

SOLAR CONTROLLER

User-Manual



Model No.: CLL1210LI-B

1. DESCRIPTION

CLL1210LI-B is solar light controller for Both Lead acid and lithium battery. This solar light controller is integrated with LED driver, so the led light can't have LED driver. And this also can save the cost of LED driver. Adopting advanced circuit design and intelligent driving program, this controller has high charging/discharging efficiency and stability. With fully sealed waterproof design and wide output voltage. Innovative circuit design can make the discharging efficiency up to 94%.

2. FEATURES

- 1) Designed for 12V lead acid battery or 2-4 Series Li ion/LifePo4 Lithium batteries.
- 2) When used for Lithium battery,the controller can be restarted to charge by solar panel after the protection board is powered off.
- 3) Optimized circuits and procedures,to improve the stability of the system greatly.
- 4) It can adjust the power of load automatically by detecting the remaining capacity of the battery,which can extend the lighting time longer 90% compared with normal controllers.
- 5) With the function of 4 time frames power regulation, Users can dim LED lamps' output power.

- 6) The controller adopts fully sealed waterproof design. The IP grade reaches IP67. The controller can be used in the water.
- 7) This controller can withstand from -35℃ to 60℃ high and low temperature, so it can adapt to extreme temperature.
- 8) This controller can drop load's power automatically according to the left capacity of battery, and this feature helps the solar street light work for more days.
- 9) Automatic time controlling at dusk and dawn.

3. INSTALLATION

- 1) Connect the lamp to the controller;
- 2) Connect the battery to the controller. At the moment, the IDLE indicator is on. After 30 seconds, the lamp is turned on;
- 3) Connect the solar panel to the controller. If at daytime, after 70 seconds, the CHARGE indicator is on and the lamp will be turned off.

4. NOTES

- 1) The controller is wide voltage output. Before using the controller, make sure the LED light can match the controller.
- 2) Please connecting wires in order. Wrong wire connection lead to system's misjudgment and controller's damage.

5. INDICATORS

State	Idle (green)	Charge (green)	Discharge (red)	Remarks
Idle	on	off	off	Normal
Charge	off	on	off	Normal
Discharge	off	off	on	Normal
finish discharging	on	on	off	Normal
output end over power protection	off	on	Slow flicker	Abnormal. Check whether the output power is less than rated power.

Low voltage of Battery	on	on	Slow flicker	Normal
output end short circuit protection	off	off	Fast flicker	Abnormal. Check whether the lamp is connected right.
output end open circuit protection	on	on	Fast flicker	Abnormal. Check whether the lamp is connected right or the number of lamps is suitable.
Abnormal input voltage protection	on	Fast flicker	off	Abnormal. Check whether input voltage is higher than rated peak voltage.
Over current protection of Charging	off	Slow flicker	off	Abnormal. Check whether solar panel is out of the range of this model.
wrong model	Fast flicker	Fast flicker	Fast flicker	Abnormal. Reset right model No. or return to factory.
1) No flicker means OK; 2) Slow flicker (2 seconds) means recoverable error. There is no need to solve the error manually; 3) Fast flicker (0.5 seconds) means unrecoverable error. The error need to be solved manually.				

6. SPECIFICATIONS

Model	CLL1210LI-B
Working voltage	DC 5V-18V
Output voltage	Battery's peak volt plus 1V~50V
Self consumption	≤8mA
Max. charging current	10A
Max. output power	40W
Max. conversion efficiency	94%
Output current error	±3%
Output current	50mA - 2000mA (programmable)
Max. solar panel	170WP
Max. solar panel voltage	DC22V

Working temperature	-35℃ ~ 60℃
Charging mode	PWM mode
Working mode	Light controlling, time controlling, output current adjustable in 4 time intervals
Over-charging protection voltage	DC 5V-18V adjustable
Under voltage protection	DC 5V-18V adjustable
Exit under voltage protection	DC 5V-18V adjustable
Weight	150g
Size	55mm×77mm×18mm
Battery type	12V Lead acid Battery/2-4 Series Lithium Battery

7. APPLICATION

12V system for Lead acid battery: Solar LED light with max 30W LED light (LED should be 15V-50V)

12V system for Lithium battery: Solar LED light with max 30W LED light (2 Series Li ion/LifePo4); Solar LED light with max 40W LED light (3/4 Series Li ion/LifePo4).

8. SAFETY AND PROTECTION

Lightning protection, overcharge and over discharge protection, reverse polarity protection, reverse current protection at night, output end protection(open circuit, over current, over voltage, over power), and over temperature protection.

9. WARRANTY

Three years since the date of ex-factory.