

# [LOGICA]<sup>®</sup>

by **Beghelli**

México  
2018



# Product Portofolio

<b>RELAY</b>	 LOG-RLY		
<b>NODES</b>	 LOG-DR10V	 LOG-10V12	
<b>SENSORS</b>	 LOG-LPML	 LOG-HPML	 LOG-ML2
<b>NODE W/ SENSOR</b>	 LOG-HBKO10V	 LOG-LBKO10V	 LOG-ML10V
<b>SWITCHES</b>	 LOG-ESRP	 LOG-EDRP	
<b>INFRA- STRUCTURE</b>	 LOG-EBOX	 LOG-AP3	 LOG-USB





by **Beghelli**

The first & complete  
**Smart Lighting Control Solution** that is:

- Flexible
- Smart
- Wireless
- Integrated
- Secure
- Scalable
- Powerless
- Commissioning

**LOGICA**® is an affordable and customizable automation solution that allows for increased comfort, greater flexibility, and convenience for your lighting control needs. **LOGICA**® utilizes leading edge wireless communication and battery free technology that makes your lighting control very easy to use. With no wires to run and no batteries to replace, **LOGICA**® basic and advanced solutions are secure, scalable, flexible, convenient commissioning, and easy to install.

**APPLICATIONS**

**LOGICA**® simply deploys an energy management solution to your lighting control needs. It provides energy savings by controlling lighting based on occupancy or daylight harvesting; by dimming and monitoring lights to maximize savings and utilize ambient sunlight making it a perfect solution to be used indoor & outdoor. It utilizes EnOcean communication protocol and LOGICACONFIG Software.

EnOcean is an energy harvesting technology that combines micro energy converters with ultra-low power electronics which enables wireless communications between batteryless - wireless sensors, switches, controller, and gateways.

**WIRELESS COMMUNICATION**

**LOGICA**® offers a unique software platform augmented by wireless devices to drive the data; and a secure, open radio protocol with limited interference and exceptional distance. It needs no wires for controlling your lighting and its interoperability make it capable to work with other protocols like BACnet.

**SCALABILITY**

One of the most important features **LOGICA**® has is its scalability. **LOGICA**® has an easy to do scaling from basic stand alone configuration with sensors, and controllers to an advanced configuration with gateways and mobile apps that allows to monitor, configure and manage multiple locations in real-time. It simply allows the consumer to create their own lighting control solution with the help of EnOcean transmission protocol.



FREE easy commissioning. Just download the LOGICACONFIG Software.

■ ■ ■ **Features & Benefits**

Wireless	<ul style="list-style-type: none"> <li>· No wires needed for controls.</li> <li>· Strong RF signal that works through doors and walls.</li> <li>· 150 ft. typical wireless range.</li> <li>· Compatible with BACnet protocol.</li> <li>· Dedicated frequency specifically designed for this solution.</li> </ul>
Powerless	<ul style="list-style-type: none"> <li>· No batteries, maintenance free.</li> <li>· Easy to install.</li> <li>· Energy harvesting.</li> <li>· Solar-powered wireless sensors.</li> <li>· Kinetic powered switches.</li> <li>· Reduces energy consumption.</li> </ul>
Integrated	<ul style="list-style-type: none"> <li>· Sensing and control as one solution.</li> <li>· Integration of drivers with controls.</li> <li>· Global dominant protocols: 0-10V, DALI, PWM.</li> </ul>
Commissioning	<ul style="list-style-type: none"> <li>· Easy commissioning.</li> <li>· Software with friendly user interface.</li> <li>· Factory commissioning available.</li> <li>· Free LogicaConfig Software for Windows and IOS.</li> </ul>
Flexible	<ul style="list-style-type: none"> <li>· Be able to change locations of switches and external sensors without re-wiring.</li> <li>· Be able to modify settings and configurations remotely.</li> <li>· Create and rearrange groups of luminaires and devices.</li> <li>· Ideal for retrofit kits.</li> </ul>
Secure	<ul style="list-style-type: none"> <li>· Restricted to authorized users.</li> <li>· 128 AES encryption.</li> </ul>
Smart	<ul style="list-style-type: none"> <li>· Automated and programmable lighting solution.</li> <li>· Advanced capabilities such as tunable controls and occupancy needs.</li> <li>· Energy savings options that include occupancy sensors, time of the day scheduling and daylight harvesting.</li> <li>· Mobile apps that allows to monitor, configure and manage multiple locations in real-time.</li> </ul>
Scalable	<ul style="list-style-type: none"> <li>· Create your own lighting control solution.</li> <li>· Expandable solution from basic to advanced topology.</li> <li>· Add-on as needed.</li> </ul>

## LOG-RLY

CIRCUIT BASED LIGHTING CONTROL MODULE



### DESCRIPTION

The LOG-RLY Lighting Control Module responds to a variety of wireless EnOcean devices to control and dim LED drivers, fluorescent ballasts, or other switchable loads.

Offers bi-directional, ON/OFF and 0-10V dimming control (when combined with a wireless light switch).

Can perform occupancy-based setback dimming and self-contained daylight harvesting functions.

For single or multiple fixtures on/off or dimming control applications.

### FEATURES

- Level 1 or level 2 wireless repeater.
- Built-in Proportional-Integral (PI) Controller.
- Full range dimming for advanced daylighting control.
- Zero crossing activation determined by user.
- Built in dawn control.
- Customizable scene control.
- Adjustable ramping speed/rate of dimming.

### OPERATION

- 100 to 277 VAC
- Includes one relay to switch up to 15 A.
- 0-10V DC output for control of dimmable loads, including electronic ballasts.
- Receives signals from wireless sensors, switches and software.

## LOG-10V12

IN FIXTURE 0-10V LIGHTING CONTROL FOR DIM-TO-OFF DRIVERS (1 CHANNEL)



### DESCRIPTION

LOG-10V12 is integrated into the lighting network at the fixture level, and gives the flexibility to incorporate lighting control. It can be mounted onto a new fixture or retrofitted after.

This node communicates wirelessly over radio frequency to compatible wireless end devices, including occupancy sensors, LUX sensors, light switches and more.

With the LOG-EBOX, LOG-10V12 can be integrated into an existing BACnet based building automation system (BAS).

### FEATURES

- Wireless communication.
- In fixture installation.
- Connection for optional motion / lux sensor.

### OPERATION

- Compatible with 0-10V, dim-to-off LED drivers.
- Allows for multiple drivers to be connected together through the 0-10V output.
- Powered through available low voltage from the driver or an available 12-36 VDC, 12-24 VAC source near the fixture level.
- 0-10V dimming and dim-to-off functionality, with compatible LED drivers.
- Provides continuous dimming control to conserve energy,

simplify maintenance and personalize the lighting environment.

- Local Control: An on board microprocessor and memory allows for standardized operation at the fixture level, eliminating the reliance on software or network configuration. LOG-10V12 can be utilized out of the box with default settings, or configured for advanced operation.
- Integration to BAS: It has the ability to communicate information through LOG-EBOX and into an existing building automation system (BAS). The convergence of lighting and building automation allows for granular information to be communicated to the BAS for improved operational efficiency.

## LOG-DR10V

IN FIXTURE 0-10V LIGHTING CONTROL FOR DIM-TO-OFF DRIVERS



### DESCRIPTION

LOG-DR10V is integrated into the lighting network at the fixture level, and gives the flexibility to incorporate lighting control. It can be mounted onto a new fixture or retrofitted after.

This node communicates wirelessly over radio frequency to compatible wireless end devices, including occupancy sensors, LUX sensors, light switches and more.

With the LOG-EBOX, LOG-DR10V can be integrated into an existing BACnet based building automation system (BAS).

### FEATURES

- Wireless communication.
- In fixture installation.
- Connection for optional motion / lux sensor.

### OPERATION

- Compatible with 0-10V, dim-to-off LED drivers.
- Allows for multiple drivers to be connected together through the 0-10V output.
- Powered through available low voltage from the driver or an available 12-36 VDC, 12-24 VAC source near the fixture level.
- 0-10V dimming and dim-to-off functionality, with compatible LED drivers.
- Provides continuous dimming control to conserve energy, simplify maintenance and personalize the lighting environment.

\*CERTIFICATIONS PENDING

**LOG-ML2**

MOTION / LIGHT SENSOR



**DESCRIPTION**

LOG-ML2 is a wireless, self powered, passive infrared sensor that ensures reliable detection of occupant presence.

When paired with a LOGICA® Relay (LOG-RLY) and a LOGICA® wireless rocker switch (LOG-ESRP), the sensor creates an out of the box, cost effective, lighting control system.

When combined with a gateway (LOG-EBOX), it can be integrated into an existing BACnet-compatible building automation system.

**FEATURES**

- Ideally suited for occupancy based lighting control.
- Provides for indoor daylight harvesting functionality, with a light range of 0-1020lx.

**OPERATION**

- Built in solar cells, it stores energy from available ambient light. An optional battery backup is available for locations with low or no ambient light.
- The device must be placed where sensing is required.
- Must be paired with a receiver. The device pairs manually to compatible devices by pressing the LRN button.

**LOG-LPML / LOG-HPML**

WIRED PIR SENSOR (LOW-BAY / HIGH-BAY)



**DESCRIPTION**

LOG-LPML (Low-Bay) & LOG-HPML (High-Bay) includes a digital LUX sensor and a PIR occupancy sensor (Digital Passive IR motion sensor).

The two piece scenario allows for flexibility when installing into fixtures where there isn't significant room for an all-in-one option.

LOG-LPML is rated for up to 4.5 m; and LOG-HPML up to 11 m.

LOG-LPML (Low-Bay) and LOG-HPML (High-Bay) work together with the LOG-DR10V node. The separate node is optional and is available for both LOG-LPML & LOG-HPML.

**LOG-LPML + LOG-DR10V**                      **LOG-HPML + LOG-DR10V**

**LOG-ML10V**

FIXTURE INTEGRATED 0-10V LIGHTING CONTROL FOR DIM-TO-OFF DRIVERS



**DESCRIPTION**

LOG-ML10V node easily customized housings, it is architecturally and aesthetically pleasing. For indoor applications.

Includes a digital PIR sensor and ambient light sensing for daylight harvesting applications as well as occupancy based control.

It can also be integrated to BACnet through LOG-EBOX.

**FEATURES**

- Wireless communication.
- Full digital passive infrared.
- Easy and seamless integration at the fixture level.
- Configurable for advanced settings.
- Designed for plug and play applications.

**OPERATION**

- Input range: 12-24VAC / 12-36VDC
- Powered from driver or any available 12VDC source
- Compatible with 0-10V, dim-to-off LED drivers
- Allows for 0-10V dimming and dim-to-off functionality, providing continuous dimming control, simplify maintenance and a personalized lighting environment.
- No need for extra relays and control devices (when paired with compatible LED drivers).

**OPTIONS IN OPERATION**

- Local Control: An on board microprocessor and memory allows for standardized operation at the fixture level, eliminating the reliance on software or network configuration. LOG-ML10V can be utilized out of the box with default settings or configured for advanced operation. Preferences and settings can be made by remote configuration, even after installed.
- Integration to BAS: It has the ability to communicate information through LOG-EBOX and into an existing building automation system (BAS). The convergence of lighting and building automation allows for granular information to be communicated to the BAS for improved operational efficiency.

**LOG-HBKO10V / LOG-LBKO10V**

FIXTURE INTEGRATED 0-10V LIGHTING CONTROL FOR DIM-TO-OFF DRIVERS



**DESCRIPTION**

The LOG-HBKO10V (High-Bay) & LOG-LBKO10V (Low-Bay) nodes bi-directionally communicate data to and from the lighting control network. Easy to integrate into a high-bay or low-bay fixture through an available half inch knock out.

Includes a digital PIR and ambient light sensing for daylight harvesting applications, as well as very accurate occupancy detection.

Provides data points such as: occupancy status, light levels and light status.

LOG-HBKO10V is rated for up to 12 m; and LOG-LBKO10V up to 5 m.

**FEATURES**

- Wireless communication.
- Full digital passive infrared for occupancy sensing
- Remotely configurable.
- Configurable for advanced settings.
- Designed for plug and play applications.

**OPERATION**

- Powered from driver or any available 12-24VAC / 12-36VDC source.
- Compatible with 0-10V, dim-to-off LED drivers.

\*CERTIFICATIONS PENDING

## LOG-ESRP / LOG-EDRP

SELF-POWERED WIRELESS CONTROLS.



### DESCRIPTION

LOGICA® Single and Double Rocker Pads communicate wirelessly with other LOGICA® devices using EnOcean radio frequency technology, they provide convenient control of lighting.

The rocker pads are self-powered, pressing the rocker generates enough energy to send a signal to other LOGICA® devices.

In conjunction with LOGICA® sensors and control, they maximize efficiency and provide a level of comfort and unachievable with traditional switches. With an appropriate receiver, the switch can be used to control lighting scenes and continuous dimming.

### FEATURES

- Wireless.
- Switching and dimming functions.
- Fast and easy installation, you can move them anytime.
- Self-powered, no batteries to replace and no on-going maintenance.
- Radio frequency technology to communicate wirelessly with other LOGICA® devices.

## LOG-EBOX

ENOCEAN TO BACNET GATEWAY



### DESCRIPTION

LOG-EBOX allows the ability to integrate EnOcean wireless solutions to wired building automation systems that utilizes the BACnet building automation protocol.

The LOG-EBOX "listens" to EnOcean wireless devices in a space and translates these incoming messages automatically into BACnet IP objects. The information gathered through the wireless devices can then be utilized in the building automation system and applied for greater efficiency in the operations of the building. The EBOX supports every existing EnOcean product and all existing EnOcean profiles.

### FEATURES

- WiFi enabled.
- Bidirectional.
- No programming.
- No scripting.
- No software required.
- No ongoing fees.
- Easily configured with LOGICACONFIG Software.
- Each EBOX can "Listen" to an unlimited amount of EnOcean wireless devices and "Speak" to 128 EnOcean wireless devices (limit is radio based).
- 464 m<sup>2</sup> of radio range\* coverage approximately, range depends on factors including building type, usage, and building materials.
- With Power Supply Included.

## LOG-AP3

WIRELESS LAN ACCESS POINT WITH ETHERNET INTERFACE



### FEATURES

- Imsys IM3910 Snap FX-32 processor.
- Micrel Integrated 100 MBit layer - 2 managed 3-port switch.
- Capable of buffering up to 3 million EnOcean signals.
- Coverage is approximately 557 m<sup>2</sup>.
- Firmware upgradeable.
- Programming API available.
- Built-in fall-back solution if server is down.
- Compatible with ALL EnOcean Dolphin chips in 902 MHz.
- 120V Power supply included.
- Optional WiFi module.
- Each EBOX can "Listen" to an unlimited amount of EnOcean wireless devices and "Speak" to 128 EnOcean wireless devices (limit is radio based).



## LOG-USB

SELF-POWERED WIRELESS CONTROLS.



### DESCRIPTION

The LOGICA® USB stick\* is enabled with a radio module for over-the-air configuration or a LOGICA® EBOX for configuration over Ethernet / WIFI.

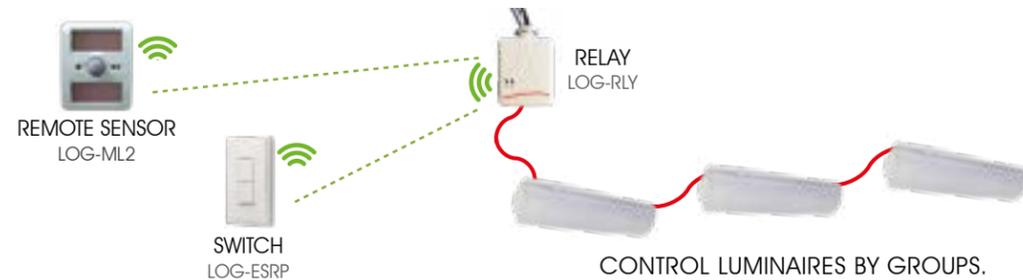
The software tool includes both a "USER-FRIENDLY" mode and a more advanced "TECHNICIAN" mode.

### FEATURES

- Easy to use
- Compatible to any EnOcean hardware / software
- Ability to configure hundreds of devices at the same time

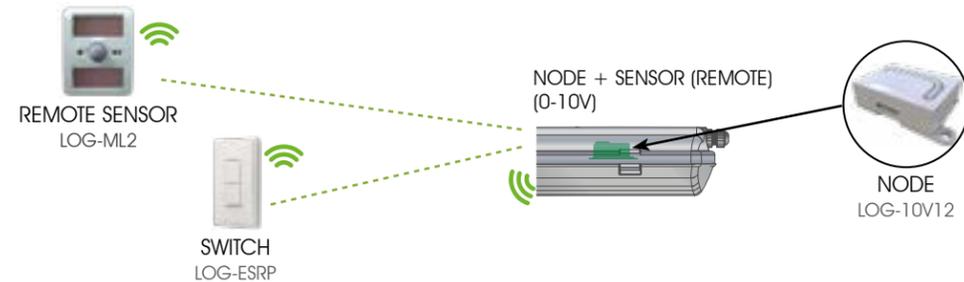
## 1. RELAY (RLY)

\*Notes: ~ \* ◆



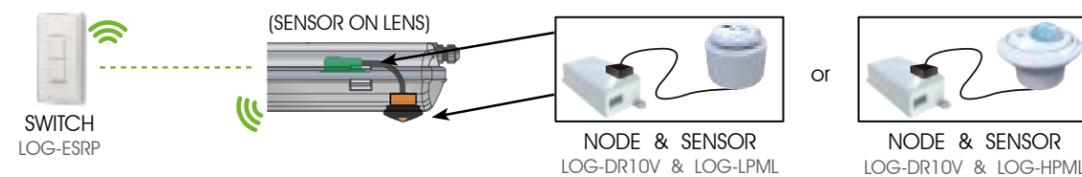
## 2. NODE (NOD)

\*Notes: ■ ● ◆



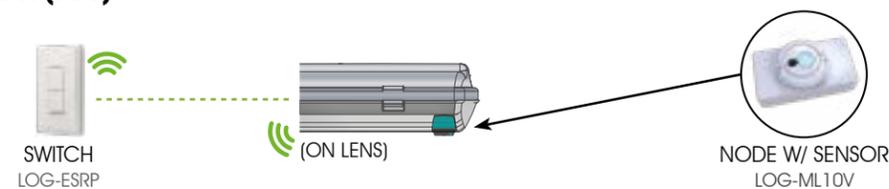
## 3. INTERNAL OCCUPANCY SENSOR (IOS)

\*Notes: ■ ●



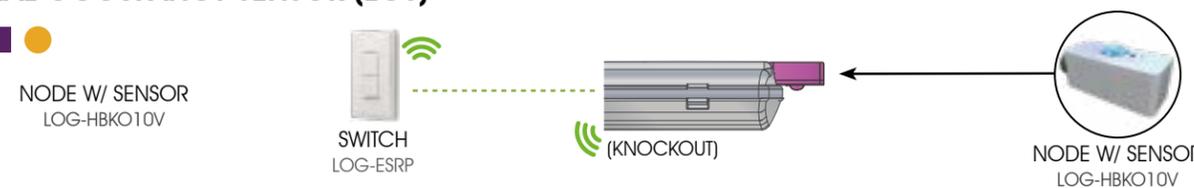
## 4. INTERNAL OCCUPANCY SENSOR (IOS)

\*Notes: ■ ●



## 5. EXTERNAL OCCUPANCY SENSOR (EOS)

\*Notes: ■ ●



\*Notes (P. 14 -15):

- ~ \* Line voltage wiring & dimming wiring.
- \* \* Solution only available for LED, dimmable 0-10V products.
- ◆ \* Place sensors only in strategic places and not in every fixture.
- ~ \* Wireless range between 15-45 mts.
- \* Low voltage control.
- \* Requires a driver with auxiliary output.

The ADVANCED SOLUTION allows the user to:

- Control the system using the smartphone application.
- Control and monitoring through the cloud or server.
- Download performance and consumption data.
- Perform all BASIC SOLUTION features.

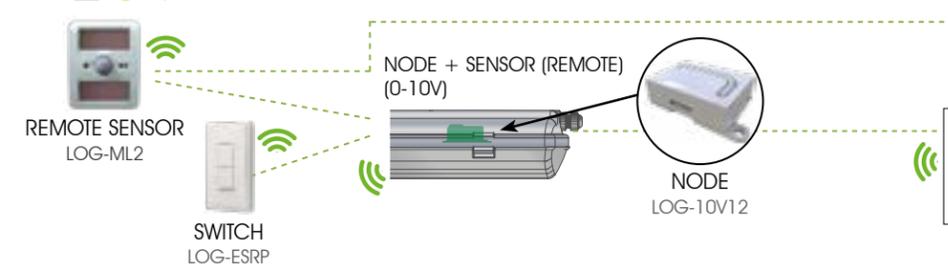
## 1. RELAY (RLY)

\*Notes: ~ \* ◆



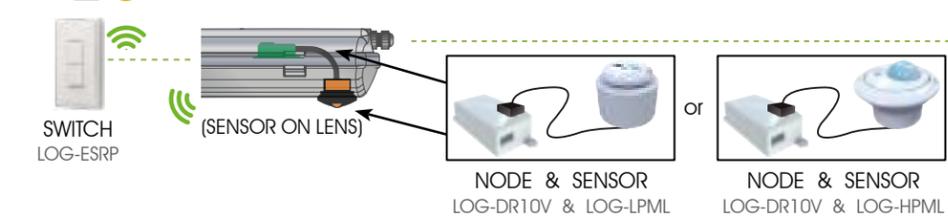
## 2. NODE (NOD)

\*Notes: ■ ● ◆



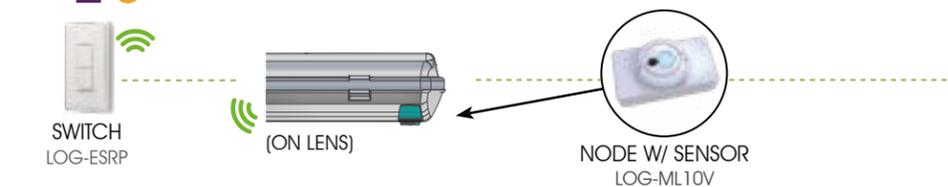
## 3. INTERNAL OCCUPANCY SENSOR (IOS)

\*Notes: ■ ●



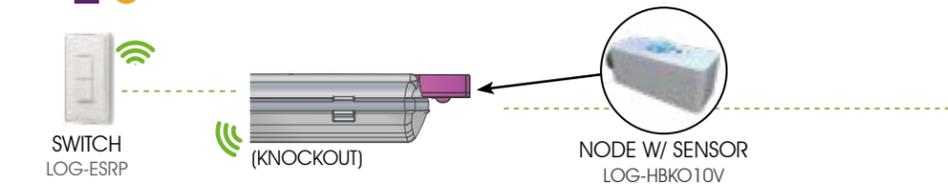
## 4. INTERNAL OCCUPANCY SENSOR (IOS)

\*Notes: ■ ●



## 5. EXTERNAL OCCUPANCY SENSOR (EOS)

\*Notes: ■ ●



AP3 (EnOcean) or EBOX (BACnet)



BUILDING MANAGEMENT or OTHERS (BACnet)

\*Note:



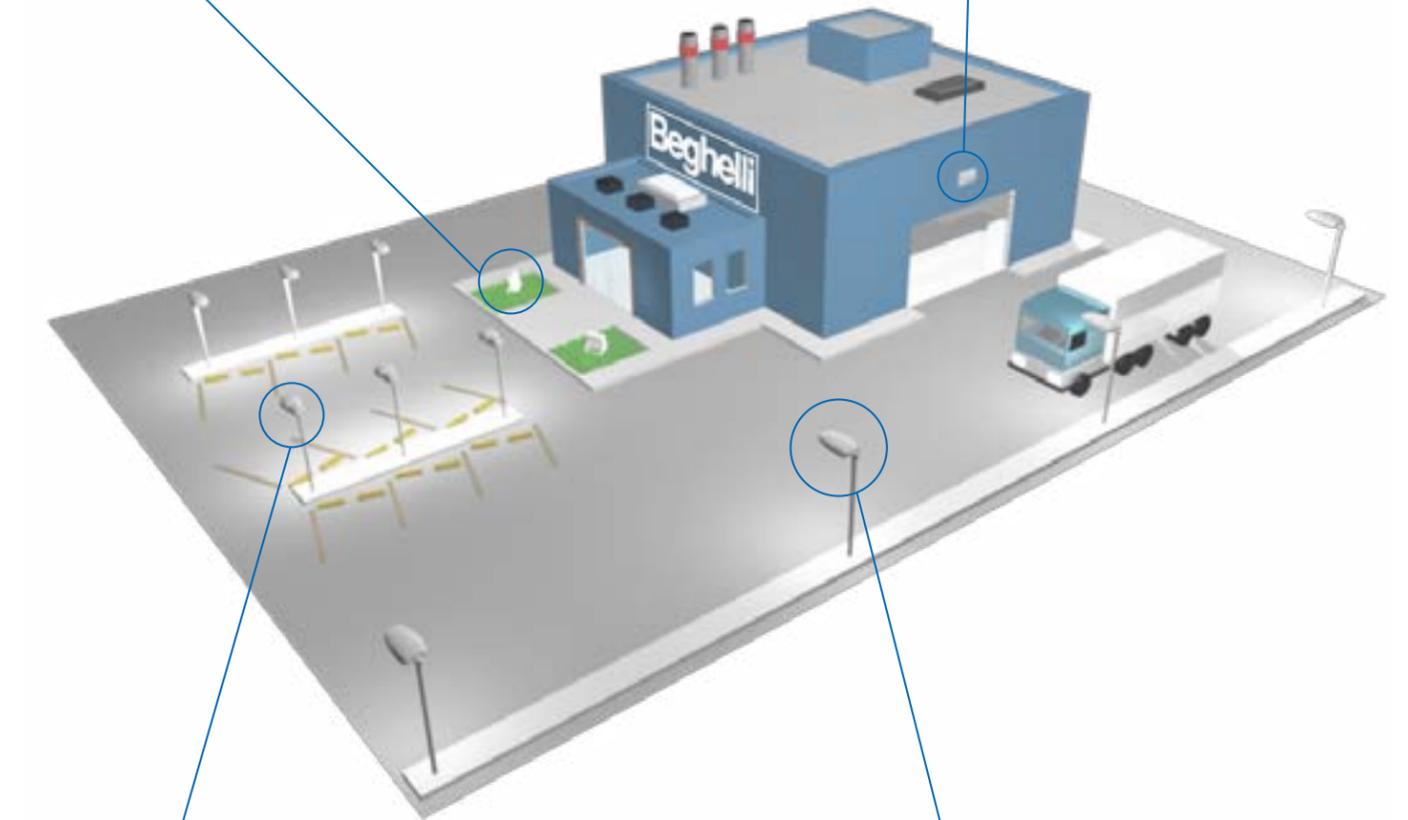
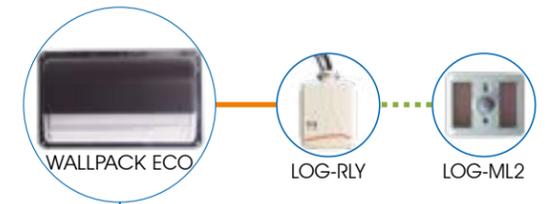
\*Wireless range: up to 557 m<sup>2</sup>

LIGHTING CONTROL APPLICATIONS

Line voltage control by groups.



Line voltage control by groups.



Line voltage control by groups.



Line voltage control by groups.

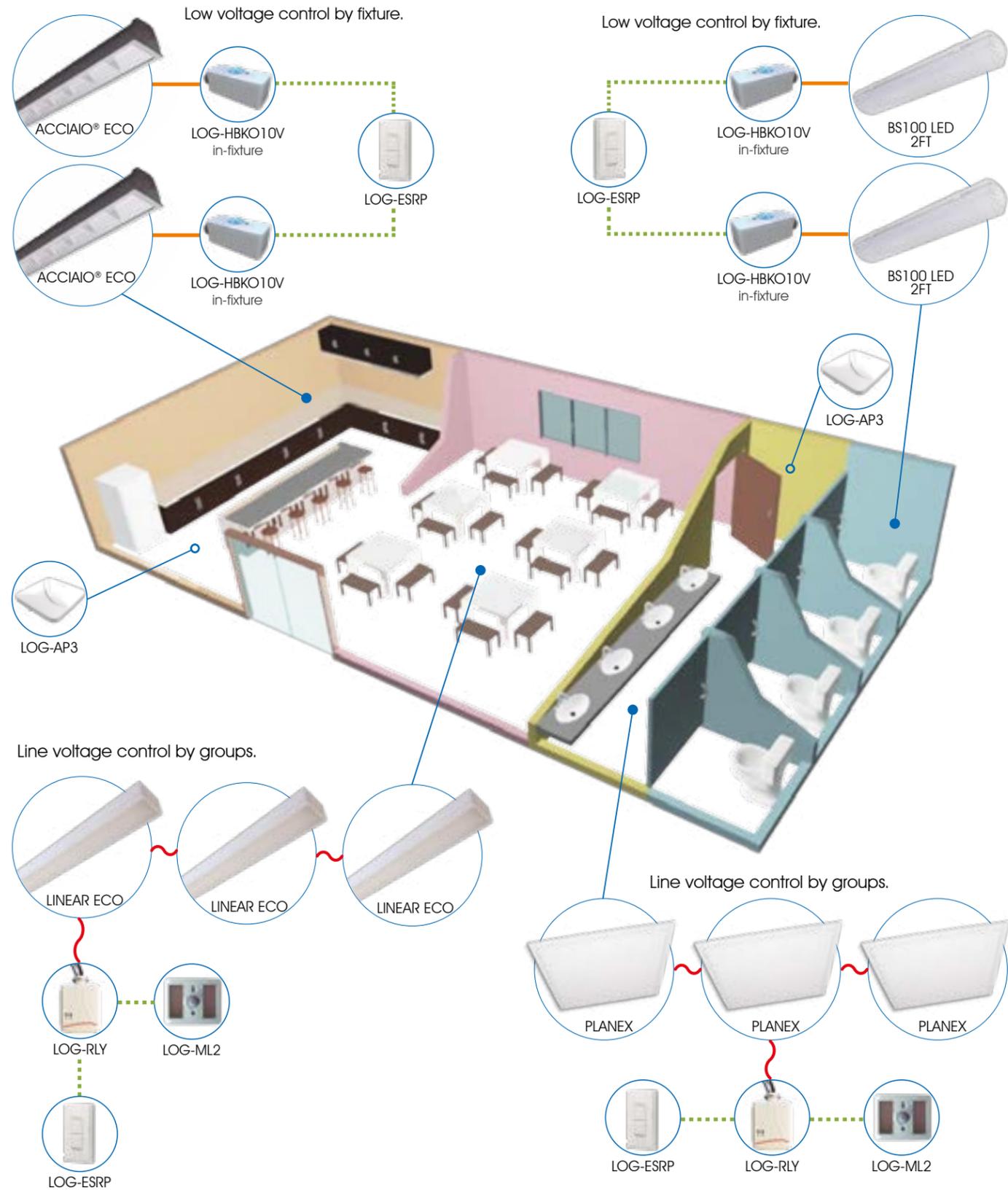


\*Notes:

- \* All components must be installed indoor.
- \* LOG-ML2 only as lux-sensor (basic solution).
- \* Creation of schedules by geolocation (advanced solution).

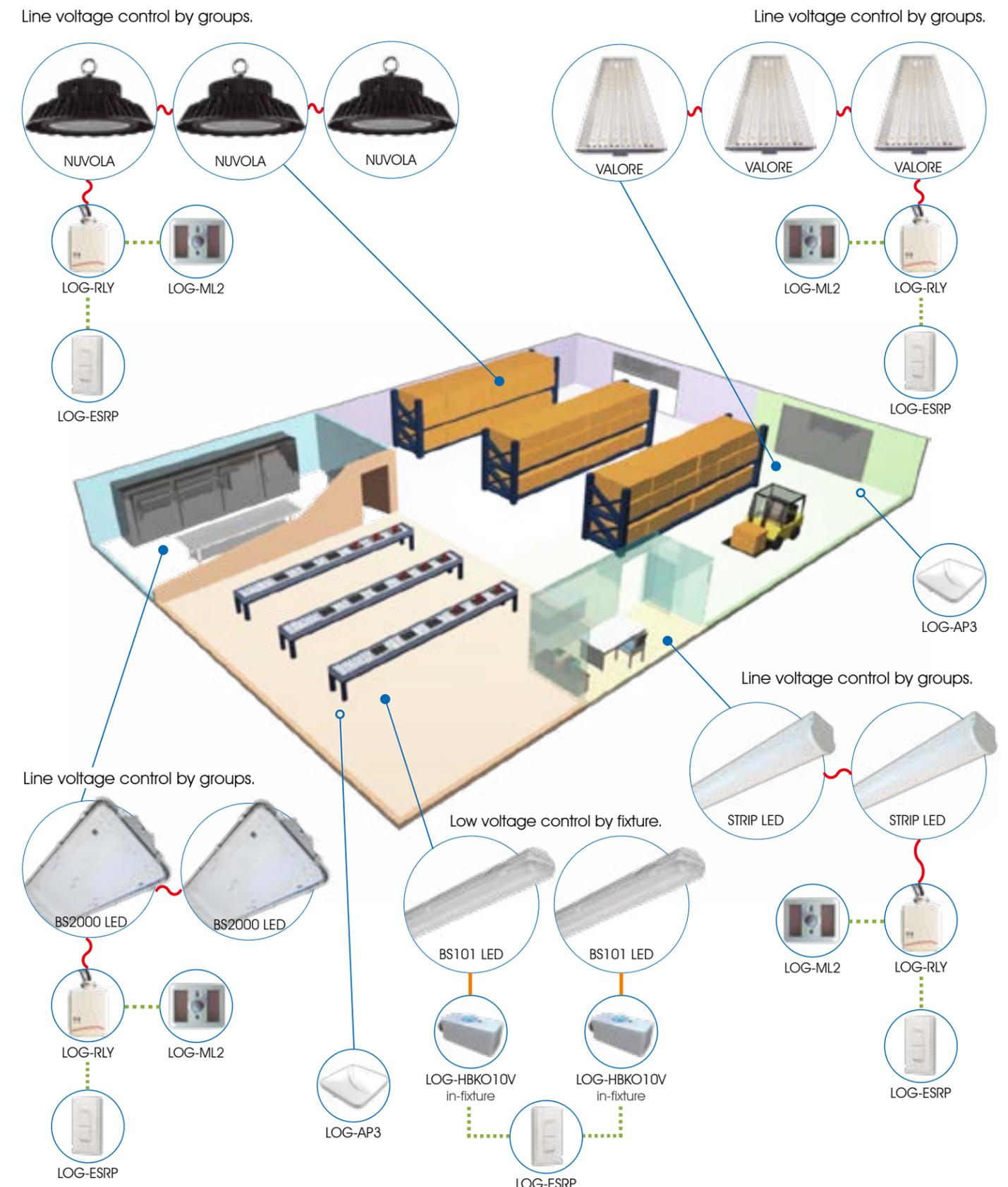
- Wireless.
- Wired fixtures.
- ~ Line voltage wiring & dimming wiring.

# DINING HALL APPLICATION



--- Wireless.    — Wired fixtures.    ~ Line voltage wiring & dimming wiring.

# WAREHOUSE & MANUFACTURE APPLICATION



~ Line voltage wiring & dimming wiring.    — Wired fixtures.    --- Wireless.





# [LOGICA]<sup>®</sup>

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