

FLOS

FLOS
CONTROL
APP

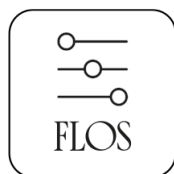
User Guide

POWERED

BY CASAMBI

FLOS

FLOS Control App User Guide



Flos Control®
Powered by Casambi

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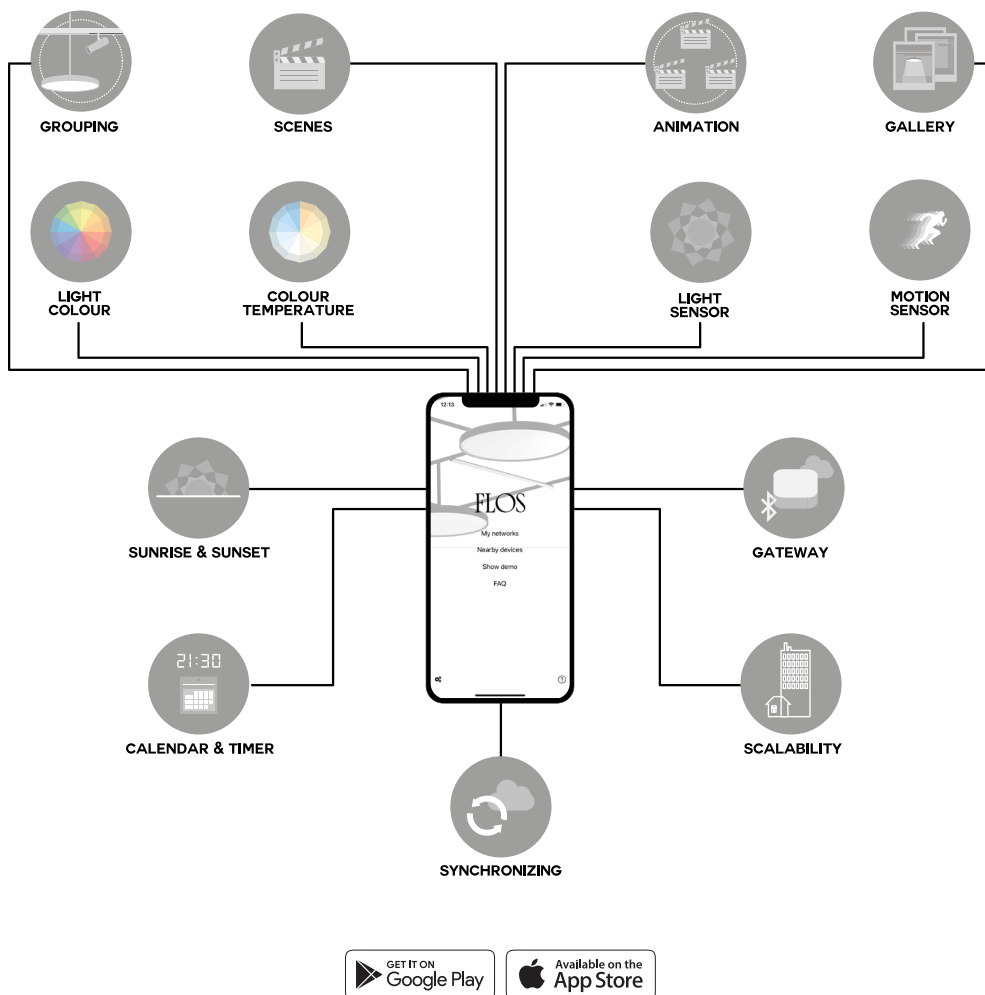
System Overview

Casambi is an advanced lighting control solution based on Bluetooth Low Energy (BLE). Bluetooth Low Energy is the only low power wireless technology in all modern smartphones, tablets and even smart watches, making it the only mainstream and future proof low power radio technology in the world.

Casambi technology can be integrated into luminaires, LED-drivers and even within LEDmodules or bulbs, creating an optimal solution in terms of ease of installation and functionality with minimal additional hardware and deployment costs.

Casambi technology provides a mesh network where all the intelligence of the system is replicated in every node. This means that there are no single points of failure.

FLOS Control app works as one of the user interfaces in a Casambi lighting control solution, the commissioning tool and also as a remote gateway. FLOS Control app works with iOS and Android devices, like smartphones, tablets and smartwatches. The app is free to download from Google Play and Apple App Store.



Using the FLOS Control App

First time use

FLOS Control app is easy to use. Follow these simple steps:

1. Download the app from Apple App Store or Google Play Store.
2. Switch on your Casambi enabled luminaires.
3. Open the app.
4. FLOS Control app will automatically find all Casambi enabled luminaires that are switched on.
5. Select Take all luminaires into use
6. FLOS Control app will automatically add all of the located luminaires to one network and open the 'Luminaires' tab.

FLOS Control app has four tabs: Luminaires, Gallery, Scenes and More. All of these will be covered in this document.

Taking luminaires into use

When first taking all luminaires into use the FLOS Control app will automatically create a network. All the luminaires are added to the same network so that they can be easily controlled from the Luminaires tab. One luminaire can only be in one network at a time. When a luminaire is part of a network it is in a 'paired' state and cannot be added to any other network before 'unpairing'. i.e. removing it from the network.

The network that is automatically created is always a Not shared network. This means that the network is only stored on the device that has created it and is not shared with other devices. If you would like to share the network you need to change the network sharing. Go to the More tab and select Network setup > Sharing settings. Select Sharing settings to change the sharing mode. There are four different sharing modes: Not Shared, Administrator only, Password protected and Open.

When you select Administrator only, Password protected or Open mode the network will be uploaded to cloud server and then it can be accessed also from other mobile devices. Remember to add also an email address and a password for the network so it can be recovered later if needed.

Luminaires

Basic Gestures

After you have taken your luminaires into use they are displayed in the Luminaires tab with a picture, name and the current brightness level.

Here are the basic gestures to control your lights:

To turn off or on your luminaire just tap the luminaire control.

Pan the luminaire control left or right to adjust the light level of the luminaire. The app will remember the last light level, so when you turn on the light on again it will return to the previous level.



Tip: use the basic gestures on the *All luminaires* icon to control all of your lamps simultaneously or *Nearby luminaires* icon to control luminaires that are close to you.

Using a group

After creating a group you can control all of the luminaires within it simultaneously. Use the normal gestures - select, pan and hold - to control the whole group.

If you would like to control luminaires separately, even if they are part of a group, just double tap the group to expand it and a separate screen will open which then allows you to control the luminaires separately.

Note that groups are predominantly designed for manual control, whereas scenes are designed primarily for automation. See the Scenes section later for more information.

Creating a group

There are two ways to create a group:

1. Select **Group** at the top of the screen and select the lamps for the group by tapping them. Create the group by tapping the 'folder' icon on top. At the top you can also see + or - icons. They can be used to select or deselect all luminaires. Tap **Done** to save the changes.
2. Select **Edit** at the top of the screen. Drag the lamp controls on top of each other to create a group.

If you want to add more lamps into the group, select **Edit** and drag and drop them on top of the group.

If you want to edit the group just select the group while in edit mode and it will open for editing.

In the edit window you can rename the group and remove lamps from it by dragging and dropping them outside the group area.

When you have finished editing the group, select **Done** and **Close** to go back to luminaires tab.

If you want to remove a group just select **Edit** or **Group** and then select the X sign in the corner of the group icon.

Editing a luminaire control

To edit a lamp control either double tap the lamp control you want to edit or tap on the **Edit** on top of the screen and select the lamp control you want to edit.

In the edit screen there are multiple options. You can adjust the luminaire's state, mode, smart-switching features and control hierarchy options etc.

MODES: Modes can be used to store different dimming levels, colours or colour temperatures. To edit a mode, select and hold the **Default** or *Mode X* text and an *Edit* option will appear. Select *Edit* and then adjust the luminaire's settings as needed. The mode will be automatically saved after adjusting and exiting the luminaire setting. NOTE: the *Default* option is used to set the luminaire state after a power cut.

SMART SWITCH and PUSH BUTTON: Smart-switching and Push Button allow you to select the mode for a luminaire's switch, depending on the type of Casambi device which you are using. For detailed information about *smart-switching* and push-buttons, please see the *Smart Switching* and Push Button sections of this document.

DEDICATED DAYLIGHT SENSOR: This option allows you to select a daylight sensor which can affect the luminaire. You can also adjust the *Daylight gain* for this luminaire using the slider.

STARTUP STATE FOR POWER ON: Allows you to set the luminaire to use either the *Default mode* (default light level) or *Last state* when switching on the luminaire. The *Last state* option will cause a luminaire to go to the same dimming level and colour which were previously in use before the luminaire was switched off.

You can also configure minimum and maximum dimming levels for the luminaire. The luminaire will always operate within these restrictions, although dimming to 0% will always turn off the luminaire.

MANUAL CONTROL: The *Behaviour* and *Timeout* options allow you to over-ride the network's default manual control settings and create individual options for an individual luminaire. Select *Behaviour* to change how manual control should work for the luminaire and select *Timeout* to over-ride the default timeout value.

NOTE: the Manual Control option will only appear if Use control hierarchy is enabled in the Control options section of the network settings.

INFORMATION: Within this section you can change the luminaire's name and create a new icon which replaces the luminaire's default image. The icon can be an existing picture from your device's photo gallery or you can take a new photo. The *Details* section also displays further technical information about the luminaire.

UNPAIR DEVICE / REPLACE DEVICE: Use the *Unpair device* option to remove a luminaire from a network. If a luminaire has become damaged and is powered off, the *Replace device* option can then be used to replace a luminaire. When using the *Replace device* option, an identical luminaire device must be used. This allows all of the previous settings for the luminaire to be used by the new luminaire device.

Changing a device's profile

A Casambi device's profile may need to be changed depending on the type of luminaire which it controls. For example, different profiles are required for 1ch dim, 2ch dim, RGB, TW etc. To change a devices profile:

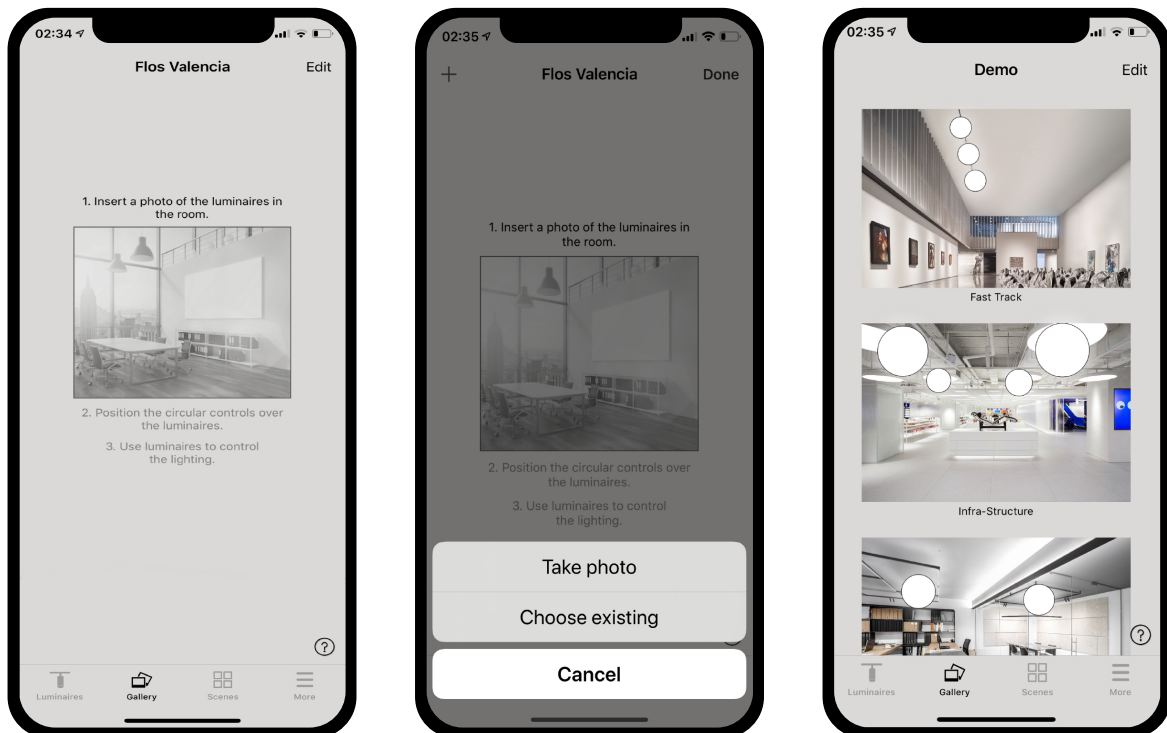
1. Unpair the device from your network
2. Select the device from the **Nearby Devices** list
3. Choose the **Change profile** option
4. Select the correct profile from the list
5. Once the profile has been configured, add the device to your network.

Gallery

First time use

The Gallery in FLOS Control app is the most intuitive way of controlling your luminaires. Take a picture of the room where your luminaires are and place lamp controls over them in the photograph.

To add the first photograph, select the black and white image and choose whether you want to take a photo or use an existing picture from your device's gallery.



After you have taken a photo or selected a photograph it is added to the Casambi Gallery.

The next step is to add lamp controls to the picture.

Tap on the **+** sign to open the selection screen containing your luminaires

Select a luminaire that is in the photograph and confirm your selection using **Done**. If the required luminaire is in a group, first double tap the group and you can then select the required luminaire.

A lamp control circle will appear in the centre of the photograph. Drag the control circle on top of the luminaire. You can resize the circle by pinching.

If you have more than one luminaire in the picture tap on **+** sign to add other controls. When you have added controls over all of the luminaires in the photograph, select **Done**.

To return to the Gallery and add more photographs, select **Close**.

If you would like to add more photographs, select the **+** on top of the Gallery screen. If the **+** sign is not visible, select **Edit** and the **+** sign will appear.

Tip: take a panorama picture of your room to capture more luminaires in one photo. Alternatively, use a graphical floor plan of your building to control luminaires based on their location.

Controlling luminaires

After adding at least one photo you can open it from Gallery and control the luminaires in it from the photograph. Tap on a photograph to open it in full screen.

Use the normal gestures, select, pan and hold on the lamp control circles to control the luminaires in the picture.

If you open the photograph in portrait orientation then related scenes are shown next to it. The scene icon is shown if even one lamp in the photograph is part of the scene.

Tip: pan or hold anywhere outside the control circles in the photograph to dim or change colour for all luminaires simultaneously.

Arranging the pictures

You can arrange the order and change the size of photographs in Gallery.

First select **Edit** at the top of the screen.

In edit mode you can drag and drop photographs to arrange them.

If you want to resize the photographs, move the orange bar up or down between the photographs. Note that this feature is only available for Apple iOS.

Confirm the changes by selecting **Done**.

Scenes

Scenes allow you to create different lighting situations for different occasions. Multiple luminaires can be controlled with a single scene to create perfect ambience for different needs. The same luminaire can also be used in multiple scenes. Note that a basic scene must first be created before time-based scenes and animations can be created. And a scene is active when it's highlighted.



Select **Edit** and **+** then enter a name for the scene and select **Add a scene**. Select and adjust the luminaires for this scene. With **+** you can add all luminaires and with **-** you can remove all luminaires from the scene. You can adjust the luminaires separately or if you want to have same dim level or colour for all you can use **Luminaires in scene** control to adjust all luminaires in the scene.

If you want to add luminaires that are in a group, double tap the group to open the selection screen. If you want to add all luminaires in the group to the scene tap on the **+** sign on left bottom corner. Or if you want to remove all the luminaires in the group from the scene tap on the **-** sign

To adjust all the luminaires in the group use basic gestures anywhere on the group area (in iOS app). In Android app close the group with **Close** and then you can adjust all luminaires in the group from the group control icon.

Luminaires can also be added from a gallery image. Simply open the appropriate gallery image and select the required luminaire(s).

To change the name, icon and colour for the scene control, select the settings icon in the bottom right corner. Use the colour palette to define a colour for the scene icon, if required. A scene can also be hidden from the user view by selecting the **Hidden** option. To return to the scenes tab, select **Done**.

To create more scenes just select the **+** sign at the top of the scenes tab. You can also copy scenes by selecting and holding an existing scene. A copy will then be created in edit mode and the number 2 will appended to the scene name.

Tip: also select any luminaires which should be off during the scene and adjust their brightness level to 0%.

Circadian scenes

Circadian rhythms can be enabled by selecting the graph icon.

A circadian rhythm allows automatic colour temperature management for basic scenes by using a response graph that displays the hours of the day and colour temperature. When a circadian profile is enabled for a scene it will look up the colour temperature from the response graph when the scene is activated and every minute after that, until the scene is deactivated. Note that it can be used simultaneously with daylight control.

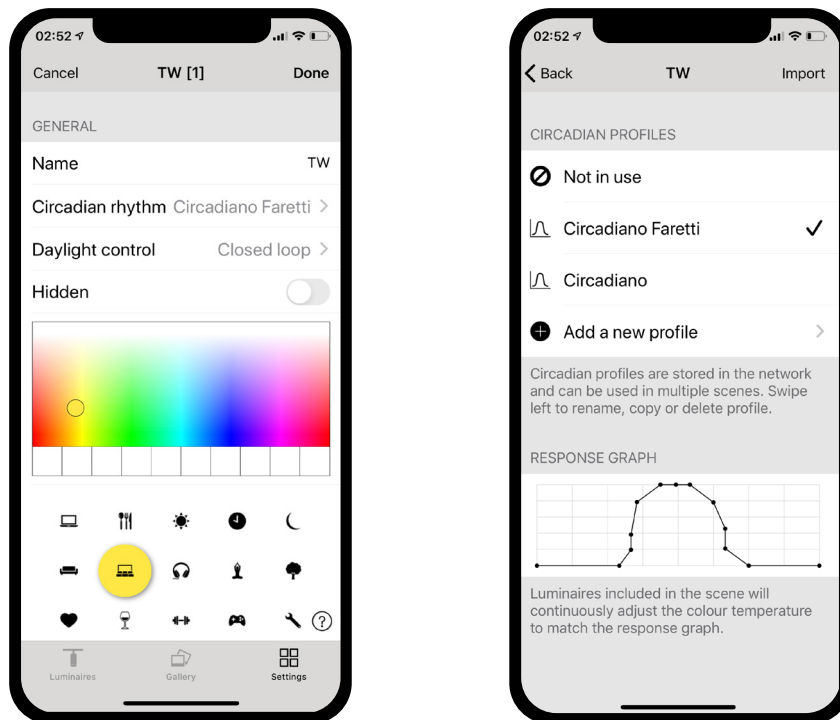
To add a circadian rhythm to a scene, select the Settings icon in the bottom right corner and then choose the Circadian rhythm setting. Select **Add a new profile** or the **Default** profile and then tap on the response graph below. You can then adjust the response graph to your requirements. The time of day can also be moved to help you select when your circadian rhythm should start and finish.

Select any area on the graph to create a new marker point. Use the rubbish bin icon to delete a highlighted graph marker point.

Use the **Switch Form** option to change the response graph form from a smooth graph to a stepped graph.

Multiple rhythms can also be created and rhythms from other networks listed on the same device can also be imported. To **Import** a rhythm from another network, simply select the Import option and you will then be presented with a list of circadian rhythms from the other networks on your device.

Select **Done** when your rhythm is complete.



Daylight control

To change the daylight control mode, select the Settings icon in the bottom right corner and then choose the Daylight control option. Below is a description of each available setting:

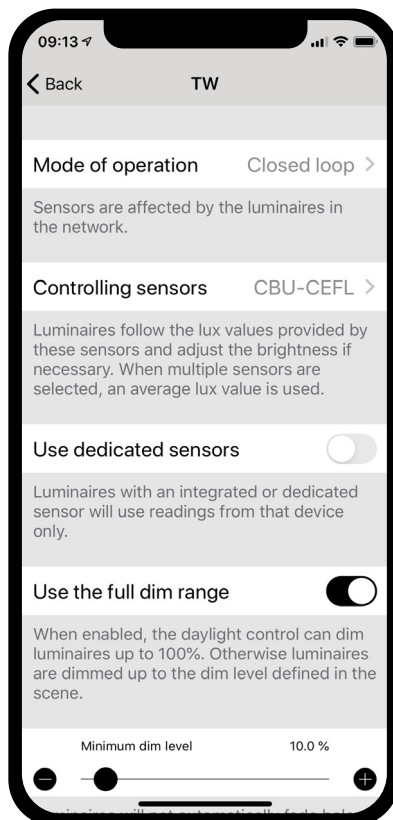
Basic (ON/OFF) Luminaires will switch ON or OFF based on two configurable Lux threshold levels. Sensors may or may not be affected by the nearby luminaires and the mode only operates when it is the highest priority item on control hierarchy. The scene's output is always defined by the dimming level(s) of the luminaires selected within the scene.

Open loop Luminaire output level (0-100%) is obtained by comparing the sensor's lux reading against a response graph. Sensors should not be affected by the luminaires in the network and this mode can operate on the control hierarchy even if it is not the highest priority item. Some examples of this are: a group of luminaires controlled by a daylight sensor installed in a separate location to the luminaires, or controlled by a sensor facing towards a window away from the luminaires.

Closed loop A target lux level is manually specified and the sensor will actively try to reach and maintain the lux level via a feedback loop (by observing the results of its own changes). Sensors are affected by luminaires and this mode can only operate when it is the highest priority item on the control hierarchy. An example of this is a group of luminaire controlled by a daylight sensor located in the same area as the luminaires.

External Similar to the open loop option, but is based on a 0-100% dimming signal rather than a Lux level. This option is designed to be used to combine a Casambi unit with a sensor which is not Casambi-activated. Examples include a CBU-ASD connected to a non-Casambi activated sensor, or when dimming is performed by an external DALI controller or DALI 2 sensor.

Casambi-ready sensors created by our partners already contain the Casambi firmware so there would be no need to use the External option with those devices.



Creating Animations

In the Scenes tab it is also possible to create animations. Animations are a special type of scene that fade from scene to scene. Animations can be activated in the same way as standard scenes and it is also possible to set animations to repeat.

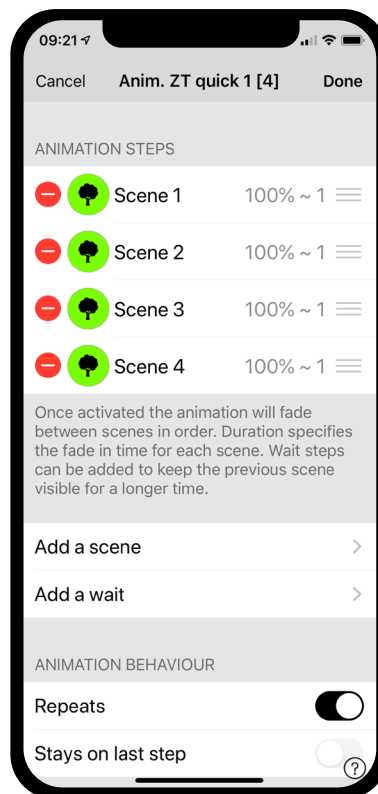
Select **Edit** and then the **+** in the top right corner. Then select **Add an animation**. Note: at least one scene must already exist in order to create an animation.

Next you need to add animation steps. Steps are scenes and waiting times. You can add as many steps as you like.

Example animations:

Add Scene Red, fade time 10 sec
 Add wait 3 min
 Add Scene Blue, fade time 10 sec
 Add wait 5 min
 Add Scene All Off, fade time 10 sec

This animation above will fade in to scene Red within 10 seconds and Red will be active for 3 minutes. Then the scene Red will fade into scene Blue in 10 seconds and Blue will be active for 5 minutes and fade out in 10 seconds.



Under the GENERAL section you can set the animation to repeat. You can also change the name, colour and icon. The animation can also be hidden from the Scenes tab view if needed. It will, however, reappear once **Edit** has been selected.

When you have finished editing the animation, select **Done**. The time displayed next to the animation's name is the total time length of the animation.

Please note that non-repeating animations can not be used with time-based scenes.

Tip: you can also use timers to control animations. This way an animation can be turned on and off based on time.

Example animations:

Add Scene Red, fade time 10 sec
 Add wait 3 min
 Add Scene Blue, fade time 10 sec
 Add wait 5 min
 Add Scene All Off, fade time 10 sec

This animation above will fade in to scene Red within 10 seconds and Red will be active for 3 minutes. Then the scene Red will fade into scene Blue in 10 seconds and Blue will be active for 5 minutes and fade out in 10 seconds.

Add Scene SHOWROOM1, 100% fade time 1 sec

Add wait 15 sec
 Add Scene SHOWROOM1, 0% fade time 1 sec
 Add Scene SHOWROOM2, 100% fade time 1 sec
 Add wait 15 sec
 Add Scene SHOWROOM2, 0% fade time 1 sec
 Add Scene SHOWROOM3, 100% fade time 1 sec
 Add wait 15 sec
 Add Scene SHOWROOM3, 0% fade time 1 sec
 Repeat ON

This animation above will fade in to scene SHOWROOM1 within 1 second and be active for 15 seconds before fading off (to 0%) within 1 second. Then the scene SHOWROOM2 will fade on in 1 second and remain active for 15 seconds before fading off (to 0%) within 1 second. Then the scene SHOWROOM3 will fade on in 1 second and remain active for 15 seconds before fading off (to 0%) within 1 second. The whole animation will then repeat itself.

Time-based scenes

Time-based scenes can be used to alter dimming levels of scenes at specific times. While this can also be achieved by using a timer, a time-based scene has its advantage in that it can be triggered so that a luminaire is not permanently on. For this reason they are primarily designed to be used with presence sensors.

For example:

A time-based scene (Kitchen lwr1 timed) is created to set scene Kitchen lower 1's dimming level at 40% between 08.00 and 21.00. Between 21.00 and 08.00, the dimming level will be 15% (to not disturb people if the scene is activated during the night).

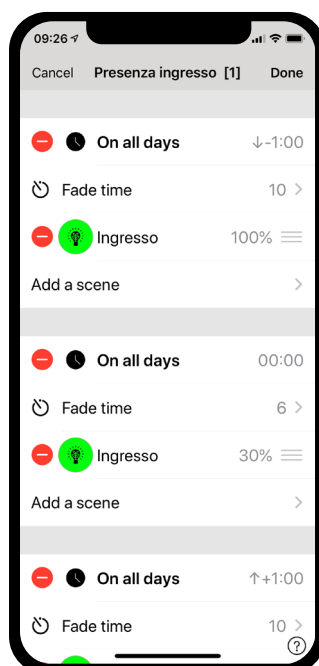
The scene is not running 24 hours / day. Instead, a presence sensor triggers scene Kitchen lwr1 timed whenever presence is detected. Depending on when the time-based scene is triggered, it then sets the dimming level of scene Kitchen lower 1 appropriately.

To create a time-based scene, follow the same procedure for a basic scene, but then choose:

- the time and days when it should alter the basic scene
- the fade time
- the basic scene
- the basic scene's dimming level

Multiple conditions can be added using the **Add a condition** option.

Please note that non-repeating animations can not be used with time-based scenes.



Timers

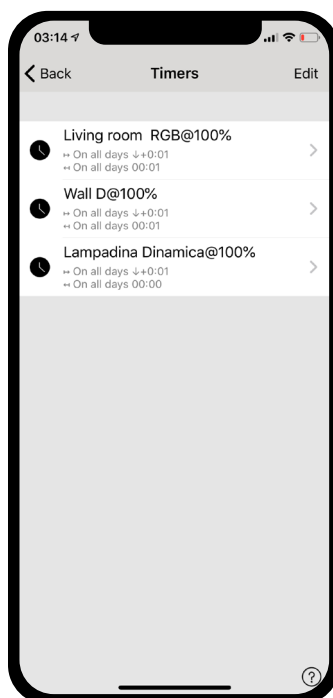
With the timer function you can create a list of timers that will turn scenes or animations on and off based on time and/or date. For example, you can set a presentation luminaire to activate during office hours or set corridor lights dim to a lower level during the night.

Go to *More* tab and select *Timers*. Create a new timer by selecting **Edit** on the left top corner and then **+** on the top right corner. Select the scene or animation you want to control with this timer.

Activate the *Switches ON* button and set the time when the scene should start. You can use weekdays or a specific date. For time you can set a time of day or use local sunrise and sunset to turn on the scene. To use sunrise/sunset the network location needs to be set. See the *Network setup* settings section for detailed instructions. Select **Done** to confirm the changes.

Select the *Switches OFF* option and select the time when the scene should turn off. The options available are the same as those available for the start time. You can also select **After** and set the length of time the scene will stay on. Select **Done** to confirm the changes.

Note that standard timer settings do not always require a start and stop time. For example, multiple timers could be configured to trigger the same scene to different dimming levels throughout a 24-hour period. Therefore only start times would be necessary because the timers would transfer from one to the next. This is not the case for timers using **Override presence**. See the explanation below.



It is also possible to set the Fade time for the scene. This means that when the scene is turned on the lights will slowly reach the light level in the scene. With faders you can change from one scene to other very smoothly.

The fader will start when the timer is turned on. This means that if you set the scene to come on at 14:05 and you set a fader for 30 seconds then the scene is at full brightness at 14:05:30. The scene also fades to off with the same time, so if the scene goes off at 15:00 the light will be fully off at 15:00:30.

If an installation requires that some timers operate at a higher priority in the Control Hierarchy, then you can enable the **Override presence** option. Note that a timer using Override Presence must always shave its own start and stop times, as it will operate on a higher level within the Control Hierarchy. See the Appendix for an explanation of the *Control Hierarchy*.

It is also possible to Enable/Disable a timer by using the **Enabled** button. Confirm your settings by selecting **Done**. After saving a timer it is possible to copy that timer. Open the timer again and select **Save as copy** from the bottom of the timer screen.

Casambi units will keep track of time when even one unit in the network is powered on all the time. In a situation where all units have been powered off, the network time needs to be set to the units again. In this situation please open the network in the FLOS Control app with modification rights to set the time again.

A timer's state can also be reactivated by selecting **Edit** and then selecting the refresh button in the top left corner of the Timers screen.

Switches

Within the Switches section, Casambi-enabled switches can be configured to control luminaires easily and wirelessly. Casambi-enabled switches and push-buttons appear under the Switches page after pairing them with the network. To use standard wall switches with Casambi, see the Smart Switching section in the Appendix.

Xpress switch

The Casambi Xpress is a wireless user interface that brings flexibility to interior design. The switch can be kept wherever the user needs it and it gives direct access to all the important Casambi lighting control functionalities.

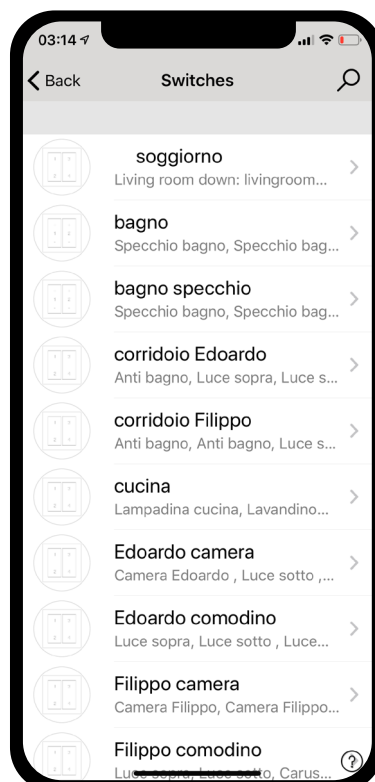
1. Press any two preset buttons on the Xpress and the FLOS Control app will automatically detect it (for example, buttons 1 and 3). If you have an existing network, Casambi will automatically suggest to add Xpress to that network. Select **Add to 'My Network'** button. If a network has not yet been created, select **Take into use**.

2. After you have added the Xpress switch to the network navigate to the More tab and select Switches to configure the numbered preset buttons.
3. Select the Xpress switch from the list of available switches and the configuration page will open. You can then assign a luminaire, scene, group, element or all luminaires to each button. It is also possible to assign resume automation options either for a group or the whole network.
4. Select the appropriate Use toggle function. When activated, will allow luminaires to be turned on and off. When deactivated, will prevent the switch from turning luminaires off.
5. Select the appropriate Long press all OFF function. This option allows any Xpress configurable button to be held down and turn off all luminaires in the network.

You can also rename the Xpress and change its icon to make identification easier. Select **Done** to save the settings.

After configuring the buttons they will now control the assigned scene, luminaire, group, element or resume automation (see *Control Hierarchy*).

The first press will turn on the scene, lamp or group and second press will turn it off. The + and - buttons allow you to dim your selected device(s) up or down. The up and down buttons can be used to change colour temperature (of a tuneable white luminaire) and direct/indirect lighting ratio, provided that your luminaire supports these features.



Unpairing a Xpress

To begin the unpairing process, first press any two preset buttons on the switch. There are two ways to unpair a Xpress switch: by selecting the *Unpair device* option within the switch settings page, or by swiping the device's row to the left (in iOS) or tap and hold (in Android) in the switches main page.

Make sure that the Xpress switch has the amber LEDs on when you do the unpairing. You will also need to perform the steps quickly before the switch turns itself off (no LEDs on).

Sensors

Presence Sensors

In order to add a presence sensor to your network, the Use Control Hierarchy option must first be enabled. Once a presence sensor has been added to your network, it will appear on the Sensors page. For each sensor sensor, there are a number of options which can be selected:

- *Presence*
- *Presence/Absence*
- *Absence*
- *Resume automation (group)*
- *Resume automation*

Presence activates up to two scenes when the sensor has been triggered.

Presence/Absence activates up to two scenes when the sensor has been triggered, and then activates up to two scenes when absence has been detected.

Note: presence and absence scene(s) must control the same luminaire(s). An absence scene can not control different luminaires to those configured in the presence scene(s).

Absence removes manual control from selected scene(s) once presence is no longer detected and the linger time has expired (see below).

Linger time is the delay between presence no longer being detected and the controlled scene(s) expiring.

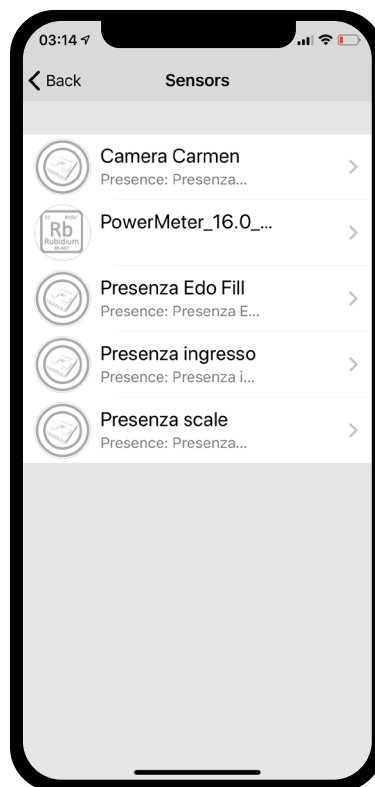
Fade time is the time it takes the expired scene(s) to dim to 0%.

Removes manual control allows any previous manual control of a scene to be removed once presence is no longer detected and the linger time has also passed.

The two **Resume automation** options can be used to remove manual control from a specific group of luminaires or all luminaires in your network.

Once a sensor has a presence type assigned to it, it will display a 'walking' icon next to the sensor's name when it is presence is detected.

Note: 230VAC-switching PIR sensors can also be used with the CBU-ASD or CBU-TED to act as a Casambienabled sensor.



Daylight Sensors.

From the Sensors list ,you can configure the sensitivity and tolerance of a daylight sensor.

Altering Sensitivity will determine the reaction time of the sensor when changes in detected illumination occur.

The Tolerance determines how large change in illumination is required before the sensor will react.

The daylight sensor can also be calibrated. This CALIBRATION may be needed because

the lux value received by the sensor is typically not the same as the actual lux received on the surface below it.

To enter a calibration value tap on the Current value and then enter the actual lux value measured on the surface of interest.

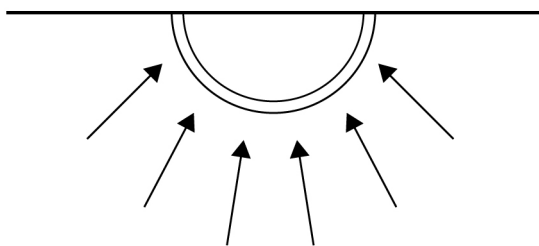
Closed loop, and other daylight sensor configuration options and settings are done when creating a daylight scene.

Note: If multiple lux sensors control the same luminaire, the average of all lux readings will be the used value.

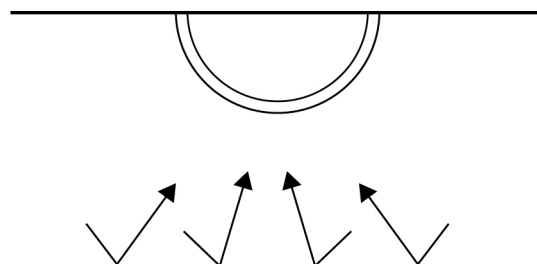
Daylight Sensors Calibration & SetUp.

In most circumstances, calibrating a daylight sensor will not be needed as the sensor technology is highly likely to be accurate enough. However, if calibration is needed, then it first needs to be determined whether the sensor should be calibrated for measuring incidental or reflected light.

Incidental (direct) light



Reflected light



Calibrating a sensor for incidental (direct) light

Incidental light is the total amount of light being received by the sensor

This is the default measurement and is the lux reading that a sensor will display in the Casambi app. If needed, the below steps should be followed to calibrate the sensor reading in the Casambi app:

1. Place a lux meter as close as possible to the lens of the Casambi enabled sensor, ensuring that the lux meter's lens is pointing in exactly the same direction as the lens of the Casambi sensor being calibrated.
2. Measure the amount of light received by the lux meter.
3. Open your network in the Casambi app and navigate to More > Sensors.
4. Select the desired sensor.
5. Select Daylight sensor.
6. Select Current value and enter the value of lux measured by your lux meter.
7. Select **OK** and then **Done** to complete the calibration.

Push **Back** to return to the sensors view

When using the sensor in any of the daylight scene modes if the sensor is calibrated for direct light, using Closed loop mode for constant light control will try to maintain an overall total amount of light for the whole area in which the sensor is situated.

Calibrating a sensor for reflected light

Reflective light is light that is being received on the surface of an object, or objects placed directly opposite the lens of the Casambi enabled sensor.

If you would like to try to maintain a specific amount of light on that object or surface you will need to calibrate the sensor lux value shown in the Casambi app. The accuracy of the lux measurement will be reduced because the accuracy will be reduced the further the measured point is from the surface of the sensor lens.

To calibrate for this type of use:

1. Place a lux meter on the surface of the desired object with the lens of the lux meter directed straight at the lens of the Casambi enabled sensor that is to be calibrated.
2. Measure the amount of light received by the lux meter (this value is likely to differ significantly from the lux value received by the Casambi enabled sensor and displayed in the app).
3. Open your network in the Casambi app and navigate to More > Sensors.
4. Select the desired sensor.

5. Select Daylight sensor.
6. Select Current value and enter the value of lux measured by your lux meter.
7. Select **OK** and then **Done** to complete the calibration.
8. Push **Back** to return to the sensors view

If you now are using the Closed loop daylight mode in a scene, the Casambi enabled sensor will attempt to maintain a constant amount of light on the surface of the object.

When calibrating a sensor that is to control the amount of artificial light in an area, it is important to remember to exclude as much natural light from the area as possible during the calibration. Ideally there should be no natural light. Also, it is best practice to try to have the installation in as final state as possible with all carpets, decks and other items in their final places. This enables the most accurate calibration and the best dimming range for the controlled luminaires in the widest possible variety of situations.

Regardless of the calibration method chosen, it is necessary to consider if one or multiple sensors distributed through an area would be required to archive the best possible lighting control solution. Each individual sensor may need calibration for the lighting conditions applicable in their specific area of installation.

Note also that if multiple daylight sensors are configured to be controlling the same luminaires in an area then the lux values used by the Casambi app will be the average of all sensor measured lux values.

Sensitivity and tolerance.

Within the Daylight sensor settings, you will see options for adjusting the sensor Sensitivity and Tolerance.

The Sensitivity defines how quickly the sensor will react to changes in illumination. The higher the sensitivity the faster the reaction time. Lower sensitivities are usually chosen to avoid possibly annoying situations of luminaires dimming up and down every time a cloud happens to cover the sun for a few seconds.

The Tolerance defines how large the changes in measured lux value need to be before the sensor will react and make adjustments to the lighting. A larger value requires larger measured lux changes.

Daylight gain.

Daylight gain is mainly used, for example, if there are multiple luminaires in an area being controlled from a single daylight sensor.

Daylight gain is an estimate of the amount of available natural light that can be present in the same area that is illuminated by a single luminaire.

Configuring different daylight gains for the luminaires in an area would have the effect of providing a more consistent illumination throughout a room if controlled by a single lux sensor. Luminaires installed near a window will dim to a lower level than luminaires situated further inside the room, but users of the area will perceive that there is a similar amount of total light available throughout all areas across the entire room.

A recommended method to determine the estimate of daylight gain for different areas would be to use a lux meter to take readings at different points without any artificial illumination being active.

Each luminaire in a Casambi network can have its own daylight gain defined if desired. As standard the Daylight gain for luminaires is set to 100%.

To set the daylight gain for a luminaire, navigate to the Luminaires tab, push **Edit** and then select the luminaire you wish to set the daylight gain for. Scroll to the Daylight gain slider and adjust this to reflect the approximate amount of natural light that you consider is present in the same areas that the luminaire illuminates. Push **Back** when finished and **Done** to return to the Luminaires tab view.

Dedicated daylight sensor.

If a luminaire has an inbuilt daylight sensor, you may wish that luminaire to only respond to values from that sensor. Alternatively, you may have a situation where you are using multiple daylight sensors, but you only wish to have one specific sensor affecting a particular luminaire. In such cases you can configure individual luminaires to react only to a specific sensor.

From the Luminaires tab select **Edit** and then select the luminaire you wish to configure. Scroll to Dedicated daylight sensor, tap and choose the correct controlling sensor from the displayed list. Push **Done**, then **Back** then **Done** again to return to the Luminaires tab view.

When configuring the Daylight control, Mode of operation as part of a scene, you will see an option to Use dedicated sensors. If this is enabled, a luminaire that has had a dedicated sensor assigned to it will only respond to values from that sensor. Luminaires that have not had any dedicated sensor assigned will be controlled by multiple sensors, if used.

Sensor placement considerations.

To achieve the best performance from a daylight harvesting installation it is important for the location of the lux sensors to be carefully considered. The performance of the lighting control will depend totally on what the sensors “see”. This is particularly important where you have lighting applications relying on side-lighting, reflected light, diffused daylight or where direct sunlight can influence the sensor performance. It may be that simply a small change in sensor location or orientation can affect the overall system performance.

Ideally sensors should be positioned and orientated so that they are shielded from any direct glare. Indoor sensors should not typically be placed beside a window. They are best orientated to only be receiving indirect illumination from daylight.

The lux sensor should be placed so that it receives a representative sample of the available daylight in an area. Having a too wide field of view can result in detection direct sunlight or illumination from light sources outside of the zone being controlled. A too narrow field of view can have the effect of making the sensor too sensitive to local changes in brightness.

Gateway

Internet gateway

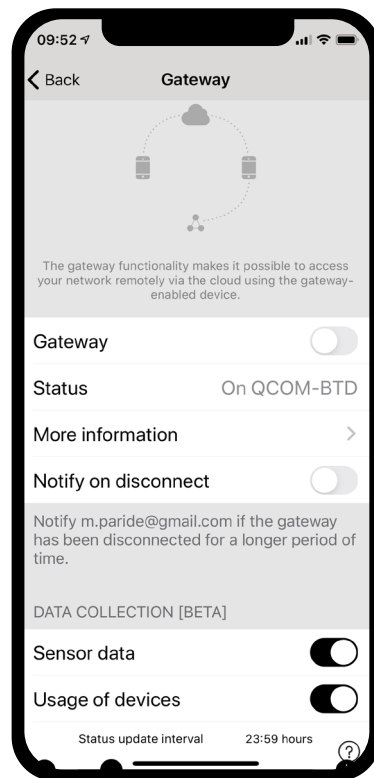
Using a gateway it is possible to control Casambi-enabled luminaires remotely. A network administrator can also remotely configure the network.

To enable remote access, a Casambi network needs to have one iOS or Android device acting as a gateway and the sharing settings for the network need to be Open, Password protected or Administrator only.

To set up the gateway device select Gateway in the Network Setup screen. If the Gateway option is grey and can not be selected, make sure the sharing setting is not set to Not shared.

Select the Gateway button to enable the gateway on the device. If you have added an email address for the network you can also enable notifications to that email address if the gateway is disconnected for some reason.

Note: The Casambi gateway feature relies on third-party devices and connections. Because of this, a continuous and flawless operation can not be guaranteed.



After enabling the gateway please make sure that:

1. The FLOS Control app is always open on the gateway device. The app can be in the background when using iOS devices, but the app must be active and at the foreground when using Android devices.
2. The gateway device has a reliable Internet connection at all times.
3. The gateway device has a reliable Bluetooth connection to at least one Casambi device in the network.
4. Disable all automatic updates on gateway device.
5. The gateway device is always plugged in to a power source.
6. Disable all power-saving options from the device that might cause the Bluetooth or Internet connection to close.

DALI gateway

A CBU-DCS can be used to act as a gateway between a wired DALI network (controlled by DALI controller hardware and software) and a wireless Casambi network. Before connecting the CBU-DCS, it must first be in an unpaired state and the CBU-DCS DALI Gateway profile must be applied (see the Luminaires section for unpairing and profile changing instructions). The CBU-DCS must be connected to the same powered DALI

bus as the DALI controller. Once physically connected, the CBU-DCS should then be paired to the existing Casambi network.

Any device which exists in the Casambi network will then appear as standard DALI gear to the wired DALI controller software. Each Casambi device uses one DALI address but the CBU-DCS DALI gateway does not; instead it appears transparent to the DALI controller software. Casambi devices which control more than one channel appear as single-channel DALI gear to the DALI controller software, therefore the separate channels can not be dimmed individually by the DALI controller software, only by the FLOS Control app.

Casambi devices which use TW, RGB or XY controls are presented to the DALI controller software as DALI or DALI DT8 (Tc/RGB/XY) devices.

If your Casambi network exceeds the DALI limitation of 64 devices, you can simply add multiple CBU-DCS DALI gateways in your existing Casambi network. The DALI controller software will then be able to address all of your Casambi devices. All Casambi devices can be addressed by the DALI controller software, regardless of what type of Casambi device they are. i.e. the Casambi device does not need to be a DALI-controllable device.

As with other Casambi devices, the gateway device can be renamed and assigned its own icon.

DALI gateway - Gateway Parameters

Control Scope defines which devices are passed through the DALI gateway to the DALI control software. The default option is All luminaries. However, this can also be restricted to a single scene, in which you can define the devices which you wish to be seen by the DALI controller software.

Control priority defines the level at which the gateway will prioritise commands sent by the DALI control software:

- **Higher than manual** prevents the Casambi system (apps, sensors, switches, timers) from controlling Casambi devices. Casambi devices can only be controlled by the DALI controller software.
- **Manual** is the default setting. It allows control of Casambi devices by both the DALI controller software and the FLOS Control app.
- **Higher than automation** allows the DALI controller software to control lights which are under automation but not those manually controlled by the FLOS Control app.
- **Lowest-priority automation** allows the DALI controller software to control lights

at the lowest level of automation. Any luminaire control from the FLOS Control app (manual, timers or sensor automation) will take over the externally set dimming levels.

The resume automation button (@) must be used to allow the FLOS Control app to regain full control if the Higher than automation or Lowest-priority automation options are used.

Export sensors allows Casambi-ready sensors to be discovered and consumed through the DALI gateway as instances of DALI-2 sensors (light sensor, occupancy).

Export switches allows inputs from Casambi EnOcean switches and push-button enabled fixtures to be delivered through the DALI gateway as events of DALI-2 push-button devices.

Network Setup

When you first take your luminaires into use the FLOS Control app will automatically create a network and add the luminaires to that network. For more information about Classic and Evolution networks, please see the Appendix.

By default the network is *Not Shared* which means that its configuration is only stored on the device used to create it. This means that only that device can control the luminaires. Please see the *Sharing Settings* section if you want to use multiple devices to control the same Casambi network.

To change the network settings select the *More page > Network Setup > Network Settings*. There you can change the network name, set the time zone and the network's location. The location needs to be set if you wish to create timers using local sunrise or sunset as a trigger.

You can also select if you would like the nearby luminaires icon to be visible in the app. This selection will hide the *Nearby Luminaires* icon for all users in this network.

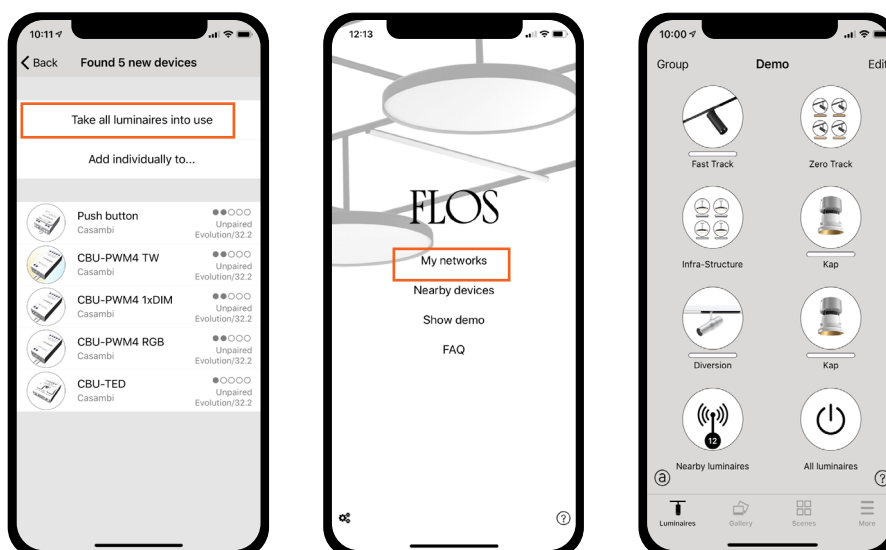
The network mode and network frequencies can only be configured when creating a network for the first time; it can not be changed after a network has been taken into use. The default mode for Classic networks is *Balanced* and that should normally be used for most networks. Evolution networks use *Better performance* as their default mode. If your network contains a very large amount of luminaires (100+) and they are placed physically close to each other, then the *Better Performance* option can be used, regardless of the network type. See *Change networks* section for instructions how to create a new network.

Network frequencies are always chosen in pairs. Communication is always made on

both frequencies for redundancy in the event of interference in the mesh network caused by an external source.

Once your network set-up is complete, select **Save** to finish.

Tip: it is possible to have several networks in one mobile device. All created and visited networks will be listed in the Networks screen.



Sharing settings

To control luminaires also with other devices the sharing settings need to be changed. Tap on Sharing settings and then Sharing. There are four different options for network sharing:

Not shared Access to the network is only possible using the device with which it was originally created and not uploaded to cloud service.

Administrator only The network is not automatically visible to any devices but it is possible to log in with admin email and password from the networks screen. Everyone who is able to log in, is also able to modify network. The Networks screen can be accessed from *More > Change network* or from the app's start page by selecting *My Networks*.

Password protected The network is automatically found by other devices but users need a password to access and control luminaires. If users want to modify the network i.e. add more luminaires, or create scenes, they need to have the administrator password. This type of network has two access levels: visitor and administrator. Visitors can not make changes but they can control lights.

Open The network is automatically found by other devices and there is no password for

visitor access. If a user wants to modify the network they need the administrator password. This type of network also has two access levels: visitor and administrator.

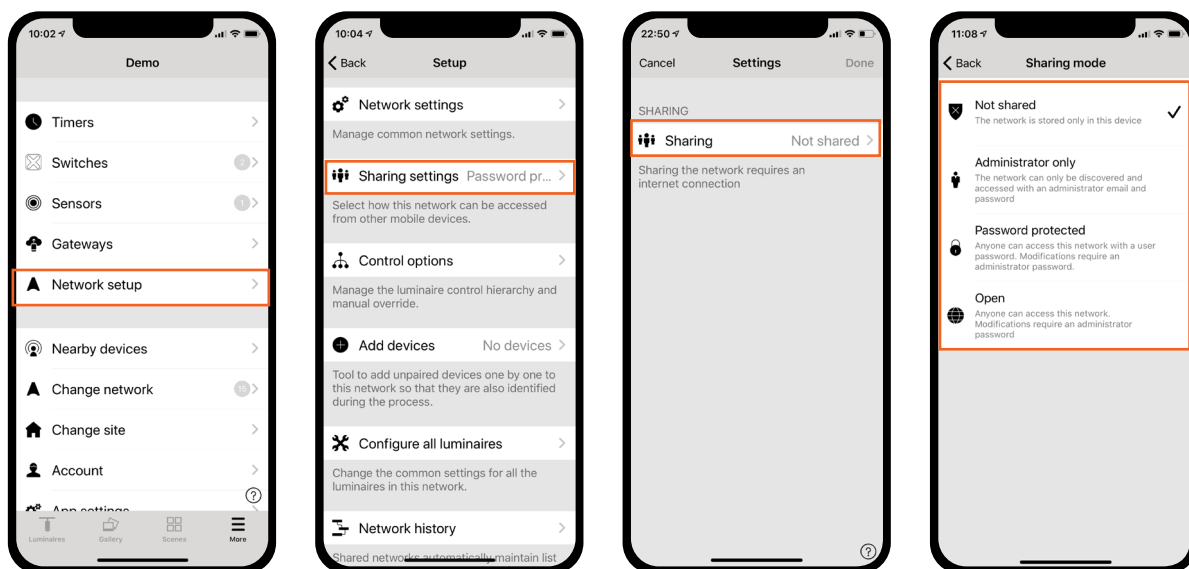
Note: In order to be able to recover lost passwords, an administrator email address and password must always be used when creating a network.

After changing the network sharing mode the administrator email and password need to be set for the network. A visitor password is needed for a password protected network so that other devices can access the network.

To save the new settings select **Save**. If the sharing setting is something other than *Not Shared* all the changes are uploaded to Casambi cloud service and the network can be accessed from other devices.

See the *Change network* section of this guide for more information about removing and deleting networks.

Note that Evolution networks offer three levels of user access: user, manager and administrator. Managers can configure the network but not create new user accounts. Only an administrator account can create new accounts.



Control options

The Control options page allows you to define the basic and automation controls (Control Hierarchy) of a Casambi network.

Fade times These three options allow you to alter the fade time for powering up a Casambi luminaire, turning a luminaire on/off (with the FLOS Control app or Xpress

switch) and the dimming time when using Xpress + or - buttons.

Remember last state Activating this option will allow luminaires to return to their previous state when toggled on.

Note: this is not the same as a luminaire's Startup State For Power On - Default mode, which is used after a luminaire has lost power.

Activate timers on startup When a luminaire is powered on and has received the network time, any timers associated with it will then activate.

Use control hierarchy For a detailed explanation of the Control hierarchy, its priorities and its use with sensors and timers, please select the **More information** option, which can be found directly below the User control hierarchy option. The same information can be found in the Appendix of this guide.

When the Control hierarchy is activated, a number of options will then become available and a @ button will appear in the lower left of the Luminaires page to allow the end-user to manually resume network automation if needed.

The Control hierarchy options are:

Manual control behaviour This option selects how luminaires should react to manual control and if/when network automation should resume.

- **Always timeout** will always cause manual control of a luminaire to expire (based on the timeout period).
- **Timeout if automation waiting** will cause manual control of a luminaire to expire only if it is being controlled by the control hierarchy. For example, a presence sensor or a timer.
- **Don't timeout** will prevent any network automation from affecting any manually-controlled luminaires.

Manual control fade out This option sets the time within which a luminaire will fade once manual control has expired.

Manual control timeouts The timeout value is the length of time a luminaire can remain under manually control before network automation resumes.

A separate timeout value can be set for each individual week day, its evening and night. The default values are 2 hours in the day and 30 minutes in the evening, but these can be changed to suit your installation.

The **Use these settings for the whole week** option allows you to set the same day and night values for the entire week, rather than have to manually edit the values for each week day.

Performance & Security

The following options are only visible for Evolution networks:

Payload size & Bandwidth allocation - these options should be left alone unless otherwise instructed by the Casambi Support team.

Allow unpair - allows devices to be unpaired from a network using the Unpair device option within a device's own settings.

Allow flick unpair - allows devices to be unpaired by using the power cycling process (usually by flicking a wall switch off and on) to unpair a device. This process is used when you need to unpair a device belonging to a network to which you do not have access.

Allow Utility unpair - this option is reserved for Casambi partners.

Note that if all unpair options are disabled and you are for some reason unable to access the network to which a device is paired, you will be unable to unpair the device in any way and it will become unusable.

Allow firmware updates - allows or prevents firmware update, even if a new firmware version is available.

Devices always visible - this hides or displays devices within the Nearby Devices list. When the option is disabled, it is then possible to choose an initial amount of time for which the devices will be visible after power-on. The minimum amount of time is one minute. This is to allow the device to be unpaired from the Nearby Devices list if needed.

Add devices

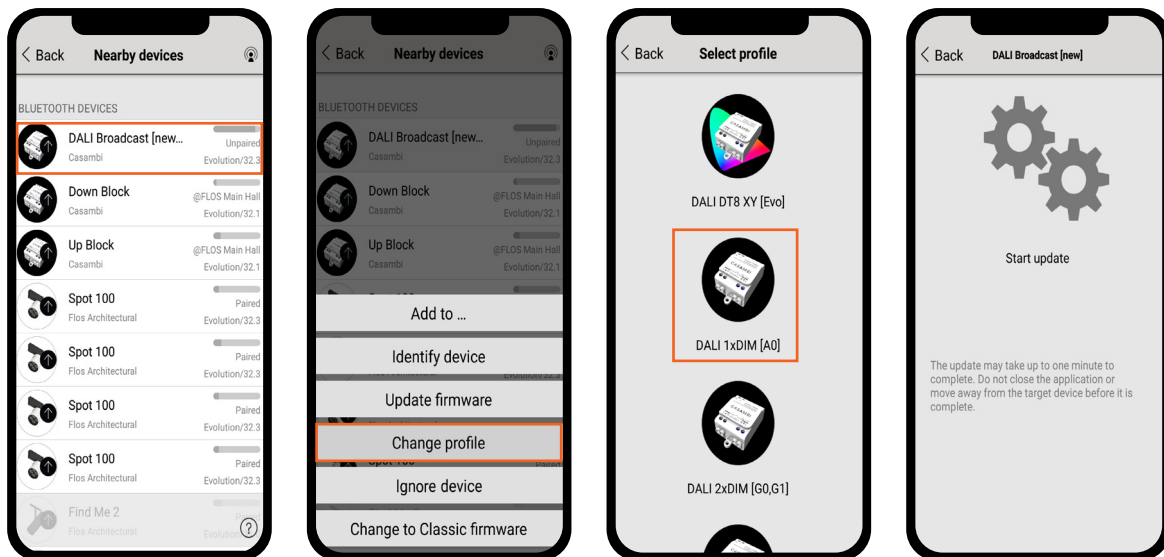
The Add devices option can be used as a commissioning tool to add devices to a network and identify them at the same time. When adding each device, you can:

- select a network
- select the groups to which it will belong

- create and add it to a new group
- change the device profile
- rename the device
- skip the device (and not add it to your network)

Configuration for CASAMBI module 60.9392 for DALI systems

- Unpair the module from any network;
- Go to nearby devices and select the module
- Then select “Change Profile”
- Select **DALI 1xDIM[A0]**
- Pair to the network



Configure all luminaires

It is possible to configure all luminaires in one network by selecting the *Configure all luminaires* option under *Network Setup*.

There are five settings that can be changed for all luminaires:

- **Disable Smart Switch** Disables smart switch option for all lamps.
- **Startup -> last state** Sets startup state to last state on all lamps.

- **Startup -> default mode** Sets startup state to default mode on all lamps.
- **Save current state** Sets current state as the default mode for all lamps.
- **Reset network** Can be used to reset the control hierarchy and mesh network. For example, you may need to reset the hierarchy after removing a timer.

Network history

Network history allows two recovery options: backups and snapshots.

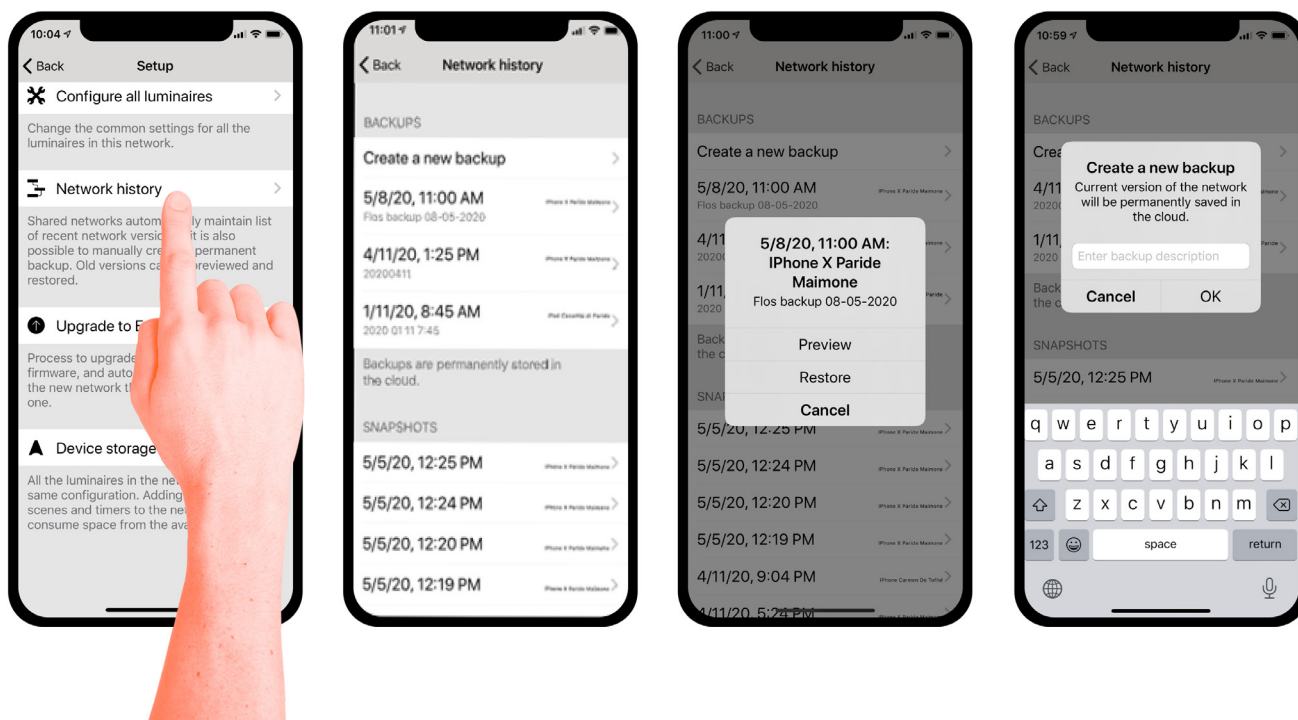
The difference between the two is that snapshots are over-ridden, whereas backups are stored permanently on the server and can not be removed.

Once a total of fifty snapshots have been saved on the mobile device, the oldest will then be removed to allow space for the newest. A new snapshot is taken each time a network configuration change is made.

To create a permanent backup, select **Create a new backup** and then enter a description for the backup. A date and timestamp will automatically be added to the backup. The device on which the backup/snapshot was taken is also shown.

To recover a backup or a snapshot, first select the backup or snapshot. You will then be prompted with a small menu where your options are *Preview*, *Restore* and *Cancel*. Selecting *Preview* shows you a visual example of how the configure will look if you decide to restore that particular backup or snapshot.

Select *Leave* to leave the *Preview* image. You can then decide to *Restore* the backup/snapshot or *Cancel*.



Upgrade to Evolution firmware

For more information on the benefits of using an Evolution network, see the *Change network* section of this user guide.

Before updating to an Evolution network, please ensure two things:

1. Your devices must be Evolution compatible. You can check this by viewing your *Nearby Devices* list. The devices in your network must all display a small 'Classic' text close to the firmware version and network name. If you can not see the Classic text, then your device is not compatible with Evolution networks.
2. Use the same radio settings (Balanced/Better Performance) for your new Evolution network that you used with your current Classic network.

To start the upgrade process, select the *Upgrade to Evolution firmware* option.

A new *Network upgrade* window will open, where you will have the option to **Start** or to go **Back**. Select the **Start** option to continue at which point your network's devices will be checked for Evolution compatibility. You will be prompted with names of any devices which are not compatible, which will then need to be changed to new Evolution-compatible devices.

If all of the devices are compatible, the firmware of each device will then be updated. This process may take some time if you have many devices in your network and you may see a *Waiting for devices 1/x* message.

At this point it is still possible to select **Cancel the upgrade** or **Back** (in the top left corner). One can also see the update progress (1 - 100%) of the Casambi devices in the Luminaires tab. Navigate back to *Upgrade to Evolution firmware* to continue with the upgrade.

Once all devices have been upgraded, a Update ready message is displayed. Select **Continue** (in the top right corner) to check and configure the new network's details and select **Done** once complete.

Again, select **Continue** to continue with the network upgrade. The FLOS Control app will prompt you with a warning regarding rolling back to Classic networks: an Evolution network can not be rolled back; you need to create a new Classic network rather than roll back. You must select **OK** to this prompt in order to continue.

The upgrade process will now unpair all devices from the Classic network and pair the devices to the new Evolution network.

If your network contains a large amount of devices, it is advised to physically move around at the installation area in order to help the FLOS Control app find all of the devices in the network.

The upgrade process ends when Upgrade complete is displayed and you can close the upgrade process by selecting **Done**.

Device storage used

This is not an option but instead displays the amount of storage used on each Casambi device to store the network configuration.

Nearby Devices

In the Nearby devices page you can see a list of all Casambi-enabled devices that are close-by.

In the list you can see the device's name, vendor, network type, firmware version, signal strength and pairing state or network name. If you have access to the network with which the device is paired, the network name will be displayed. Otherwise, *Paired* will be displayed.

The list is initially sorted so that un-paired devices first appear at the top of the list (as long as they are within range of the mobile device). The remaining devices are then displayed in order of network name. This view is also seen when selecting **Aa** from the top right corner of the page. Alternatively, selecting the antenna icon (from the top right corner) will then display all devices based on their signal strength: closest at the top, lowest at the bottom, regardless of whether the devices are paired or not.

When you select a luminaire from the list, you can see the options that are available, such as: *Add to a network, Unpair, Identify device, Change profile, Update firmware or Update to Classic/Evolution firmware* etc.

In this screen you can also check if there are any updates available for your Casambi-enabled device. Just select the **Check for updates** option at the bottom of the Nearby devices page and the FLOS Control app will connect to the cloud service and look for updates. If there is an update available you will then see an arrow above your device icon.

The latest firmware version can be seen at the bottom of page by selecting **Latest firmware version**. This will also display release notes for each software release.

Change Network

You can see the networks stored on your mobile device from the **Change network** page. The **Change network** page can be accessed by selecting **More > Change Network**, or from the start page by selecting **My Networks**.

In the list, all networks that have nearby powered-on devices, i.e. online networks, will displayed a black icon and offline networks display a grey icon. Choose a network by selecting the network name.

There are two options to remove a network from your network list:

1. You can 'forget' a network from the list. This option will not delete the network from the cloud server. To forget a network, swipe to the left (in iOS) or tap and hold (in Android) on top of the network name and the **Forget Network** option will appear.
2. You can delete a network from the list. This option will delete the network from both your FLOS Control app and the cloud server, which then prevents any other devices from using the network. To delete a network from the list, swipe to the left (in iOS) or tap and hold (in Android) on top of the network name and the **Delete Network** option will appear.

From this screen it is also possible to create new networks and log into networks with an administrator email and password.

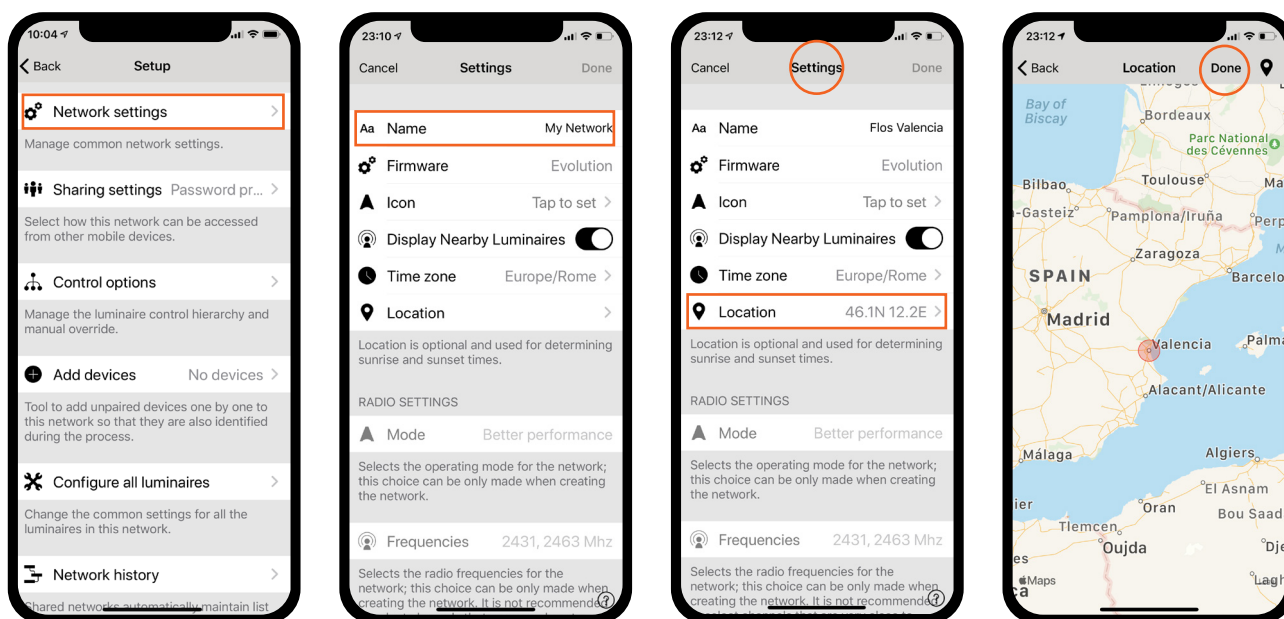
Select **Log in to network** and enter the administrator email and password. You can access a network with the administrator email and password even if you are not in the range of the luminaires in that network.

Tip: to use a network as a user after previously accessing a network as an administrator, use the forget the option and then log back into the network using user access.

To create a new network, select **Create new network**. You are then prompted to create either a Classic or Evolution network. For a description of Evolution networks, please see the Appendix section of this user guide.

After selecting your network type, the *New Network* page is shown. In the *New network* screen you can assign a network name, time zone, location, sharing settings, network mode and network frequencies.

Note that a Location must be set in order for sunset and sunrise times to work correctly.



The network *Mode* has two options: **Balanced** and **Better performance**. Most types of network should use **Balanced** mode. Although networks with a large number of devices which are very close to each other (i.e. over 100), **Better performance** mode can be selected.

Note that the default option for Evolution networks is **Better performance**. Better performance allows faster speed, but at the cost of reduced signal strength.

You can also share your network if needed. If you would like other devices to be able to access this network, select Sharing and then one of the following options:

Open, Password protected or Administrator only. For administrator access and password recovery, add an Administrator email and password.

Open - allows anyone with the FLOS Control app to control the network, but they can not make configuration changes.

Password protected - allows user and administrator access.

Administrator only - the network is hidden from the network list unless the end-user has access.

Note that Evolution networks offer three levels of user access: user, manager and administrator. Managers can configure the network but not create new user accounts. Only an administrator account can create new accounts.

Change Site

The *Site* feature allows you to control multiple networks simultaneously, create site-wide scenes and site-wide timers. For example, a building with three floors could be assigned a separate network for each floor and a site could then be used to connect the three floors and control them simultaneously.

In order to use this feature, it must first be enabled in the *App settings section of the app*. Each network in the site must also have a gateway enabled, and it is recommended that changes to a network should not be made once it has been added to a site.

To create a Site:

- enable the Site feature by selecting *More > App Settings > Enable Site features*.
- create a Site account: *More > Account > Create account* and enter the required details
- navigate to *More > Change site* (or select Sites from the app's start page)
- select **Create a new site**
- add a site name

The site should now appear in the list of available sites in your FLOS Control app.

Add networks to the site:

- Select *Add a network to site* and then select a network from the list. More networks can be added by selecting the **+** icon
- Select **Done** when you have added your networks to your site

After creating a site, more users can be added to it. To add more users select *More > Privileges* and tap on the + sign. Enter the user's email address. Note that new users also need to have a Site Account.

To delete a Site:

- Select the site name
- Navigate to *More > Site setup Delete site*

There are three different levels of privileges:

- **User (default)** Can use the Site or network but cannot make any modifications
- **Manager** Can use the Site or network and can modify settings but cannot assign privileges to the other accounts
- **Admin** Can modify all the settings and can also assign privileges to other accounts

Controlling one network

In the Networks page it is possible to control a network in the same way as an individual luminaire. When selecting the network, all the luminaires inside the network will switch on or off. It is also possible to dim the whole network with swiping left or right, and colour temperature (if supported) can be changed by swiping up and down.

Double tapping a network will open it and from within that view it is then possible to control the network's individual luminaires.

Scenes

In the Scenes page it is possible to create site-level scenes and animations.

Site-level scenes can include luminaires from different networks. A whole network can be added to a scene. Individual luminaires can be selected by opening a network by double tapping on the network icon. Creating and editing site-level scenes is done the same way as network-level scenes.

Timers

It is possible to create site-level timers that control sitelevel scenes. Site-level timers can be configured in the **Sites > More > Timers** page. Site-level timers are configured in the same way as network-level timers.

Resetting a network password

If you don't remember the password for your network it can be reset if you added a working administrator email address when setting up your network. After failing to enter the correct network password, the FLOS Control app will prompt you with a **Reset password** option. This option will then send a reset password link to the administrator email address specified in *Sharing settings*. The link will be active for 15 minutes.

App Settings

The App settings page offer the following options:

- change the FLOS Control app's language
- Automatically select the previous network you used
- enable/disable un-paired device notification
- enable/disable Bluetooth luminaires
- enable/disable a Philips Hue bridge
- enable/disable help buttons
- enable/disable the Site feature
- Send feedback to Casambi Technical Support (also used to request diagnostic trouble-shooting feed back)
- Reset application

Note: the Reset application option will reset all app settings, data and also delete any networks that you have visited from the device. Use this option with caution.

Help

This sections displays a list of Frequently asked questions (FAQ) and release notes for Casambi each software version.

Appendix

Smart Switch

With Smart Switch feature it is possible to use ordinary wall switches as dimmers or control scenes with them.

The Smart Switch mode for the luminaire's power switch can be configured in FLOS Control app. It is possible to assign different Smart Switch modes to each Casambi enabled luminaire.

For example you can use Smart Switch to switch on several lamps when you come home or switch the lighting to be suitable for dinner party or watching a movie.

Go to *Luminaires* page and double tap the luminaire control you want to assign a Smart Switch mode to.

Under *Smart Switch* section, select the current mode to open the Smart Switch selection. The default mode is *Dim and Save*.

The possible *Smart Switch* modes are:

- **Not in use**
- **Dim and save** Controls one luminaire
- **Cycle through modes** Controls one luminaire
- **Control scenes** Controls one or multiple luminaires
- **Cycle scenes** Controls one or multiple luminaires
- **Active / Standby** Controls one or multiple luminaires
- **Emergency** activates a scene which can not be manually over-riden until the controlling device is powered off (EVOLUTION NETWORKS ONLY)
- **Presence** Replicates a presence sensor
- **Presence/Absence** Replicates a presence/absence sensor
- **Absence** Replicates an absence sensor
- **Resume automation (group)** Resumes automation for a single group
- **Resume automation** Resumes automation for the whole network

Dim and Save

By default Casambi enabled luminaires are set to use the Dim and Save Smart Switching mode. This means you can use the luminaires power switch for dimming and setting the default light level.

To start the dimming process, quickly switch OFF and ON the light fixture from the wall or power switch. After flicking the switch the dimming process will start.

Once the light has reached the desired brightness level flick the power or wall switch quickly OFF and ON again to save the current level as the new default brightness for the luminaire.

It is always possible to change the default brightness by starting the dimming process again.

To set the default brightness level back to maximum, just flick the power or wall switch OFF and ON once and the dimming process will start again. When the brightness level reaches the maximum value it is set as a new default for the light fixture.

Cycle through modes

If you have set different modes for the luminaire with FLOS Control app you can assign the power switch to control them. Modes can be different dimming levels, colours or colour temperatures. Flicking the power switch quickly OFF and ON will cycle between the different modes and off: Default, Mode1, Mode2, Mode3, Off.

To set a mode, adjust the light level, colour temperature or colour of a luminaire to its desired level, hold down the mode number you want to save the settings to and you will then be prompted with a Save message. Repeat the steps to set more Modes.

After you have set all the desired modes tap the Smart Switching mode and select Cycle through modes from the list.

Tip: Create a standard step dimmer by storing Mode 1 = 75%, Mode 2 = 50% and Mode 3 = 25%.

Control Scenes

If you have created different scenes with the FLOS Control app you can control them from a single power switch.

Select which scene you want to control and turning on one luminaire will also turn on all other luminaires in that scene. Turning off the luminaire will turn off also all the luminaires that are currently controlled by that scene.

Select the 'Control Scenes' option from Smart Switching and tap on the desired scene to select it. Confirm changes with **Done**.

Cycle Scenes

If you have created different scenes with the FLOS Control app you can cycle through them and off with one power switch. Select the scenes you would like to cycle through and flick the power switch off and on to cycle the selected scenes.

Select the Cycle Scenes option from Smart Switching and tap on the desired scene or scenes to select them. It is also possible to change the order of the scenes by dragging and dropping. Confirm changes with **Done**.

Example: selected scenes Movie and Dinner:

Flick off/on > Movie scene activates

Flick off/on > Movie scene deactivates and Dinner scene activates

Flick off/on > Dinner scene deactivates

Active/Standby

With Active/Standby Smart Switching mode you can control two scenes that have the same luminaires in them.

Create two scenes, one active scene that should turn on when the controlling luminaire is turned on and one Standby scene that is turned on when the controlling luminaire is turned off. This mode can be used for example with motion sensors.

When motion is detected the luminaires go to full light level and when there is no motion the luminaires are dimmed to 30%.

Emergency

This option is only available with Evolution networks.

A scene is assigned to the Emergency smart-switching option. When the power to the device is on, the assigned scene becomes active and can not be disabled until the power to the device is removed. This feature can be used with a latching wall switch to create an 'emergency switch'.

Not in use

Sometimes it is necessary that the power switch doesn't do anything special when used. The Not in use option will disable our Smart Switching feature.

Push Button

If you use a push-button to control your luminaire(s), you can select the configuration for the push button in the FLOS Control app. You can use it to dim the luminaire or control several luminaires with one push button. It is possible to assign different modes to each Casambi enabled luminaire's push button.

For example, you can use the Push-button to switch on several luminaires when you come home or switch the lighting to be suitable for a dinner party or watching a movie.

Navigate to the Luminaire page and double tap the lamp control in which want to change the push-button configuration.

Under 'Push Button' tap the current mode to open the Push button selection. As a default the mode is 'Controls this lamp'

The Push Button modes are:

- **Not in use**
- **Controls a luminaire**
- **Controls an element**
- **Controls a group**
- **Control scene**
- **Controls all luminaires**
- **Adjust the temperature of a luminaire**
- **Adjust the temperature of a group**
- **Adjust the temperature of all the luminaires**
- **Cycle scenes**
- **Active/Standby - controls one or multiple luminaires**
- **Presence**
- **Presence/Absence**
- **Absence**
- **Resume automation (group)**
- **Resume automation**

Control Hierarchy

Control hierarchy allows co-operation with manual lighting control (app, switches and push buttons) and automated controls (presence sensors and timers). Each control action has a specific priority and if multiple controls are simultaneously controlling the luminaire it will adhering to most highest priority.

When the highest priority control is removed the luminaires will fade into next highest priority. If hierarchy is empty the luminaire will turn OFF.

Priority levels

- **Manual control (App, switches, push buttons)**
- **Date timers (with sensor override)**
- **Weekday timers (with sensor override)**
- **Presence sensors**
- **Date timers**
- **Weekday timers**

Manual control

Manual lighting control has the highest priority and will always override the automated control. It can be set to timeout or stay on luminaires indefinitely. There is a configurable timeouts for manual control assigned for day and night periods of each weekday.

When the timeout is reached the manual control will be removed and luminaire fades out to next highest priority control. Setting timeout value to zero will disable timeout, but in this case manual control is always hiding presence sensors and timers.

When luminaires display the @ icon it indicates that it is under automated lighting control (presence sensors or timers). Tapping the @ button will remove the manual control from all luminaires or opened group.

Presence sensors

Presence sensors operate on second highest priority and use scenes to control the luminaires. Up to ten sensors can simultaneously control individual luminaire, and when multiple sensors are affecting luminaire it will be following the presence scene with highest dim level.

Each presence sensor has a setting for linger time which dictates how long the scenes will stay on after presence is no longer detected. After linger time passes the associated luminaires will be faded over the configured duration.

Presence controls can be attached to smart switch, push button or dedicated presence sensors. Each action can have two scenes; typical use case is to use one scene for actual controlled area and another scene for associated emergency route. Note that if multiple scenes are used there should not be overlap between affected luminaires.

Presence control

Activates a scenes when presence is detected and deactivates it after presence is no longer detected.

Presence/Absence control

Activates a scene when presence is detected and changes to absence scene after presence is no longer detected. Note that absence scenes will only have effect those luminaires that were affected by presence scenes.

Absence control

Absence control allows luminaires can be manually controlled and when presence is no longer detected it will remove the manual control (if any.) Scenes are only used to select the affected luminaires.

Timers

Timers are split into two categories: date based (meaning start / end times are based on specific date) and other timers. Date based timers has higher priority than the other timers, so they will override weekday based rotations. Thus it is possible to use them to implement, for example, holiday season override.

Timers can be set to override presence sensors; this could be used, for instance, to prevent sensors from activating at luminaires at certain time of day.

It is also possible to configure the timers to automatically activate when luminaire is powered on. After receiving network time the luminaire will determine the expected timer state and activate them. Note that after switching the power ON there will be a small delay before this happens.

Tip: during commissioning the luminaire control hierarchies can be reset by selecting More ? Network Setup ? Configure all luminaires ? Reset Network.

Upgrading Device Firmware

Devices which contain the Nordic Semiconductor nRF52 chip can be changed from Classic to Evolution firmware and vice-versa. In order to verify if this chip is used, the device should display Classic or Evolution text next to its firmware version when viewed within the Nearby Devices list.

To upgrade a Classic device to use Evolution firmware, simply:

- ensure that the device is un-paired
- select the device within the Nearby Devices list and then choose Change to Evolution firmware from the menu
- Select START when prompted
- the updated device can now be paired with an Evolution network

To change an Evolution device to use Classic firmware, simply:

- ensure that the device is un-paired
- select the device within the Nearby Devices list and then choose Change to Classic firmware from the menu
- Select START when prompted
- the updated device can now be paired with a Classic network

Apple Watch

The FLOS Control app for the Apple Watch allows limited functionality of your Casambi networks.

The available options allow you to control the all luminaires function, all scenes and three favourites can also be selected.

Favourites

The three favourite scenes can be any scene type. The Apple Watch app automatically selects the first three scenes from your iPhone app's *Scenes* page, so the three scenes you want to use as your favourites must be moved to the top of your iPhone app's *Scenes* page.

Also note that scene names are not visible in the Apple Watch so it is recommended to set a different colour for each of your scenes in order to identify each individual scene.

Networks

You can change to a different network by selecting the Network option in the top left of the app.

Note: it is not possible to log into a network from the Apple Watch app. Any network you wish to use must already be accessible from your iPhone FLOS Control app in order to be used by the Apple Watch app.

Scene control

The currently controlled scene can be identified by a grey circle around the scene icon.

Similar to the Casambi iPhone app, scenes are highlighted when active and dimmed when inactive.

An active scene can be controlled in two ways: by the digital crown (on the side of the Apple Watch) or by the plus and minus icons in the Apple Watch app. When using the plus and minus icons in Apple Watch app they can only be selected (tapped) repeatedly. It is not possible to hold down the plus or minus icons as this will automatically call up another Apple Watch functionality. This can not be avoided as it is part of the Apple Watch operating system.

The dimming level of the scene will appear in the dimming bar at the bottom of the display.

Note that selecting an active scene from your favourites will automatically deactivate it.

Scene list

Forcefully selecting the centre of the screen for one second will open the Scenes option. Select the Scenes option to continue to the Scenes list.

Use the digital crown to scroll up and down the scenes list. When you select a scene name from the list, this automatically activates the scene and opens the scene's page.

Note: hidden scenes are also visible in the Scenes list.

Once in the scene's page, you can activate and deactivate the scene by selecting the scene icon in the centre of the screen. Again, the scene icon will highlight or dim depending on whether it is active or not, similar to the Casambi iPhone app.

The scene's dimming level can be altered by using the digital crown or the plus and minus icons, similar to the favourite scenes.

Evolution and Classic Networks

Note that to take advantage of using an Evolution network, your devices must be Evolution-compatible and contain the Nordic Semiconductor nRF52 chip. This can be verified by viewing the device within the Nearby devices list. It should display Classic or Evolution next to its firmware version. If the Classic or Evolution text does not appear, the device is not compatible with Evolution networks.

The features below are now available with Evolution networks:

- The maximum amount of Casambi devices in an Evolution network is 250. This was previously 127 with Classic networks.
- New features are visible through remote connection making the commissioning and technical support phase easier than ever before. The unit's conditions (e.g. Over heated, Configuration failure, Missing driver etc) as well as the unit's priority level in the control hierarchy are now transported over the mesh network.
- Supports for some new products:
 - Various DALI and DALI2 push button devices
 - Casambi Ready battery powered presence & lux sensor
 - EnOcean's wireless presence/daylight sensor
- Support for XY and XY,TW colour control for DALI8-based fixtures.
- The sharing settings in Evolution have been updated. The users in Evolution are:
 - USER
 - MANAGER
 - ADMINISTRATOR
- A 'Performance & Security' tab has been added. For more information, see the Performance & Security section of this user guide.
- Emergency mode for Smart switching. For more information, see the Smart switching section of this user guide.

