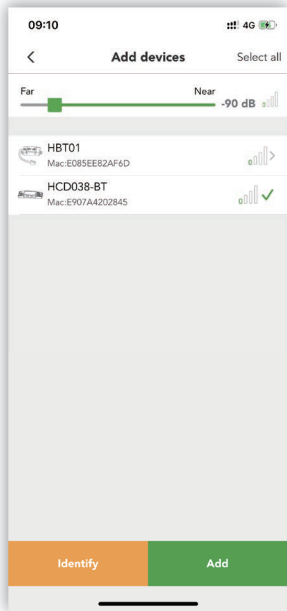
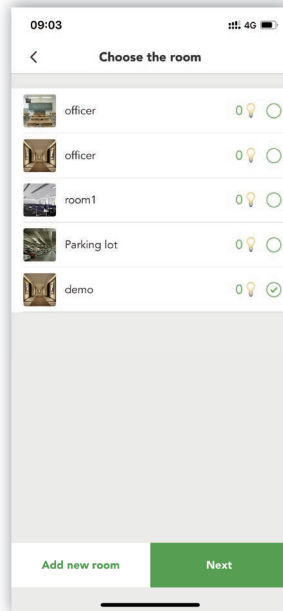


The following instructions will guide users how to add a new device to the Mesh network. In this devices management page, all connected devices will be displayed here. Click the “add” button at the top right to add new devices. After searching is done, all of the devices available will be listed here, users can drag the green line to adjust the search range of Bluetooth devices. To the left, the app has the largest search range; in reverse, it will have the smallest. All devices will rank by strongest to weakest signal.

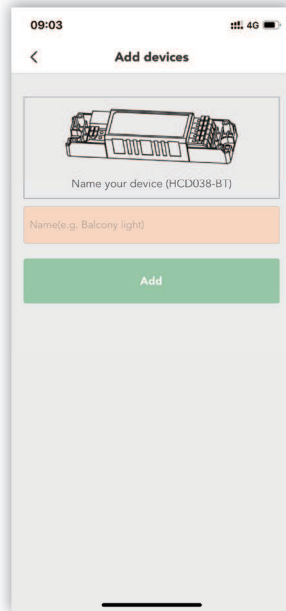
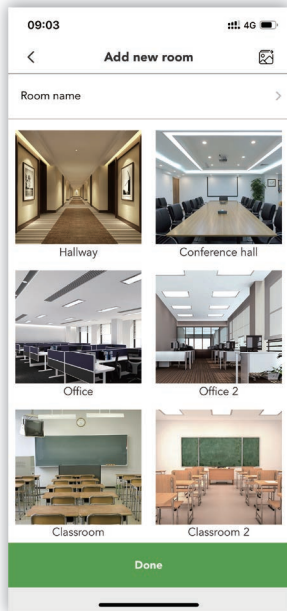


A



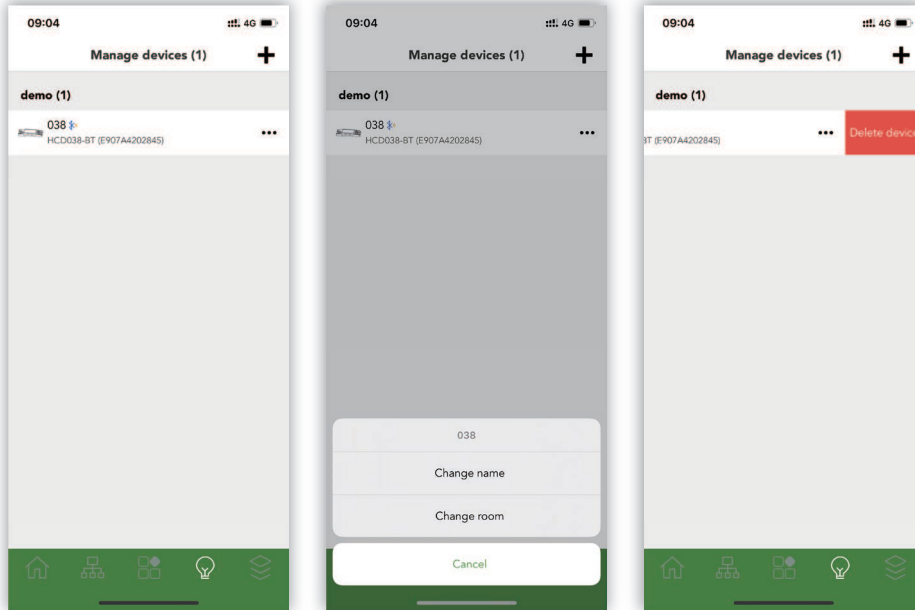
B

- A. Users can click on the devices of which they would like to add to the room. If selecting only one device, users can locate where the device is by clicking on the “identify” button and user will see light flashing. If adding more devices at the same time, all the devices will be added to the same room and will be sorted automatically.
- B. Next, users need to choose which room they would like to add these devices to, or just can create a new room. The little light bulb icon indicates that how many luminaries are already in this room. Select the room and click “Next”. On this page, it will show what kinds of devices are being used, and user will need to name the device. Click “Add”.



Click the "Add new room": Name the room, choose the default scenario accordingly by users themselves, if you would like to make your own picture to be the cover, users can click the "picture" button, choose to take a new photo or choose from Album.

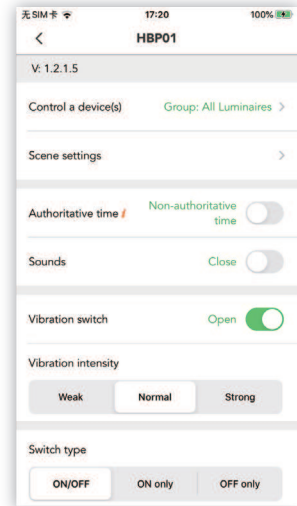
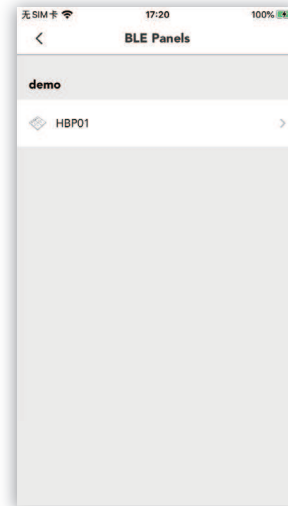
On Add devices page, if there are no devices to be found, it means that all the devices are connected.

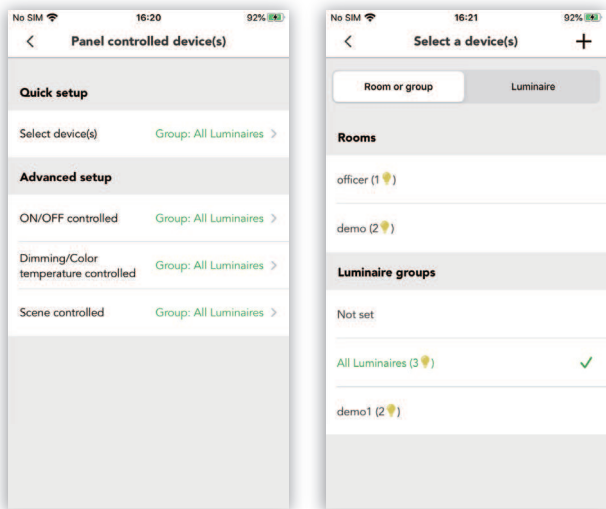


By going back to device management page, users will see all the connected devices here. The small “Bluetooth icon” indicates that these devices are connected to the app. Clicking at the right “dots” icon, users can rename the device or change the room of which it belongs to. When sliding the device to the left, users can choose to delete the device from the current network. To delete the device, it will need password confirmation. When clicking on the device, it will go to the device setting page. Going to the home page, users can turn on and turn off the light, change the brightness and adjust color temperature.

On the Bluetooth panel section, HBPO1 can be configured to control luminaries easily and wirelessly. HBPO1 appears under the BLE panel page after pairing it to the network.

Click the one you would like to use. On the top there is a version number which stands for the firmware version of the panel. In order to use the panel, firstly you need to choose a target to control.





There are two kinds of setups: quick and advanced setups.

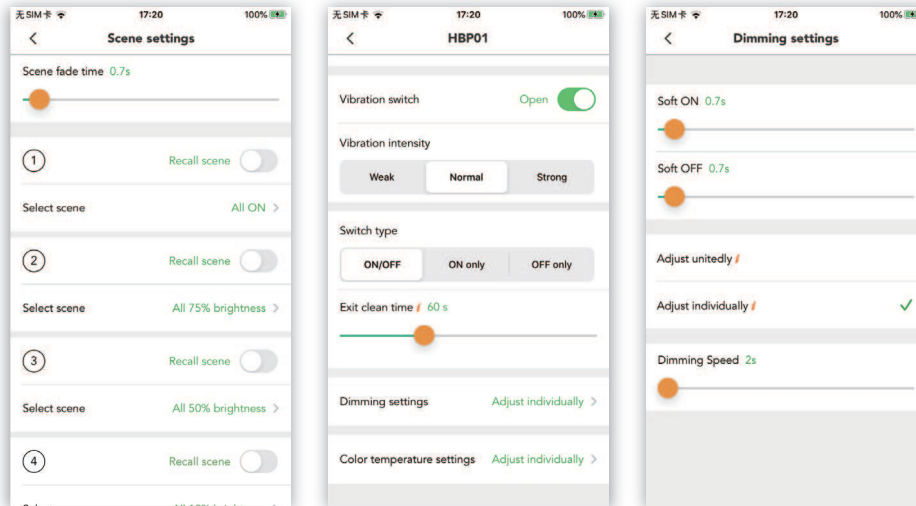
If you select quick setup, you can simply select which devices, rooms or groups to be controlled by this panel.

If you choose advanced setup, you can choose the target to be controlled independently based on the three functions (On/off control, dimming/color temperature control and scene recall).

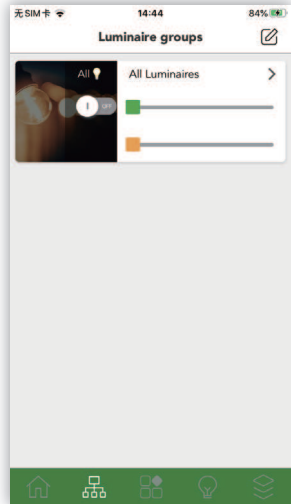
Next is the scene settings, the panel can be configured to save maximum six scenes at the same time. On the app, four default scenes are provided from button 1 to button 4. You can still change the four default scenes according to your own scenes as well. And if you don't need to use the scene button, you can select "exit manual mode" instead.

Authoritative time: After a device is turned on for authoritative time, its entire network will be based on this time when there is no mobile phone connection (If the phone has connection, it will base on the phone time). Please ensure to turn on authoritative time for device only when there is a stable power supply.

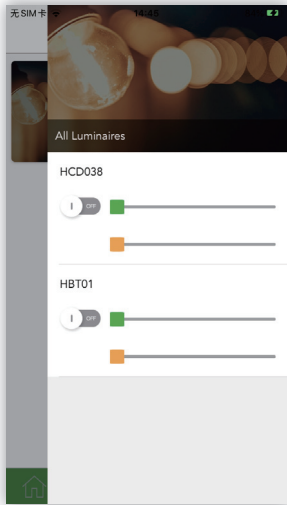
For the panel itself, users can personalize the features, such as the panel beeper sound and vibration intensity. For the switch type, you can choose to make the middle on/off button on HBPO1 to be on/off, on only or off only. There is a function called exit clean mode: long press the on/off button on the panel, HBPO1 will enter the screen lock mode/clean mode, the panel button will be temporarily unavailable until the screen lock time expires. You can exit lock mode by long pressing on/off button for 5s.



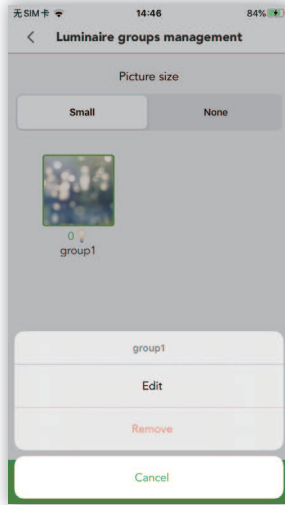
The dimming settings and color temperature settings are the same as the Push switch. You can choose to adjust unitedly or adjust individually. Adjust unitedly: All the luminaries will be adjusted to the same brightness or color temperature via the panel. Adjust individually: Each luminaire will be adjusted individually for their own brightness or color temperature via the panel (i.e. the brightness or color temperature of each luminaire may be inconsistent).



This document will discuss about how to create a new group via the Koolmesh app. Here is the Luminaires groups' page. We have introduced about how to add a new device to the network earlier, now we need to add a device to a room. So, what are the differences between the "Room" and "Groups"? Every device will need a room to store all the configurations, one device will only belong to one room. But for groups, it is different, one luminaire can belong to many different groups, regardless of the other luminaires in the same group are from different rooms. It means that the luminaire A in the room 1 can group with the luminaire B in the room 2. And the most important thing is that all the devices in the same group will be linked together automatically. It means that once a single motion sensor has been triggered, the others will be triggered at the same time. It allows them to work together.



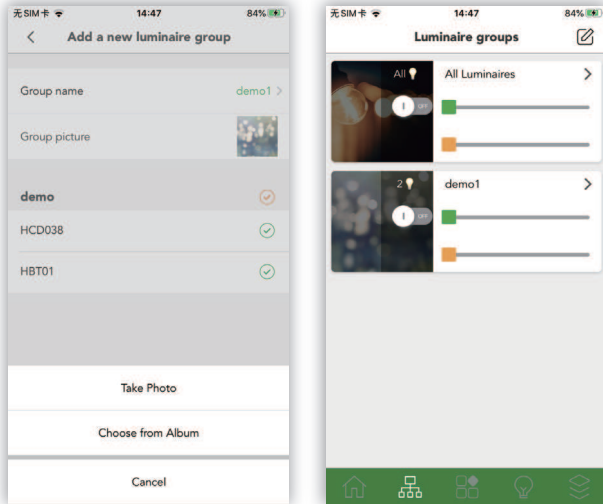
A



B

- A. Going back to the page, there is a default group which includes all the connected luminaires in your network, users can turn them on or off, adjust the brightness or the color temperature.

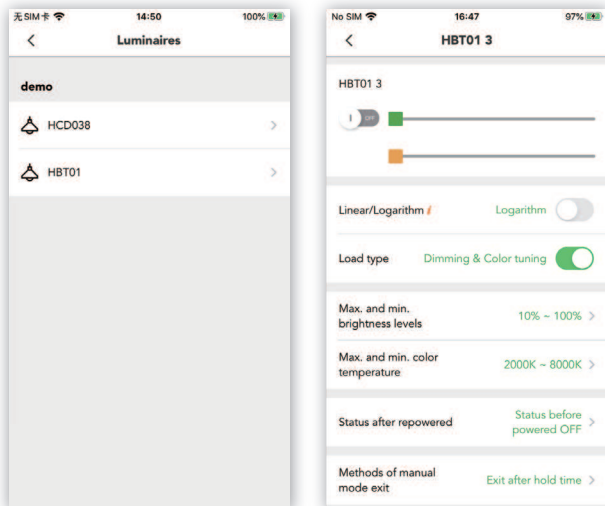
- B. Click the top right corner button to add a new group. Users can choose the Picture size. When clicking the group which has already existed, users can edit or remove it.

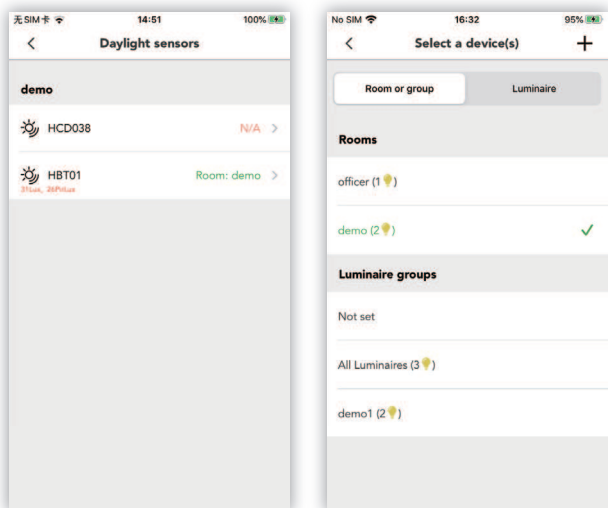


Users can name the group and choose the picture for it by either taking a photo or just uploading from local album. Select the luminaries to add to this group. Going back to the home page, all the luminaries will be listed here.

Luminaire settings

There are many components in the app, each component will have different functions in the mesh network. For example, the luminaire settings include many features which is related to the drivers, you can change the max. and min. brightness, color temperature, the load type, the status after re-powered etc. You can access to the setting page through the function menu. On the luminaires page, you can see that all the connected luminaires will be listed here. Click the one you would like to set up. Here you can change the brightness and color temperature for the luminaires. The app provides two types of dimming: linear or logarithm. Normally this dimming profile should be in line with the dimming pattern of Dali drivers. You can change the load type as well; it can be dimming only or both dimming and color temperature tuning. And next is the max. and min. brightness and color temperature settings. The “status after repowered” function allows you to decide what status you would like the luminaire to be after repowering it. This is very useful for accidental power shut down. You can choose it to remain off, stay at customized brightness and color temperature or just recover to the status before powered off. Method of manual mode exit: Choose how you would like to quit the manual mode and let the sensor control the luminaire.



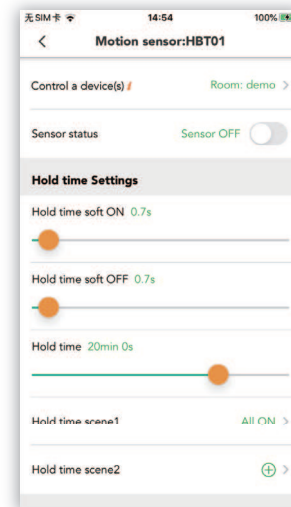
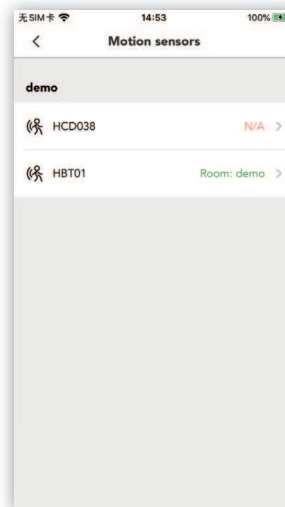


Daylight sensor

Daylight sensor is another important component to the network. It can collect, send, receive the environment Lux level from or to other devices to achieve the daylight harvest and circadian rhythm functions. You can access to the daylight sensor settings through the function menu. On the daylight sensors page, you can select which sensor you would like to set up. Control a device: Select which device you would like this daylight sensor to control, e.g. a luminaire, a group or a room. (The daylight sensor only sends a lux level to the selected target). Lux calibration function is to calibrate the lux level of the daylight sensor.

Motion sensor

Motion sensor is the most important component of this mesh network. It will take controls of the luminaries and send its motion command to related devices. It is also a keyway to trigger and call a scene. So, making a right and accurate settings for the motion sensor is necessary. Same as the daylight sensor, you can access to the setting page from the function menu. You need to select the motion sensor first. Choose which devices you would like this motion sensor to control. It can be a single device, a group or a room. Use the sensor status function to decide if you want the sensor to be activated or disabled. When the sensor is disabled, it will not detect the motions but still can receive and send the message to other nodes.

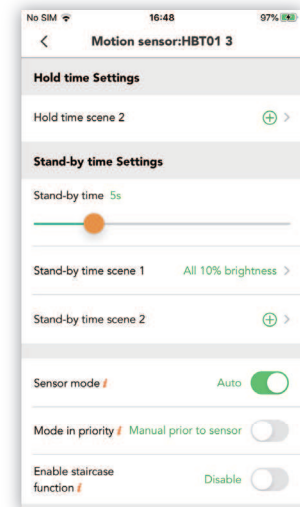


Next is the hold time settings. You can set up the hold time, soft on, soft off time individually. When the sensor enters hold time, it can call maximum two scenes, it means when the sensor detects motions, then it will trigger and run the scenes preset. If you do not set up the stand-by time or stand-by scene, the luminaire will then be turned off right away after the hold time elapses. The stand-by time setting is similar to the hold time setting.

As we mentioned, the sensors have two types of modes: Auto and semi-auto. Auto: After the sensor is triggered, the scene is automatically called, the luminaires will go off after hold time and stand-by time. Semi-auto: The sensor is only activated on the manual press of a Push switch, Bluetooth panel or app. The luminaire goes on in the presence and goes off automatically after the hold-time and stand-by time (Absence detection mode).

Mode in priority: 1) Manual priority: The sensor will not interrupt the manual override mode. 2) Sensing priority: When the sensor is triggered, it will exit manual override mode and call a scene according to the sensor settings.

Staircase function: When entering a floor, the luminaires on this floor will go to full on, while the neighboring upper and lower floors will go to dim level, according to the scene preset.



Network management and Sharing

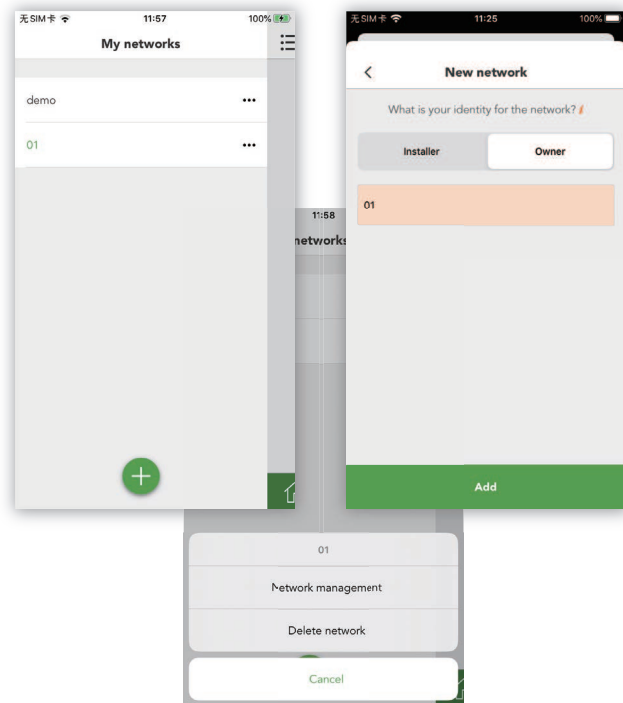
When you first create a new account for the Koolmesh app, it will guide you to create a network and add the luminaires to that network. By default, the network is Not Shared which means that its configuration is only stored on this account which has created the network itself. This means that only that account can control the luminaires. One app account can have many networks and for each network they can have many different identity users.

There are three levels of users for the Koolmesh app: owner, installer, sub-user. The owner is the primary user for the network, and one network belongs to only one owner, the owner can control all installers and sub-accounts associated with this network. If the owner deletes the network, this network will then be removed from all the installers and sub-accounts. The installer, as the name suggests, the owner can share the network to the installer to do the commissioning work. One network can have many installers. When an installer deletes the network which is associated with multiple accounts, this same network will not be removed from other accounts, meaning that the installer cannot control other accounts associated with this network. Other than this, the installer and owner have the same access permissions to the network. The sub-user, meaning the guest user, they can use the network normally, but for some operations such as deleting the network, sharing the network to others etc., they need the permissions from the owner.

Adding a new network

You can access to the network page through the home menu, all the networks in this account will be listed here. Click on the green plus button to create a new network. And choose the identity for this account in this network. Name it and click add.

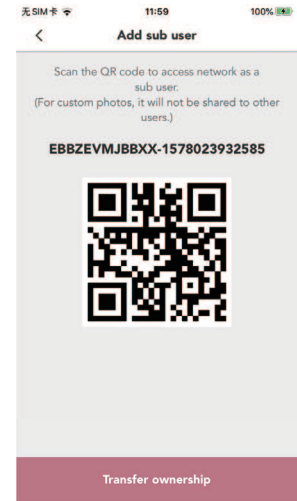
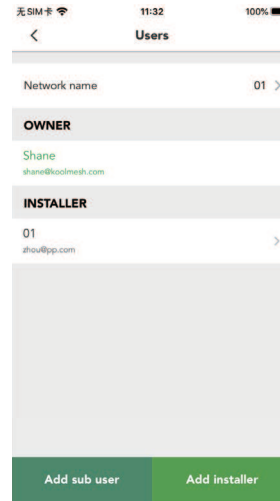
If you would like to delete the network, you can click at the right part of the network bar. Choose the delete option. If you would like to change the network name, choose the network management.

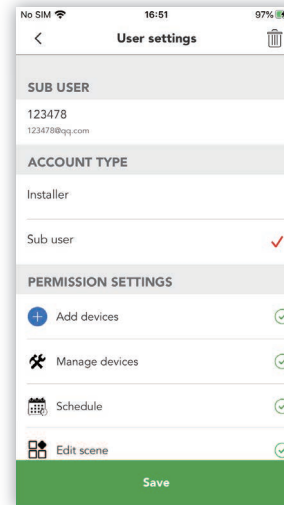
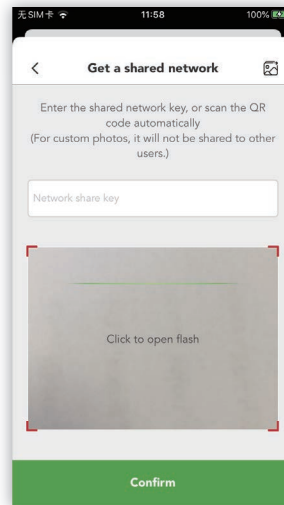


Adding a sub-user or installer

If the network owner wants to add a new sub-user or installer to this network, you can go to the network management page. Choose to add an installer for example. The installer can then use his account to access to the network page, click “Get a shared network” and scan the QR code from the owner. And on the user page, all the accounts associated with this network will be displayed here.

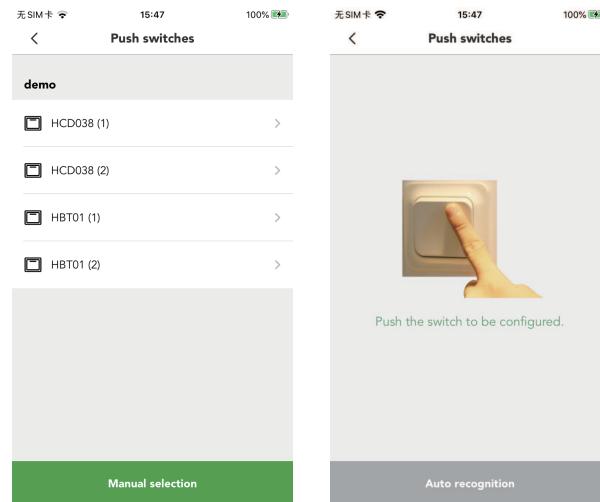
If the owner wants to delete the other accounts from this network, click on the user name, you can then change the account type for the user, for example, switch the account from the installer to sub-user. If another account is sub-user, you can manage the permissions for this account here. Click the right top to delete the account from the network. The owner can transfer the network to a sub-user on the add sub-user page.





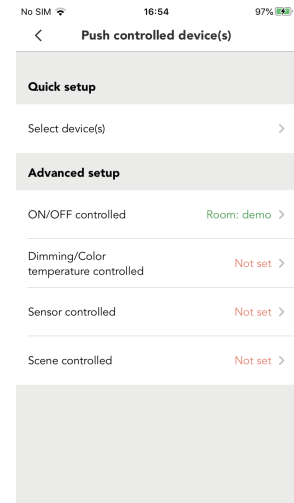
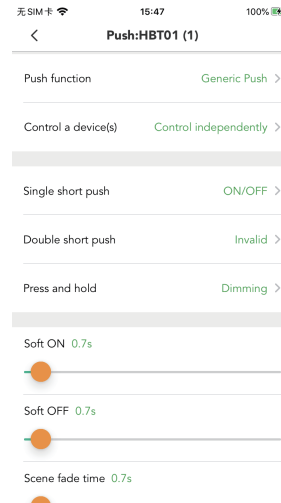
On the Push Switch section, switches can be configured to control luminaires easily. The push switch can be configured on the Koolmesh app, different kinds of sensors may support different numbers of Push switches. It means if the sensor has only one Push terminal, the app only can configure one Push switch.

On the function menu, there is an access for the Push switch, all the push switches available will be listed here before being configured. If you do not know what a Push switch is, you can choose the manual selection at the bottom. You need to push the switch to be configured.



On the settings, first you will see the Push functions: Generic push or sensor. In other words, it can be a normal switch but also can be a sensor trigger.

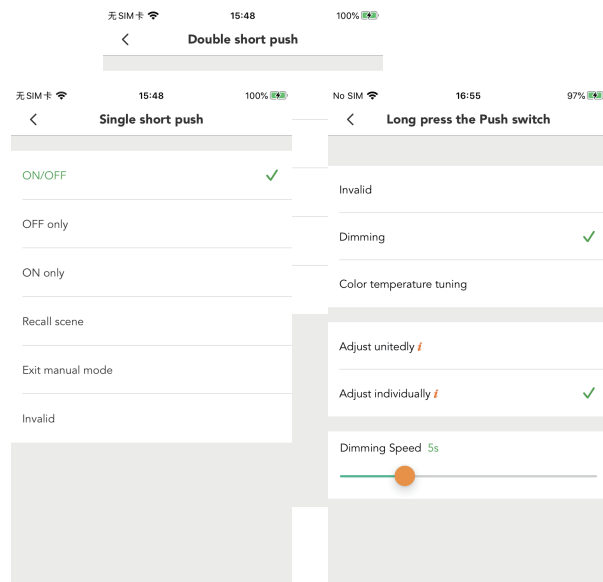
Next is the "Control device": choose which room, groups or individual devices to be controlled by this Push switch. And, there are two options: quick setup and advanced setup. For quick setup, the user can set to let a single room, group or luminaire to be controlled by one Push switch for all Push functions such as turning on/off, dimming, colour temperature tuning, sensor and recall scenes, or to have each function to be controlled by different Push switches. You can personalize the push functions by yourself.



For the single short push and double short push, it can be on/off, off only, on only, recall scene or exit manual mode.

For the press and hold, the function can be changed to dim and tune color temperature. And you can choose to change all the luminaire's brightness or color temperature to the same levels by using this Push Switch or to adjust luminaire individually for their own brightness or color temperature via this Push Switch.

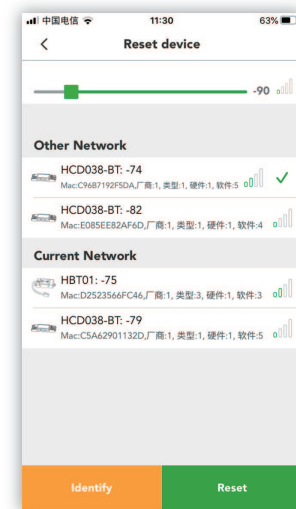
And the last one, the dimming speed indicates how long it takes for the brightness dimming and color tuning to go from min. level to max. level, when pressing the Push switch.

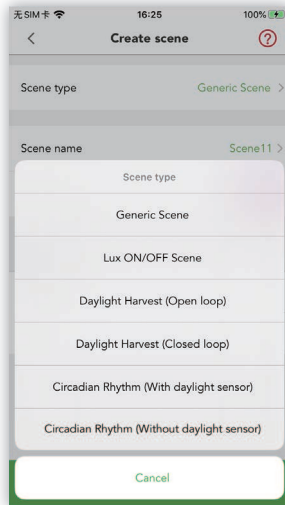
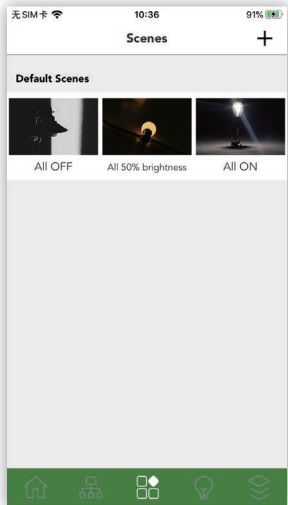


This function allows a factory reset to be carried out in order to restore the software to the default factory settings through the Koolmesh App and all network settings (of those which have been set via the app before) will be lost.

This function can be accessed on the “add devices” interface. On the “Reset device” interface, all the Koolmesh Bluetooth module enabled devices will be displayed here which can be divided into “other network” and “current network”. Drag the slider to expand or narrow down the search range. Click on the device to reset. Use the “identify” function to determine the device location. When the reset operation is triggered, the target device has to be powered on and powered off when the lights are flashing.

All versions of the Koolmesh firmware can be reset via the Koolmesh App.





Introduction

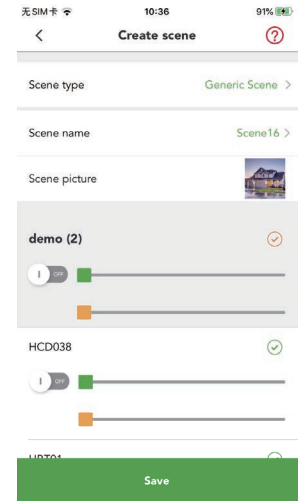
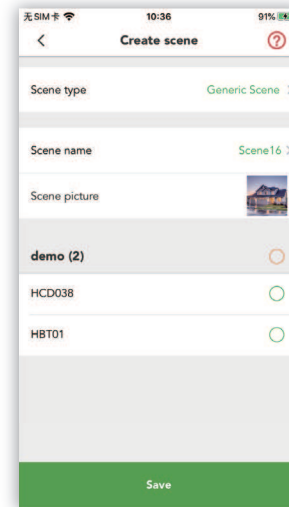
Scene is a very useful and important function to the users. Scenes are the core of the whole app. Users can create a lot of customized scenes through this feature. The scene can be recalled by the motion sensor, scheduling, Push switch and Bluetooth Panel.

For the Koolmesh app, we have many types of scenes for the users to select, especially for the daylight harvest and circadian rhythm. This is the home page of the Scene function. We have 3 default scenes for users to choose: all on, 50% on, and all off. Users can create up to 16 scenes.

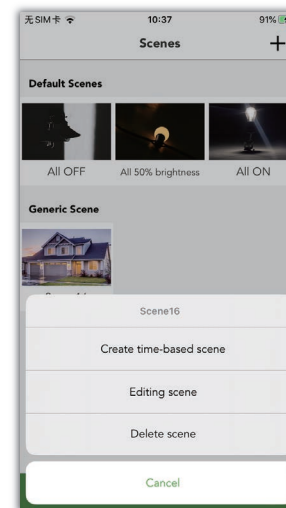
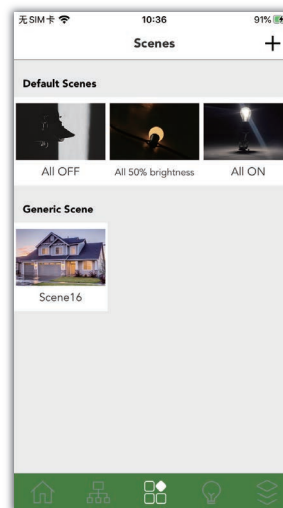
Click the left top to go to the create scene page, choose the "Scene type", there are 6 types of scenes for the users to select. If you do not know how to select the right one, please click the right top Help icon, there are short explanations for all kinds of scenes.

Creating a Generic scene

Firstly, we choose Generic Scene and name the scene. Set up the cover picture for the scene. The most important thing is that users must choose which luminaires they would like to run this scene; it can be an individual luminaire or a room. Adjust the brightness and color temperature of the luminaires they want and then click “Save” button to save the scene.



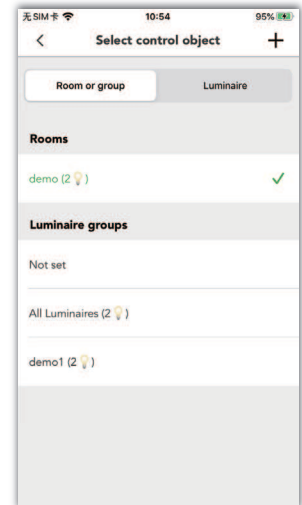
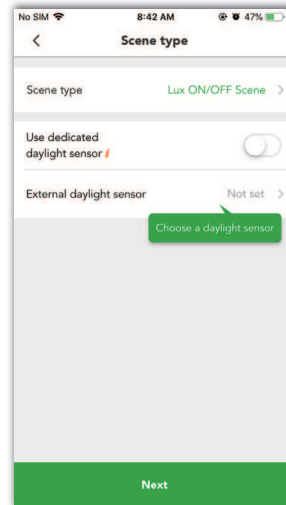
On the Scene page, the scene created will be shown here. If you would like to edit or remove the scene, you just need to long press on the Scene cover. The configuration of the generic scene is completed, users can tap the Scene to recall the scene immediately.



Creating a Lux On/Off scene

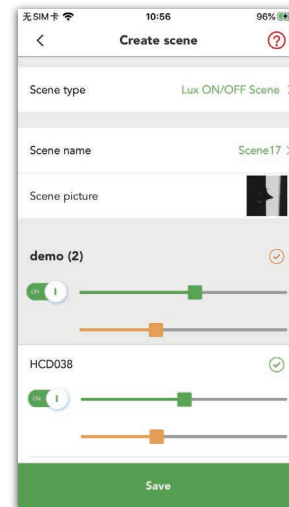
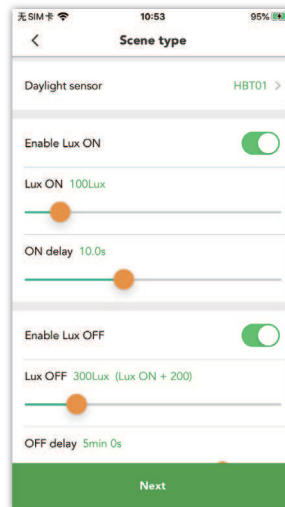
Same instruction as the generic scene. Create a new scene, for the scene type, choose the "Lux On/Off scene", in this stage, you need to select which daylight sensor will be involved in this scene. Click the daylight sensor, you need to select which room or group, or individual luminaire to be controlled by this daylight sensor.

On the external daylight sensors page, all of your rooms and luminaire groups will be listed here, if these existing rooms and groups are not what you are looking for, you can just create a new group through the top right button. If you just want to control an individual luminaire, click the luminaire bar in the "select a device(s)", all of your devices will be listed here, click the one you would like to control.



There are many settings for the daylight sensor, first one is the "Lux on". When this function is enabled, if the environment total lux level is less than the "Lux on" value, the light will turn on automatically. Users can set up the "On delay" time as well. Same as the "Lux on", if the environment lux level is higher than "Lux off" value, the light will turn off automatically.

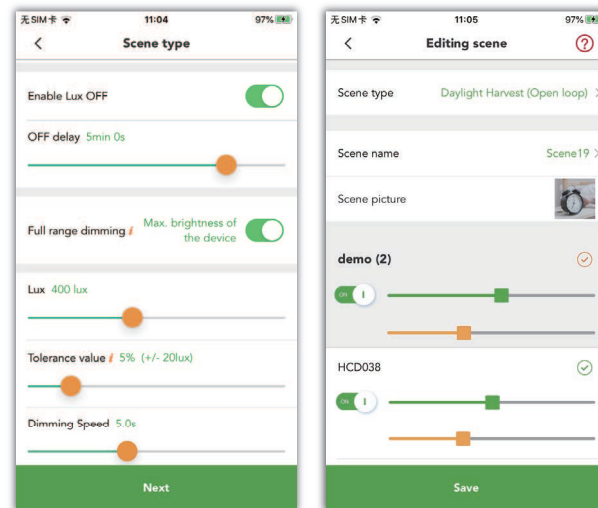
After everything is set up, click "save" button, go back to the Create scene page, the last step is to select the luminaires to run this Scene. Same as the generic scene, you can change the brightness and color temperature as you want. On the scenes page, you can see that the scene has already been created. Click it to trigger the scene.



Creating a Daylight harvest scene

Daylight harvest (open loop):

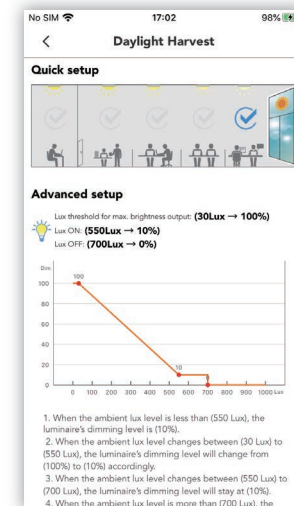
Next is the Daylight harvest scene, there are 2 types: Open loop and closed loop. Open loop means the daylight sensor will follow the daylight harvest curve; the X axis of the curve is Lux level, the Y axis is dimming level, when the lux is changing, the dimming level of the luminaire will change accordingly. Users can personalize their daylight harvest curve. On the scene type page, when selecting the open loop scene, most of the functions are the same as those of the Lux On/Off scene, the users need to select the daylight sensor first. But when scrolling down, there is a feature called "Full range dimming". This is the valid dimming range when the device is running this scene. On: range from device min. brightness to device max. brightness. Off: range from device min. brightness to scene max. brightness. The "dimming speed" indicates the speed of luminaire adjusting brightness when reacting to changing ambient lux level.



Click the “Daylight Harvest Profile”: there are two options for you to choose, first one is the quick setup, you don’t need to know the exact lux level and dimming level but simply select the most similar scenario on the picture based on real application environment, the app has already programmed the daylight harvest curve for each scenario. If you are very familiar with the settings for the lighting, you can choose to adjust the curve in the Advanced setup to achieve more accurate settings.

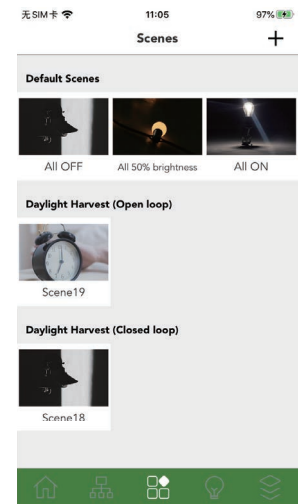
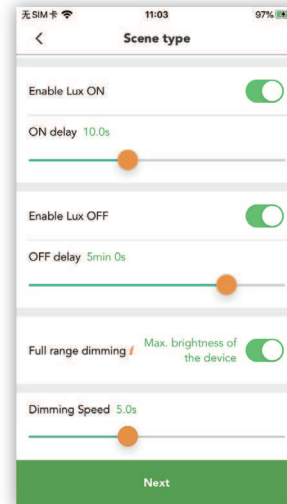
After getting the setup done, go back to the Create scene page, you can change the name and cover of the scene here.

The last thing is that do not forget to select the luminaire of which you would like it to run this scene.



Daylight harvest (closed loop):

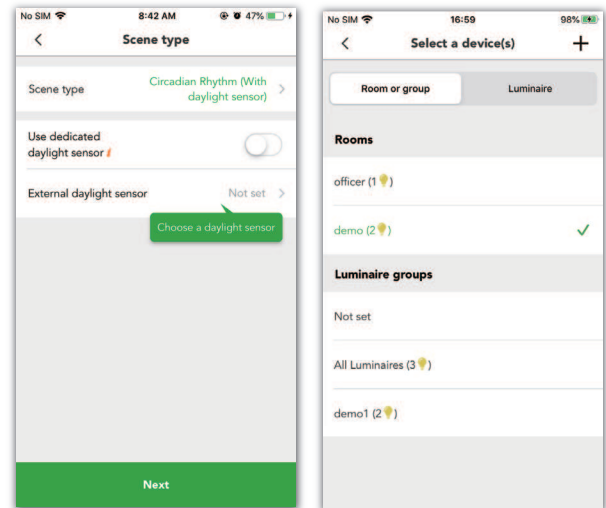
When you select closed loop, there is no longer a curve for you to adjust. There will be a specific Lux value for you to set the daylight sensor, once you have set the target Lux level, the combination of luminaire's brightness output and ambient lux level will be approximately equal to the preset target lux value. For tolerance value, it means that if the daylight sensor setting is set as 500 Lux, and the tolerance lux is set to 50 Lux, the valid range will be from 450 Lux to 550 Lux.



Creating a Circadian Rhythm scene

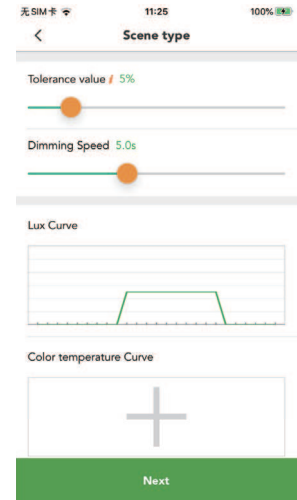
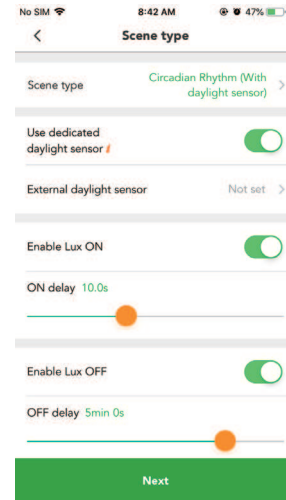
There are two types of Circadian rhythm scenes as well, with daylight sensor and without daylight sensor.

The difference between two types is: If the daylight sensor is involved, then the Lux on/off function is active in this setting, most important thing is that there are two curves for the users to modify, the lux curve (lux level) and color temperature curve. If the daylight sensor is not involved, the Lux on/off function is not available, and the users just can modify the brightness curve (Dimming level in %) and color temperature curve.



Circadian rhythm (with daylight sensor):

Firstly, you need to select the circadian rhythm from the scene type. And then the users need to select the daylight sensor. There is a function called Full range dimming for which you can decide the max. brightness of the device or the max. brightness of the scene settings. The tolerance value: For example, when the tolerance value is set to 10%, the lux values on the circadian rhythm profile have a tolerance range from -10% to +10%. Next is the lux curve setting, you can name and modify the curve. The X axis of the curve is time in hours, the Y axis of the curve is lux value. If you don't know how to draw the curve, you can use the help button, which is located at the right bottom. You can also view the curve in landscape mode by clicking the top right button. The color temperature curve is the same, the X axis is time in hours, the Y axis is color temperature in Kelvin. After getting it done, click next, you can change the scene name and the cover for it. You also need to select which devices or rooms will be involved in this scene.

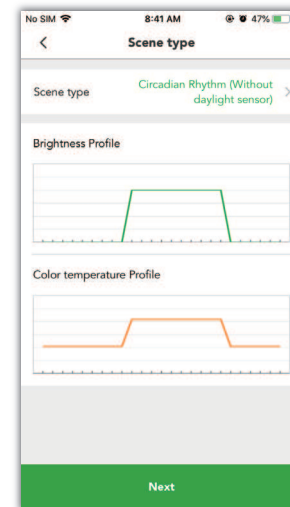


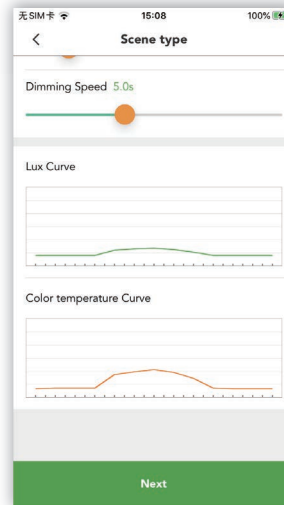
Circadian rhythm (without daylight sensor):

Same as the above one, users need to select the scene type first, this scene setting is simpler than “with daylight sensor”. There are two curves as well: Brightness curve and color temperature curve. For the brightness curve, the X axis is time in hours, the Y axis is the dimming level of the luminaire in percentage %. The color temperature curve is the same as the “with daylight sensor” scene.

You can see that the circadian rhythm profiles run based on time whereby the gradual change of brightness (either based on lux level or dimming level) and color temperature of the lights will automatically change over 24 hours.

Go back to the scene home page. All the scenes will be listed here. You can long press on the scene to edit or delete the scene. If you would like to call the scene immediately, just tap on the scene cover, the devices involved will run this scene automatically.

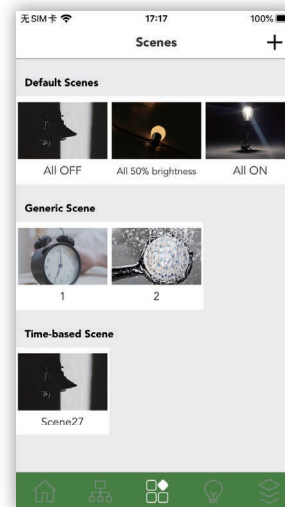
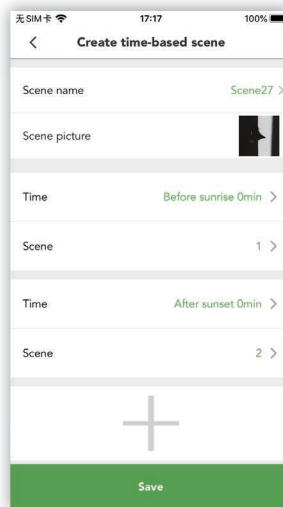
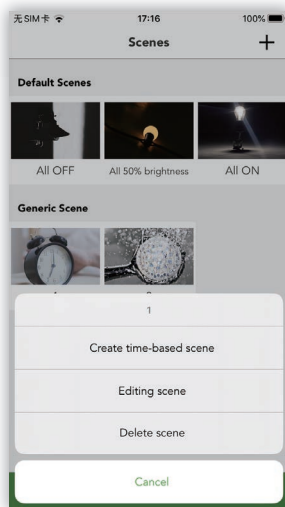
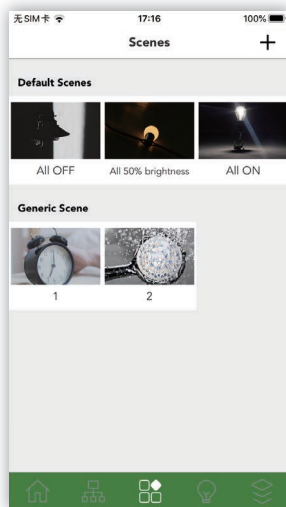




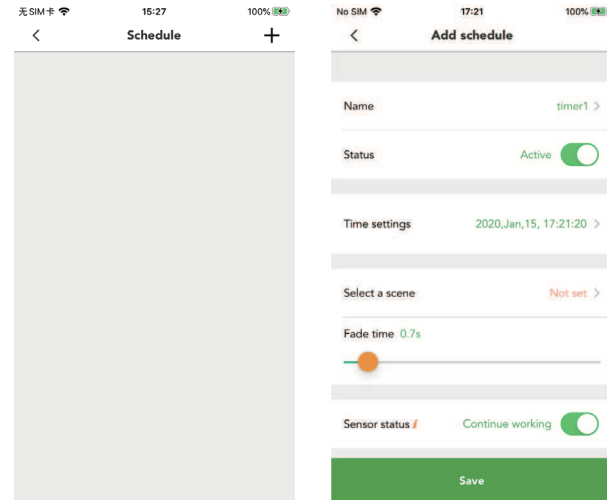
Time-based scene

Time-based scene is a scene generated based on 6 types of basic scenes, such as generic scene, Lux on/off scene, daylight harvest (open and closed loop) and circadian rhythm (with or without daylight sensor). The user can assign several preset basic scenes (max. 6 scenes) within 24 hours in a day according to own preferences, so that all these scenes will run according to the preset time once the scenes are triggered and called upon motion detection or simply by tapping on the scene cover on the app. While this can also be achieved by using scheduling function, time-based scene has its advantage that the luminaires do not have to be on all the time since the time-based scene are activated upon occupancy or via manual activation on the app.

In the Koolmesh app, you can set up the time-based scene in the scene home page. Before you start, you need to create some scenes which you want to be added into the time-based scenes. For example, there are two generic scenes: scene 1 at 100% dimming level; Scene 2 at 30% dimming level. Long press on any one of them, then you will see the “Create time-based scene” option. Click into it. You can give a name for it, change the cover. Then you can choose scene 1 and set up the time. For the time, it can specific time but also can be sunrise or sunset time. We select sunrise here. Then add a new one, select scene 2 and select the time to sunset. Click save. Now at the home page, you can see there is a new scene which is time based. When sunrise, scene 1 will be recalled, when sunset, scene 2 will be recalled. You can achieve similar function through the schedule function as well. If you want to delete this scene, you can long press on the cover.



Scheduling function is another important feature for the users. With this function you can create a list of timers that will turn scenes on and off based on time. For example, you can set a luminaire to activate during office hours or set corridor lights dim to a lower level during the night. On the function menu, click on "schedule" to enter the page: If you have any pre-defined schedules, it will be shown here. If you don't have any, just click the "+". On that page, you can set up the name for the schedule, the status of the schedule. For the day settings, you can choose year, month, day or week to operate the schedule. For the time settings, it can be specific time, sunrise and sunset. The sunrise and sunset time will change according to the geographical location and season. Select a scene: Choose the scene you would like it to run, if there are no suitable ones, you can just create a new one directly through the right corner.



Operation mode: You can recall a scene of which you would like it to run based on a timer. Or there are two quick shortcuts: When a user intends to turn on or turn off the lights in a scene (of which we believe that it is a very common application in real life), the usual way is to create a new all on or all off scene, and then create a new timer to recall this specific scene. Here we provide two quick setups as shortcut to achieve such function 1) Turn OFF the lights in this scene 2) Turn ON the lights in this scene, through these two quick setups, it saves customers from additional steps to create a new scene. Sensor status: ON: If a sensor is triggered when schedule is running, the state of the schedule will then be interrupted. (i.e. Sensor prioritizes over schedule). Off: If a schedule is running, then light will no longer be controlled by the sensor. (i.e. Schedule prioritizes over sensor).

