Staircase function

Revision History

Date	Version	Description
March 2025	V1.1	The following content has been added or updated: Case added
July 2024	V1	First release

Introduction:

The Koolmesh staircase function is ideal for corridors, municipal parks, parking lots, and staircases. However, setting it up traditionally requires configuring multiple scenes and adjusting each motion sensor individually, often leading to confusion and errors. To streamline this process, Koolmesh has simplified the setup into just three steps. Users only need to verify the default staircase function settings, assign luminaires to the corresponding floors or locations, and synchronize the settings. With this, the staircase function is ready to go. Many complicated and challenging project also can be fulfilled with few steps adjustment of our staircase function.

Case 1

The building has a total of nine floors. When motion is detected on the 2nd floor, the luminaires there will light on 100% brightness, while the adjacent 1st and 3rd floors will dim to 10% (adjustable via the app). All other floors will remain off. As movement shifts upward, the brightness adapts accordingly—for example, when presence is detected on the 3rd floor, it will light up to 100%, while the 2nd and 4th floors will remain at 10%. After a set period of no movement, all lights will turn off.
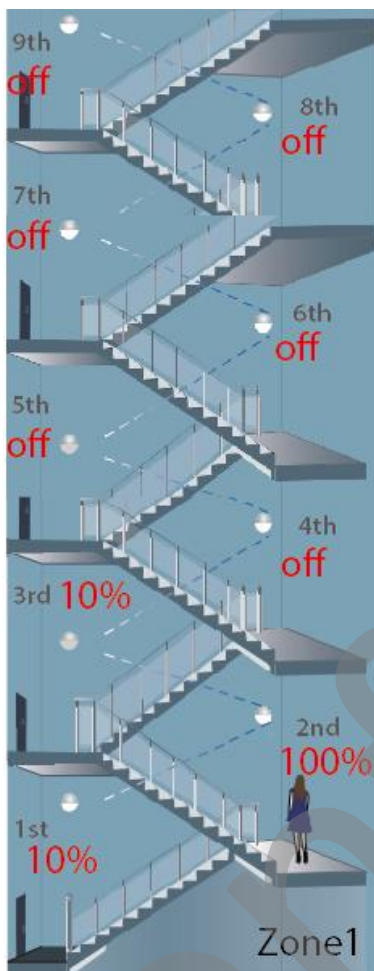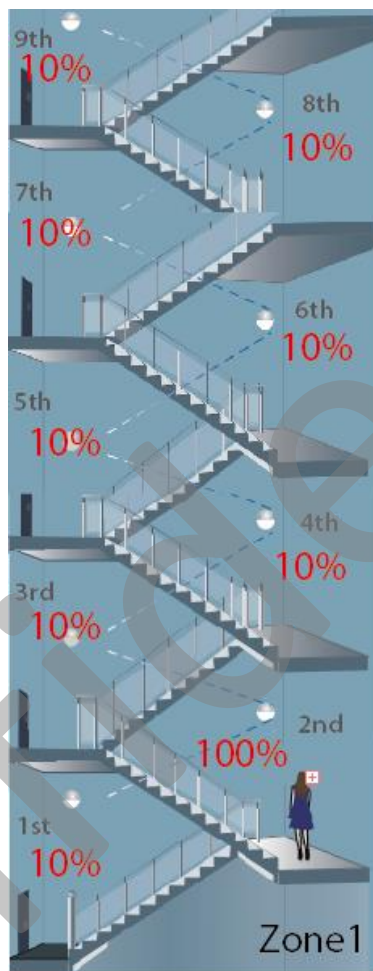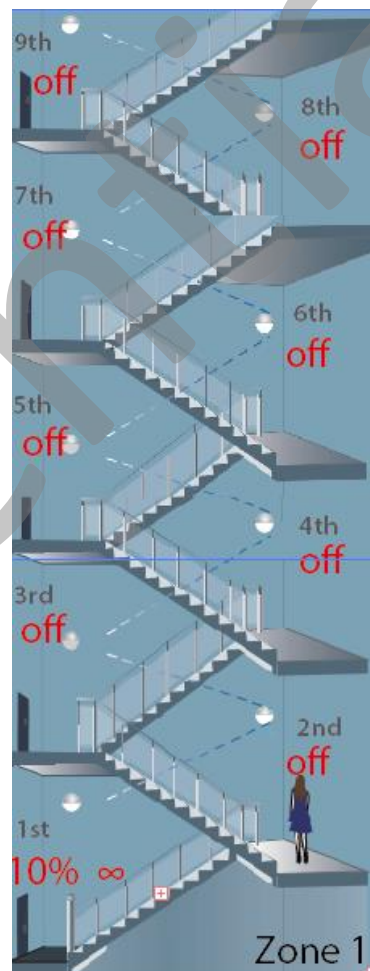

Figure Case 1   Figure Case 2   Figure Case 4

In scenarios such as parking lots or offices, some of the functions desired by customers are related to staircase functions. However, these functions cannot be fully achieved relying solely on staircase functions. In such cases, based on the existing framework of staircase functions, we can add or adjust some settings. This approach not only simplifies the configuration process but also effectively meets the specific requirements of customers.

Case 2

The building has a total of nine floors. When motion is detected on the 2nd floor, the luminaires there will light on 100% brightness, while those on other floors will light up at 10%. As movement shifts upward, the fixtures detecting motion will switch to 100% brightness, then gradually dim to 10% after no movement is detected for a set period. All will be off.

Settings:

1. Set the building as a whole zone. Then you can use the "Floorplan & staircase function" as usual, and you finish the synchronized.

2. Go to the scene section and "edit" the scene, and you will see those invisible scenes become visible and you need to select those unselected devices and set the brightness you want as stand-by time scene brightness, for example 10% brightness
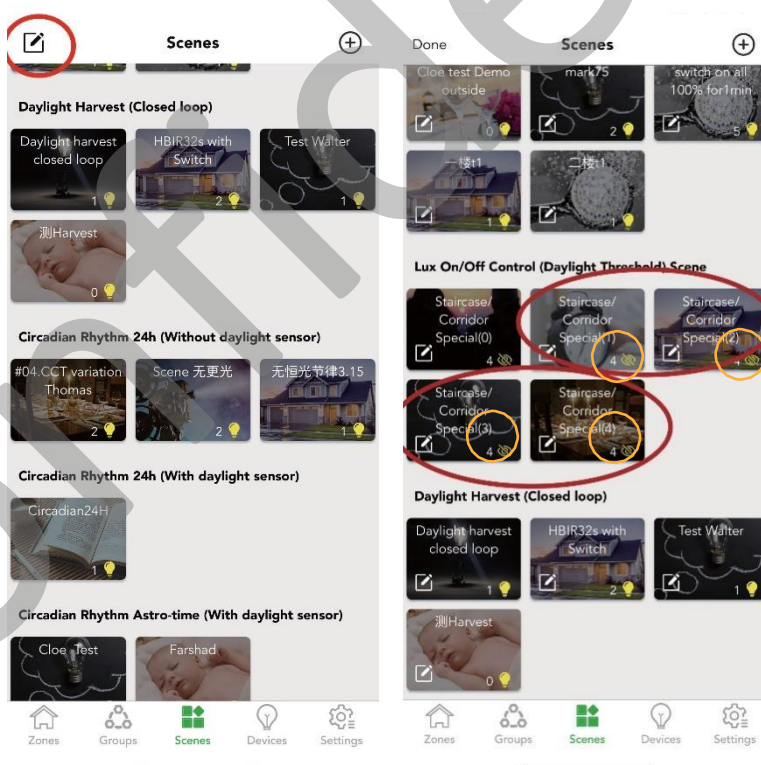
Note: The luminary count (orange circle) should match the number of luminaires on each floor.
For example, if each floor has one luminary and the building has nine floors, the total luminary count in the scene should also be nine.
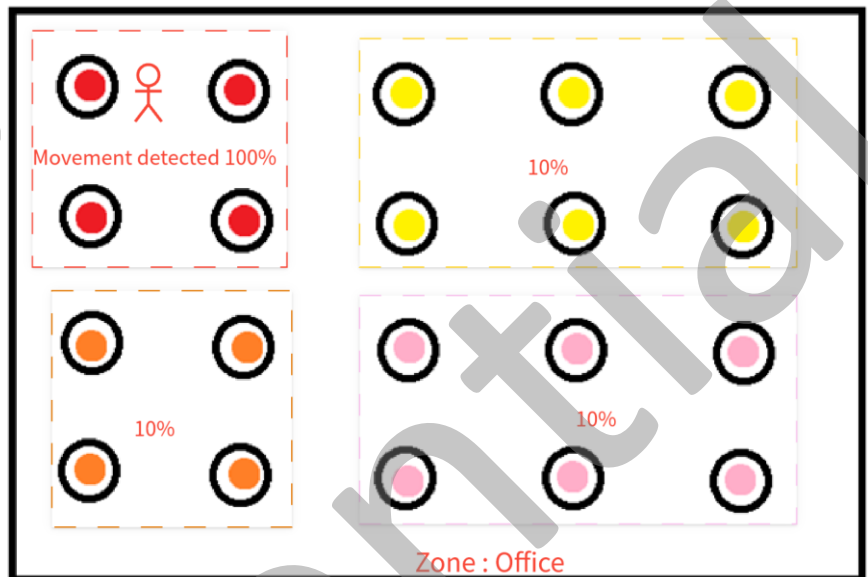
Case 3

The customer has a large office and requests the following lighting control system:

Requirement:
Any area movement detected will switch
to 100%
Adjacent area will be 10%

As the movement advances,
the newly detected area switch to 100%
Previously active areas turning off if no
further movement is detected.

Movement detected 100%

10%

10%

10%

Zone : Office

1. Movement - Based Lighting in Daylight - Insufficient Conditions
When movement is detected in any of the areas (Red, Yellow, Orange, or Pink), the lights in that particular area should be light up to 100% brightness. In the remaining parts of the office where no movement is detected, the lights should be light up to 10% brightness. This is designed to accommodate people working late or at night. If movement is detected in multiple zones simultaneously, the zones with detected movement will have their lights at 100% brightness, while the areas without movement will have their lights at 10% brightness, provided that daylight is insufficient.

2. No - Movement Scenario
If no movement is detected anywhere in the entire office, all lights should be turned off.

Settings:
1.   Set the office as a whole zone and use the "Floor plan & staircase function" as usual, you can change the parameters as you need such as the target lux level and so on, remember to change the Standby time to 0 in this case.
2.   Synchronize and assign the devices to its corresponding floor. Here we view different color areas as different floors, see figure below.
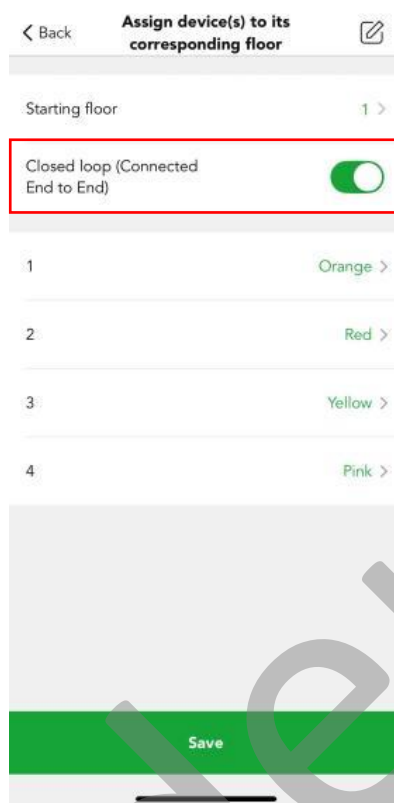
3.   We need to make a little change about the staircase function scene. For example, the Staircase function-Tri level control (1) is a scene which will run as: Luminaires in Orange area will light up to 100% brightness and luminaires in adjacent area Red and Pink will light up to 10% brightness, but not the Yellow area. So we need to edit this scene and add the luminaires in Yellow area to this scene, and set them to 10% brightness. The same goes for the other 3 scenes.

Here are the details: Go to the scene section and "edit" the scene, and you will see those invisible scenes become visible and you need to select those unselected devices and set the brightness as 10% brightness. See figure below.
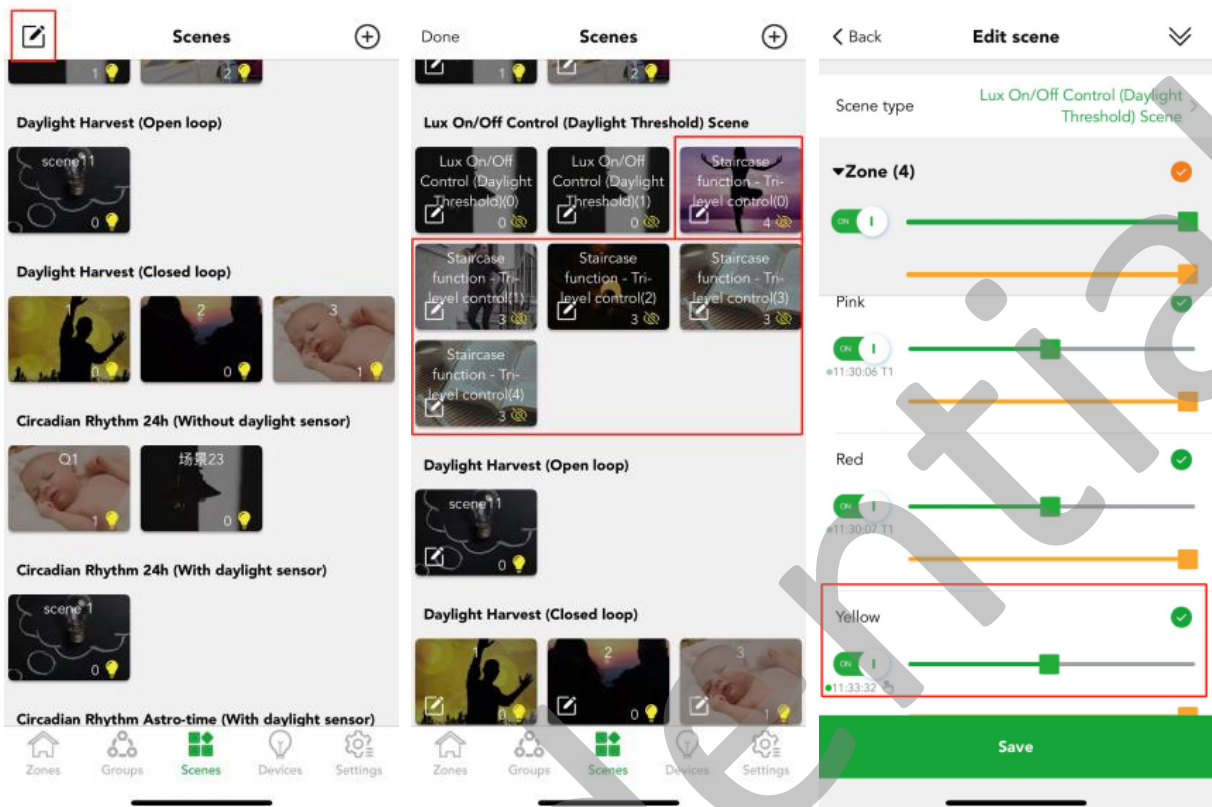
4. The same goes for the other three scenes. After all these four scenes are edited, the configuration is done.

Case 4

In a car park, stairwell, or corridor, it is sometimes required that one or more luminaires remain at a low light level while others turn off completely. For example, if a building has three floors but you want only the 1st floor to stay at 10% brightness indefinitely while others turn off.

Settings:

1. Set the car park as a whole zone. Then you can use the "Floor plan & staircase function" as usual, and you finish the synchronized.

2. Create two generic scenes as below

One including 1st and 2nd and 3rd, all other 10% brightness, let's name it as "10% brightness".

Another one also includes 1st and 2nd and 3rd, but only 1st remain 10%, L2 and L3 are off, let's name it as "1 floor 10% others off"
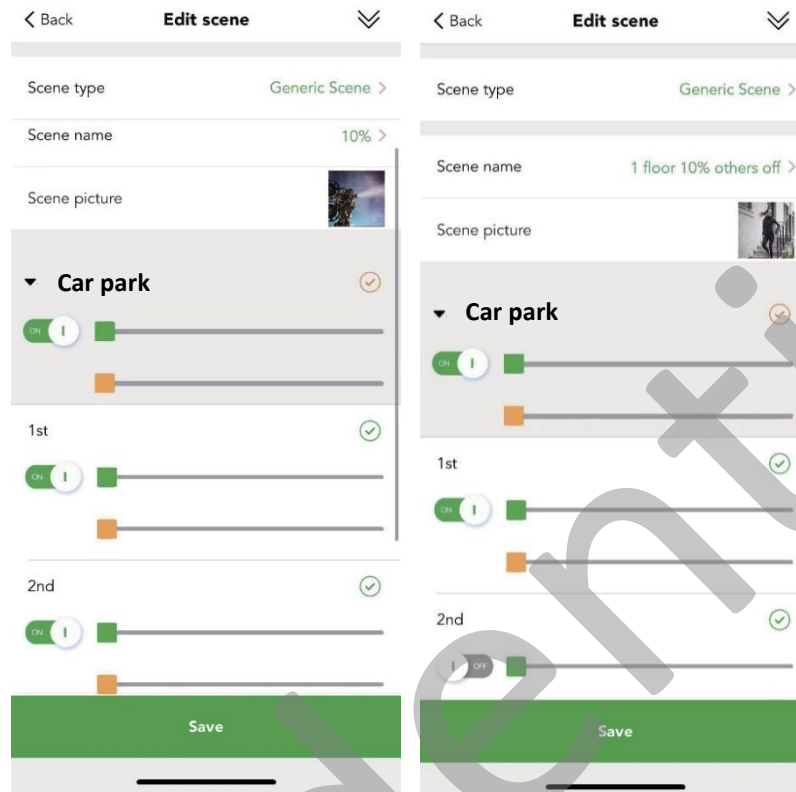
3. Create animation scene, and recall two generic scenes as below, and let's name it as "animation"
4. Go to motion sensor setting of 1st and 2nd, change the stand-by time to ∞ for both floors and recall animation as stand-by time scene

Edit animation scene

< Back   **Edit animation scene**   ☰↕

Scene name	animation >
Scene picture	
Loop run *i*	⬤
Start over *i*	⬤
Time *i*	(+0 s) **10 s** >
Scene	10% >
Time *i*	(+0 s) **10 s** >
Scene	1 floor 10% others off >

\+

Save

Motion sensor: 1st

< Back   **Motion sensor: 1st**

Hold time Settings

Hold time scene 1 *i*	Staircase function-Tri level control
Hold time scene 2 (Optional) *i*	⊕ >

Stand-by time Settings

Fade time *i* 0.7s

⬤————————

Stand-by time *i* ∞

————————————⬤

Stand-by time scene 1 *i*	animation >
Stand-by time scene 2 (Optional) *i*	⊕ >

Sensor mode *i*

Semi-auto	**Auto**

Mode in priority *i*

Note: If there are multiple floors, like let's say 9 floors, then you need to be including all the floor's luminaries into the scenes.