

ECO-DISTRIC: SPEED SIGNALING AND SOLAR VIDEO SURVEILLANCE

This didactic solution makes it possible to understand, in a context of sustainable development, road signs and autonomous video surveillance in an eco-district.

Simulates a 20Km / h Xenon flashing light panel mounted on a mast with a CCTV camera.

Autonomous and fully low voltage 12Vdc, all run on solar energy.

Indoor (halogen fixed to the frame) or outdoor use.



Controller screen attached to the side of the cabinet

ref. SOL-EQ3

FREE TELEPHONE ASSISTANCE ON 05 56 89 91 07

DELIVERED WIRED AND CONFIGURED

TEACHING RESSOURCES STUDENTS / TEACHER

AUTONOMOUS WIFI NETWORK



EDUCATIONAL OBJECTIVES

- Study a flashing panel and solar energy.
- Study video surveillance in urban areas powered by solar energy.
- Commission a solar system.
- Discover the different solar panel technologies.
- Wire photovoltaic components.
- Perform electrical and mechanical maintenance on the mast.
- Use hand tools.
- Identify the different electrical quantities of a solar energy production chain.
- Calculate the efficiency of the installation.
- Configure communication on a Bluetooth (MPPT) and wifi (camera) network from a tablet or Smartphone
- Configure a photovoltaic installation from a tablet or smartphone.
- Configure an Ethernet IP network, between the camera and the Wifi Switch.

PROPOSED PRACTICAL WORK

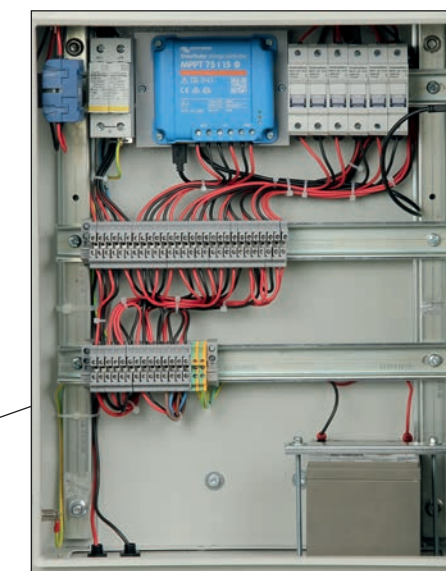
- Course on different solar panel technologies (Monocrystalline, Polycrystalline, Amorphous)
- Study on the positioning of solar panels for maximum efficiency.
- Mechanical fixing of the mast, the panel and the lamppost on the frame.
- Study of solar irradiation.
- Reminder on Direct, Diffused and Reflected solar radiation.
- Study and realization of the cabling of the solar energy chain on an isolated site.
- Reading of currents and voltages at different points of the wiring.
- Interpretation of measurements then calculation of yield.
- Calculation of the battery discharge time as a function of the load.
- Configuration of the application from a touchscreen tablet.
- Mechanical and electrical maintenance.
- Configuration of the Ethernet network, in view of the use of the camera in wifi



Dim : 710 x 800 x 1800mm. Weight: 60kg.



30Wp monocrystalline panel swivel for use interior with the 2 projectors supplied, outdoor with a natural solar source.



Battery box + charge regulator.

COMPOSITION

- 1 frame with wheels, very stable, passes easily between the doorways.
 - 1 traffic sign 20Km / h.
 - 2 flashing Xenon flashes.
 - 1 orientable camera connected in RJ45, communication protocol IP.
 - 1 monocrystalline photovoltaic panel of 30Wp fixed on an aluminum mast. The panel is adjustable. Allows outdoor use in good weather.
 - 2 halogens to be connected to a 2P + T mains socket make it possible to simulate solar radiation for indoor use of the model.
 - 1 MPPT (Maximum Power Point Tracking) load regulation system and electronic control of the device with twilight detection and programming by voltage level directly modifiable from a smartphone or touchscreen tablet. A recording of the voltages, currents and powers of the solar panel, battery and LEDS, in the form of data, can be retrieved by an application via a Bluetooth link (display in the form of a bar graph).
 - 1 screen connected to the regulator makes it possible to retrieve information from the MPPT locally.
 - 1 solar battery 12V / 14Ah.
 - 1 set of photovoltaic fuse holders.
 - 1 surge arrester.
 - 1 wifi switch
 - 1 RJ45 Ethernet cable of 3m
- Component connection made on industrial terminals to prevent component wear.



Requires download from Play store or Apple store of the free Victron Energy app.

Allows reading on tablet or smartphone:

- Voltage - Panel current / Power (W)
- Voltage - Battery current / Load current
- State On-Off charge

