

PowerTilt™



Key Attributes

Weight	2.06 lbs per square foot (10.06 kg/m ²)
Power Rating	Industry leading 144 watts per panel
Wind Rating	120 mph (193 kph)
Tilt	15 degrees for increased performance
Energy Yield	10-20% more than crystalline
Roof Penetration	None
Roof Attachment	Various non-penetrating attachment mechanisms depending on roof type.
Warranty	Limited power output warranty: 92% at 10 years; 84% at 20 years; 80% at 25 years (of minimum power). 5-Year limited product warranty.

The *UNI-SOLAR PowerTilt* photovoltaic panel is available to solar integrators and installers. Please contact one of our many partner companies to purchase your integrated solar roofing solution today.

Global Contact Information

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To learn more about *PowerTilt* and other *UNI-SOLAR* products, please call **1.800.528.0617**, or visit us at **uni-solar.com**

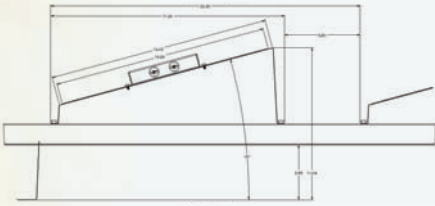
Concrete-Ballasted Attachment



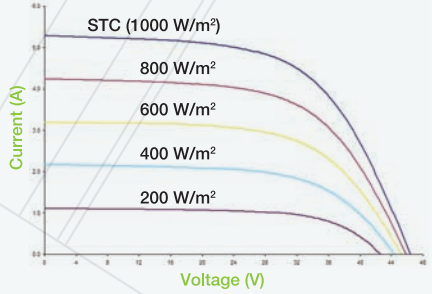
PowerTilt photovoltaic panels can be applied with a simple, concrete-ballasted attachment, adjustable to conform to uneven rooftop surfaces.

Electrical Specifications

PV GCR: 0.66; SHADING GCR: 0.78
 DIMENSIONS: 22.50 N-S 219.25 E-W
 AREA PER TILT PAN: 33.83 SQ. FT.



IV Curves at various Levels of Irradiance at Air Mass 1.5 and 25°C Cell Temp.



STC
 (Standard Test Conditions)
 (1000 W/m², AM 1.5, 25°C Cell Temp.)

Maximum Power (P_{max}): 144 W
 Voltage at P_{max} (V_{mp}): 33.0 V
 Current at P_{max} (I_{mp}): 4.36 A
 Short-circuit Current (I_{sc}): 5.3 A
 Open-circuit Voltage (V_{oc}): 46.2 V
 Maximum Series Fuse Rating: 10 A

NOCT
 (Nominal Operating Cell Temp.)
 (800 W/m², AM 1.5, 1 m/sec. wind)

Maximum Power (P_{max}): 111 W
 Voltage at P_{max} (V_{mp}): 30.8 V
 Current at P_{max} (I_{mp}): 3.6 A
 Short-circuit Current (I_{sc}): 4.3 A
 Open-circuit Voltage (V_{oc}): 42.2 V
 NOCT: 46 °C

Temperature Coefficients
 (at AM 1.5, 1000 W/m² irradiance)

Temperature Coefficient (TC) of I_{sc}:
 0.001/K (0.10%/°C)
 Temperature Coefficient (TC) of V_{oc}:
 -0.0038/K (-0.38%/°C)
 Temperature Coefficient (TC) of P_{max}:
 -0.0021/K (-0.21%/°C)

Temperature Coefficient (TC) of I_{mp}:
 0.001/K (0.10%/°C)

Temperature Coefficient (TC) of V_{mp}:
 -0.0031/K (-0.31%/°C)

$$y = y_{reference} \cdot [1 + TC \cdot (T - T_{reference})]$$

Notes:

- 1. 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%.
- 2. Electrical specifications tolerance for P_{max} is +/-5% and for other parameters is +/-10%. Electrical specifications are based on measurements performed at standard test conditions of 1000 W/m² irradiance, air mass 1.5, and cell temperature of 25°C (per ASTM E892) after long-term stabilization.

- 3. Actual performance may vary up to 10% from rated power due to low temperature operation, spectral and other related effects. Maximum system open-circuit voltage not to exceed 600 VDC (NEC rating).
- 4. Specifications subject to change without notice.