

# USL

Solar

Photovoltaic

Modules



## KL008/KL010 & KL012 / KL015 / KL018

*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 8W, 10W, 12W, 15W & 18Watts of maximum power, it is used primarily in telecommunications, remote villages, clinics, and load-based aids to navigation.*



## Series

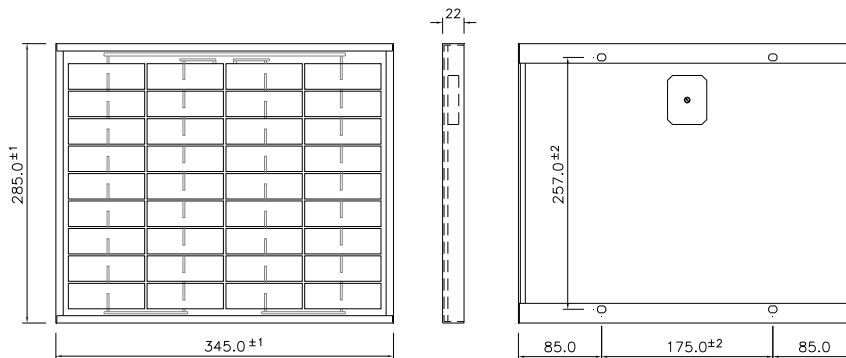
# 6

Series:6  
Polycrystalline Modules

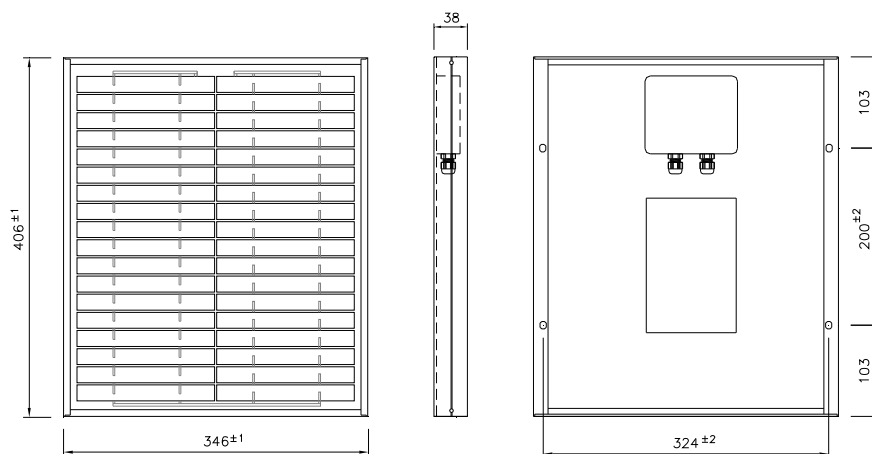
## Electrical and Mechanical

Model	KL008	KL010	KL012	KL015	KL018
Maximum power (Pmax)	8 Wp	10 Wp	12 Wp	15 Wp	18 Wp
Open Circuit Voltage (Voc)	21.5 V	21.5 V	21.5 V	21.5 V	21.5 V
Maximum power point voltage (Vmpp)	16.5 V	17.1 V	17.1 V	17.1 V	18.0 V
Short circuit current (Isc)	0.53 A	0.65 A	0.79 A	0.98 A	1.10 A
Maximum power point current (Impp)	0.48 A	0.59 A	0.70 A	0.88 A	1.00 A
Tolerance	±10%	±10%	±10%	±10%	±10%
Cell Size (mm)	26 X 78	26 X 78	18 X 156	18 X 156	18 X 156
No. of cells	36	36	36	36	36
Dimensions (mm) ± 1	345 x 285 x 22		406 x 346 x 38		
Maximum system voltage	600	600	600	600	600
Temperature co-efficient	NOCT (°C)45	NOCT (°C)45	NOCT (°C)45	NOCT (°C)45	NOCT (°C)45
$\frac{\Delta V_{oc}}{\Delta T}$ (Voc) (mV/°C)	- 105	- 105	- 105	- 105	- 105
$\frac{\Delta I_{sc}}{\Delta T}$ (Isc) (mA/°C)	- 0.32	- 0.32	- 0.32	- 0.32	- 0.32
$\frac{\Delta P_{max}}{\Delta T}$ (Pmax) (%/°C)	- 0.45	- 0.45	- 0.45	- 0.45	- 0.45
Weight (kgs)	1.2	1.2	1.9	1.9	1.9

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



KL008, KL010 Module

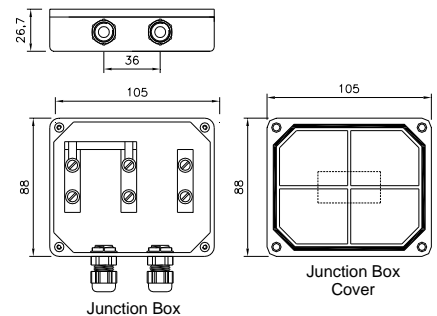
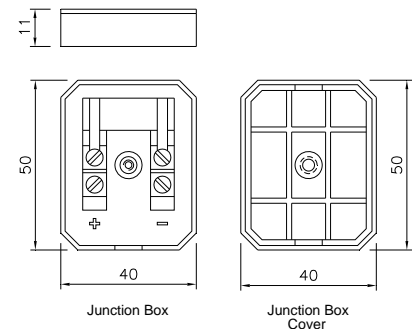


KL012, KL015, KL018 Module

### 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 are standard in 12W, 15W & 18W modules.
- Each module is flash tested in a Sun simulator to ensure conformity to specification.



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Technical Specifications Subject to change without prior notice due to technology upgradation.