



e-Sense Tune  
*User manual*



FAGERHULT

# Content

e-Sense Tune	3
Quick start	4
Getting started	5
Main menu	6
Guest user	6
Creating a profile	7
General settings	8
Home screen	9
The Node menu	10
Preset scenes	10–13
About	13
Updating the system	14
Information in system list	15
Technical information	16

# Terms

Device	Any device with Bluetooth installed, smartphone or tablet
Profile	A users settings / where user settings are stored
System	At least one master luminaire and, possibly, up to ten follower luminaires working together.
Main menu	You find this by tapping the symbol with three parallel lines in the upper left corner.
Configuration	A mode for all the basic settings for the system. Configuration is only for system installer and / or system owners.
Node menu	Menu bar at the bottom of the home screen, visible when you are connected to a master luminaire.
Master	Master luminaire in the system/room.
Follower	A slave luminaire that gets its instructions wirelessly from the master.
Intensity	Light intensity.
Colour temperature	Colour temperature of the light (from warm white 2700 K to cold white 6500 K).
PIR-sensor	(Passive infrared) A sensor that registers occupancy in an area.
Light sensor	Sensor that reads the light level. Only used in the Adapt scene.
Sensor switch	A built in switch that controls the light when pressed.



*Light sensor/Switch PIR-sensor*



# Fagerhult e-Sense Tune

Welcome as a user of e-Sense Tune. e-Sense tune is designed for you to have personalized light that will support you with the right lighting conditions for an efficient working day.

The e-Sense Tune app is available for both iOS and Android devices, and downloadable from the App Store or Google Play.

## Master and followers

Fagerhult's e-Sense tune app communicates to the system's master luminaire using "Bluetooth Low Energy". A master luminaire may have one or more (up to 10) follower luminaires connected, controlled via a wireless radio protocol. Consequently, an entire system with one master and several followers can be controlled easily via your Bluetooth device.

In a system, both the intensity (lighting level) and colour temperature (tunable white) can be adjusted and personalized.

Only one user at a time can actively control a system. The first device to connect to the master luminaire will be the device that controls the system. If a user with a Bluetooth device, with Fagerhult's e-Sense Tune app installed, enters a room with an installed master luminaire a connection between the device and the master luminaire will be established once the user starts the app.

The system will identify the device and then adjust the light according to the profile, that's stored in the master luminaire, associated with that device.

## Guest users

If there is no profile associated with the device the user can connect manually and become a guest. A guest user will get access to the system, but with reduced functionality.

To gain access to all the system's functions the user must create a personal profile that will be stored in the master luminaire

## Lighting without a device

If a user without a Bluetooth device enters a room, with an e-Sense tune system installed, and occupancy has been detected the light will go to a default setting.

## Storing of information

The e-Sense Tune system does not store any information on your device. All settings are stored in the active master luminaire together with a file used to identify the device. This means that you can have pre-sets for multiple e-Sense Tune systems in your device without any conflict.

This saves both the time taken to transfer settings to the e-Sense Tune system and memory space on your device. If you have multiple devices you can add them to your profile without the need to synchronize any data between them. One profile can store up to five devices.

## Sensors

All master luminaires have two sensors, one PIR sensor and one light sensor.

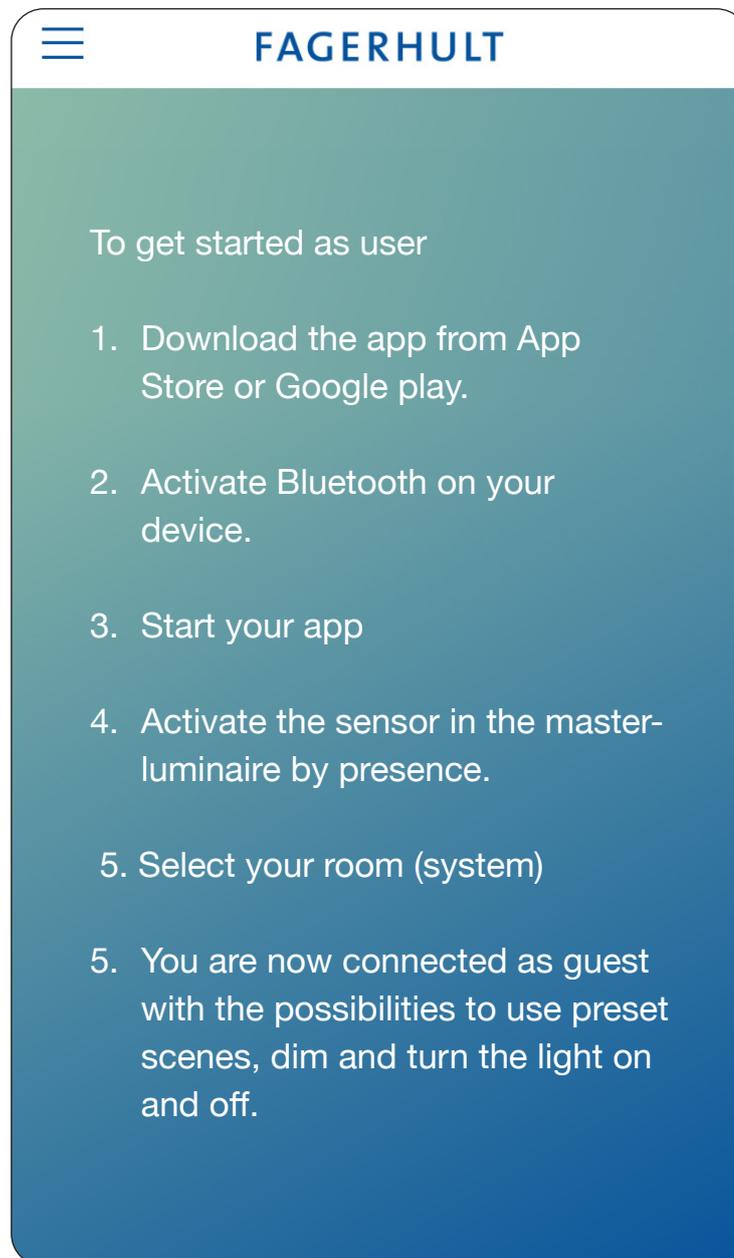
The PIR-sensor detects presence and helps to minimize energy consumption in unoccupied areas.

The light sensor is used for daylight control / constant light level, when the **Adapt** scene is in use.

## Sensor Switch

The small ring around the light sensor can also be used as a manual switch for controlling the lights. A short press turns the light on or off. If continuously pressed the light dims up or down depending on the starting value. The time for dimming from min level to max level is 4s. This feature is only available on the master luminaire of the system. Any followers in the system will also be controlled from the same switch.

# Quick start



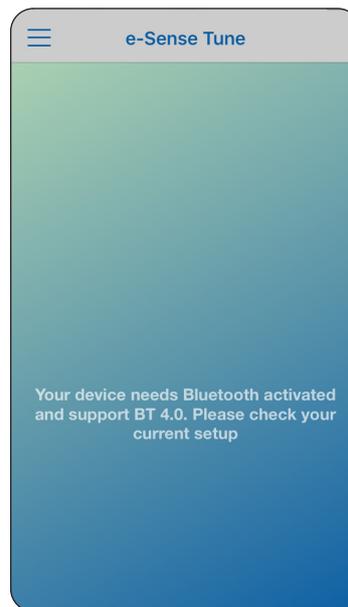
The image shows a screenshot of the FAGERHULT mobile application. At the top, there is a white header bar with a blue hamburger menu icon on the left and the text "FAGERHULT" in blue. Below the header is a large teal-to-blue gradient area containing a list of instructions for getting started as a user.

To get started as user

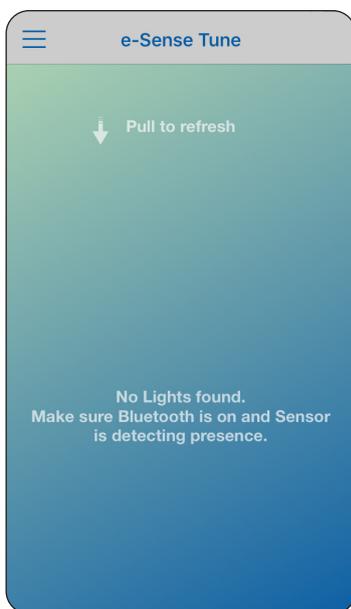
1. Download the app from App Store or Google play.
2. Activate Bluetooth on your device.
3. Start your app
4. Activate the sensor in the master-luminaire by presence.
5. Select your room (system)
5. You are now connected as guest with the possibilities to use preset scenes, dim and turn the light on and off.

# Getting started

With e-Sense Tune you can get personalized light that is tailored to suit your needs. Fagerhult's e-Sense Tune app is available for both iOS and Android devices and can be downloaded from the App store or Google Play respectively. To get started it is important to make sure that Bluetooth is enabled on your device. There are three methods of connecting the e-Sense Tune app to your system. The following section assumes you are using the default method known as 'Automatic BT + Sensor'.



*Enable Bluetooth on your device.*



*Enable Bluetooth in the master luminaire by presence.*

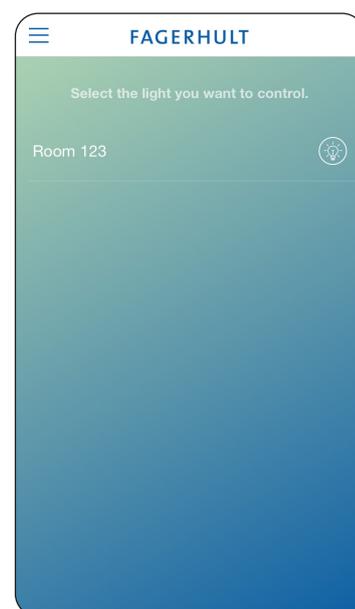
To open Bluetooth communication between your device and the e-Sense Tune system the PIR-sensor in the master luminaire must have detected presence. If you are not within Bluetooth range or no presence is detected you will be shown a screen stating that no lights have been found.

To make a new search for an e-Sense Tune system just perform a swipe action on the screen from the top downwards.

When your device has connected with the system's master luminaire it will be displayed in a list. In this example, the name of the system is "Room 123."

The list can contain more than one entry, as other systems may be within the Bluetooth radio range, even if they are in another room. The order of the systems listed is determined by signal strength, in other words, the master with the best signal is shown at the top.

If you don't see the expected master luminaire in the list, it may already be in use. This is because an e-Sense Tune system, by design, only allows one user at a time. Tap the bar to go to **Guest User Mode**.



*Tap the lamp symbol to identify the system.*

# Main menu

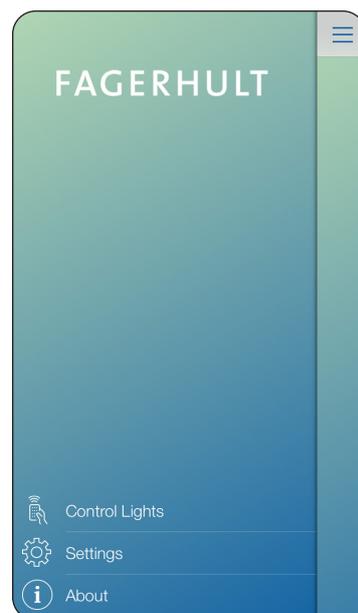
Enter the main menu by tapping the symbol with three parallel lines in the upper left corner (you can also get to this menu by swiping from the left edge of the screen to the right). The app's main menu allows you to:

**Control Lights** – takes you to the 'Home Screen' to control the lighting and scenes of the currently selected system.

**Settings** – contains the general settings for the app.

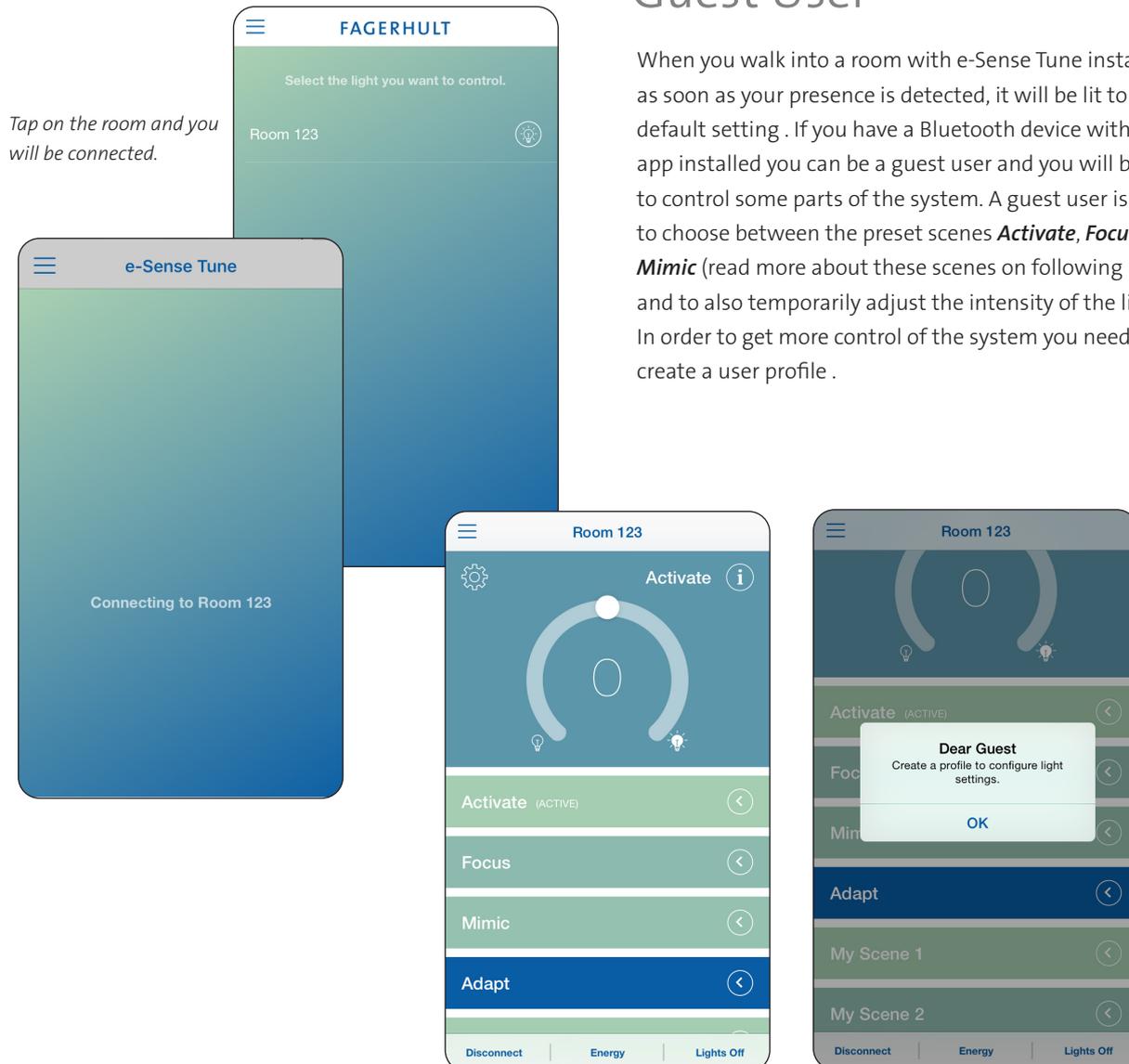
**About** – shows the version of the app you are using and the version of the software installed in the system's luminaires.

Once connected other entries will become visible in the main menu. These are covered in the relevant manual sections below.



# Guest User

When you walk into a room with e-Sense Tune installed, as soon as your presence is detected, it will be lit to a default setting. If you have a Bluetooth device with the app installed you can be a guest user and you will be able to control some parts of the system. A guest user is able to choose between the preset scenes **Activate**, **Focus** and **Mimic** (read more about these scenes on following pages) and to also temporarily adjust the intensity of the light. In order to get more control of the system you need to create a user profile.



The homescreen.

# Create a Profile

To access all the features of e-Sense Tune you need to create a user profile for your system. Your profile will be associated to the Bluetooth device that creates it and stored in the system's master luminaire.

A user profile can be associated with up to five devices. The associated devices can be managed, added or deleted

to the profile, at any time. To add a device you must have the e-Sense Tune app installed and you will need to know the security PIN code that was set when the profile was created.

It is required that the user (or the device) has a profile stored in the current master luminaire, without a stored profiled no automatic connection can be made.

**NOTE!** Automatic connection requires that the app is open in background mode.

To create a profile, start the app and select the room that you are in.

Then tap **My profile** in the app's main menu. You will see a list of all of the profiles that are already installed in this system's master luminaire.

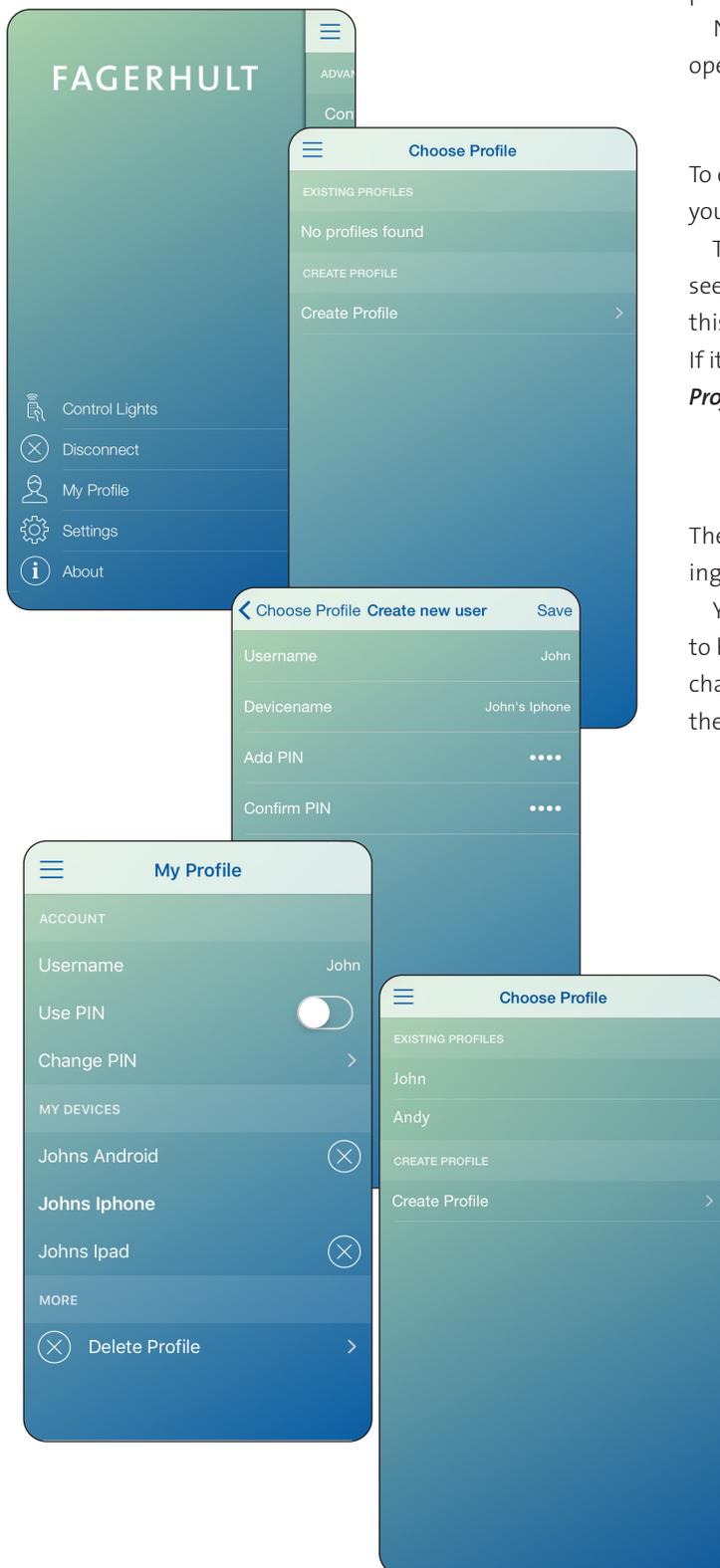
If it is your first time using the system click on **Create Profile**.

The **Create new user** screen allows you to provide a meaningful name for your profile and for the associated device.

You are offered to use a security PIN code, that needs to be confirmed. This protects your profile from being changed by unauthorized users. Once you've completed all the fields tap on **Save**.

A previously created profile can be edited, by choosing it from the existing profiles list. You'll need to know the PIN if it is active. Once you have done this, you can access all your previous settings, and may add or remove devices.

The current unit that is used to connect to the system will be showed in Bold font in the "My Devices" list.



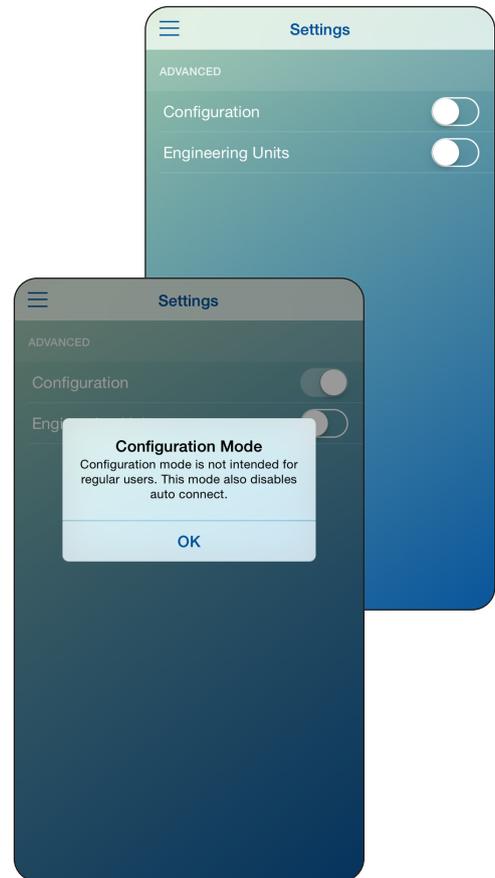
# General Settings

The system's settings are accessed from the **Main menu**. Slide switches provide a means for enabling or disabling the features of **Configuration** and/or **Engineering Units**.

## Configuration

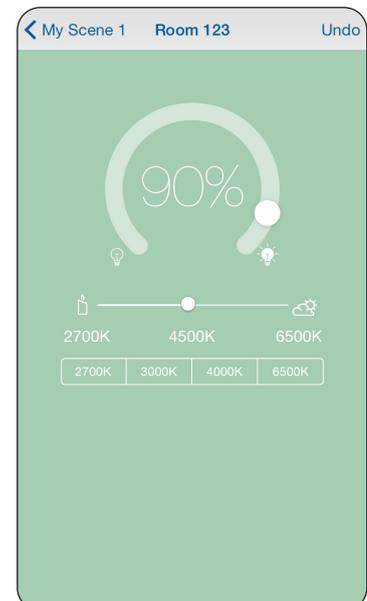
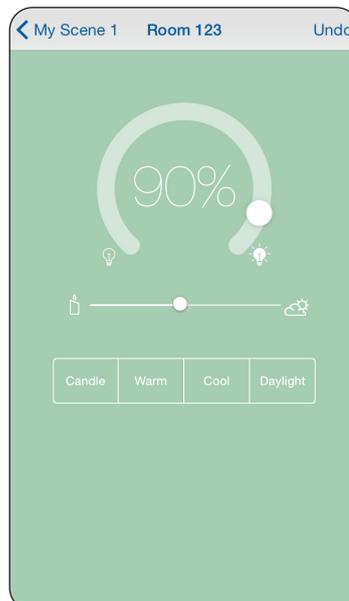
In **Configuration** all the basic settings for the system are made, such as setting up the network and the default settings. **Configuration** is only for system installers and / or system owners. Access to configuration is protected by a security PIN code. For further information, see the Configuration manual.

NOTE! Automatic connection requires that the app is open in background mode.

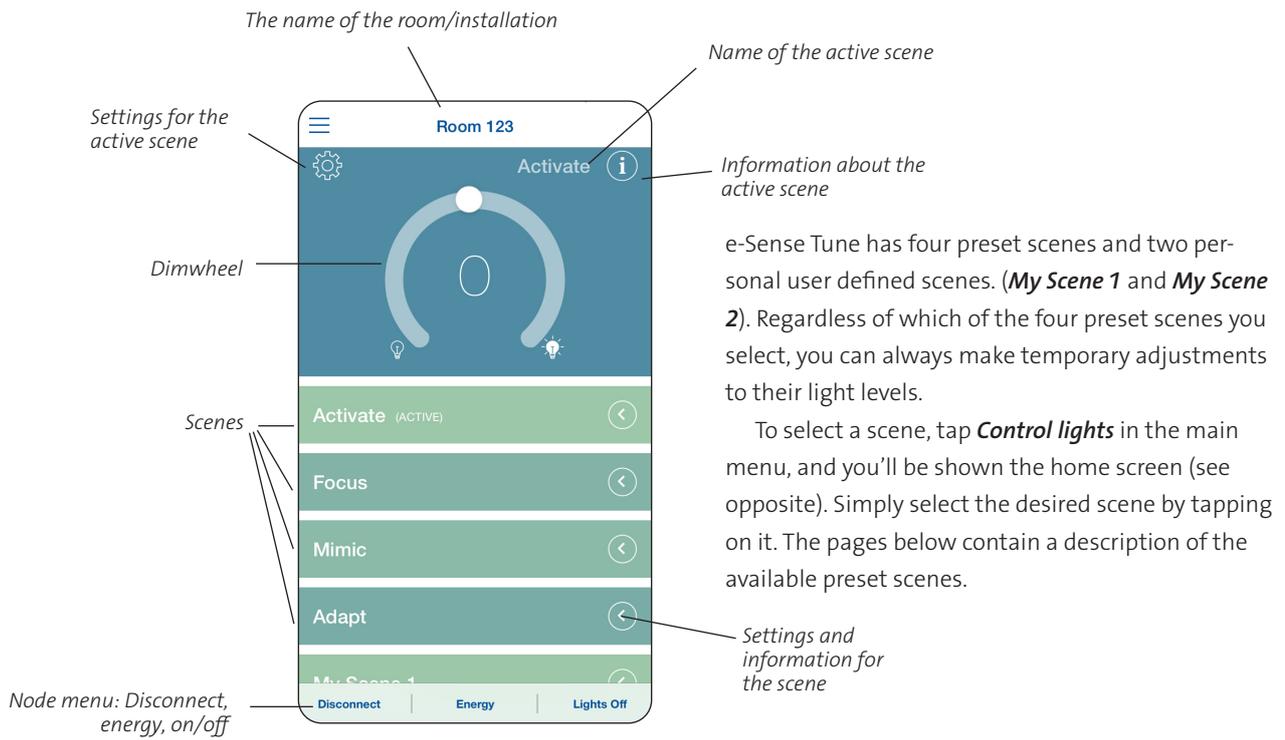


## Engineering Units

When you start the app for the first time expressions such as **Cool White**, **Warm White** are used, if you enable the Engineering Units under Settings, instead you will see the actual colour temperature in Kelvin.

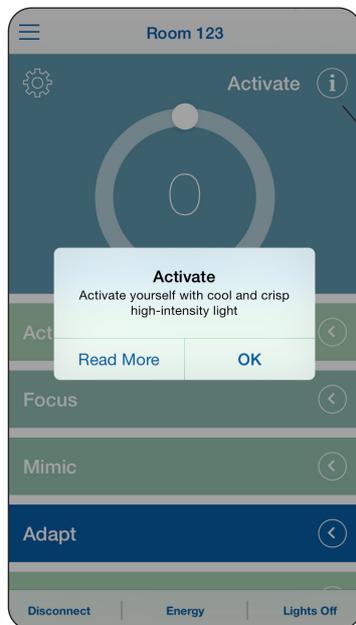


# Home Screen



e-Sense Tune has four preset scenes and two personal user defined scenes. (**My Scene 1** and **My Scene 2**). Regardless of which of the four preset scenes you select, you can always make temporary adjustments to their light levels.

To select a scene, tap **Control lights** in the main menu, and you'll be shown the home screen (see opposite). Simply select the desired scene by tapping on it. The pages below contain a description of the available preset scenes.



Tapping on the "i" icon provides a brief description on the current scene. If you wish to get more information about this particular scene, tap **Read More** and you will be directed to Fagerhult's website.

# The Node menu

At the bottom of the home screen is the **Node menu**. This line consists of three parts:

### **Disconnect**

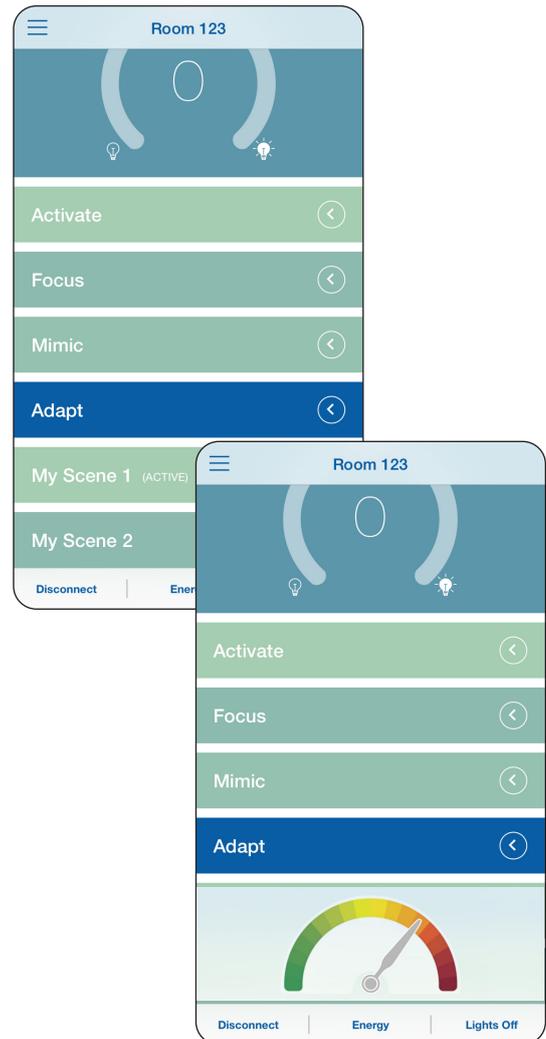
Disconnects your Bluetooth device from the current system. You can use this feature to make the system available for another user. For example, if you leave the room and don't intend to return, but are still within Bluetooth radio range.

### **Energy**

By tapping on **Energy** you will see an indication of how much of the total system's available power is currently being consumed.

### **Lights on/off**

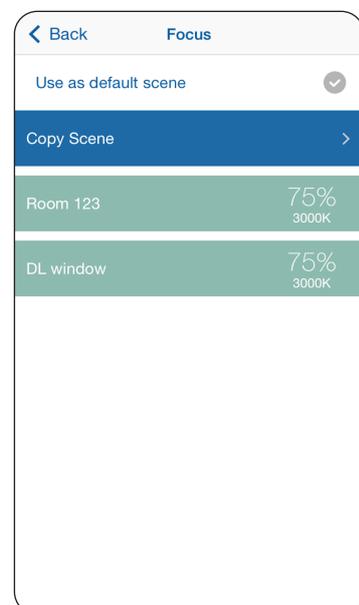
Tapping on **Lights On/Off** toggles between all lights off and lights on (to the last level used). For example, this is useful if you want to black out the room for a presentation.



# Preset scenes

You can choose the current scene to be the default scene. To do this tap on the cogwheel icon of the currently active scene on the home page, then tick **Use as default scene**.

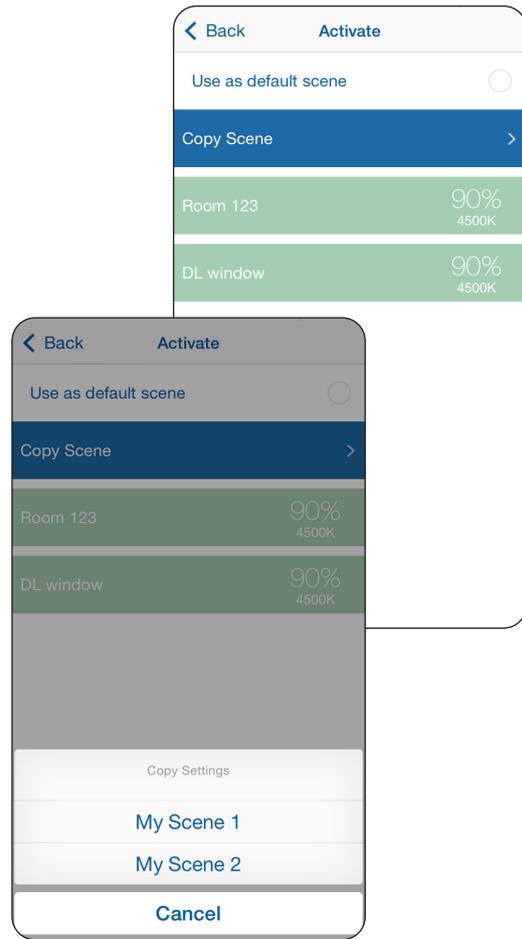
This is the scene that will be selected each time you connect to this system with your device.



### Activate

The **Activate** scene is designed so that you, the user, will get a real energy boost. **Activate** provides a crisp white light with high intensity. You cannot make changes to this scene, apart from temporarily adjusting the light level.

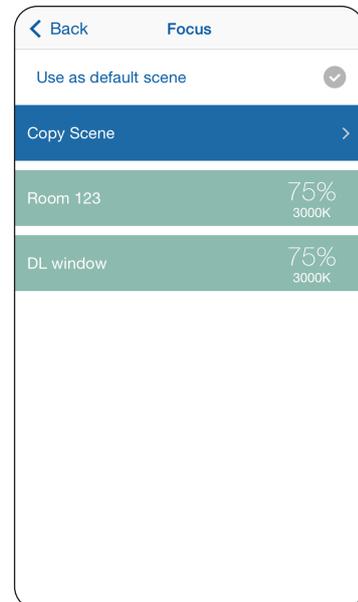
However, you can create a personal **My scene** based on **Activate**. You do this by clicking on **Copy Scene** and then selecting the **My scene** you wish to copy it to.



### Focus

The **Focus** scene contributes to enhancing well-being and stimulating communication. Focus provides warm light with slightly lower intensity, but still enough light to keep you focused.

As with the **Activate** scene you can't make any changes and you need to copy the scene in order to personalize it.



### Mimic

This is a scene that mimics the natural light cycle of a typical day. It does this by using a pre-set daylight mimicking curve to adjust the light over time in both colour temperature and intensity. From warm welcoming light in the morning to energizing cold white light at lunch and then back to a warmer light during the afternoon to prepare the body for the evening.

The **Mimic** scene is designed to mimic nature and keep the body's natural circadian rhythm. The time used, to set the light's parameters from the curve, is automatically synchronized to the clock on your device.

You can choose between a warmer or cooler colour temperature curve as well as light output when the Mimic scene is selected. Other parameters are controlled entirely from the daylight mimicking curve. However, you can temporarily change intensity from the home screen.



### Adapt

**Adapt** is a pre-set scene that uses the master luminaire's light sensor's reading to regulate the light in an attempt to maintain a constant illuminance under conditions of changing incidental daylight. This is often referred to as either constant light, daylight control or daylight harvesting.

In **Adapt** a target value is set for the scene. This is accessed on the home screen; select **Adapt**, and then tap the setting cogwheel icon.

To set the target value, you should use a lux meter and perform this operation when the room is darkened (late in the evening or by closing window shades). Here you can also choose whether you want a warmer or cooler colour temperature.

When you are satisfied with your settings, tap **Back** and the settings will be saved once confirmed.

You can also temporarily dim the light from the home screen. In this case the regulation of the light will be suspended and its output will remain fixed. To re-enable this mode simply select the **Adapt** scene again.



### My Scene:

In **My Scene 1** and **My Scene 2** you can create two different personal settings for both colour temperature and intensity, individually for both the master luminaire and followers (slave luminaires). You can also choose to turn off some luminaires completely if you wish.

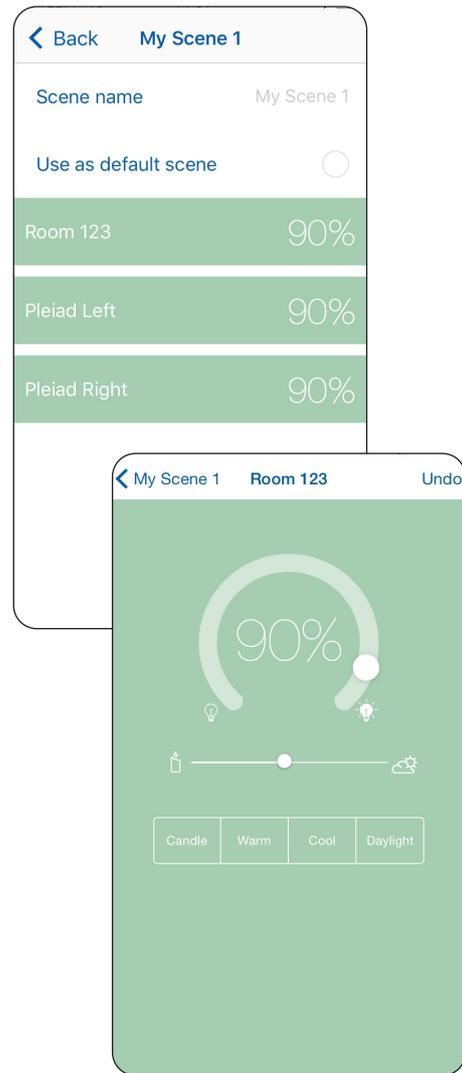
To be able to use **My Scene** requires you to have created a profile (see section for creating profile)

Tap the desired My Scene button on the home screen, then tap the setting cogwheel icon to get to the menu that shows the luminaires connected to the system.

If you wish to personalise the name for the scene tap the field next to Scene Name to change it.

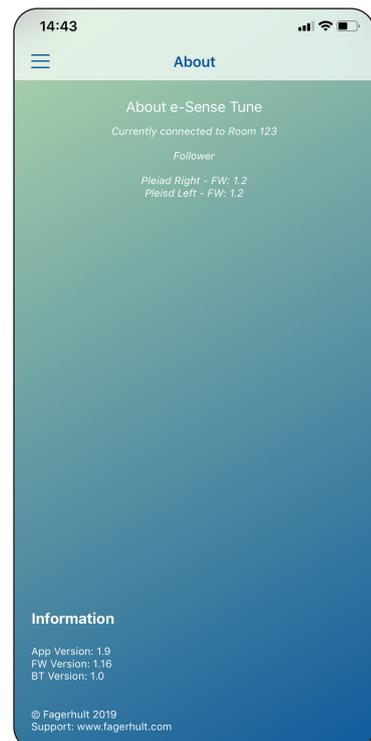
Tap on any of the luminaires in the list, on the screen that opens you can set both the colour temperature and intensity.

There are also pre-sets on the colour temperature scale that you can use if you wish. When you are satisfied with your settings save them by returning to the previous menu.



## About

The **About** button can be found in the app's main menu. It shows the version of software installed in the system, and the version of the app that is installed on your Bluetooth device.



# Updating the System

Fagerhult will constantly develop updates for the system, both for the application itself and also for the software in master and follower luminaires. These updates will be announced via the AppStore and Google Play.

By continuously updating the app, new features that are developed, as well as other updates will be available to customers.

When there is a new update available, you will be notified of this on your device in App Store or Google Play.

Download the latest version of the app, this will also include any possible software update for the system.

Connect to the system with your **User Profile**, if an update is available it will appear as a new item in the app's main menu: **Update Software**.

Tap this button to start the update's download, it's important that you stay within the device's Bluetooth radio range during this time. A progress screen appears that informs you when the download is complete. If you (your device) leave Bluetooth radio range before the update is completed it will be aborted. Next time you connect to the system, upload will start again.

After the download is complete the system will automatically start the software installation when you disconnect from the system. During this period the system will be unavailable.

When the installation is complete in all luminaires, the system will restart and function normally again. This process normally takes 1–2 minutes, but can, in some cases, take up to 30 minutes.

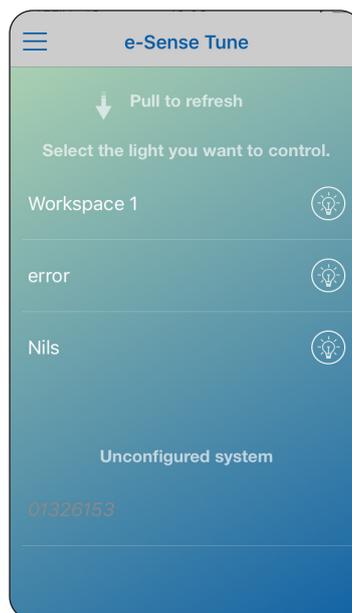


# Information in system list

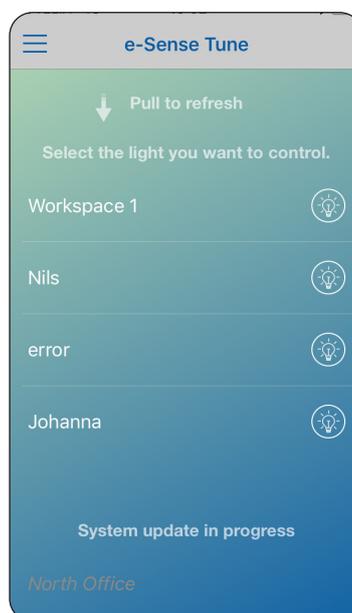
In the list over available systems that you can connect to there is information about systems that are in a specific (non-connectable) state.

**Unconfigured system**, shows a list of master units that are within detection range for your smart device, but have not yet been configured. Since no configuration has been done the units serial number is shown in a grey colour to indicate that the system is not selectable.

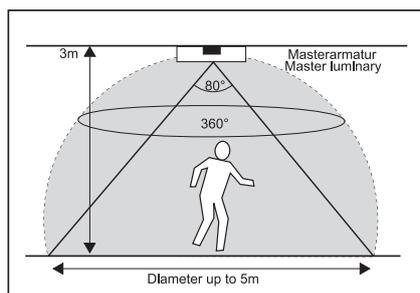
Tapping the serial number will show a text that says that the unit needs configuration.



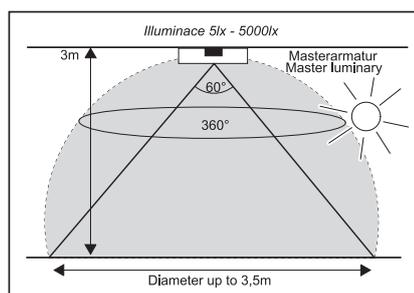
**System update in progress**, indicates that a system is in progress of updating its software. To get a new status, the list has to be reloaded with a "Pull to refresh" gesture.



# Technical specification



Detection area master PIR-sensor



Detection area light sensor

## Bluetooth LE (master)

Mains (L / N): 100 – 240 VAC, 50-60 Hz , 28mA max.  
 Operating Temperature: 10 °C to 50°C (Tcase 75°C)  
 Storage Temperature: -25°C to + 75°C  
 Relative Humidity: 90 % max, non-condensing  
 IEEE 802.15.4 wireless (Master & Follower): Integral Antenna -2 dBm max at 2.4 GHz, Channels 15 and 25  
 Integral Antenna -8 dBm max. at 2.4 GHz, Advertising Channels 37, 38 and 39  
 Radio transceiver for the worldwide ISM frequency band 2.4 GHz  
 Bluetooth Smart (low energy mode), not certified.  
 Profile: Proprietary profile  
 Class: 2  
 Data rate: 1 Mbit/s (theoretical)

## e-Sense Tune-system (followers)

Mains (L / N): 100 – 240 VAC, 50-60 Hz , 28mA max.  
 Operating Temperature: 10 °C to 50°C (Tcase 75°C)  
 Storage Temperature: -25°C to + 75°C  
 Relative Humidity: 90 % max, non-condensing  
 IEEE 802.15.4 wireless (Master & Follower): Integral Antenna -2 dBm max at 2.4 GHz, Channels 15 and 25  
 IEEE 802.15.4 radio transceivers for the worldwide ISM frequency band 2.4 GHz  
 Using the IEEE 802.15.4 Mac and Physical protocol with a Proprietary high level profile.  
 Application profile: Proprietary profile  
 Data rate: 250 kbit/s (theoretical)

## Master/followers

EMC Emissions: EN 301489-1 v1.9.2 EMC Standard for radio equipment and services, common technical Requirements  
 EN 301489-17 v2.2.1 EMC Standard for radio equipment, specific conditions for broadband data transmission  
 EMC Immunity: EN 61547 : 2009 Equipment for general lighting purposes, immunity requirements  
 R&TTE Directive: EN 300328 v1.8.1 EMC and ERM, wideband transmission systems, data transmission operating in 2.4 GHz ISM band  
 Safety: EN 61347-2-11 : 2002 Lamp control gear. Particular requirements for miscellaneous electronic circuits used with luminaires  
 Environment: Complies with WEEE and RoHS Directives