



# M-Series 20W PV Module SPM020P-A

## Solartech M-Series Modules

Solartech photovoltaic M-Series Modules are constructed with high efficient polycrystalline solar cells and produce higher output per module than others in its class. This industrial grade module is an industry standard among various industry professionals.

### Features

- An UL-approved AWG 18 cable is put into the fully sealed junction box (weather and UV resistant) material meet UL1703
- (EVA) with TPT cushions the solar cells within the laminate and ensures the operating characteristics of the solar cells under virtually any climatic condition
- Rigid anodized aluminum frame and low iron tempered glass
- Easily accessible grounding points on all four corners for fast installation
- Proven junction box technology



### Reliability

- Proven superior field performance
- Tight power tolerance

### Qualifications and Certifications



### Applications

- Traffic & Safety
- Federal Government
- Agricultural
- Security
- Telecommunications
- Water and Wastewater
- Weather & Environmental Monitoring
- Telemetry
- Wi-Fi & Wi-Max
- Gate & Fence

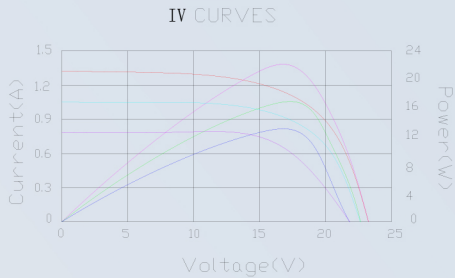
## Electrical Characteristics

Max power(Pm)	20W
Maximum power voltage(Vpm)	17.2V
Maximum power current (Ipm)	1.17A
Short circuit current (Isc)	1.25A
Open circuit voltage (Voc)	21.7V
Module efficiency	10.0%
Tolerance	±5%
Nominal Voltage	12V
Temperature coefficient of Voc	-0.36%/K
Temperature coefficient of Pm	-0.46%/K
Temperature coefficient of Isc	0.05%/K
NOCT	48°C±2°C
Maximum series fuse rating	10A
Maximum system voltage	600V

## Mechanical Characteristics

Construction	Tempered glass, silicon cell, EVA, Polyester with Tedlar
Solar Cells	36 cells (156mm x 26mm) in a 4x9 matrix connected in series
Front Cover	High transmission 3.2mm(1/8") glass
Encapsulant	EVA(Double layers)
Back Cover	White polyester
Frame	Anodized aluminum
Junction Box	IP65, UL94-5VA material
Diodes	None
Terminal	Open end, 9 feet (3m) 18 AWG wire
Dimensions	21.7in (550mm)x13.8in (350mm)x0.98in (25mm)
Weight	6.16b (2.8kg)
Operating Temperature	-40°C ~ 90°C
Storage Humidity	<90%

## IV Curves



## Warranty

25-year limited warranty of 80% power output;  
12 year limited warranty of 90% power output;  
2-year limited warranty of materials and workmanship\*

## Certifications

UL 1703 certification  
ETL Class I ,Division 2,Groups C and D certification

