organic response

THE ORGANIC RESPONSE USER GUIDE LITE

V1.0_Aug 2024

DOCUMENT CONTROL

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Disclaimer
This document is meant for offline sharing and can result in outdated information once shared. Always refer to the online user guide and user guide light to get the most up-to-date information.

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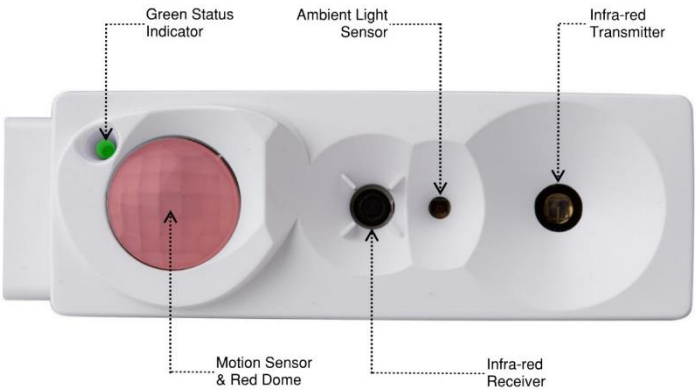
1.0. Product Introduction

1.1. Introduction

Organic Response (OR) offers an intelligent wireless lighting control solution. A solution that allows lighting to respond to the collection of information directly coming from its environment and its neighboring light fittings. As a result, an Occupancy Information Cloud is formed that always delivers an optimal amount of light when and where needed.

1.2. Response SN3

We have sensor nodes at the core of this intelligent lighting control system. These are fitted during luminaire manufacturing and are primarily integrated into each luminaire. OR also offers detached nodes to allow customization while delivering the same operational intelligence as an integrated version of the sensor node. Each Sensor Node has a motion sensor, ambient light sensor, infrared transmitter, and infrared receiver.



1) Light and motion sensors collect direct information from their environment while
2) IR transmitter & receiver allows each Sensor Node to communicate wirelessly with neighbors.

1.3. Response Radio

Response Radio allows similar benefits in the lighting control system. However, it doesn't have any native sensing capabilities. Instead, it takes control commands wirelessly from a publishing/linked sensor node and implements the lighting control to its connected DALI devices.

All our products are Wirepas capable, which is an RF wireless communication protocol. This mode of communication enables the use of cloud-based analytics & lighting control platform known as the Portal.

2.0. How Organic Response Works

In an OR installation, SN3 nodes implement wise lighting control decisions from 2 key factors,

1. Information directly in its environment (presence & light level)
2. Proximity-based presence information shared with neighboring nodes

These factors allow the nodes to make informed decisions on how much light is required and where it is required. Some examples (illustration only) of how information propagates between neighbors or how the system behaves seamlessly to motion,

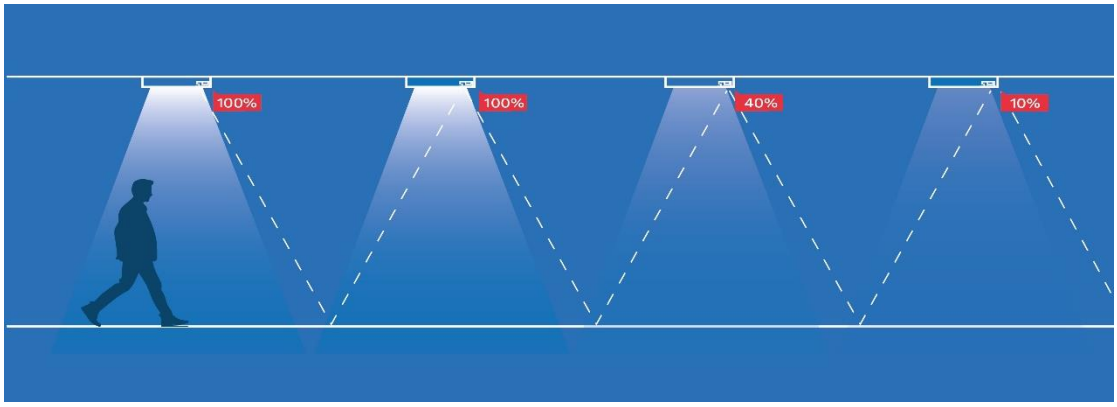


Figure 1 Proximity information shared with neighbours

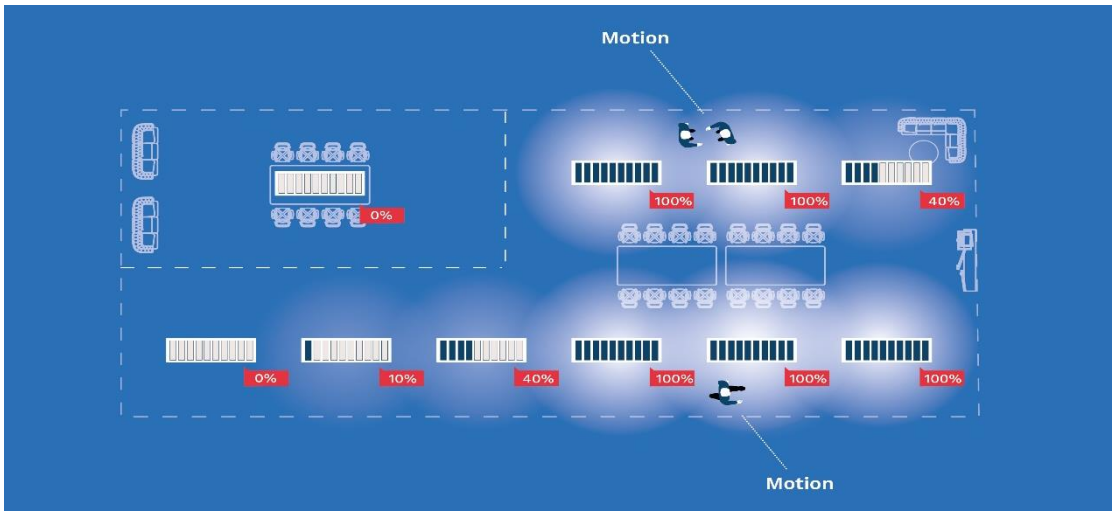


Figure 2 Proximity information shared with neighbours (Top View)

As the occupants continue moving under different luminaires, the light levels will adapt accordingly.

3.0. Operational Terminology (Plug'n'play)

Organic Response is a “plug & play” system requiring no configuration and operates out of the box with default factory settings. These factory default settings and how they contribute to the operations are detailed below.

3.1. Zone (Default ID 1)

Zones act as logical separations between how information is shared between nodes in an area. All nodes come with a default zone 1. This allows them to communicate with one another to share all occupancy & control information with their neighboring nodes without any need to configure them.

3.2. Personality (Default Open Floor)

Personality is a setting of the Response SN3 that determines the dimming level for various distances from the closest occupant in a zone. The dim levels for open floor personality, which is the default mode for all Response SN3 are shown as below;

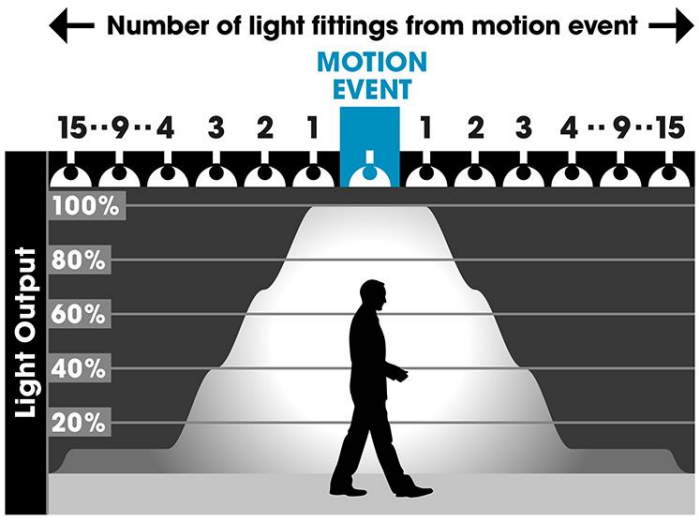


Figure 3 Open Floor Personality Light Output Profile

LIGHT LEVELS (%)							
MOTION MaxLight	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4+	0% FROM LEVEL	LOW LIGHT	STANDBY
100%	100%	70%	40%	10%	16	10%	0%

3.3. Operations

Some of the core default operations can be understood easily from the figure showing the transition of,

1. Light output (along y-axis) against
2. Time (along x-axis) with
3. Occupancy events shown at the top indicate the state of occupancy

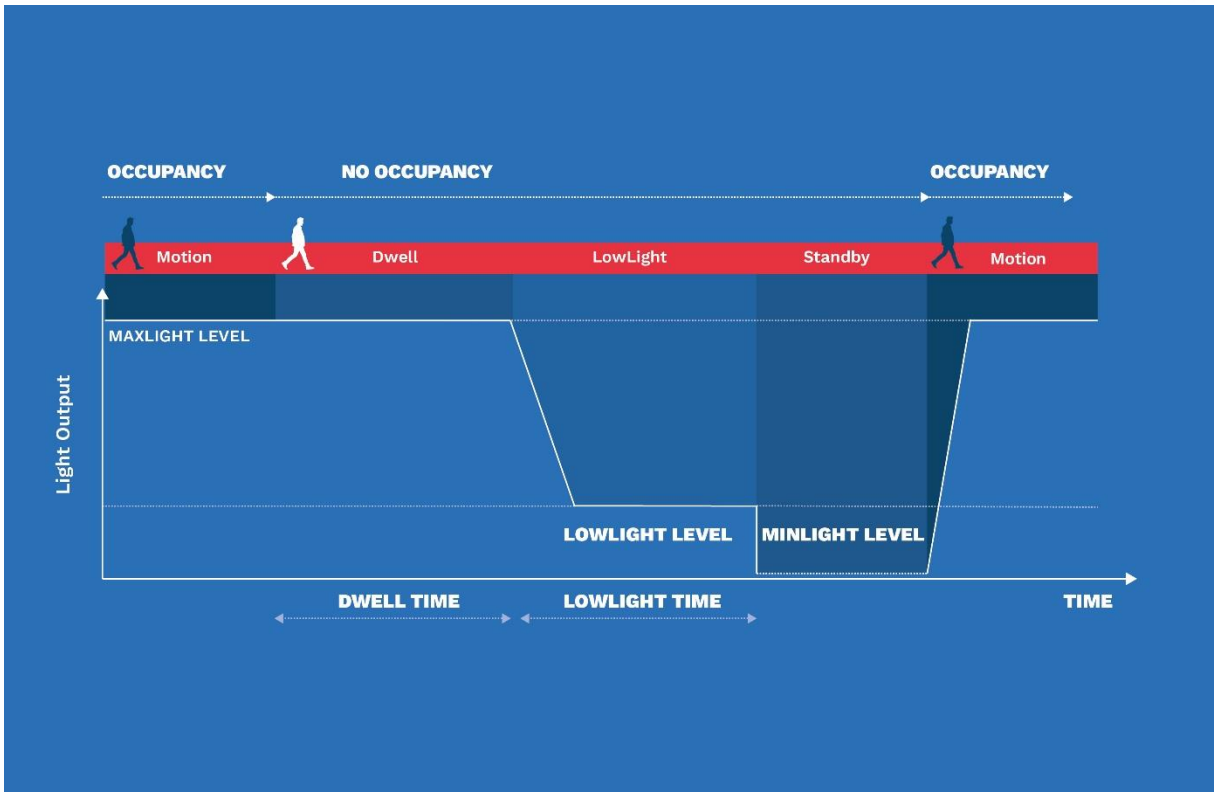


Figure 4 Operational Depiction

In an out-of-box installation following the picture above, an occupancy detection will trigger the below actions,

1. MAXLIGHT LEVEL – Upon sensing occupancy from its own PIR, a ResponseSN3 would turn the light on at 100%, known as the default maxlight level. This node will then trigger the open floor personality to come into effect for neighboring nodes in zone 1 (as explained above).
2. DWELL TIME – Luminaire would wait for 10 mins (called dwell time) at its MaxLight level (100%) before dropping to a low light level after a space becomes vacant.
3. LOWLIGHT LEVEL – This low light level achieved after dwell time is a lower safety level for occupancy and is 10% by default.
4. LOWLIGHT TIME – Luminaire would wait for a further 10 mins (low light time) at its LowLight level (10%) before going to the next level while the space remains vacant.
5. MIN LIGHT – Upon passage of 10 mins of no occupancy (lowlight time) lights would turn off (0% light output) where default min light levels at 0%

In addition, some other default parameters which are shared above and contribute to operations include,

1. DEFAULT COLOR TEMPERATURE - The default colour temperature is 4500K which is maintained as long as luminaire outputs non-zero light level.
2. RESPONSE RADIO LIGHT OUTPUT – Upon powering up a Response Radio it will cause the connected luminaire to exhibit 100% light output and will continue to

stay at 100% light output at all times unless further configured.

3. RESPONSE RADIO COLOR TEMPERATURE – A Response Radio that will have the tunable white luminaires will preset to 4000K colour temperature in addition to 100% light output unless configured further.

4.0. OR Smart Phone Application

4.1. Response App

The *Response App* is free to download from the Apple App Store (click here) and Google Play Store (click here) and includes contextual help and FAQ's. This app uses your smartphone's Bluetooth device to communicate with a nearby sensor node.

Please skip the below step if you are already a configurator and head over to node selection
If you are using the application for the first time, please navigate as shown below to upgrade your access to a configurator,

1. Login using one of the available options and follow the on-screen prompts
2. Click on "Upgrade to Configurator "highlighted (greed) & contact your luminaire manufacturer to approve your access.

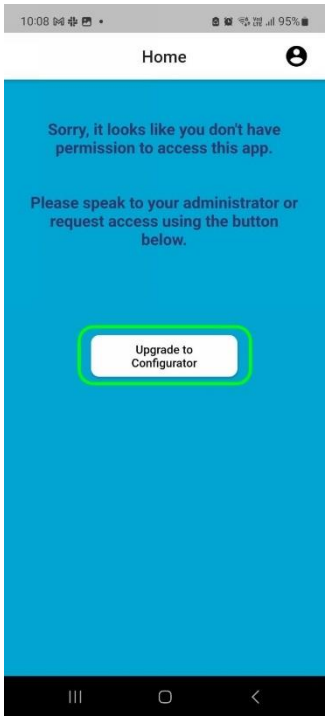


Figure 5 Upgrade to Configurator

4.2. Node Selection Response App

Since the *Response App* uses Bluetooth on your device, there can be several nodes in your vicinity from which to select. A nearby node with the highest signal strength (RSSI) is automatically selected as soon as you click on configure SN3 or Passive Node.

4.2.1. How to select a ResponseSN3 and What to Expect

1. Click on Configure SN3.
2. Look for the Response SN3, which has a *red dome* (as highlighted in the figure).
3. If it's not the intended node, click ***dismiss*** as you bring your device closer to the node you wish to select.

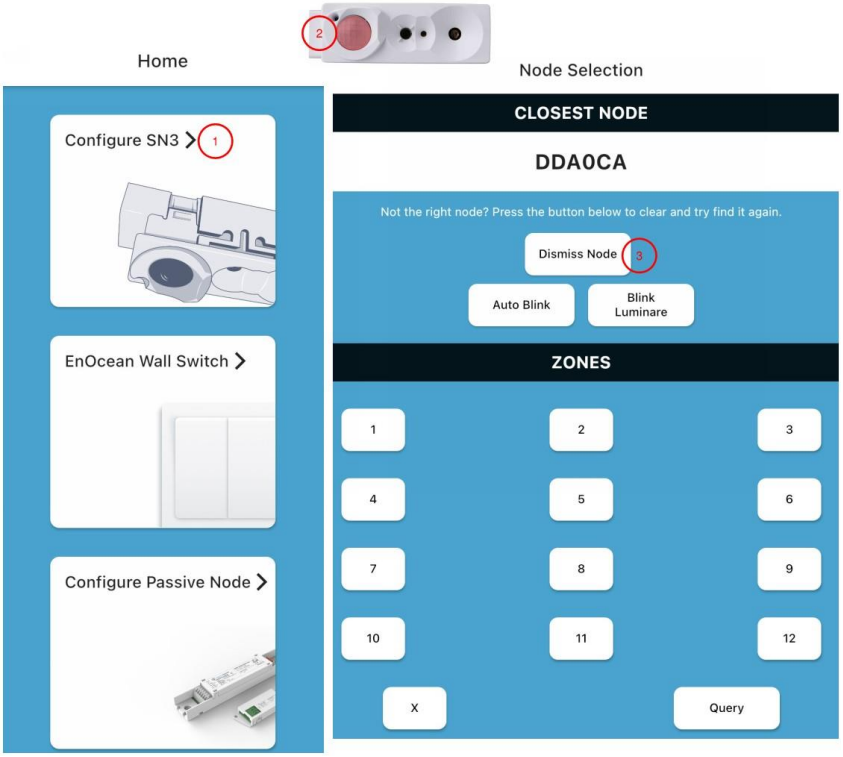
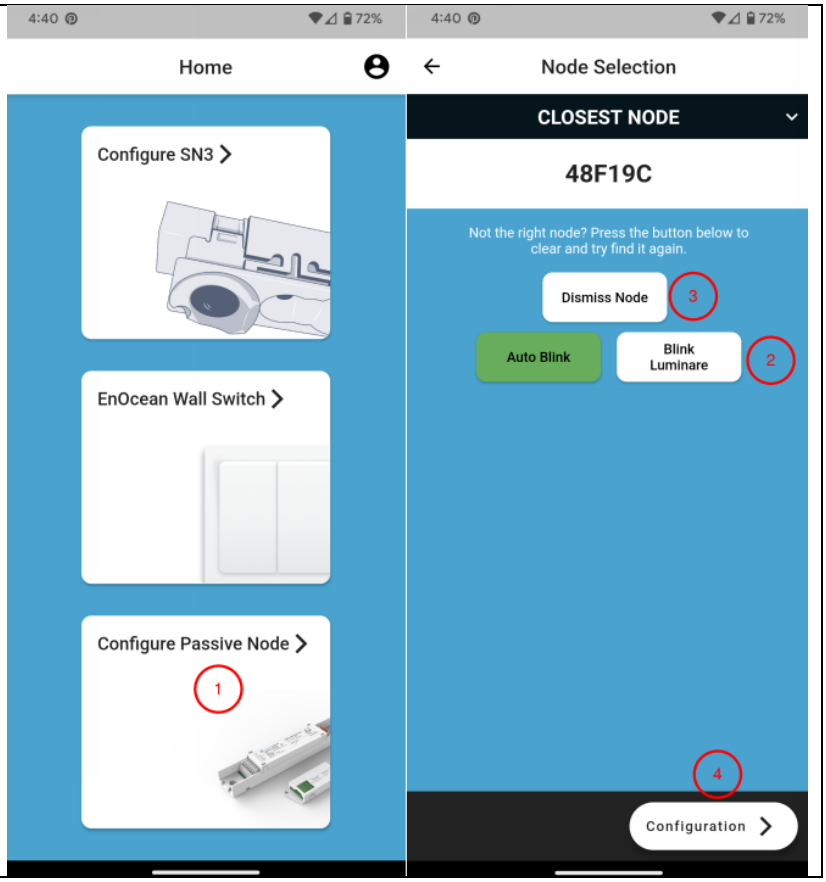


Figure 6 Node Selection

You can also blink the luminaire in step 2 for a visual aid.

4.2.2. How to select a Response Radio and what to expect

1. Click Configure Passive Node.
2. The respective publisher SN3 luminaire will blink once, or you may click the Blink Luminaire button to confirm if you are connected with the right response radio.
3. Click dismiss node if it's not the intended node.
4. Press the Configuration tab to configure the connected Response Radio.



You can have the “Auto Blink” selected for visual aid.

4.3. Organic Response IR App

An older version of the application, also available in the Apple and Play Store, uses an additional component (IR Dongle) to communicate with the nodes. This version of the app is no longer under development, which means that some of the new features can only be found in the Express app.
If you are using this version of the app, please head over to the detailed version of the User Guide to see the navigation steps for the relevant feature configuration.

4.3.1. IR Dongle

The Infrared (IR) Dongle, when plugged into a compatible iOS or Android device, enables users to communicate with Organic Response-enabled light fittings by using the Organic Response IR App. The dongle uses a 3.5 mm audio jack to convert audio signals from the app to IR signals that sensor nodes recognize. The IR dongle is intentionally directional and must be aimed directly at the sensor node you wish to communicate with.

5.0. Features & Configuration

5.1. Light Output

5.1.1. Introduction

This feature enables you to,

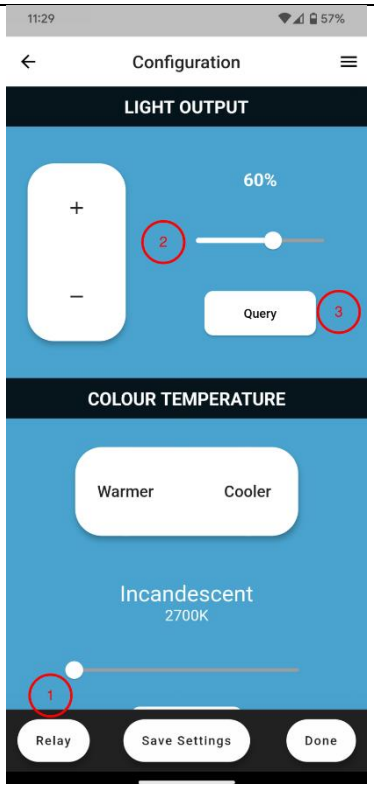
1. Read and change the current light output level (Temporary dimming)
2. Change the default Max, Low, and Min light values for auto operation.
3. Set the desired color temperature (CT) temporarily or change it for default operations.

5.1.2. Simple Steps to Configure (Response App)

5.1.2.1. Temporary Dimming:

Upon node selection

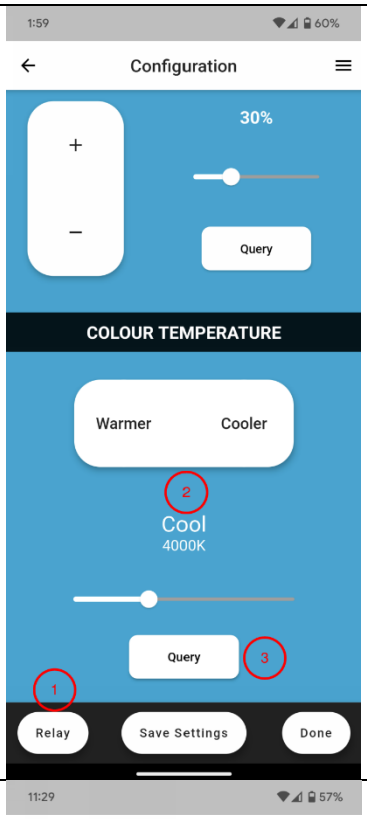
1. Toggle the ***relay*** on for the whole zone or off for selected nodes only.
2. Press the ***+ or -*** button or use the ***sliding bar*** to adjust the light output percentage.
3. Press the ***Query*** button to read the current light output value.



5.1.2.2. Temporary Color Temperature:

Upon node selection

1. Toggle the ***relay*** on for the whole zone or off for the selected node only.
2. Press a ***Warmer*** or ***Cooler*** button or use the ***sliding bar*** to set a desired color temperature (from warmer to cooler)
3. Press the ***Query*** button to read the current CT.

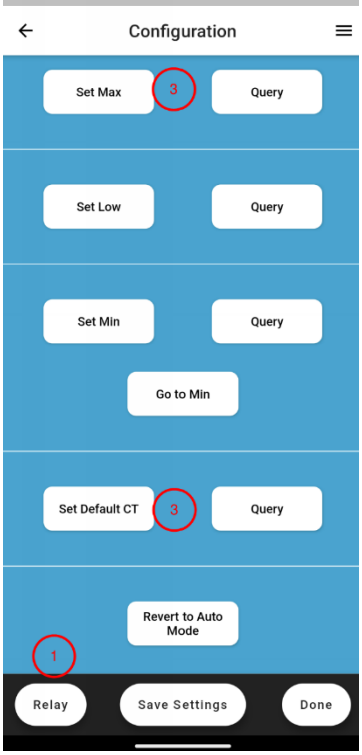


5.1.2.3. Auto Operation (Light/Colour Temp):

Setting default light output (max, min & low) or default color temperature has the same steps with very minor variation i.e.
Upon node selection

1. Toggle the ***relay*** on for the whole zone or off for selected nodes only
2. Follow the Temporary Dimming steps above to choose a desired light output level (e.g., using a sliding bar) or the Temporary Color Temperature steps above to choose a colour temperature.
3. Now click on the relevant option (***"Set Max"/"Set Default CT"***) to set it as the new default.

Step 3 of "set max" changes max light and, when replaced with "Set Low" or "Set Min, " configures Lowlight & Minlight.



5.2. Zones

5.2.1. Introduction

Zoning allows Response sensor nodes to decide if they need to act on the control & occupancy messages they receive over IR from their neighbors. If the neighbors (sender and receiver) have the same zone ID, they share the occupancy-level messages and act collectively.

The system allows configuring the Response Sensor Nodes to 12 unique zone IDs. Consider zoning each application area separately to enhance energy efficiency, e.g., a kitchen area next to the corridor can be zoned separately to allow lights to stay off in the kitchen while unoccupied.

By default, different zones don't share information. We can configure Response Sensor Nodes to share the following type of messages from/with other zones (collectively) called zone stitching,

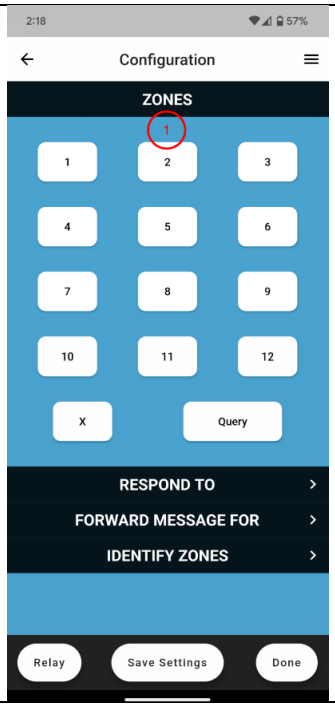
1. Respond to occupancy from another zone and
2. Forward control/configuration messages for a different zone

5.2.2. How to Zone

Select a node and

1. Click the respective zone button to assign the node to a specific *zone ID*.

The relay option cannot be used for zoning.



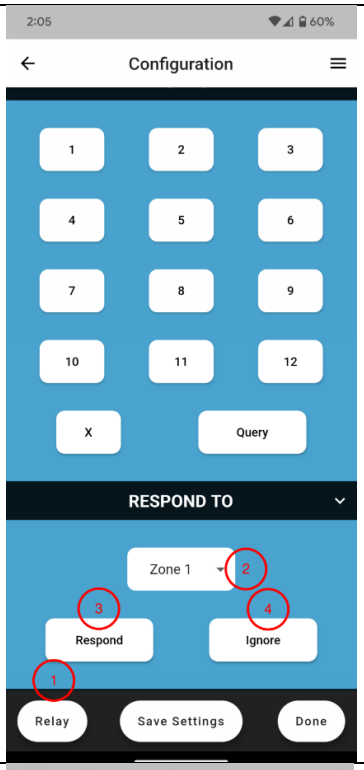
Always remember to press the Save Settings button before you exit this page in case you want to store this setting.

5.2.3. Zone Stitching

5.2.3.1 Respond To

Allows a node in a different zone to receive and respond to occupancy messages from neighboring nodes in a different zone.
Upon node selection

1. Toggle the ***relay*** on for the whole zone or off for the selected node only.
2. Select a ***zone*** (e.g., Zone 1).
3. Press the ***Respond*** button.
4. Press the '***Ignore'*** button while zone 1 is selected to undo.



5.2.3.2 Forward Messages For

Allow any node to forward *configuration and control* messages of a particular zone from and to its neighboring nodes even when it doesn't belong to that specific zone.

Upon node selection

1. Toggle the ***relay*** on for the whole zone or off for the selected node only.
2. Select a ***zone*** (e.g., Zone 1).
3. Press the ***Forward*** button.
4. Press the '***don't forward'*** button while zone 1 is selected to undo.

The default for all Response Sensor Nodes is zone 1

5.3. Personality

5.3.1. Introduction

The personality determines how much light output a luminaire should exhibit based upon its distance from other luminaires in its zone that detected occupancy.

The distance from occupancy is measured in the number of luminaires, and the light output levels are predetermined relative to their maxlight light values.

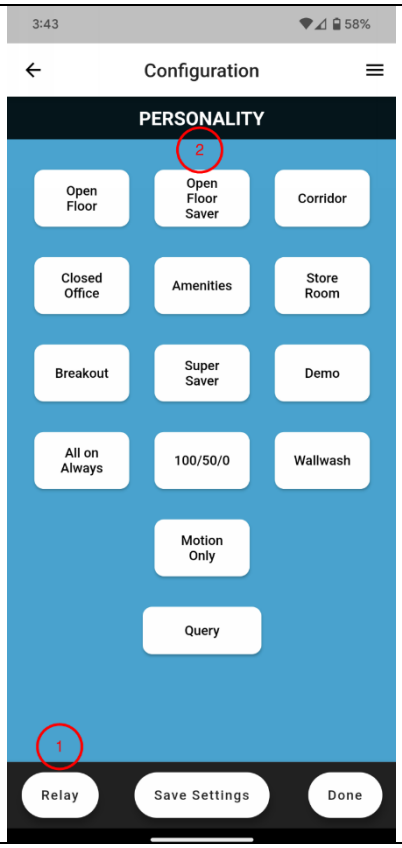
There are a total of 13 personalities, each with their defined output levels and profiles.

5.3.2. Choose Personality

The default personality is “Open Floor.”

Upon node selection

1. Toggle the ***relay*** on for the whole zone or off for the selected node only.
2. Click on any ***personality profile*** you choose for a node or whole zone.



5.4. Dwell Time

5.4.1. Introduction

Dwell Time is the time it takes for a luminaire to dim from its MaxLight to its Lowlight state.
Lowlight time is the length of time a luminaire remains in its LowLight state before switching off (MinLight) completely.

5.4.2. How to Configure Dwell/Lowlight Time

The steps are similar for configuring both times,
Upon node selection

1. Toggle the ***relay*** on for the whole zone or off for selected nodes only.
2. Select a Dwell/Lowlight Time in ***minutes/seconds***.
3. Press the ***Query*** button to read the current Dwell Time.

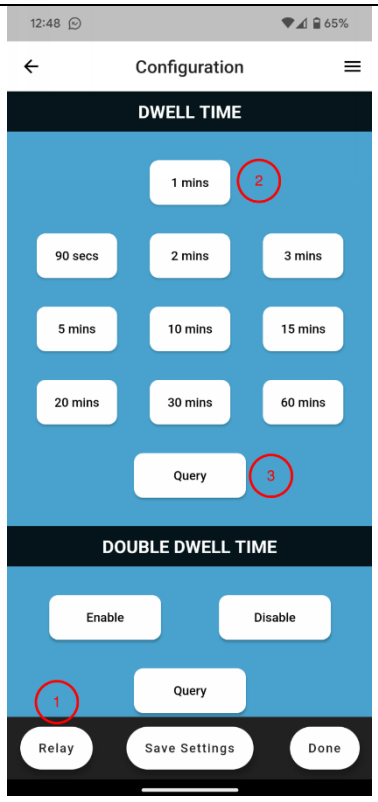


Figure 7 Dwell Time

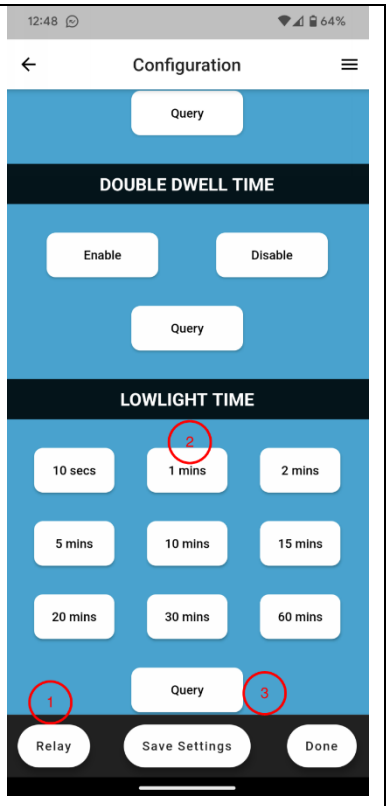


Figure 8 Lowlight Time

The default Dwell Time and LowLight time is 10 minutes each

5.5. Daylight Dimming

5.5.1. Introduction

This feature allows us to utilize external daylight coming into the space and reduce the light output of any luminaire to enhance energy efficiency.

5. You can either enable or disable daylight dimming with existing calibration or
6. Manually calibrate and enable daylight dimming by adjusting the light output of a luminaire.

5.5.2. Configuration

By default, daylight dimming is disabled for all the nodes.

We recommend if this is your first time enabling daylight dimming, consider reading the detailed user guide for further guidelines.

5.5.2.1. Enable/Disable with Current Calibration

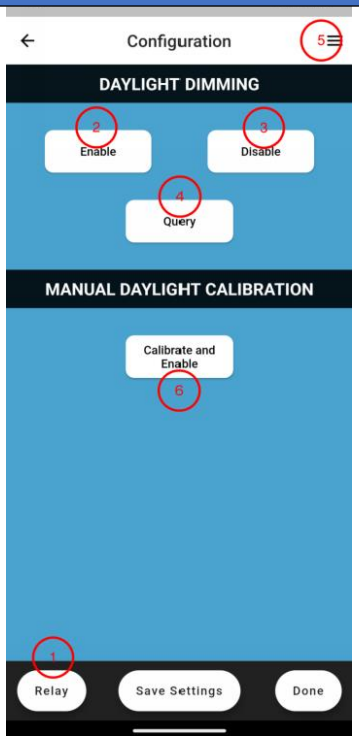
Upon node selection

1. Toggle the ***relay*** on for the whole zone or off for the selected node only.
2. Press ***Enable*** to enable daylight dimming. or
3. Press ***Disable*** to disable daylight dimming.
4. Press ***Query*** to get the current status.

5.5.2.2. Calibrate & Enable (recommended)

5. Dim a luminaire to the desired output by following the temporary dimming shared earlier.
6. Now click on “Calibrate and Enable”.

Allow 3 seconds to move out of the field of view before it takes a light reading and calibrates the Response Sensor Node for this light level. If you are enabling this feature for the first time, we recommend doing this for each luminaire separately.



5.6. Scene

5.6.1. Introduction

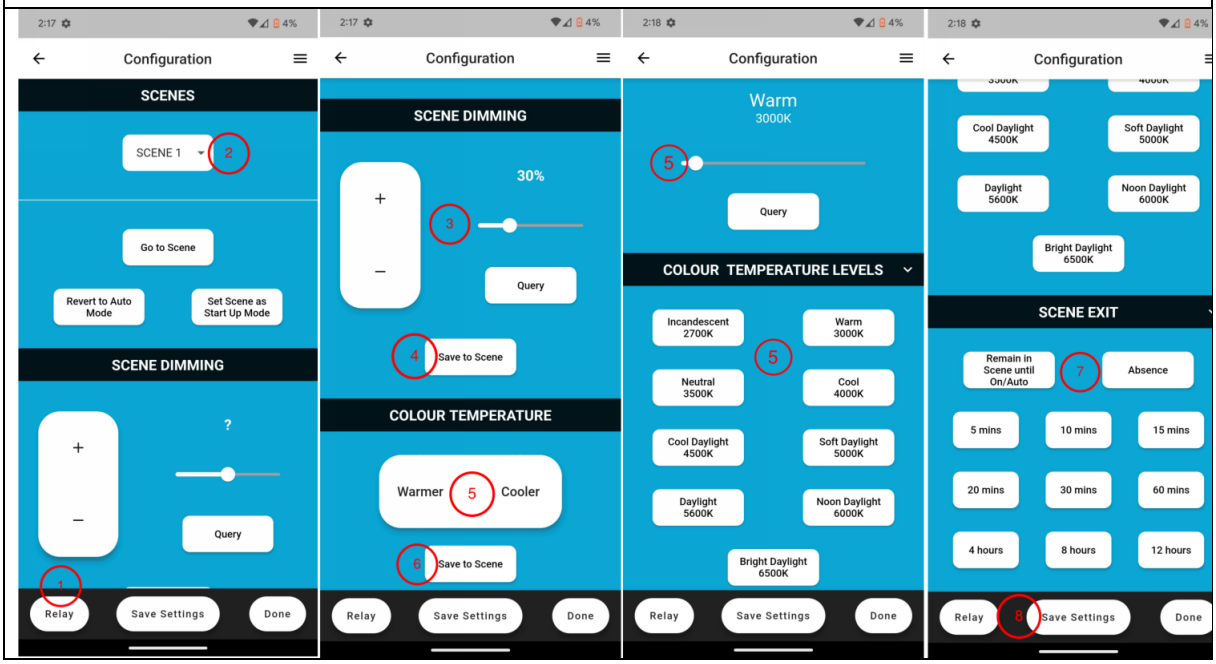
This feature enables selected luminaires to ignore occupancy and auto operation parameters and adopt a *constant light output and color temperature* for a specific period or until scene exit conditions are met. Eight scenes can be configured and customized to different parameters.

How to identify: If a sensor node is in a scene its green LED will blink continuously as opposed to blinking in response to an occupancy.

5.6.2. Scene Configuration

Upon node selection

1. Toggle the ***relay*** on for the whole zone or off for selected nodes only
2. Select the desired ***scene number*** from the drop-down menu
3. Choose a desired scene ***dimming level*** (Dim +/- button or Slider)
4. Click ***save to scene*** under scene dimming
5. Choose the desired ***Color Temperature*** (using Warmer/Cooler, Slider, or level from the list)
6. Click ***save to scene*** under color temperature
7. Choose the desired Scene Exit condition
8. ***Save settings*** to store all configurations for this scene



Note that the nodes will only revert to responding to occupancy and ambient light once they exit the scene or when you select the “Revert to Auto Mode” button on the ResponseApp to exit the scene and return the lights to normal operation.
The detailed user guide contains each scene's default light levels and exit conditions.

5.7. EnOcean Node Interface

5.7.1. Introduction

EnOcean wall switches allow you to apply manual switch control in an area. Depending on the configuration, EnOcean switches can be configured to control either a single luminaire or a group of luminaires.
The wall switches can be configured through the app using your smart devices' NFC. See an illustration on the right,

The location of the NFC module could vary for mobiles. You can move your device while trying to configure it to find the best alignment for your smartphone.

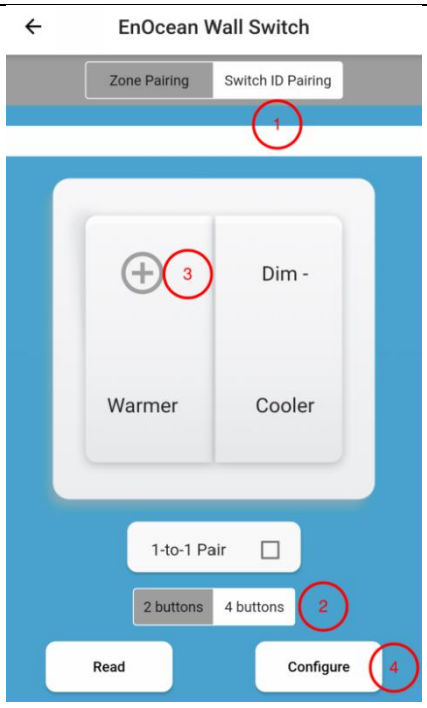
5.7.2. Switch ID pairing

In firmware version 181 or higher, this feature allows you to pair nodes with a switch and control the paired nodes or the zone of paired nodes. The operation in this mode requires the configuration of both the switch (Step 1) and the node (Step 2) to be paired.

5.7.2.1. Step 1: ID Paired EnOcean Switch Configuration

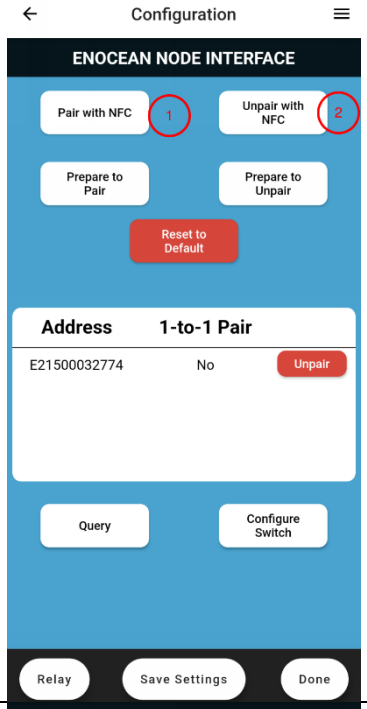
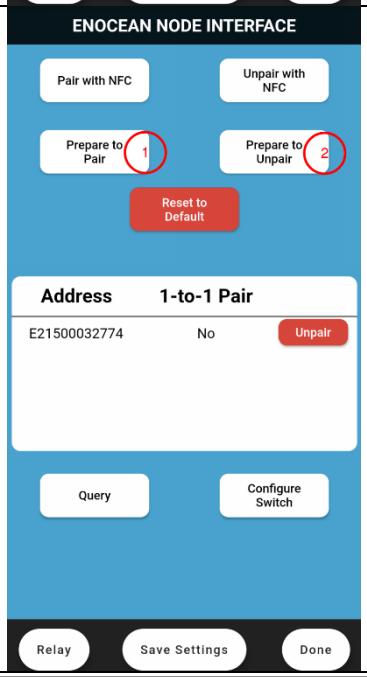
1. Click on Switch ID Pairing if greyed out.
2. Select relevant assembly – ***2 or 4 buttons***
3. Press on each "***+***" to choose a function
4. Press "***Configure***" & hold your phone, touching its back to the EnOcean switch as shown above

1-to-1 Pair option when left unchecked allows the nodes configured in step 2 below to share control with other nodes in its zone using IR. If you wish the control is applied to work only for nodes paired then check this option before configuring your switch.



5.7.2.2. Step 2: ID Paired Response Sensor Node Configuration

To pair the Response sensor nodes with the switch configured in Step 1, you can use either of the two options below.

Option 1: Node Selection & NFC Upon node selection 1. Click "***Pair with NFC***" and hold your phone, ***touching*** its back to the EnOcean switch from step 1. This allows the Response App to share and save the switch's ID with the selected node. 2. Click "***Unpair with NFC***" and hold the ***EnOcean switch*** closer to the device. If the switch address is known, click unpair next to it.	
Option 2: Node selection & Switch Buttons Upon node selection 1. Click "***Prepare to Pair***" and press any of the buttons 3 or more times on the switch configured in step 1. 2. Click on "***Prepare to Unpair***" and click any of the buttons 3 times on the EnOcean switch	

Switch ID Pairing is the default recommended mode of operation.

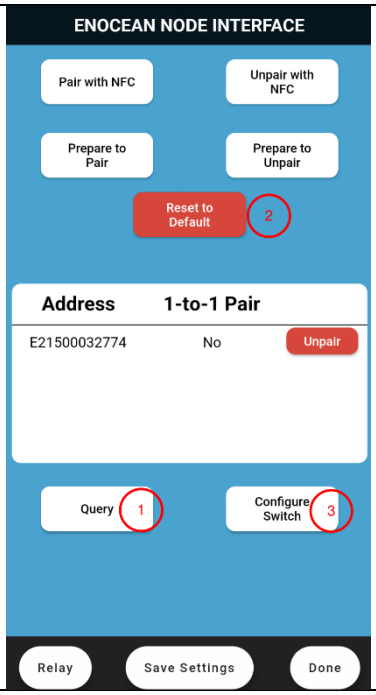
5.7.3. Query / Edit Switch ID Pairing

Upon node selection

1. Click "***Query***" to see paired EnOcean Switch IDs
2. Click "***Reset to Default***" to remove all pairings
3. Click "***Configure switch***" to navigate to EnOcean Switch configuration without going to the main menu

(The ID shown can be found on the back of your switch or by reading a switch)

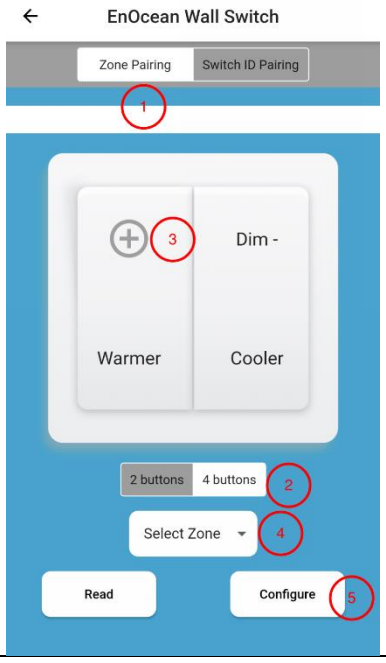
Please note this option is only available in Response App for Response sensor nodes with firmware versions 188 or higher.



5.7.4. Zone pairing

This feature allows the switch to be paired to a zone ID and control the whole zone. The operation in this mode only requires the configuration of an EnOcean switch.

1. Click on "Zone Pairing"
2. Select switch assembly – ***"2 or 4 buttons"***
3. Press ***"+"*** on each button to choose a function
4. Press on "***Select Zone***" to assign a Zone ID
5. Press "***Configure***" & ***hold your phone, touching*** its back to the EnOcean switch



Note: If no zone is selected the wall switch will control all luminaires and their respective zones in its direct communication range that can go up to 15 meters (indicative) line of sight (LOS)

5.8. Channel Link

5.8.1. Introduction

This feature enables the possibility of sharing occupancy & control data between Response Sensor nodes outside the typical infrared communication distances using the *Wirepas RF Mesh*. All Response Sensor nodes, by default, automatically become part of this Mesh that can act as a highway to carry targeted messages from a transmitting Response Sensor node to the desired receiving Response Sensor Node(s). Without configuration, messages are not shared over Wirepas; however, when configured for the same channel link ID, the message can be shared in the entire building network.

Each node can be assigned to a maximum of 6 different channels simultaneously, and the system supports 65,000 available channel IDs.

Please note that this feature is only supported by Stack 5 Response Sensor nodes with firmware version 188 or above. Please do not use this feature to share messages across the whole network, and care must be taken when enabling channel links to only apply it where required.

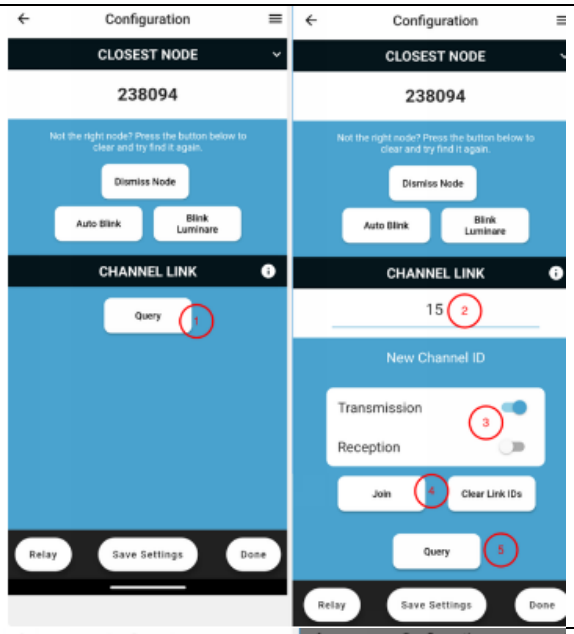
Important Recommendation: You must plan for the groups you wish to use in the building. Even if the nodes exist several floors apart, they can still see messages from faraway floors when there are 20 floors in between them.

Therefore we recommend planning ahead and documenting the groups that you will be using in a single building/network. To avoid any unnecessary overreach or over-sharing.

5.8.2. How to Create or Join a Channel Link

Upon node selection

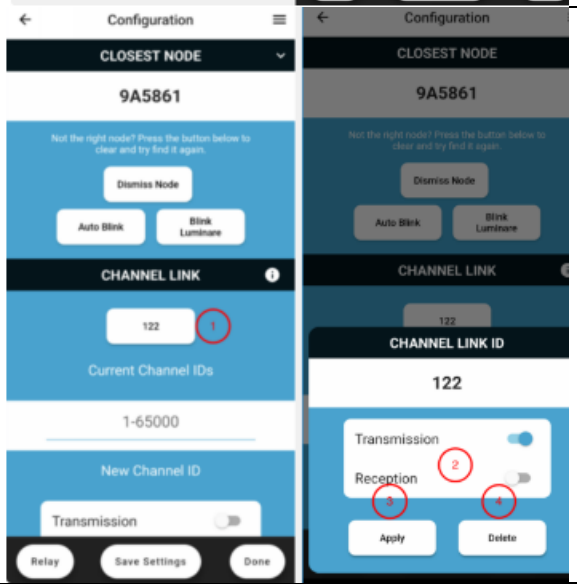
1. Press ***Query***
2. Enter the Channel Link ID/number.
3. Toggle ***Transmission*** and ***Reception*** for the node to transmit/receive or do both on this ID.
4. Press ***"Join"*** to allow this node to transmit or receive on this channel link.
5. Press the ***Query*** button to verify the Channel Link IDs assigned to the selected node.



5.8.3. How to Edit/Remove Channel Link

Upon node selection

1. Click on ***Channel link IDs*** to select it, e.g., click on 122. This will open a pop-up window with the current transmission and reception settings.
2. Toggle ***Transmission***/***Reception or both*** to set nodes as transmitter/receptor or both for the channel.
3. Click ***"Apply"*** to apply the settings
4. Click on ***"Delete"*** to delete this Channel Link



Please note that the firmware version of the Response Radio must be 188 PIC and 23 Nordic or higher. The Response Radio can be configured through RESPONSE APP ONLY.

Please Plan Ahead for Success: You must plan ahead & prepare for the configuration of pub-sub groups. Document what you are going to use in the building. Use as-builts and mark pub-sub group IDs to be used on different floors since
1. Response Radios are usually installed hidden behind a ceiling &
2. The message of a publisher is shared throughout the network, i.e., with all the nodes in the building.

5.9. Response Radio

5.9.1. Introduction

A Response Radio doesn't carry any sensing capabilities of its own. It relies on a publishing Response sensor node to provide control commands for subscriber nodes. This generates a publisher-subscriber link between "a publishing Response sensor node" & "one or many subscribing nodes," a.k.a *pub-sub group*.

There are 32,000 available pub-sub group IDs/numbers supported by the system.

5.9.2. Configuration

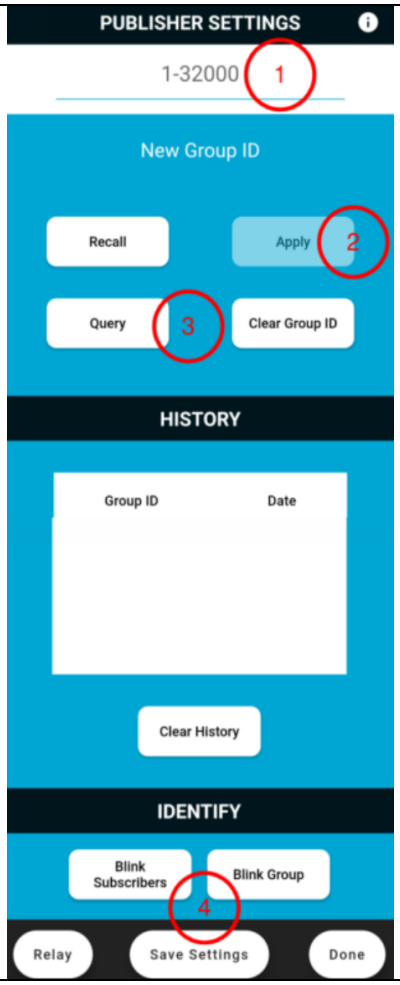
Response Radio configuration is a 2-step process: step 1 Publisher & step 2 Subscriber

5.9.2.1. Step 1: Configure Publisher

(On Response SN3)

Upon node selection

1. ***Enter*** the intended group ID
2. Click ***apply.***
3. Press ***Query*** to query the currently configured groups for a publisher Response sensor node.
4. ***Save*** settings



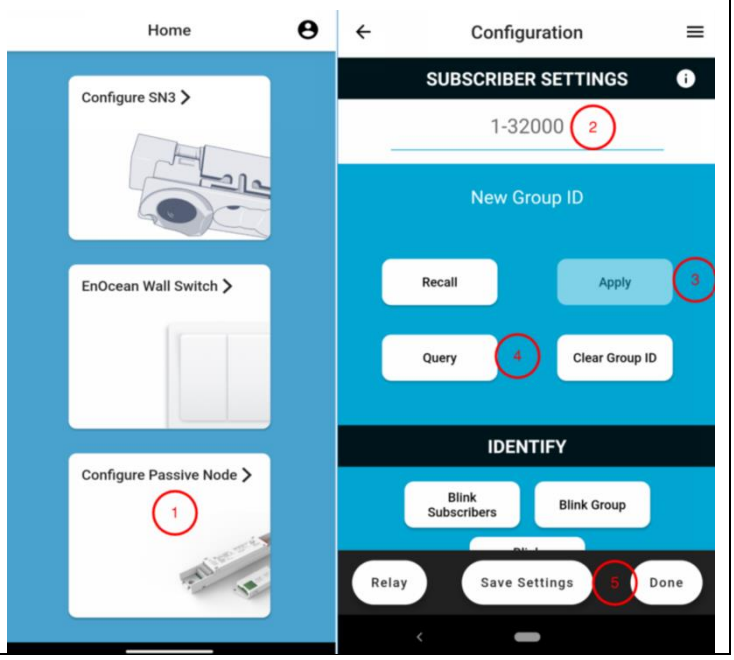
5.9.2.2. Step 2: Configure Subscriber

(On Response Radio)

1. Select the option "***Configure Response Radio***" from the main menu

Upon Response, Radio selection

2. ***Enter*** the intended group ID.
3. Click ***Apply.***
4. Press ***Query*** to query the currently configured subscriber group ID.
5. ***Save settings*** if necessary.



A few key notes

1. If the Response Radio is already assigned to a group, it will indicate the existing group ID in Step 2.
2. To easily identify, use the blink luminaires feature (click here).
3. By default, a Response Radio will always keep connected luminaires at static 100% light output and 4000K color temperature (if tunable white).

Note!

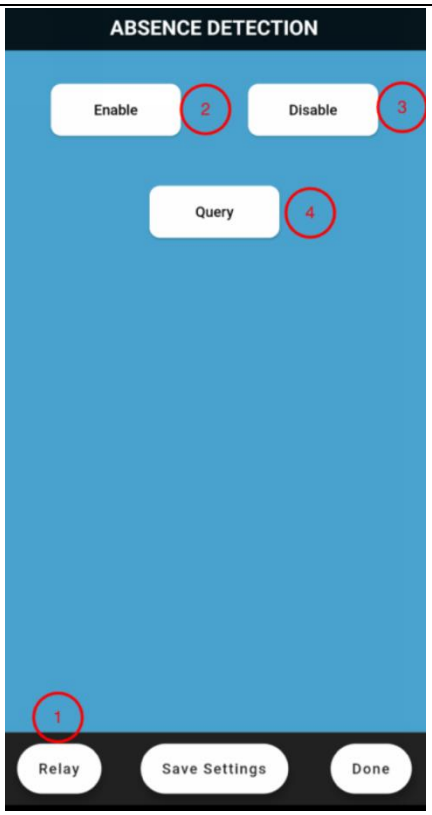
The relay is not going to be usable as the configuration of Publisher and Subscriber both require RF communication. Therefore, as soon as you click on relay in either of these menus all the options will be automatically greyed out rendering all buttons unusable.

5.10. Additional Features

5.10.1. Absence Detection

This feature enables luminaires to turn off when unoccupied as they usually would but *does not automatically switch them on upon seeing occupancy*. Absence Detection should always be used where you can manually send an On/Auto command, such as from an EnOcean switch or through the app. The below image shows how to enable/disable absence detection using the Response App.

Absence Detection is disabled by default

Upon node selection 1. Toggle the ***Relay*** on for the whole zone or off for selected nodes only. 2. Press ***Enable*** to activate absence detection. 3. Press ***Disable*** to deactivate absence detection. 4. Press ***Query*** to read the present configuration	

5.10.2. Response Sensor Node Settings

Previously stored settings will always be overwritten when you press save settings if you are unhappy with the recent changes.

1. You can recall the previously saved Response sensor node setting without saving new changes.
2. If you have saved them and would like to start from scratch, you can perform a factory default reset.

To recall settings for a node,

Upon node selection 1. Toggle "***Relay"*** on for the whole zone or off for the selected node only. 2. Use ***Recall Settings*** to revert to the last stored point. 3. Press ***Recall Factory Settings*** to restore the configurations back to factory settings.	

5.10.3. Infrared Transmission

Sometimes, in an installation, the IR transmission is unable to reach long distances due to the environment or poor reflective surfaces. To compensate for such circumstances to some extent, we can increase Response Sensor Nodes' infrared transmission power %.

When there is poor communication between response sensor nodes, a transmission test can be carried out. A Transmission Test is done to test the quality of the communication from one Response Sensor Node to its neighbors (communication that is critically important for effective Organic Response lighting control).

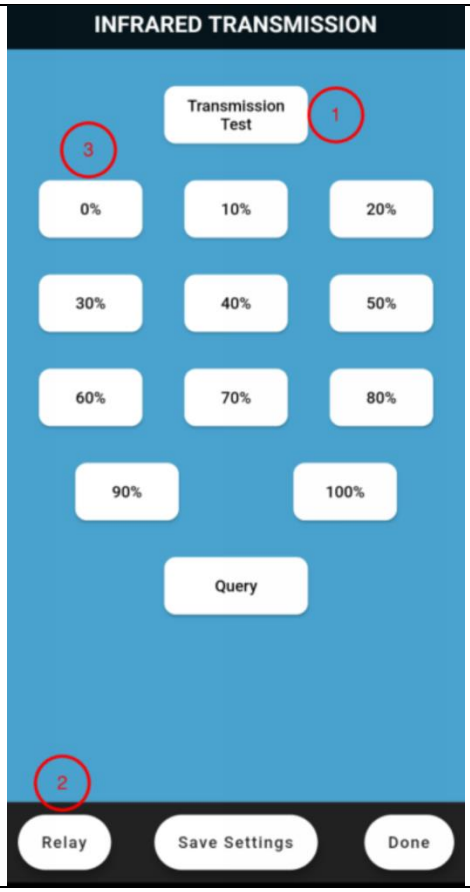
IR Transmission is 30% by default

To perform the test and increase transmission power

Upon node selection

1. Press the *Transmission Test* to test the IR signal. Please count that neighboring Response sensor nodes blink their red dome & count
   a. 27 to 30 times = pass (skip next steps)
   b. If less than 27, increase the power
2. (Optional) Toggle ***Relay*** on for the whole zone or off for selected node only
3. Press *any percentage higher than 30* to increase transmission power from its default level and try step 1 again.*

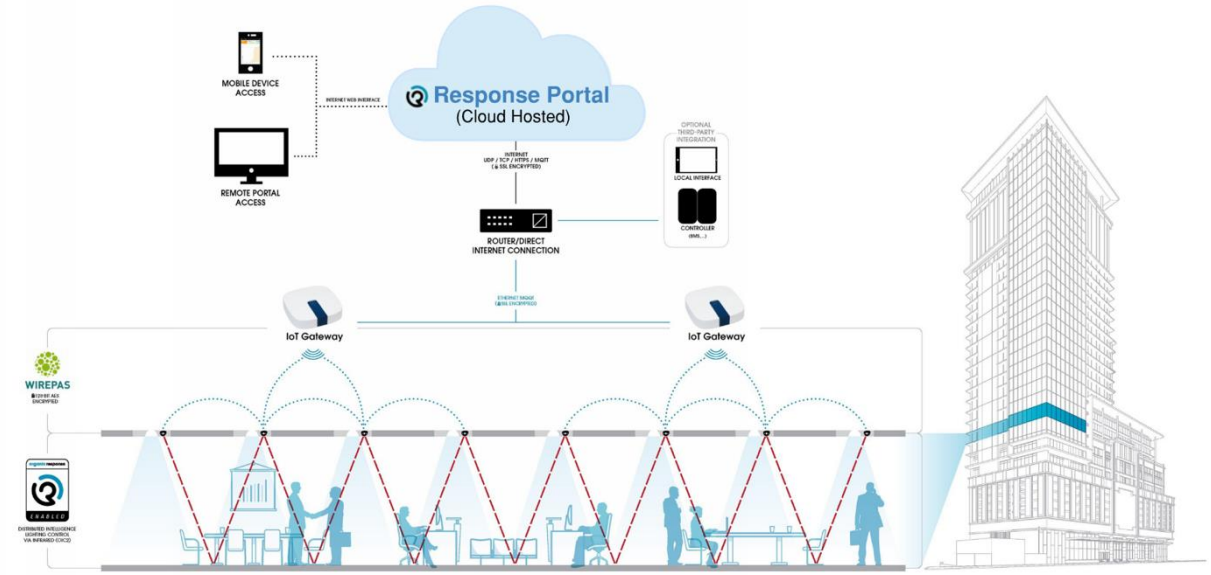
*Please remember to press *Save Settings*.



6.0. Response Portal

OR offers a cloud-hosted analytics & lighting control application called the Response Portal. It allows users to remotely monitor, control, test & configure their lighting assets. All sensor nodes installed continuously collect & communicate data on occupancy, luminaire performance & ambient sensing, which is then transferred & stored securely in the cloud.

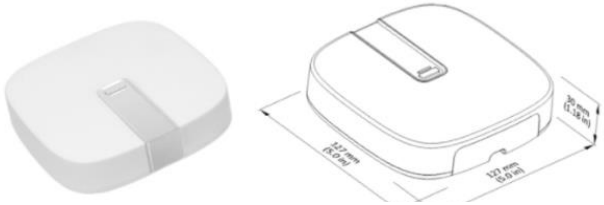
We previously shared that each sensor node communicates over IR for lighting control operations. In addition to IR communication, all nodes collect & report granular data using Wirepas 2.4 GHz RF mesh.



Connected Portal / Solution Topology

An OR Gateway can collect information from sensor nodes and securely publish it to the portal. This device is known as an IoT gateway and uses Wirepas to wirelessly collect and communicate with sensor nodes & The existing building IP network to publish this collected information to the portal securely.

The IoT GW has a standard power supply and supports PoE in powering up the device and providing an ethernet connection to the local network.



IoT Gateway (cascade model)

6.1. Portal Commissioning

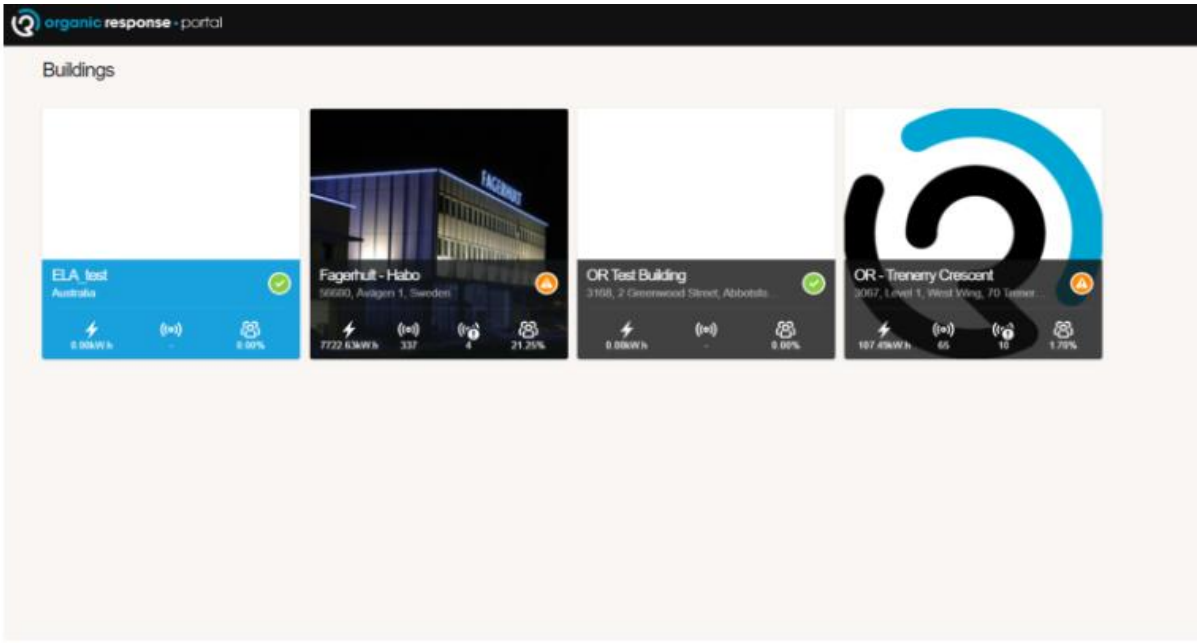
Every Response Sensor node can connect to IoT gateways automatically and start reporting to the Response Portal. However, there is a manual process of adding nodes and mapping them on floor plans called Response Portal commissioning.

A commissioning process consists of,

1. Creating a new building in the Response Portal.
2. Adding/assigning gateways to the Response Portal.
3. Adding Floorplans/Electrical Layouts as images.
4. Adding nodes on the floor plan.
5. Mapping each node to register their addresses in their installed locations.

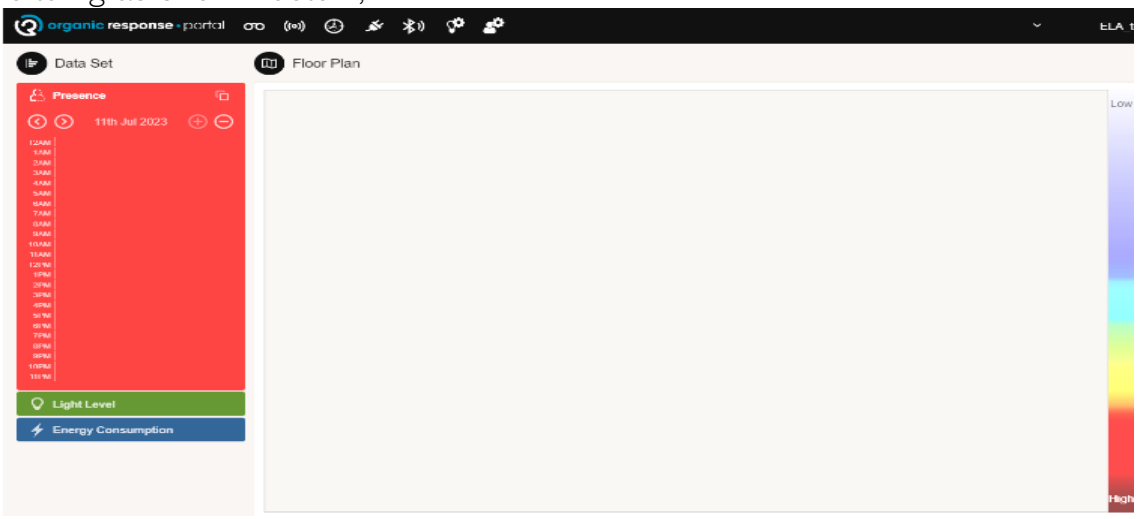
6.1.1. Setting up Building in Response Portal

The OR team is responsible for creating a Response Portal building upon request from our partners. We recommend contacting your luminaire manufacturer to get your project created. We provide admin rights to provided email addresses at the time of building creation, which can provide access to more users in a building. An example image below shows a user with access to 4 buildings,

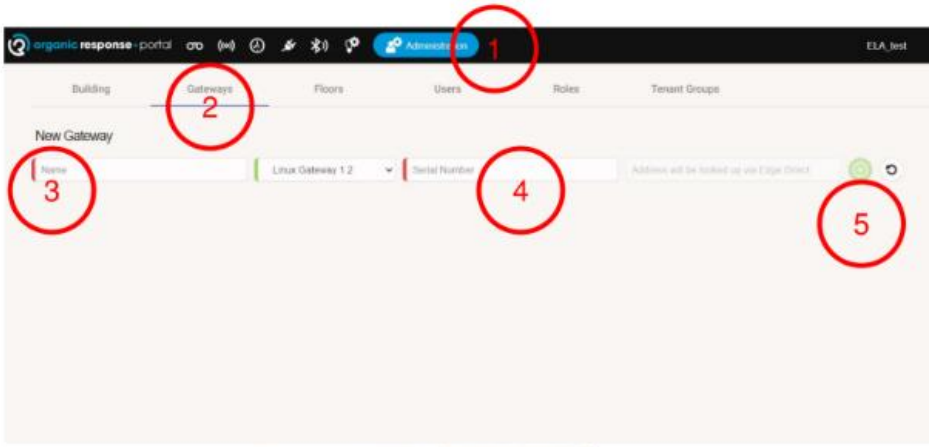


6.1.2. Adding Gateways to the Response Portal

When you select any building by default, you land on the analytics page of the building as shown below,



Analytics page when you open the Response Portal



Add Gateways

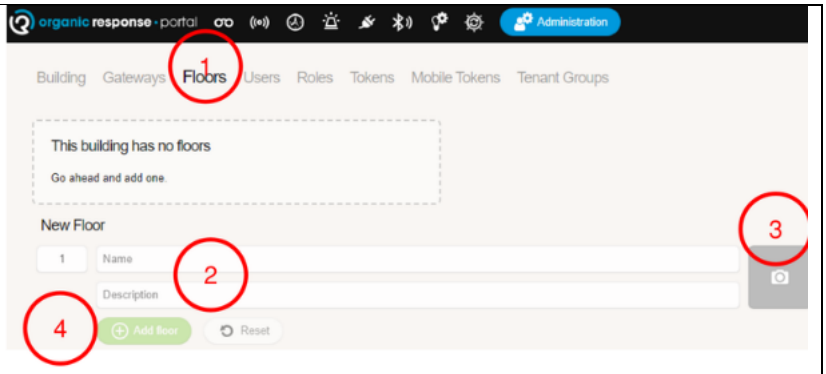
Since a fresh building is blank, you can start by adding gateways to the building.

1. Navigate to the blue highlighted Administration menu as shown on the right
2. Switch to the "***Gateways***" tab.
3. Start adding gateways by giving them a name/description (a good practice would be to name/number it based on floor plan location)
4. Now add the gateway serial number, usually found on the box or on the label of the gateway
5. Now click on the *PLUS* button to save it.

6.1.3. Adding Floorplans to the Response Portal

Once you have added gateways, you can start adding floors while in the Administration menu.

1. Switch to the "***Floors***" tab.
2. Add a name & Description.
3. Hover your mouse over this blank space to start uploading your floorplan as an image
4. Click on *Add Floor*

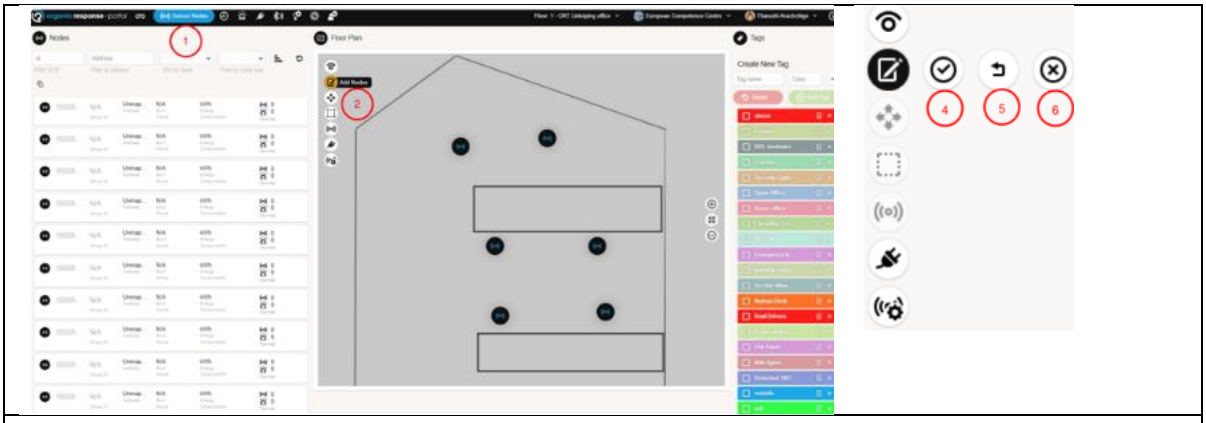


In addition to the above, some optional administration options that could be useful may include: if these are not required, please skip the next 3 steps.

1. Switch to the "*Users*" tab and start inviting other people to this Response Portal building as admins or with other roles.
2. When in the "*Roles*" tab, you can customize a role and control the access levels for existing or new users.
3. Section "*Tenant Groups*" will allow you to create different tenants within a single building.

6.1.4. Adding Response Sensor nodes:

Once you have added floor plans, you can start populating nodes in the floor plan by following the simple steps shown and explained below,



1. Go to the Response Sensor node page
2. Hover your mouse over the floorplan area, and you will see a tooltip appear. Click on "***Add nodes***" as highlighted.
3. When you click on the '***Add nodes***' tab, your mouse will start carrying a black Response Sensor node as you move it around on the floor plan. ***Click anywhere on the plan*** image to start placing Response Sensor nodes.
4. Once added, one or all nodes, click save.
5. Use "***Undo***" to clear the previously added nodes in sequence.
6. You can also click the "***Discard***" tab to clear all changes you made since the last save.

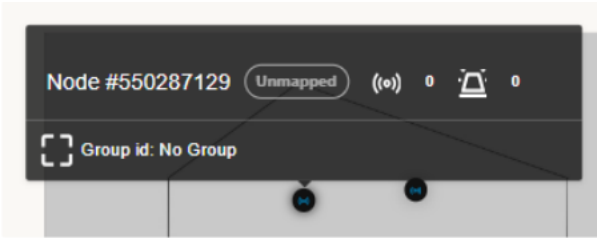
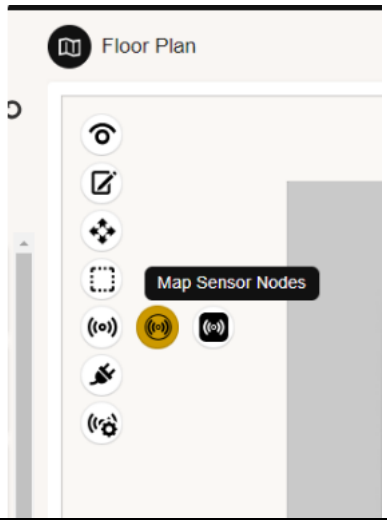
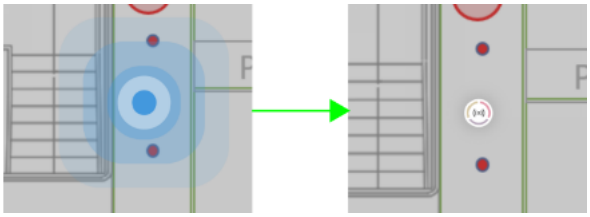
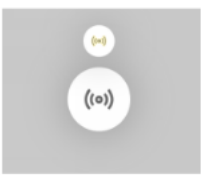
6.1.5. Mapping

6.1.5.1. Mapping A Response Sensor Node

To prepare for mapping, arrange to take with you a smart device (tablet/phone/laptop) that can

1. be easily carried while you go to each node to map it
2. open the Response Portal in a browser, and you can view the Response Sensor node page easily
3. has 3.5 mm audio jack that can have a charged dongle inserted to it.

The mapping process associates the installed Response Sensor nodes' address with the node you added above.

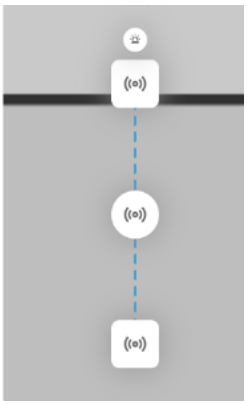
1. Insert IR dongle in the audio jack of a smart device 2. Navigate to the nodes page and select the relevant floor where you wish to map nodes	
3. Click anywhere on the floor plan if using a touch screen. When you see the tooltip appear, press on the 'Map Response Sensor node ' tab here to see 2 options 'map Response Sensor node ' icon or the 'Map Response Radio' icon.	
4. Click on the required node in the Response Portal and point the dongle with your laptop towards the Response Sensor node that you need to map at that particular location on the floor plan in the Response Portal . The red dome of the node should flash 3 to 5 times to indicate a mapping attempt is being made. You can only map the next node when the Response Portal flashing indicator settle for the first node you attempted to map. Now continue doing this for all nodes.	
5. Upon successful mapping the Response Sensor node icon would turn white and would indicate when mouse is hovered over it that it is "mapped".	

6.1.5.2. Mapping a Response Radio Device

While response radio devices can be mapped using manual or automated mapping processes, we would only cover automated processes for this guide.

To get response radio devices automatically mapped, you will require them to be configured for a pub-sub group. The pub-sub group configuration makes the mapping of Response radio devices quite simple.

When you map a Response sensor node that is a publisher, all Response radio devices (2 square white icons) in its pub-sub group will also be mapped automatically. Response radio devices mapped this way will automatically show linked as blue dotted lines next to mapped Response Sensor nodes in random order.



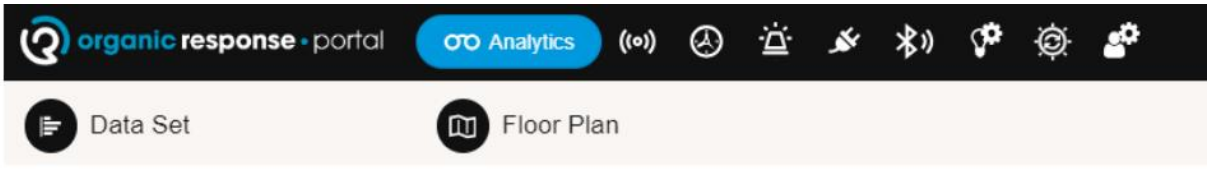
Emergency luminaires get automatically detected upon mapping because of emergency gear attached to them and reporting the status. Emergency luminaire may initially be mapped as standard luminaire first before it is detected as emergency gear due to the query process

6.2. Analytics & Node Management

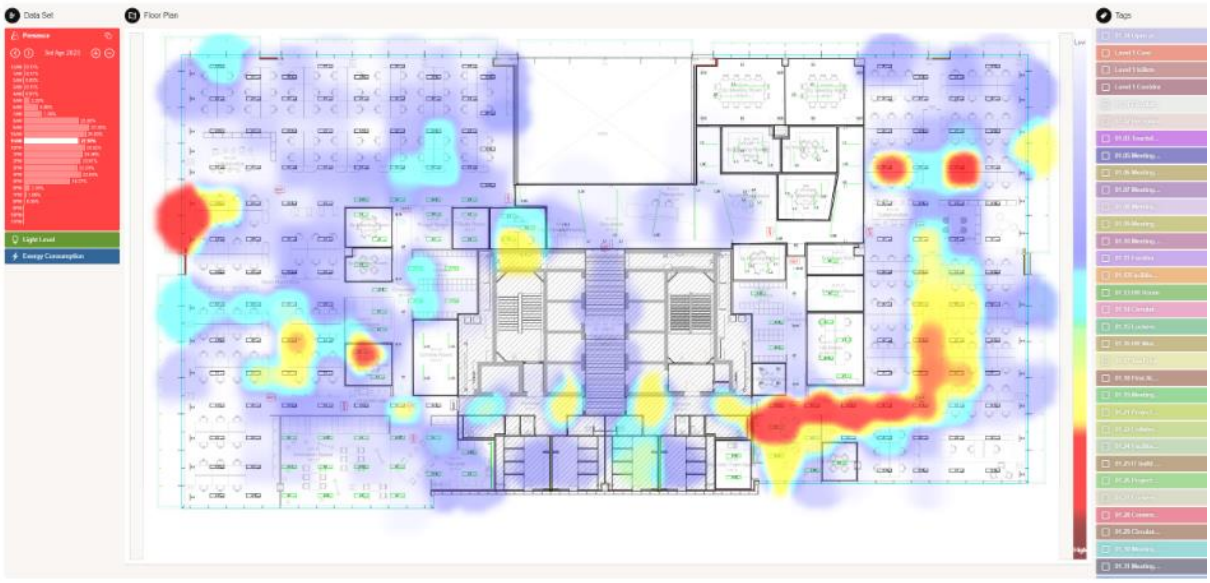
6.2.1. Introduction to Analytics

An analytics page is where data sets such as presence, light level, and energy consumption on a selected floor plan can be seen against time slots as well as through heat maps on floorplans. The default view of this data set will be for the present day, whereas you can,

1. Change the data resolution to look for each data set from yearly to 5-minute windows.
2. Access live mode to visualize the current space utilization if allowed by building admin.
3. Check your space utilization for different spaces when the nodes are tagged.



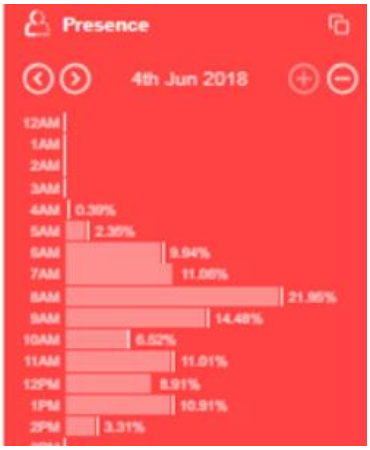
Analytics Menu Navigation



As an example consider 100 luminaires and a 50% presence is shown for 10 am window. Then it means that for whole one hour 10:00:00 am to 10:59:99 am 50 luminaires saw occupancy for this whole period.

6.2.1.1. Data Set 2: Light level

The presence data is shown as a percentage for every one-hour window accumulated for all nodes on the floorplan. To understand the percentage.

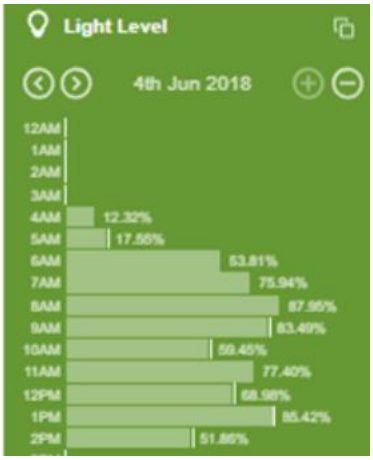


As an example, the light levels are showing up as 75%. This would essentially mean that out of 100 luminaires the luminaire output can be quantified (visualized) as;

1. EITHER 75 luminaires out of 100 were at 100% light output for that time
2. OR All 100 luminaires were on 75% light output for this one-hour window

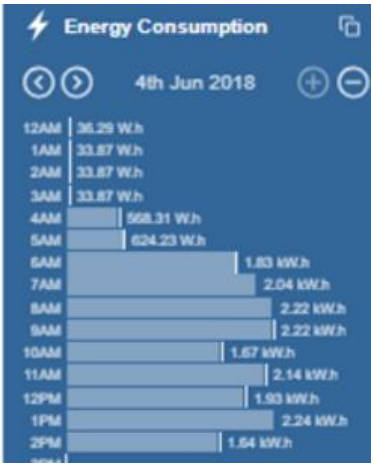
6.2.1.2. Data Set 2: Light level

Percentage levels achieved for a period of time averaged for all Response Sensor Nodes that are mapped on a floor.

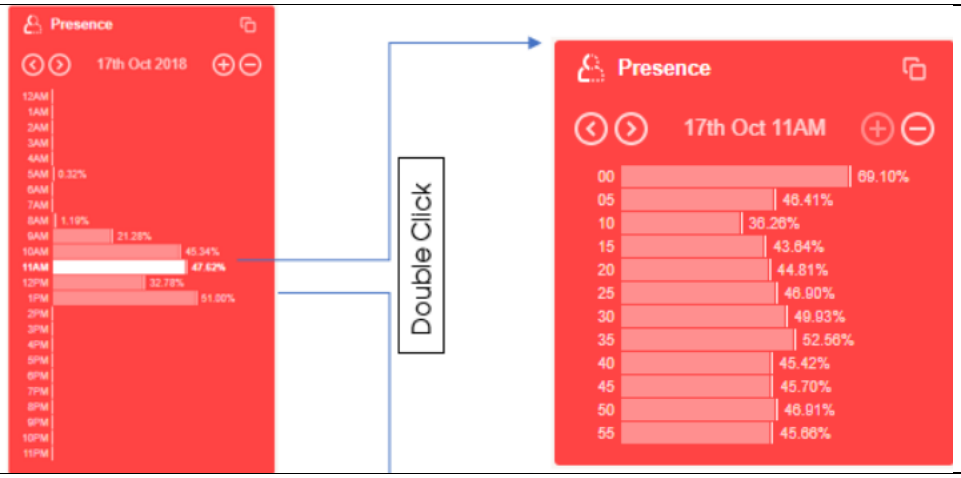


6.2.1.3. Data Set 3: Energy Consumption

Calculates the consumption for each Response Sensor Node in kW.h for any window of time to give a relative measure of energy consumption. The default calculation is normalized upon 40W luminaire.



6.2.1.4. How to Customize Analytics View



1. Selecting the time bar would update the heat map view to show relevant data on the floor plan.
2. Each window can be minimized or maximized to gain a more granular resolution of that time window. Double-click each time window to go as low as 5-minute timeslot and right-click to go as high as a monthly view in a calendar year.
3. You can also select a tag to see a particular space utilization for a time window.

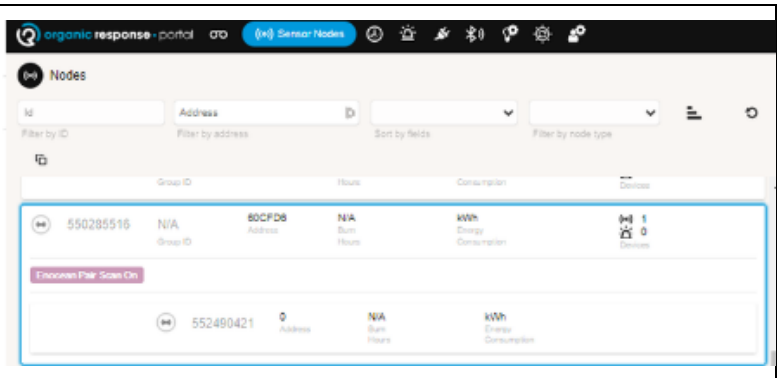
6.2.2. Response Sensor Node Management

Each response sensor node contains information that is visible in the response portal as soon as it is mapped. Users can manage the nodes using different Response Sensor Node page tools. Information and tools on the Response Sensor Node page include,

6.2.2.1. Response Sensor Node Information

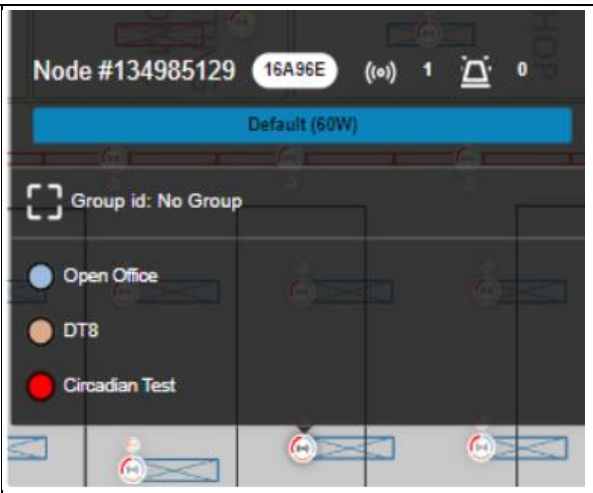
A few key pieces of information for a Response Sensor Node include,

7. Node ID - A Response Portal generated ID as soon as a new unmapped node is placed on the floor plan
8. Node Address – The physical address of the node.



9. Group ID - Pub-Sub group ID nodes have.
10. Burn Hours – calculated since the mapping while lights remained at non-zero light output
11. Energy consumption – calculated based upon various light output nodes take for 40W

This address matches the address you see in the OR Express app upon node selection.



12. Devices - showing numbers of EM lights & DALI drivers
13. Tags, if any, assigned to the nodes

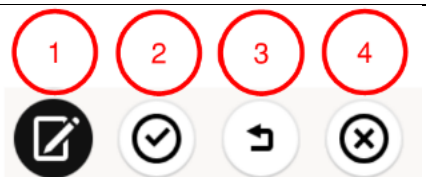
14. The node list allows you to filter, sort and export the nodes list using options as shown below

6.2.2.2. Tools in Floor Plan

The tools that become visible when you hover your mouse on a floor allow you to.

Select one or multiple nodes

1. Enable node selection bar
2. Area selection
3. Cumulative selection
4. Select all nodes int the floor plan
5. Clear selection
6. Delete selected nodes

Enable or disable the view of 1. All nodes 2. Subscriber connections 3. Attached devices 4. Faulty nodes 5. Mapped nodes 6. Unmapped	
Allows you to Add/Remove nodes 1. Add nodes 2. Save 3. Undo 4. Discard changes	
Move nodes in the floorplan 1. Move single node 2. Move all nodes relatively 3. Save 4. Undo 5. Discard changes	
Map Response Sensor node or Response Radio 1. Enable mapping icons 2. Map a Response Sensor Node 3. Map a Response Radio	
Reset / Unmap 1. Enable configuring icons 2. Clear attached devices for a node or group of selected nodes. 3. Unmap a Response Sensor Node	

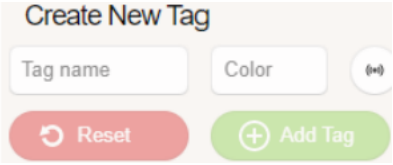
6.2.2.2. Tagging

Tagging a Response Sensor Node is simple and offers a means of identification but is also vital for features such as,

1. Running Emergency Test
2. Viewing analytics data for specific area (tagged) nodes
3. Circadian curve or other lighting control schedules

4. Distinguish nodes and addresses to enable BLE scanning and so on

The tagging of any node or group of nodes can also be done from the nodes' menu. Users are free to edit or add as many tags as required, whereas 4 tags are created by default in any building,

Creating a tag is easy. Navigate to the right-hand side tag menu on the nodes page. "*Create New Tag*" Name a tag, e.g. Board room, and assign a colour by clicking on the node icon and saving. Once you have created the tag select one or multiple nodes and then check (to add) uncheck (to remove) the tag.	

6.3. Control Schedules & Configuration (via Response Portal)

6.3.1. Control Schedules via Response Portal

While the OR control solution works independently, temporary, time-limited control/configurations are sometimes required. Such implementation is achieved by using lighting control schedules in the Response Portal.

In a lighting control schedule, you can implement time-specific changes to

1. Specific nodes, if they are tagged
2. All the nodes upon floor selection or
3. Entire building if no selection is made

6.3.1.1. Rules

A rule defines the intended control/configuration change. We recommend generating one configuration/control change per rule for a tag. Avoid using multiple tags within the same rule.

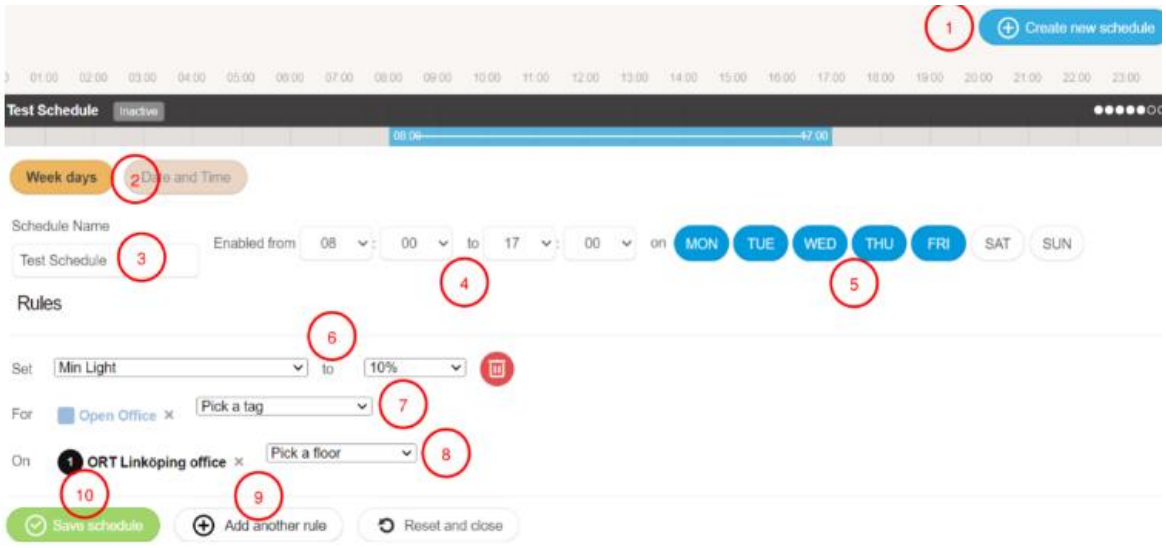
Each schedule can have as many rules as necessary. In rules, you can set,

- Max/Min/Low light to any values between 0% to 100% dimming percentages
- Dwell/Low light to a selective set of time values in minutes
- Personality to a whole range of profiles available to OR lighting control system &
- Scene to one of the eight scenes

6.3.1.2. How to Configure Schedules

Each schedule can be custom named to run these temporary time-based settings weekly or on a specific day and time in the future. You can add as many schedules as required to achieve intended outcomes.

6.3.1.2.1. Creating A Schedule



1. Click *Create New Schedule*.
2. Select *Weekdays* or *Date and Time*.
3. Enter the *Schedule name*.
4. Enter intended schedule running time in *from* & *to*.
    a. These fields will be replaced with *Start Date and Time* & an *End Date and Time* in the Date and Time type schedules.
5. Selected the required *days*.
6. Now define your *Rule*.
7. Click “For” to pick tags created & assigned earlier in the node’s menu. *Pick one tag in a rule only*.
8. Click on *Pick a floor* for tags on that floor to follow this rule.
9. Click *Add another rule* to more rules for other tags.
10. Click *Save Schedules* to save the schedules.

6.3.1.2.2. Enabling The Schedule

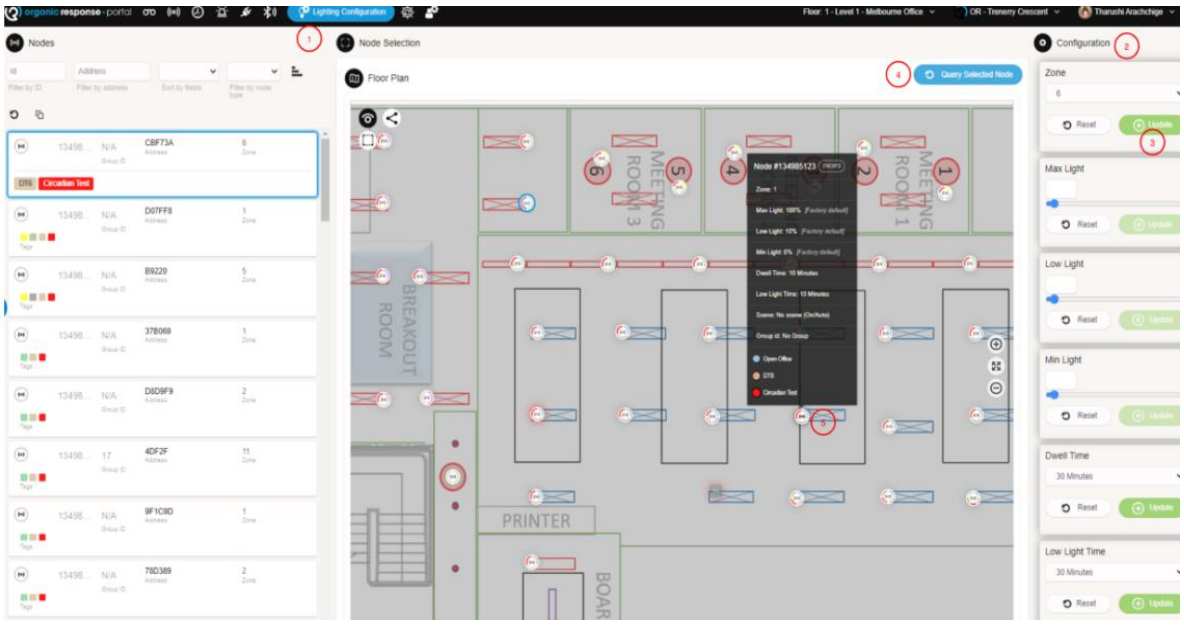
1. Click *Play* to enable a schedule.
2. Click *Pause* to pause an active schedule.
3. Click *Always Active* to force the schedule to start now and always run, irrespective of time.
4. Click on the *arrows* to prioritise the schedules. If there are conflicting rules for a tag, then the *rule on top* would take *precedence* over the ones lower.

6.3.2. Introduction To Configuration Via Response Portal

Configuration via Response Portal allows you to configure and query lighting configuration remotely. Once the necessary permission is obtained, you can configure the available parameters, such as zone ID, Max/Low/Min Light %, Dwell/Lowlight Time, and one of the 8 scenes.

Please obtain configuration menu page access permission from the building administration page by checking the option for “Lighting Configuration”.

6.3.2.1. How to Configure (via Response Portal)



To configure nodes successfully, proceed as below;

1. Go to the *Lighting Configuration* page and select a node by clicking it.
2. Kindly choose different values for the required parameters from the configuration panel.
3. Click *Update* to update the changes.
4. Click *Query selected nodes* after making changes.
    a. Hover your mouse over the configured Response Sensor nodes to see the current configuration status of the Response Sensor nodes.

When you hover the mouse over a Response Sensor node on the floor plan, the parameters of the nodes that haven’t been queried yet will show as N/A and once queried, will be replaced with actual values.

6.3.3. Introduction To Circadian Curves via Response Portal (Draft)

Circadian curves are 24-hour cycles a human's body follows as part of its daily operation. In terms of lighting, this can mean gradually changing a luminaire's colour temperature between warmer and cooler outputs throughout the day.

Circadian curves via the Response Portal aim to better align the lighting conditions with a human's internal body clock, thereby creating a more natural environment indoors. It can be easily achieved by enabling users to create 24-hour schedules while setting a colour temperature and light intensity curve.

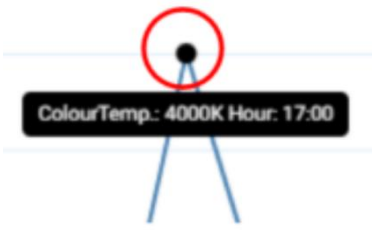
What is required?

1. DT8 (tunable white) drivers & luminaires
2. Compatible PIC firmware version (v184 or higher)
3. Response Portal connected installation
4. Necessary user-level access

Contact your building admin if you can't access the menu

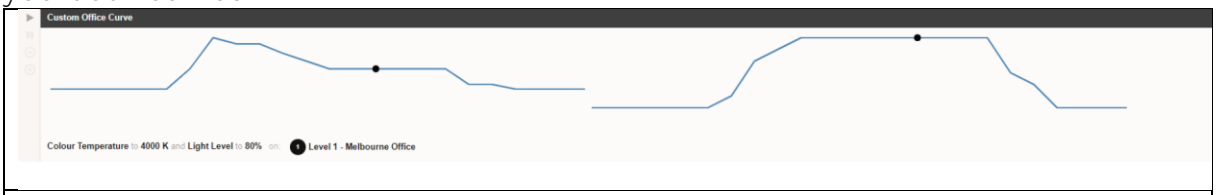
6.3.3.1. Step 1: Create a Curve

1. Click "Create new Circadian Curve."
2. Add a curve name
3. Click on "Pick a tag" to select from a list of tags (created & assigned earlier in the node's menu).
4. Click on "Pick a floor" to select a floor from the dropdown list.
5. Click on each dot & drag to choose the desired colour temperature values for the hour, e.g.



6.3.3.2. Step 2: Read & Verify

Upon saving a curve the editing window will shrink such that it will now show you both curves



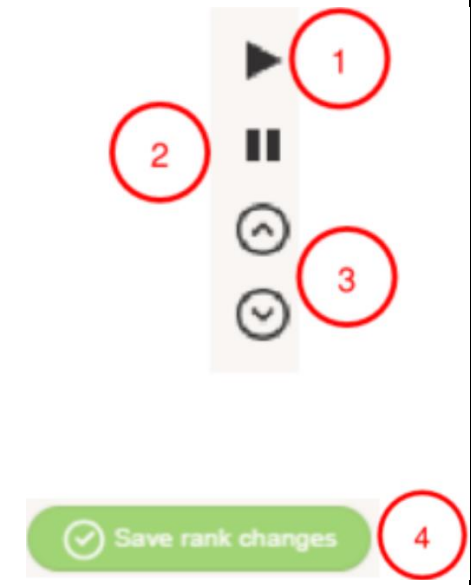
15. The first curve from the ***left*** represents the rise & fall in ***the colour temperature***.
16. The ***second*** curve represents different levels in the ***light output***.

The maxlight (light level) set by the curve is always relative to its saved maxlight e.g. if curve sets it to 80% and its saved max light is also 80% then the max output with curve enabled for this node would be around 64%.

6.3.3.3. Step 3: Applying the Curve

Hovering your mouse over the play icon to the left of the curve will show 4 options, as shown on the right,

1. Click "***Play***" to enable a circadian curve. It will turn blue to indicate that the curve is applied.
2. Click ***Pause*** to pause an active circadian curve.
3. Click on the arrows to prioritise the circadian curve. The *Curve on top* would take *precedence* over the lower curves.
4. Once you are happy with the priority, click on "***Save rank changes***" to save the new priority.



If you want to apply an active curve to newly mapped or remapped nodes, please deactivate and then activate the curve again after all mapping is completed.
When a curve is disabled the current firmware can take up to 2 hours before the Response Sensor node will stop following the previously configured curve changes.

6.4. Emergency Light Monitoring & Testing

6.4.1. Introduction to ELMT

The Response Portal automatically discovers emergency devices upon the mapping of connected Response Sensor nodes. The Response Portal offers automated and manual testing of DT1-type emergency (EM) devices. The tests that can be done include functional & duration tests.

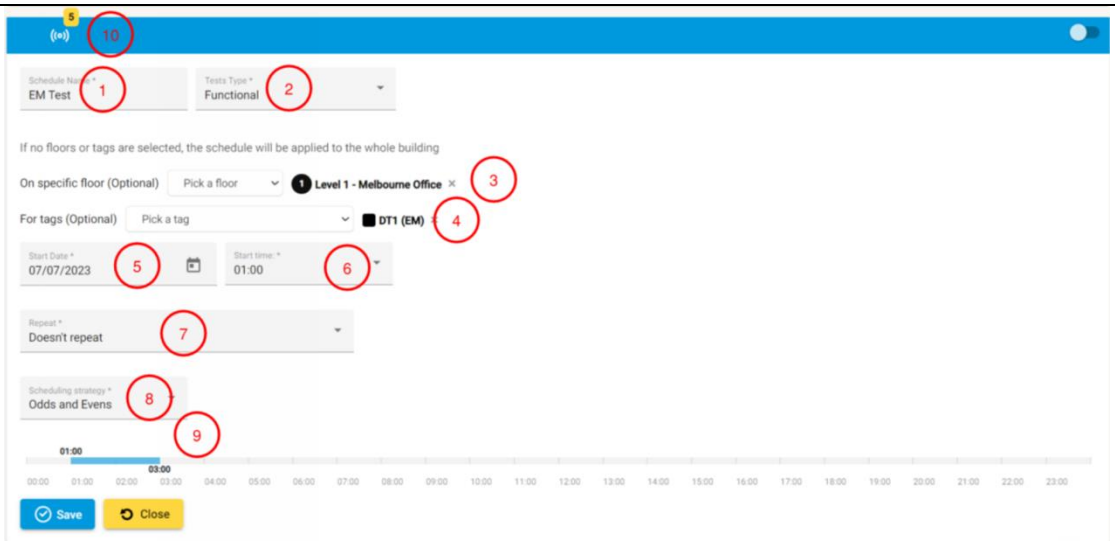
Once a building has an EM device detected, you can navigate to the Emergency Light Monitoring & Testing (ELMT) menu if your access level is appropriate. Your building administrator manages the roles and permissions. Contact your admin if you are unable to find the option.

Tagging plays a vital role to set up schedules that automate emergency testing. We recommend that you tag EM Response Sensor nodes to schedule different floors/areas at different times in multiple schedules.

6.4.2. Creating an ELMT Schedule

To automate running functional & duration tests, we create EM schedules. Navigate to ELMT page where can see a ***PLUS*** button at the bottom right corner of the page (scroll down if needed).

When you press on *PLUS* a blank schedule appears, let's look at the example with steps explained below.

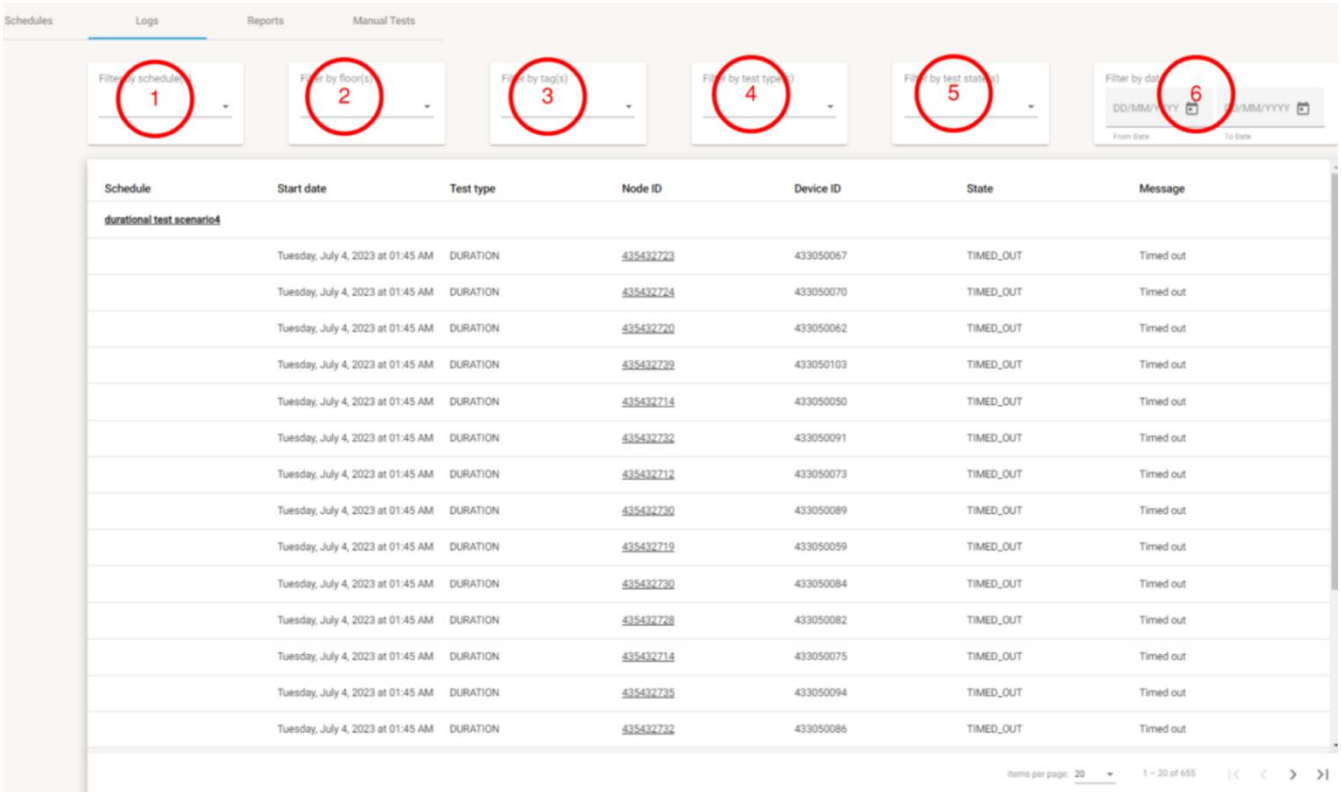


1. *Schedule Name* - naming the schedules can help you identify, e.g. Core Area-east, Level 3 North etc.
2. *Test Type* - enables you to choose a test type (Functional test or Duration test) from the drop-down list. *You CAN'T choose both tests in the same schedule.*
3. *On Specific Floor* - It is always recommended to choose a floor if you have multiple floors to run ELMT. *Consider splitting the building into multiple floor based schedules for best results if you have large quantity of nodes in a building.*
4. *For tags* - similar to floor selection an optional parameter but recommended. *Consider splitting the floor into tag-based schedules for best results large quantity of nodes in each floor.*
5. *Start Date* - Helps you select a calendar date for a schedule to run on when you click the calendar icon.
6. *Start Time* - Allows setting a particular time to start a test on your planned date.
7. *Repeat* - lets you define the repeat frequency of each schedule by choosing from several options such as *doesn't repeat or repeat weekly, monthly, yearly, or even customising it further* (click here to read more).
8. *Scheduling Strategy* - can be chosen to either 'odds and even' or 'simultaneous' from the dropdown.
9. *Time Window* - the finishing time is *automatically estimated* by the Response Portal and shown in the time window.
10. *EM node count* - displays how many nodes there are on the selected floors and tags.
11. *SAVE* - Please make sure to save the schedule by pressing the 'Save' button.
12. *Enable* - You can activate the schedule by moving the toggle button (given at the top right corner), to the right. The screen will refresh for a second and schedule will become active.
13. *Edit* - Once you saved a new schedule and you would like to edit the schedule later, please click on the schedule name tab (blue bar) to edit the schedule.

6.4.3. Check Logs (Results)

The logs page contains all historical test results manual or automated via schedule. The below image displays the latest test results in logs page followed by different options to filter out the results

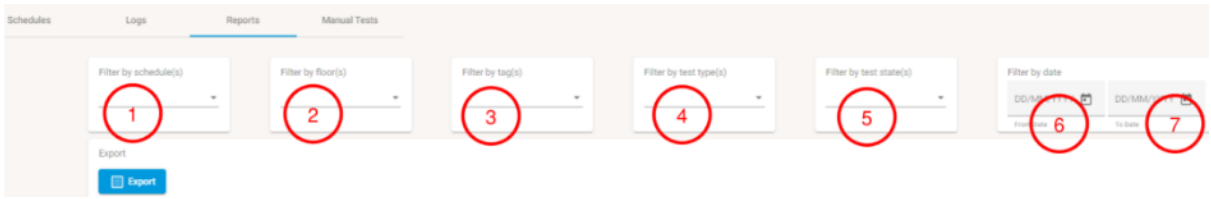
1. **Schedule Name(s)**	2. **Floors**	3. ***Tags***	4. ***Test Types***	5. ***Test Dates***	6. ***Date/Period***



You can filter the log by choosing different parameters to easily find specific results. All nodes will display their results in this page starting from the latest test to the oldest.

6.4.4. Reports

You can export the most recent tests for selective or all nodes using reports menu. The exporting is supported in an excel (.xlxs) format by clicking on the ***Export*** button shown in the below image. The filters are already explained in the logs above to export only specific results if required.

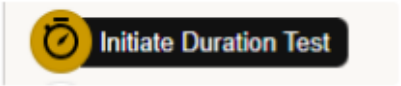


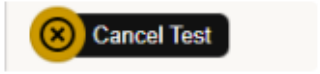
6.4.5. How To Run Manual Tests

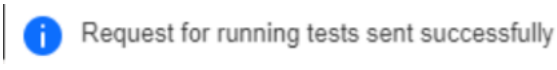
1. Select a node using one of the options shown on the right (you might also recognise these options explained earlier in the nodes page)
2. Once selected you can initiate a relevant test from options on the right to initiate that test or to cancel the test.

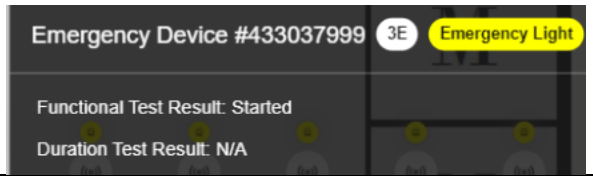
You can also click on the node ID from logs page to select a particular node/emergency device and it will take you to the manual test page with the device or node selected.

3. Once you click on to initiate a test, the popup window appears to confirm that you wish to run this test.
4. Upon confirmation, you can see the status as 'Request for running tests sent successfully' at the top of the screen.







5. Once the test has been initiated, you can see the selected emergency device will change to a blinking orange colour to indicate a test is in progress. 6. When you hover the mouse over the selected node, you can also monitor the live test result status, as shown in the image on the right	 

6.4.5.1. Different Colour Schemes and Results

The floor plan will give you a visual indication of the latest test result through four different colors explained below;

Color Schemes & Combinations		DT Status				
		Passed	Failed	Cancelled	Timed out	NA
FT Status	Passed					
	Failed					
	Cancelled					
	Timed out					
	NA					

Green -	Red -	Orange -	Yellow -