

PoliStar Solar Panels

The interior lighting of shelters has many benefits, most notably improving shelter visibility and security. The solar lighting kit provides all materials required for stand-alone illumination of shelters. Available in three configurations, the system can be sized to meet the lighting requirements of a variety of shelter sizes.

Transit Kit: A single 4.5 watt lamp unit provides adequate lighting for the smaller shelter.

Sentry Kit: The 9 watt lamp unit provides adequate lighting for many mid-sized shelters.

Watchman Kit: Two 9 watt lamps expand the lighting capability of this system.

The kit includes the photovoltaic (PV) cell and mount, L.E.D. lamp unit, storage battery(s), lamp driver / battery controller, battery enclosure, and required wiring.

Illumination times, generally 4 hours after sunset and 3 hours prior to dawn, are program controlled and are maintained as an automatic system function.

The actual amount of illuminance provided by the solar lamp(s) will vary by the mounting height of the lamp and the size of the area being illuminated but is approximately 10 lumens or 1 foot candle, a level roughly equivalent to the ambient light available at twilight.



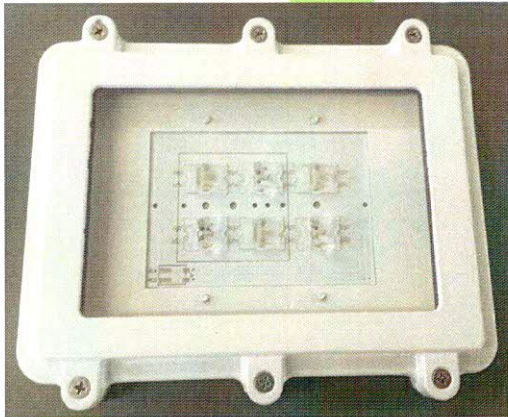
*Improving shelter
visibility and security*

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Description:

- **Lamp Unit:** The L.E.D. lamp is encased in a metal low profile enclosure. The lamp contains three or six 1.5 watt L.E.D. emitters mounted behind a polycarbonate shield.
- **Photovoltaic Panel (PV):** PV cells are UL and CSA rated crystalline module which typically offer a 20 year service life. Size of the cell will vary depending on the size and number of lamp units powered and the location of the shelter, with sunnier locals requiring smaller cells than areas that tend to have more overcast conditions.
- **PV Panel Mounting:** The PV panel can be either rail mounted flat to the roof or oriented using an adjustable angling rail mount. For shelters that require it, a frame mounted bracket is also available to mount

the PV cell, which offers optimum orientation for difficult situations. With PV efficiency directly related to the orientation of the cell relative to the sun, mounting is an important consideration. The needed direct exposure to the sun can also be impacted by trees or other obstacles near the structure.

- **Battery/Box:** Batteries are a key element in a well-designed solar lighting system. The battery storage capacity should be capable of operating the system for three days of heavy overcast conditions. The AGM (Absorbed Gas Mat) storage battery(s) provided with the kit is a totally liquid and gel free battery. They have a 2 year full and 3 year prorated warranty. The enclosure box is a NEMA standard security enclosure generally mounted to the parameter beam of the structure.
- **Wiring:** Wiring harness is pre-assembled to provide connection between VP cell, battery box, and lamp unit. Exposed wiring (if any) will need to be installed within a protective conduit. Electrical cut-outs can be specified on new shelters to provide access for wiring. As these are low voltage stand-alone systems, permitting is generally not required and installation can be accomplished by qualified but unlicensed individuals.
- **Lamp Driver/Battery Controller:** Incorporated into a single module, the lamp driver provides power to the L.E.D. emitters and controls on-off times for the lighting. The battery controller regulates and balances the operation of the PV cell and battery system.

