

# Solar Photovoltaic Modules

USP60 / USP70 / USP75 / USP80

*USL Solar modules provides cost-effective photovoltaic power for general use, operating DC directly or, in an inverter-equipped system, AC loads. The 36 cells in series provides 60W, 70W, 75W & 80 watts of maximum power, it is used primarily in utility grid-supplemental systems, telecommunications, remote villages and clinics, pumping and load-based aids to navigation.*



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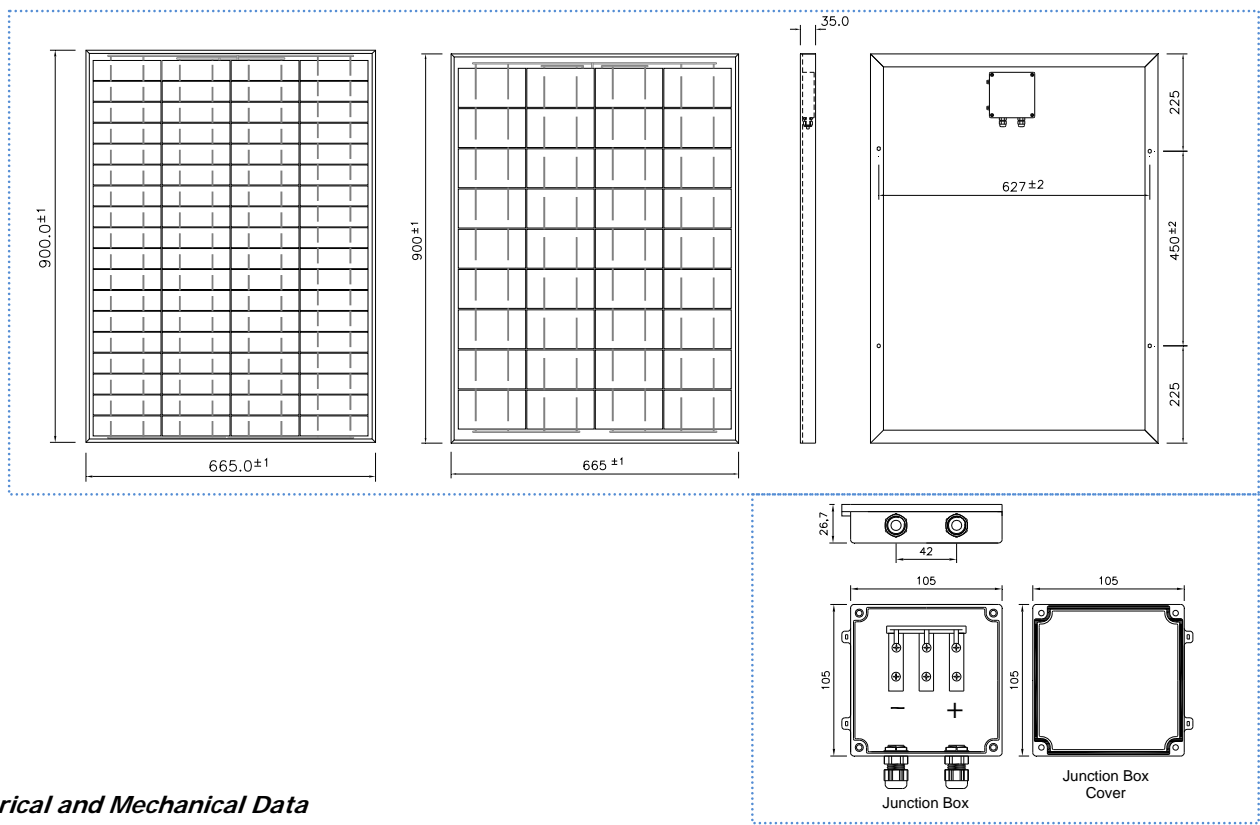
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*Polycrystalline  
Modules*



### Electrical and Mechanical Data

Model	USP60	USP70	USP75	USP80
Maximum power (Pmax)	60Wp	70Wp	75Wp	80Wp
Open Circuit Voltage (Voc)	21.5 V	21.5 V	21.5 V	21.5 V
Maximum power point voltage (Vmpp)	17.1 V	17.1 V	17.1 V	17.1 V
Short circuit current (Isc)	3.92 A	4.59 A	4.90 A	5.24 A
Maximum power point current (Impp)	3.50 A	4.10 A	4.38 A	4.68 A
Tolerance	±10%	±10%	±10%	±10%
Cell Size (mm)	92 X 156 / 46 X 156	92 X 156 / 46 X 156	92 X 156 / 46 X 156	92 X 156 / 46 X 156
No. of cells	36 / 72	36 / 72	36 / 72	36 / 72
Dimensions (mm) ± 1	900 x 665 x 35	900 x 665 x 35	900 x 665 x 35	900 x 665 x 35
Maximum system voltage	600	600	600	600
Temperature co-efficient	NOCT (°C)45	NOCT (°C)45	NOCT (°C)45	NOCT (°C)45
$\frac{dV}{dT}$ (Voc) (mV/°C)	- 105	- 105	- 105	- 105
$\frac{dI}{dT}$ (Isc) (mA/°C)	- 0.32	- 0.32	- 0.32	- 0.32
$\frac{dP}{dT}$ (Pmax) (%/°C)	- 0.45	- 0.45	- 0.45	- 0.45
Weight (kgs)	6	6	6	6

Standard Test Condition : Irradiance 1,000 W/sq.m, Temperature 25deg C Air mass 1.5 spectrum)

### Proven Materials and Construction

USL experience shows in every aspect of this module's construction and materials

- ❖ Anodized aluminum frame offers required strength and allows for quick and easy installation on standard array structures.
- ❖ 36 Crystalline silicon solar cells in series.
- ❖ Modules are laminated in toughened low iron content PV grade glass – Ethyl Vinyl Acetate films – PV module back sheet.
- ❖ Optimized lamination process parameters ensure a stable laminate. Junction Box with PG Cable glands are standard in all modules.
- ❖ Each module is flash tested in a Sun simulator to ensure conformity to specification.

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