

## FRAMED SOLAR MODULES US-SERIES

- Power Rating For 5W - 64W
- Clear Anodized Aluminum Frame
- Assemble To Meet Virtually Any Load
- Virtually Unbreakable (No Glass)
- Shadow & High Heat Tolerant
- Delivers Up To 20% More Real Energy



Photo Courtesy of Solar Century (UK)



Photo Courtesy of Kellin Solar



Gate Operator Photo Courtesy of GTO Inc.



**UNI-SOLAR® framed modules are mounted** on permanent, fixed position module racks that can be adjusted for optimum tilt, wind resistance and orientation to sunlight. These glass-free vandal resistance modules can be utilized in a wide variety of applications from fence charging to telecommunications.

The larger framed panels are often used as building blocks in photovoltaic arrays, which can be assembled to meet virtually any load from less than 100 watts to multi-megawatts.

### Why Do UNI-SOLAR® Products Outperform Others?

All solar panels are rated in terms of peak power output (watts). Outdoors, under normally higher operating temperatures, solar panel performance changes, depending on temperature, solar spectrum (light color) and related effects. UNI-SOLAR® products are less affected by temperature than monocrystalline or polycrystalline solar technology products. The result is up to 20% more delivered energy. \*\*

\*\* Source Solfest, "Module Shoot Out"

### Applications

- Battery Charging
- Off-Grid Solar Home Systems
- Water Pumping or Desalination Systems
- Telecommunications
- Gate Opening or Fence Charging
- Bus or Animal Shelters



MORE  
AMP-HRS



NO-GLASS



DURABLE



SHADOW  
TOLERANT



HIGH-TEMP  
PERFORMANCE

## Specifications

| Model                         | US-64       | US-32       | US-11      | US-5       |
|-------------------------------|-------------|-------------|------------|------------|
| Rated Power (Wp)              | 64.0        | 32.0        | 10         | 5.0        |
| Max Power Point VMPP (V)      | 16.5        | 16.5        | 16.5       | 16.5       |
| Max Power Point IMPP (A)      | 3.9         | 1.9         | 0.6        | 0.3        |
| Open Circuit Voltage VOC (V)  | 23.8        | 23.8        | 23.8       | 23.8       |
| Short Circuit Current ISC (A) | 4.8         | 2.4         | 0.8        | 0.4        |
| Weight (lbs./kg)              | 20.2 / 9.2  | 10.6 / 4.8  | 3.6 / 1.6  | 2.5 / 1.1  |
| Length (in./mm)               | 53.8 / 1366 | 53.8 / 1366 | 19.3 / 491 | 19.3 / 491 |
| Width (in./mm)                | 29.2 / 741  | 15.1 / 383  | 15.1 / 383 | 8.1 / 206  |
| Cable Length (in./mm)         | --          | --          | 96 / 2438  | 96 / 2438  |
| Warranty On Power Output      | 20 yr.      | 20 yr.      | 10 yr.     | 10 yr.     |

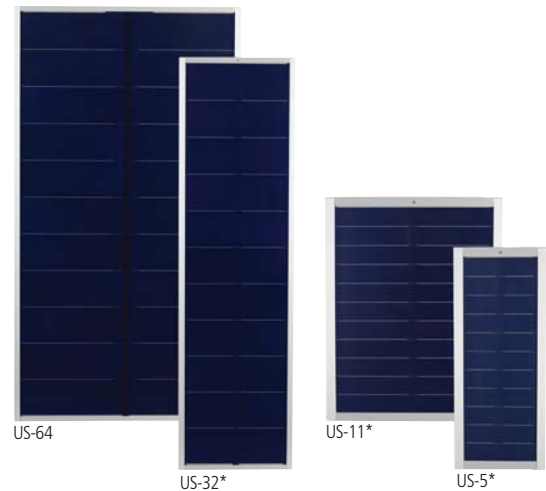
During the first 8-10 weeks of operation, electrical output exceeds specified ratings. Power output may be higher by 15%, operating voltage may be higher by 11% and operating current may be higher by 4%. Electrical specifications are based on measurements performed at standard test conditions of 1000 W/m<sup>2</sup> irradiance, Air Mass 1.5 and Cell Temperature of 25°C after long-term stabilization. Maximum system open-circuit voltage not to exceed 600 VDC per UL. \*\*\* Actual performance may vary up to 10% from rated power due to low temperature operation, spectral and other related effects. Specifications subject to change without notice.

\*\*\* US-64 and US-32 only, US-11 and US-5 not to exceed 30 VDC

### Quality Assurance, Proven Reliability

UNI-SOLAR® modules comply with the following qualification tests:

- UL Listed Up To 600 VDC ☑
- Safety Class II Up To 520 VDC ☑ (US-64 and US-32 only)
- Meets IEC 61646 Requirements (US-62 and US-32 only)
- Thermal Cycling
- Humidity-Freeze Test
- Damp Heat Test
- UV-Test
- Wet Insulation Test
- Mechanical Load Test
- Hail Impact Test
- Robustness of Terminations Test



\* Product available upon request, depending on volume.

### Product Description

The UNI-SOLAR® modules are exceptionally durable. They are encapsulated in UV-stabilized polymers and framed with anodized aluminum. The Polymer encapsulation includes EVA and ETFE. A Galvalume® steel backing plate provides stiffness.

Bypass diodes are connected across each cell, allowing the modules to produce power even when partially shaded (exception: US-5).

The US-64 & US-32 have a weather resistant UNI-SOLAR® junction box with knock-outs for customization by the customer. All other US-modules have a potted pig tail with integral wiring. The cable is a 2-conductor 18 AWG with insulation rated at 158° F.

The UNI-SOLAR® US-64 & US-32 modules are appropriate for all applications from simple single module requirements to larger grid-connected applications. All other UNI-SOLAR® US modules under 30 watts should not be connected in series.

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