rCMSB Sensor

BATTERY POWERED CEILING MOUNT SENSOR
INSTALLATION INSTRUCTIONS

nLIGHT

SPECIFICATIONS (rCMSB)

Electrical Specifications	**Input Ratings**	3 AA Lithium Batteries
Mechanical	**Mounting**	Surface mountable to a variety of surfaces including ceiling tile, drywall, concrete, and metal. Recessed mountable in drywall or ceiling tile applications. Junction box mount is designed for standard 4" ceiling electrical boxes.
Environmental	**Warrantied Operating Temperature**	-40°C to 60°C (Indoor Use Only)
	Standards/ Ratings	RoHS, UL 916, FCC / IC / IFETEL

Contains FCC ID: 2ADCB-RMODIT or 2ADCB-RMODIT3
Contains IC: 6715C-RMODIT or 6715C-RMODIT3
IFT #: RCPACRM18-1879 or RCPNLNL20-2057
Acuity Brands Lighting Inc. RMODIT or RMODIT3

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.

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

IMPORTANT SAFEGUARDS
WHEN USING ELECTRICAL EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED INCLUDING THE FOLLOWING:

- **DO NOT USE OUTDOORS.**
- DO NOT MOUNT NEAR GAS OR ELECTRIC HEATERS.
- EQUIPMENT SHOULD BE MOUNTED IN LOCATIONS AND AT HEIGHTS WHERE IT WILL NOT READILY BE SUBJECTED TO TAMPERING BY UNAUTHORIZED PERSONNEL.
- THE USE OF ACCESSORY EQUIPMENT NOT RECOMMENDED BY THE MANUFACTURER MAY CAUSE AN UNSAFE CONDITION.

In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the radiator shall not be less than 20cm during normal operation.

NOTE: 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:

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

READ AND FOLLOW ALL SAFETY INSTRUCTIONS!
SAVE THESE INSTRUCTIONS AND DELIVER TO OWNER AFTER INSTALLATION

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WARRANTY
5-year limited warranty.
Full warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
NOTE: Specifications subject to change without notice.
Actual performance may differ as a result of end-user environment and application.

- To reduce the risk of death, personal injury or property damage from fire, electric shock, falling parts, cuts/abrasions, and other hazards please read all warnings and instructions included with and on the fixture box and all fixture labels.
- Before installing, servicing, or performing routine maintenance upon this equipment, follow these general precautions.
- Installation and service should be performed by a qualified licensed electrician.
- Maintenance should be performed by qualified person(s) familiar with the products' construction & operation & any hazards involved. Regular maintenance programs recommended.
- To be installed to a circuit with overvoltage control to Overvoltage category Cat.III or less, minimum suppression rating 6.0 kV for a 600 V ac rms system voltage
- **DO NOT INSTALL DAMAGED PRODUCT!** This product has been properly packed so that no parts should have been damaged during transit. Inspect to confirm. Any part damaged or broken during or after assembly should be replaced.

⚠ CAUTION: RISK OF PRODUCT DAMAGE
√ Electrostatic Discharge (ESD): ESD can damage product(s). Personal grounding equipment should be worn during all installation or servicing of the unit.
√ Do not touch individual electrical components, as this can cause ESD and affect product performance.
√ Do not stretch or use cable sets that are too short or are of insufficient length.
√ Do not tamper with contacts.
√ Do not modify the product.
√ Do not change or alter internal wiring or installation circuitry.
√ Do not use product for anything other than its intended use.

WARNING - RISK OF ELECTRIC SHOCK
√ Disconnect or turn off power before installation or servicing.
√ Verify that supply voltage is correct by comparing it with the product information.
√ Make all electrical and grounded connections in accordance with the National Electrical Code (NEC) and any applicable local code requirements.
√ All wiring connections should be capped with UL approved recognized wire connectors.
√ All unused connector openings must be capped.

WARNING - RISK OF BURN or FIRE
√ Do not exceed maximum wattage, ratings, or published operation conditions of product.
√ Do not overload.
√ Follow all manufacturer's warnings, recommendations and restrictions to ensure proper operation of product.

CAUTION - RISK OF INJURY
√ Wear gloves and safety glasses at all times when installing, servicing or performing maintenance.

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OVERVIEW

The nLight AIR **rCMSB** is a wireless ceiling/surface mount occupancy and daylight sensor family that utilizes digital Passive Infrared (PIR) and photocell detection with adjustable time delays for dimming and on/off switching of luminaires. It is battery powered for simple installation into a variety of ceiling types. When installed as part of an nLight AIR lighting control system, the **rCMSB** will send commands to other devices wirelessly for networked control strategies.

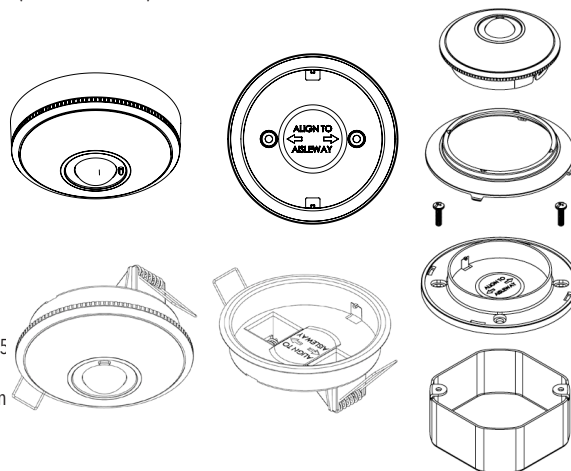## INSTALLATION INSTRUCTIONS

INSTALLATION STEPS

There are 3 mounting options with the rCMSB: Surface, recessed, and junction box mounts. Please see the installation steps for each option. Once the mounting plate is installed, proceed to the sensor installation process to complete installation. Do not mount using adhesive tape.

REQUIRED TOOLS & SUPPLIES

- Drill (Surface Mount)
- Screwdriver (Surface Mount , Junction Box Mount)
- 3" Hole Saw (Recessed Mount)

SURFACE MOUNT INSTALLATION

1. Disconnect the sensor from the mounting plate by twisting the top half of the sensor counterclockwise. This will unlock the sensor from the mounting plate.
2. Place the mounting plate at the sensor location and mark the two holes to drill. Drill 3/16" hole through ceiling surface at these locations. Note: If using an aisleway lens (45A), be sure to align the mounting plate with the arrows as indicated on the mounting plate.
3. Insert anchors (#6-8-10 X 1") into ceiling surface at drilled locations.
4. Mount the mounting plate to the anchors using the screws (#6 Pan-Head Phil/Slot 1") provided.

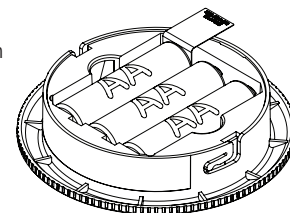### RECESSED MOUNT INSTALLATION

1. Disconnect the sensor from the recessed mounting plate by twisting the top half of the sensor counterclockwise. This will unlock the sensor from the mounting plate.
2. Drill a hole using a 3" hole saw in the surface you plan to mount the sensor. Hole size should not exceed 3.25 to ensure proper fit.
3. Pull the spring clips up on the plate and guide them through the ceiling hole. Once inside the hole, the spring clips will pull the plate up, covering the hole drilled.

JUNCTION BOX MOUNT INSTALLATION

1. Disconnect the sensor from the junction box mounting plate by twisting the top half of the sensor counterclockwise. This will unlock the sensor from the mounting plate.
2. Align the mounting plate to the junction box with the holes matching where the screws will attach to the junction box. **Note:** If using an aisleway lens (45A), be sure to align the mounting plate with the arrows as indicated on the mounting plate.
3. Mount the mounting plate to the junction box using screws for junction box (typical #6 Pan-Head Phil/Slot 1").
4. Attach the optional mounting ring by inserting the tabs into the corresponding holes on the mounting plate. **Note:** If you need to remove the mounting ring, there are small arrows along the ring to indicate where the tabs are located. Place a flathead screwdriver at one of these locations between the ring and the mounting plate and gently pry upwards to remove.

SENSOR INSTALLATION

1. Remove the pull tab from the battery compartment on the bottom of the sensor. Verify the sensor is operational by tapping once on the button next to the sensor lens. A green LED will light up as you tap the button.
2. Place the sensor in the mounting plate and rotate clockwise until the sensor seats into the plate (for the recessed mount, you may need to pull down on the mounting plate slightly or remove altogether to install the sensor). Continue to turn until it is locked in place - you feel/hear a slight click. Ensure the sensor is seated completely around the entire edge, as there are two locking tabs on the unit.
3. Proceed next to commissioning using the Clairity Pro app.

> **NOTE**
>
> You will need to push the button on the sensor during the commissioning process.

> **NOTE**
>
> If you need to remove the surface mount sensor for any reason, simply twist counterclockwise to remove. If you need to remove the recessed mount sensor, pull down on the sensor until one of the ceiling clips is exposed and you can grab it with your fingers. Guide this first clip out of the hole, then remove the entire unit. At this point, you can now twist counterclockwise to remove the sensor from the mount.

COMMISSIONING PROCESS

All nLight AIR devices utilize the Clairity Pro mobile app for commissioning. Refer to the quick start guide for a brief introduction to the commissioning process. It is recommended that you follow the commissioning process with the device installed in its final location. This will ensure you have proper network connection.

1. The rCMSB conserves battery prior to commissioning. In order to activate it during commissioning, simply double tap the button on the device next to the lens. This will allow you to see and identify the device in Clairity Pro.
2. After tapping the button twice, the device will display in Clairity Pro for 1 minute, at which time you should select the device and add it to your grid.

> **NOTE**
>
> At least 1 line powered device must be added to the grid first before adding any battery powered devices.

3. Once the device is on the grid, you will now have an additional 2 hours where the device will remain actively in commissioning mode. You can visibly see this with a simple 1 sec blink pattern on the device.
4. Proceed to adding other devices in the space to the grid.

5. Once you have completed adding all devices to the grid, you can now proceed to setting up your behavior zones. Refer to the quick start guide or user guide for more information on this process.
6. Once your behavior zones are set, tap Save and this will complete the commissioning process. If you were not able to complete this process within the 2 hour window, upon tapping Save, Clairity Pro will instruct you to wake devices via motion sensor by walking under each sensor. If a sensor does not wake up, simply double tap the button again next to the sensor lens.

NOTE

The blinking of the LED to indicate active commisioning mode can be silenced with a simple single tap of the button. After saving behaviors, there is a 2-minute sync process before rCMSB controlled devices will respond to occupancy delay times. This sync process occurs after the space has become unoccupied.

If a firmware update is required for the rCMSB, you must update each device individually from the Site Overview screen.

Test Mode
The rCMSB has a test mode feature for verifying occupancy and daylighting with the output devices. Once placed in test mode, the occupancy time out will occur within approximately 30 seconds to the dim percentage as programmed in Clairity Pro and by simply shining a light on the photosensor, the outputs will change from 100% (or max level) to 1% (or min level) in approximately 15 seconds.

To enable test mode, press the button next to the sensor lens 3 times, wait for the LED to blink twice (indicates test mode disabled), and then press the button once. Confirmation of successfully entering test mode will be seen with three subsequent LED blinks with a 1 second pause between each. This will enable test mode for 10 minutes. To disable, press the button 3 times, followed by pressing it 2 times. Otherwise, the test mode will expire on its own after 10 minutes, at which point it will return to the programmed settings put in Clairity Pro.

Low Battery Mode
When the rCMSB has reached a very low battery threshold, the device will go to sleep and produce the following blink code at the LED on the unit:
- LED on for 1/4 sec
- LED off for 10 sec
- Repeat

PUSH BUTTON SETTINGS

Please read all 3 steps before using the push button functions

1. Enter a function by pressing button the number of times as the desired function number from the tables below (e.g., press three times for function 3, test mode).
2. LED will flash back the selected function's current setting (e.g., 2 flashes for disabled). To change setting, proceed to step 3 before flash back sequence repeats 3 times. To exit the current function or to change to a different function, wait for sequence to repeat 3 times then return to step 1.
3. Press button the number of times indicated in the particular function's detailed table for the NEW desired setting (e.g., press 1 time for enabled). As confirmation of setting change, LED flashes back the NEW setting 3 times before exiting.

DETAILED FUNCTION TABLES

2 = Wake Up
This will activate the device for commissioning purposes. The device's LED will flash rapidly for one second, followed by one second of off time repeatedly while it is awake. It will be discoverable for 1 minute and able to receive messages from Group Monitor for 2 hours.

3 = Test Mode
When enabled, the device will have an occupancy time delay within approximately 30 seconds and daylighting will change outputs from 100% to 1% in 15 seconds. Test mode will automatically be disabled after 10 minutes.

1	Enabled
2	Disabled*

4 = Occupancy Time Delay
The length of time an occupancy sensor will keep the lights on for after it last detects occupancy.

1	15 sec	**7**	12.5 min	**13**	60 min
2	30 sec	**8**	15 min	**14**	1 hr 15 min
3	2.5 min	**9**	17.5 min	**15**	1 hr 30 min
4	5 min	**10**	20 min	**16**	1 hr 45 min
5	7.5 min	**11**	30 min	**17**	2 hrs
6	10 min*	**12**	45 min		

5 = Microphonics
Enables or disables the microphonics feature associated with PDT option.

1	Disabled
2	Enabled*

6 = Battery Remaining Feed
An estimate of the remaining battery life on the device.

1	~0%	**3**	25% to 50%	**5**	>75%
2	<25%	**4**	50% to 75%		

7 = LED Behavior
Enables or disables the LED from flashing on occupancy state changes.

1	Disabled
2	Enabled*

9 = Restore Factory Defaults
*Restores the device to factory defaults (as indicated with *).*

1	Don't restore factory defaults*
2	Restore factory defaults

NOTE

* indicates default setting for rCMSB models.

For further troubleshooting guidance, please contact the Controls Technical Support Team

1(800)-535-2465