

# Lumina™ RF Surface Mount Daylight Harvesting Photocell

Cat. No. LURPC-01W



## WARNINGS AND CAUTIONS

- **TO AVOID DEATH, PERSONAL INJURY OR PROPERTY DAMAGE, DO NOT RECHARGE, DISASSEMBLE OR INCINERATE BATTERY, NOR HEAT IT ABOVE 100°C (212°F).** Dispose of used battery promptly. DO NOT dispose of battery in normal household waste. Keep away from children. Please contact your local waste provider or recycling facility for proper disposal of used battery.
- To be installed and/or used in accordance with appropriate electrical codes and regulations.
- If you are unsure about any part of these instructions, consult an electrician.
- For indoor applications only.
- **SAVE THESE INSTRUCTIONS.**

DI-001-LURPC-05A

## INSTALLATION

ENGLISH

### OVERVIEW

The Leviton Lumina™ RF Daylight Harvesting Photocell is designed to monitor and measure natural or electric light levels as a key component in a daylight harvesting solution.

The wireless, battery-powered photocell uses a Fresnel lens to intelligently measure light levels to determine optimal daylight design levels for closed loop applications. The Photocell can be used to trigger other devices in a Lumina RF network for additional daylight harvesting and automation capabilities.

Lumina RF wireless technology eliminates the need for traditional hard-wired devices opening up a world of control possibilities for restaurants, retail stores, offices and other small commercial properties. It also ensures energy savings in new construction and retrofits.

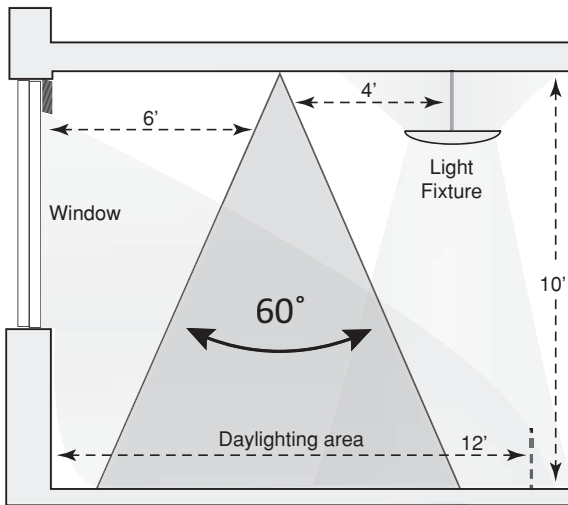
Designed for effortless automation and intuitive control, Lumina RF products simplify the end user experience.

### PLACEMENT

Place the Photocell so that it views the daylight and the electric light available in the controlled area.

In areas with pendant fixtures providing uplighting, place the Photocell at least 4 feet (1.2m) away from the nearest uplighting fixture.

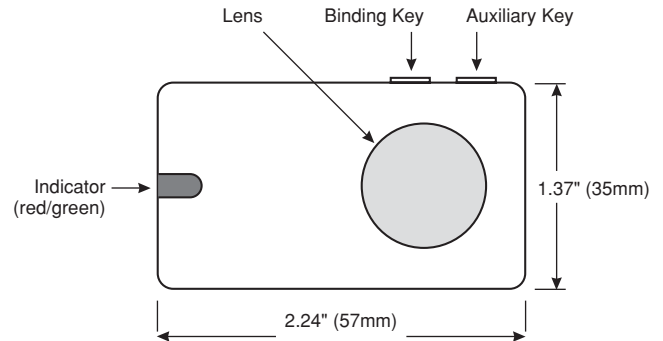
In areas where the primary light source is through a window, place the Photocell between 6 feet and 15 feet (1.8m to 4.5m) from the window.



### SPECIFICATIONS

- Fully IEEE 802.15.4 compliant
- Utilizes 2.4GHz ISM band; up to 16 channels
- Power supply: 2 x 3V CR2450 button cell batteries.
- Operating consumption:  $\leq Tx \leq 43mA$ ;  $Rx \leq 28mA$
- Standby consumption:  $\leq 1\mu A$
- Up to 220 meters wireless transmission range in unobstructed space

### DIMENSIONS



### INSTALLATION

1. Determine the mounting location for the photocell based on daylight availability and task area. *See Placement for details.*
2. Remove backing to expose adhesive strip and affix photocell to desired location.

#### Turn ON/OFF

- **Turn ON:** Press the Binding Key once. The indicator will flash red once, and the device is ready to be used.
- **Turn OFF:** When device is on, press the Binding Key. The indicator will flash 10 times within 5 seconds. Press the Binding Key again within the 10 flashes to turn the device off.

**NOTE:** If the photocell cannot successfully connect to a network the first time it is used, or after resetting, it will turn off.

#### Joining the Lumina RF Network

After the photocell is turned on, it will search for an existing Lumina RF network and send a request to join the network automatically. While the photocell is linked under a router whose permit-join feature is enabled, the photocell will be permitted to join the network.

1. Enable the permit-join function (valid for 60 seconds) of a router (please refer to the user manual of the gateway/router to enable the permit-join feature).
2. Turn on the photocell. It will search for and join the network.
3. The indicator will flash green once, when it finds out a network to join.
4. The indicator will flash green 5 times after it is joined successfully. Otherwise, the indicator will not flash.

#### Sleep Mode

The photocell is designed to go into sleep mode for power saving in some situations:

- A. While the device is connected to the network, the sleep period is 5 minutes. It will wake up every 5 minutes to report online.
- B. When it is not connected to a network, the photocell will go into sleep mode. It will wake up every 15 minutes to search for a network to join.
- C. Once the photocell is joined to a network, and for any reason, it loses its connection to the network, the photocell will wake up every 15 minutes to find and reconnect to the network it was last connected to.

When disconnected from a network, it never remains in sleep mode, but continues to search for a network every 15 minutes. This condition consumes up to 30 times more power compared to normal-operation. To prevent this unwanted power consumption, remove the batteries to power off the device.

## Wake up Device

To setup or acquire data from a device which is in sleep mode, wake up the device using the following steps:

1. Press and hold both Binding Key and Auxiliary Key.
2. When the indicator flashes red twice, release both buttons.
3. The indicator will flash 5 times while broadcasting.

## Battery

When the operating voltage is lower than 2.1V, the indicator will flash red once per hour. The photocell will also send a low-power report to the Lumina RF network.

## Restore to Factory Setting

To restore it to factory setting, please follow the steps:

1. Press and hold both the Binding Key and Auxiliary Key for 5 seconds.
2. After the indicator shows fast red flashes, release the buttons.
3. The indicator will flash red 20 times, and the restore is completed.

## Lumina RF Cluster Attributes

A cluster is a set of related attributes and commands which are grouped together to provide a specific function. A simple example of a cluster would be the On/Off cluster which defines how an on/off switch behaves. This table lists the clusters which are supported by the photocell.

1. End Point(s): 0x01
2. Device ID: Light Sensor 0x0106
3. End Point Cluster ID

## Cluster ID for Photocell

- End Point: 0x01
- Device ID: Light Sensor 0x0106
- Basic: (0x0000) None
- Identify: (0x0003)
- Commissioning: (0x0015)
- Luminance Measurement: (0x0400)
- Power Configure: (0x0001)
- Diagnostics Information: (0x0B05)
- Poll Control: (0x0020)

Identifier	Name	Type	Range	Access	Default	Mandatory or Optional
0x0000	<i>ZCLVersion</i>	Unsigned 8-bit integer	0x00 - 0xff	Read only	0x03	M
0x0001	<i>ApplicationVersion</i>	Unsigned 8-bit integer	0x00 - 0xff	Read only	20	O
0x0002	<i>StackVersion</i>	Unsigned 8-bit integer	0x00 - 0xff	Read only	51	O
0x0003	<i>HWVersion</i>	Unsigned 8-bit integer	0x00 - 0xff	Read only	0x0B	O
0x0004	<i>ManufacturerName</i>	Character string	0 - 32 bytes	Read only	Leviton	O
0x0005	<i>ModelIdentifier</i>	Character string	0 - 32 bytes	Read only	LURPC-01W	O
0x0006	<i>DateCode</i>	Character string	0 - 16 bytes	Read only	20131227	O
0x0007	<i>PowerSource</i>	8-bit Enumeration	0x00 - 0xff	Read only	0x03	M
0x0010	<i>LocationDescription</i>	Character string	0 - 16 bytes	Read/write		O
0x0011	<i>PhysicalEnvironment</i>	8-bit Enumeration	0x00 - 0xff	Read/write	0x00	O
0x0012	<i>DeviceEnab</i>	Boolean	0x00 - 0x01	Read/write	0x01	M
0x0100	<i>CELCertification</i>	Signed 32-bit		Read only	0XD9F87A0F	M
0x011C	<i>ManufacturerCode</i>				011C	M

## Important Maintenance Instructions

- Please keep the device in a dry place. Precipitation, humidity, and all types of liquids or moisture can contain minerals that corrode electronic circuits. In cases of accidental liquid spills to a device, please leave the device dry properly before storing or using.
- Do not use or store the device in dusty or dirty areas.
- Do not use or store the device in extremely hot temperatures. High temperatures may damage the device or battery.
- Do not use or store the device in extremely cold temperatures. When the device warms to its normal temperature, moisture can form inside the device and damage the device or battery.
- Do not drop, knock, or shake the device. Rough handling could break it.
- Do not use strong chemicals to clean the device.
- Do not paint the device. Paint could cause improper operation.

Handle your device, battery, and accessories with care. The suggestions above help you keep your device operational.

## FCC STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## INDUSTRY CANADA COMPLIANCE STATEMENT

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. **IMPORTANT!** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This Class B digital apparatus complies with Canadian ICES-003.

## TRADEMARK DISCLAIMER

Use herein of third party trademarks, service marks, trade names, brand names and/or product names are for informational purposes only, are/may be the trademarks of their respective owners; such use is not meant to imply affiliation, sponsorship, or endorsement.

## FOR CANADA ONLY

For warranty information and/or product returns, residents of Canada should contact Leviton in writing at **Leviton Manufacturing of Canada Ltd to the attention of the Quality Assurance Department, 165 Hymus Blvd, Pointe-Claire (Quebec), Canada H9R 1E9** or by telephone at **1 800 405-5320**.

## LEVITON LIMITED WARRANTY

Leviton warrants to the original consumer purchaser and not for the benefit of anyone else that products manufactured by Leviton under the Leviton brand name ("Product") will be free from defects in material and workmanship for the time periods indicated below, whichever is shorter: • **OmniPro II and Lumina Pro**: three (3) years from installation or 42 months from manufacture date. • **Omni LTe, Omni Ile, and Lumina**: two (2) years from installation or 30 months from manufacture date. • **BitWise Controllers, Accessories**: two (2) years from installation or 30 months from manufacture date. • **Lumina Gateway Controllers**: two (2) years from installation or 30 months from manufacture date. • **Thermostats, Accessories**: two (2) years from installation or 30 months from manufacture date. • **Batteries**: Rechargeable batteries in products are warranted for ninety (90) days from date of purchase. **Note:** Primary (non-rechargeable) batteries shipped in products are not warranted. **Products with Windows® Operating Systems:** During the warranty period, Leviton will restore corrupted operating systems to factory default at no charge, provided that the product has been used as originally intended. Installation of non-Leviton software or modification of the operating system voids this warranty. Leviton's obligation under this Limited Warranty is limited to the repair or replacement, at Leviton's option, of Product that fails due to defect in material or workmanship. Leviton reserves the right to replace product under this Limited Warranty with new or remanufactured product. **Leviton will not be responsible for labor costs of removal or reinstallation of Product.** The repaired or replaced product is then warranted under the terms of this Limited Warranty for the remainder of the Limited Warranty time period or ninety (90) days, whichever is longer. This Limited Warranty does not cover PC-based software products. **Leviton is not responsible for conditions or applications beyond Leviton's control. Leviton is not responsible for issues related to improper installation, including failure to follow written Installation and operation instructions, normal wear and tear, catastrophe, fault or negligence of the user or other problems external to the Product.** To view complete warranty and instructions for returning product, please visit us at [www.leviton.com](http://www.leviton.com).