

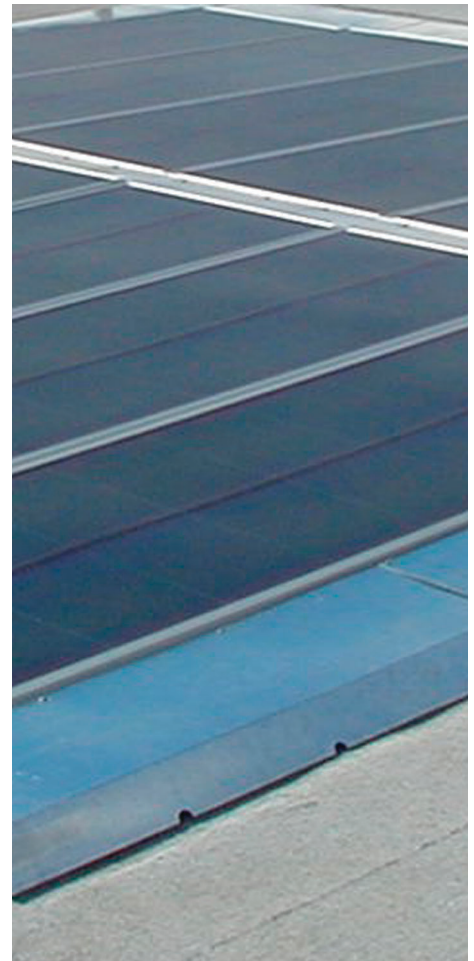
UNI-SOLAR[®]



SOLAR QUILT

SOLAR ENERGY SYSTEMS FOR LOW SLOPE ROOFS

A COMPLETE SYSTEM TO CONVERT LOW SLOPE ROOFS INTO AN ENERGY SOURCE



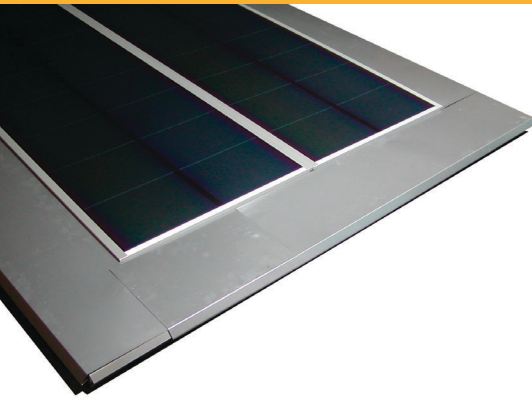
INTRODUCING SOLARQUILT

Independent Energy Solutions (IES) and *UNI-SOLAR*® have introduced a photovoltaic power system solution for all types of low slope roofs. The same high efficiency associated with the *UNI-SOLAR* name, and the thin-film amorphous product, is now a part of an interconnecting Solar Electricity Generating Solution: **The SolarQuilt.**

It's like a quilt where the patches are *UNI-SOLAR*'s US-116 framed modules that are 'stitched' together with strips of corrosion resistant sheet metal - The Power Blanket - SolarQuilt.



SOLARQUILT BENEFITS



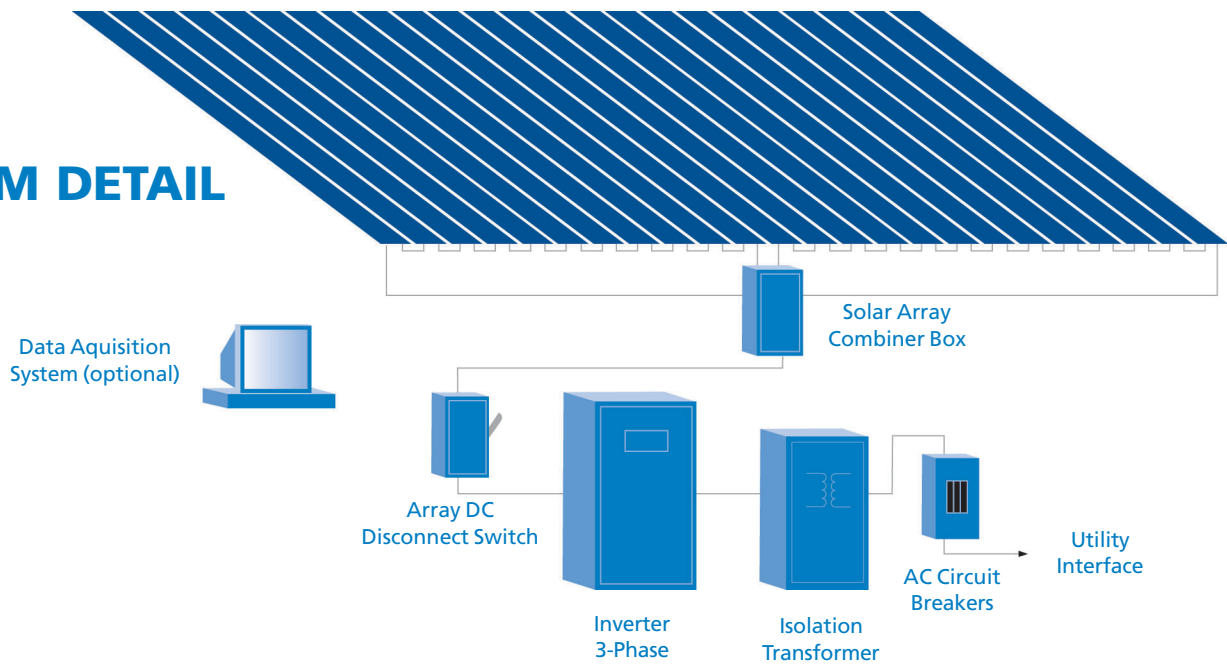
The SolarQuilt is a *UNI-SOLAR* based solution for every type of flat or low slope roof. It's much lighter than other solar products used in similar applications. The modular design allows the solar power generating system to expand from 1 kW to well over 1 MW without modifying roofing material or penetrating the roof structure.

This solution gives building owners the option to turn their roof space into a power generator without the expense of a new roof. Roof replacement, modifications or maintenance can be accomplished without damage to the SolarQuilt system: remove the lightweight units at point of service and replace when finished - no need to remove additional units in other sections.

- ★ Safe
- ★ Durable
- ★ Glass-free
- ★ Self-ballasted
- ★ Non-penetrating
- ★ Aesthetically pleasing
- ★ Roof remains serviceable
- ★ High power density - watts/area
- ★ Sloped for self-cleaning of modules
- ★ Wind tunnel tested at wind speed of 150 mph
- ★ No mold, mildew growth from moisture trapping
- ★ Modular, lightweight & manageable by one worker - 3-5 lbs. per/ft²
- ★ Expandable, removable and stackable for palletizing to ship and transfer on/off roof



SYSTEM DETAIL



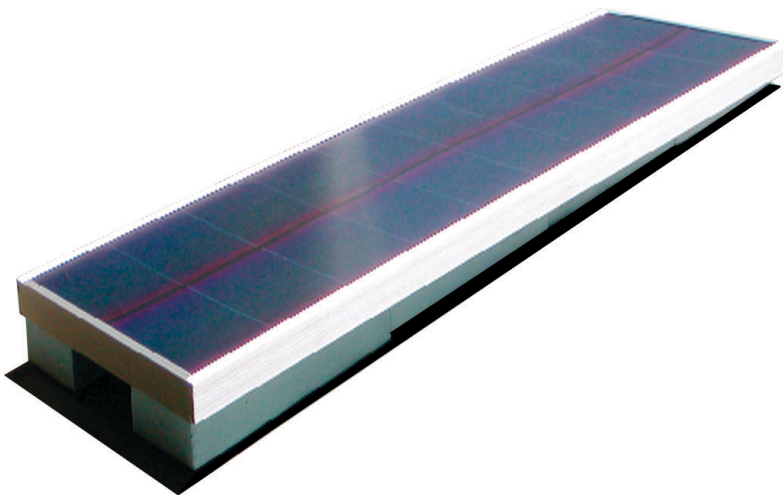
DESIGN FEATURES

The SolarQuilt's (patent pending by IES) durable, unbreakable, glass-free design allows roof traffic for maintenance of rooftop equipment. Its interconnecting units are stackable for palletizing to transfer on and off the roof. This lightweight system offers a safety level far above that of glass modules.

This unique design features the *UNI-SOLAR* panels that have been proven to provide more real energy (Kilowatt Hours) than crystalline panels of the same rating (based on independent studies*) *Source: NREL, ECN, and TISO

UNI-SOLAR QUALITY

- ★ NEC compliant
- ★ UL compliant
- ★ Protect the roof from UV & thermal cycling
- ★ Increase R-value
- ★ Natural wire raceways
- ★ Junction box with quick connects



UNI-SOLAR

SOLARQUILT SPECIFICATIONS

System Size	No. of US-116 SolarQuilt Modules	Typical Roof Coverage	Average Roof Loading	Average Yearly kWh*
10 kWac	96	2,200 ft ²	3-5 lbs/ft ²	15,360
20 kWac	192	4,400 ft ²	3-5 lbs/ft ²	30,720
30 kWac	288	6,600 ft ²	3-5 lbs/ft ²	48,180
50 kWac	432	9,900 ft ²	3-5 lbs/ft ²	80,920
100 kWac	960	22,000 ft ²	3-5 lbs/ft ²	162,000

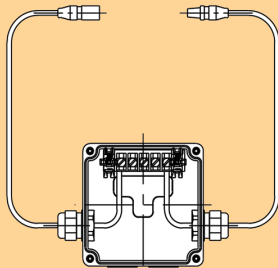
Physical Dimensions	Modular Length	Modular Width	Modular Height (max)	Weight
US-116W	98" L	30.125" W	5"	56.5 lb

*Derived from computer model analysis using solar data for Los Angeles, CA

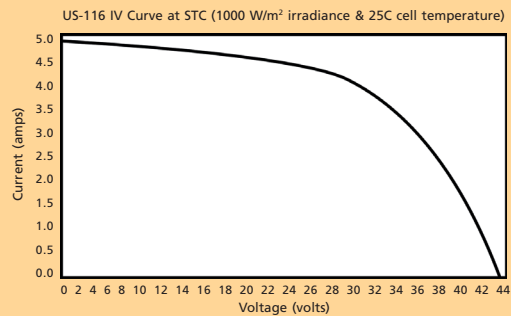
Specifications and Performance	US-116
Rated Power (Watts)	116
Nominal Operating Voltage	24
Operating Voltage (Volts)	30.0
Operating Current (Amps)	3.88
Open-Circuit Voltage (Volts)	43.2
Open-Circuit Voltage (Volts) at -10° C and 1250 W/m ²	49.3
Short-Circuit Current (Amps)	4.8
Short-Circuit Current (Amps) at 75° C and 1250 W/m ²	6.3

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 (±10%) are based on measurements performed at standard test conditions of 1000 W/m² irradiance, Air Mass 1.5, and Cell Temperature of 25° C after long-term stabilization. Actual performance may vary up to 10% from rated power due to low temperature operation, spectral and other related effects.
3. Maximum system open-circuit voltage not to exceed 600 VDC.
4. Specifications subject to change without notice.



Junction Box with Quick Connects



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