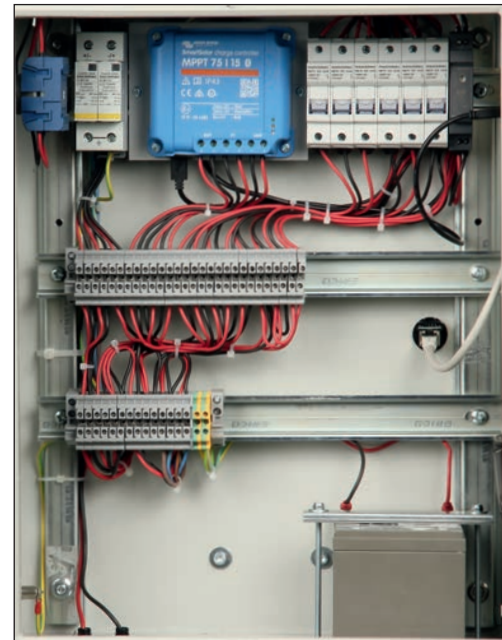
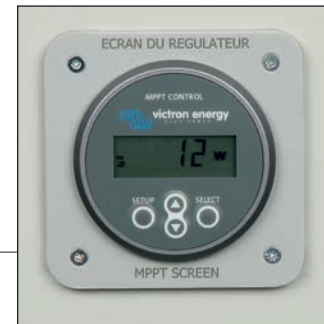
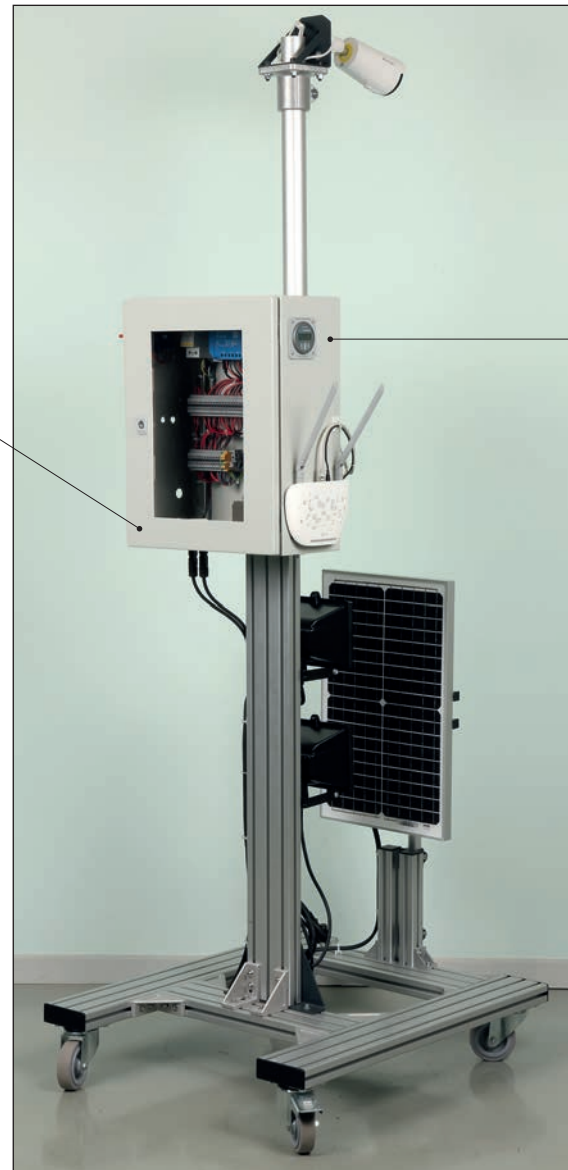


ECO-DISTRICT: AUTONOMOUS SOLAR VIDEO SURVEILLANCE



Battery box + charge regulator. Bluetooth.



Controller screen attached to the side of the cabinet

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

Dimensions : 710 x 800 x 1900mm. Weight: 55kg.

ref. SOL-EQ7

FREE TELEPHONE ASSISTANCE ON 05 56 89 91 07

DELIVERED WIRED AND CONFIGURED

TEACHING RESSOURCES STUDENTS / TEACHER

AUTONOMOUS WIFI NETWORK



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

This didactic solution makes it possible to understand, in a context of sustainable development, an autonomous CCTV camera in an eco-district.

Completely autonomous and entirely at low voltage 12Vdc, the assembly operates on solar energy thanks to a set of photovoltaic components. Indoor use (halogens attached to the frame) or outdoor, under certain conditions.

EDUCATIONAL OBJECTIVES

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

PROPOSED PRACTICAL WORK

- Course with theoretical labs on different solar panel technologies (Monocrystalline, Polycrystalline, amorphous), on solar radiation (Direct, Diffused and Reflected), on solar irradiation.
- Study of the positioning of solar panels for maximum efficiency.
- Mechanical fixing of the mast on the frame.
- 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 and 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.

COMPOSITION

- 1 wheeled frame with brakes, very stable. Sized for doorways.
 - A swiveling color camera connected to RJ45, IP protocol communication.
 - 1 monocrystalline photovoltaic panel of 30Wp fixed on an aluminum mast. The panel is adjustable for outdoor use.
 - 2 halogens to be connected to a 2P + E mains socket 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 editable from a smartphone or touchscreen tablet. A recording of 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 to retrieve information from the MPPT locally.
 - 1 solar battery 12V / 14Ah
 - 1 set of photovoltaic fuse holders.
 - 1 surge arrester.
 - A wifi switch
 - 1 RJ45 Ethernet cable of 3m
- Component connection made on industrial terminals to prevent component wear.