

ROAD LIGHTING
SOLARSERIES

MORE THAN LIGHT

2020



ef ILUMINACIÓN VIAL SERIE SOLAR

Ecology and New Technologies (NTE) was born ten years ago with the commitment to offer lighting solutions that, thanks to LED technology, will help reduce energy consumption and thus CO2 emissions on our planet, always offering maximum light capacity .

Our experience in this field has resulted in the development of our **SOLAR SERIES**, a range of street lighting that combines the high quality of our **EFFICIENCY** products with the energy autonomy of the **SOLAR KIT**, making it a 100% sustainable luminaire.



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the most respectful lighting with the environment

WWW.NTESISTEMAS.ES



The SOLAR NTE KIT takes advantage of the latest technology to transfer the benefits of clean and sustainable solar energy to LED street lighting

Lighting that does not pollute. The solar kit produces 100% of the energy needed for the luminaire, transforming the sunlight captured by the panel into electricity that is stored in the batteries. All this without making any emission of CO2 into the atmosphere, so that the environmental balance is preserved.

In the same way, our range of road luminaires provides maximum efficiency and ensures minimal light pollution, with an ULOR of > 1%.

Illuminate where the electrical network does not reach. It is a completely autonomous assembly, so it can be installed in isolated places where there is no access to the electrical network.

Savings in installation costs. As it is not necessary to connect to the electricity grid, the total cost of the whole installation is significantly reduced compared to a normal installation.

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KIT SOLAR DETEC

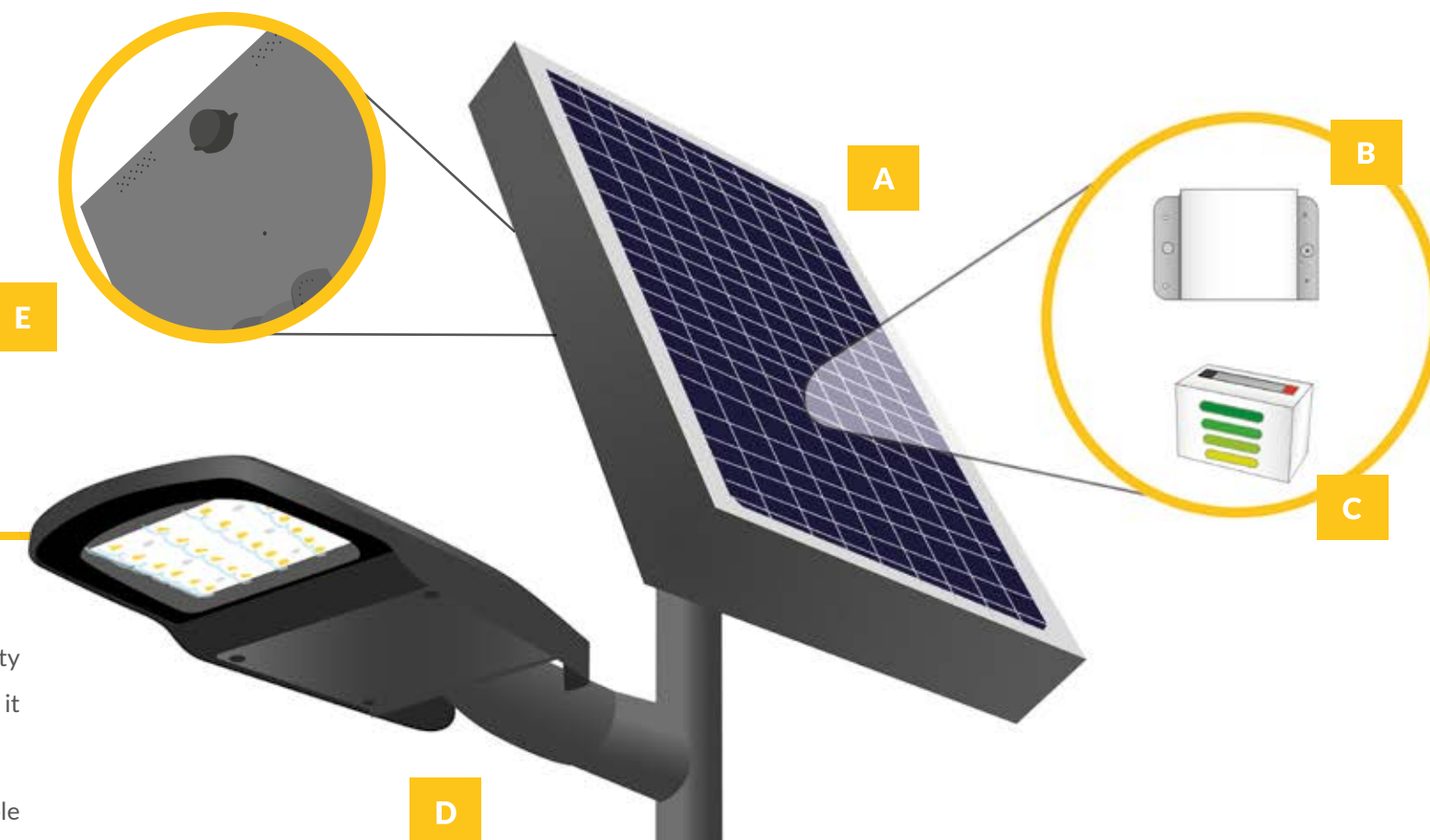
KIT SOLAR

kit solar

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The compact **NTE** solar kit consists of a photovoltaic panel, high capacity, low-capacity lithium-ion battery, great durability (5 years minimum life) and IP66. In addition, it includes a charge controller and the option to install a presence sensor.

It is compatible with high-efficiency Efficiency road luminaires, through simple mounting on a post top on any standard 60-70mm post or arm. Up to 5 days of operation depending on model and applied regulation pattern.



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SYSTEM COMPONENTS

A. SOLAR PHOTOVOLTAIC PANEL

Turns solar radiation into an electric current.

B. SOLAR LED DRIVER

Regulates the current going from the solar panel to the batteries and from the batteries to the LED luminaire.

C. BATTERIES

They store the electrical energy produced by the solar panel and power the luminaire in the absence of natural light.

D. LED LUMINAIRE

High efficiency LED luminaire, with constant current driver powered from the battery.

E. MOTION SENSOR (OPTIONAL)

Detects movement by presence making the luminaire increase luminosity, dramatically increasing its autonomy.



how does it work?

regulation profile with motion sensor

Charge time	<5 hours
Controlers - MPPT	Motion sensor 3 configurable leaps
Duration time of the system with motion sensor	up to 3 days

The Solar Detec Kit has a motion sensor. The system reduces light intensity and consumption, during periods of time when the sensor does not pick up movement. Also includes a charge controller.

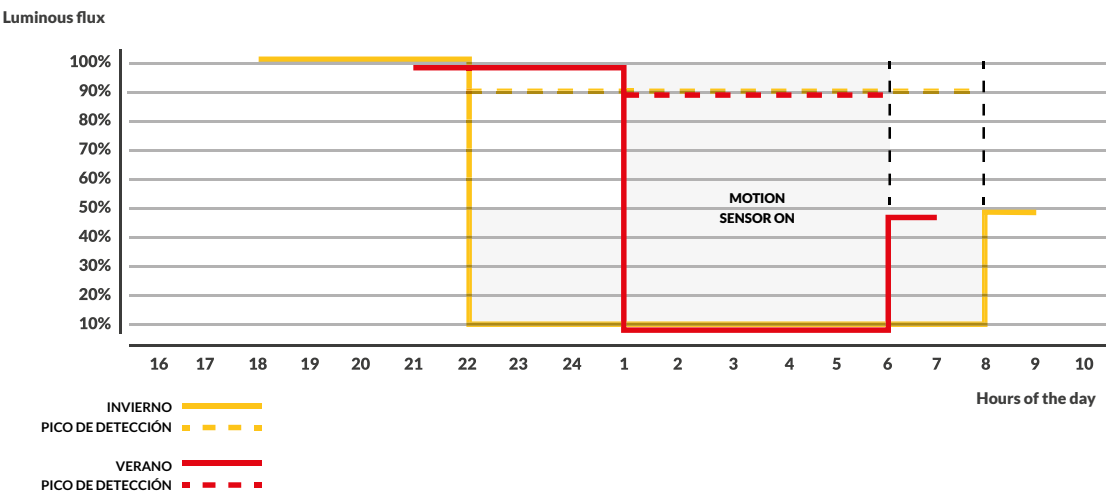
The system is scaled for more than two days duration with less than 5 hours charge time. The luminaire will automatically turn on below the minimum solar radiation value (twilight sensor).

As long as it does not detect presence, it will carry out the regulation curve without detection.

The automatic summer-winter change adjusts working hours at different levels of regulation.



STANDARD EXAMPLE



The system starts according to the established schedule. In the example shown, the luminaire turns on at 100% operation and after 4 hours it goes to 90% light with the action of the motion detector. The motion detector can be set to 10% at the time of non-detection, which would rise to 90% upon presence detection with a configurable courtesy time of up to 200 seconds. In the example, the last hour is set to 50% no detection.

The luminaire will automatically turn off when the minimum solar radiation is exceeded, and it is not necessary to complete the curve.

conectivity

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The luminaires with motion sensor, regardless of their technology, are not suitable for inter-urban roads in which there is moderately fast traffic, being common in pedestrian areas or bicycle lanes.

This limitation is given by the height / opening ratio of the sensor and is not recommended for sections over 25km / h, although a correct performance would require its evaluation in each case.

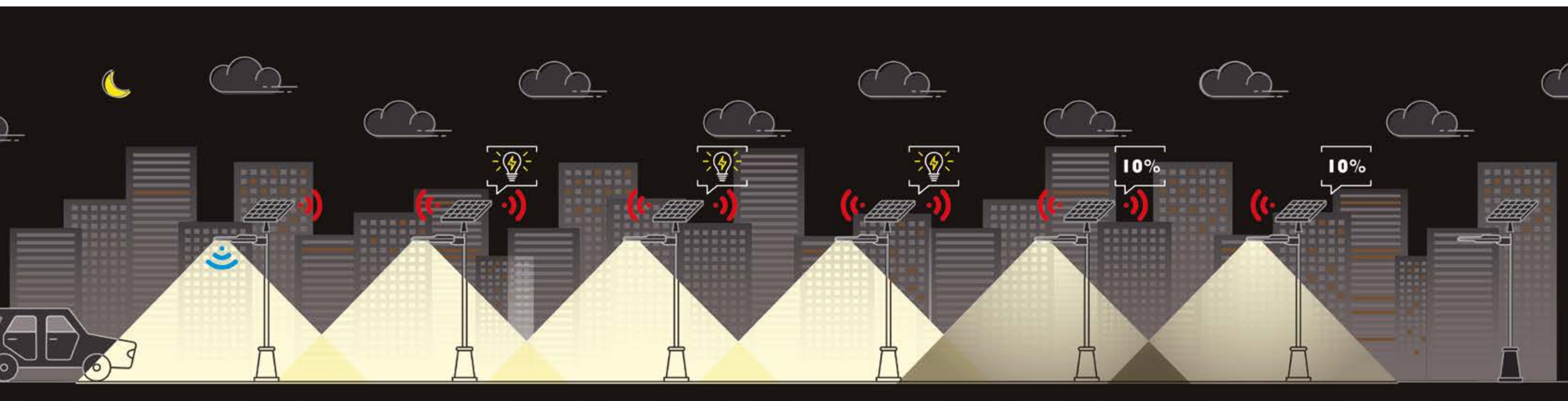
From **NTE** we offer the integral solution to this problem with an encrypted wireless communication system between the solar kits, valid for one-way and two-way routes. This resource allows the

system, after the detection of one of the motion sensors, to activate the lighting of successive luminaires covering up to a total of 250 m, depending on the distance between the posts.

For this, **NTE** uses MESH network technology by radio frequency, allowing all solar luminaires in a single installation to communicate with each other wirelessly without the need to add signal repeaters and avoiding the eventual loss of data in the event of a power failure. any of the points.

In addition, it is easily expandable in the event that the installation of the luminaires is carried out in different batches.

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app control

NTE has developed its own application compatible with Android / IOS systems designed for the end user. The application, together with a small USB receiver that connects directly to the mobile terminal, will allow users to communicate individually with each of the luminaires. In this way, the user will be able to access the data collected by the luminaire during its hours of operation, as well as customize the configuration parameters of the complete solar kit, including the presence sensor.

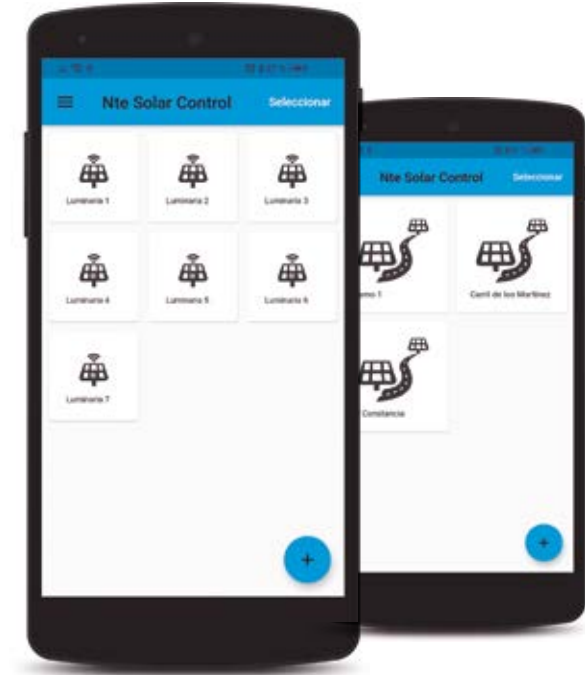


OPERATING MODES

- Synchronize all lights to operate identically.
- Change the times and powers of the 3 available operating periods.
- Set Summer / Winter hours.
- Define the way the motion sensor(s) will operate.
- Identification of the direction(s) of the road.
- Different programming preset or added by the user.

DATA COLLECTED BY THE LUMINAIRE

- Number of times the motion sensor has been activated.
- Maximum activation time of the motion sensor.
- Average activation time of the motion detector.
- Total lighting time of the luminaire.
- Lack of battery failure.



regulation profile without motion sensor



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Charge time	<5 hours
Controlers - MPPT	5 configurable leaps
Duration time of the system without motion sensor	up to 5 days

The luminaire will automatically turn on below the minimum solar radiation value (twilight sensor).

The system is scaled for a duration of more than two days with a charging time of less than 6 hours in the worst case.

The automatic summer-winter change adjusts working hours at different levels of regulation.

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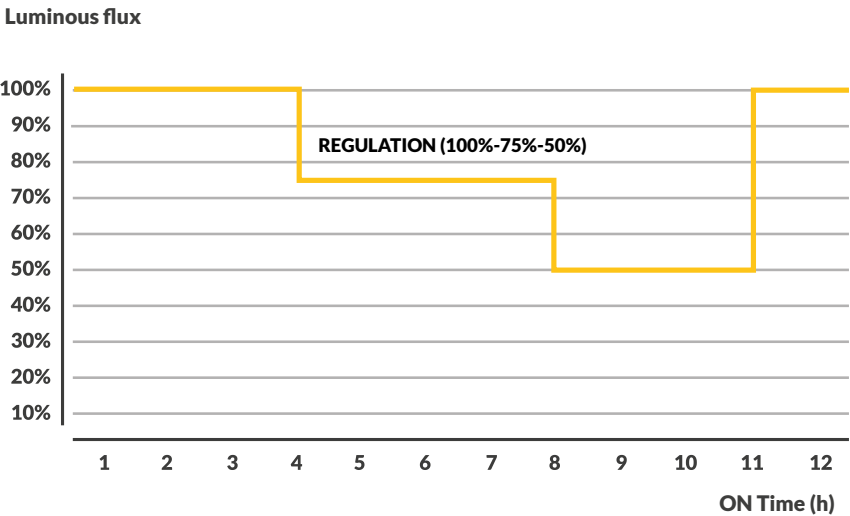
The luminaire will automatically turn on when it does not exceed the minimum solar radiation.

The system starts according to the established schedule. In the example shown, the luminaire starts at 100% operation and after 4 hours it goes to 75% light, 4 hours later it goes to 50% and at dawn, it would rise to 100% lighting. This programming is optional, designed for a longer duration of the system.

The luminaire will automatically turn off when the minimum solar radiation is exceeded, and it is not necessary to complete the curve.

▶ SAVING MODE

STANDARD EXAMPLE



In all cases, when the battery charge is below the critical charge point, the luminaire enters Economy Mode, gradually reducing the intensity, in order to avoid complete discharge of the battery.

KIT SOLAR MODELS

KIT SOLAR 4K



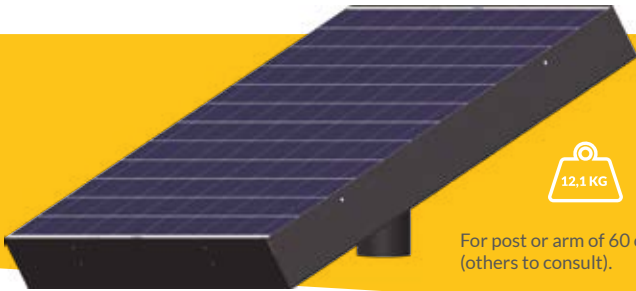
9.8 KG
For post or arm of 60 cm
(others to consult).

Size:
678x419x82 mm

	CHARGE TIME	NTE COMPATIBLE MODELS		DURABILITY*
KIT SOLAR 4K WITH SENSOR MOTION	~5h	PULSAR 4K GEF4K LEF 4K	LEF -LT 4K Round 4K	3 nights
	CHARGE TIME	NTE COMPATIBLE MODELS		DURABILITY**
KIT SOLAR 4K WITHOUT SENSOR MOTION	~5h	PULSAR 4K GEF4K LEF 4K	LEF -LT 4K Round 4K	1 nights

RECOMMENDED MODELS

KIT SOLAR 6K



12.1 KG
For post or arm of 60 cm
(others to consult).

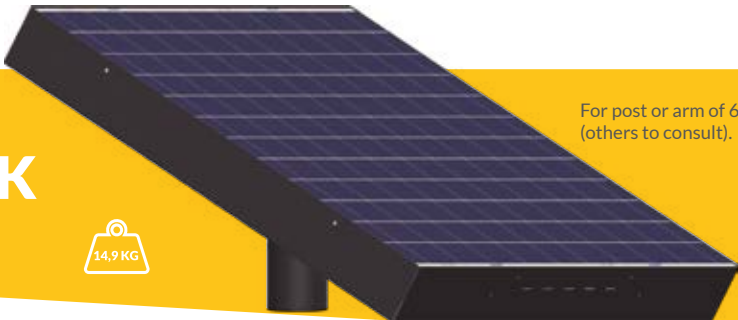
Size:
678x771x82 mm

	CHARGE TIME	NTE COMPATIBLE MODELS		DURABILITY*
KIT SOLAR 6K WITH SENSOR MOTION	~5h	PULSAR 6K GEF6K LEF 6K	LEF -LT 6K Round 6K	3 nights
	~5h	PULSAR 4K GEF4K LEF 4K	LEF -LT 4K Round 4K	4 nights
	CHARGE TIME	NTE COMPATIBLE MODELS		DURABILITY**
KIT SOLAR 6K WITHOUT SENSOR MOTION	~5h	PULSAR 6K GEF6K LEF 6K	LEF -LT 6K Round 6K	1 night

RECOMMENDED MODELS

* Maximum duration time that the kit with a full-load motion sensor would maintain, based on 12-hour nights, with a 15% sleep regulation profile and 15% / 100% operating without courtesy hours for an occupancy route of 30% of the night.
** Maximum duration time that the kit would maintain without a full-load motion sensor, based on 12-hour nights, with a 4-step regulation profile 4h 100% - 4h 70% - 3h 50% - 1h 100% for one way occupation of 30% of the night.
Battery life greater than 5 years for a maximum decay of 25%.

KIT SOLAR 8K



14.9 KG
For post or arm of 60 cm
(others to consult).

Size:
678x836x82 mm

	CHARGE TIME	NTE COMPATIBLE MODELS		DURABILITY*
KIT SOLAR 8K WITH SENSOR MOTION	~5h	PULSAR 8K GEF 8K LEF 8K	LEF -LT 8K Round 8K	3 nights
	~5h	PULSAR 6K GEF 6K LEF 6K	LEF -LT 6K Round 6K	4 nights
	CHARGE TIME	NTE COMPATIBLE MODELS		DURABILITY**
KIT SOLAR 8K WITHOUT SENSOR MOTION	~5h	PULSAR 8K GEF 8K LEF 8K	LEF -LT 8K Round 8K	1 night
	~5h	PULSAR 4K GEF4K LEF 4K	LEF -LT 4K Round 4K	2 nights

RECOMMENDED MODELS

KIT SOLAR 12K



21 KG
For post or arm of 60 cm
(others to consult).

Size:
1300x730x82 mm

	CHARGE TIME	NTE COMPATIBLE MODELS		DURABILITY*
KIT SOLAR 12K WITH SENSOR MOTION	~5h	PULSAR 12K GEF 12K LEF 12K	LEF -LT 12K Round 12K	3 noches
	~5h	PULSAR 8K GEF 8K LEF 8K	LEF -LT 8K Round 8K	4 noches
	CHARGE TIME	NTE COMPATIBLE MODELS		DURABILITY**
KIT SOLAR 12K WITHOUT SENSOR MOTION	~5h	PULSAR 12K GEF 12K LEF 12K	LEF -LT 12K Round 12K	1 noche
	~5h	PULSAR 4K GEF 4K LEF 4K	LEF -LT 4K Round 4K	4 noches

RECOMMENDED MODELS

recommended NTE models

PULSAR



MODEL	WATTS	LUMENS	EFFICIENCY
PULSAR 4K	24 W	4.084 lm	170 Lm/W
PULSAR 6K	36 W	6.467 lm	180 Lm/W
PULSAR 8K	48 W	8.169 lm	194 Lm/W
PULSAR 11K	62 W	11.672 lm	189 Lm/W

LEF



MODEL	WATTS	LUMENS	EFFICIENCY
LEF 9K	48 W	9.297 lm	194 Lm/W
LEF 12K	72 W	12.933 lm	180 Lm/W

LEF-LT



MODEL	WATTS	LUMENS	EFFICIENCY
LEF-LT 4K	24 W	4.084 lm	170 Lm/W
LEF-LT 6K	36 W	6.467 lm	180 Lm/W
LEF-LT 9K	48 W	9.297 lm	194 Lm/W
LEF-LT 12K	72 W	12.933 lm	180 Lm/W

GEF



MODEL	WATTS	LUMENS	EFFICIENCY
GEF 6K	36 W	6.467 lm	180 Lm/W
GEF 9K	48 W	9.297 lm	194 Lm/W
GEF 12K	72 W	12.933 lm	180 Lm/W

ROUND



MODEL	WATTS	LUMENS	EFFICIENCY
ROUND 25	25 W	4.222 lm	169 Lm/W
ROUND 35	35 W	6.320 lm	181 Lm/W
ROUND 50	50 W	9.613 lm	192 Lm/W
ROUND 70	70 W	12.641 lm	181 Lm/W

instalation example

Example with PÚLSAR 6K SOLAR

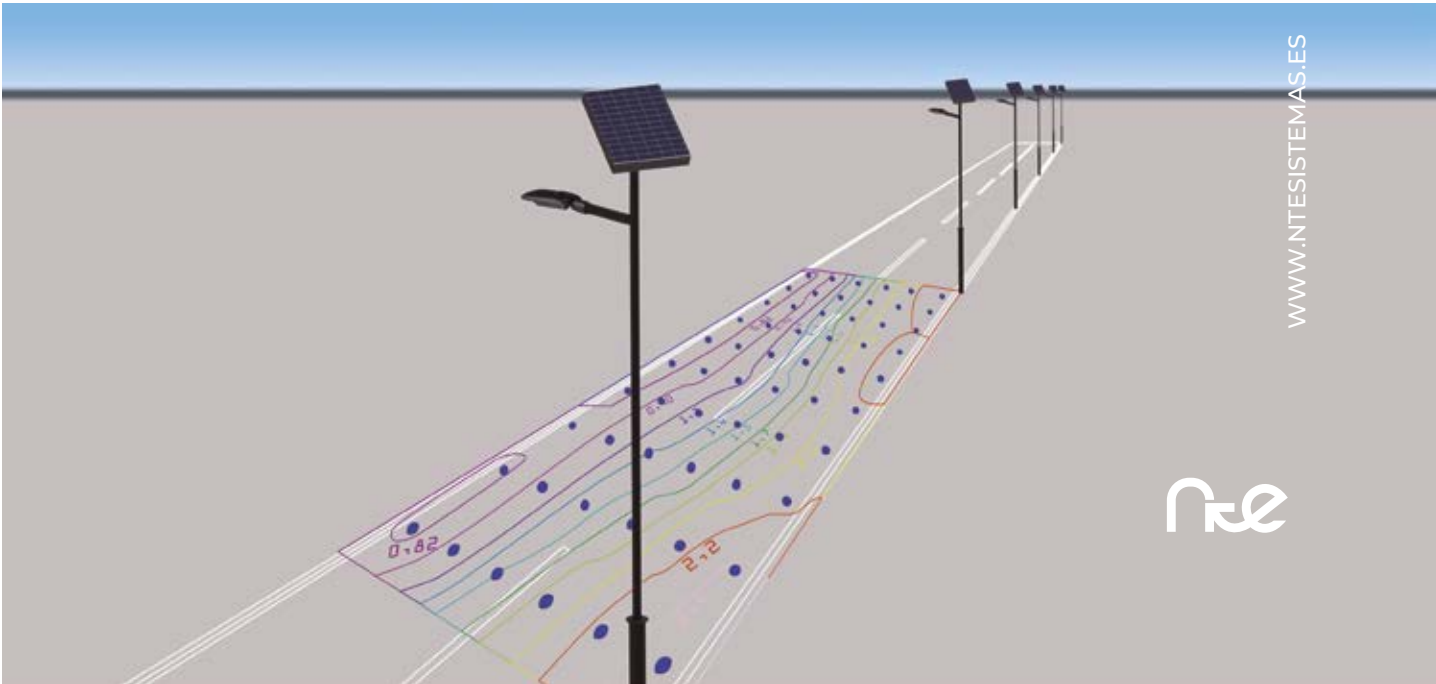
It works in perfect conditions with an interdistance of 20 meters between unilateral luminaires with a height of 8m to justify the ME4a regulations.

	Size	Calculated	Nominal
Road 1 (ME4a)	L _m	1.29 cd/m ²	≥ 0.75 cd/m ²
	U _o	0.60	≥ 0.40
	U _l	0.93	≥ 0.60
	TI	9 %	≤ 15 %
	SR	0.53	≥ 0.50

Example with PÚLSAR 8K SOLAR

It works in perfect conditions with a spacing of 25 meters between unilateral luminaires with a height of 8m to justify the ME4a regulations.

	Size	Calculated	Nominal
Road1 (ME4a)	L _m	1.31 cd/m ²	≥ 0.75 cd/m ²
	U _o	0.61	≥ 0.40
	U _l	0.89	≥ 0.60
	TI	10 %	≤ 15 %
	SR	0.53	≥ 0.50





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Ecología y Nuevas Tecnologías S.L.

Avda. de Lorca 193, Nave 3
30835 Sangonera la Seca (Murcia) Spain
+34 902 509 095 / +34 968 806 612

www.ntesistemas.es