

STAND ALONE SOLAR STREET LIGHT/PARK BENCH

CUORE MODEL



The CUORE solar streetlight/park bench combines a sensitive, esthetic architectural design with energy-efficient solar light generators. As such it is an innovative element of a sustainable urban landscape.

The Led luminary system is located at 4,5 meters above the ground thus maximizing illumination of the surrounding area while reducing associated luminous pollution.

The photovoltaic solar module uses a 0,9 sq. m. receptor panel fixed to an inclined structure at the apex of the streetlight. It generates 135 Wp of power.

The system works on 12 V direct current (DC) and is monitored through a two-level programmable regulator which uses an internal algorithm based on sunrise and sunset times throughout the year to optimize lighting periods at full or half power as needed.

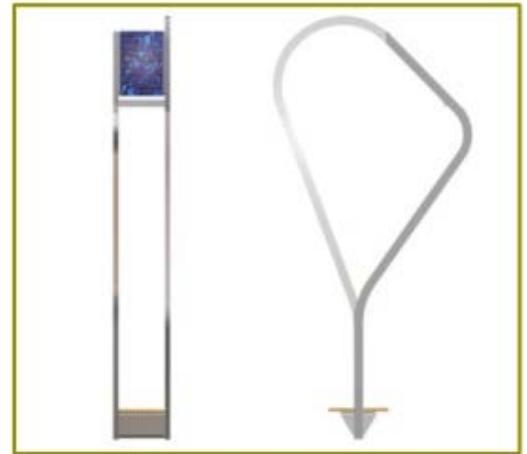
The energy generated during the daylight hours is accumulated in a set of two gel batteries for a total capacity of 200 Ah. The batteries are located in the base of the streetlight and used when natural light is weak or absent.

This autonomous lighting system makes it unnecessary to dig large ditches to connect the streetlight to an electric grid. It also makes it possible to provide lighting in isolated areas which don't have easy access to a grid.

Finally, the base of the structure is designed to serve as a comfortable two-seat park bench, making it ideal for public spaces, parks and gardens 🌱



Type of system	Stand alone photovoltaic lighting system
PV Installation PV Module:	Maximum power: 135 Wp Mono crystalline silicon
Batteries Regulation System	Gel Lead-calcium technology 12 V - 200 Ah (C100) MPPT
Structure	Galvanized steel and wood prepared for outdoor use
Luminary	LEDS system lamp, adjustable power 30W – 55W
Dimensions	Total height: 6100 mm Lamp height: 4500 mm Approximately weight: 250 kg



PHOTOVOLTAIC FIELD

The photovoltaic field consists of a mono-crystalline silicon module with a power of 135 Wp. The field converts the solar energy captured into DC (direct current) electrical energy.

REGULATING SYSTEM

The high quality dual level timer/regulator MPPT makes it possible to select a wide range of lighting duration times. The intensity of the light can be set to 100% or to 50% to save energy or permit longer periods of lighting.

The microcontroller uses an algorithm to calculate sunrise and sunset times throughout the year. This makes it possible, for instance, to set the streetlight for maximum illumination an hour or two before sunrise. Finally, the regulator controls the charge level of the batteries thus protecting them from excessive discharge.

ACCUMULATION SYSTEM

The accumulation system consists of two gel lead-calcium batteries. They require no maintenance and can withstand high discharge conditions. Their life span is above 1,500 cycles (4 years) for a nominal capacity of (C100) 200Ah.

ARCHITECTURAL CHARACTERISTICS

The design of the supporting structure takes into account esthetic, technical and functional aspects of the streetlight in order to optimize both energy generation and lighting of the surrounding area while minimizing maintenance.

The steel profiles maintain the capture field oriented south at an inclination of 45° to the horizontal, an efficient orientation for electricity generation under low light conditions (wintertime) ●

