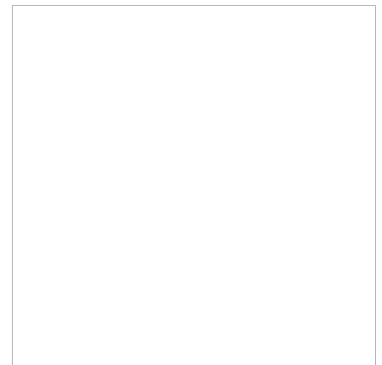
25 year linear performance warranty

(Please refer to product warranty for details)

## PACKAGING CONFIGURATION

Modules per box: 24 pcs

Modules per 40' container: 672 pcs



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