



windsol

renovables [®]



LIGHTING

Urban and Outdoor

*SOLAR, SOLAR-WIND AND HYBRID
(solar-wind-wire)*

TÁCTICAS
LOGÍSTICAS





windsol renewables develops and manufactures all products according to the needs of the project and the environment. We have our own development team to consider any problems and provide solutions.

- Adaptation to existing ornamentation.
- Lighting of pedestrian walkways.
- Integration of lighting systems in wooden structures.
- Customizing designs.
"Restyling" of the old lighting equipment for new solar energy installations, making maximum use of existing structures.
- Illumination of monuments, churches, etc. .
- Possibility of temporary facilities, which can be installed without any type of civil works.
- Maintenance of facilities.
- Take away projects.



The lighting systems for urban and outdoor illuminate **windsol renovables**, provide a versatile solution capable to be integrated into the urban surroundings, residential, industrial, sports and recreation and leisure uses. They are also useful to illuminate monuments, places of interest and wrapped.

windsol renovables lighting is a stand-alone system that require no electrical power. This point of view allows a great versatility and maximum benefit in your installation, minimizing civil works and environmental impact.

A stylized design allows easy integration with the environment, using the top area as base for the photovoltaic module, also, we put in the top all the elements that contains the complete management system and regulation. This characteristic increase the general efficiency of the system, the operation time of the lamp, the durability and storage charge optimization.

windsol renovables lighting has an innovative security system. The "SPB System" protect and ensure longer battery life, a key element in this type of solutions. Also, the "**SPB System**" regulates the on / off of light bulbs and adjusting the intensity of illumination to the state of battery charge every time.

All lighting products **windsol renovables** can be adapted to a mixed (solar-wind) or hybrid (solar-wind-wire) power. In the hybrid option, when we have deficits capture solar energy, an additional external energy supply, ensuring a return of 100%, regardless of the seasonal period, and the inclement weather.

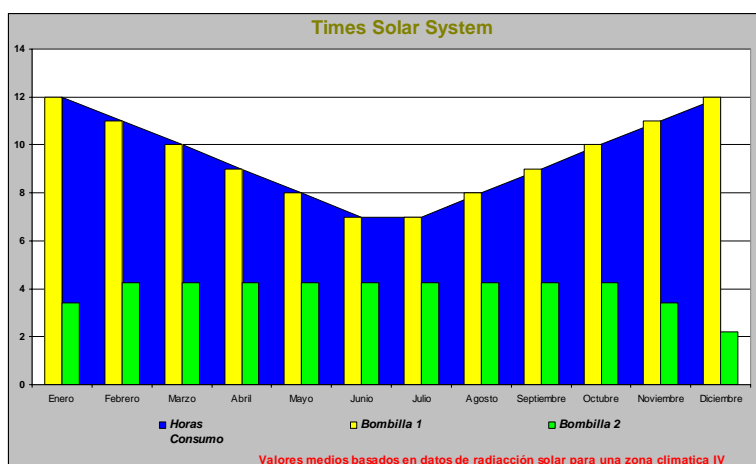
The types of lamps that we assemble to our solar lighting systems are of low consumption and include lamps of low pressure sodium, fluorescent or LEDs.



All lighting systems developed and produced by **windsol renovables** have control charges "**SPB System**". This module is developed for facilities or equipment where battery energy efficiency is a vital requirement, protecting the battery from big discharge and avoiding damages.

The operating principle is based on controlling outputs connected, so that depending on the battery charge level, the system will self-control the intensity of light projected.

In the case of luminaires with two lamps, the "**SPB System**", keep one or two light bulbs "on" depending of the charge state of the battery.



The contribution of "**SPB System**" is to ensure the charge / discharge cycles of the batteries avoiding big discharges.

Furthermore, the control "**SPB System**", can set the on / off operation according to the following options (see Table 1):

Table 1

	I (STANDARD CONFIGURATION)	II	III	IV	V	VI
Switch on	Getting Dark	Getting Dark	Getting Dark	Chosen Time	Chosen time	Chosen Time
Switch of	Daybreak	Chosen Running Time	Chosen Time	Chosen Running Time	Chosen Time	Daybreak

CHARACTERISTICS:



Charges regulator **SPB121** manufacture by **windsol renovables** is a equipment to control Light Solar Systems. Their use is focused on those systems where energy efficiency is very important. Their functions are optimally charging the battery during the day and protecting against deep discharge and lighting the lamp at night. The control will disconnect the several lights, according to the battery voltage.

The system regulates the battery charge and is programmed with twilight function. So, the sunset gives signal for the lamps are on, and when the sun appear by the morning, the lamps are switch off.

The device **SPB121** manages the lamps or lights areas for the LEDs systems according the battery charge. The operation is based on the control of up to four outputs connected with a defined priority. This circuit in controlled by a microprocessor that continually manages battery voltage.

The computer power is about 24VCC/12VCC.

The maximum power in each output is 30w.

Once dark, the system gives the signal and output are activated individually and will be lighting with a progressive control.

As the battery will be discharging, several zones will be disconnected according to next criteria:

Tensión Bateria	Nominal	Estado de lamparas
> 12,5 v.		Funcionan todas las lámparas. ●●●●
12,5 > 12 v.		Se desconecta una lámpara ●●●●
12 > 11,5 v.		Se desconectan dos lámparas ●●●●
11,5 > 11 v.		Se desconectan tres lámparas ●●●●
11 v		Se apaga la farola ●●●●

GENERAL CHARACTERISTICS

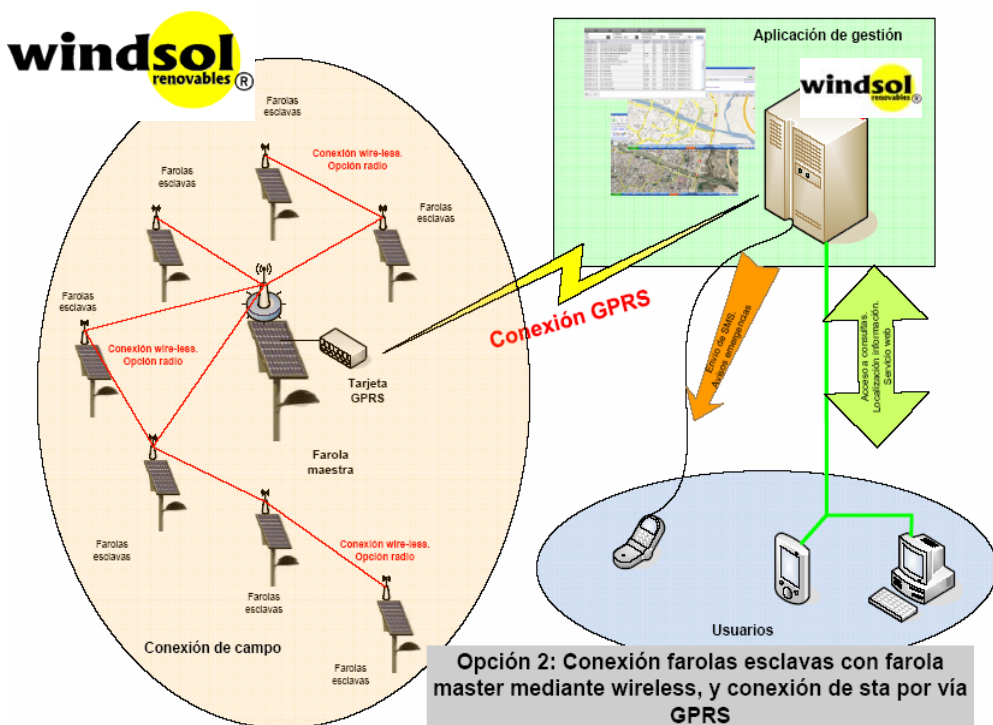
Voltage	VCC	12 / 24
Load Current Máx.	A.	10
Consumption Current Máx.	mA.	6
Votage full charge	V	13,7 / 27,4
Protecting Deep Discharge	V	11,1 / 22,2 (30%)
Output Power Máx.	W	90
Dimensions	mm.	150x105x60

Battery	Gel 12 / 24V
Light	VSBP / Fluor / LED
Control Type	Charge status
Twilight function	ON
Protection	IP 55

In this point, the system only will be ready, after a complete charge cycle, and night will come again.

The equipment has a protection IP55.

windsol renovables provides a remote maintenance system **“REMA”** which operates through its GPRS connection with all stand-alone lighting. This service offers customers the chance to know at any time the status of its facilities, as well as notices in the event of any incident.

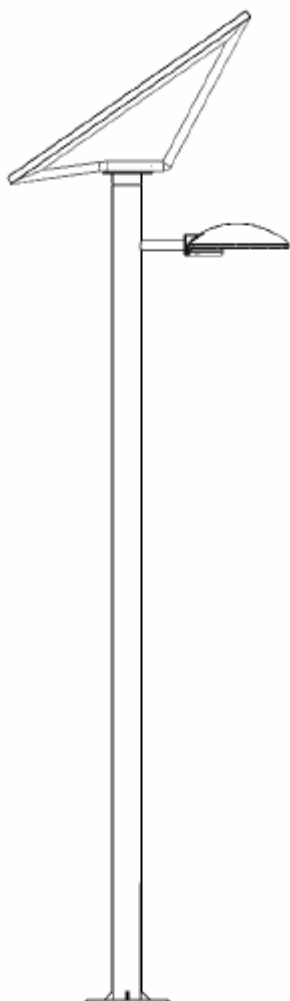


“REMA” sends information on the status of the equipment to a central management, which is available to customers. The information we receive will be:

- Consumptions lamps.
- Battery status.
- Capturing energy.

This information is recorded and managed, enabling our clients:

- Alerts to mobile devices (PDA, Mobile Phone)
- Web service query and reporting.



The *Collection “OVAL”* of solar lighting that offers **windsol renovables** is designed in carbon steel according to RD 2642/1985 and hot dip galvanized. The masts are truncated cone of circular cross-section of one piece. To prevent corrosion of the its entire surface is protected by hot-dip galvanized in accordance with the technical specifications of galvanized coatings in ISO 1461:99.

The luminaires are made of thermoplastic materials, which allows easy customization of the design in terms of shapes, colors and finishes. The support of the photovoltaic module has been designed to maintain soft and rounded forms. As the luminaire, it is also customizable.

The base of the solar panel, the control charges module and the accumulator, are located in a cabinet at the top of the mast, reducing the possibility of theft of components.

The design of soft lines of the *“OVAL”* is an optimal solution for any environment: walks areas, gardens, squares, private housing estates, sports areas, etc. ..



OVW30LD5

TECHNICAL CHARACTERISTICS:



ELECTRIC SYSTEM:

Photovoltaic Module	130w 12V
Batery	150Ah 12V
Timming charge (HSP)	3.5 hours
Lighting	30 hours

SANCTUARY LAMP:

Sealing:	IP 66
Impact strength:	IK 09
Aerodynamic drag	0.095
Weight	4 Kg.
Size	500 x 200 mm.
Color (*)	Metalic Grey
Materials	ABS+PMMA / PC
Power:	30w
Bulb:	LED
Color:	White
Lumens	3.600

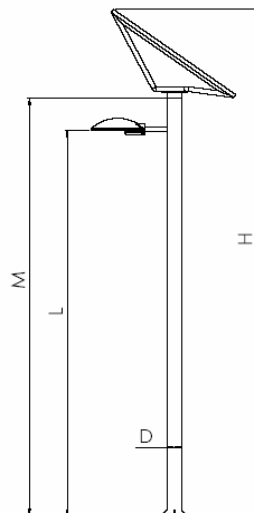
(*) Orders more than 100 units the color may be personalized.



MECHANICS:

- Galvanized Carbon Steel or Aluminium.
- Designed to support wind speed and snow charges as CTE-DB-SE-AE y EUROCODIGO 9.
- Stainless steel for bolts and nuts.

	L	H	M	D
OVW33LD4	4.700	5.870	5.000	185



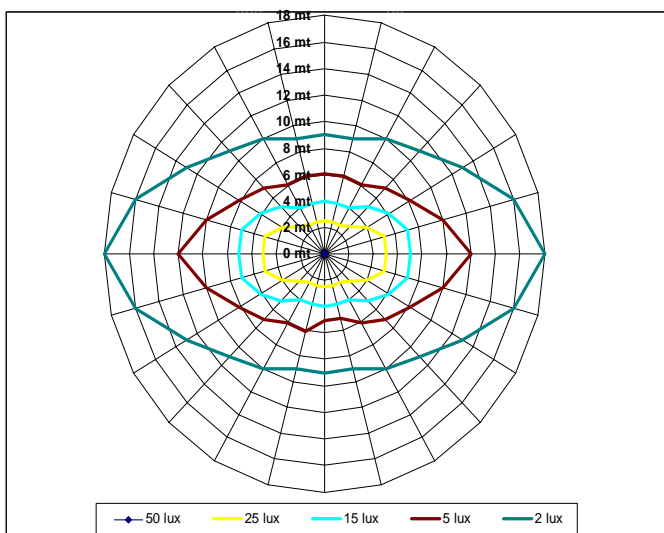


The LED lights manufactured by **windsol** renovables **OVAL** Series, are made of thermoplastic material, which allows easy customization of the design in terms of shapes, colors and finishes.

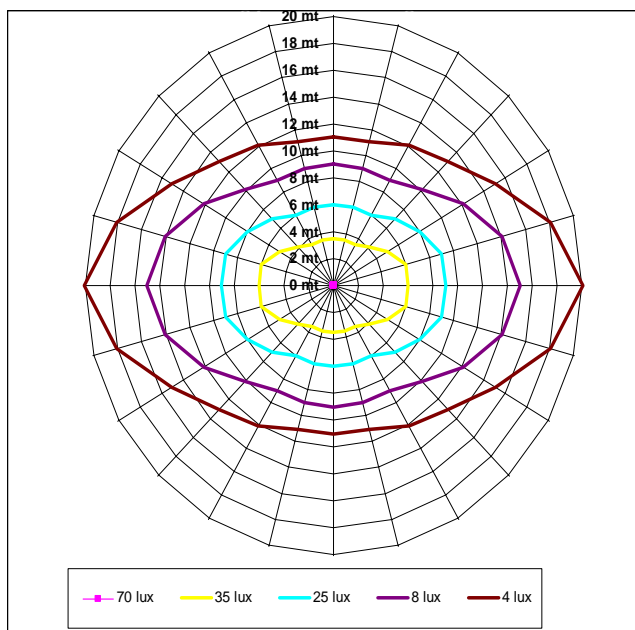
LED series OVAL

Power	w.	30	60	90
Voltage	v	12 / 24		
Light color	K.	2700 / 3200 / 6500		
Lumens	lm.	3000	6000	9000
Lux (4 mt.)	lx.	50	70	90
Illuminated area	Altura mt.	4	6	8
	Area mt.	18	22	30
Dimensions	mm.	500x500x120		
Weight	Kg	3	4	5
Cover material		ABS+PMMA		
Protection		IP65		

OVAL LED light fixture diagram 30w, 5 m height.



OVAL LED light fixture diagram 60w, 5 m height.



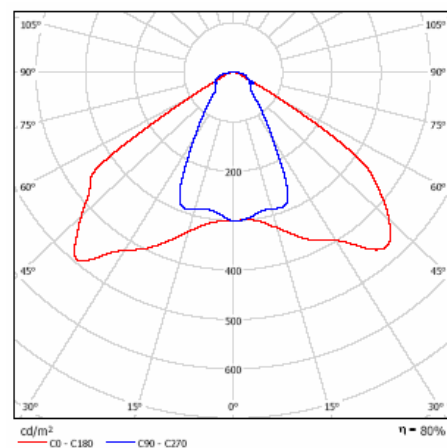


LED Luminaires **windsol** renewable URBAN series, are made of aluminum or galvanize carbon steel, providing a robust product ideal for outdoor environments.

It is composed by two independent modules of 28 w. LEDs each one, (56 w. total)

LED serie URBAN

Potencia Lumínica	w.	56
Tensión Nominal	v	12
Color	K.	Blanca
Lumenes	lm.	4.200
Lux (5 mt.)	lx.	25
Area Iluminada	Altura mt.	5 / 6 / 7
	Area mt.	18
Dimensiones	mm.	600x330x130
Peso	Kg	7
Material Carcasa		Aluminio
Protección		IP65



Collection "FIRST" of solar lamppost offers **windsol renovables** is designed in aluminum, a material with excellent resistance to corrosion, no maintenance and minimal weight.

The luminaires are made of thermoplastic materials, which allows easy customization of the design in terms of shapes, colors and finishes.

Its design allows for easy integration with various environments, using the top area as base of the photovoltaic module, we put in the top all parts that contain the control charges of module and battery.

Being located at the top of the support, there is not the possibility of theft of components, and prevents the deactivation of the system in case of hypothetical flooding. In this way, "FIRST" is an excellent solution for areas in banks of rivers, promenades and other areas with flood possibility.



FSW18FL3 / FSW18FL4 / FSW18FL5

TECHNICAL CHARACTERISTICS:

ELECTRIC SYSTEM:

Photovoltaic Module	85w 12V
Battery	85Ah 12V
Timming charge (HSP)	3.5 hours
Lighting range	30 hours



SANCTUARY LAMP:

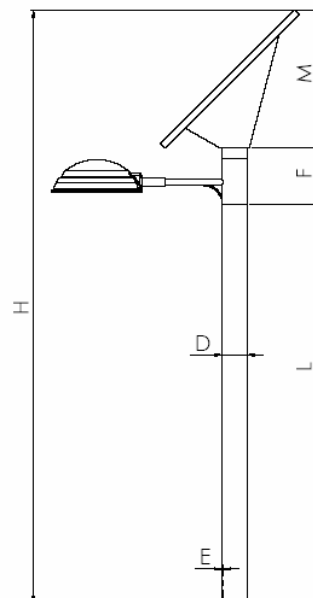
Sealing:	IP 66
Impact strength:	IK 09
Aerodynamic drag:	0.095
Weight	8 Kg.
Size	680 x 350 mm.
Color (*)	Metalic Grey
Materials	ABS+PMMA / PC
Power:	2 x 9w = 18w
Bulb:	Fluorescent
Color	White
Lumens	1.200

(*) Orders more than 100 units the color may be personalized.

MECHANICS:

- Aluminum Structure 6063 T5.
- Designed to suport wind speed and snow charges as CTE-DB-SE-AE y EUROCODIGO 9.
- Japaned Forging Grey .
- Stainless steel for bolts and nuts .

	L	H	F	M	D	E
FSW18FL3	3.000	4.300	430	858	185	5
FSW18FL4	4.000	5.635	430	1.193	185	5
FSW18FL5	5.000	6.693	488	1.193	185	5



FSW36VS3 / FSW36VS4 / FSW36VS5

TECHNICAL CHARACTERISTICS:

ELECTRIC SYSTEM:

Photovoltaic Module	130w 12V
Battery	150Ah 12V
Timming charge (HSP)	3.5 hours
Lighting range	30 hours



SANCTUARY LAMP:

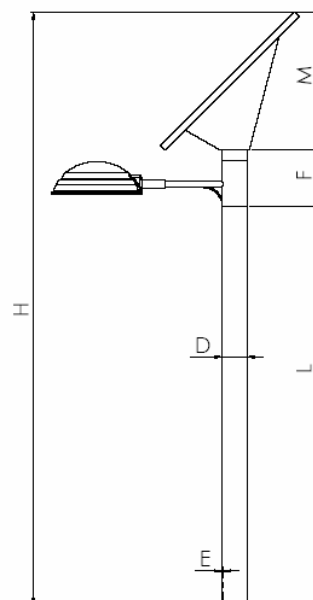
Sealing:	IP 66
Impact strength:	IK 09
Aerodynamic drag:	0.095
Weight	8 Kg.
Size	680 x 350 mm.
Color (*)	Metalic Grey
Materials	ABS+PMMA / PC
Power:	2 x 18w = 36w
Bulb:	Low pressure sodium
Color	Yellow
Lumens	3.600

(*) Orders more than 100 units the color may be personalized.

MECHANICS:

- Aluminum Structure 6063 T5.
- Designed to suport wind speed and snow charges as CTE-DB-SE-AE y EUROCODIGO 9.
- Japaned Forging Grey .
- Stainless steel for bolts and nuts .

	L	H	F	M	D	E
FSW36VS3	3.000	4.300	430	858	185	5
FSW36VS4	4.000	5.635	430	1.193	185	5
FSW36VS5	5.000	6.693	488	1.193	185	5



FSW36FL3 / FSW36FL4 / FSW36FL5

TECHNICAL CHARACTERISTICS:

ELECTRIC SYSTEM:

Photovoltaic Module	130w 12V
Battery	150Ah 12V
Timming charge (HSP)	3.5 hours
Lighting range	30 hours



SANCTUARY LAMP:

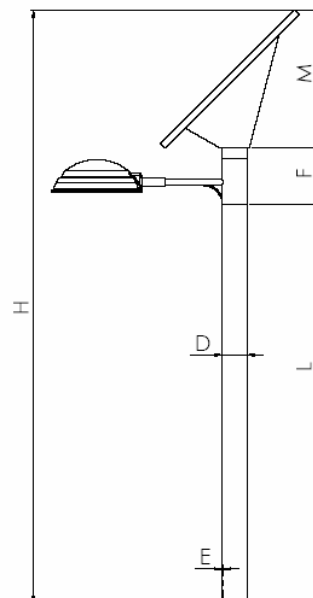
Sealing:	IP 66
Impact strength:	IK 09
Aerodynamic drag:	0.095
Weight	8 Kg.
Size	680 x 350 mm.
Color (*)	Metalic Grey
Materials	ABS+PMMA / PC
Power:	2 x 18w = 36w
Bulb:	Fluorescent
Color	White
Lumens	3.600

(*) Orders more than 100 units the color may be personalized.

MECHANICS:

- Aluminum Structure 6063 T5.
- Designed to support wind speed and snow charges as CTE-DB-SE-AE y EUROCODIGO 9.
- Japaned Forging Grey .
- Stainless steel for bolts and nuts .

	L	H	F	M	D	E
FSW36FL3	3.000	4.300	430	858	185	5
FSW36FL4	4.000	5.635	430	1.193	185	5
FSW36FL5	5.000	6.693	488	1.193	185	5



Collection "LIGHTline" for road signs offering by **windsol renovables** is designed in aluminum and polycarbonate.

The lighting systems are developed under LED technology.

They have anti-vandalism protection system.



CARACTERISTICAS TECNICAS:

Energy System:	Solar
Photovoltaic Module:	10 w.
Material:	Al and PC
Battery:	2x (12v/7.2Ah)
Leds:	Amber glow.
Lighting:	50 hours
Visibility:	1 km.
Size:	32x57 cm.

