RAB DESIGN

Introducing the new

ControlLED App

Network Lighting Control
App Instruction Manual

Bluetooth DLC LISTED UL CERTIFIED RoHS COMPLIANT FC

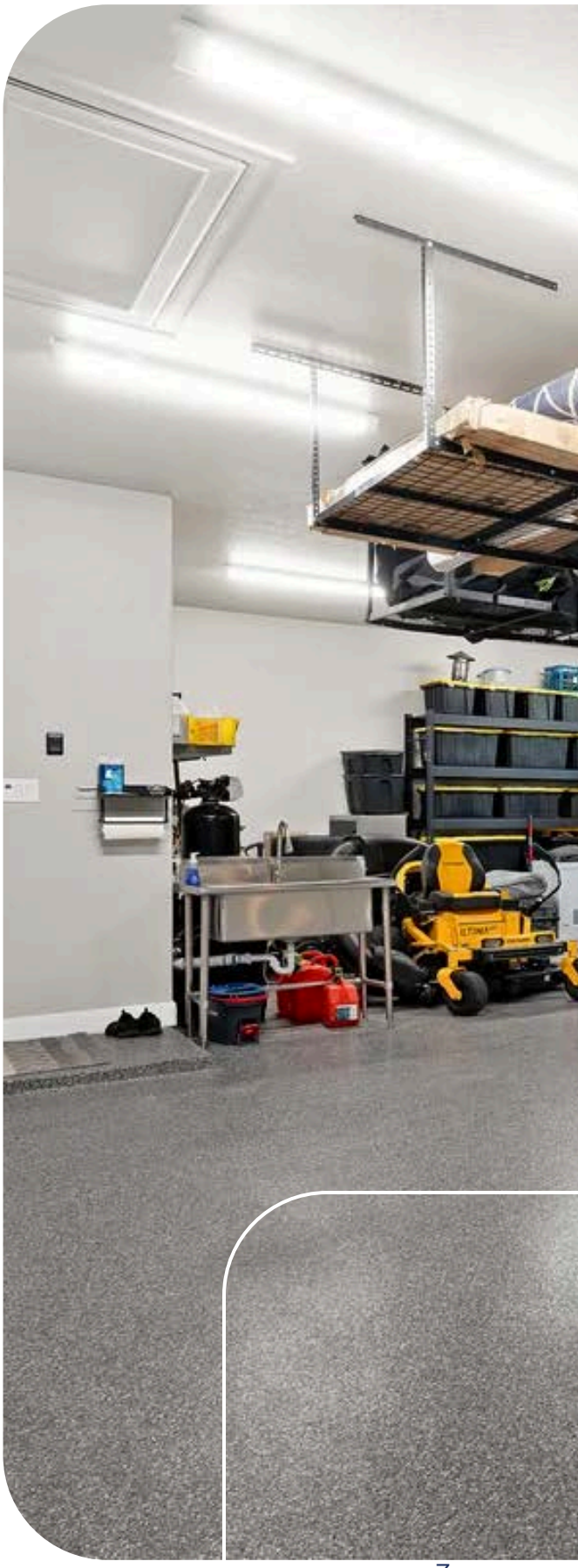
Table of Contents

Introduction

ControlLED® Network Lighting Controls (NLC) offer advanced capabilities to manage luminaires individually or in groups, utilizing Bluetooth® Low Energy Mesh 4.2 & 5.0 protocols. This cutting-edge wireless control system is operated using the ControlLED App, integrating seamlessly with various sensors. The system components can be easily commissioned using the ControlLED App on a mobile device, eliminating the need for a gateway. The mesh network supports wireless communication over distances of up to 100 feet or more between devices, even without internet access.

The ControlLED App uses data encryption to secure the mesh network. Configuration settings for each device are stored in encrypted QR codes, ensuring that each network device is accessible only with the corresponding QR code.

Luminaire level lighting control (LLLC) refers to a type of lighting control system where each individual light luminaire is equipped with its own control device or integrated control system. This setup allows for independent control and management of each luminaire. LLLC luminaires can detect human movements and ambient light levels, automatically turning on/off or dimming the lights to enhance comfort, safety, and energy efficiency.



Cautions

1. Single Device Usage:

Do not use more than one mobile device during the commissioning process. Using multiple devices may cause unexpected results such as data corruption and duplicate light addresses.

2. Sync Data Before Sharing:

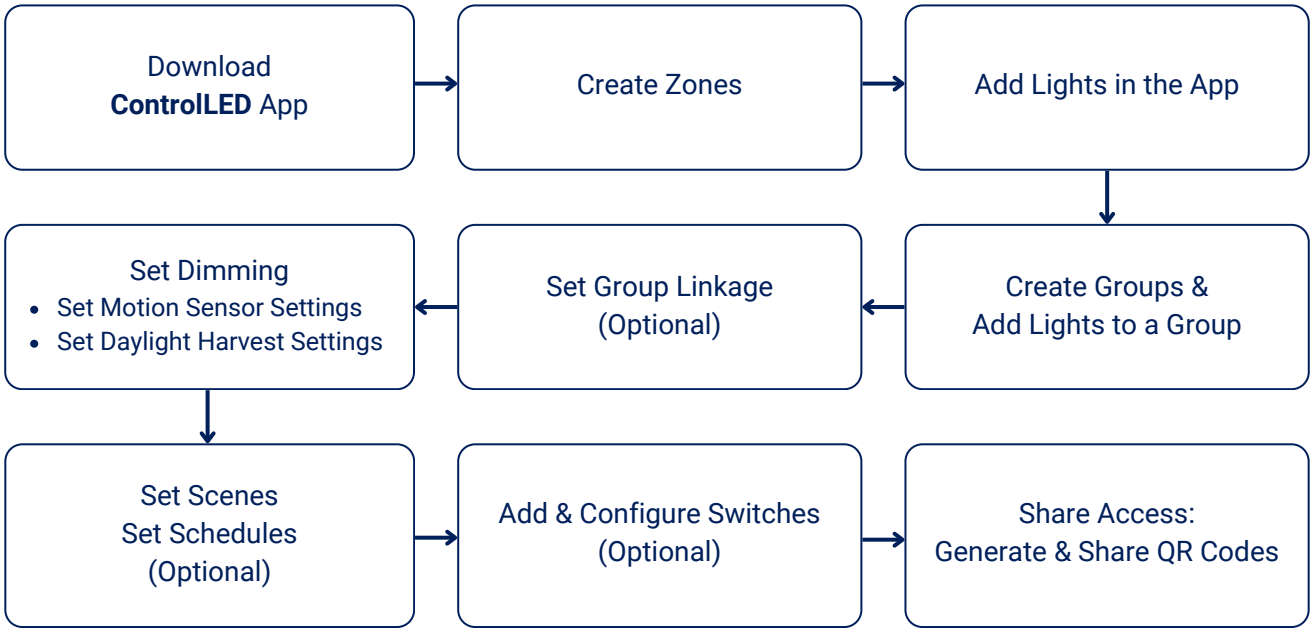
Ensure commissioning data has been synchronized to the cloud before sharing the QR code. Access rights to the zone can be shared by sharing the QR code. Before sharing, make sure the zone data has been uploaded to the cloud (requires internet connection). The app will try to sync the data automatically in the background whenever an update is made to the zone. You can also select “Force Sync” on the “More” page to sync manually.

3. Internet Connection:

- During the commissioning process, or whenever an update is made to the zone, the app will try to save and sync the commissioning data to the cloud. This requires an internet connection, either by Wi-Fi or data connection.
- The mobile device must have a good internet connection during commissioning to save/update the commissioning data to the corresponding QR code.
- If the internet connection is functioning properly, the app will sync the data to the cloud in the background. You may share the QR code to other users immediately after commissioning is completed.
- If the mobile device does not have a good internet connection during commissioning, the user will see an error prompt on the “More” page but may continue the commissioning process. Remember to “Force Sync” the data to the cloud when the mobile device has a good internet connection. Do NOT share the QR code to others before you successfully sync the data.
- If the mobile device has a poor internet connection, the app will attempt to sync commissioning data to the cloud, but each communication may take longer or may fail after a long delay due to the poor connection. In such conditions, it is suggested to turn off Wi-Fi (or put the phone in Airplane Mode) and complete the commissioning process. Later, when a good internet connection is available, the user can sync commissioning data to the cloud. DO NOT share the QR code to others before you successfully sync the data.

Commissioning

The following commissioning procedure is recommended:



How to Download & Navigate the App

To download the ControlLED App, scan the QR code below, which corresponds to the type of smartphone/tablet that will be downloading the App.

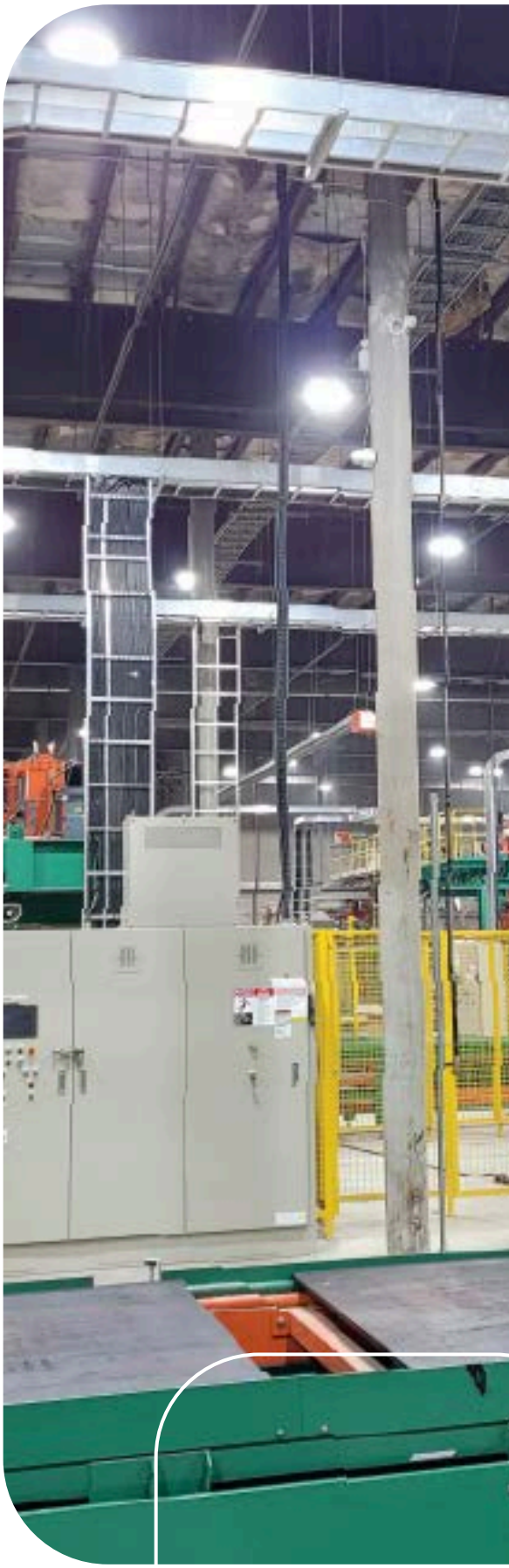
The app supports most Android smartphones. However, some models may not be compatible due to hardware or firmware issues. The app requires access to the network and Bluetooth, so please approve these access requests. The app does not collect any private data.

To automatically save QR codes to your album, please accept the prompt to allow access to your photos.

RAB DESIGN Lighting will update the app with new features and bug fixes. To ensure you receive the latest version, please enable auto-update on your device.

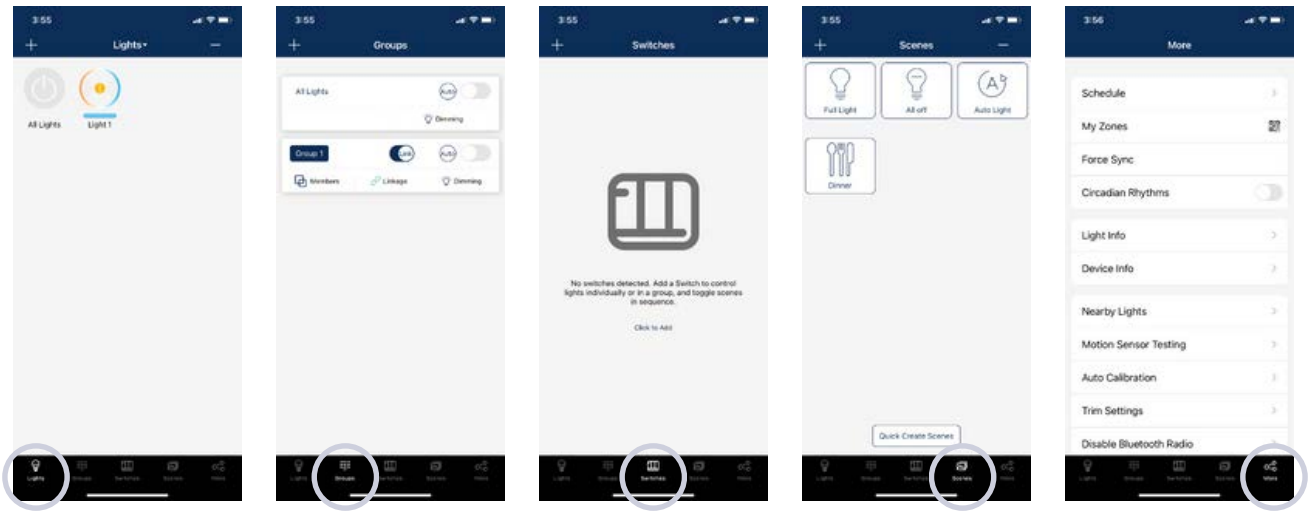
Android

iOS



App Navigation

ControlLED's NLC App has 5 tabs that can be toggled using the icons at the bottom of the screen.



Lights
Shows all lights that are connected to the app. It allows the user to view and control individual lights.

Groups
Allows user to create and manage groups.

Switches
Displays all switches that are connected to the App. It also allows the user to view/edit switch controls.

Scenes
Allows the user to create and manage scenes.

More
Allows the user to view Schedules, Zones, Light and Device Info, and other additional settings.

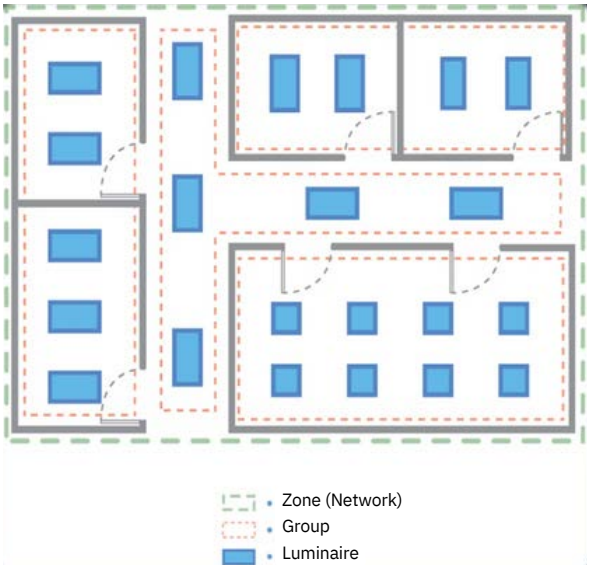
Zones

Zones enhance workspace organization by enabling users to create, rename, and delete zones according to their workflow. It is recommended to create QR codes for all zones and pre-define groups, scenes, and their names prior to commissioning. To streamline the setup process, add and commission lights one group at a time. This involves configuring sensor settings and assigning them to their respective zone.

- There is no limit to the number of zones a user can create, giving the flexibility to organize the workspace as needed.
- Each zone can have up to 100 lights.
- Each light can be assigned to one zone only.

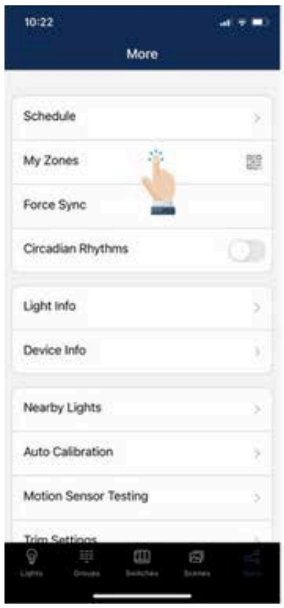
The following illustrates an example of a zone.

- **Zone:** Each floor in a building can be defined as a zone.
- **Groups:** Each room or hallway can be defined as a group.



Zones

Creating Zones



1. Start the ControlLED App and select the “More” page.
2. Then select the “My Zones” button.

3. Select “Create” in the top-right and then select “Confirm.”

4. Input the name of the zone and then select “OK.”

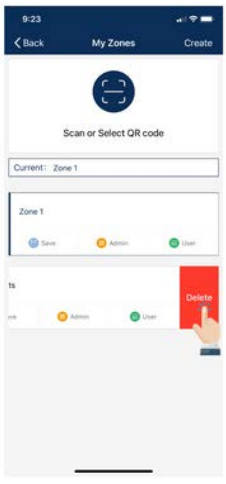
5. All zones can be found in the “My Zones” list and you can switch between them by selecting them.

Renaming Zones

1. On the “My Zones”page, press the edit button located to the right of the zone name.

2. Enter preferred zone name as prompted. Press “OK” to save.

Deleting Zones



1. Select the “Zone” to delete and slide finger from right to left over that Zone.

2. Press the red delete button that appears.
3. Confirm by pressing “Delete”.

Note: User cannot delete the zone in which they are currently active.

Set-Up Lights

The Lights page is the first page upon opening the app. It is the primary page for controlling individual lights.

- Add a maximum of 100 lights per zone.
- Do not turn on more than 100 lights at the same time.
- To prevent wireless communication interference, turn off lights by power source that are not in the current zone.

Add Lights in the App

1. From the Lights page, select the “+” button in the upper left corner.
Note: Please ensure the lights with sensor are powered on before adding lights in the App.

2. Select “Top 20”, “Top 50” or all from the filter at top of screen to show lights with the strongest Bluetooth signal.

3. The App will scan for lights that can be added to the zone. Lights can be identified in a room by pressing the icons to turn it on and off.

4. Select the lights you want to add by pressing the check mark located in the lower right corner of desired light icons.

5. Select “Add” to associate all of the selected lights into the zone.

6. Confirm by selecting the “Add” button in the dialog box. A light will blink to indicate a successful connection.

7. Select the “Back” button to return to the Lights page.

Note: Commissioning performance may deteriorate if there are more than 100 factory-setting lights powered up at the same site. Please power off some factory-setting lights before continuing.

Set-Up Lights

Name or Rename Lights

1. From the Lights page, do an extended press on a selected light to go to the dimming page.

2. Select on the light's name located in the upper left of the dimming/tuning slider.

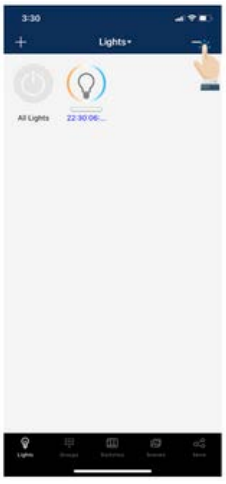
3. Enter the light's new name in the dialog box. Press "OK" to save.

4. Note that the wattage is the rated wattage after High-Trim is set. E.g., input 24 for a 30-watt luminaire with 80% of High-End trim setting.

Note: For lights with no colour tuning or RGB capability, the icons and dimming wheel will appear as black and white.

Delete Lights

Lights must be paired to the app to be deleted. If not paired, please refer to the reset/restore section.



1. From the Lights page, select the "-" button in the upper right corner.

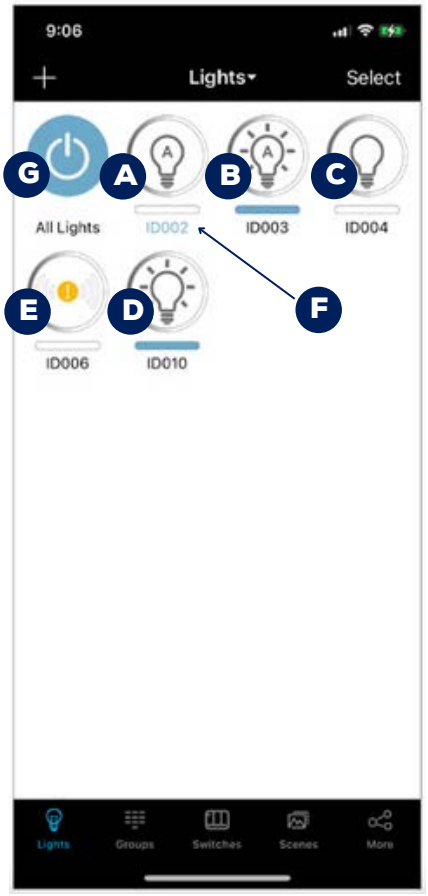
2. Select the lights you want to delete, by giving it a tap and check mark.

3. Select "delete" in the dialog box to confirm.

Set-Up Lights

Understanding Light Icons

Once lights are added to the App, they can appear as different icons. Each icon represents the state of the device:



A. Auto-off: Light output is off, and will be triggered to auto-on if motion is detected.

B. Auto-on: Light output is on, and light is operating in auto mode.

C. Manual-off: Light output is off, and light output stays off until a scheduled event or manual command overrides this.

D. Manual-on: Light output is set to a manual override level via a scene trigger or manual override command. It will return to auto-off mode automatically after the sum of the motion sensor delays.

E. Offline: Controller is most likely either not getting power or is out of range of the mesh network.

F. Blue Light Name: This is the light which the phone/tablet is using to connect to the mesh network.

G. All Lights: A default full system on/off switch, toggles all lights in the region between auto-on and manual-off.

Groups

Create a Group

Groups enable control of a defined set of lights/sensors, in a small area. They allow the user to configured/change settings for all devices in a Group at the same time.
A light can be a member of up to 20 Groups. This allows for linkage with multiple groups.
The App provides a default group named “All Lights” which gives the user control over all lights in the zone.

1. Select the “Groups” page in the bottom menu.
2. Select the “+” in the top left corner.

3. Type the group name and then press “OK”.

4. Select the lights that you want to add in the group by selecting
the checkbox in the bottom right of the desired Light icon.

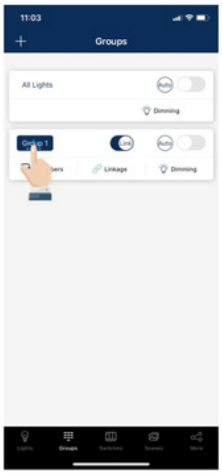
5. Use the filter at the top of the screen to help add proper lights to the group:

- All: All lights are shown.
- Grouped: Only lights added to at least 1 group are shown.
- Ungrouped: Only lights that have NOT been added to a group are shown.

6. After all Lights have been selected, press “Save” to save the Group.

Groups

Rename a Group



1. Select the Group that you wish to rename.

2. Enter new group name as prompted.
3. Select “OK” to confirm.

Delete a Group

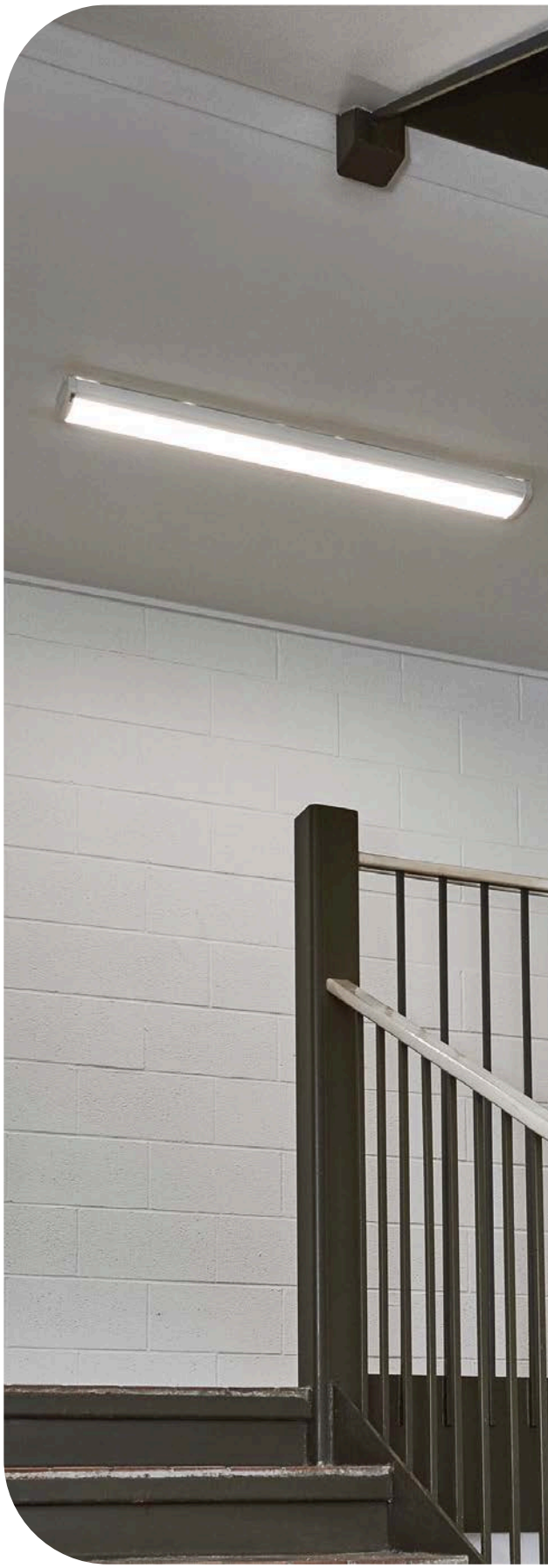
1. Select the Group to delete and slide finger from right to left over that Group.

2. Press the red delete button that appears.
3. Confirm by pressing “Delete”.

Groups

Add or Remove Lights In a Group

1. Select which group to add or remove lights, from the Groups page.
2. Tap “Members” to see all current lights in the group.
3. Select which lights you want to add or remove.
4. Press “Save” to confirm changes.



Groups

Adjust Group Linkage Level

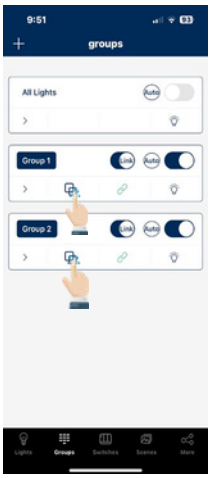
1. Choose which group to change linkage settings, from the Groups page.
2. Select “Linkage” to access the group linkage controls.
3. Set linkage brightness level according to preference.
4. Press “Save Linkage Brightness” ” to confirm changes.

When Group Linkage “Link” is enabled, all lights in a group will respond when one light senses motion. When disabled, a light in a group detecting motion will not affect other lights in the group.

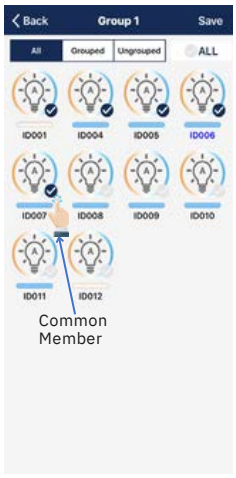
Linkage Brightness: When one light in a group detects motion, the brightness of that light changes to maximum, whereas the brightness of all other lights in the group will be at a set value called Linkage Brightness. An example is provided in the next section.

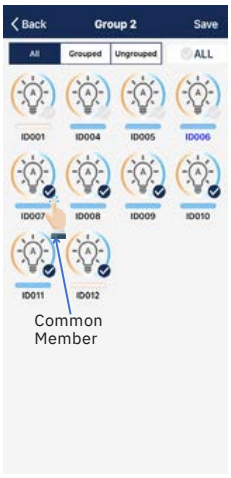
Groups

Set Multiple Group Linkage



1. Select the Member symbol to list the lights in Group.



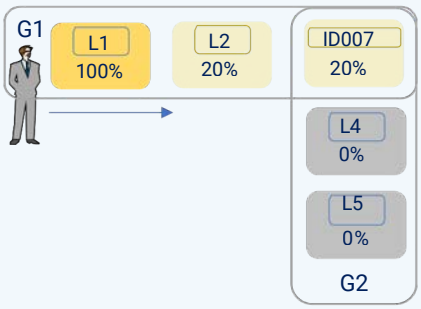


2. The common member should be in correct physical position as shown in illustration. Note: A light can be a member of up to 20 groups.

Example of Group Linkage

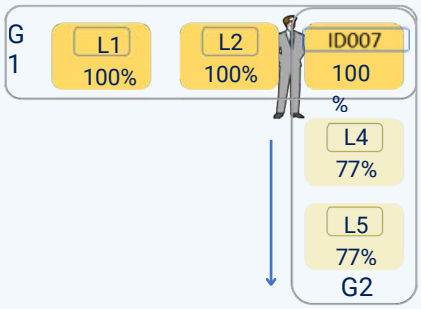
In this example, there are two hallways - one hallway has 3 lights in Group 1 (G1) and the other has 3 more lights in Group 2 (G2). Both groups share a common light ID007. Group link is enabled in both groups.

1) When an occupant enters the hallway with Group 1 (G1) lights, light L1 reaches the maximum brightness level (100%) and the other lights in the group (L2 and ID007) reach a linkage brightness of 20%.



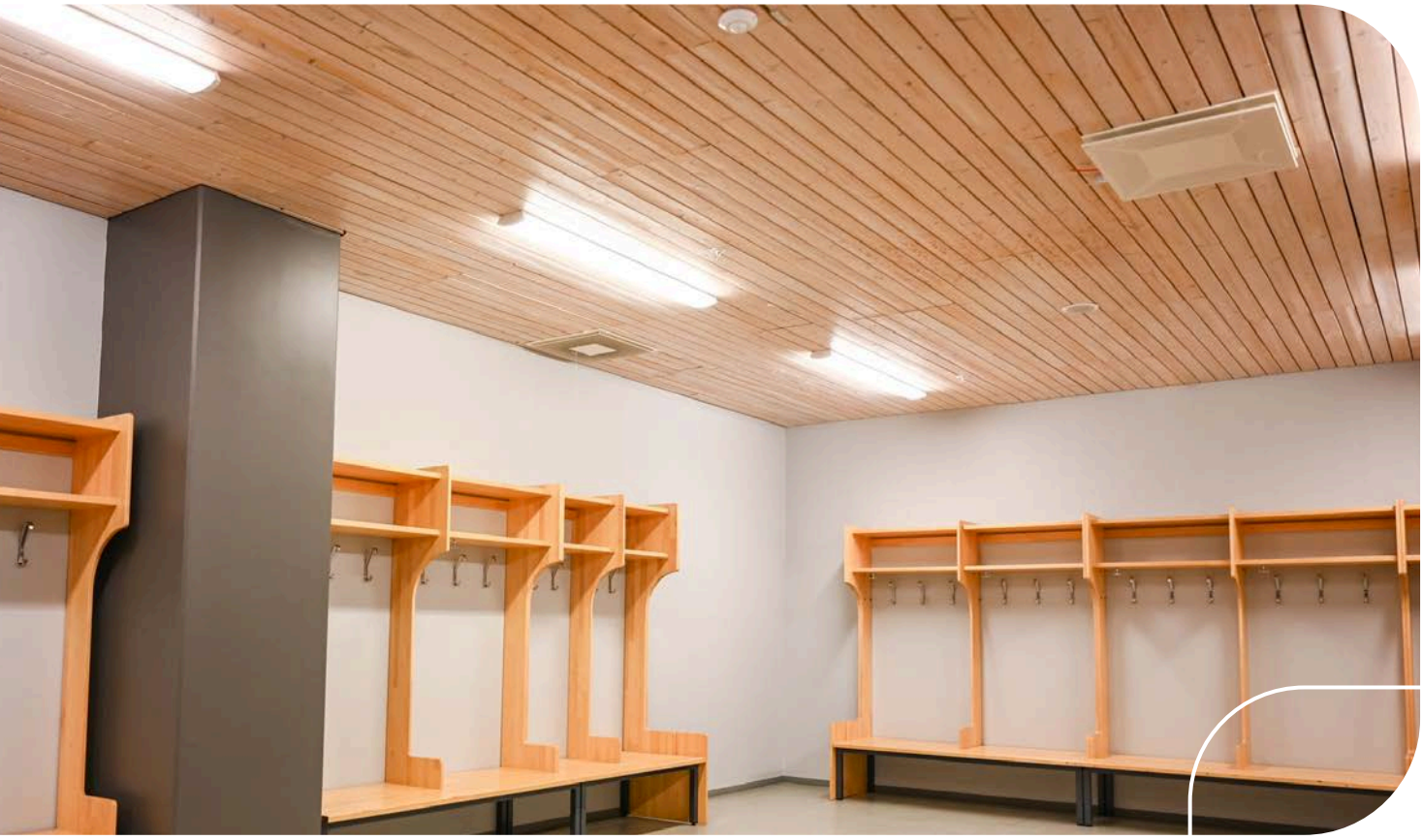
2) As the occupant walks through the hallway, the brightness in each light in G1 increases from 20% to 100%.

3) When the occupant reaches ID007, since this light is shared in G2, all other lights in G2 reach a linkage brightness of 77%.



Note: For a light to respond to the 'Link' command from other lights in the same group, the 'Motion Sensor' function must be enabled for this light, even if the light does not have a motion sensor connected to it.

4) As the occupant walks through the new hallway, the brightness in each light in G2 increases from 77% to 100%.



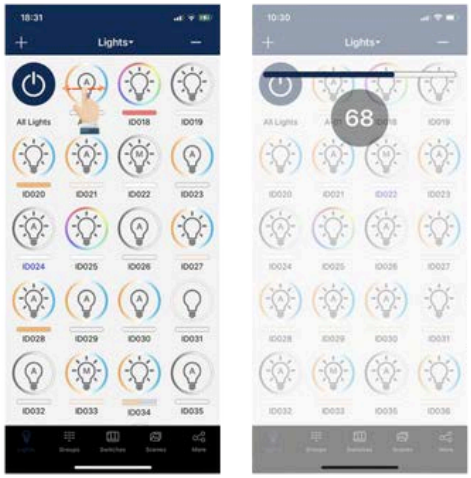
Dimming Lights

Dimming Individual Lights

Below are the steps to dim individual lights. For convenience it is recommended to dim groups of lights.

Method 1

1. From the Lights page, a quick select on a light's icon will turn it on or off.



2. Lightly slide a finger left or right across the light's icon to adjust brightness.

Method 2

1. From the Lights page, do an extended press and hold on a light's icon to open the Light Dimming settings page.

2. The Light Dimming settings page appearance will vary according to the light's capabilities. Set to the desired dimming level and select the "Back" button to save settings.

Dimming a Group of Lights

1. Choose which Group to change settings, on the Groups page.
2. Tap "Dimming" in the lower right corner.

3. Select dim level using the dimming wheel or sliding across the Brightness bar.
4. Optional: Set wattage levels.
5. Press "Back" to save changes.

Motion Sensor

Set Motion Sensor Settings

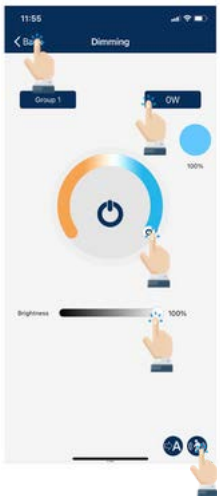
The motion sensor function allows bi-level dimming for lights, promoting energy efficiency while enhancing security and visibility in any space.

Individual Motion Sensor

Group Motion Sensor

To set individual motion sensor settings:
From the Lights page, do an extended press and hold on a light's icon to open the Light Dimming settings page.

To set group motion sensor settings:
Choose which Group to change settings on the Groups page and tap "Dimming" in the lower right corner.



1. Select the "Sensor Settings" icon in the lower right corner.
2. Set the brightness of the luminaire using the dimming wheel or slider.
3. Motion Sensor should be enabled by default. Select Occupancy or Vacancy mode. If Occupancy mode is selected, set the Manual Off override.
4. Set the Sensitivity, 1st Time Delay, 2nd Time Delay, and Dim Level.
5. Click "Save" in the top right corner.

Note: Setting the "Trigger" to "Disable" will deactivate the motion sensor but will still allow the Occupancy/Vacancy dimming function to operate. In this scenario, the light will turn off according to the T1 and T2 time delays. Since the sensor is disabled, motion will not reactivate the light to the working light level. The only way to turn the light back on is manually using Schedule, a Bluetooth switch, or App functions.

For example, disabling the "Trigger" might be useful in a maintenance room where you don't want the sensor to be triggered by heat (PIR sensor) but still want to use the time delays.

Occupancy vs Vacancy
Motion sensors operate in two modes: Occupancy and Vacancy.
In Occupancy mode, the lights turn on automatically when motion is detected and turn off when the set time delays expire.
In Vacancy mode, the lights must be turned on manually with a switch but will turn off automatically after the time delays.

Manual Off Override
This option appears when Occupancy mode is selected.
When the light is turned OFF manually (by either App, switch, or schedule), it remains OFF and won't be triggered by motion during the 'Manual OFF override time' period. If motion is detected during this period, it will restart the time counter.
After the 'Manual OFF override time' timer times out, the lights will remain OFF but will be ready to be triggered by motion.

The default is set to 'Infinite'. At this setting, when the light is turned OFF manually, the lights stay off and motion does not trigger the sensor until the light is manually turned back ON.
Note: This function only works with firmware later than 231013.

Example: If the Manual Off Override is set to 3 minutes, a user can switch off the light manually, and it will remain off for 3 minutes, regardless of any motion nearby. After this period, the light will automatically return to its motion-responsive mode and will turn on when motion is detected.

Sensitivity
This feature determines the detection range of the motion sensor.

Time Delays & Dim Level
There are two time delays in auto mode.
The 1st Time Delay (T1) keeps the lights at the working light level for a specified period when motion is detected.
If no motion is detected during T1, the 2nd Time Delay (T2) begins, during which the lights dim to a lower level to indicate they will soon turn off.
The dim level during T2 is set as a percentage of the working light level.

For special applications, T1 and T2 can be set to an infinite time delay to prevent the lights from turning off.

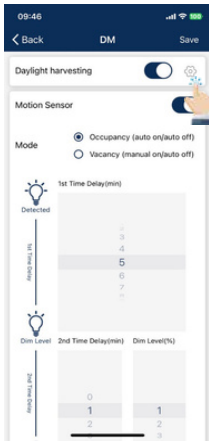
Example: If T1 is set to 3 mins, T2 is set to 30 mins, the working light level is set to 90%, and the Dim Level is set to 30%, when motion is detected, the brightness stays at 90%. After 3 mins of no motion, the brightness decreases from 90% to 30%. After 30 more mins of no motion, the lights turn off.

When Daylight Harvest is disabled, the working light level refers to the light level set at the Dimming phase (please refer to the Dimming Lights Section). When Daylight Harvest is enabled, the working light level is a combination of the light emitted from the light and the ambient light.

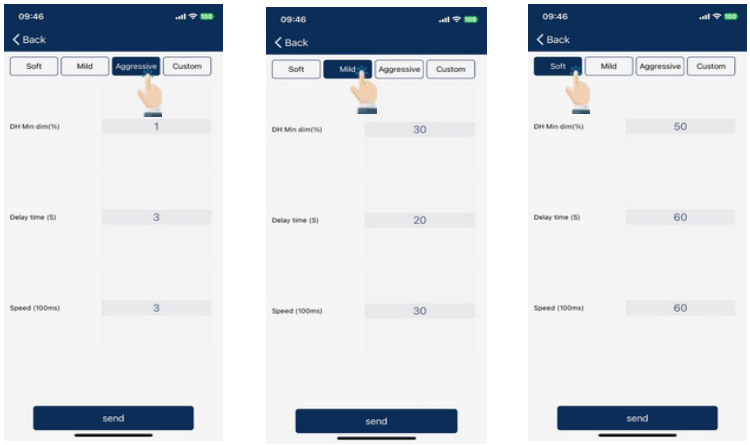
Daylight Harvesting

Set Daylight Harvest Settings

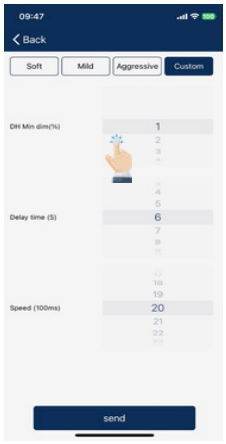
Daylight Harvesting optimizes natural light for energy efficiency in buildings. The user-friendly interface offers presets like “Soft,” “Mild,” and “Aggressive,” along with customizable dimming options. This guide helps you adjust settings to achieve optimal illumination while reducing energy consumption.



1. Select the setting button beside Daylight harvesting toggle button to set daylight harvesting (it is off by default).



2. There are three pre-defined strategies, select the one that best fits application.



3. Custom will allow the user to fine-tune the daylight harvesting parameters.
4. Set the working light using either “Manual Setting” or “Auto Calibration”. Please see the next section.

Note: Do not enable daylight harvesting if no photosensor is installed or connected, as this may cause the lights to dim randomly due to incorrect ambient light level readings.

DH Min dim (%)
It is the minimum light level that the daylight harvesting sensor can dim a luminaire to. Set this parameter higher if you want to keep the luminaire brighter and set it lower if you want to save more energy. If a low-end trim is set, please ensure the DH Min dim % is higher than the low-end trim or it will automatically be set to this value. For more information on low-end trim, please refer to the section Trim Settings.

Delay time (S)
The time the sensor will wait to dim down the luminaire when ambient light has gone up. The unit of this parameter is in seconds. Set this value larger if you want the luminaire to hold the level longer even when ambient light has gone up.

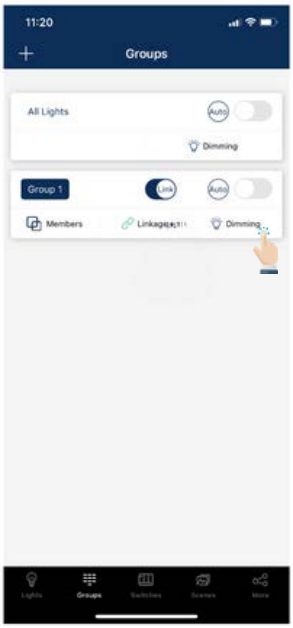
Speed (100ms)
How quickly the sensor should dim the luminaire. The unit of this parameter is in 100 milliseconds. Set this value larger if you want the dimming process to be more gentle and softer.

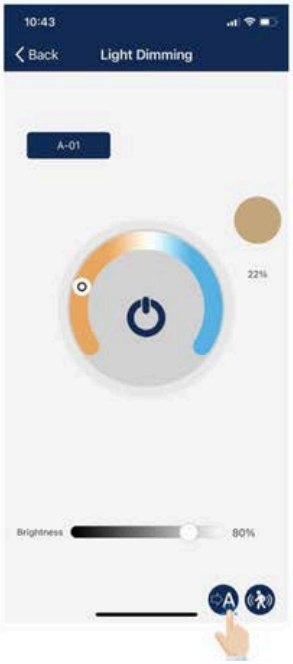
Name	Response speed to ambient light changes	Minimum daylight harvesting light level	Suggested applications
Soft	Slow	50%	Independent office, parlor, concierge area
Mild	Medium	30%	Open office, classroom, meeting room
Aggressive	Quick	= low-end-trim (1% or 10%)	Tea room, storage room, warehouse

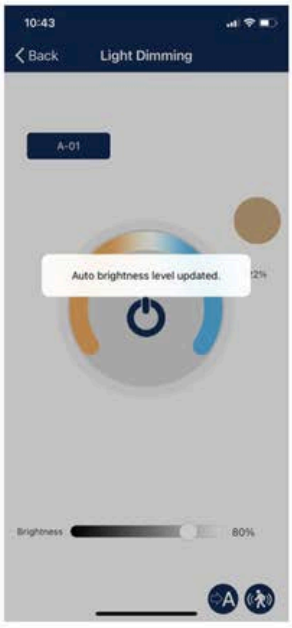
Set Auto Light Level using Manual Setting

The "Manual Setting" feature allows users to customize the working light level by remembering the light reading from the sensor, whether it's from ambient light or the luminaire itself. To ensure accuracy, adjust the light level at night when all luminaires experience the same ambient light. Initially, the working light level brightness is set to 100%. Users should adjust the dim level of the luminaire instead of keeping it at full brightness. Once the dim level is set, it will serve as the reference to maintain a consistent lumen level in the workspace, combining both luminaire and natural light. Lights will dim independently based on their exposure to ambient light.

Fixtures near windows, which receive more natural light, will dim more than those farther from windows, ensuring a consistent working light level throughout the workspace.







1. **To set individual daylight sensor settings:**
On the Lights page, select and hold a light icon.

To set group daylight sensor settings:
On the Groups page, select Dimming.

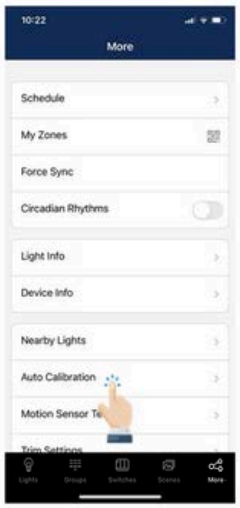
2. Adjust the dimming levels as desired considering any ambient light.
3. Enable Auto Mode by pressing the Auto button in the lower right.

4. A confirmation will appear that the Auto Mode brightness level has been updated.

Note: Auto mode only applies to lights with sensor functions enabled, either motion sensor and/or photo sensor. When the working light level has been set, the lights will return to the brightness each time it is powered on, or turned on by the App, switch, or schedule. The working light level does not apply to lights with sensor functions disabled, even when it has a sensor connected to it. Each time it is powered on, it will return to the last brightness.

Set Auto Light Level using Automatic Calibration

This feature automatically adjusts light levels based on user-defined settings, effectively filtering out ambient light interference through a self-learning process. To determine the optimal parameters, test with one light in real or simulated conditions. Then, use ‘Auto Calibration’ to quickly set the lights. During calibration, the lights will turn on and off several times.



1. From the “More” page, select “Auto Calibration”.

2. Select a group for Auto Calibration by selecting the group name.

3. Adjust parameters as desired. Only the brightness option will appear for non-colour tunable products.

4. Select the “Start” button to start Auto Calibration.

Scenes

Scenes allow users to create pre-programmed settings of dim level and color temperature for individual lights or groups of lights. Color tuning is not offered at this time for ControlLED-enabled products.

- Up to 32 scenes can be set for a light.
- Up to 127 scenes can be set for a zone.

The App has three default scenes defined: All Off, Full Light, and Auto Light. Activating a scene will cause all members to adopt the settings of the selected scene. Users must add lights first; then the next step is sensor setting before creating groups and scenes.

Create a Scene

1. Select the “Scenes” page in the App.
2. Select the “+” button in the upper left corner.

3. Type in the scene name and press OK.

4. Select a desired icon to be the scene icon.

5. Select the individual lights or groups that will participate in the scene. An extended press on a light or a group will dim the light or group.

6. Select “Save” to save the scene settings.

Create a Quick Scene

1. Select the “Quick Create Scenes”.

2. Select the “Group” to adjust Brightness and Color.

Edit Scene Settings

1. Select the scene icon of the scene to edit/program.
2. Press and hold the scene icon to edit scene settings.

3. Press and hold Lights/Groups and de fine settings desired.
4. Select “Save” to save the scene settings.

Delete a Scene

1. Press the “-” button in the upper right corner.

2. Select which scene(s) to delete.
3. Press “Delete” to confirm.

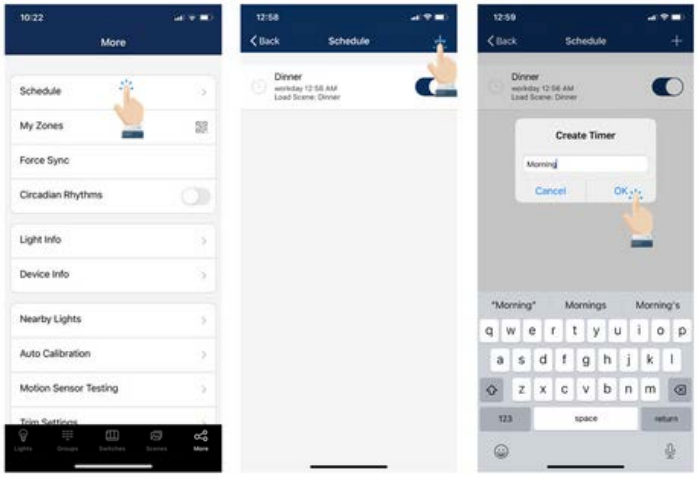
Schedules

Schedules allow the user to program lighting changes for specific dates and times. Schedules can be applied to an individual light, a group, or a scene.

- Up to 32 schedules can be set for a zone.

Powering the fixtures off will disable the Schedule function. If there is a power failure, please re-commission the Schedule function.

Create a schedule

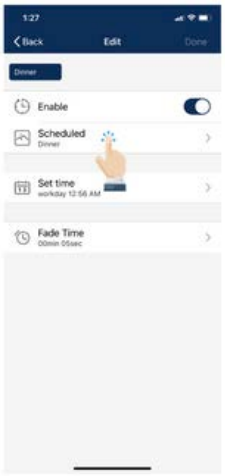


1. From “More” page, press “Schedule”.

2. Select the “+” in the upper right corner.

3. Type in a name for the schedule.
4. Press “OK” to continue.
5. The user will need to associate the Schedule to lights, groups, or scenes, as well as set the schedule’s time, before saving the Schedule.

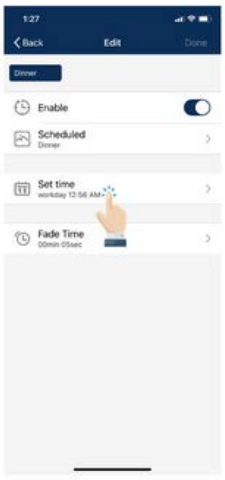
Schedules for Lights, Groups, or Scenes



1. On the Edit screen of a selected schedule, press “Scheduled”.

2. Choose between “Lights”, “Groups”, or “Scenes”.
3. Select one light/group/scene to schedule.
4. Press “Done” to continue.

Set the Schedule’s Date and Time



1. On the Edit screen of a selected schedule, press “Set time”.

2. Choose preferred date for the schedule.
3. Choose preferred time for the schedule.
4. Press “Done” to continue.

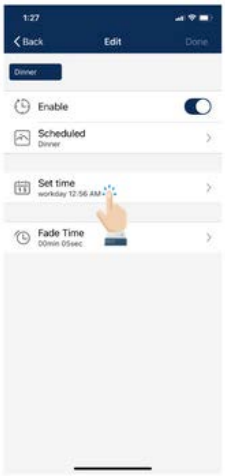
Group Settings Legend

AUTO:
Activates auto mode when configured. This mode maintains the working light level if calibrated and dims based on motion sensor settings.

MOTION ON/OFF:
Enables or disables the motion sensor.

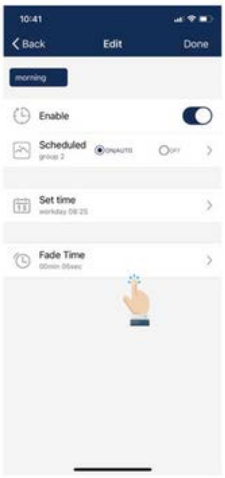
PHOTO ON/OFF:
Enables or disables the daylight harvesting feature using the photosensor.

Set a Repeating Schedule

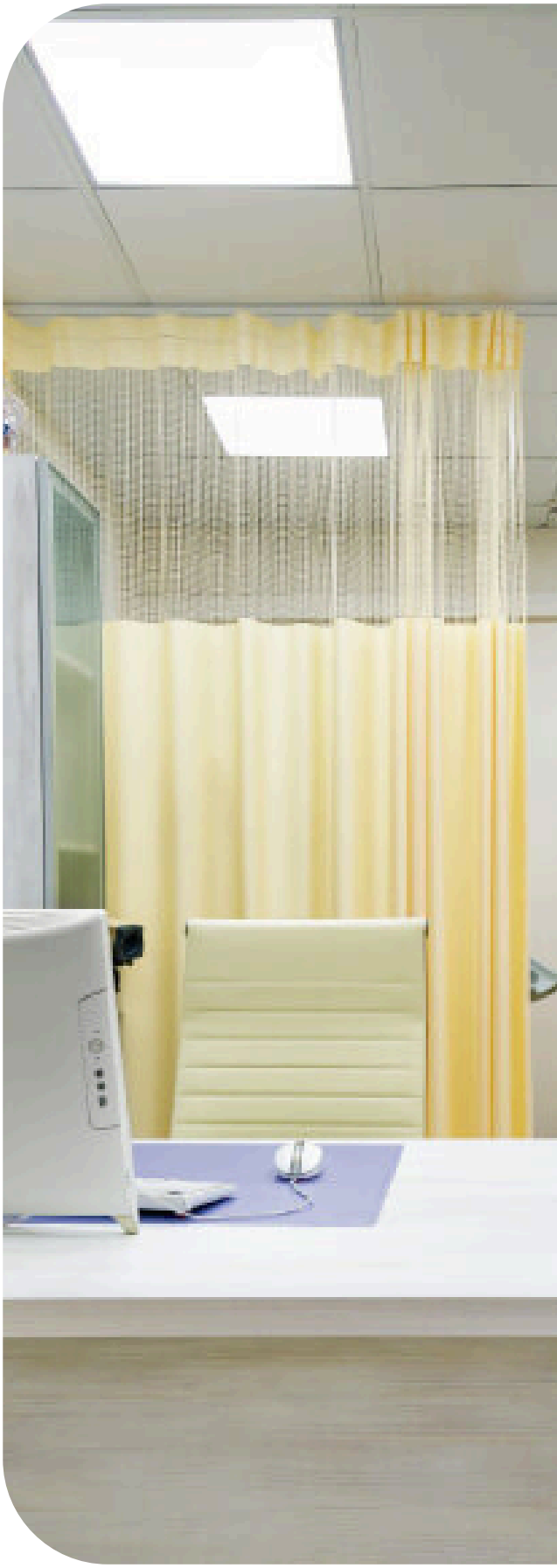


1. On the Edit screen of a selected schedule, press “Set time”.
2. Repeat switch.
3. Choose which days of the week you want the schedule to repeat.
4. Set desired time for the schedule.
5. Press “Done” to continue.

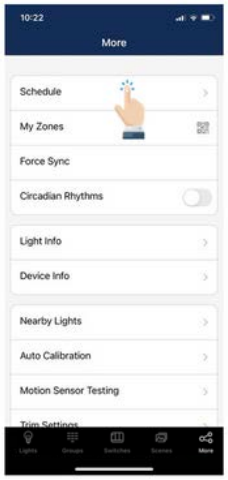
Set Fade Time for a Schedule



1. On the Edit screen of the selected schedule, press “Fade-Time”
2. Set Fade Time to a desired duration.
3. Select “Done” to continue.



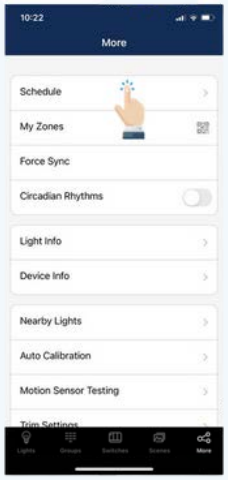
Delete a Schedule



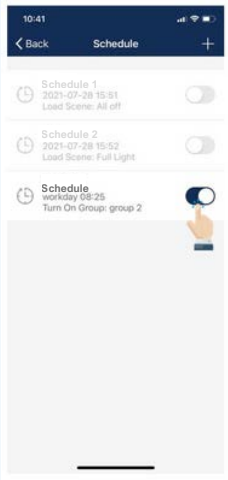
1. From the More screen, select “Schedule” to see a list of all schedules.

2. Select which schedule to delete and swipe finger to the left.
3. Press the red “Delete” button that appears.
4. Press “Delete” to confirm.

Enable Or Disable a Schedule



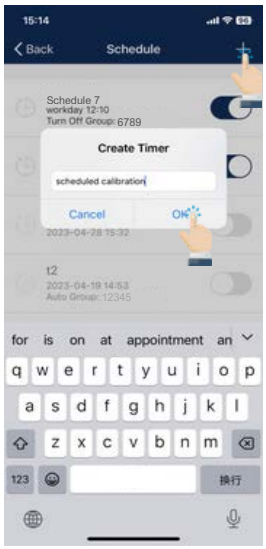
1. From the More screen, select “Schedule” to see a list of all schedules.



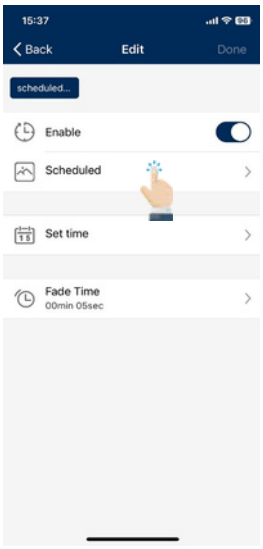
2. Select which schedule to enable/disable and select the enable/disable button on the right.

Set Scheduled Auto Calibration

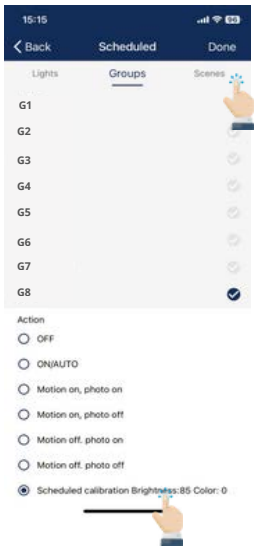
The scheduled Auto Calibration feature allows users to set the Auto Calibration function for times when natural daylight will not affect ambient light levels in the space.



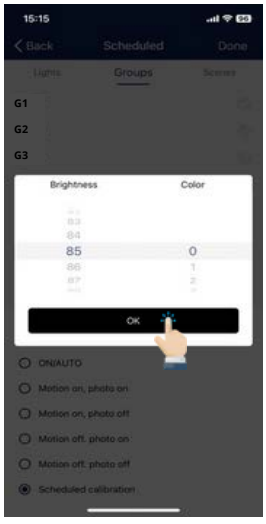
1. On the “More” page, select “Schedule”, then select the “+” button to add a scheduled calibration. Input a name and selecet “OK”.



2. Select “Scheduled”.

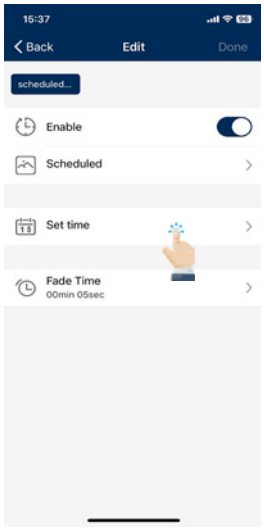


3. Select the group desired to calibrate. Then select “Schedule Calibration” at the bottom.



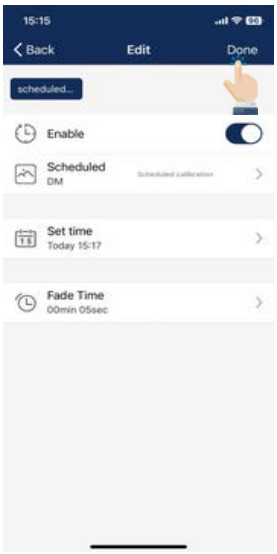
4. Then choose the appropriate brightness value and the colour CCT in the prompt box and select “OK”.

5. Then select “Done”.

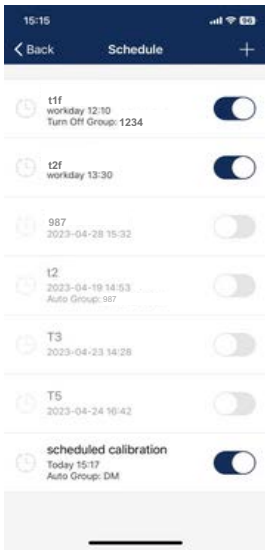


6. Select “Set Time” to set the appropriate Date/Time of the Scheduled Calibration.

7. Select “Done”.



8. Select “Done” to save the schedule.



9. Schedules will show on “Schedule” list.

Note: Lights must be powered during Scheduled Calibration. Sensors must be firmware versions “230426” or later. Select “Set Time” to set the appropriate Date/Time of the Schedule Calibration.

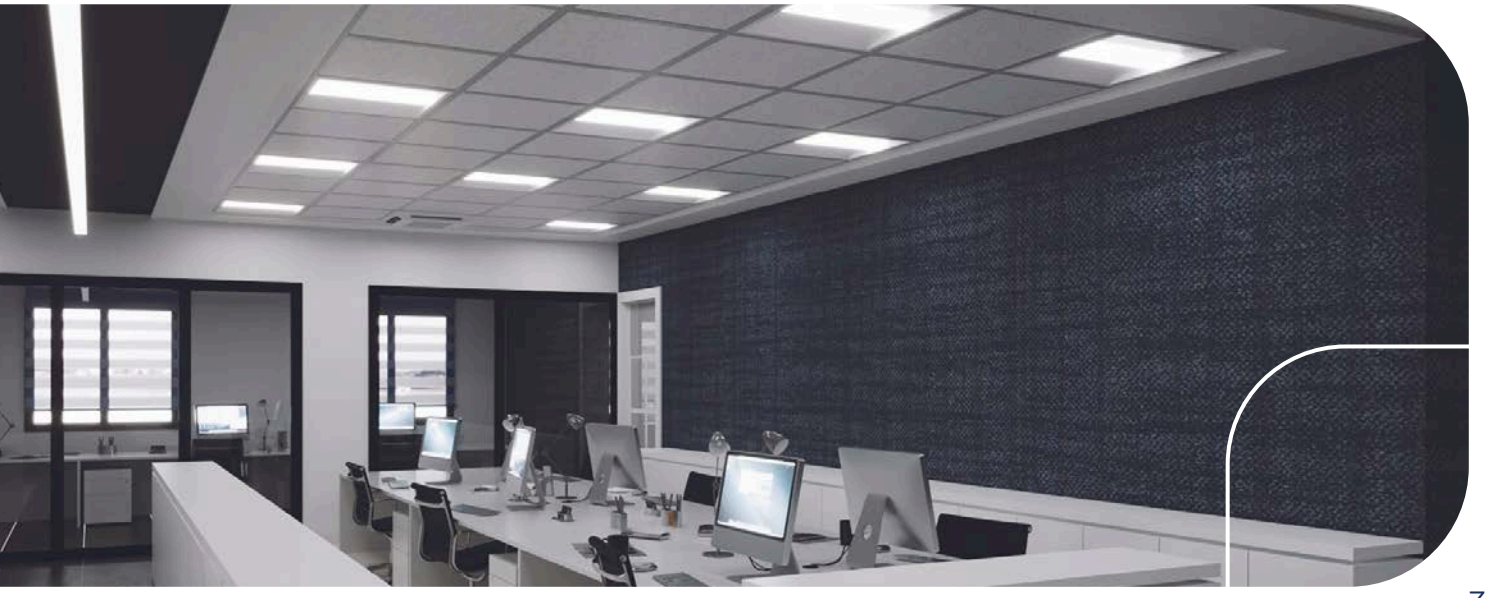
Switches

Switches offer simplicity and control, enabling users to manage individual lights and groups with ease at the press of a button, such as turning a light on/off. This section outlines the steps for adding, renaming, deleting, and linking lights or groups to switches, ensuring a smooth and efficient lighting control experience.

Adding Switches

Note: Please ensure the switch is powered on before adding it to the App.

1. Open the “Switches” or “Discover” page in the App.
2. Tap the “+” button in the upper left corner.

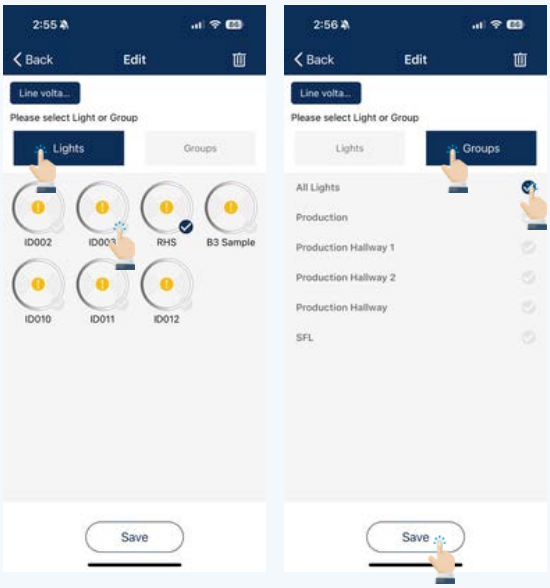


3. The App will begin searching for nearby switches.
4. Pair the switch with the App by pressing the required buttons on the switch, as described in the installation instructions of the switch.
5. When the number of added switches displays 1, tap “Done.”
6. Pair the switch with specific lights or a group of lights by referring to the section “Associating Switches to Lights/Groups” below.

Associating Switches to Lights/Groups

1. From the “Switches” page of the App, press the settings button corresponding to the appropriate switch.

2. Select the “Lights” or “Groups” tab accordingly.



3. Select the desired lights or groups to associate with the switch and click “Save”.

Note: Once pairing is complete, the App is no longer required to use the switch buttons.

Renaming Switches

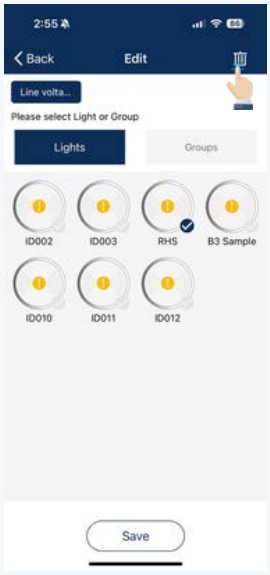
1. From the “Switches” page of the App, press the settings button corresponding to the switch that requires renaming.

2. Select the current switch name displayed in the top left.

3. Enter the new switch name.
4. Press “OK” to save.

Deleting Switches

1. From the “Switches” page of the App, press the settings button corresponding to the switch that requires deleting.



2. Select the trash icon in the top right corner.

3. Select “Delete” to delete the switch.

Additional Settings

“More” page contains additional settings and features of the App.

Schedule
Set a schedule for individual lights, groups and/or scenes

My Zones
Create, edit and delete zones
Generate and share QR codes

Force Sync
Sync data and settings across devices

Circadian Rhythms
Enable or disable circadian lighting

Light Info
Check info on all connected lights, groups and scenes in a zone

Device Info
Check info about external converters and sensors connected to app

Nearby Lights
See a list of all online lights nearby

Motion Sensor Testing
Test settings for motion sensors

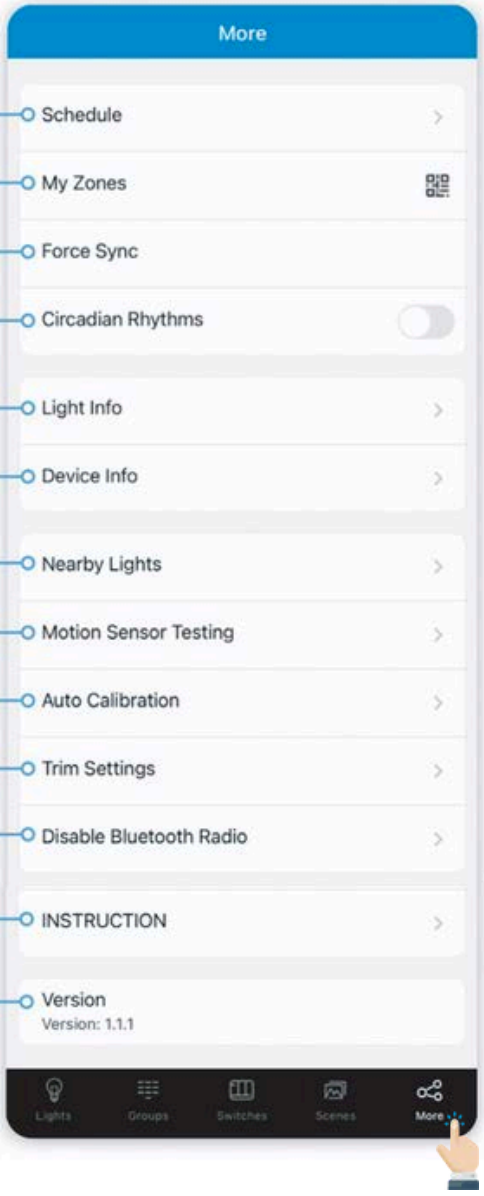
Auto Calibration
Auto calibrate brightness and temperature of lighting groups

Trim Settings
Adjust trim settings of lights or groups

Disable Bluetooth Radio
Disables all bluetooth connections to the app for quick control transfer

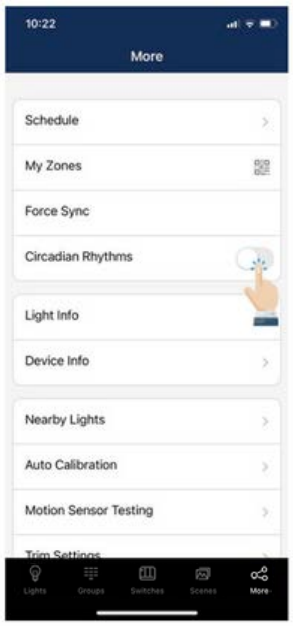
INSTRUCTION
Quick link to the app commissioning guide for instructions

Version
Displays current app version



Additional Settings

Circadian Rhythms

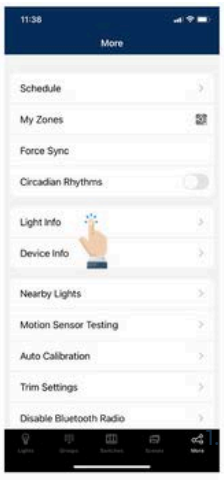


Enabling Circadian Rhythms automatically synchronizes all of the lights' color temperature across all color tunable lights in Auto mode and adjusts them based on the time of the day to mimic natural daylight. This only applies to tunable white lights that are set in Auto mode.

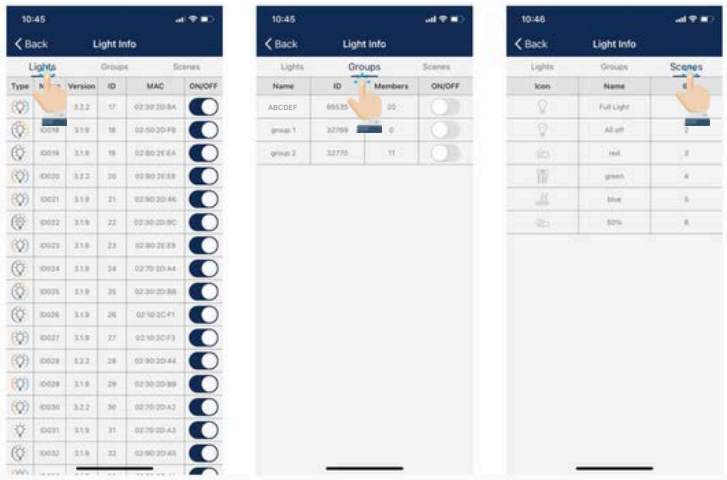
ControlLED enabled products are not color tunable at this time.

Light Info

From the More page, The Light Info tab will display a list of all of the information for lights, groups and scenes in a zone.



1. From the More page, select "Light Info".

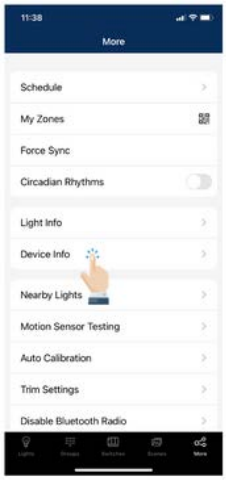


2. Switch between Lights, Groups, or Scenes to display the desired information.

Additional Settings

Device Info

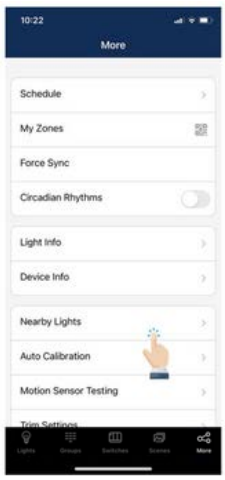
On the “More” page, the Device Info tab shows all sensors and any other bluetooth devices.



1. From the “More” page, select “Device Info”.

Nearby Lights

On the More page, the Nearby Lights tab is useful in the commissioning process because it lists all online lights that are connected and not connected to the App.

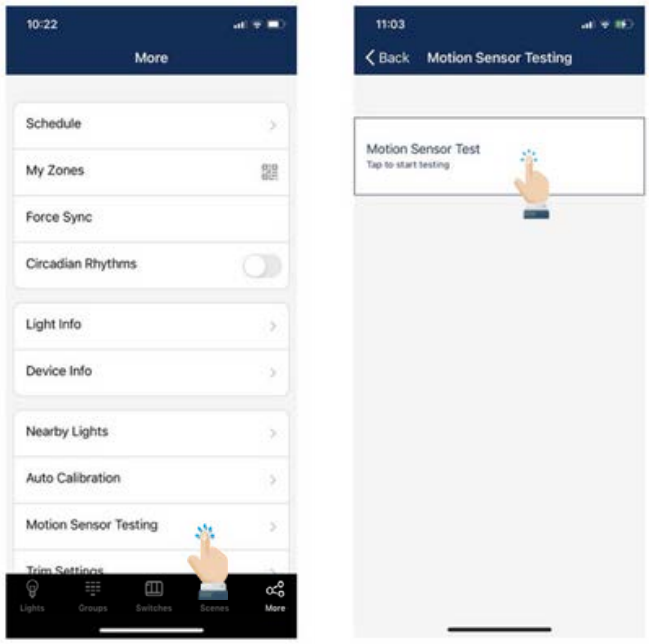


1. From the More page, select “Nearby Lights”.

2. Press the Refresh button if lights don’t show up.

Motion Sensor Testing

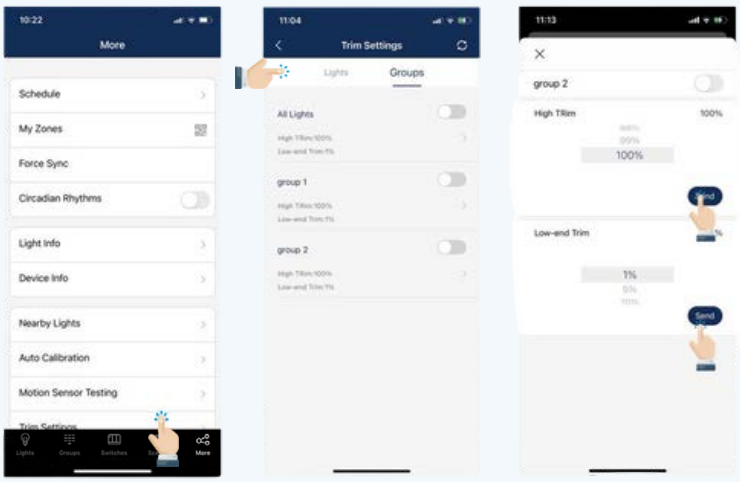
Motion Sensor Testing allows users to test if the motion sensors are are working properly. Lights must first be set to Auto mode before running the test.



1. From the More page, select “Motion Sensor Testing”.
2. Select to start the test. Lights with motion sensors should turn off as soon as the test is started.
3. Walk around to test the sensors and trigger the lights to turn on. Please wait for 6 seconds to trigger the sensor.

Trim Settings

Users can set the High Trim and Low-End Trim that defines a maximum and minimum power for lights and groups.



1. From the More, select “Trim Settings”.
2.Select Lights or Groups to change settings.
3. Set to desired trim settings.
4. Select “Send” to send trim settings to the light or group.

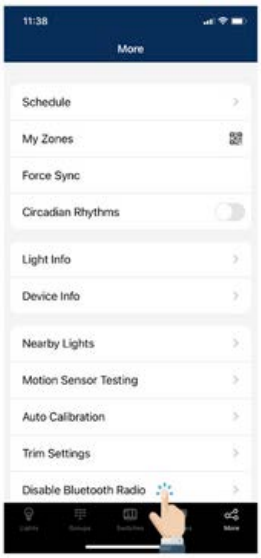
High Trim: The brightness indicated on the dimming wheel or slider represents a percentage of the High Trim setting. For example, if the High Trim is set to 90% and the dimming wheel is adjusted to 50%, the luminaire will emit brightness equivalent to 50% of the 90% High Trim value.

Low-end Trim: The Low-end Trim establishes a minimum brightness level for the luminaire, ensuring it never falls below this specified value. If the brightness level is lowered below this value on the dimming wheel/slider, the brightness level will automatically bounce back to the Low-end Trim value.

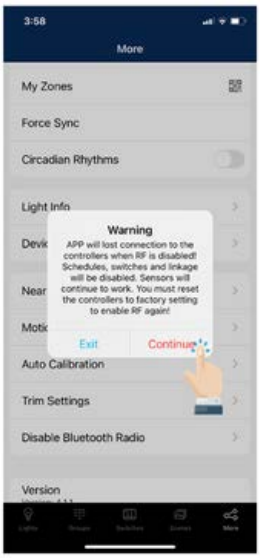
Daylight min dim: This is the minimum brightness level that the daylight harvesting sensor can reach when it is enabled.

Disable Bluetooth Radio

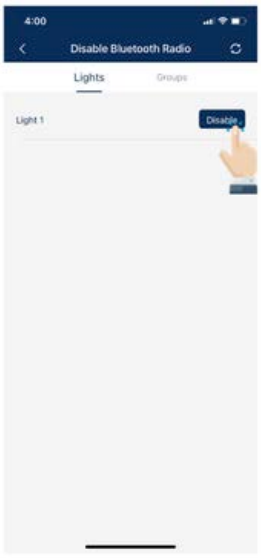
Disabling the Bluetooth Radio disconnects all of the lights' connections to the App to easily transfer control. To restore, sensors will need to be reset.



1. From the More page, tap "Disable Bluetooth Radio".



2. A warning dialog box will appear. Select "Continue".



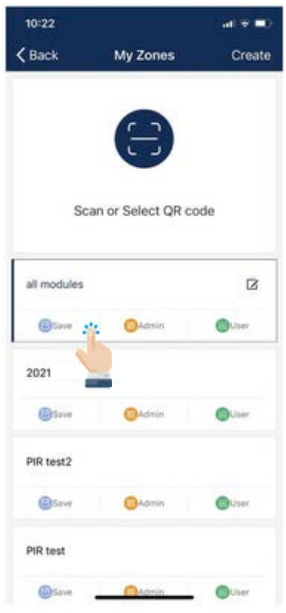
3. Select which Lights or Groups, to disable their bluetooth connection.
4. Press "Disable". The App will automatically refresh and sync settings.

Share Access

Whenever a zone is created, two QR codes are automatically generated: one for the Admin level and one for the User level. The QR codes represent the zone, as well as all of the lights, switches, and groups associated with that zone.

- The User QR code allows the user to dim, activate a scene, or control lights in that zone, but it does not allow the user to add, delete, or change lights, groups, or scenes.
- The Admin QR code allows a user to control and edit all settings within the app. Only users with the Admin QR codes can share Admin QR codes.

Save QR Codes

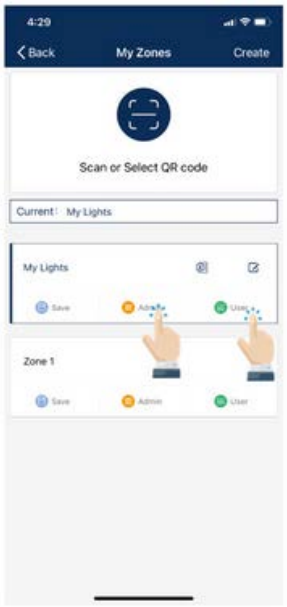


1. Allow the App access to photos for QR codes to be saved to the phone.

2. On the More page, select “My Zones”.

3. Press the “Save” button located under the zone name. QR codes will be saved on an autogenerated album folder in your phone.

Share QR Codes

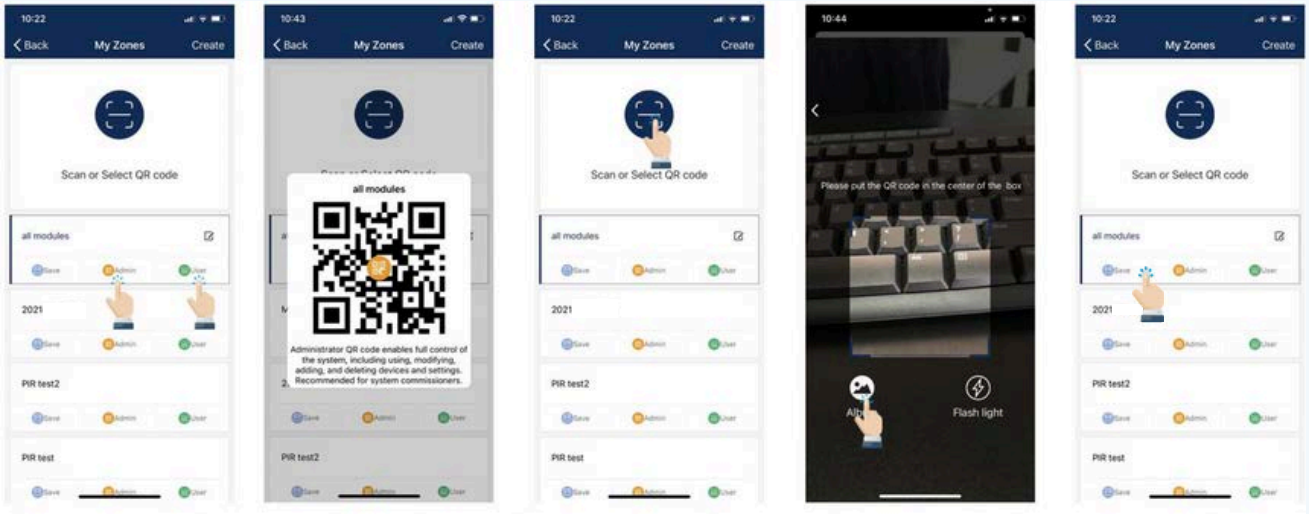


1. From the “My Zones” page, select the Zone to share and select on either Admin or User.

2. A QR code will be displayed on the app. It can then be scanned by another for sharing or you can screenshot it and send it to another for scanning.

Note: A second method to share is to go to you photo library “MyQRCode” and select the QR Code for the project desired and send via email to the party for the project.

Scan QR Codes



1. From the “My Zones” page, select a zone in the list or select “Scan or Select QR code”.

2. Center the boxed camera frame around the QR code and scan it.

3. You can also select QR codes saved in the phone by pressing the “Album” button.

4. The App will automatically add a new scanned Zone after the QR code has been scanned.

System Capabilities

ControlLED NLC Platform Capacity Limits

The following chart summarizes the capacity limits of the ControlLED NLC platform:

Luminaires	Up to 100 lights (nodes) per zone. Unlimited zones available, with each with its own sharable QR code for commands and settings, assignable for administrative or user-level control.
Luminaire / Group	A light can be a member of up to 20 groups.
Scene	Up to 32 scenes can be set to a light. Up to 127 scenes can be set to a zone.
Schedule	Up to 32 schedules can be set to a zone.

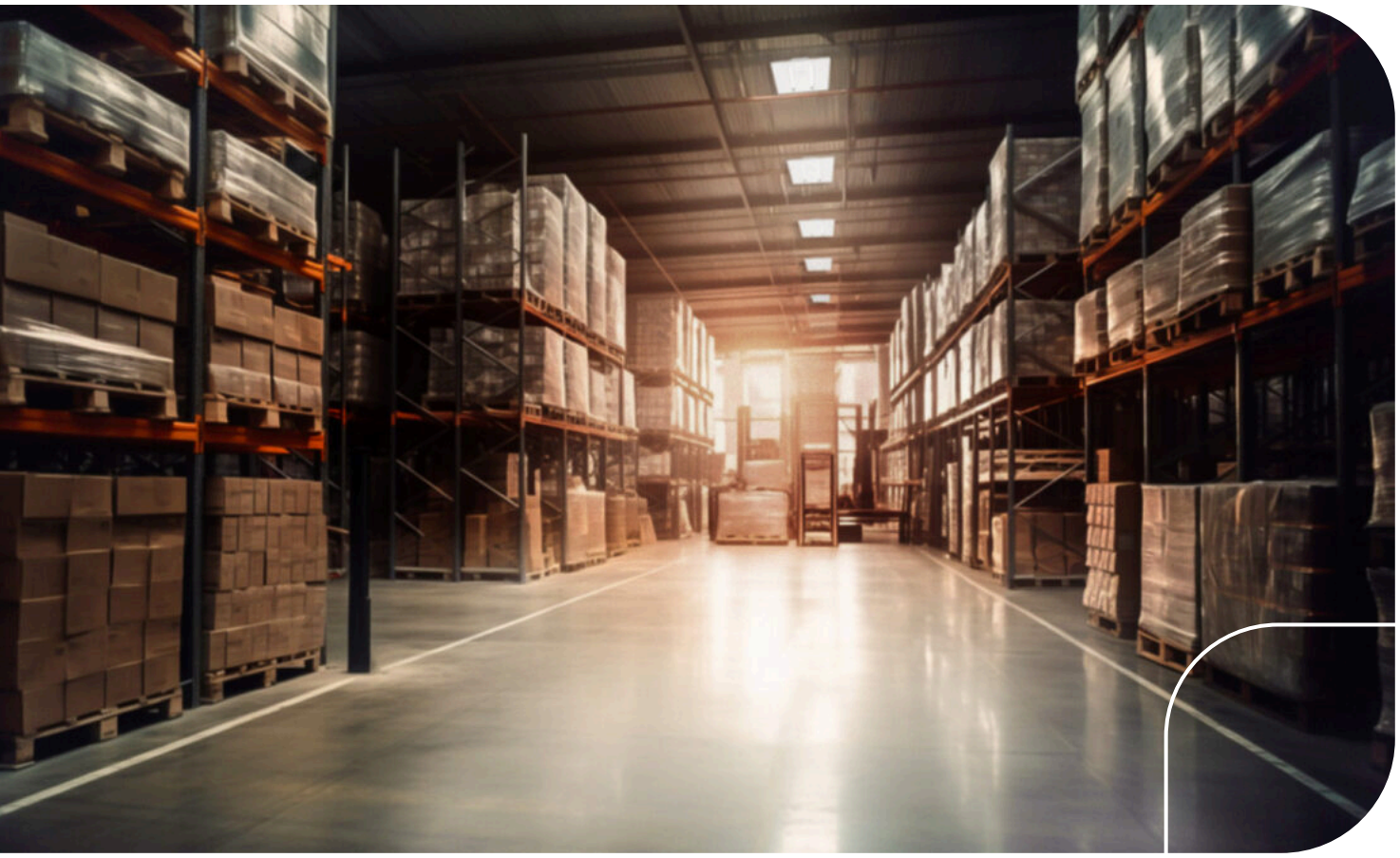
Recommendations

The following table highlights the key features of ControlLED LLC luminaires, emphasizing energy efficiency and optimal light levels. It includes tailored settings for various spaces like open offices, meeting rooms, and corridors, ensuring a comfortable and productive environment while saving energy.

Recommended Settings by Space Type					
Zone	1st time Delay (T1) (minutes)	2nd time Delay (T2) (minutes)	Dim Level (%)	Linkage light level (%)	Scenes
Open office area	20 mins	1 min	50%	50%	No Scene
Meeting room	20 mins	1 min	80%	80%	Configure PPT/ Lecture Scenes
Classroom	30-40 mins	5 mins	80%	80%	Configure PPT/ Lecture Scenes
Storage room	10 mins	1 min	30%	30%	No Scene
Corridor	10 mins	1 - infinity mins	30%	30%	No Scene

- **1st Time Delay (T1):** Lights maintain the working light level during this period (in minutes) when motion is detected.
- **2nd Time Delay (T2):** If no motion is detected during T1, T2 starts. Lights dim to a lower level during this period to indicate they will soon turn off.
- **Dim Level:** The brightness level during T2, set as a percentage of the working light level.
- **Linkage Light Level:** If no motion is detected during T1 but other lights in the group detect motion, this light dims to a linkage level, calculated as a percentage of the working light level.
- **Working Light Level:** Defines the light level when a light's sensor detects human movements. The working light level is automatically controlled by a photosensor, if the light is equipped with one, and may change according to the level of ambient light.
- **Auto Calibrate:** Use this feature to set the working light level, which adjusts for ambient light interference.
- **Manual Set:** Users can manually set the working light level, preferably at night or by shielding lights from sunlight.

Please refer to the Motion Sensor & Scenes sections for more detailed information.



Restoring Factory Settings

There are three methods for restoring factory settings for lights.

Restore by Deleting Lights

1. From the Lights page, select the "-" button in the upper right corner.

2. Select the check for each light that you want to delete and reset.

3. Select the "Delete" button in the upper right corner to delete and reset all selected lights.

4. Select "Delete" in the dialog box to confirm.

Restore by Power Reset

This method restores factory settings by following the power reset sequence:

1. Confirm all lights are off.
2. Turn on lights for 8 seconds; then turn the power off for 10 seconds.
3. Immediately turn the lights on and off, then wait for another 10 seconds. Repeat 3 times.
4. Turn the lights on for 8 seconds, then turn the power off for another 10 seconds. Repeat 2 times.
5. Turn the lights back on. Blinking Lights indicate a successful factory reset. All previous settings and data for these lights have now been deleted.

Waiting for at least 10 seconds will ensure that the is completely powered off.

The duration will vary depending on the driver and the power supply. If the driver can cut power to the within 3 seconds, then you may change the waiting period from 10 to 3 seconds to facilitate a faster reset time.

Restore Individual Sensor

This method is applicable only to sensors with a manual reset switch. For further details, please consult the product installation instructions:

1. Locate the reset button on the sensor.
2. Press and hold the reset button until the LED blinks. This will clear all settings and revert the sensor to factory defaults. The user can now re-commission the sensor through the app like new.

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