

Trina module
Mounting system hardware
Trinamount system



TSM-PC05/PA05.10



Spanner Bar & Bar Sleeve



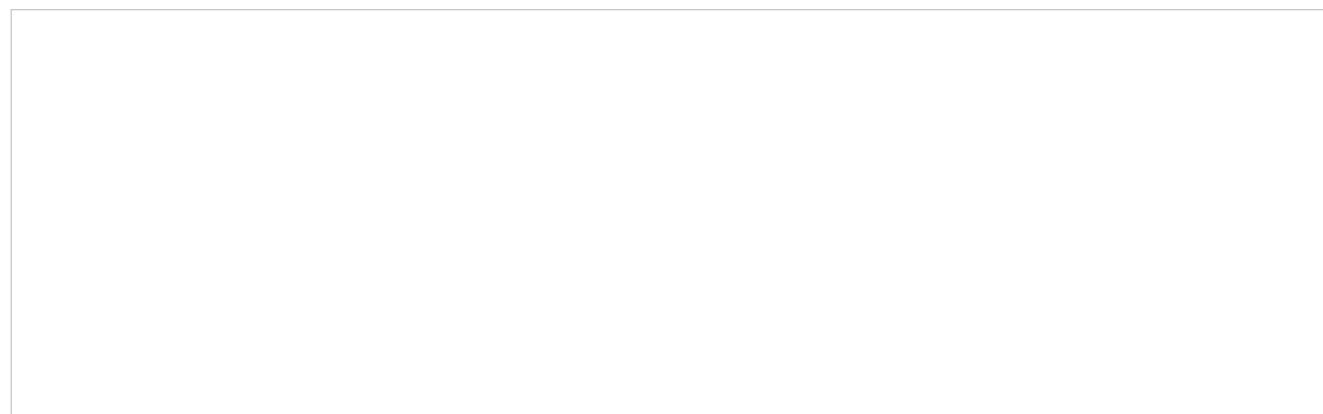
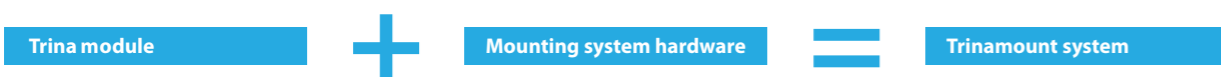
Spanner Clamp



Cam Foot



Interlock



TSM_EU_2011_RevA_PC05/PA05.10 (available Q3/2011)

Trina Solar Limited
No. 2 Trina Road, Trina PV
Industrial Park, New District,
Changzhou, Jiangsu, 213031,
China

T +86 519 8548 2008
F +86 519 8517 6021
E sales@trinasolar.com

Founded in 1997, Trina Solar is a vertically integrated PV manufacturer, producing everything from ingots to modules, using both mono and multicrystalline technologies. By the end of 2011, the company will have a nameplate module capacity of 1.9GW. Trina Solar's wide range of products are used in residential, commercial, industrial and public utility applications throughout the world.

Only by matching an efficient cost-structure with proven performance will we, as an industry, achieve grid parity. And at Trina Solar, we have both.

Trinamount I - For tile roof


by Trinasolar

Combining PV module expertise with a highly innovative mounting system solution, Trina Solar is introducing Trinamount—the fastest, easiest and least expensive way to mount PV modules onto residential and commercial rooftops.

With a series of drop-in and quarter-turn connections on a specialized module frame, this mounting solution installs up to 5 times faster than conventional mounting systems.

Trinamount connects directly to the module frame, eliminating the need for long rails. By drastically reducing the number of parts, cost of materials and installation time, Trinamount offers the optimal solution for residential and commercial installations.



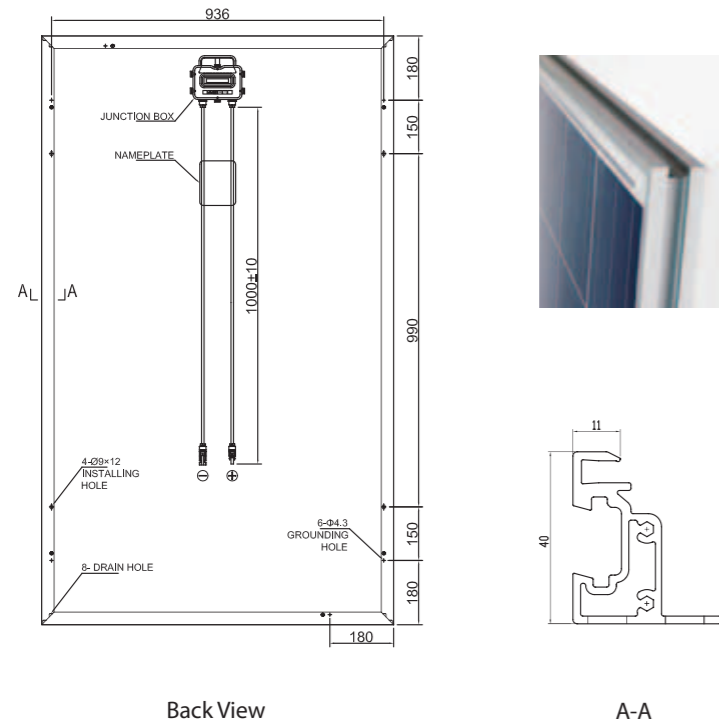
-  Fast and simple to install through drop in mounting solution
-  Low parts and SKU count in comparison to conventional mounting solutions
-  Superior aesthetic solution for residential rooftops
-  Long rail elimination reduces inventory and freight cost
-  Theft resistant and auto grounding hardware
-  Compact packaging with module and mounting hardware delivered on pallet

Applications:

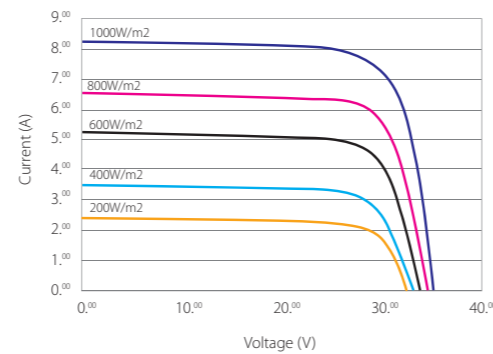
- tile roof

Trinamount I - For tile roof TSM-PC05/PA05.10

Dimensions of PV module TSM-PC05/PA05.10



I-V Curves of PV module TSM-230PC05/PA05.10



Efficiency	up to 14.7%
Wattage	up to 240W
Years warranty	25

Certification (in progress)



Electrical Data @ STC

	TSM-220 PC05/PA05.10	TSM-225 PC05/PA05.10	TSM-230 PC05/PA05.10	TSM-235 PC05/PA05.10	TSM-240 PC05/PA05.10
Peak Power Watts- P_{MAX} (WP)	220	225	230	235	240
Power Output Tolerance- P_{MAX} (%)	0/+3	0/+3	0/+3	0/+3	0/+3
Maximum Power Voltage- V_{MAX} (V)	29.0	29.4	29.8	30.1	30.4
Maximum Power Current- I_{MPP} (A)	7.60	7.66	7.72	7.81	7.89
Open Circuit Voltage- V_{OC} (V)	36.8	36.9	37.0	37.1	37.2
Short Circuit Current- I_{SC} (A)	8.15	8.20	8.26	8.31	8.37
Module Efficiency η_m (%)	13.4	13.7	14.1	14.4	14.7

Values at Standard Test Conditions STC (Air Mass AM1.5, Irradiance 1000W/m², Cell Temperature 25°C)

Mechanical Data

Solar cells	Multicrystalline 156 x 156mm (6 inches)
Cells orientation	60 cells (6x10)
Module dimension	1650 x 992 x 40mm (64.95 x 39.05 x 1.57inches)
Weight	19.5kg (43.0lb)
Glass	High transparency solar glass 3.2mm (0.13inches)
Frame	Anodized aluminium alloy
J-Box	IP 65 rated
Cables/Connector	Photovoltaic Technology cable 4.0mm ² (0.006inches ²), 1000mm (39.4inches), MC4

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	46°C (±2°C)
Temperature Coefficient of P_{MPP}	-0.45%/°C
Temperature Coefficient of V_{OC}	-0.35%/°C
Temperature Coefficient of I_{SC}	0.05%/°C

Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1000/600VDC
Max Series Fuse Rating	15A

Warranty

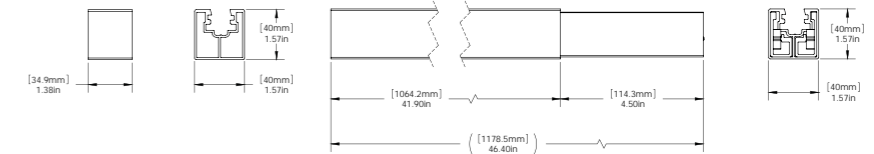
5 years workmanship warranty
10 years warranty, 90% power output
25 years warranty, 80% power output

Packaging Configuration

Modules per box	25 pcs
Modules per 40" container	650pcs

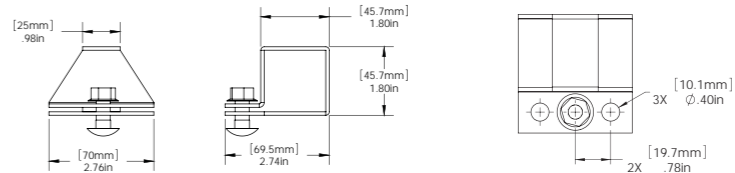
Basic Hardware

Spanner Bar & Bar Sleeve



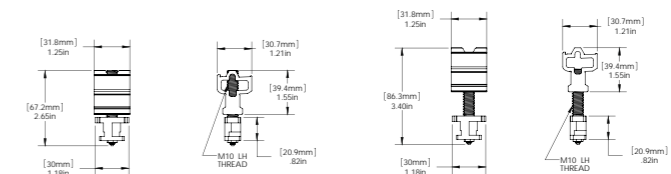
The Spanner Bar is a snap-together component that spans between and connects to tile hooks or fl ashed attachment hardware and provides attachment point flexibility in both nominal east-west and north-south axes. At the end of a run of Spanner Bars, the Bar Sleeve provides a point of attachment for the Cam Foot.

Spanner Clamp



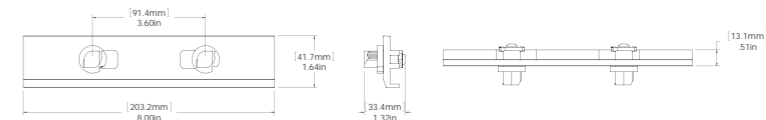
The Spanner Clamp provides a means of attachment between the Spanner Bar and the roof attachment hardware.

Cam Foot



The Cam Foot creates a structural connection between the Spanner Bars and the module frame and allows for precision height adjustability.

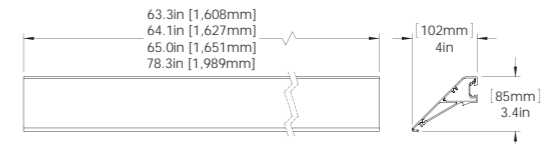
Interlock



The Interlock provides north-south and east-west structural and ground bond connections creating a structurally contiguous hyper-bonded array. ETL Listed to UL1703

Accessories

Array Skirt



Enhancing both function and aesthetics, the Array skirt facilitates easy front-row installation while providing a clean look at the front of the PV array (available in both clear and black finish).

Ground Bolt



Attaches to Groove. One Ground Bolt per every 72 modules max (see Installation Manual for instructions).

Wire Clip



Clips into Groove for ultra-fast and easy management of PV wiring and micro-inverter cables.

Trinamount Tool, Flat Tool



Trinamount Tool: 4 functions, 1 tool; Flat Tool: For inter-module removal.