



NICOR[®]

NLC Quick Start

Commissioning Guide

www.nicorlighting.com



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NICOR NLC Overview

NICOR's Network Lighting Controls (NLC) is a wireless network of components comprised of passive infrared (PIR) motion/daylight sensors, load controllers, power packs, wall controls, and system nodes. Each component utilizes Bluetooth Low Energy (BLE) Mesh to remotely control and operate luminaires separately or together as a zone. The NLC system can control up to 100 luminaires per zone across multiple rooms with NICOR's NLC app. Available to download on major app marketplaces, the NICOR NLC app provides total system control with energy usage statistics. The NLC system is certified UL Gold 1376 and acts as a localized network with encryption (128-bit) and protection from outside sources. Whether you're in the design or remodel phase, NICOR's Network Lighting Controls system is designed to fit any new or existing framework with easy scaling solutions. Take control of your lighting today.

NLC Features and Benefits

FEATURES

- **Occupancy/Vacancy Detection**

Completely adjustable, dual-time delays with light level reduction can help save energy in unoccupied rooms/zones. Settings can be adjusted from anywhere using the NLC App.
- **Dimming**

Full-range dimming with smooth transitions on select 0-10V NLC controlled luminaires and devices.
- **Daylight Harvesting**

Continuous dimming technology automatically adjusts light levels while factoring in the natural lighting in the space. This helps provide energy savings while reducing the need for artificial lighting during daylight hours.
- **The NLC Network**

Utilizing a Bluetooth Low Energy (BLE) Mesh network, the NLC Network can connect to existing frameworks, devices, and building management systems.
- **Groups**

Create groups of luminaires or devices that share similar settings to quickly configure rooms or spaces. Integrate groups within zones for easy scaling with no limit to the number of groups that can exist.
- **Zones**

NLC Luminaires can be grouped together in unlimited configurations within zones. The NLC Network can accommodate unlimited zones with the ability to scale up to provide coverage for entire sites. Each zone can control up to 100 devices.
- **Task/Trim Tuning**

Light levels can be adjusted to match predetermined visual requirements of a given space. Each NLC enabled luminaire can be adjusted to limit its maximum lumen output to save on energy costs.
- **Scenes**

Create preset lighting scenes within the NLC app to apply specific brightness and color temperatures stored in the NLC network. Scenes can be controlled with the app or NLC connected wall switches.
- **Schedules**

Set-up your lighting system according to your schedule. Create simple on/off automations at certain times of the day or week to eliminate unnecessary energy consumption.
- **Security**

The NLC system meets UL's Gold (1376) level IoT security rating to protect each connected device on the network. The Bluetooth Low Energy (BLE) Mesh features 128-bit data encryption and acts as a localized network, eliminating the need for a hub, gateway, or internet connection.

BENEFITS

- **Limitless Configurations**

Each individual NLC luminaire or device acts independently from the next. This allows for a limitless combination of settings and features to meet any application requirement.
- **Wide Compatibility**

Whether you're in the design or remodel phase, NICOR's Network Lighting Controls system is designed to fit any new or existing framework with added security measures.
- **Complete Control**

Control every zone, luminaire, wall switch, and sensor directly from your phone with NICOR's NLC app. Available on Android and iOS.
- **Energy Savings**

The NLC System uses advanced features such as Daylight Harvesting, Task/Trim Tuning, and Occupancy/Vacancy Detection settings to optimize lighting. This can help reduce energy consumption to ultimately save on energy costs.

NICOR NLC Components



NLCPS1
NLC In-Line Low-Voltage
Power Pack



NLCW31WH
NLC 3-Button Wireless
Control Switch



NLCPC1
NLC Wireless Zone and Plug
Load Controller



NLCW51WH
NLC 5-Button Wireless
Control Switch



NLCSPEW1WH
NLC Wireless End-Mount
PIR/Daylight Sensor



NLCWP1WH
NLC Wall-Mount Switch
Base with Faceplate



NLCLHW1WH
NLC Fresnel Occupancy
Sensor Lens for High-Mount
(Wide Distribution)



NLCLHN1WH
NLC Fresnel Occupancy
Sensor Lens for High-Mount
(Narrow Distribution)



NLCspeJ1WH
NLC Wireless External-
Mount PIR/Daylight Sensor



NLCLMW1WH
NLC Fresnel Occupancy
Sensor Lens for Mid-Mount
(Wide Distribution)



NLCSPCW1WH
NLC Wireless Low-Voltage
PIR/Daylight Sensor



H12VADJARM1WH
H12 Socket Mount
Adjustable Arm



NLCSPCMOUNT1
NLC Spring-Loaded
Recessed Ceiling Mount



H12VSOCKET
H12V Socket Mount Base



NLCSPiHW1WH
NLC Wireless Integrated
Low-Voltage PIR/Daylight
Sensor



NLCSPFW1WH
NLC Wireless Integrated
Low-Voltage PIR/Daylight
Sensor



NLCSPCWNBWH
NLC Non-Bluetooth Low-
Voltage PIR/Daylight Sensor

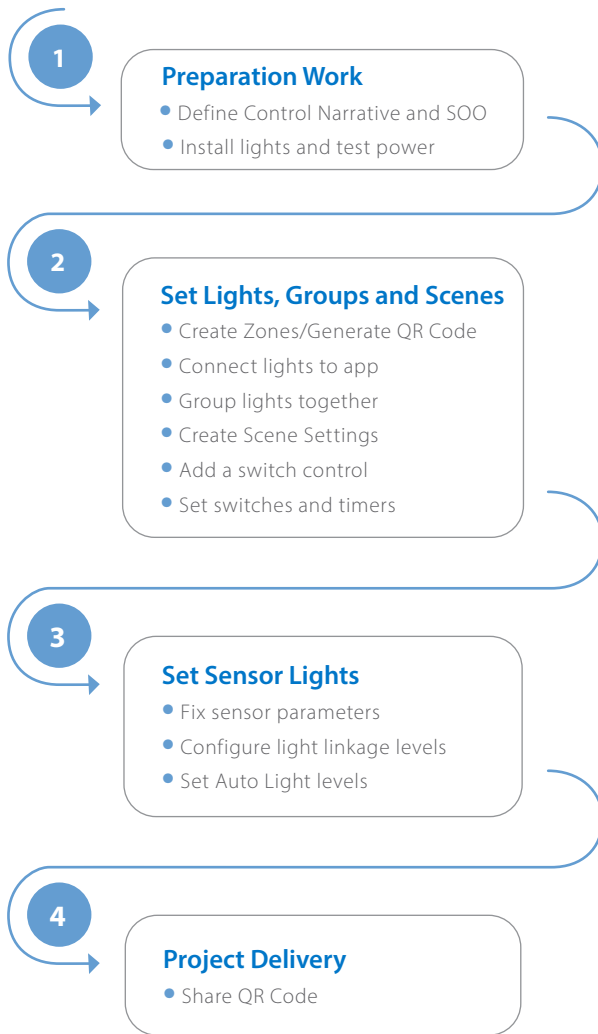


NLCPC2
NLC Wireless Zone
Controller

NICOR NLC Enabled Fixtures

Product Series		NLC Solution	Assortment Code
CLR			NLCDOWN1
CDA			ND
TACsv2			N1
TGL			N1
TGLS			N1
T7C			N1
LSCS			N2
HBGv1			NLCIND
HBLv4			NLCIND3.5A
HMLv1			NLCIND3.5
HMLv1 Twin			NLCIND3.5

Commissioning Procedure



Download the NICOR NLC App

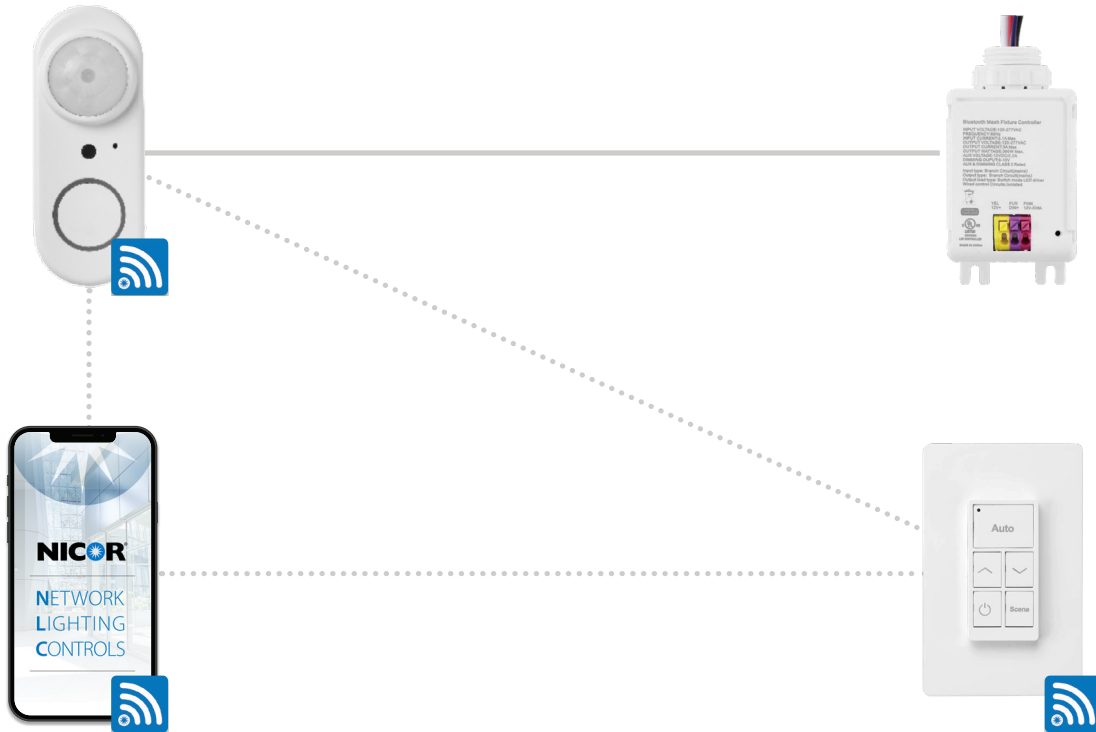


Scan QR code to download the NICOR NLC App. NICOR NLC App will need access to network and Bluetooth. Accept prompt to allow access to photos for QR codes to be automatically saved in your album.

Commissioning Procedure

System Planning

System planning will ensure the user has the best benefits from the NICOR NLC. The guidelines and best practices should be fully reviewed prior to commissioning the NLC System.



How to put it all together

Simple Application Rules

- Determine whether Room/Zone or individual luminaire Control (LLLC)
- Maximum of 100 network devices per group/zone
- Maximum of 75' distance between devices

1

Identify your Room Requirements

- Sequence of Operation
- Sensor Requirements
- User Interface Requirement
- Load Schedule

2

Select the Appropriate Controller

- Room/Zone Controller
- Additional ceiling sensors can be added for coverage
- LLLC - Select the NLC enabled luminaire for individual control

3

Select your Load Controller for plug loads

4

Select your User Interface(s)

- Use one or more of the following:
 - 3 button wireless, battery wall station - ON/OFF, Raise, Lower
 - 5 button wireless, battery wall station - AUTO, Raise, Lower, On/OFF, Scene

5

For energy monitoring, connect zones with the dongle

6

To connect with third-party controls devices, use the Bridge.

Contact factory for more information.

Commissioning Procedure

System Preparation

Define a system **Control Narrative with a Sequence of Operation (SOO)** for each lighting controls project. Preparation should begin with a layout or floor plan of the entire space. The control narrative should include the following:

- Zones
- Group
- Luminaires

It is suggested to divide the site into zones according to their lighting functions. Make sure each zone contains no more than 100 lights and that no objects will block the wireless signal transmission, such as concrete walls or large metal objects. The size of a zone should not reach outside the limit of the wireless coverage. For interior application, keep node distance less than 100ft and the zone diameter less than 150ft.

Example of a Control Narrative

Space Type	Daylight Sensor	Manual Switch	Occupancy Sensor	Auto Schedule
Conference	×	×	×	
Equipment Room	×		×	
Office - Open	×		×	×
Office - Private	×	×	×	
Restrooms			×	

Example of a Sequence of Operation (SOO)

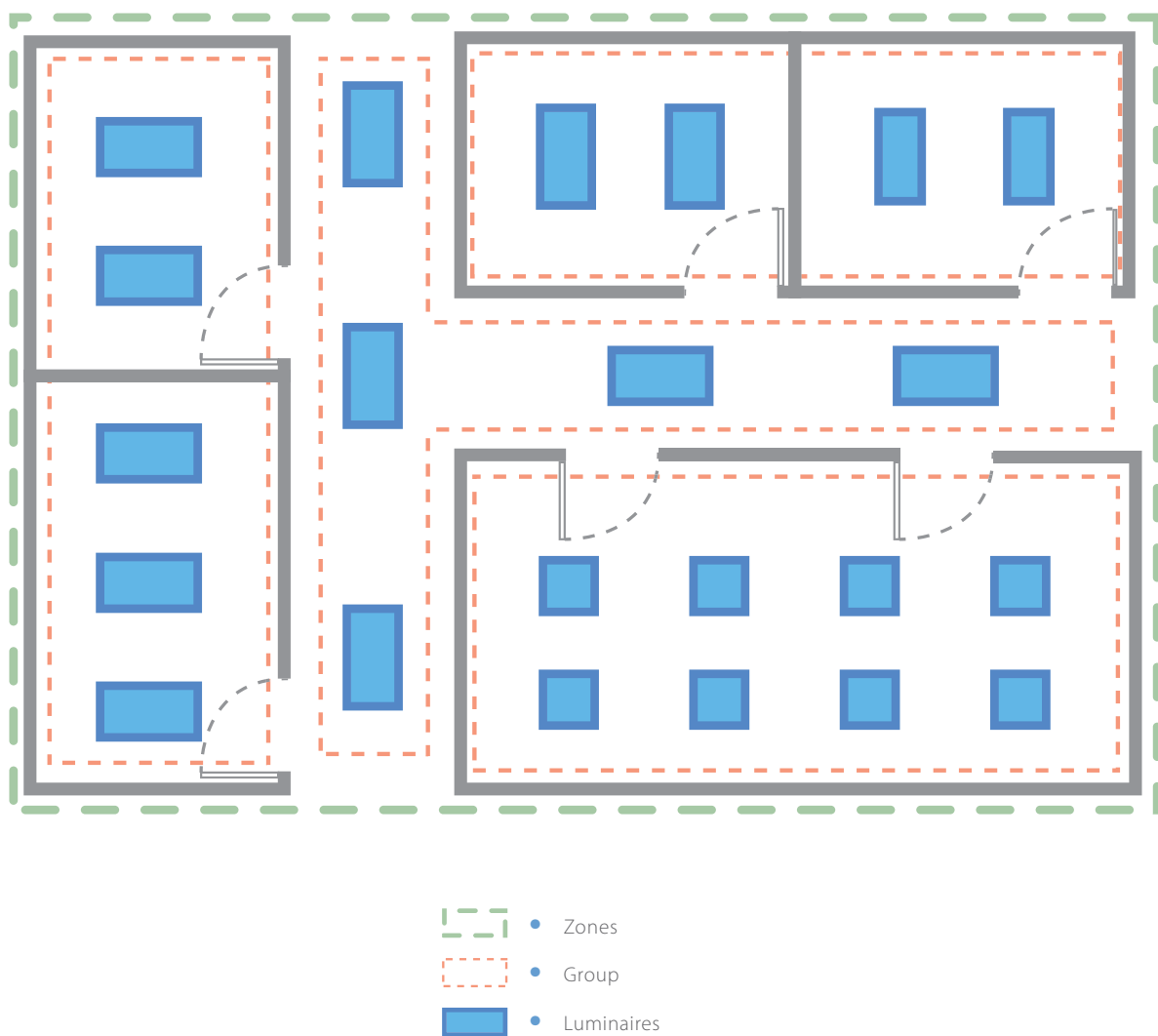
Area:	Open Office		
	Lights	Zones (A) - (D)	Fully dimmable lights controlled in this area
Lighting and Controls	Daylight Zones	Zones (A) - (B)	Daylight rows 1 and 3 will dim independently; Lights will automatically adjust to daylight, maintaining recommended 30FC on task surfaces
	Manual Switch	Zones (A), (B), (C), (D)	User can select scenes, turn lights ON/OFF, or dim lights in each independent zone

Commissioning Procedure

System Installation

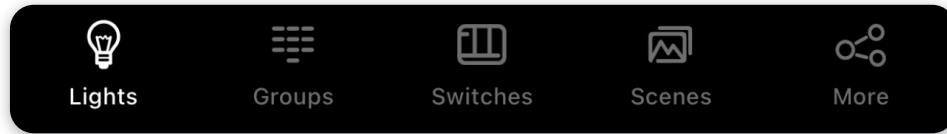
An installation layout presents a clear map of where NLC components will be placed into the physical space of the room or floor. This also allows an easy identification of groups within a zone, scene areas, and wall switches. Design an installation layout by dividing the floor plan into groups according to the room's operational needs.

Example of an installation layout



App Navigation

App Pages



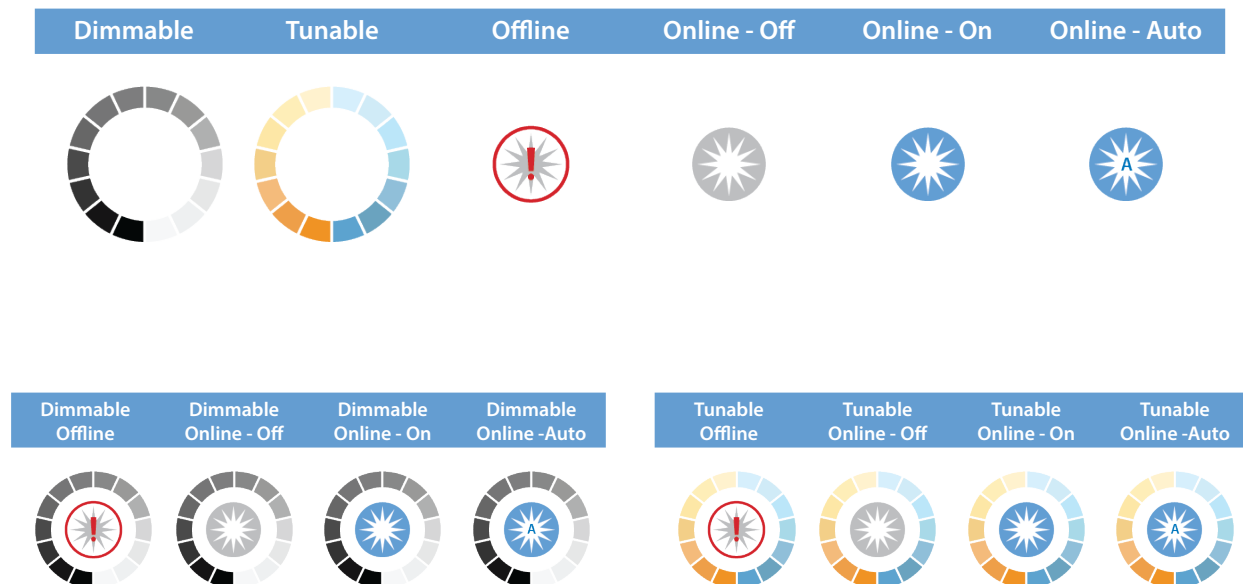
NICOR NLC app has five (5) tab pages you can switch between that gives you better control on your lights. They can be found on the bottom menu bar of the screen. Below is a brief description of each tab pages of the app.

- 1 "Lights" shows all connected lights to the app. Allows user to view and control individual lights.
- 2 "Groups" allows user to create and manage groups.
- 3 "Switches" displays all switches connected to the app. Allows user to view/edit switch controls.
- 4 "Scenes" allows user to create and manage scenes.
- 5 "More" allows user to view Schedules, Zones, Light and Device Info, and other additional settings.

Light Icons

Lights connected to the app will be listed on the **Lights** page.

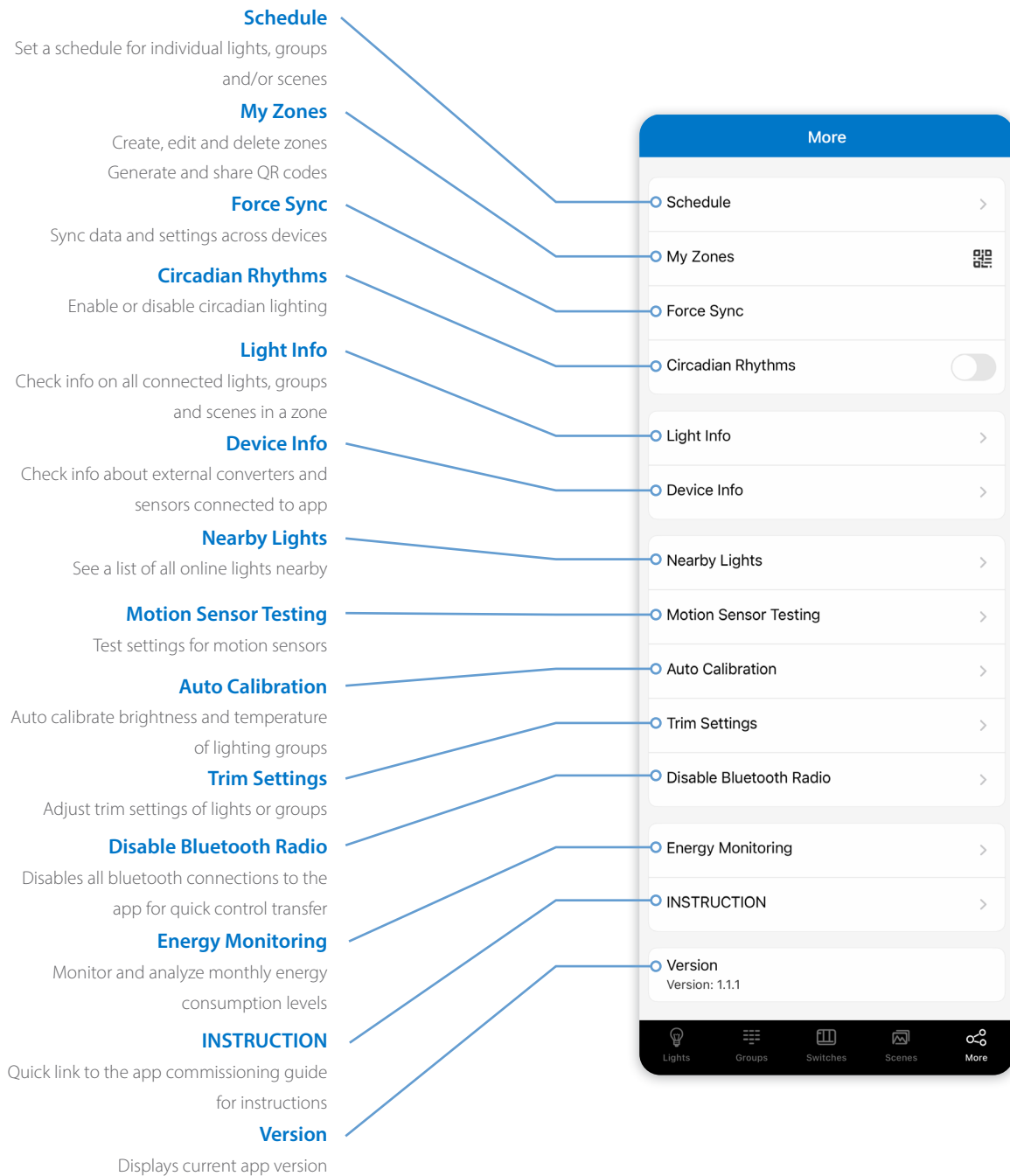
Refer to the icons below to check the status of each individual light.



App Navigation

More Menu

Additional settings and features of the app can be accessed by pressing the **More** button.

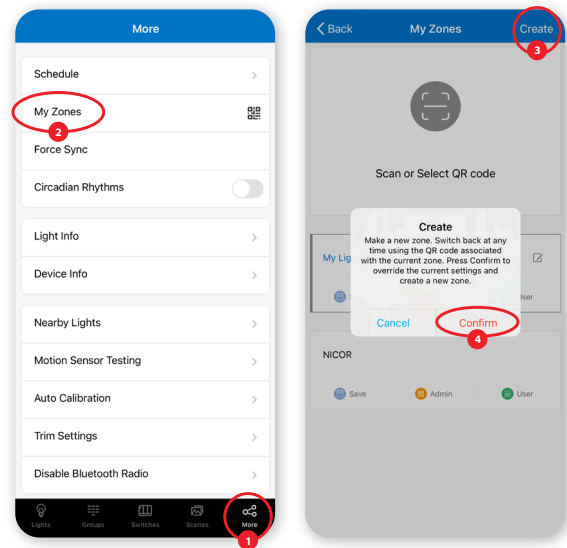


Zones

A zone will automatically be created named **"My Lights"** upon first opening the app. A zone can control groups of lights in a huge area. Each zone is assigned a unique QR code for easy access to light controls between different users. If you allowed access to your phone's photos, QR codes for both the admin and user will automatically be saved in your albums.

Creating Zones / Generating a QR Code

- 1 Press **"More"** located on the lower right menu bar.
- 2 Press **"My Zones"**.
- 3 Press **"Create"** on the top-right corner of the screen.
- 4 Press **"Confirm"**.
- 5 Type in a name for the Zone/QR Code and then press **"OK"**.
- 6 Switch between zones by tapping on them.

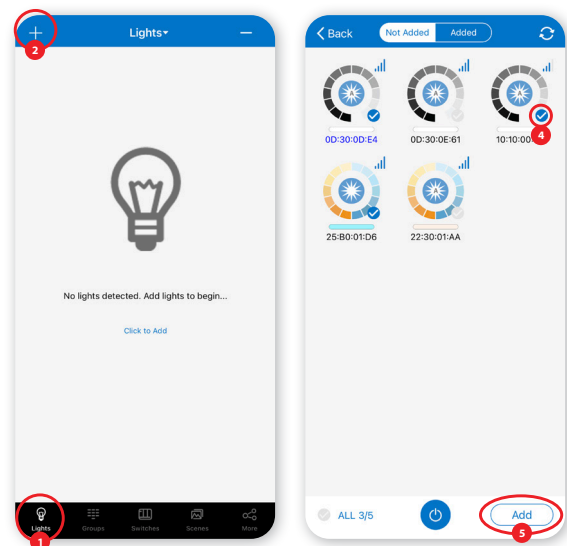


Lights

The Lights page will be the first page you'll see whenever you open the app. It is the main page for controlling individual lights. Add lights per zone and do not turn on more than 100 lights at the same time. To prevent wireless communication jamming, turn off lights that are not in the current zone.

Connecting Lights to App

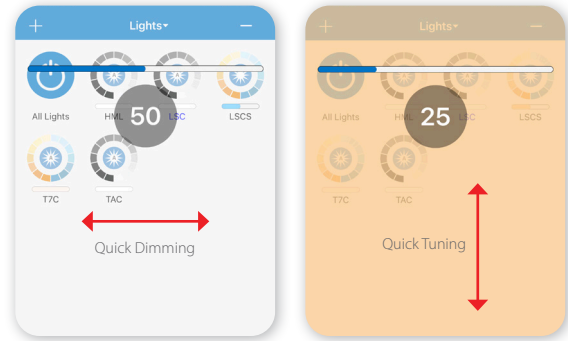
- 1 Switch to the **"Lights"** page of the app.
- 2 Press the **"+"** button on the top left corner.
- 3 App will scan for applicable lights that can be added to the zone. Locate the lights by pressing the icons to turn it ON/OFF.
- 4 Select the lights you want to add by pressing the check mark located on the bottom right corner of the icons.
- 5 Press **"Add"** to add all the selected lights into the zone.
- 6 Confirm by tapping the **"Add"** button again. Light will blink to indicate a successful connection.
- 7 Press the **"Back"** Button to return to the Lights page.
- 8 Check and confirm all lights have been added and successfully connected with the app.



Lights

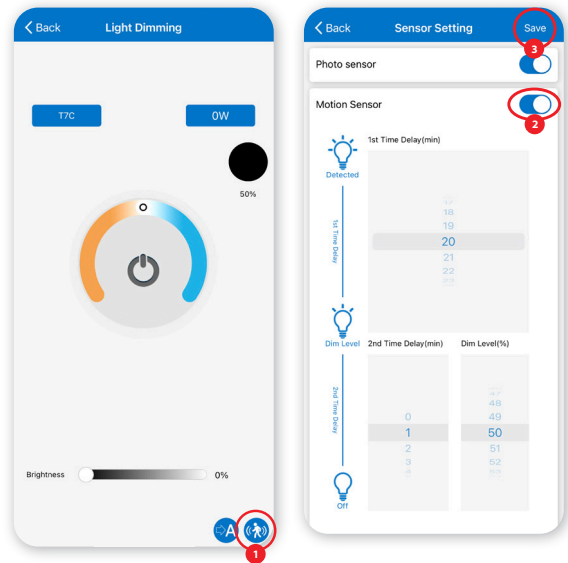
Quick Dimming and Tuning

- 1 Choose which light to change the dimming or tuning levels.
- 2 Lightly tap the light icon and quickly slide finger **left or right** to adjust brightness.
- 3 Lightly tap the light icon and quickly slide finger **up or down** to change the color temperature.



Sensor Settings

- 1 On the Light Dimming settings, press the **"Sensor Settings"** icon located on the lower right of the screen.
- 2 Enable or disable motion sensors and set parameters according to preferences.
- 3 Press the **"Save"** button on the top right corner to save sensor settings.

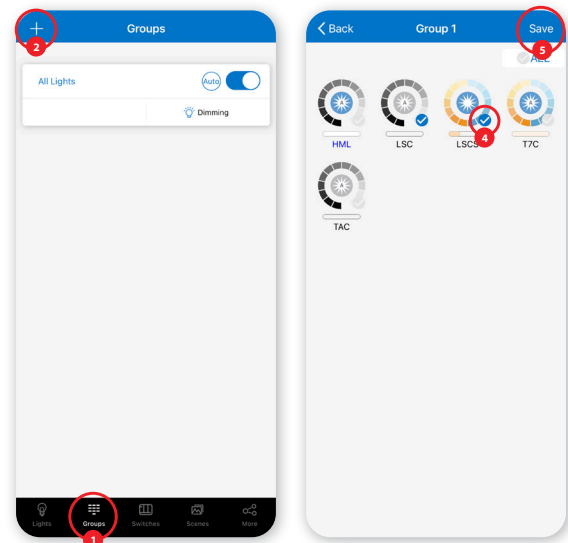


Groups

Groups simplify control by grouping lights in a small area together. There will be a default group named **"All Lights"** which gives user control over all lights in the zone.

Creating Groups

- 1 Switch to the **"Groups"** page screen of the app.
- 2 Press the **"+"** button on the top left corner.
- 3 Input the group name as prompted then press **"OK"**.
- 4 Select the lights you want to add in the group.
- 5 Press **"Save"** to save group settings.

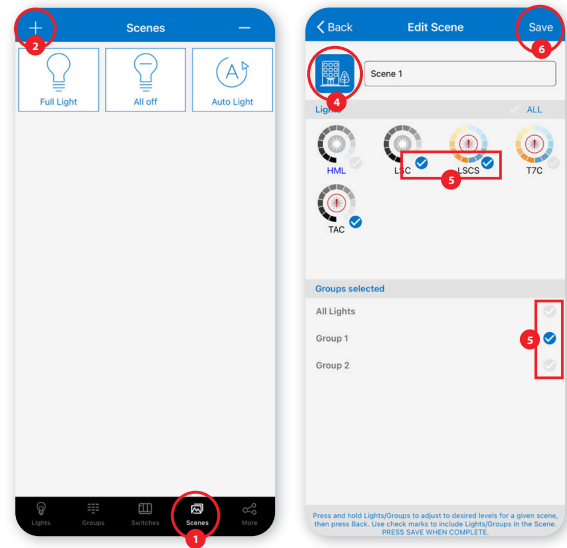


Scenes

Scenes are pre-programmed light settings that users can manually set. Triggering a scene will cause all members (individual lights or groups) to change their settings to the applied scene. The app comes with three default scenes: Full Light, All Off, and Auto Light.

Creating Scenes

- 1 Switch to the "Scenes" page of the app.
- 2 Press the "+" button on the top left corner.
- 3 Type the scene name as prompted then press "OK".
- 4 Select an appropriate icon to use as the scene icon.
- 5 Select individual lights or groups to add to the scene.
- 6 Press "Save" to save scene settings.

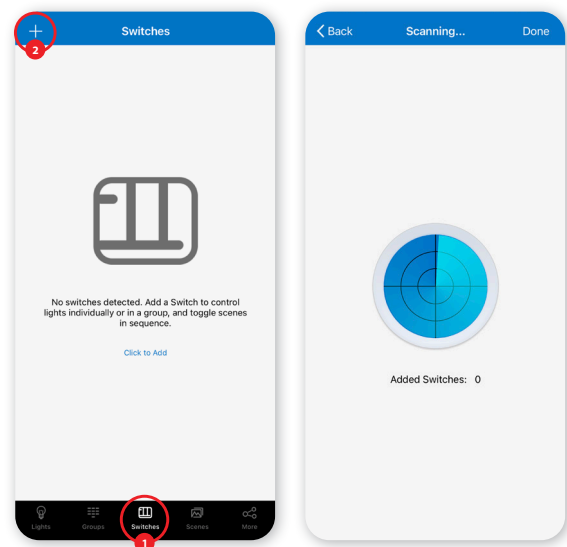


Switches

Add switches to the app to easily control individual lights or groups. Depending on the switch type, you can associate up to 3 scenes to a button. Switches will automatically stop pairing after 30 seconds or when a button is pressed.

Pairing Switches

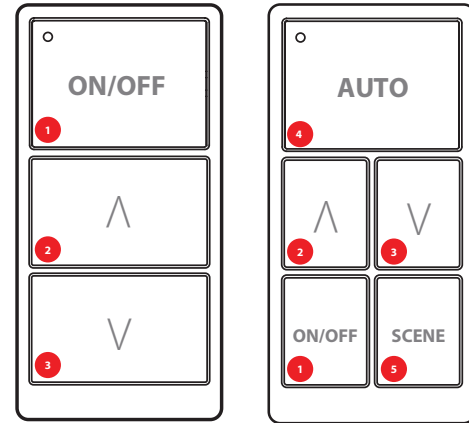
- 1 Switch to the "Switches" page of the app.
- 2 Press the "+" button on the top left corner.
- 3 App will scan for nearby switches.
- 4 Follow instructions below to pair a 5-Key or 3-Key switch.



Switches

Button Configurations

- 1 ON/OFF button
- 2 Dimming button - UP
- 3 Dimming button - DOWN
- 4 Auto-sensors button - ON/OFF
- 5 Scene button - switch between assigned scenes



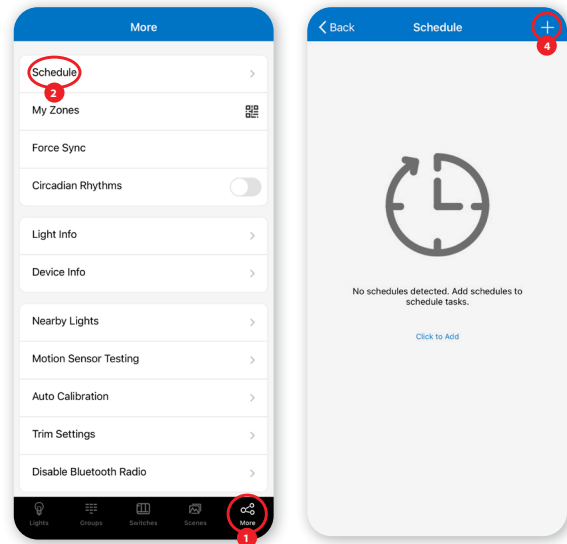
To connect a 3-Key Switch, press and hold buttons **1** and **2** for three seconds or when the LED indicator light blinks.
To connect a 5-Key Switch, press and hold buttons **4** and **2** for three seconds or when the LED light indicator blinks.

Schedules

Schedules allow users to set a specified date and time for lights to function.
Users can set schedules to an individual light, a group or a scene.

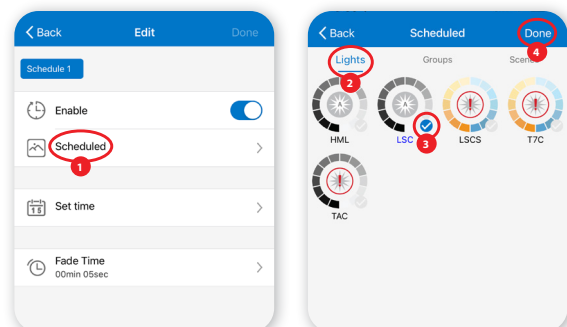
Creating a Schedule

- 1 Press "More" to access additional settings of the app.
- 2 Press "Schedule".
- 3 Press "+" on the top right corner.
- 4 Type in a name for the schedule as prompted.
- 5 Press "OK" to continue.



Assigning Schedule to 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.



QR Codes

Scanning, Saving, Sharing

A QR code represents a zone and the lights, switches, and groups inside the zone. By creating a zone, a QR code is automatically generated for both an admin and user. While the User QR code is limited only to lighting controls, an Admin QR code allows any user to control and edit all settings in the app.



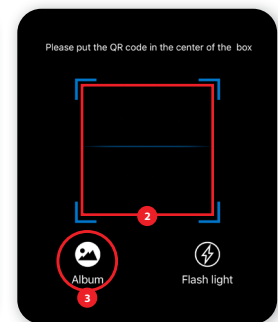
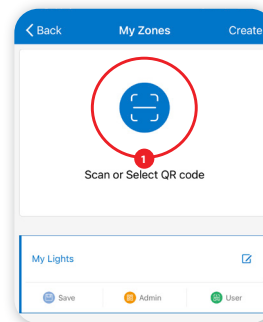
Admin QR code



User QR code

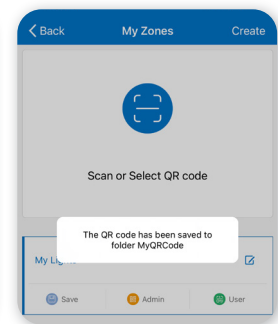
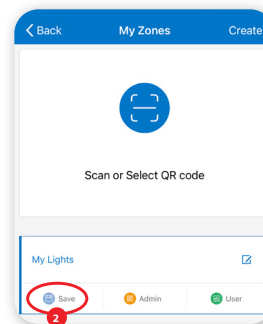
Scanning QR Codes

- 1 On the My Zones page, press **"Scan or Select QR code"**.
- 2 Place QR code inside the boxed camera area to scan.
- 3 You can also select QR codes saved in phone by pressing the **"Album"** button.
- 4 App will automatically add Zone after QR code has been scanned.



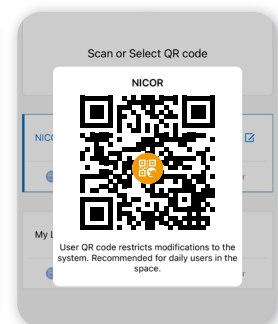
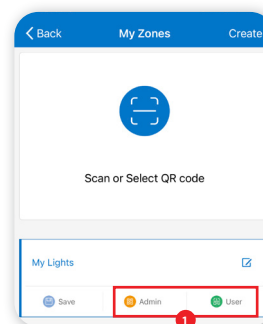
Saving QR Codes

- 1 Allow access to photos for QR codes to be saved to phone.
- 2 Press the **"Save"** button located under the zone name.
- 3 QR codes will be saved on an auto-generated album folder **"MyQRCode"**.



Sharing QR Codes

- 1 Choose between Admin or User level QR codes then press to share.
- 2 A QR code will be displayed on the app for scanning.



Restore Factory Settings

There are two ways to restore lights to their factory settings. Deleting lights from the app is the easiest way to reset the light settings. The other way is by forcefully resetting through a power sequence. See steps below.

- 1 Make sure the 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 connected to the app has now been deleted.

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

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

Devices also have a reset button on most models. Use a small diameter paper clip and push for 3 seconds to reset. Device will blink to indicate reset.

System Capacity

Luminaires	Up to 100 lights in a zone. Please divide to different zones if you have more than 100 lights.
Luminaire/Group	Lights can be added up to 20 groups and will automatically be removed from the first group after.
Scene	Lights can be set up to 32 scenes and will automatically be removed from the first scene after. Up to 127 scenes can be set per zone.
Schedule	Up to 32 schedules can be set per zone.
Switch	Up to 10 switches can be set per zone. Switches and lights are counted separately. Adding switches to a zone does not reduce the number of lights.
Zones	Unlimited number of zones can be added to the app.
Data Persistence	All settings (sensor, group, scene, parameters and switch) are saved on individual luminaire controllers so the system can run without network connection or after a power outage.

Contact [NLC support](#) for any questions or concerns.



NICOR NLC
Network Lighting Control

WAREHOUSE LOCATIONS

Albuquerque, NM	Detroit, MI
Atlanta, GA	Folcroft, PA
Buford, GA	Roseville, CA

Scan for more NICOR NLC info



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