

# SensyCity®



Sensing ecosystem for outdoor lighting

# Maximising energy savings w safety & the nighttime enviro

## SENSYCITY,

A COMMUNICATING SENSING  
AND DIMMING ECOSYSTEM  
FOR OUTDOOR LIGHTING

Smart  
and **standalone**,  
it enables the main  
**street lighting issues**  
of communities  
to be addressed.



### CONTROL ENERGY CONSUMPTION

Outdoor lighting  
represents up to  
**40%** of city  
electricity expenses.



### BIODIVERSITY AND SUSTAINABLE DEVELOPMENT

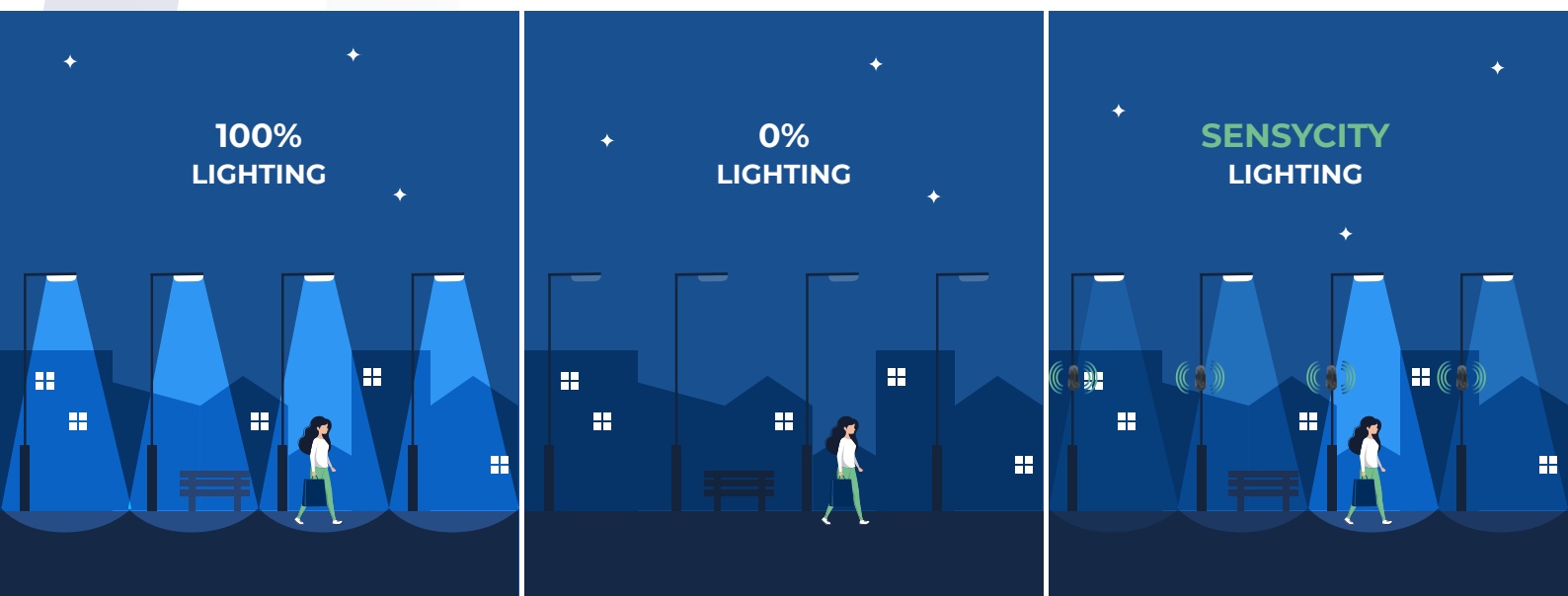
Reducing carbon impact and  
protecting nocturnal fauna  
and flora by combatting light  
pollution.



### COMFORT & WELL-BEING

Guaranteeing service  
quality and safety.

# While maintaining environment



**Savings**



**Safety**



**Light  
pollution**



## SensyCity adapts lighting levels to activity and user needs

### Savings

Energy savings at night  
(mainly during low activity  
periods).

### Safety

For people and goods  
in the street at night.

### Light pollution

Citizens, plants and animals  
that could be disturbed by  
light pollution.

# SensyCity, an answer to the new needs of towns and

**LIMITING**  
light  
pollution

**PROMOTING**  
active modes  
of mobility  
at night

**BETTER**  
visibility at night

**PROVIDING  
PROTECTION**  
on cycle lanes

**IMPROVING**  
the well-being  
of users

**PROVIDING  
PROTECTION**  
for pedestrian  
crossings

# cities

**BETTER**  
monitoring of  
isolated  
locations

**CREATION**  
of unlit areas

**DYNAMIC  
STANDALONE**  
lighting

**PROVIDING  
PROTECTION**  
for public  
transport users

...

## SensyCity helps cities and territories to:

- Ensure the **SAFETY** of users of soft and active mobilities
- Ensure **ATTRACTIVENESS** of the cities and territories
- Optimise **BUDGETS** of investments and operations
- Reduce **CONGESTION** and its environmental **IMPACTS**



**20 years**  
**OF EXPERIENCE**

in smart lighting



**25,000**  
**DEVICES**

installed since 2015



In more than

**800**  
**CITIES AND  
PRIVATE SITES**



In

**France**

**AND IN EUROPE**



# SensyCity, an answer to the environmental challenges of outdoor lighting

In addition to energy savings, SensyCity makes it possible to **significantly limit the environmental impacts** of lighting installations equipped with its devices.



## THE RIGHT AMOUNT OF LIGHTING

Adapts lighting to activity and user needs



## LIMITING LIGHT POLLUTION

Enables unlit areas to be created



## ENERGY SAVINGS

Permits the RES-EC-03 Energy Saving Certificate to be obtained

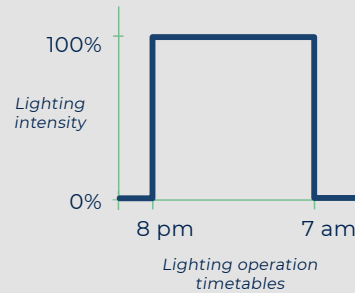


Up to  
**96%\***  
SAVINGS

\* Measurements carried out on 4 pilot sites in the Agen conurbation, equipped with LEDs vs. previous FB installations (fluorescent bulb)/dimming scenario of reduction to 20% + 100% boost on detection with SensyCity.

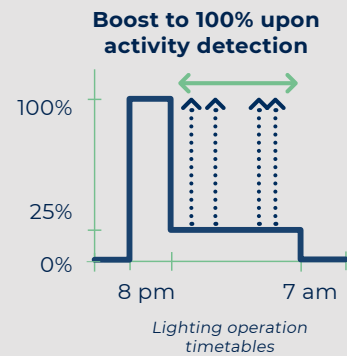
## Environmental benefits, Contamines-Montjoie example\*

Without **SensyCity®**



- 64 LED lights (69W)

With **SensyCity®**



- 64 LED lights (69W)
- 32 SIR + 16 NOD
- Boost to 100% on detection of activity
- Dimming to 25% when no activity detected

### ENVIRONMENTAL ASSESSMENT OVER 15-YEAR LIFE CYCLE

#### Power consumption



Annual average  
per French household = 4,944kWh

Without **SensyCity®**

265,781kWh

= 54 years of average  
consumption by a French  
household

With **SensyCity®**  
1 hour cumulative  
boost per night

138,694kWh

= 28 years of average  
consumption of a French  
household  
(i.e. 127,088kWh saved)

-48%

#### Water consumption



1 Olympic-size pool  
= 2,500m³

685,000m³

= 274 Olympic-size pools

362,000m³

= 145 Olympic-size pools  
(i.e. 323,000m³ saved)

-47%

#### Equivalent CO<sub>2</sub>



1 flight from Paris to New York  
= 717kg CO<sub>2</sub> eq.

28,900kg CO<sub>2</sub> eq.

= 40 Paris – New York flights

15,800kg CO<sub>2</sub> eq.

= 22 Paris – New York flights  
(i.e. 13,100kg CO<sub>2</sub> eq. saved)

-45%

\*Methodology available on request

# SensyCity, a communicating ecosystem for outdoor lighting adjustment

## Innovative solution

**SensyCity** allows light to be adjusted using **local, real-time wireless communication** between lighting points. Able to accommodate the various sensors of the city, SensyCity is highly **interoperable**.

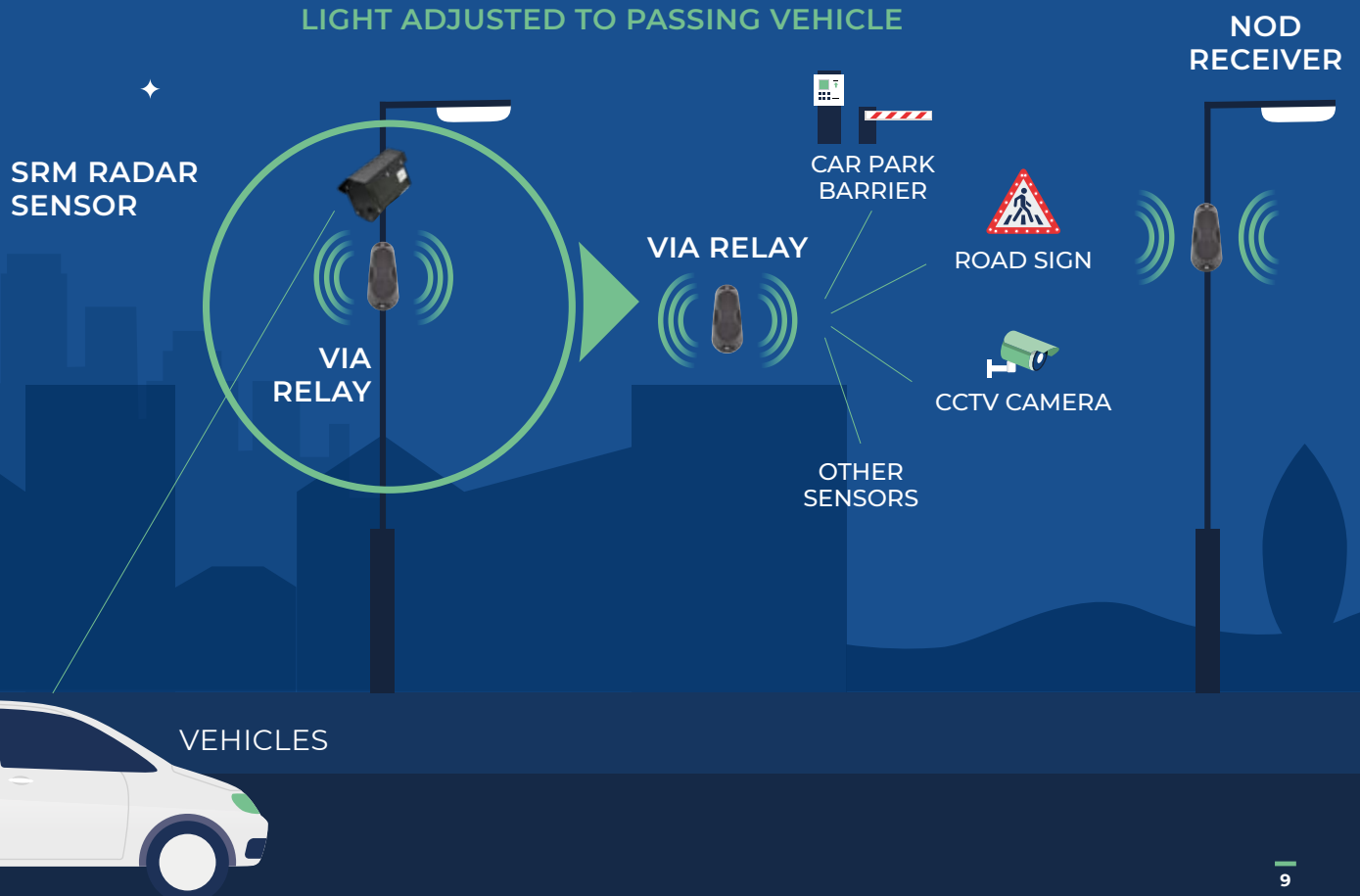
### DETECTION OF PEDESTRIANS AND BICYCLES





## DETECTION THROUGH VARIOUS SENSORS

EXAMPLE  
LIGHT ADJUSTED TO PASSING VEHICLE



# SensyCity, a scalable ecosystem for the Smart City

## VIA: the key to the smart city

The VIA relay enables **the city's various professions** to connect with the SensyCity detection ecosystem so that street lighting can be adjusted and optimised using the information received from different sensors.

### WORKS BOTH NIGHT AND DAY!

Making use of City Activity know-how, VIA is also **interoperable with LACROIX road safety and traffic management equipment.**



**Lx3 Link**  
ILLUMINATED SIGN



**EcoCam**  
SMART AND  
STANDALONE  
CAMERA



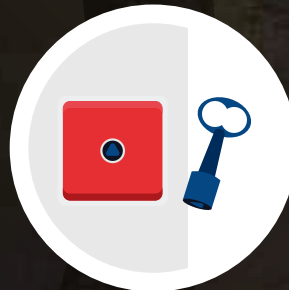
**RADAR**  
for vehicle  
detection



**RADAR**  
for other types  
of detection



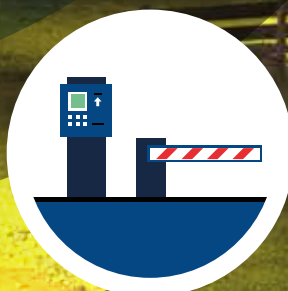
**CCTV  
CAMERA**



**FIREFIGHTER  
KEY**



**PUSH  
BUTTON**



**CAR PARK  
BARRIER, ETC.**



# SensyCity, a local ecosystem for smart control of lighting points





## Local intelligence, simple to program and easy to deploy

The SensyCity app can be used to prepare different lighting scenarios and programme up to 5 dimming levels per night, offering a simple solution for smart control of light points.

**Tegis®**  
**compatible**  
for connected lighting  
management.

# SensyCity, dedicated sensing for outdoor lighting



## EASY to install

**Easy to implement:** wireless long-range communication avoids complex wiring on all existing installations.

**Mounting on any shape of pole,** any diameter  $\geq 60\text{mm}$ , or on facade.

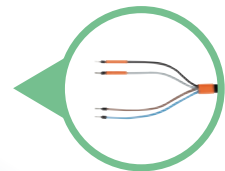
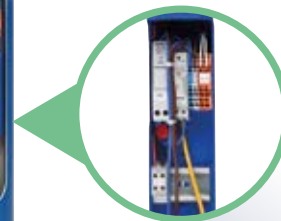
**Simple connection** at the bottom of the pole, pre-cabled (5 metres).

Integrated **230V mains or 9-30V** power supply for standalone solar pole.



## “PLUG AND PLAY” PACK

with complete modules or junction boxes for even **greater simplicity**.



## EASY to program

**SensyCity intuitive client interface:** group light points and configure them in just a few clicks.

**Wireless setup** of the entire installation.

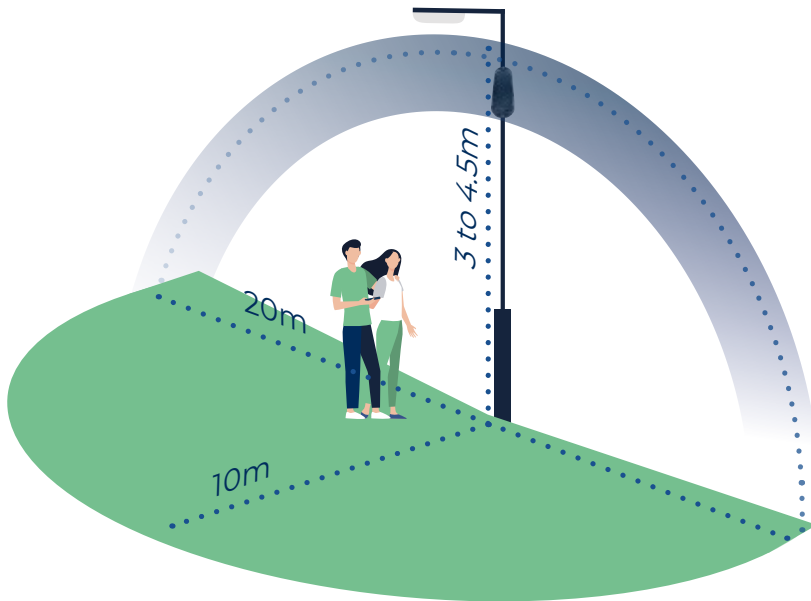
**Quick and easy** implementation of dynamic detection.

**Web backup:** shared and secure access to every SensyCity installation setup.





## DESIGNED for urban environments



**Efficient:** detection area perfectly adapted for street lighting with its 2 PIR sensors.

**Standards:** compliant with lighting standard EN 61 347-2-11.

**Robust:** IK08 housing and protective flange for the 2 sensors.

**Discreet:** compact, it integrates perfectly into the urban landscape.



## FUTURE-PROOFED for tomorrow's city

**Interoperable** with any new or existing LED lights, on grid or standalone, as it can be installed on poles or on facade.

**Future-proof:** installations can be reconfigured and extended to meet your needs.

# SensyCity: the offer



## — SIR WIRELESS: communicating motion sensor

Intelligent system based on motion sensors for pedestrians and cyclists.

When no activity is detected in the area, light is dimmed down to a minimum level, offering only guidance.

The slightest movement:

- immediately restores brightness thanks to priority instructions to the LED driver (level and time adjustable).
- sends wireless information to surrounding lighting points equipped with S.I.R. Wireless sensors, NOD receivers or VIA relays.

Dimming scenarios configurable in the S.I.R. Wireless with the SensyCity application.

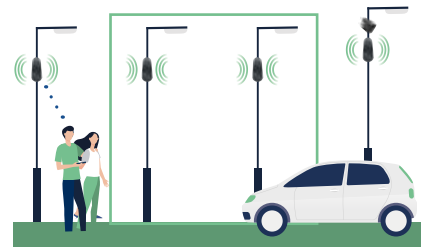


## — NOD: receiver

Device receiving the radio information coming from a S.I.R. Wireless sensor or a VIA relay.

The NOD immediately restores the light level when receiving the radio information through a priority instruction sent to the LED driver (level and time adjustable).

Dimming scenarios configurable in the NOD using the SensyCity application.



## — VIA: relay

Device allowing the city's various professions to link with the SensyCity ecosystem to adjust and optimise light based on a variety of information.

The VIA relay receives the information as soon as a sensor is activated (vehicle radar sensor, traffic sensor, weather sensor, etc.) and sends it immediately via radio to the light points equipped with NOD receivers or S.I.R. Wireless.



## — SRM RADAR

For vehicle detection and with a range of 150m for light vehicles, the radar uses the Fizeau Doppler effect principle at a 24.125GHz frequency. Its mounting system, specially designed for street lighting posts, allows for easy mounting and multi-axial radar orientation.

To be used with the VIA relay to interface with the SensyCity ecosystem.



## — Configuration DONGLE

Plugged into the USB port of a laptop or a tablet, it allows the **ecosystem' devices** (S.I.R., NOD, VIA) installed on the lighting points to **be localised and registered**.

The dongle enables configuration or **wireless re-configuration of all your SensyCity installations**.

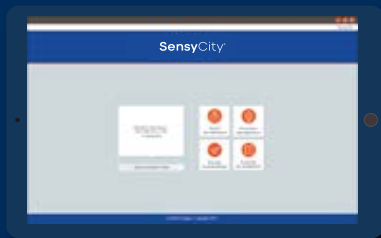
## Configuration APP

The SensyCity configuration application enables highly intuitive use of the sensing ecosystem and allows you to upgrade your installations easily.

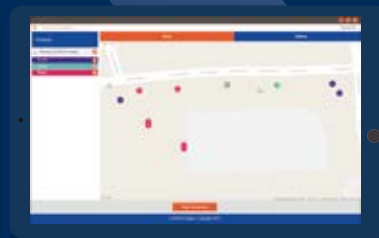
### Examples of features:

- Automatic update when application is launched
- Creation of groups on Google Maps in just a few clicks
- Configuration of levels, durations and night profiles
- Duplication of group settings
- Locking of lighting scenarios

### HOME MENU



### CREATION OF GROUPS ON GOOGLE MAPS



### CONFIGURATION OF SCENARIOS

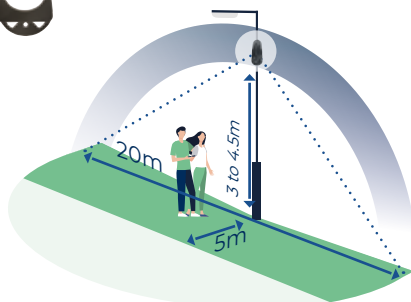


## Accessories: detection zones

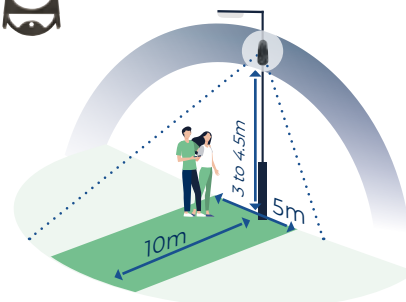
Positioned directly on the SIR sensors, the accessories make it possible to adjust the detection area of the PIR sensors to best meet the desired detection needs.



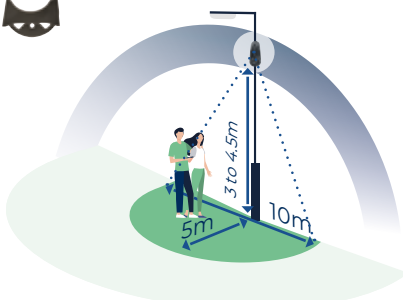
**ZONE 1:** for applications requiring a reduction at the front of the detection zone.



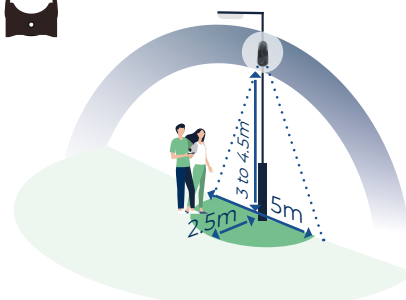
**ZONE 2:** for applications requiring a reduction at the sides of the detection zone.



**ZONE 3:** for applications requiring a reduction of the entire detection zone.



**ZONE 4:** for applications requiring a greater reduction of the entire detection zone (e.g. cycle path).



*Example distances, may vary depending on site configuration*

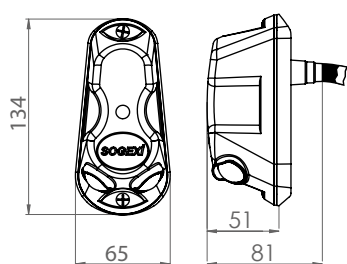
# Technical specifications

## SIR Wireless



Compatible with Tegis

Communication		
Communication between lighting points	Secure LoRa wireless	
Output (driver control)	DALI output	Dry contact output
Input	n/a	
Electrical specifications		
Mains (integrated)	220-240 VAc/50-60 Hz	
9-30 VDC battery version	Yes	
Power consumption	<1 W	
Electrical class	Class 2	
Overvoltage resistance	4 kV	
Mechanical specifications		
Mechanical resistance	IK08 casing	
IP level	IP54	
Material	Housing: polypropylene Protective skirt: thermoplastic elastomer	
Colour	Black	
Installation		
Operating temperature	-20°C to +60°C	
Min. temperature difference with the target	+/- 4°C	
Cabling	5 m cable included (4 conductors)	
	Power: 2 conductors	Power: 2 conductors
	DALI output: 2 conductors	Dry contact output: 2 conductors
Mounting	3 holes/2 M4 self-tapping screws	
Advised mounting height	from 3 m to 4.5 m	
Detection area	On the ground: 180° with a radius of 10 m around the sensor	
On-site configuration		
On-site configuration interface	SensyCity App	
On-site configuration tools	Wireless dongle	
Settings that can be adjusted on-site	Light point groups	
	Light level when sensing activity (≤100%)	n/a
	Boost duration (≥3 sec.)	
	Light level when no activity (≥ 10%)	n/a
	Dimming scenario (1 to 5 levels)	n/a
Standards and certifications		
Product standards	NF EN 60529	
	NF EN 61347-2-11 (street lighting)	
Certifications	EC	



## DONGLE

### Dimensions

• 63 × 50 × 25mm

### Connection specifications

- Connection on PC or tablet: USB plug
- Communication with S.I.R., NOD & VIA: Wireless

### Configuration interface

- 'SensyCity' App
- Hard drive space required: 200MB
- Operating systems: Windows (10 and higher)
- App and user guide can be downloaded from LACROIX City website



NOD		VIA	
			
Compatible with Tegis			
Secure LoRa wireless		Secure LoRa wireless	
DALI output	Dry contact output	n/a	DALI output
n/a		Dry contact input	
220-240 Vac/50-60 Hz		220-240 Vac/50-60 Hz	
Yes		Yes	
< 1 W		< 1 W	
Class 2		Class 2	
4 kV		4 kV	
IK08 casing		IK08 casing	
IP54		IP54	
Housing: polypropylene Protective skirt: thermoplastic elastomer		Housing: polypropylene Protective skirt: thermoplastic elastomer	
Black		Black	
-20°C to +60°C		-20°C to +60°C	
n/a		n/a	
5 m cable included (4 conductors)		5 m cable included (4 conductors)	5 m cable included (5 conductors)
Power: 2 conductors	Power: 2 conductors	Power: 2 conductors	Power: 2 conductors
DALI output: 2 conductors	Dry contact output: 2 conductors	Dry contact input: 2 conductors	Dry contact input and DALI output: 3 cond.
3 holes/2 M4 self-tapping screws		3 holes/2 M4 self-tapping screws	
from 3 m to 4.5 m		from 3 m to 4.5 m	
n/a		n/a	
SensyCity application		SensyCity application	
USB radio dongle		USB radio dongle	
Light point groups		Light point groups	
Level when activity detected ( $\leq 100\%$ )	n/a	n/a	Level when activity detected ( $\leq 100\%$ )
Boost duration ( $\geq 3$ sec.)		n/a	Boost duration ( $\geq 3$ sec.)
Level when no activity detected ( $\geq 10\%$ )	n/a	n/a	Level when no activity detected ( $\geq 10\%$ )
Dimming scenario (1 to 5 levels)	n/a	n/a	Dimming scenario (1 to 5 levels)
NF EN 60529		NF EN 60529	
NF EN 61347-2-11 (outdoor lighting)		NF EN 61347-2-11 (outdoor lighting)	
CE		CE	

## SRM RADAR



### Technology

- Ultra high frequency 24.125Ghz

### Mechanical characteristics

- Dimensions: 180 × 100 × 70mm
- Weight: 1.2kg
- Housing: IP65 with thermal protection/Painting & anodising

### Electrical characteristics

- Switched power
- Resistive load: 110 Vac 0.3A - 24 Vdc 0.3A
- Inductive load: 110 Vac 0.2A - 24 Vdc 0.3A
- Supply voltage: 220 Vac +/- 10%
- 48/62 Hz - fuse protection
- Consumption < 1.5 VA

### Installation

- Radar range: 150 m for light vehicles
- Operating temperature: - 40°C to +75°C
- Connecting: 1 IP68 7-pin connector pre-wired 5m

### Settings:

- Mode: One-way/two-way incoming flow
- Configured using the switch on the front panel
- Display: high-performance red LED on front panel

### Standards

- Compliant with CE standards
- Fulfils the requirements of directive R/TTE 1999/5/EG



LACROIX – City Street Lighting BU

1, rue de Maupas

69380 Les Chères. France

Tel.: +33 (0)4 78 47 33 55

info.eclairage-public@lacroix.group

[www.lacroix-city.com](http://www.lacroix-city.com)

CONNECTED  
TECHNOLOGIES  
FOR **SMARTER**  
**MOBILITY**



Paper from sustainably  
managed forests.

LACROIX City - 54 345 602 NANTES TRADE AND COMPANY REGISTERED - Any representation or reproduction of this document in whole or in part, undertaken without the agreement of LACROIX City, is illegal. This applies equally to translation, adaptation or transformation, arrangement or reproduction by any means, or process whatsoever (Articles L. 122-4 and L. 122-5 of the French Intellectual Property Code). Photo credits: © LACROIX City, © X-Raymond, © Maple World, © OSD. In the interests of continuous improvement, LACROIX City reserves the right to change the characteristics (texts and images) of this document without notice. Without any contractual nature, this information is binding only after confirmation by our services. January 2022.

