



## Features/Benefits

- Stand Alone Solar Powered
- Pad or Pole Mount Enclosure
- Available With DC Upgrade Kits
- Lockable Weatherproof Cabinet
- Internal Branch Circuit Protection
- Long Life SLA Back-Up Batteries
- Easy to Install Electrical Connections

## Smart Crosswalk™ Solar Power Control Unit (PCU)

*LightGuard Systems Part Number: LGS-Solar System*

*Description: Solar powered PCU with programmable interface, batteries, and cabinet*

### Application Notes

The solar powered control unit accepts call signal inputs from either manual push button or automatic Bollard activation. The activation devices initiate the Enlighten1™ flashing signal light sequence. Approaching motorists are alerted to the presence of pedestrians entering the crosswalk. The flashing sequence is activated for a preset duration to allow pedestrians adequate time to cross the street.

System includes enclosure, solar panel, mounting brackets, & batteries. Available with multiple DC related upgrade kits: DC beacons, constant DC output, audible notification, etc. User interface allows for multiple option selection, data collection, and preset programming

The programmable control unit user Interface has a 16 digit keypad and a 2 line-20 character liquid crystal display with 2 megabyte external memory. The programmable control unit is based on a high-speed 8 bit embedded microcontroller utilizing compiled machine control language.

The microprocessor interface allows for multiple option selections, data collection, and preset programming. PCU memory contains a limited number (approximately 65,000) of "date/time stamped" activation counts, diagnostic and power-up events. The PCU is capable of data transfer and remote communication via the PCU RS232 serial port.

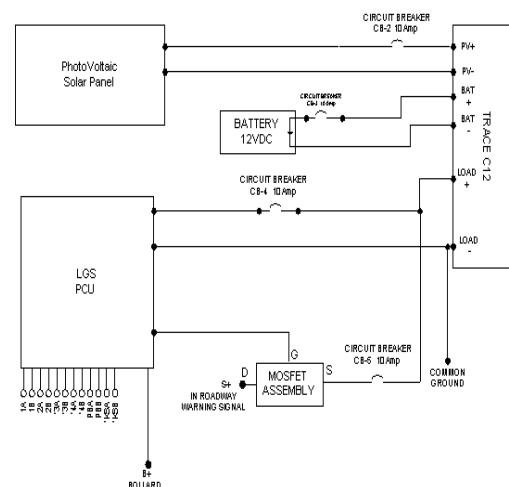
The enclosure contains 2 SLA batteries, they are 12 volt deep cycle sealed gel-cell batteries. Each battery is rated at approximately 100 amp hours. The batteries are wired in parallel to give 12 volts nominal at 200 amp hours of storage.



### General Performance Specifications

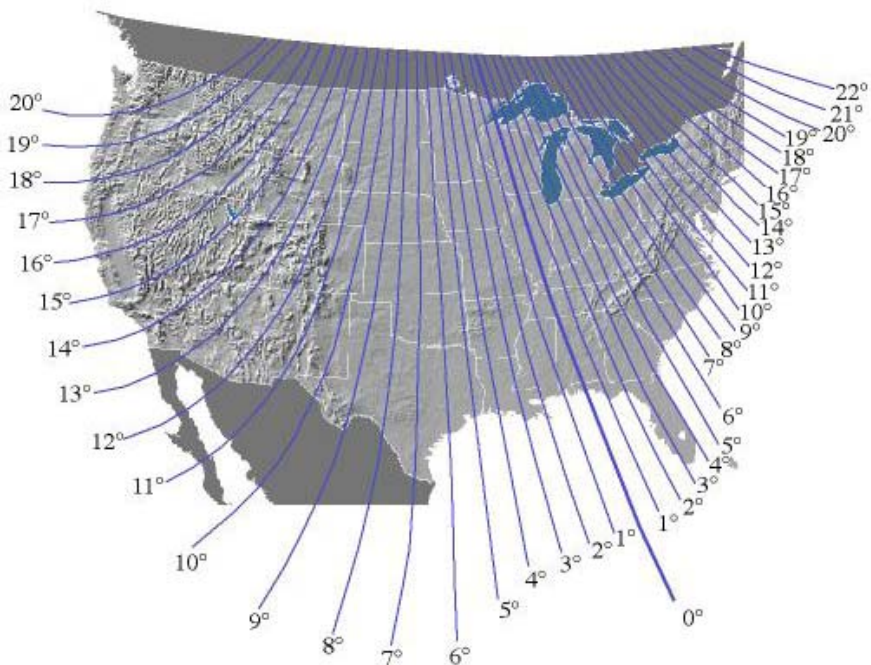
Parameter	Value
Power consumption	1 Watt (In Standby Mode)
Operating Temp	0°C to +50°C
Input Operating Voltage	17 VDC Solar Panel (Peak Sun)
Input Current Protection	10A Fast Acting Circuit Breaker
Input Solar Panel Power	80 Watts @ 4.7A (Peak Sun)
Output Operating Voltage	13.5 VDC to 15VDC
Output DC Load maximum	10 Amps
Enclosure Type	NEMA 3R Aluminum (Lockable)
Enclosure Color	White (Standard)
Enclosure Size	45" x 15" x 15"

### Solar Control Panel Schematic



### ORIENTING THE SOLAR MODULE

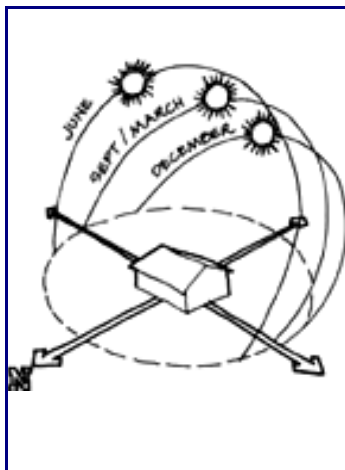
It is important for proper system operation that the array be oriented true South (if you are located in the northern hemisphere). The directions of magnetic South and true South differ from one another depending on geographic location. This variance is called deviation. Check the deviation for your region in order to extrapolate true South from a compass heading of magnetic South. The map in this section shows the magnetic deviation for the US.



### DECLINATION ANGLE FOR SOLAR PANELS

When installing photovoltaic modules, be aware that they generate maximum power when facing the sun directly. The fixed position which approximates this ideal over the course of the year, thus maximizing annual energy production, is facing due South at the angle listed in the table in the next column. Note that these orientations are **true**. The table below shows the fixed angle above horizontal at which modules should be installed in order to maximize annual energy output.

Latitude Site	Tilt Angle
0-15°	15°
15-25°	SAME AS Latitude
25-30°	Add 5° to local latitude
30-35°	Add 10° to local latitude
35-40°	Add 15° to local latitude
40° +	Add 20° to local latitude



### SOLAR MODULE MOUNTING

The solar module typically mounted to the side of a 4" galvanized mast using the aluminum side-of-pole mount and hardware supplied. The solar module must be oriented to face Due South.

Attach the mounting rails to the pole bracket and adjust the tilt angle to create an angle setting for your local latitude from horizontal facing South. Use U-bolts to secure the mount to the mast.

In areas of high winds additional wind braces may be needed. Contact LightGuard Systems® for details.

