

# Smart Light System

# SmartNodes®

## Datasheet

DS\_2110\_EN\_A

### SLS-G3-R4

includes SLN-G3-R4 & SLP-G3-R4



### Solution description

**SmartNodes is a Smart StreetLighting solution, future-proof and large-scale deployable.**

SmartNodes transforms the street lighting infrastructure into a scalable communication network for other city sensors thanks to its solution of nodes and gateways, while providing a remote web service to control, manage and monitor light points.

The solution is composed of connected nodes (SLC or SLN), a gateway (APS) and a Central Management System (CMS) using the TALQ v2 protocol.

### Product description

**The SmartNodes SLS (“Smart Light System”) is a connected node enabling dynamic lighting thanks to two sensors (PIR and doppler).**

The SLS detects and differentiates pedestrians, bikes and vehicles. It can transmit the detection information to the overall Smartnodes ecosystem.

Beyond dynamic lighting, the SLS also controls, monitors and provides luminaire information.

The SLS is composed of one SLN (“Street Light Node”) and one SLP (“Street Light Power unit”).

### main features



**Direct Light Point Control**



**Fully dynamic lighting**



**Automatically geolocated (GPS)**



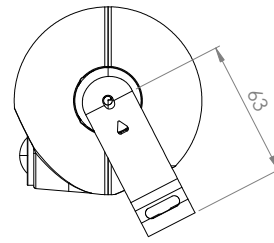
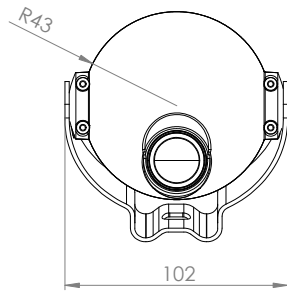
**Scalable Mesh Network**



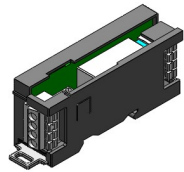
**Feedback On Status & Health**

# Product Drawings

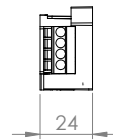
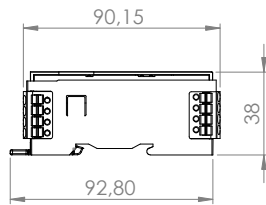
## Mechanical drawings



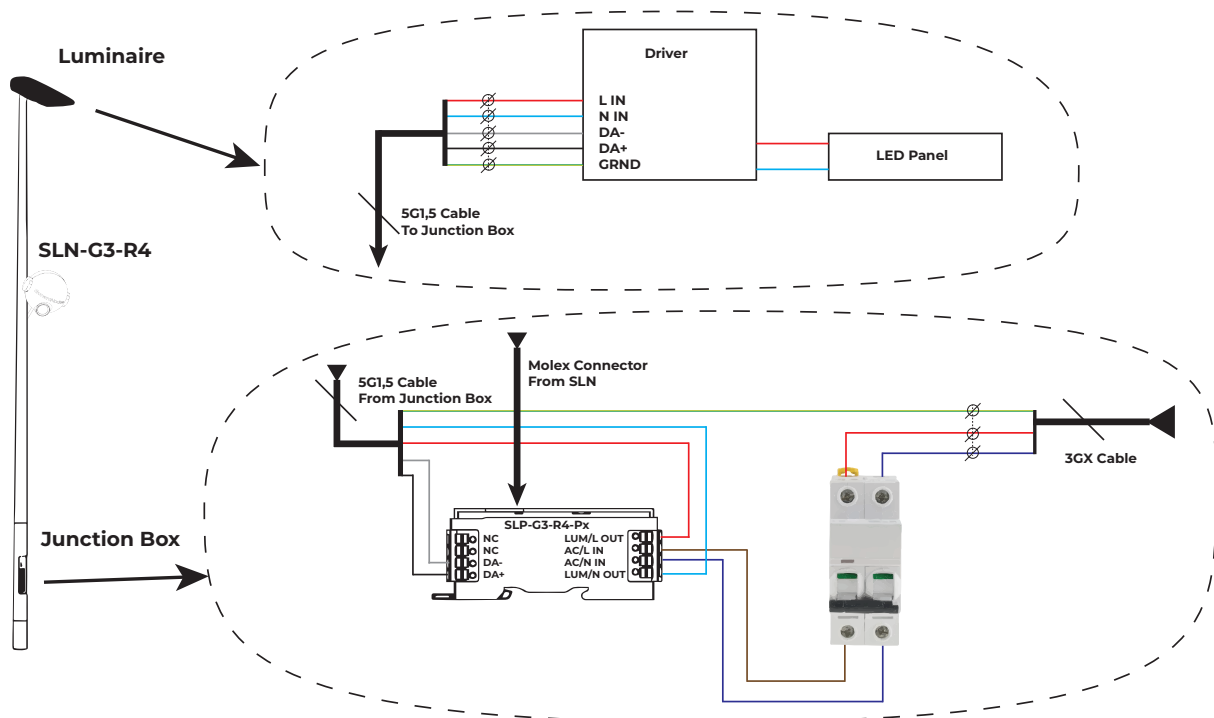
**SLN-G3-R4**



**SLP-G3-R4**



## Electrical drawings



## SLN - Technical Information

Mechanical	
Housing Material - Node	ASA Luran
Colour - Node	Gray - black RAL 7021
Housing Material - Bracket	Galvanized steel
Colour - Bracket	Deep Black RAL 9005
Protection Class	IP67 (EN 60529) IK08 (EN 62262)
Connexion Type	Molex Micro-Fit 3.0 connector
Weight	810g
Mounting	Pole mounting with strap or screw

Environmental	
Ambient Temperature	-30°C to +60°C
Ambient Humidity	0% to 100% RH
Storage Temperature	-40°C to +80°C

Compliance - Safety - Reliability	
CE Certification	Yes
Safety Standard <sup>(*)</sup>	IEC 62368-1:2014 + A1:2015 + A2: 2015
EMC Standard	Emission : • EN 55015 • EN 55032 • EN 61000-3-2 Immunity : • EN 61000-4-2 • EN 61000-4-3 • EN 61000-4-4 • EN 61000-4-5 • EN 61000-4-6 • EN 61000-4-11 • EN 301 489-1 V2.1.1 • EN 301 489-17 V3.1.1
Radio Spectrum Efficiency	• EN 300 328 V2.1.1 • EN 300 330 V2.1.1
Additional Qualifications	• HALT (Highly Accelerated Life Test) • HTOL (High Temperature Operating Life)

<sup>(\*)</sup> : Pending certification for new product release

## Approvals

EMC Directive 2014/30/EU

RED Directive 2014/53/EU

LVD Directive 2014/35/EU

RoHS Directive 2011/65/EU

CE Certification

## Sensors

PIR (Passive InfraRed)	<ul style="list-style-type: none"><li>• Detection of users up to 25km/h</li><li>• Detection distance up to 12m</li><li>• Detection zone: 92 beams.</li><li>• Field of View: 102° X 92°</li></ul>
Doppler Radar	<ul style="list-style-type: none"><li>• Detection of users between 10 and 120 km/h</li></ul>

## Features

Main Processor	<ul style="list-style-type: none"><li>• 120 MHz ARM Cortex-M4-based core</li><li>• 512 kB Flash</li><li>• 128 kB RAM</li></ul>
RGB LED	<ul style="list-style-type: none"><li>• Status indication</li></ul>
GPS	<ul style="list-style-type: none"><li>• Positioning &amp; Time Retrieval</li><li>• Built-in astronomical calendar</li></ul>
Temperature Sensor	<ul style="list-style-type: none"><li>• Internal temperature measurement</li><li>• Range from -30°C to +60°C</li><li>• Accuracy: <math>\pm 2</math> °C from -25 °C to +60 °C</li></ul>
Accelerometer	<ul style="list-style-type: none"><li>• Multipurpose accelerometer</li><li>• Sensing the gravity vector and projecting this on the axis of the accelerometer to determine the tilt angles.</li><li>• Vector accuracy: <math>&lt;1^\circ</math></li></ul>
Local Communication	<ul style="list-style-type: none"><li>• Radio mesh-network powered by Wirepas.</li><li>• Frequency : 2,4GHz</li><li>• Rated output Power : +7,5dBm</li><li>• RX sensitivity : -94dBm</li><li>• Range : Up to 175m in open air.</li><li>• Modulation : GFSK</li><li>• Data rate : 1Mb/s</li><li>• Over The Air Programmable (OTAP)</li><li>• Self-Forming &amp; Self-Healing</li><li>• Network security : AES 128 bits encryption</li></ul>

## SLP - Technical Information

Mechanical	
Housing Material	ABS - Flame retardant V0
Colour	Gray - Black RAL 7021
Protection Class	IP67 (EN 60529) IK08 (EN 62262)
Connexion Types	SLN Connexion: • Molex Micro-Fit 3.0 connector Cable Terminals: • Push Button • max. 2,5mm <sup>2</sup>
Weight	75g
Mounting	DIN-rail mounting in junction box

Environmental	
Ambient Temperature	-30°C to +60°C
Ambient Humidity	0% to 100% RH
Storage Temperature	-40°C to +80°C

Compliance - Safety - Reliability	
CE Certification	Yes
Safety Standard <sup>(*)</sup>	IEC 62368-1:2014 + A1:2015 + A2: 2015
EMC Standard	Emission : • EN 55015 • EN 55032 • EN 61000-3-2 Immunity : • EN 61000-4-2 • EN 61000-4-3 • EN 61000-4-4 • EN 61000-4-5 • EN 61000-4-6 • EN 61000-4-11 • EN 301 489-1 V2.1.1 • EN 301 489-17 V3.1.1
DALI Standard	• IEC 62386
Mains Input Protection	Surge protection : • EN61000-4-5 criteria B

<sup>(\*)</sup> : Pending certification for new product release

## Approvals

EMC Directive 2014/30/EU  
RED Directive 2014/53/EU  
LVD Directive 2014/35/EU  
RoHS Directive 2011/65/EU  
CE Certification

## Mains Input

Nominal Voltage	110V - 240V AC
Frequency	50 - 60Hz
Internal Consumption	SLN: <5W SLP: <0,7W
Maximum Current	5A
Electrical Protection	Class II
Safety	Double galvanic isolation

## Output

Nominal Voltage	110V - 240V AC
Frequency	50 - 60Hz
Maximum Rated Current	1,2A
Relay Type	Solid State Relay (SSR)
Maximum Switching Capacity	240W @ 60°C

## DALI

Bus voltage	22,5V DC
Rated current	1,5mA
DALI Supply Current	5mA
Capacity <sup>(*)</sup>	Up to 4 DALI drivers with DALI bus power supplied by the SLC-G3
Norm	DALI 2 Compliant - IEC 62386
Electrical protection	Double galvanic insulation to input power up to 5kV

<sup>(\*)</sup>: Drivers are currently addressed in "broadcast" mode. Individual control pending software update.

## Power Measurement

Nominal Voltage	110V - 240V AC
Frequency	50 - 60Hz
Type	Active Power
Range	From 0 up to 600W

CONNECTED  
TECHNOLOGIES  
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**MOBILITY**



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