

**KL080/KL085/KL090**

*USL 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 80W to & 90 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.*

**Series****6****Proven Materials and Construction**

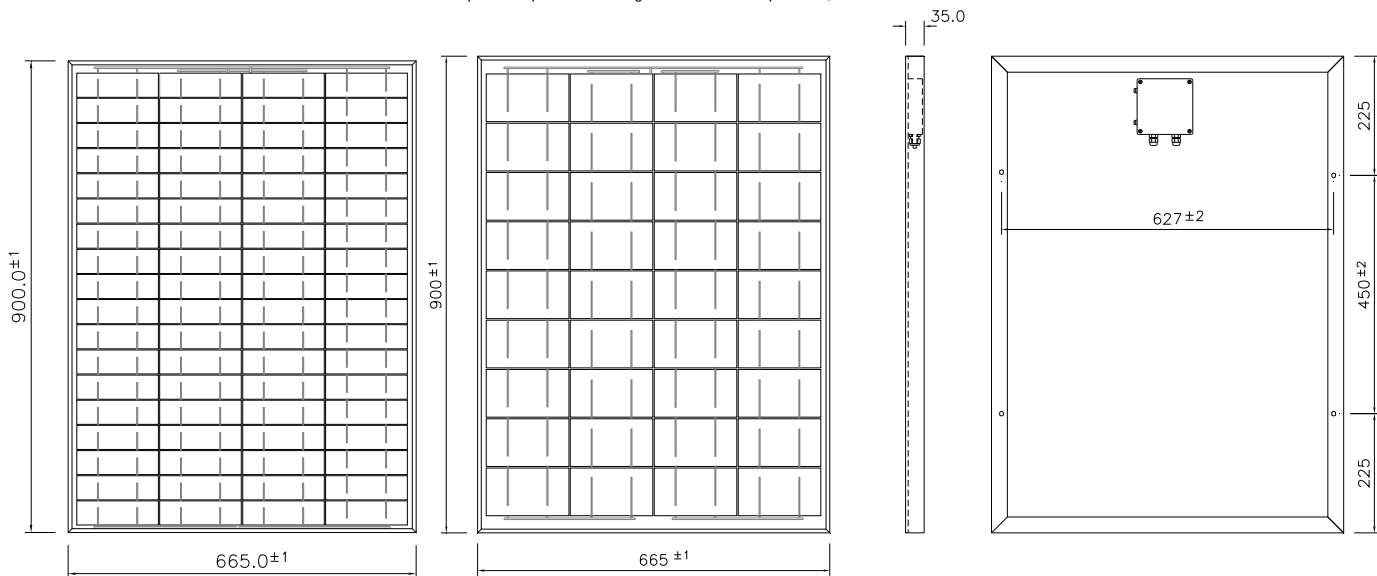
USL experience shows in every aspect of this module's construction and materials

- 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 IP65 protection rating are standard in all modules.
- Each module is flash tested in a Sun simulator to ensure conformity to specification.

## Electrical and Mechanical Data

Model	KL080	KL085	KL090
Maximum power (Pmax)	80 Wp	85 Wp	90 Wp
Open Circuit Voltage (Voc)	21.5 V	21.5 V	21.5 V
Maximum power point voltage (Vmpp)	17.1 V	18.0 V	18.0 V
Short circuit current (Isc)	5.24 A	5.10 A	5.49 A
Maximum power point current (Impp)	4.68 A	4.72 A	5.00 A
Tolerance	±10%	±10%	±10%
Cell Size (mm)	88 X 156 / 44 X 156	88 X 156 / 44 X 156	93 X 156 / 46 X 156
No. of cells	36 / 72	36 / 72	36 / 72
Dimensions (mm) ± 1	900 x 665 x 35	900 x 665 x 35	900 x 665 x 35
Maximum system voltage	1000	1000	1000
Module Efficiency	13.37%	14.20%	15.03%
Temperature co-efficient	NOCT (°C)45	NOCT (°C)45	NOCT (°C)45
$\frac{dV}{dT}$ (Voc) (mV/°C)	- 105	- 105	- 105
$\frac{dI}{dT}$ (Isc) (mA/°C)	- 0.32	- 0.32	- 0.32
$\frac{dP}{dT}$ (Pmax) (%/°C)	- 0.45	- 0.45	- 0.45
Weight (kgs)	6	6	6

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



### Qualification and certificates

The Photovoltaic Modules certified to  
IEC61215 & EN IEC 61730 Class A, Safety Class II



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