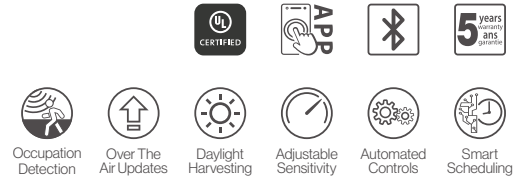# USER MANUAL
TL-TUROSMART

1.Introduction

TuroSmart® Network Lighting Controls (NLC) can address luminaires individually or in groups, utilizing Bluetooth® Low Energy Mesh 4.2 & 5.0 protocols. This state-of-theart wireless control system is operated using the TuroSmart NLC APP in conjunction with various sensors, wall switches, power packs, and controller nodes. The system components are easily commissioned using the TuroSmart NLC APP on a mobile device, without requiring a gateway. The mesh network enables wireless communication up to 100 feet or more between devices, and commissioning does not require any internet access.

The TuroSmart NLC APP employs data encryption to ensure mesh network security. The configuration settings for each device are storedin encrypted QR codes and each network device cannot be accessed without the QR code. Turolight Inc. INC receive UL 1376 verification for security capabilities. The TuroSmart platform is also one of the systems listed to DLC's Networked Lighting Controls (NLC5).

Luminaire level lighting control refers to a type of lighting control system where each individual light fixture is equipped with its own control device or integrated control system, allowing for independent control and management of each fixture. LLLC luminaires can detect human movements, ambient light level, and automatically turn on/off or dim the lights to provide comfort, safety, and energy savings.

Occupation Detection	Over The Air Updates	Daylight Harvesting	Adjustable Sensitivity	Automated Controls	Smart Scheduling

2. Caution

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

2. Ensure commissioning data has been synchronized to the cloud before sharing QR code.
Access rights to the zone can be shared to other users by sharing the QR code. Before sharing the QR code, please make sure the zone data has been uploaded to the cloud (requires internet connection).
When uploading/downloading the data, it must have a good internet connection to save/update the commissioning data to the corresponding QR code. You may share the QR code to other users immediately after commissioning is completed.
DO NOT share the QR code to others before you successfully sync the data

3. Before adding the sensors, better to have a plan for the project.
When adding devices, it is suggested to adding the nearest 5-10pcs devices via engineering adding mode. Then name the devices accordingly via positioning function. It will be much easier and quicker to add all devices you need.

*when commissioning more than 20 sensor/fixtures on one site, it is recommended to switch off the entire set of lights and switch on one circuit at a time to create zone as per all the lights in one circuit. Once one circuit is completed the second circuit should be switched on to create another zone. Continue with this process till all the sensors/fixtures are added to the zones. Keep zone names different then one another to easily identify.

4. Save and Name the Zone QR code to the project file on your computer.

3. Preparation

3.1 Download the App

To download the TuroSmart scan the QR code below.

The APP supports most Android smart phones. Some Android phone models may not be supported due to issues with the phone's hardware or firmware. The APP requires access to the network and Bluetooth, so please approve access requests from the APP. The APP will not collect user's private data. Accept the prompt to allow access to photos for QR codes to be automatically saved in your album.

TuroSmart will update the APP when there are new features or bug fixes. Please enable the auto update of the APP so that new version of the APP will be pushed to your mobile phone.

GET IT ON Google Play

Download on the App Store

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3.2 APP Navigation

TuroSmart APP has five tab pages which you can move between to provide easy control of your lights.They are located in the bottom menu bar of the screen.
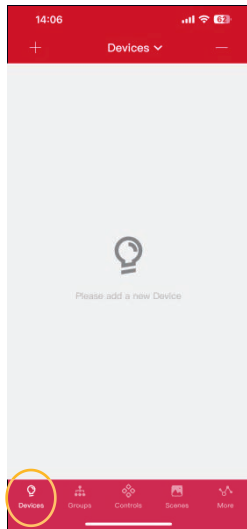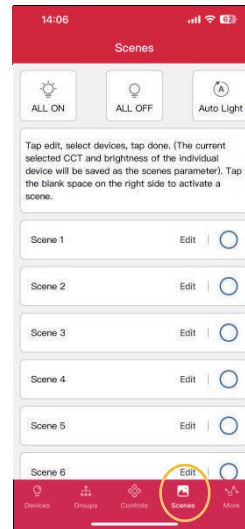

"Devices"shows all fixture sensors that are connected to the app. It allows the user to view and control individual lights.
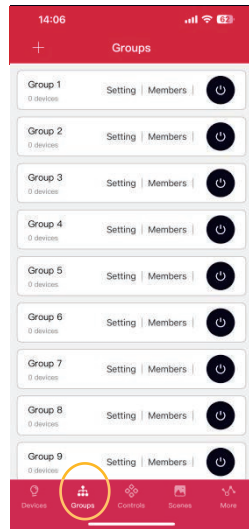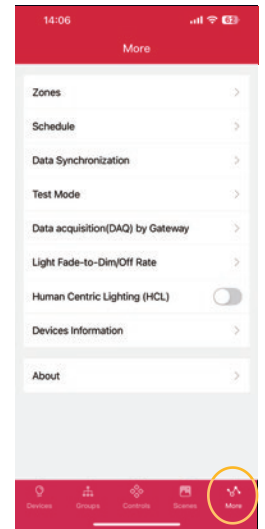
"Groups" allows users to set parameters of the devices at the same time. There are 16 groups per Zone.
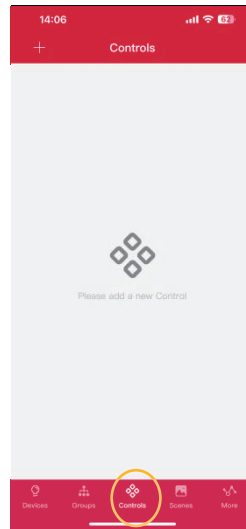
"Controls" shows all the gateways, switches and other TuroSmart BLE devices(except the sensors) those are connected to the app.

"Scenes" allows users to mange the scene according to their needs. There are 16 scenes per Zone.

"More" allows the user to view Zones, Schedule and Devices information, and other additional functions.
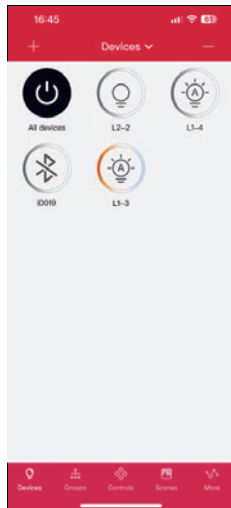
Light Icons

Every light connected to the APP will be listed on the Lights page.
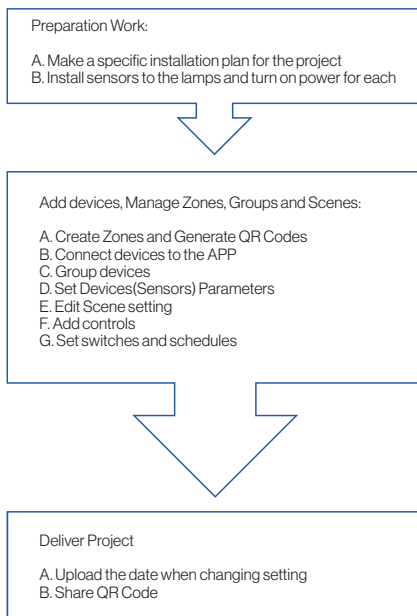Each light can display different icons to indicate the state of the device:

A. OFF – Light output is off
B. ON – Light output is on
C. Offline – Device is most likely either not getting power or is out of range of the mesh network.
D. Tunable Device – 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.

The More Page contains additional settings and features of the APP

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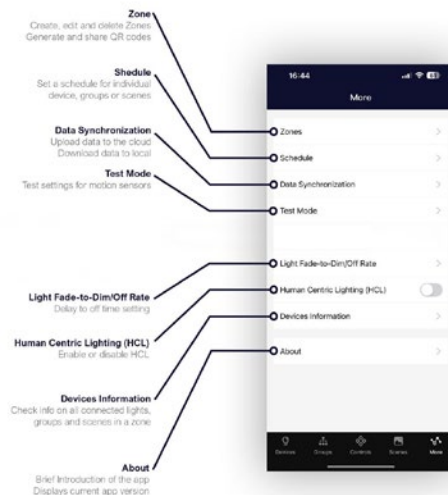
4.Commissioning

The following commissioning procedure is recommended:

Preparation Work:

A. Make a specific installation plan for the project
B. Install sensors to the lamps and turn on power for each

Add devices, Manage Zones, Groups and Scenes:

A. Create Zones and Generate QR Codes
B. Connect devices to the APP
C. Group devices
D. Set Devices(Sensors) Parameters
E. Edit Scene setting
F. Add controls
G. Set switches and schedules

Deliver Project

A. Upload the date when changing setting
B. Share QR Code

4.1 Preparation Work

For each project site, it is recommended to prepare a design script in advance, which includes the following content:
1. Site plan, description of the actual functional purposes of each area.
2. Model No., quantity, parameters, and location description of lamps.
3. The division of zones is recommended based on real functional purposes, and *the real number of lamps and switches in a single zone should not exceed 100. There should be no objects (such as solid walls, large metal objects, etc.) that hinder wireless signal transmission in the area, and the length, width, and area should not exceed the wireless coverage range (usually the length, width, and area of the building should not exceed 50 meters, and the area should not exceed 1000 square meters).*
4. For each zone, plan the number and name of groups needed, the number and name of lamps scenes, and the approximate lamps scheme for each scene.
5. Plan the number and model of devices required for each zone

4.2 Create Zones, Add Sensors, Manage Groups and Scenes

4.2.1 Zones

It is recommended to create QR codes for all zones and pre-define all groups, scenes, and their names
prior to commissioning in order to reduce work on site. A QR code represents a zone and all of the lights,
switches, and other devices in that zone. For more information on scanning, creating, and sharing QR
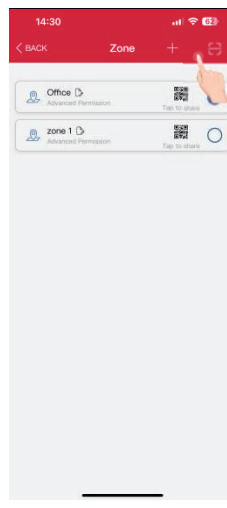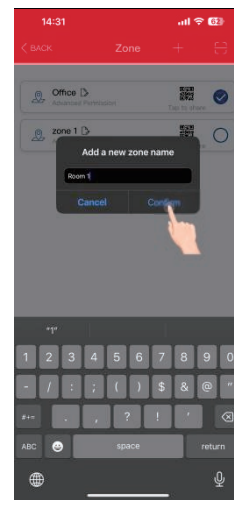Codes, see the QR Code chapter, on page 18.

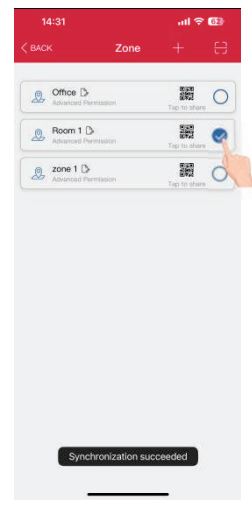### 4.2.1.1 Creating Zones
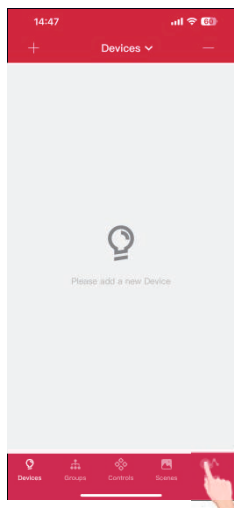
1. Open TuroSmart APPP, Click"More"
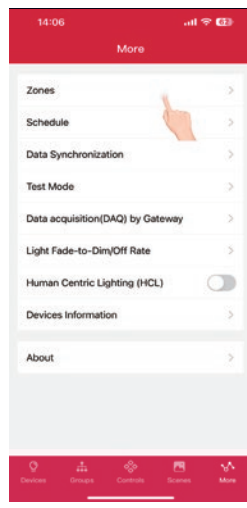
2. Click"Zones"
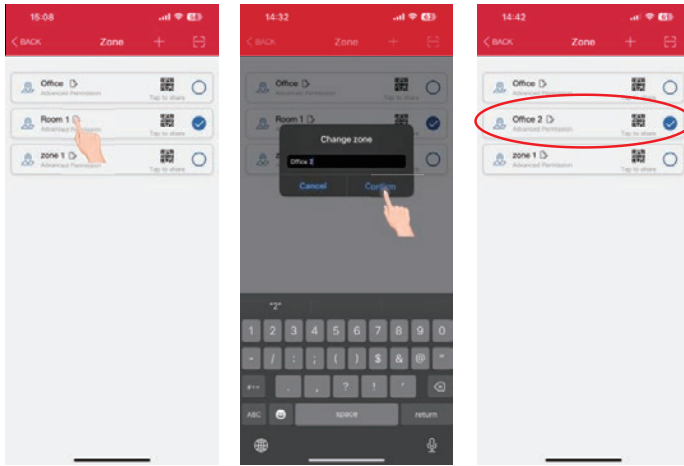
3. Click"+" to create new zones

4. Type the name , and click "confirm"

5. All zones can be found in the "Zones" list and you can tap to share and and you can switch between them by clicking the circle on them.

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4.2.1.2 Rename Zones

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

2. Enter preferred zone,name as pr

4.2.1.3 Deleting Zones
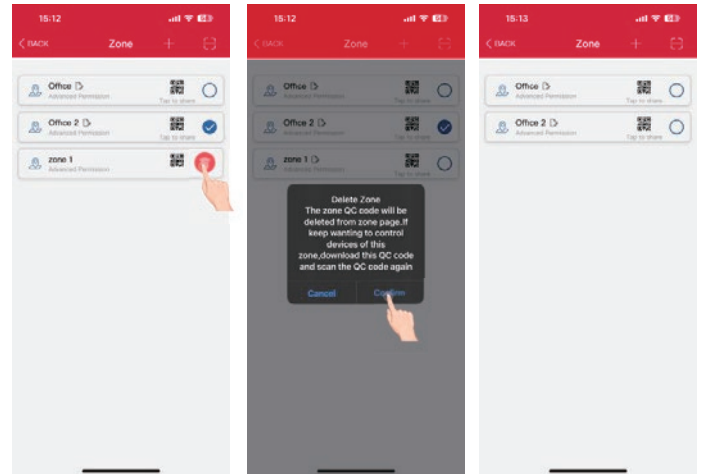
1. Select the Zone to delete and long press the zone and the delete button will appear on the right.

2. Press the red delete button that appears.

3. Confirm by pressing "Confirm"

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

4.2.2 Devices

The Devices page is the first page you'll see upon opening the APP. It is the primary page for controlling individual lights. Add devices by zone, and 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.

4.2.2.1 Add devices to the APP

We have two ways of adding, Engineering Add Mode and Quick Add Mode.

A. Engineering Add Mode
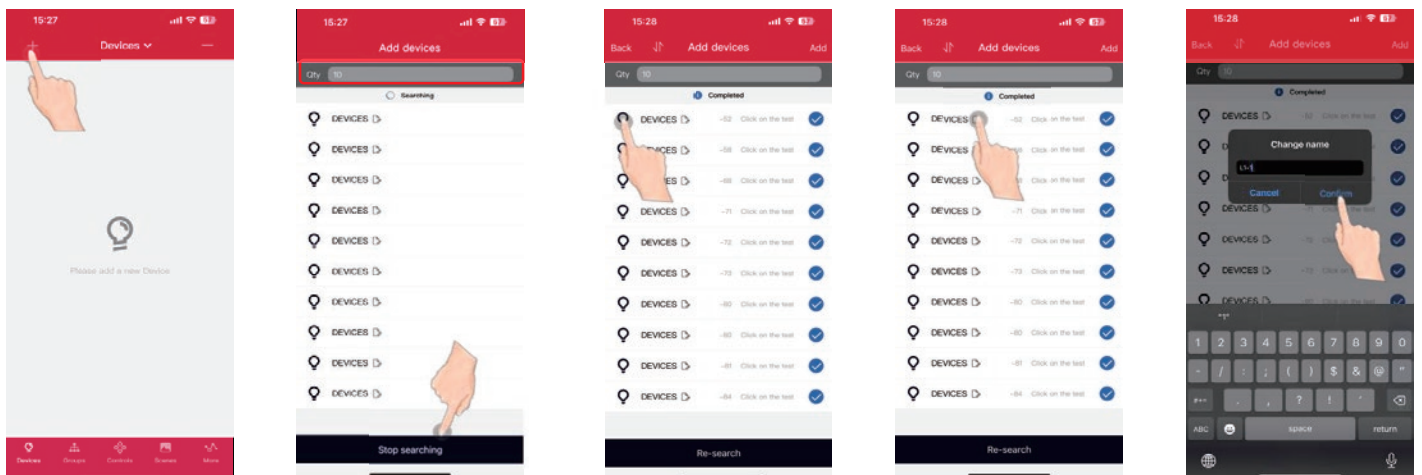
1. Enter the "Devices" interface, click the "+" in the upper left corner

2. The app will scan and list nearby lamps that can be added (the default quantity is 10). Click "Stop searching", and the nearest 10 devices will be sorted based on the Bluetooth signal.

3. Devices can be identified in a room by pressing the left icons to turn it on and off.

4. Click to [icon] rename the lamp

5. Type the name, and click "Confirm"

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Powered by Turolight
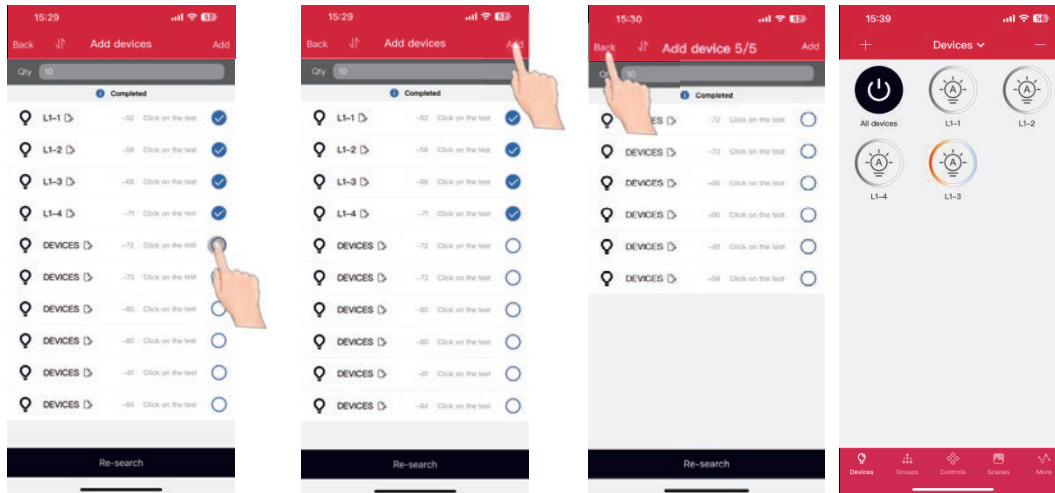
6. You can click the checkbox to select or deselect the lamp.

7. After choosing the devices you want, click the "Add" button in the upper right corner, add the selected lamps to the project

8. After adding successfully, you can click "Back" to the "Devices" interface to check whether the devices are added successfully

Tips:
1. For large areas, it is recommended to use the engineering add mode. After positioning each light, change the name before adding it.

2. Commissioning performance may deteriorate if there are more than 100 devices powered up at the same site. Please power off some devices before continue.

B. Quick Add Mode
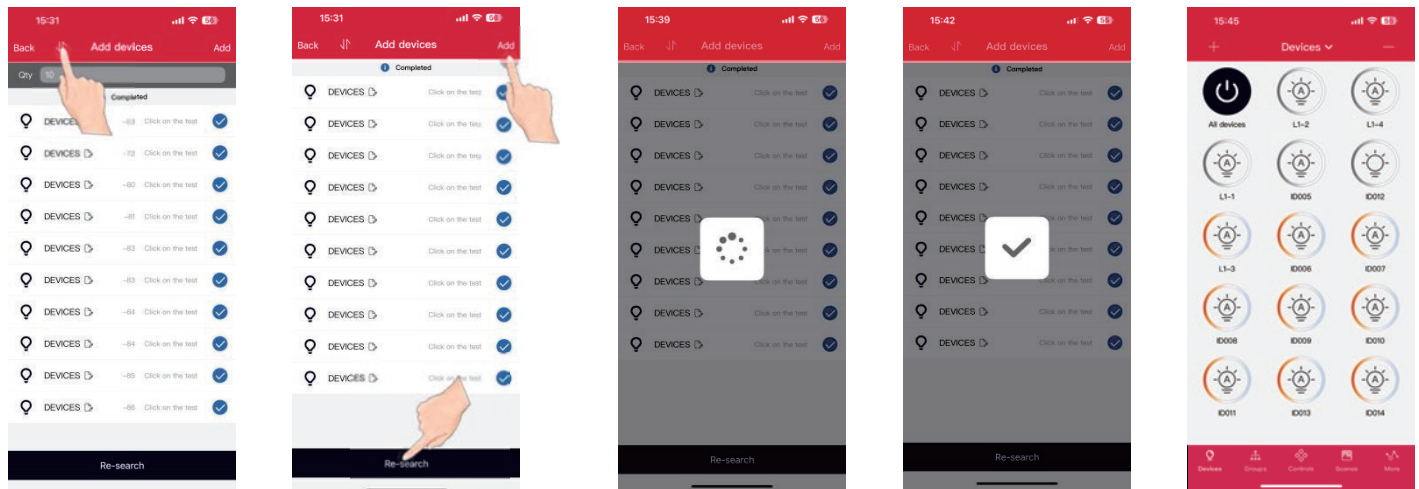
1. Click [⇅] on the top left corner will switch to Quick Add mode. In this mode, the Bluetooth signal will no longer be displayed. Click "Re-search" will search for all Bluetooth devices in the zone (up to 100)

2. Click "Add" to quickly add all devices in the list

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4.2.2.2 To Name or Rename Devices

1. On the device page, click the device icon can be quickly turned on and off for easy search and positioning
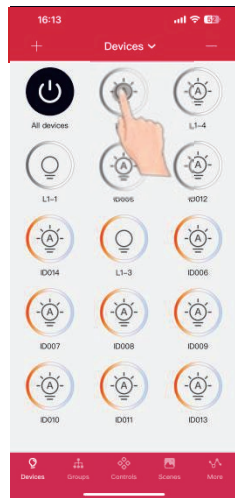
2. Long press a device icon, it will enter into the dimming and management interface
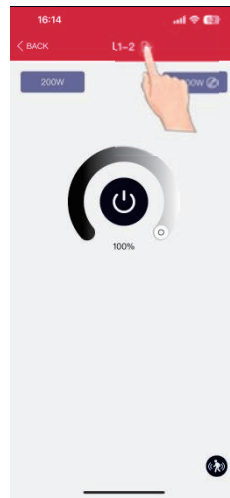
3. Click to [✏️] name the device
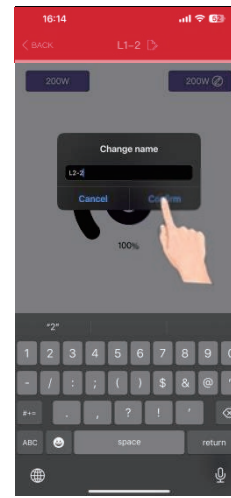
4. Type the device name and click "Confirm" to save it

5. The device name has been successfully re-named

4.2.2.3 Dimming and Color Tuning

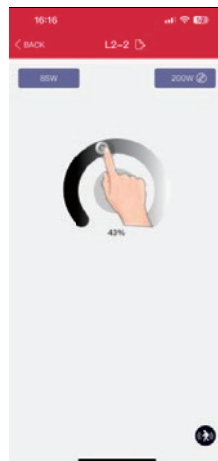Below are examples of the Device Dimming pages for mono-dimmable, CCT Dimming.

Single Dimming interface

Color temperature
Adjustable dimming interface

1. Long press a device icon to enter the dimming and management interface

2. Different types of devices will have different dimming interfaces. Please click and slide the corresponding dimming control.

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4.2.2.4 Quick setting for all Devices
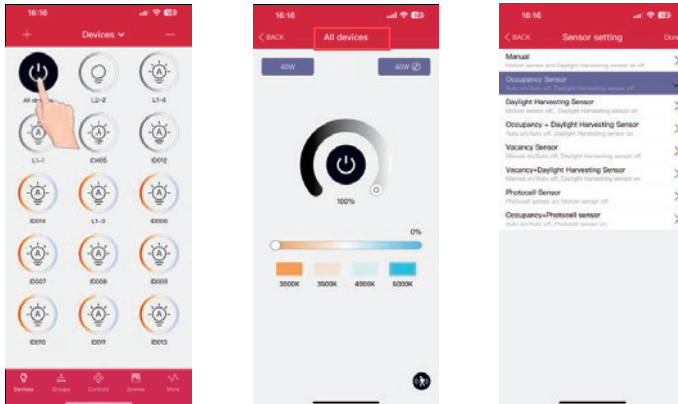
1. Long press at the "ALL Devices"icon to enter the dimming and management interface

2. Here you can set the parameters of all devices you added.

4.2.2.5 To Delete Devices
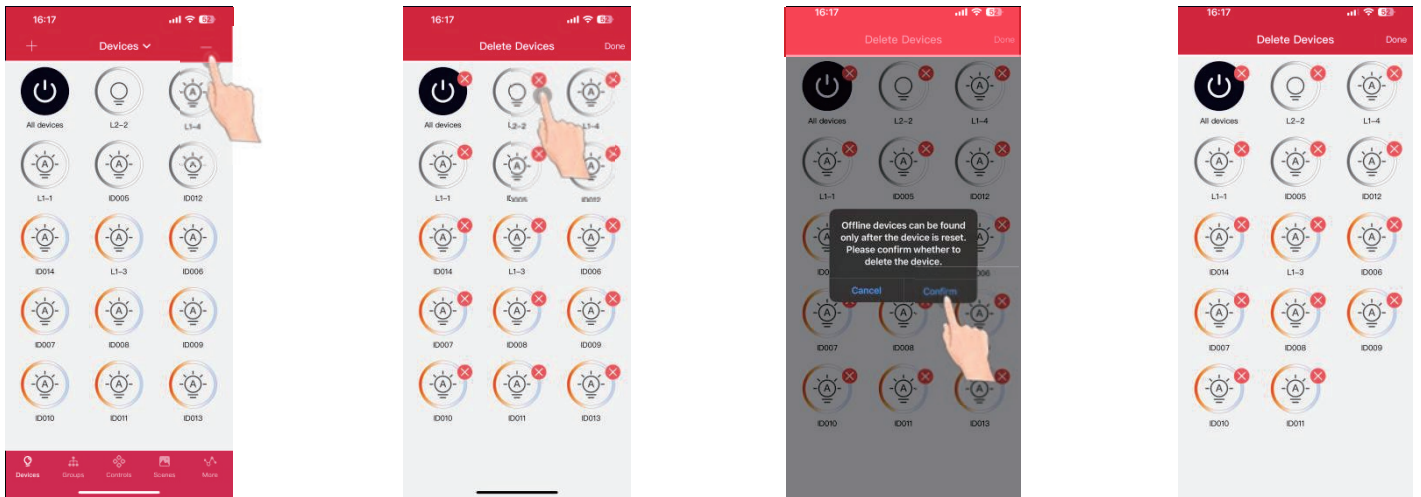
1. Click " — "on Devices interface

2. Click ✕ to delete the Device you don't need and Click "Confirm"

3. This method is only effective for online lamps. If not paired, a power reset is necessary.

4.2.2.6 Sensor Settings

4.2.2.6.1 Brief introduction

For lamps with sensors, the sensors can automatically sense human body movements and environmental light changes, and automatically switch on and off the lights and adjust the brightness according to needs, achieving the goals of comfort, health, and energy conservation.

Before setting the sensor parameters, you need to select the sensor mode according to your needs:

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Mode 1: Manual (Motion sensor and daylight harvesting sensor all off)
Mode 2: Occupancy sensor (Auto on/auto off, daylight harvesting sensor off)
Mode 3: Daylight harvesting sensor (Motion sensor off ,Daylight sensor on)
Mode 4: Occupancy +Daylight Harvesting sensor (Auto on/auto off, daylight harvesting sensor on)
Mode 5: Vacancy sensor (Manual on/auto off, daylight harvesting sensor off)
Mode 6: Vacancy +Daylight Harvesting Sensor (Manual on/auto off, daylight harvesting sensor on)
Mode 7: Photocell Sensor (Photocell Sensor on, Motion Sensor off)
Mode 8: Occupancy +Photocell Sensor (Auto on/Auto off, photocell Sensor on)
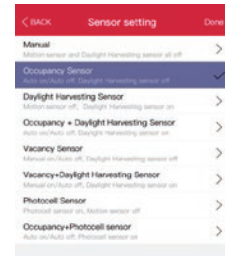
Lamps with sensors have some special parameters, including:

1. Brightness: The brightness of the lamp when the motion is detected
2. 1st Time Delay: Hold time refers to the time it takes for the sensor to turn off after receiving the signal for the last time
3. 2nd Time Delay: Stand-by time refers to the duration of the dimming function after the lamp enters the dimming function
4. Dimming level: The function of dimming a lamp, reduce the brightness to 10%, 20%, and 30% to achieve energy-saving
5. Motion Sensor Sensitivity: Sensing distance (sensitivity) refers to the distance that the sensor can receive signals, with three options: high, middle, and low
6. Linkage: When the lamp is not triggered by motion, but other lamps in the same group sense movement and turn on the linkage setting of this group, the other lamp will be triggered to the linkage brightness. The linkage brightness is calculated in proportion to the normal working brightness.

Recommended Parameters Setting By Space Type
(Refer to the Project Controls Sequence of Operations)

Suggested Settings For Zone Type						
Zone	**1st Time Delay (minutes)**	**2nd Time Delay (minutes)**	**Dimming Level(%)**	**Linkage Level(%)**	**Scenes**	**Wall Switches**
Open Office Area	30mins	1min	50%	50%	No Scene	Button programmed to ALL OFF for quickly turning off lights when leaving office
Meeting Room	30mins	1min	80%	80%	Configure PPT/ Lecture Scenes	Associate PPT / Lecture scenes to SCENE button on wall switch
Classroom	35mins	5mins	80%	80%	Configure PPT/ Lecture Scenes	Associate PPT / Lecture scenes to SCENE button on wall switch
Storage Room	10mins	1min	30%	80%	No Scene	No switch
Corridor	10mins	1-Infinity mins	30%	50%	No Scene	No switch

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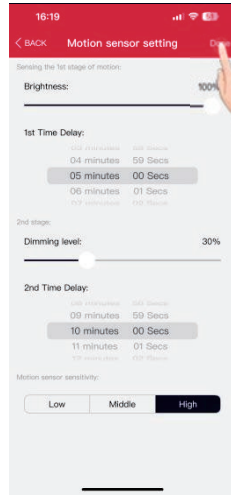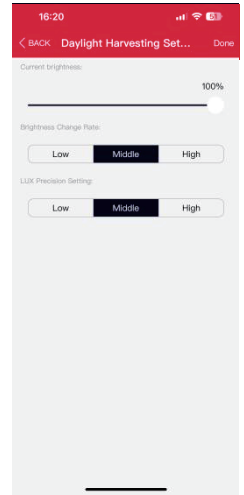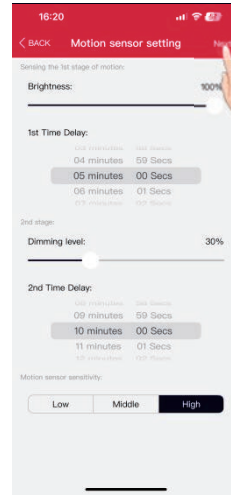# USER MANUAL
TL-TUROSMART
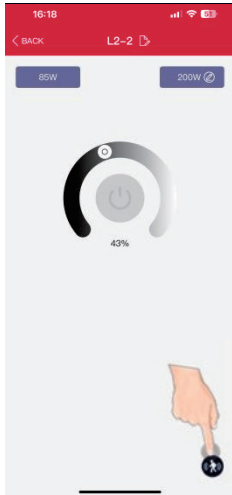
Sensor setting

1. Click the 🏃 in the lower right corner to set the sensor parameters for this sensor
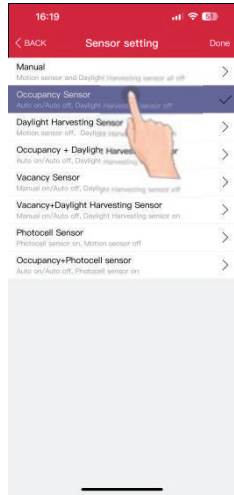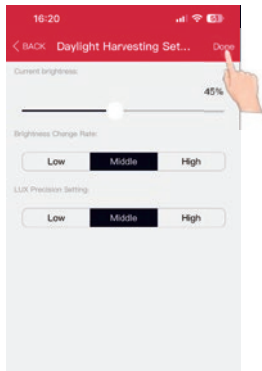
2. Select the sensor mode type

3. After setting the parameters, you need to click the "Done" button to save the settings.

4. If select the daylight harvesting mode, after setting the sensor parameters, click 'Next' to set daylight harvesting parameters

4.2.2.6.2 Sensor daylight harvesting setting

5. Choose the current brightness of the lamp as the memory lux value for daylight harvesting function. When the ambient light turn lower, the brightness of the lamp will increase. When the ambient light turn higher, the brightness of the lamp will decrease to maintain the lux level

6. Brightness Change rate means when the ambient light changes, the speed at which the luminance of the luminaire changes can be changed. There are three types : "Low", "Middle", and "High" modes

7. LUX Precision Setting means you can select the accuracy of lux recognition when daylight harvesting is working.There are three types : "Low", "Middle", and "High" modes

4.2.2.6.3 Sensor outdoor photocell sensor

Photocell only setting interface

Photocell with OCC setting interface
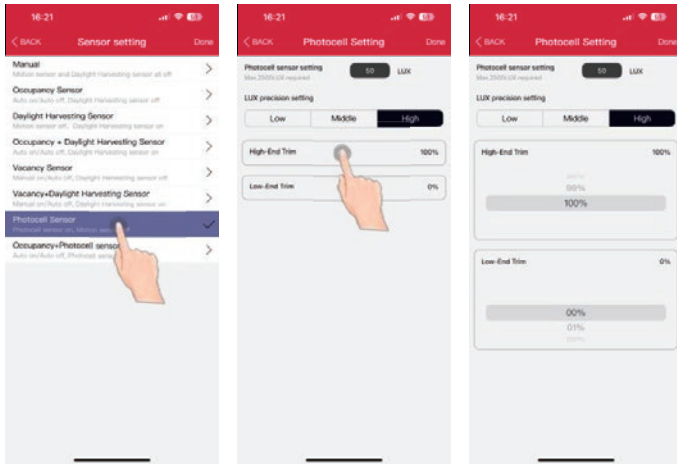
In photocell interface, you can set the lux and choose the lux precision (low,middle, high), High end trim, low end trim. Low means 15%, Middle means 10%, High means 5% Take the setting on the picture as an example, when you set 50lux, it means when the lux is less than 47lux, the fixture will be 100% on automatically, when the lux is 53lux, the fixture will be off.
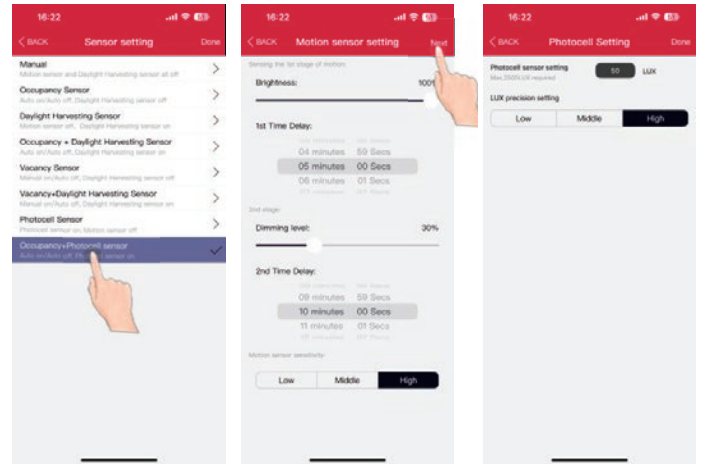
In photocell with OCC mode, after setting the sensor regular parameters, click"Next", then you can set the lux and Lux precision.

Take the setting on the picture as an example, when the lux is less than 47lux, when detect motion, the fixture will be 100% on, after 1 minute, there's no motion detected, the fixture will be 30% on, then after 1 minute without motion detected, the sensor will be off. During the 1st time Delay and 2nd time delay, once the lux is more than 53lux, the fixture will be turned off by force.

4.2.3 Groups

Groups enable control of a defined set of lights/sensors, in a small area. There are totally 16 groups in the list. The APP provides a default group named "All Devices" in Device page, which gives the user control over all lights in the zone. Groups allow user to configured/change settings for all devices in a Group at same time.

4.2.3.1 Add or remove lamps in a group
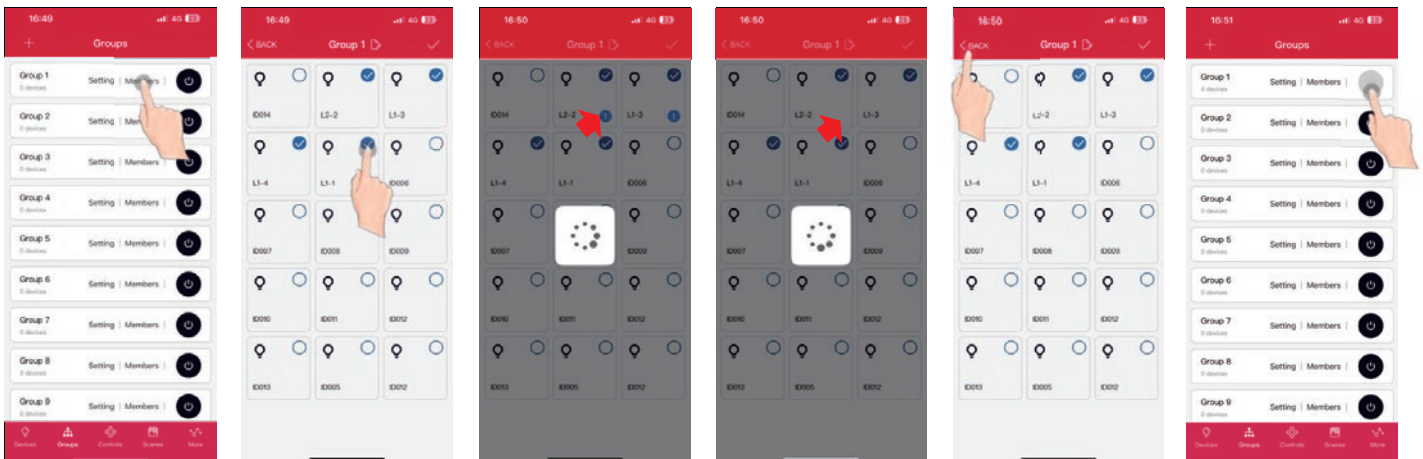
In member management page, click the selection box in the right corner of the devices icon to add or remove a certain device. After selecting members, click the "√" to save the grouping

During adding, ! will appear in the lower right corner of the device being configured. The devices that are added to the group successfully, the ! will disappear. Then press x(Back) to exit

On the "Group" interface of the APP, click the sliding switch of a certain group to quickly turn on/off all the devices in this group

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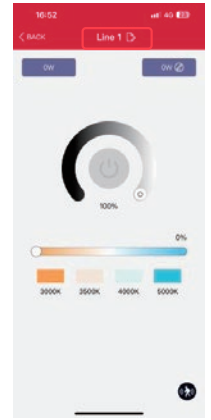
4.2.3.2 Rename the group
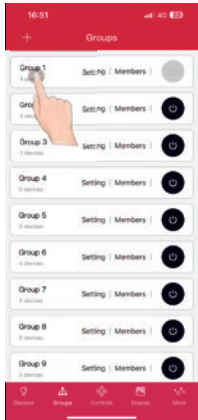
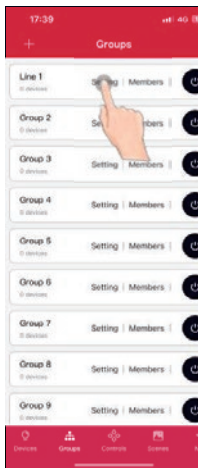1. Click "Group1" to enter the group lamp dimming and management interface
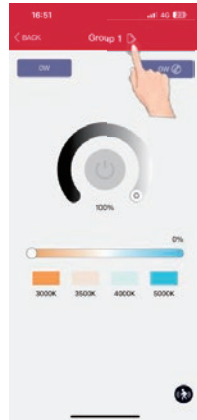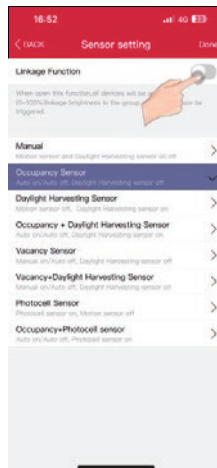
2. Click [icon] to name the group.

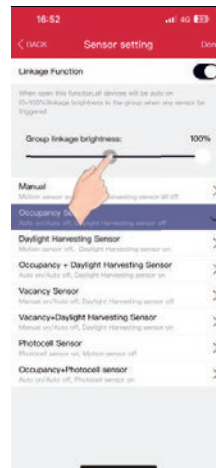3. Type the group name in the pop-up input box and click "Confirm" to save it

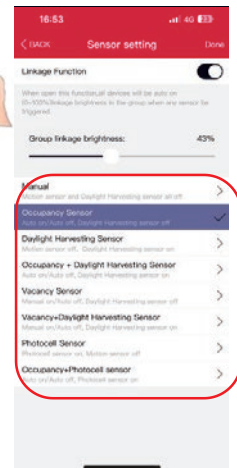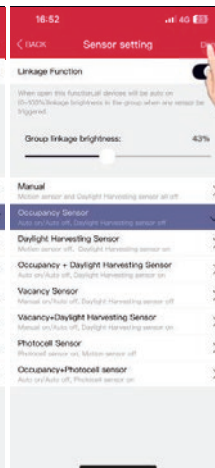### 4.2.3.3 Linkage and Parameter setting

1. Click a group to enter the group setting page and press [icon] to enter the parameter setting page

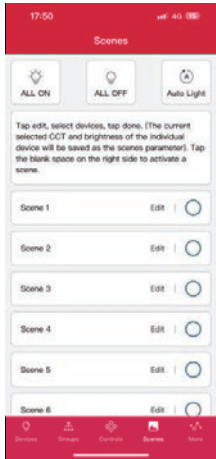2. Click the "Linkage Function" sliding switch to turn on/off the linkage function of this lamp group.

3. Set the group linkage brightness in the sensor settings interface. Must click"Done" to save the linkage function

Sensor parameters setting please refer to page 3

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4.2.4 Scenes

Scenes page has three quick settings.You can turn on/off all devices by click "ALL ON", and "ALL OFF", and if you want to quick scenes, you can click "Auto Light", it means the sensor comes to sensing mode. When it is chosen, it will become blue.
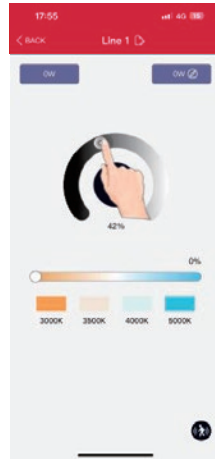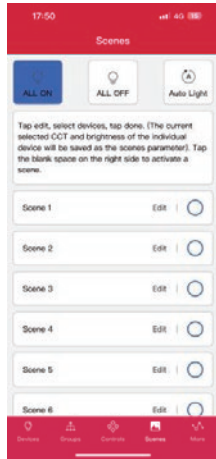
According to the actual application need, set the required brightness or CCT on each device or group.
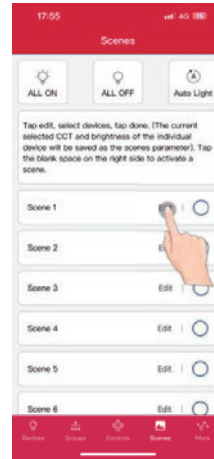
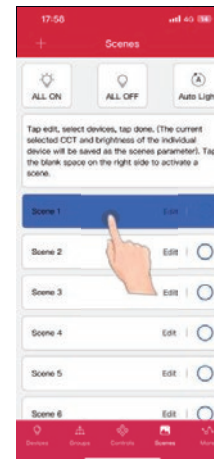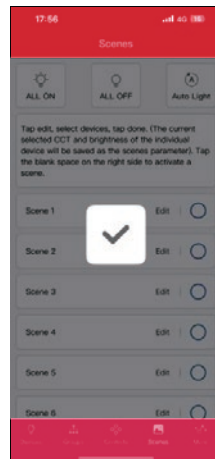Click the "Edit" on the Scene interface.

Click to select the devices or group you just set.

then click "Done"
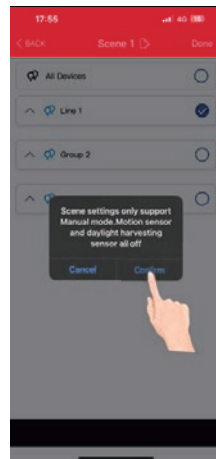
Click "Confirm" to save

Tap any blank space to achieve the scene.

4.2.5 Switch

TuroSmart smart switches can be added to the APP to control individual devices or groups.

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Toll Free: 1-888-425-7093   Website: www.turolight.com
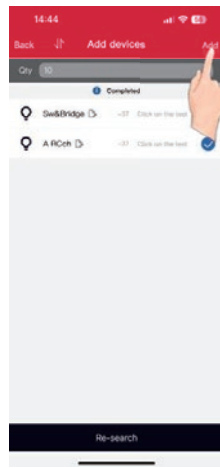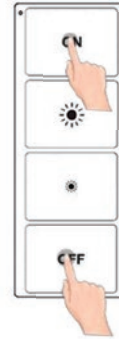02/26/25

4.2.5.1 Add a Switch
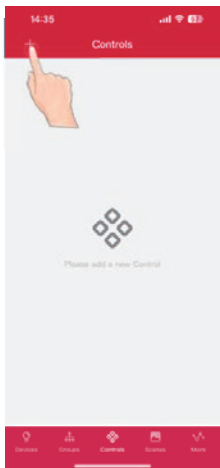
1. Click"+" on the Device interface
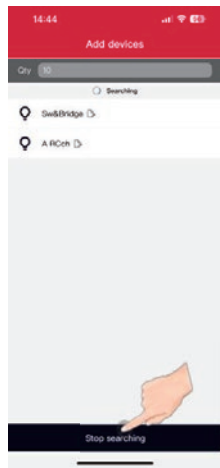
2. Click "stop searching"
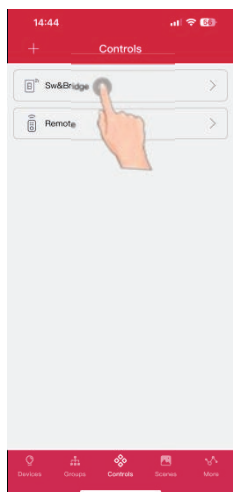

3. Click "Add "

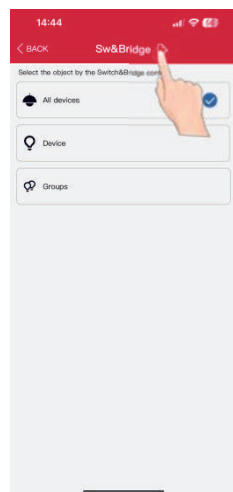Press and hold the "ON" and "OFF" buttons for 5 seconds until the green indicator is on

4. Follow the instructions to pair the switch

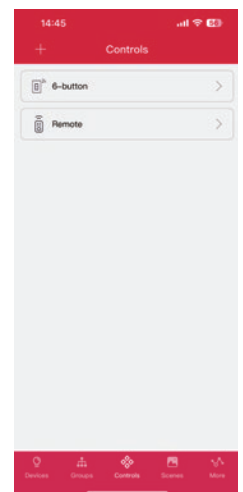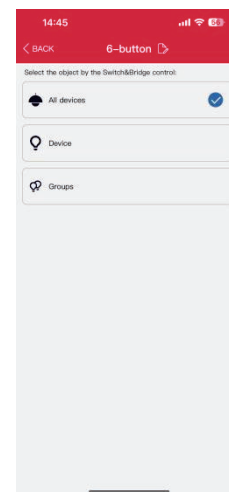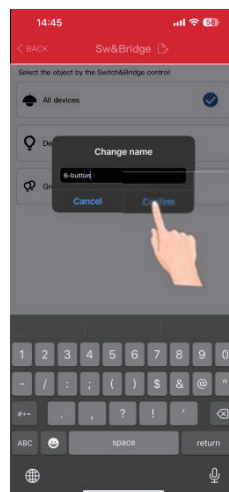*Note: Please set the switch to pairing mode, then click "+" on the app to to add the switch to the Zone.*
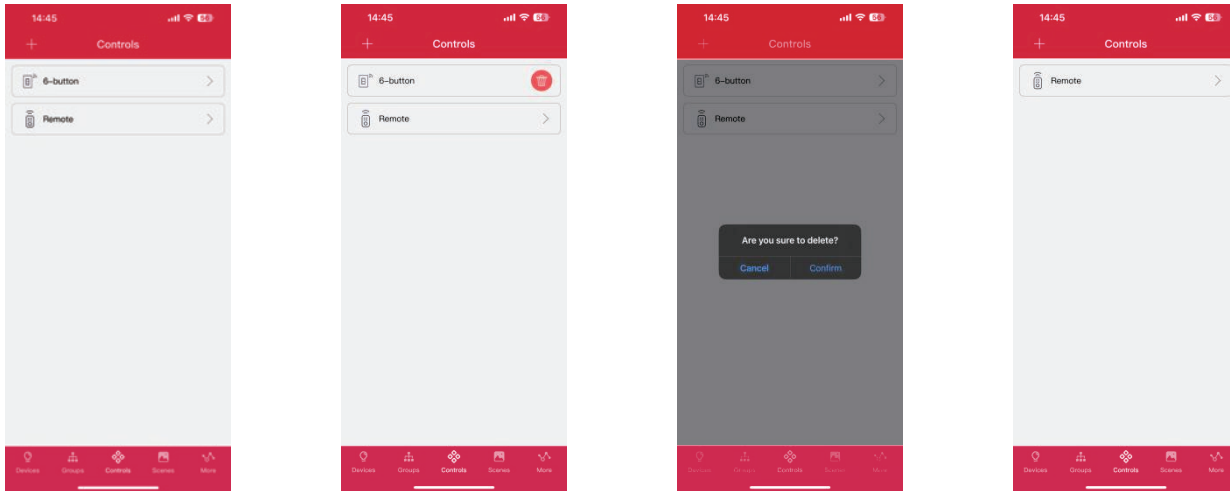
4.2.5.2 Rename and delete the switch

1. Enter the switch parameter setting interface

2. click [icon] to re-name it, and click "Confirm" to save.

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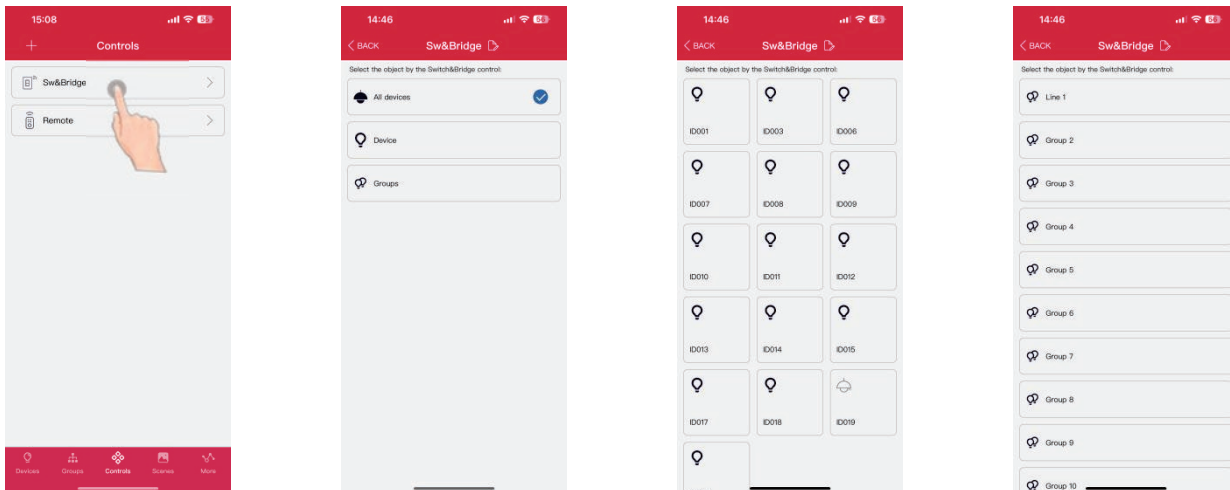
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3. Long Press the Switch until the 🗑 appears
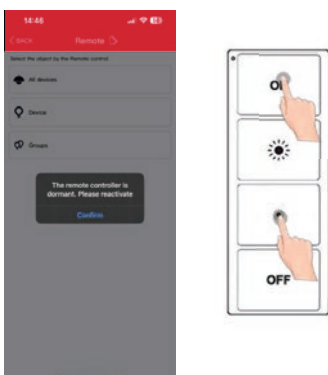4. then press 🗑 , click "Confirm" to delete

4.2.5.3 Associate Devices or Groups to the switches

1. Enter into the Device interface
2. On the Switch's Configuration interface, All lamps ,single lamp ,Group can be selected.

Note: When select the devices or groups to the switch, each time only one device or group can be assign to the switch.


For BRI-WS204-GE, when the remote control is dormant, you need to reactivate it (to enter paring mode), long press and hold the "ON" and "DIM-"buttons for 5 seconds until the green light flashes

BC-USDM101-4-GE and BC-USDM101-6-GE can also be added as gateway.

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4.2.6 Schedule (Timer)

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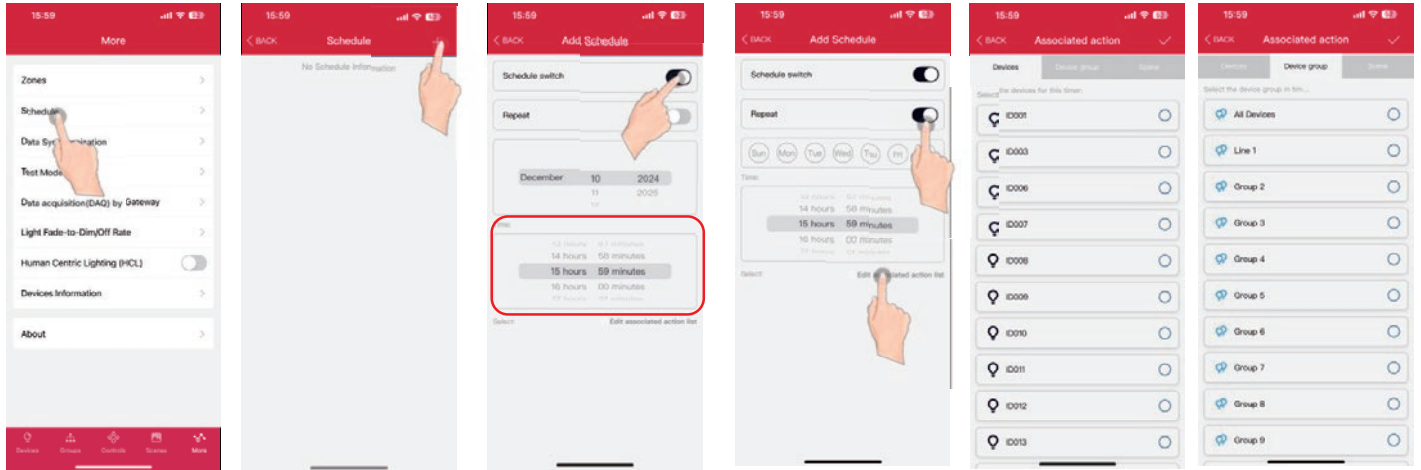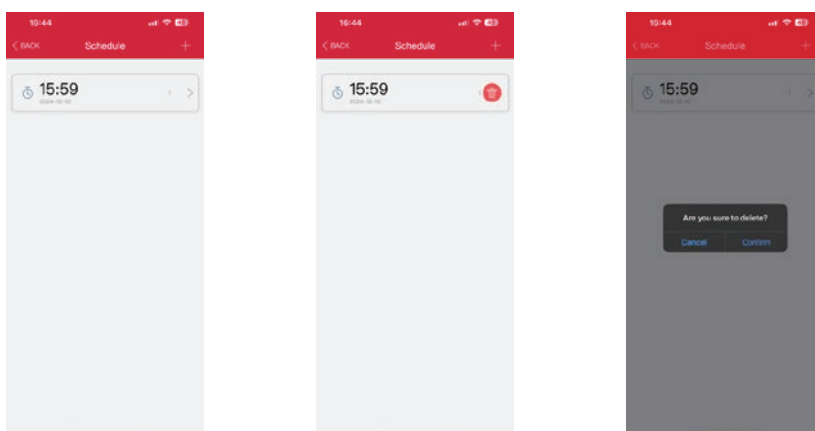

1. On the "More" interface, click "Schedule"

2. Click "+" to add a schedule

3. Click the ⬤ to enable or disable the timer
4. You can choose the time in the red part

5. Choose whether to repeat date or time
6. Click "Edit associated action list"

7. Lamps, Lamp group, and Scene can be associated according to your need
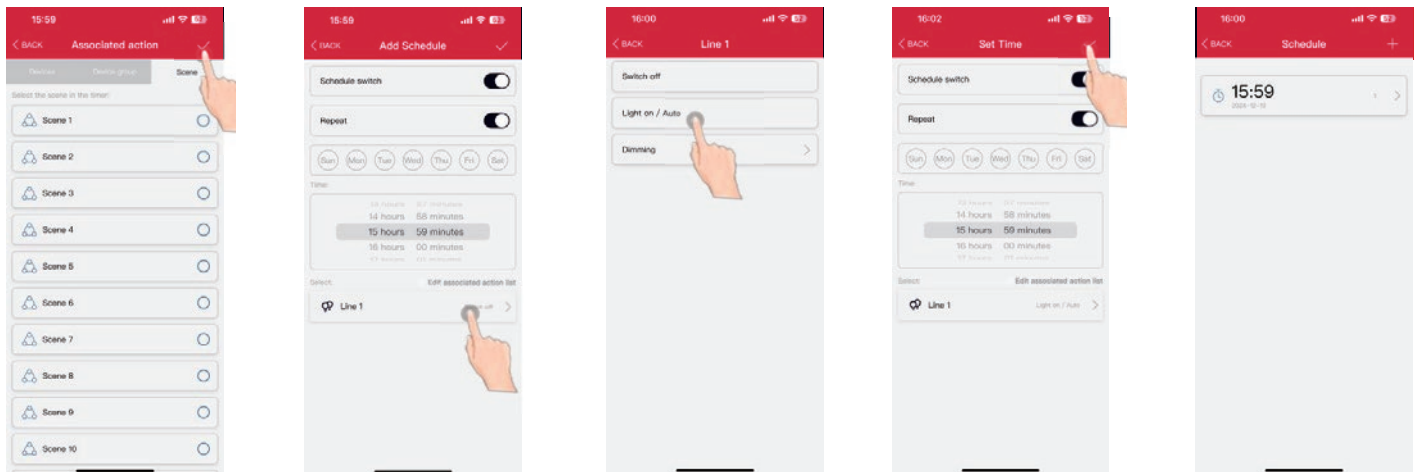
8. After select, click the "√" to save

9. Then Click the selected subject to add action. You can choose "Switch off", "Light on/Auto" and "Dimming"

10. Click the "√" to save

To Delete the Schedule

1. Long Press the Schedule until the 🗑 appears

2. then press 🗑 , click "Confirm" to delete

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5. QR CODES

Whenever a zone is created, two QR codes can be generated, one for Advanced Permission(the Admin level) and one for Basic Permission (the User level). The QR codes represent the zone, as well as all of the lights, switches. And groups associated with that zone.

The Basic Permission QR code allows the user to dim, activate a scene, or control lights on that zone, but it does not allow the user to add, delete, or change lights, groups, or scenes. The Advanced Permission QR code allows a user to control and edit all settings within the APP. Only users with the Advanced Permission QR codes can share Advanced Permission QR codes.
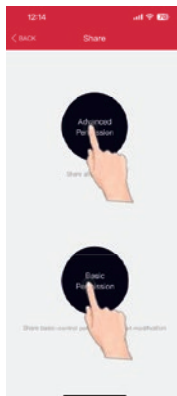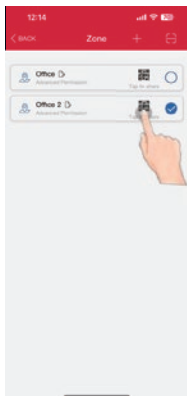
5.1 To Scan the code
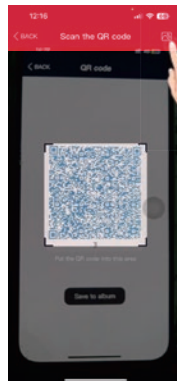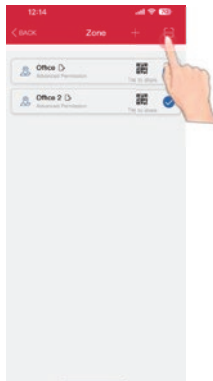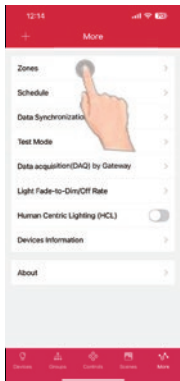
Click "Zones" in "More" interface, and click [ ] to scan the QR code

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

You can also select QR codes saved in the phone by pressing the   button.

5.2 To Save the code

All zones can be found in the " Zones" list and you can tap to share

By selecting the corresponding permissions based on the customer type, a QR code can be generated

Click "Save to album" Then you can find the code in your album

Tips :Each QR code represents a separately managed area and its lamps, switches, and other devices. During the preparation work, it is recommended to prepare the QR codes for all zones, and set the group, scene, and name in advance to reduce on-site work

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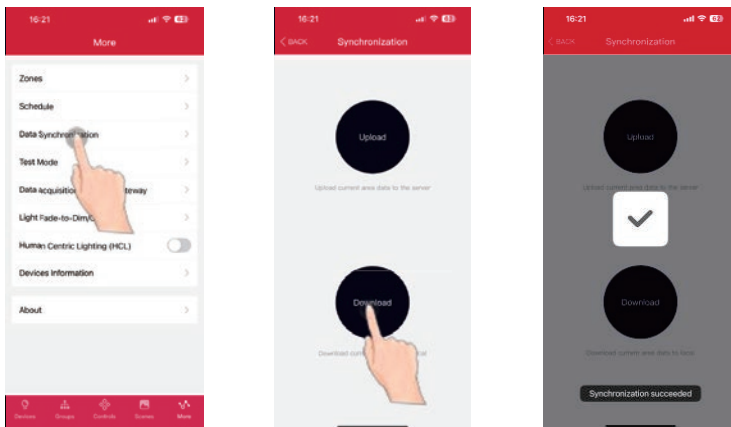**5.4 To synchronize data to the zones**

5.4.1 Upload the data to cloud

If someone(e.g. workers on site) changed the parameters,what they need to do is upload the data, then others can download.

Click "Data Synchronization" on the "More" interface,open the internet, click "Upload", then the users that the setting of the Zone has been changed.
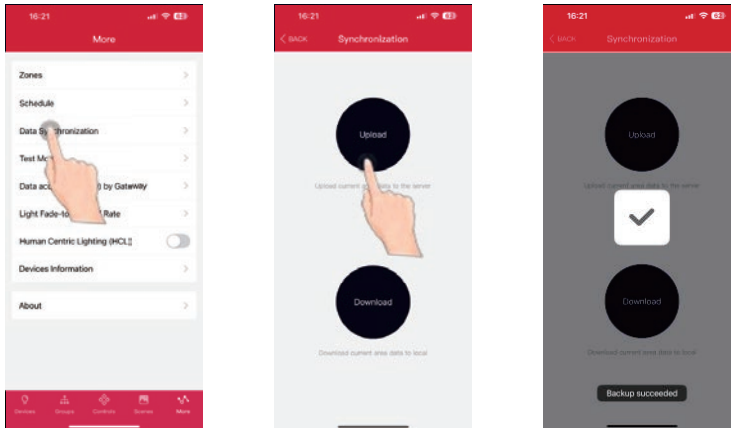

5.4.2 Download the data to cloud

Users click "Data Synchronization" in More interface ,open the internet ,Click "Download" to synchronize the settings of the zone. If the users don't have the zone, please scan the code to add the zone.

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6. Additional Setting

6.1 Device Information

From the more page, The "Devices Information" tab will display a list of all the information for the Device, Groups and Scenes in a zone. Here you can also turn on/off the Devices, groups, and Scenes.
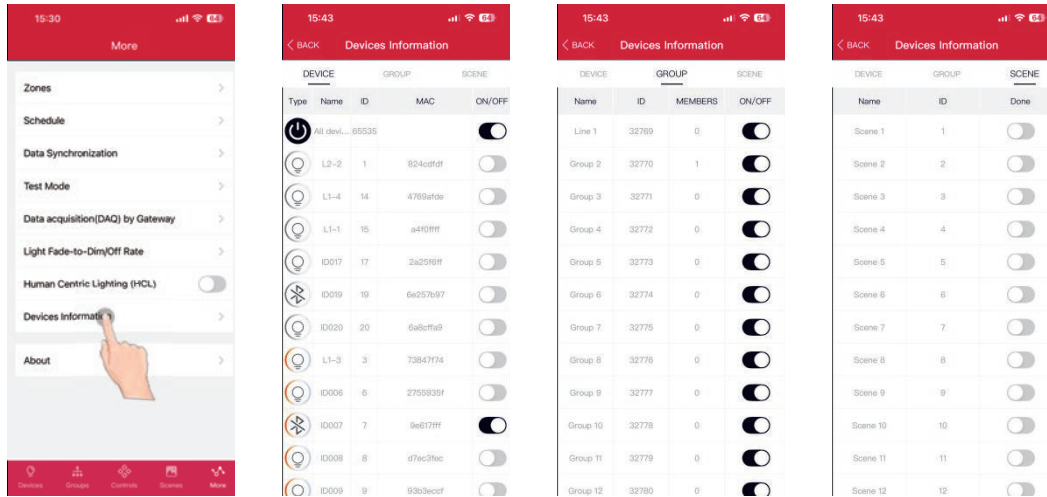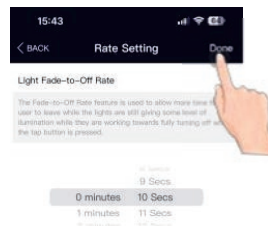

1. From the More page, select on"Devices Information"

2. Switch between Lights, Groups, or Scenes to display the desired information.Here you can also turn on/off the Devices, groups, and Scenes.

6.2 Light Fade to Dim/Off Rate

After you set the delay time, when you switch off the fixtures manually, the fixture turn off after the delay time set. This is always used in offices with wall switches.
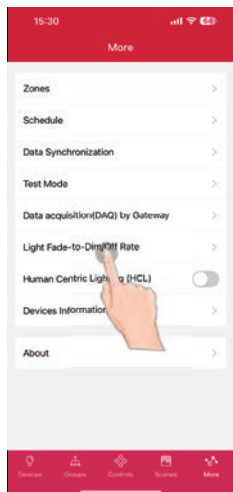

1. From the More page, select on"Light Fade to Dim/Off Rate"

2. Then Choose the delay time you need, click"Done" to save.

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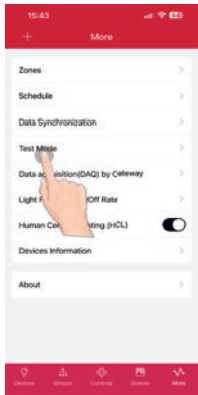02/26/25

6.3 Human Centric Lighting(HCL)

Human Centric Lighting, also called Circadian Rhythm, this function can synchronize all of the lights' color temperature, and adjusts them based on the time of the day, in order to mimic natural daylight. This only applies to tunable white lights that are set in Auto mode.
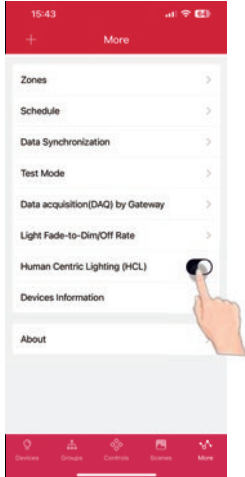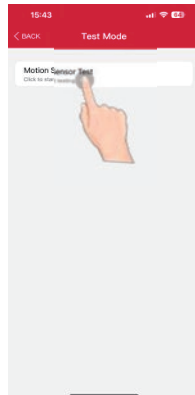

1. From the More page, select the enable/ isable button next to Human Centric Lighting(HCL).

2. Enabling Human Centric Lighting function will automatically sync color temperature across all color tunable lights in Auto mode.
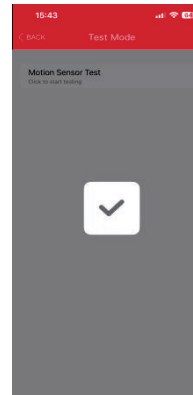
6.4 Test Mode

In test mode, when the sensor detect motion, the fixture will be 100% on, after 2 seconds, the fixture will be off. Test mode will be quit automatically in 3 minutes.

1. Click "Test Mode" in "More" interface

2. Click to start

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7. RESTORING FACTORY SETTINGS

There are 2 ways to restore factory settings for the lights. (Some ways are suitable for some devices)

### 7.1 Restore By Deleting Lights on line

The first way is by deleting lights from the APP. This is the easiest way. When finished testing, must delete the lights online. (After deleting the lights on line, wait for a while to ensure all devices is deleted successfully. Then you can refresh the "Lamp" interface to see there's still some devices.)
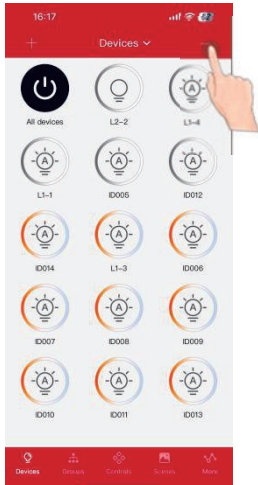
1. Click" — "on Devices interface

2. Click ⊗ to delete the Device you don't need and Click "Confirm"
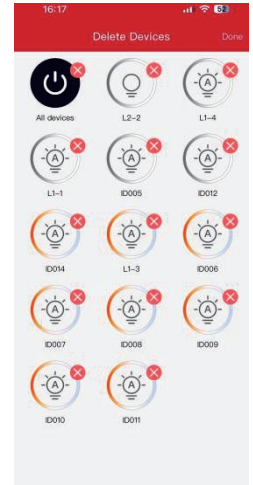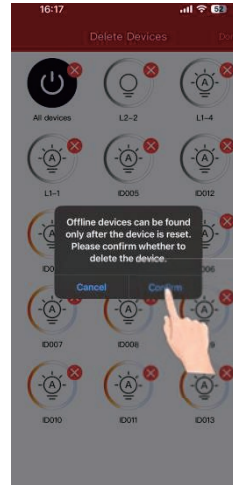
3. This method is only effective for online lamps.

7.2 Restore By RC100

First: Press "RESET" button

Second, Press "ON/OFF" button

The lamp flashes once, indicating that the reset is successful.
This way is very useful when someone forgot to delete the lamps online.

Contact Information

If you have any questions, need further assistance, or encounter any issues while using this product, please feel free to reach out to us.

- Phone: 905-479-7093, 1-888-425-7093
- Email: sales@turolight.com
- Website: www.turolight.com
- Address: 160 Cochrane Drive, Markham ON L3R 9S1

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