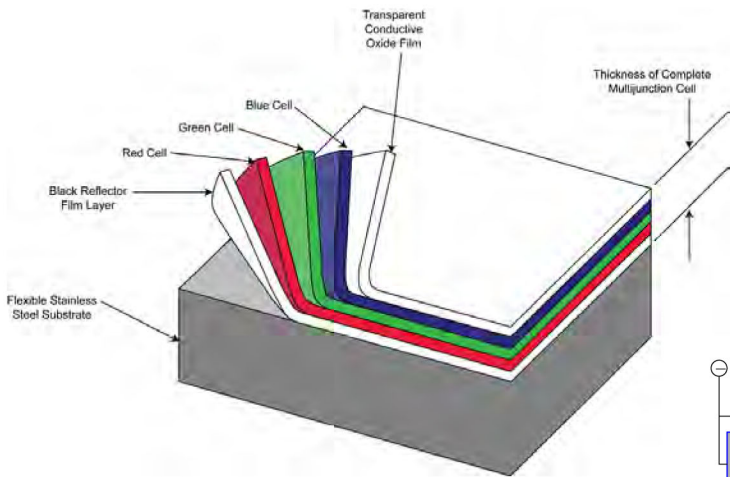


**UNI-SOLAR® produces more energy in real-world conditions**

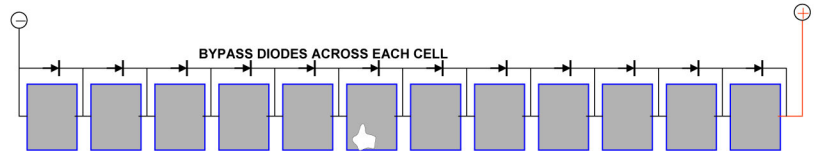
In the solar business today, system purchases are made on a dollar-per-watt or Euro-per-watt basis. But, the return on investment (ROI) or payback period is determined by the amount of electricity, in kWh, the system produces. Third party testing, in real world conditions, shows that *UNI-SOLAR* produces more energy for your purchased watt, and, therefore, provides the best return on investment.

This third party testing, conducted over a number of years, shows the long-term reliability and performance of the *UNI-SOLAR* product. This type of proof is something no other flexible photovoltaic manufacturer can provide.



Each *UNI-SOLAR* laminate utilizes unique triple-junction amorphous silicon solar cells, where the blue, green and red light of the sun is absorbed in different layers of the cell. This technology results in better performance in low and diffuse light conditions.

By-pass diodes are connected across each cell, allowing the modules to produce power even when partially shaded or soiled.



**UNI-SOLAR PV MODULE CELL CONNECTIONS**

Shade/Soil any one cell = Output loss of <4.5% (22-cell Laminate)  
Area of shade/soiling required to cover one cell = 9" x 14" (126 sq in)

Figure 1. Triple-Junction Technology

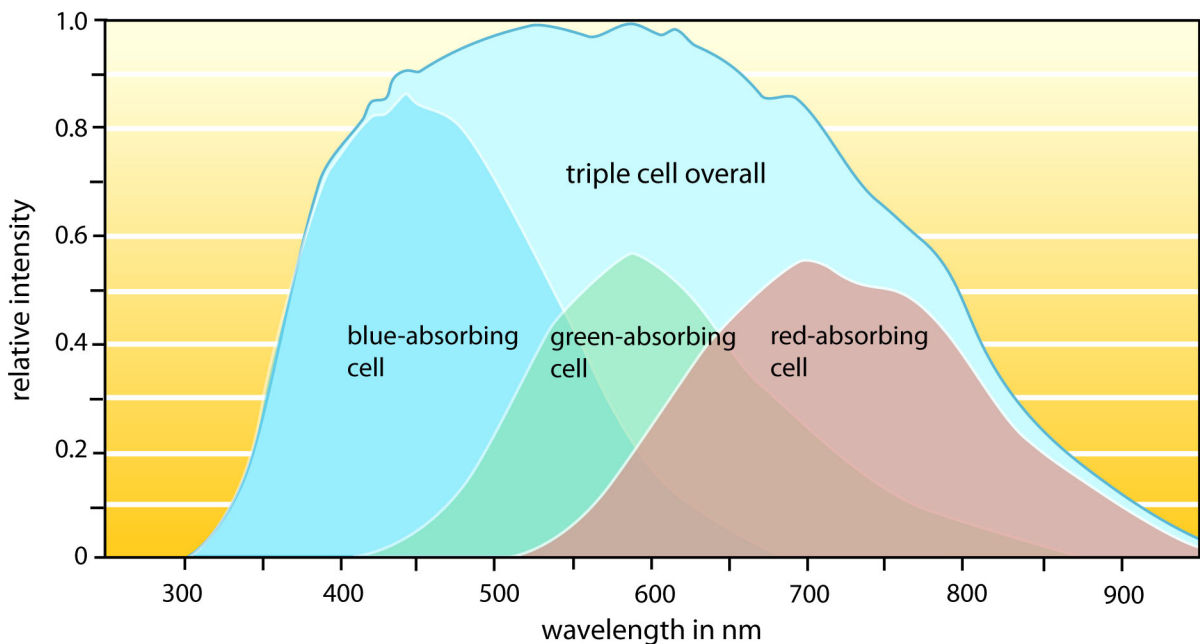
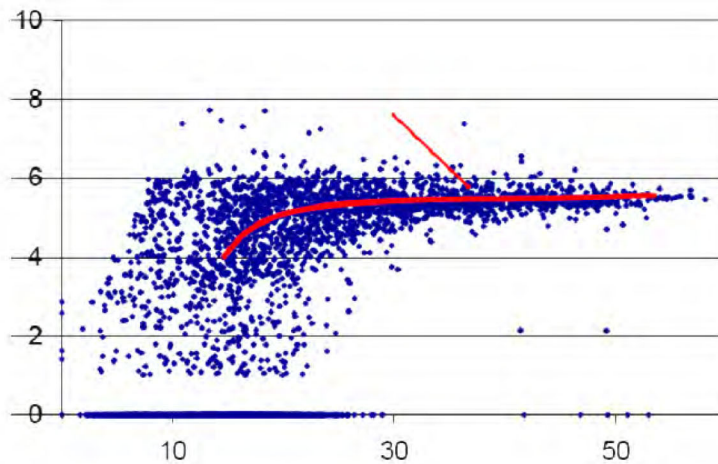


Figure 2. Light absorption effect of triple-junction technology

**Maintains energy production at high temperatures**

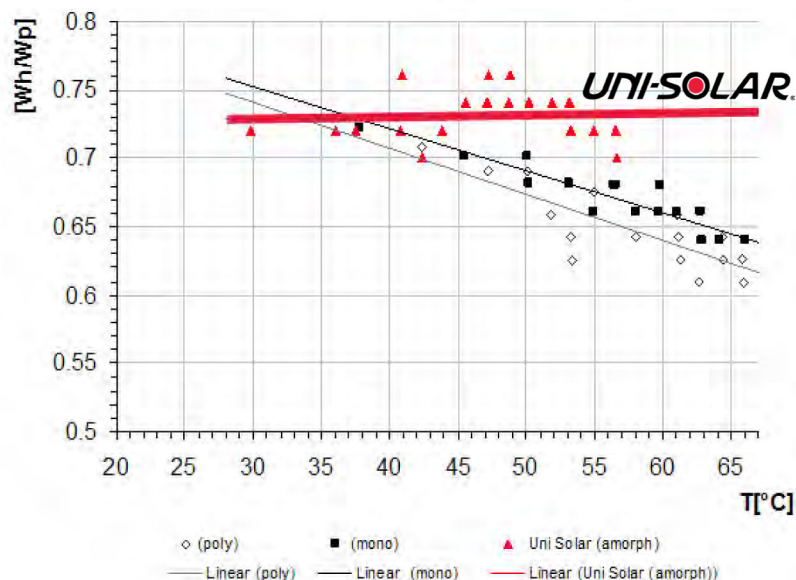
UNI-SOLAR® laminates provide better energy yield at high temperatures. Today, all solar products are rated based on standard test conditions. In real outdoor conditions, cell temperatures increase with increased solar irradiation, reaching levels much higher than standard test conditions. Crystalline silicon modules experience a significant decline in kWh output at high temperature, while UNI-SOLAR laminates do not. As a result, UNI-SOLAR laminates produce more energy when you need it most.

**Measured Temperature Influence - Germany**



Source: ISE Freiburg, Germany

**Yield in function of module temperature, Urbino, Central Italy (2003-2004)**



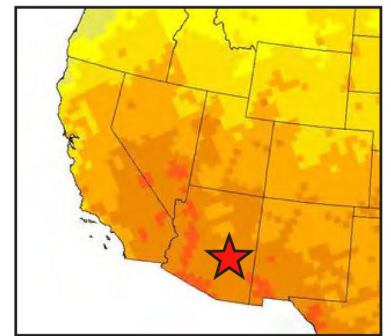
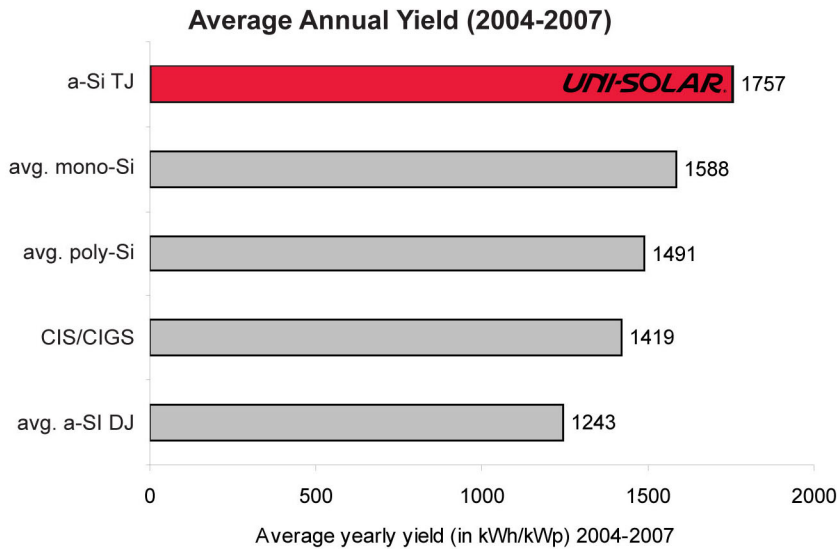
Source: University of Urbino, Urbino, Italy

**UNI-SOLAR® Performance Advantage (Third Party Testing)**

In many locations worldwide, independent third party businesses and institutions collect data on several different photovoltaic systems. This real world data demonstrates the superior energy production of UNI-SOLAR laminates in high temperatures, low light levels, and shading. Below are three examples of this data from locations in Tucson, Arizona, USA; Frankenberg, Bolzano, Northern Italy; and Santa Cruz, California, USA. In each location, UNI-SOLAR outperforms competitive products by producing more kilowatt-hours of energy per kilowatt installed.

**Site: Tucson, Arizona, USA**

**Source: Tucson Electric Power, Arizona, USA**



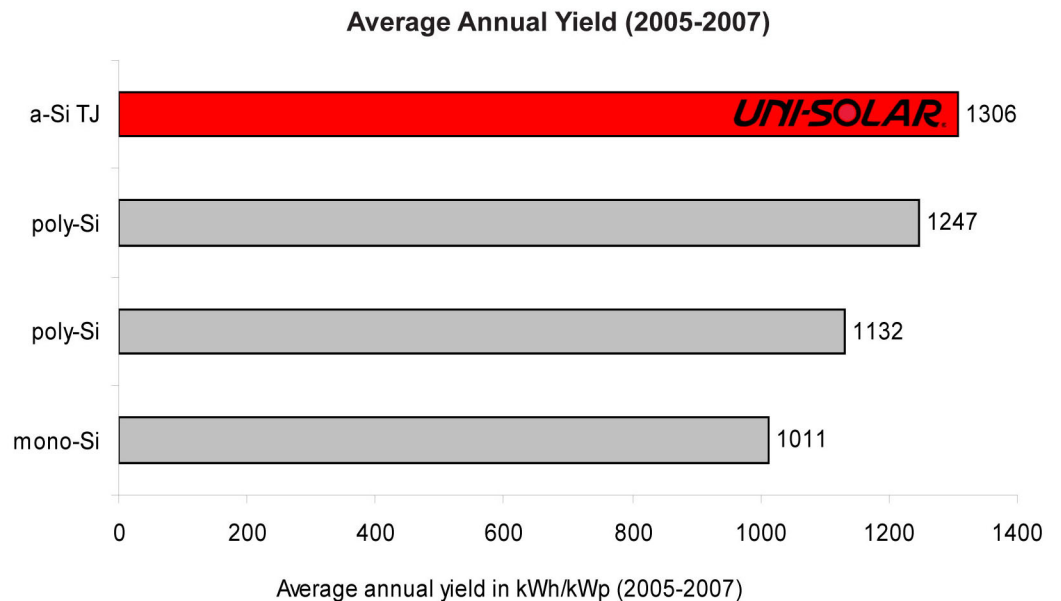
USO Surplus versus:  
Avg. mono-Si: +11%  
Avg. poly-Si: +18%  
CIS/CIGS: +24%  
Avg. a-Si: +41%

**Site: Frankenberg, Bolzano, Northern Italy**

**Source: Office for Energy Saving, Province of Bolzano, Italy**



USO Surplus versus:  
Avg. poly-Si: +10%  
mono-Si: +29%

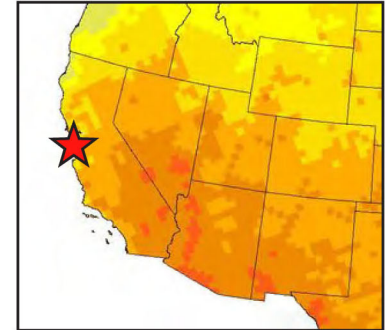
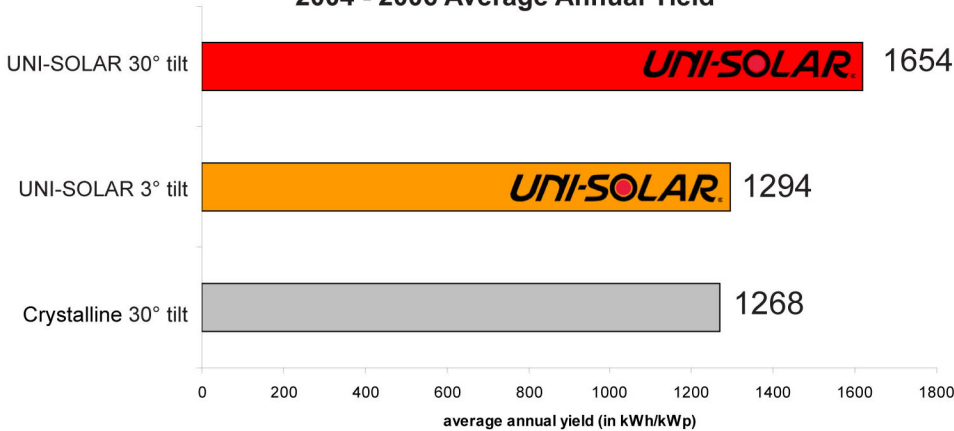




**UNI-SOLAR® Performance Advantage (Third Party Testing)**

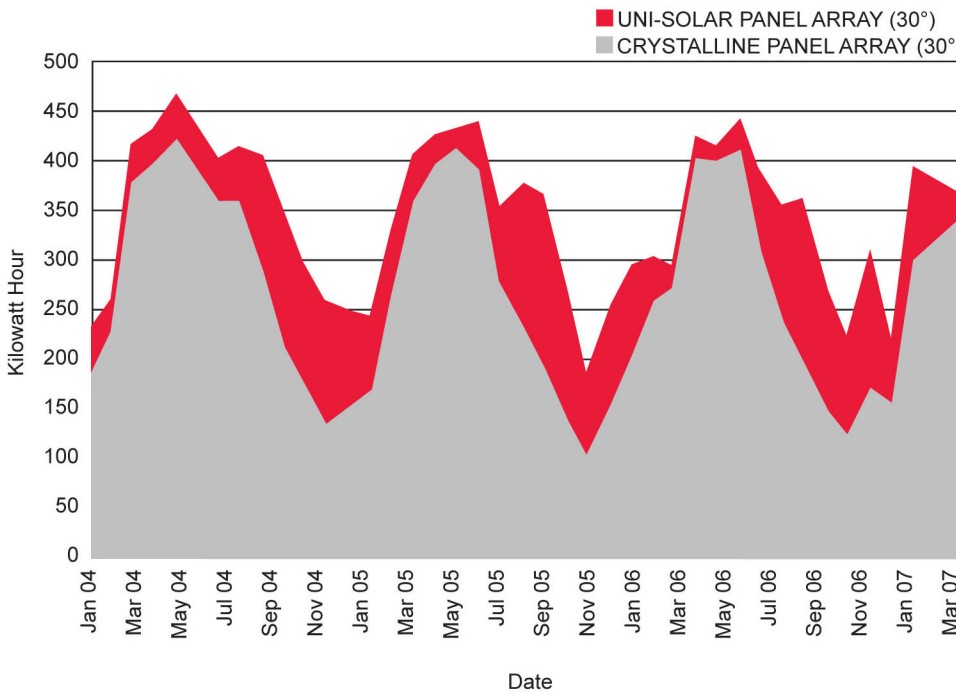
Site: Santa Cruz, California, USA  
Source: Solarquest Report

2004 - 2006 Average Annual Yield



USO 30° Tilt Surplus versus:  
USO 3° Tilt: +28%  
Crystalline 30° Tilt: 31%

**Santa Cruz Test Site  
Energy Production Performance Summary**



**Cumulative Power Production  
November 2003 - March 2007**

USO Surplus versus Crystalline: +31%

