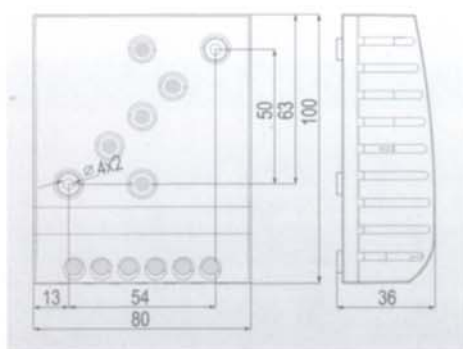




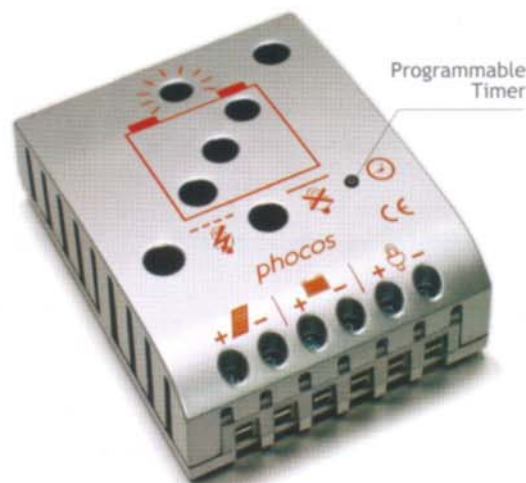
## CML Solar Charge Controller

Phocos CML series is one of the world's best-selling small solar charge controller. Over 250,000 CML controllers are currently in use in numerous projects around the world.

- High-efficiency charging process**  
 Temperature compensation, three stage PWM series charging method. Sealed or vented batteries may be used.
- Improved system indicators**  
 Five LEDs indicate the PV, battery, load status and malfunctions. Acoustic signal alerts user to potential system malfunctioning.
- Complete electronic protection**  
 Fully protected against reverse polarity, short circuit, overcurrent, overvoltage and reverse current flow at any of the controller terminals.



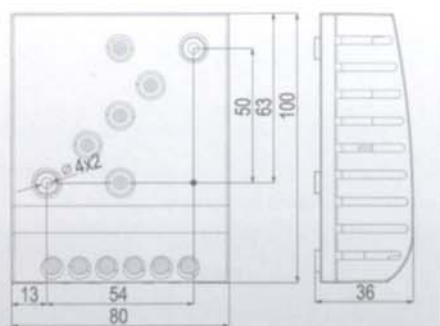
Technical Data	CML05/08/10/15/20
Nominal voltage	12/24V, automatic detection
Max. solar panel current	5A/8A/10A/15A/20A
Max. load current	5A/8A/10A/15A/20A
Overcharge protection	Constant voltage PWM series regulation: boost charge, float charge, optional equalization charge.
Overdischarge protection selectable LVD modes	11.4-11.9/22.8-23.8V controlled by state of charge(SOC) 11.0/22.0V controlled by fixed battery voltage
Ambient temperature range	-40°C to +50°C
Max. wire size	16mm <sup>2</sup> (AWG#6)
Self consumption	4mA
Weight	180g



## CMLNL Solar Charge Controller

Phocos CMLNL controller is a solar lighting controller for street lighting, parking lots and bus-shelters.

- Proven reliability**  
 CMLNL has the same electronic circuit and mechanical design as famous CML controller.
- Greater adaptability**  
 Day/night threshold (light on/off point) can be detected automatically and adjusted according to prevailing on-site conditions and solar module array type.
- Fully integrated programmable timer**  
 Adjustable for shorter periods of up to 12 hours, or from dusk to dawn for all-night applications.



Technical Data	CML05/08/10/15/20NL
Nominal voltage	12/24V, automatic detection
Max. solar panel current	5A/8A/10A/15A/20A
Max. load current	5A/8A/10A/15A/20A
Overcharge protection	Constant voltage PWM series regulation: boost charge, float charge, optional equalization charge.
Overdischarge protection selectable LVD modes	11.4-11.9/22.8-23.8V controlled by state of charge(SOC) 11.0/22.0V controlled by fixed battery voltage
Ambient temperature range	-40°C to +50°C
Max. wire size	16mm <sup>2</sup> (AWG#6)
Self consumption	4mA
Weight	180g
Button function	*Long push to program all nightlight function settings *Short push in the day to verify the correct installation of the system