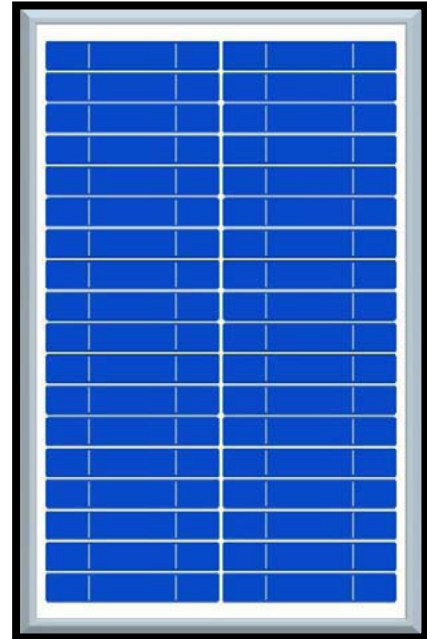




## Description

This photovoltaic module generates DC electricity when exposed to sunlight and other light sources. The Chargers are designed for safe operation in 12-volt systems only. Voltage Regulator and mounting hardware is included on all of Automata's Solar Panels. When using Automata's MINI Field Stations all Solar Panels should be connected to the battery or appliance with matching polarity. The red wire is positive (+) and the black wire is negative (-). Cover or shade the solar panel while making connections to avoid sparks or damage to electrical equipment



| Electrical Characteristics        |   |
|-----------------------------------|---|
| Power at STC(Pm)                  | 20W   |
| Tolerance                         | + 5%  |
| Short circuit current (Isc)       | 1.25A   |
| Open circuit voltage (Voc)        | 21.7V   |
| Maximum power current (Ipm)       | 1.17A   |
| Maximum power voltage (Vpm)       | 17.2V   |
| Module efficiency                 | 10%   |
| <b>Maximum system voltage</b>     | <b>1000V DC</b>   |
| <b>Standard test conditions</b>   | <b>Temperature 25°C,</b><br>Irradiance 1000W/m <sup>2</sup><br>AM=1.5 |
| <b>Temperature coefficient</b>    | Isc:0.06%K<br>Voc:-0.36%K<br>Pmax:-0.5%/K                             |
| Specifications                    |   |
| <b>Cell</b>                       | Multicrystalline silicon solar cell, (156mmx26mm)                     |
| <b>No. of cell and connection</b> | 36 (4x9)  |
| <b>Dimension</b>                  | 560mm x 360mm x 18mm  |
| Ambient Conditions                |   |
| <b>Operating Temperature</b>      | -40°C to +85°C  |
| <b>Storage Humidity</b>           | <90%  |

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## TILT ANGLE

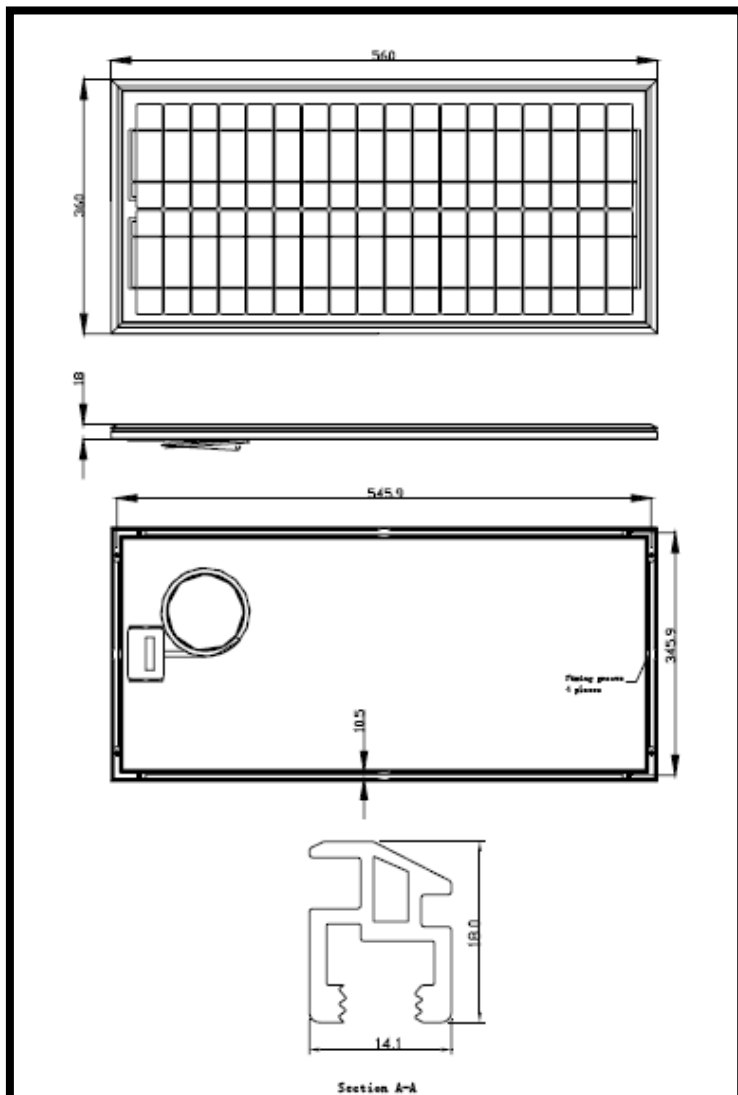
The following table shows the angle (from horizontal) at which the module should be installed in order to maximize annual energy output. At most latitudes, performance can be improved by less of an angle during the summer and more of an angle during the winter.

|        |                           |
|--------|---------------------------|
| 0-4°   | 10° from horizontal       |
| 5-20°  | Add 5° to local latitude  |
| 21-45° | Add 10° to local latitude |
| 45-65° | Add 15° to local latitude |
| 66-75° | 80° from horizontal       |

The module should be oriented toward the sun as much as possible. This is especially important during the middle part of the day – the module's most productive period. It is important to keep the module free from all shadowing.

## DIRECTIONAL FACING

As a general rule, modules used in the northern hemisphere should be faced due south (not magnetic south). Modules used in the southern hemisphere should face due north (not magnetic north).



*Mounting Bracket (included)*