

Mono

Multi

Solutions

# TSM-DC01A

# TSM-DA01A

THE **Comax** SOLUTION  
by **TrinaSolar**



**15.6%**  
MAX EFFICIENCY

**200W**  
MAX POWER OUTPUT

**10 YEAR**  
PRODUCT WARRANTY

**25 YEAR**  
LINEAR POWER WARRANTY

Founded in 1997, Trina Solar is a vertically integrated PV manufacturer, involved in the production of ingots, wafers and cells to the assembly of high quality modules, using both mono and multicrystalline technologies. As of July 2011, the Company has already achieved an annualized nameplate module capacity of approximately 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.

Trina Solar Limited  
www.trinasolar.com

**TrinaSolar**  
The power behind the panel



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**



Optimized corners increase output  
up to **195W**



Independently certified by **international certification bodies**

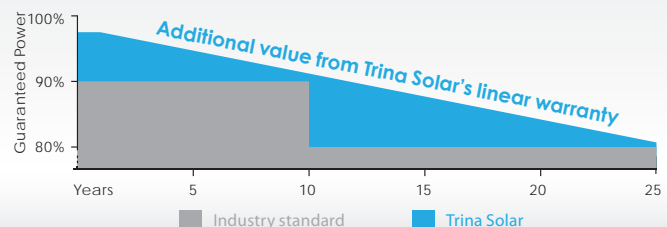


Manufactured according to International Quality and Environment Management System Standards  
**ISO9001, ISO14001**

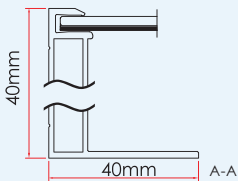
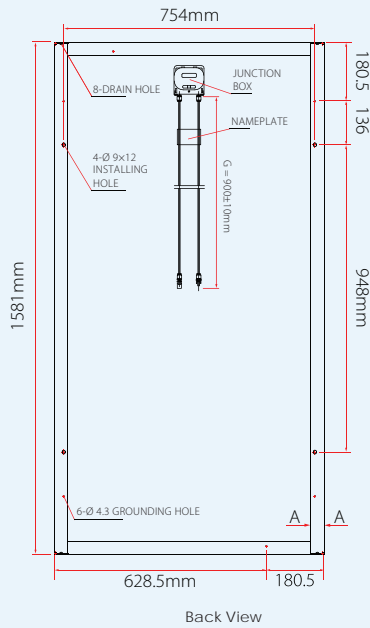
## LINEAR PERFORMANCE WARRANTY

NEW

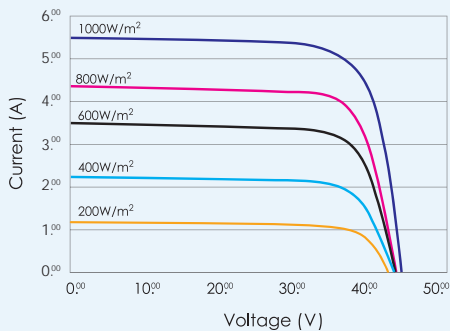
10 Year Product Warranty • 25 Year Linear Power Warranty



## DIMENSIONS OF PV MODULE TSM-DC/DA 01A



## I-V CURVES OF PV MODULE TSM-190 DC/DA 01A



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

## CERTIFICATION



ELECTRICAL DATA @ STC	TSM-190 DC/DA01A	TSM-195 DC/DA01A	TSM-200 DC/DA01A
Peak Power Watts-P <sub>MAX</sub> (Wp)	190	195	200
Power Output Tolerance-P <sub>MAX</sub> (%)	0/+3	0/+3	0/+3
Maximum Power Voltage-V <sub>MP</sub> (V)	36.6	37.1	37.6
Maximum Power Current-I <sub>MPP</sub> (A)	5.19	5.25	5.32
Open Circuit Voltage-V <sub>OC</sub> (V)	45.1	45.6	46.0
Short Circuit Current-I <sub>SC</sub> (A)	5.52	5.56	5.60
Module Efficiency η <sub>m</sub> (%)	14.9	15.2	15.6

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

ELECTRICAL DATA @ NOCT	TSM-190 DC/DA01A	TSM-195 DC/DA01A	TSM-200 DC/DA01A
Maximum Power (W)	140	143	147
Maximum Power Voltage (V)	33.8	34.3	34.8
Maximum Power Current (A)	4.14	4.18	4.23
Open Circuit Voltage (V)	41.7	42.2	42.5
Short Circuit Current (A)	4.44	4.47	4.5

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

MECHANICAL DATA	
Solar cells	Monocrystalline 125 × 125mm (5 inches)
Cell orientation	72 cells (6 × 12)
Module dimension	1581 × 809 × 40mm (62.24 × 31.85 × 1.57 inches)
Weight	15.6kg (34.4 lb)
Glass	High transparency solar glass 3.2mm (0.13 inches)
Frame	Anodized aluminium alloy
J-Box	IP 65 rated
Cables / Connector	Photovoltaic Technology cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ), 900mm (35.4 inches), MC4

TEMPERATURE RATINGS		MAXIMUM RATINGS	
Nominal Operating Cell Temperature (NOCT)	46°C (±2°C)	Operational Temperature	-40~+85°C
Temperature Coefficient of P <sub>MAX</sub>	-0.40%/°C	Maximum System Voltage	1000V DC(IEC)/600V DC(UL)
Temperature Coefficient of V <sub>OC</sub>	-0.30%/°C	Max Series Fuse Rating	10A
Temperature Coefficient of I <sub>SC</sub>	0.023%/°C		

WARRANTY	
10 year workmanship warranty	
25 year linear performance warranty	
(Please refer to product warranty for details)	

PACKAGING CONFIGURATION	
Modules per box: 23 pcs	
Modules per 40' container: 644 pcs	