



PV module - AS-156TG-650

Manufacturer	ARMY SOLAR ENERGY PVT LTD	Commercial data	
Model	AS-156TG-650	Data source	URS PRODUCT AND TESTING PVT LTD
Pnom STC power (manufacturer)	650 Wp	Technology	Si-mono
Module size (W x L)	1.134 x 2.466 m ²	Rough module area (Amodule)	2.80 m ²
Number of cells	2 x 78	Sensitive area (cells) (Acells)	2.61 m ²

Specifications for the model (manufacturer or measurement data)

Reference temperature (TRef)	25 °C	Reference irradiance (GRef)	1000 W/m ²
Open circuit voltage (Voc)	57.0 V	Short-circuit current (Isc)	14.83 A
Max. power point voltage (Vmpp)	46.1 V	Max. power point current (Impp)	14.11 A
=> maximum power (Pmpp)	650.3 W	Isc temperature coefficient (mulsc)	6.8 mA/°C

One-diode model parameters

Shunt resistance (Rshunt)	600 Ω	Diode saturation current (IoRef)	11.50 nA
Serie resistance (Rserie)	0.17 Ω	Voc temp. coefficient (MuVoc)	-147 mV/°C
Specified Pmax temper. coeff. (muPMaxR)	-0.32 %/°C	Diode quality factor (Gamma)	1.36
		Diode factor temper. coeff. (muGamma)	0.000 1/°C

Reverse Bias Parameters, for use in behaviour of PV arrays under partial shadings or mismatch

Reverse characteristics (dark) (BRev)	3.20 mA/V ²	(quadratic factor (per cell))	
Number of by-pass diodes per module	3	Direct voltage of by-pass diodes	-0.7 V

Model results for standard conditions (STC: T=25 °C, G=1000 W/m², AM=1.5)

Max. power point voltage (Vmpp)	46.8 V	Max. power point current (Impp)	13.95 A
Maximum power (Pmpp)	651.7 Wp	Power temper. coefficient (muPmpp)	-0.32 %/°C
Efficiency(/ Module area) (Eff_mod)	23.3 %	Fill factor (FF)	0.771
Efficiency(/ Cells area) (Eff_cells)	25.0 %		

