

# MICROSOLAR™

High efficiency photovoltaic micro solar panels  
for electronics and battery charging



XUNZEL industrial-grade small photovoltaic solar panels for battery charging, trickle-charging and battery maintenance, with an excellent light and spectral response over wide range of wavelength, suitable in both outdoor, low light and indoor applications.

## High efficiency

Optimally designed for efficient, stable and consistent charging of rechargeable batteries in off-grid and backup systems.

## Wide range

Wide range of voltages and charging powers. Designs for all types of rechargeable batteries: Pb, NiMH, NiCd, Lithium, Super CAP/EDLC

## Plug&Play

Ideal for IoT, IIoT, OoT, integration, motors, robots, mobile.

## Compact size

Optimized design. Lightweight. Maximize available space.

## Smart and Rugged design

Anti-dust surface to prevent dust from sticking.  
Made with materials and components of excellent quality and resistance for a reliable and long service life.  
Long-lasting performance, Waterproof, UV resistant, designed for extreme environment.

## Flexible Mounting

Frame-less design, light and compact. Easy to integrate into your application. With pre-installed cable.



## Industrial grade photovoltaic solar panels

With more than 20 years of experience designing and manufacturing state-of-the-art photovoltaic technology, XUNZEL industrial-grade small solar panels for battery charging, trickle-charging and battery maintenance have an excellent light and spectral response over wide range of wavelength, suitable in both outdoor, low light and indoor applications.

Manufactured with high quality materials to provide long-term, reliable performance in the field. MICROSOLAR™ Photovoltaic Solar Panels are made with high efficiency solar cells. Robust and ready to be used in all kind of applications, battery charging and powering your electronics.

The design allows connecting several solar panels flexibly in series and/or parallel to perfectly meet the custom-specific application's power requirements.  
Designed for industrial applications, prototyping, experiments and learning.

**Put the power of solar energy into your creations.**

### XUNZEL ENERGY

info@xunzel.com    www.xunzel.com

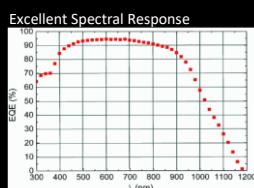
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UD9250812



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- Designed for optimal battery charging, trickle-charging and maintenance with excellent spectral response over a wide wavelength range and stability.
- Very High Efficiency silicon and thin-film technologies for outdoor, low-light and indoor environments. High power density in a small foot-print. Extremely useful in applications requiring solar power generation in a limited space.
- High quality materials and sealed package, waterproof, chemicals and UV resistant. Mechanically robust, designed for extreme environments. Long life and stable output.
- Frame-less design, light and compact. Easy to integrate into your application. Wired models for ease of integration.
- Discreet anti-vandal design.
- Suitable for rechargeable Lead-acid Pb, Ca, NiCd, NiMH, Lithium batteries and Super-Caps.
- Ideal for IoT, IIoT, OoT, integration, motors, robots, mobile.
- Hi quality. 100% Tested.

XUNZEL ENERGY has been designing and manufacturing, for more than 20 years, custom MICROSOLAR™ solar panels and energy systems to power electronic equipment and charge batteries.

## MICROSOLAR™ Systems

### Power Solutions for IoT Devices

Stand-alone and backup power systems specially designed for IoT/IIoT, Telecom, Utilities, Industry, Agriculture, Tracking, Monitoring and Sensing, Telemetry, Control, Security and Mobile Markets

Designed and manufactured to deliver reliable and efficient power. Universal. Maintenance free. Complete and Ready to use. Easy to connect.

Built with materials and components of excellent quality and resistance for a long service life.

#### Wide range of models.

The most extensive range and custom design of photovoltaic solar panels, accessories, mounting solutions, enclosures, solar batteries and solar electronics.



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## Technical Specifications

| Model       | Size        | Thickness | Pmax          | Vnom           | Imax            | Voc             | Imp            | η                     | Cable  |
|-------------|-------------|-----------|---------------|----------------|-----------------|-----------------|----------------|-----------------------|--------|
| Part Number |             |           | Maximum Power | Voltage at mpp | Maximum Current | Maximum Voltage | Current at mpp | Solar Cell Efficiency |        |
|             | [mm ±0.2]   | [mm ±0.2] | [mW]          | [V]            | [mA]            | [V]             | [mA]           | > 25%                 | [mm ±] |
| MS2V5025    | 50 x 25     | 1.7       | 200           | 2.25           | 110             | 2.70            | 76             | > 25%                 | 100    |
| MS2V50R     | Ø50 (round) | 1.7       | 200           | 2.25           | 110             | 2.70            | 90             | > 25%                 | 100    |
| MS6V5050    | 50 x 50     | 1.7       | 400           | 5.50           | 90              | 6.60            | 75             | > 25%                 | 100    |
| MS6V80R     | Ø80 (round) | 1.7       | 600           | 5.50           | 120             | 6.60            | 110            | > 25%                 | 150    |
| MS6V10050   | 100 x 50    | 2.0       | 900           | 5.50           | 190             | 6.60            | 155            | > 25%                 | 150    |
| MS6V13080   | 130 x 80    | 2.2       | 2000          | 5.50           | 420             | 6.60            | 364            | > 25%                 | 150    |
| MS9V80R     | Ø80 (round) | 1.7       | 600           | 9.90           | 70              | 11.88           | 61             | > 25%                 | 150    |
| MS9V10050   | 100 x 50    | 2.0       | 900           | 9.90           | 100             | 11.88           | 86             | > 25%                 | 150    |
| MS9V13080   | 130 x 80    | 2.2       | 2000          | 9.90           | 230             | 11.88           | 202            | > 25%                 | 150    |
| MS9V150150  | 150 x 150   | 2.2       | 4000          | 9.90           | 460             | 11.88           | 410            | > 25%                 | 250    |
| MS19V15050  | 150 x 50    | 2.2       | 1200          | 19.8           | 70              | 23.40           | 61             | > 25%                 | 200    |
| MS19V150150 | 150 x 150   | 2.2       | 4000          | 19.8           | 230             | 23.40           | 202            | > 25%                 | 250    |

**Ingress Protection (IP)** rating: IP67

**Operating Temperature:** -40°C ~ 85°C | **Storage Temperature :** -40°C ~ +90°C

All values measured at Standard Condition: 1 sun (= 1000 W/m²), Air Mass 1.5, 25°C

All our photovoltaic solar modules are carefully designed and manufactured to achieve the best results in the field. Please do not hesitate to ask us for any additional technical information you may require. We have a laboratory and state-of-the-art equipment to carry out all kinds of additional and specific tests.

XUNZEL ENERGY reserves the right to change limits, test conditions and dimensions.

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RoHS/REACH  
COMPLIANT

## Front and Back Views (Not at scale)

### 2.25V Series

p|n: MS2V5025  
 Pmax: 200mW  
 Dim.: 50 x 25 x 1.7mm



p|n: MS2V50R  
 Pmax: 200mW  
 Dim.: Ø50 (round) x 1.7mm



### 5.50V Series

p|n: MS6V5050  
 Pmax= 400mW  
 Dim.: 50 x 50 x 1.7mm



p|n: MS6V80R  
 Pmax=600mW  
 Dim.: Ø80 (round) x 1.7mm



p|n: MS6V13080  
 Pmax=2000mW  
 Dim.: 130 x 80 x 2.2mm



p|n: MS6V10050  
 Pmax=900mW  
 Dim.: 100 x 50 x 2.0mm



**Front and Back Views**  
(Not at scale)

## 9.90V Series

p|n: MS9V80R  
Pmax: 600mW  
Dim.: Ø80 (round) x 1.7mm



p|n: MS9V10050  
Pmax: 900mW  
Dim.: 100 x 50 x 2.0mm



p|n: MS9V13080  
Pmax: 2000mW  
Dim.: 130 x 80 x 2.2mm



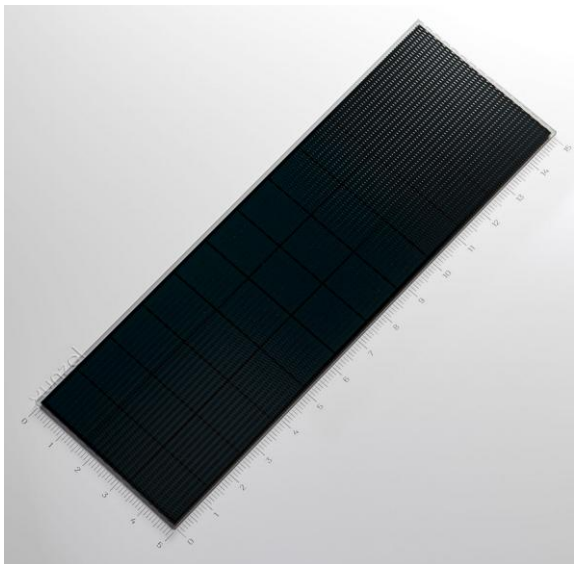
p|n: MS9V150150  
Pmax: 4000mW  
Dim.: 150 x 150 x 2.2mm



**Front and Back Views**  
(Not at scale)

## 19.80V Series

p|n: MS19V15050  
Pmax: 1200mW  
Dim.: 150 x 50 x 2.0mm



p|n: MS19V150150  
Pmax: 4000mW  
Dim.: 150 x 150 x 2.2mm

