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# **EnergyPal**

## **Solar Panel Guide Specification Data Sheet**

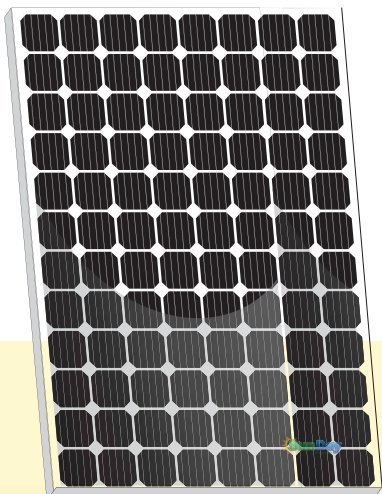
**Changzhou Sunday Energy Co., Ltd.**

**SDM-460-510**

**SDM-490-96**

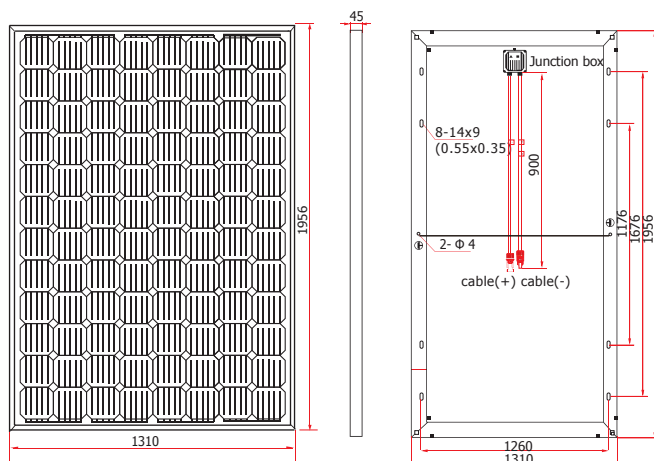
Also available on the web at  
[EnergyPal.com/changzhou-sunday-energy-co-ltd-solar-panels/sdm-490-96](http://EnergyPal.com/changzhou-sunday-energy-co-ltd-solar-panels/sdm-490-96)

# MONOCRYSTALLINE MODULES 440W - 500W



SOLAR MODULE:  
SDM440-96, SDM450-96, SDM460-96  
SDM470-96, SDM480-96, SDM490-96, SDM500-96

## PHYSICAL CHARACTERISTICS Unit: mm (inch)



## ELECTRICAL SPECIFICATIONS

| Model Type                      | SDM440-96     | SDM450-96 | SDM460-96 | SDM470-96 | SDM480-96 | SDM490-96 | SDM500-96 |
|---------------------------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Nominal Maximum Power (Pmax)    | 440W          | 450W      | 460W      | 470W      | 480W      | 490W      | 500W      |
| Optimum Operating Voltage (Vmp) | 47.78V        | 47.87V    | 48.01V    | 48.25V    | 48.35V    | 48.45V    | 48.63V    |
| Optimum Operating Current (Imp) | 9.21A         | 9.40A     | 9.59A     | 9.74A     | 9.93A     | 10.12A    | 10.28A    |
| Open Circuit Voltage (Voc)      | 58.50V        | 58.57V    | 58.75V    | 58.82V    | 58.89V    | 58.89V    | 58.95V    |
| Short Circuit Current (Isc)     | 9.40A         | 9.73A     | 9.78A     | 9.90A     | 10.04A    | 10.67A    | 10.87A    |
| Module Efficiency               | 17.17%        | 17.56%    | 17.95%    | 18.34%    | 18.73%    | 19.12%    | 19.51%    |
| Cell Efficiency                 | 19.2%         | 19.6%     | 19.8%     | 20%       | 20.5%     | 21%       | 21.5%     |
| Power Tolerance                 | 0 to +3%      |           |           |           |           |           |           |
| Maximum System Voltage          | DC 1000V      |           |           |           |           |           |           |
| Operating Temperature           | -40°C ~ +85°C |           |           |           |           |           |           |
| Maximum Series Fuse Rating      | 20A           |           |           |           |           |           |           |
| Number of Bypass Diode          | 6             |           |           |           |           |           |           |

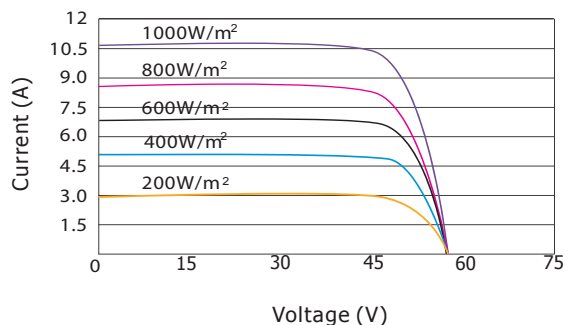
## MECHANICAL DATA

|                  |  |
|------------------|--|
| Cell Type        | 156mm x 156mm                                      |
| Cell Arrangement | 96 cells in series                                 |
| Dimensions       | 1956 x 1310 x 45 mm (With bar fixed in the middle) |
| Weight           | 26kg   |
| Front Cover      | 3.2mm tempered glass                               |
| Frame Material   | Anodized aluminium alloy                           |
| J- Box           | IP65/IP67, 6 diodes                                |
| Cable            | 4mm (IEC) / 12AWG (UL), 900mm (650mm is optional)  |
| Connectors       | MC4 or MC4 compatible                              |

## ELECTRICAL CHARACTERISTICS

(SDM500-96)

Current-Voltage Characteristic (I-V Curve)



## TEMPERATURE CHARACTERISTICS

|                                     |              |
|-------------------------------------|--------------|
| Temperature Coefficient (Pmax)      | -0.420% / °C |
| Temperature Coefficient (Voc)       | -0.336% / °C |
| Temperature Coefficient (Isc)       | 0.042% / °C  |
| Norminal Operating Cell Temperature | 45.3 ± 2 °C  |