PHILIPS

Fortimo

LED

Fortimo LED Strip CED 1ft MF FC HV5

Datasheet

BioUp CED technology brings all aspects of human centric lighting together

Fortimo LED Strip CED 1ft MF FC HV5

By combining FlexTune tunable white technology together with high MDER spectra it's now possible to create a dynamic lighting system that enables a biological effect whilst not compromising on the visual and emotional benefits. BioUp CED technology is tunable from 2700K up till 5000K. One of the unique features is that there is no MDER enhancement at 2700K so an ideal evening setting can be created. Whilst the MDER at 5000K reaches its peak up to 0.95, this increases the biological activation of the light source significantly.

Key features and benefits

- CCT tunable: 2700K – 5000K
- High MDER at 5000K of up to 0.95
- Quality of light: CRI >80, R9 >50 (2700K CRI >90, R9 >50)
- Available in 1ft and 2ft
- Excellent color consistency of 3 SDCM
- Long lifetime solution: >70.000 hours
- Designed to work perfectly with Xitanium SR FlexTune drivers
- Easy system set-up through MultiOne
- Same dimensions and form-factors as other Fortimo LED Strip products enables an easy upgrade of existing luminaires

March 2022

Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Strip CED 1ft MF FC HV5	8719514 385665 00	9290 029 24006	168

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Strip CED 1ft MF FC HV5	215	400	400	mA

For FlexTune driver configuration use 0.3114, 0.3134 (1001lm) and 0.4590, 0.4065 (1100lm) for cool and warm LED, at a rated current of 215mA for both.

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T_c (case temperature at T_c point)	45	70	80	°C

* Nominal value at which typical performance is specified

** Value at which life time is specified

*** Maximum value for safe operation, do not operate above this value

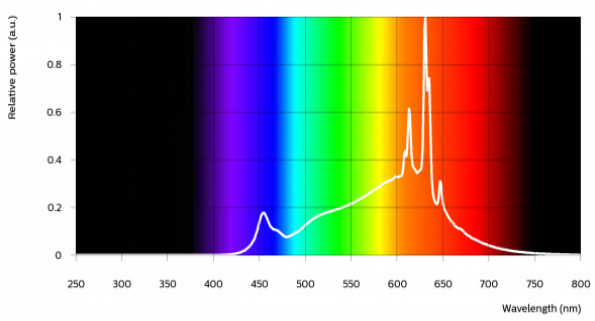
Optical characteristics - table per color (CCT)

Fortimo LED Strip CED 1ft MF FC HV5[2700K]

Parameter	Min	Typ	Max	Unit
Luminous flux	1018	1100	1183	lm
Efficacy	130	145		lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.459, 0.407)		-
Color consistency			3	SDCM
CRI	90			
R9	50			
Photometric code		927/369		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5/ Reference control settings according to CR (EU) 2019/2020

Operation point	927	lm	lm/W
80% I-nom 172mA	Tc 25 °C	921	154
	Tc-nom 45 °C	899	151
	Tc-max 70 °C	850	145
I-nom 215mA	Tc 25 °C	1130	148
	Tc-nom 45 °C	1100	145
	Tc-max 70 °C	1043	139
I-max 400mA	Tc 25 °C	1966	127
	Tc-nom 45 °C	1918	125
	Tc-max 70 °C	1809	119

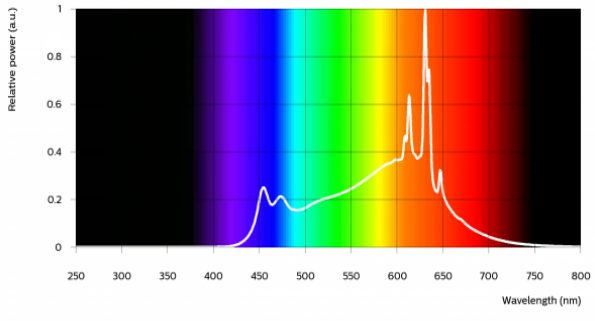


Fortimo LED Strip CED 1ft MF FC HV5 [3000K]

Parameter	Min	Typ	Max	Unit
Luminous flux	1003	1084	1165	lm
Efficacy	129	143		lm/W
Correlated color temperature (CCT)		3000		K
Color consistency			3	SDCM
CRI	80			
R9	50			
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	830	lm	lm/W
80% I-nom 172mA	Tc 25 °C	907	152
	Tc-nom 45 °C	887	149
	Tc-max 70 °C	840	143
I-nom 215mA	Tc 25 °C	1112	146
	Tc-nom 45 °C	1084	143
	Tc-max 70 °C	1029	137
I-max 400mA	Tc 25 °C	1928	125
	Tc-nom 45 °C	1883	123
	Tc-max 70 °C	1779	117

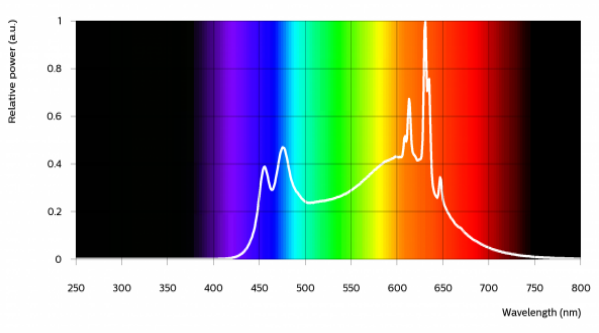


Fortimo LED Strip CED 1ft MF FC HV5 [3500K]

Parameter	Min	Typ	Max	Unit
Luminous flux	983	1063	1143	lm
Efficacy	126	140		lm/W
Correlated color temperature (CCT)		3500		K
Color consistency			3	SDCM
CRI	80			
R9	50			
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	835	lm	lm/W
80% I-nom 172mA	Tc 25 °C	890	149
	Tc-nom 45 °C	871	147
	Tc-max 70 °C	826	141
I-nom 215mA	Tc 25 °C	1089	143
	Tc-nom 45 °C	1063	140
	Tc-max 70 °C	1011	135
I-max 400mA	Tc 25 °C	1880	122
	Tc-nom 45 °C	1838	120
	Tc-max 70 °C	1739	115

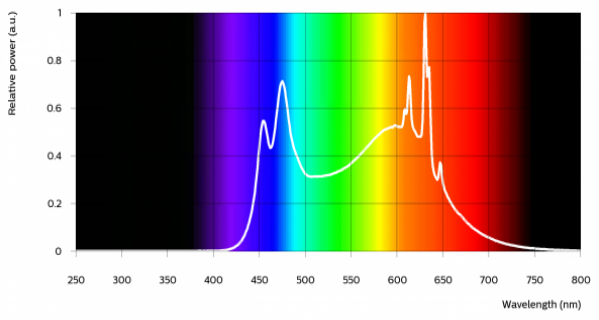


Fortimo LED Strip CED 1ft MF FC HV5 [4000K]

Parameter	Min	Typ	Max	Unit
Luminous flux	968	1047	1126	lm
Efficacy	125	139		lm/W
Correlated color temperature (CCT)		4000		K
Color consistency			3	SDCM
CRI	80			
R9	50			
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	840	lm	lm/W
80% I-nom 172mA	Tc 25 °C	876	147
	Tc-nom 45 °C	858	145
	Tc-max 70 °C	816	140
I-nom 215mA	Tc 25 °C	1071	141
	Tc-nom 45 °C	1047	139
	Tc-max 70 °C	997	134
I-max 400mA	Tc 25 °C	1843	120
	Tc-nom 45 °C	1803	118
	Tc-max 70 °C	1709	113

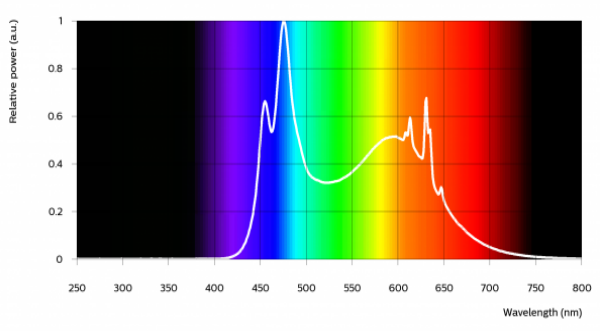


Fortimo LED Strip CED 1ft MF FC HV5 [5000K]

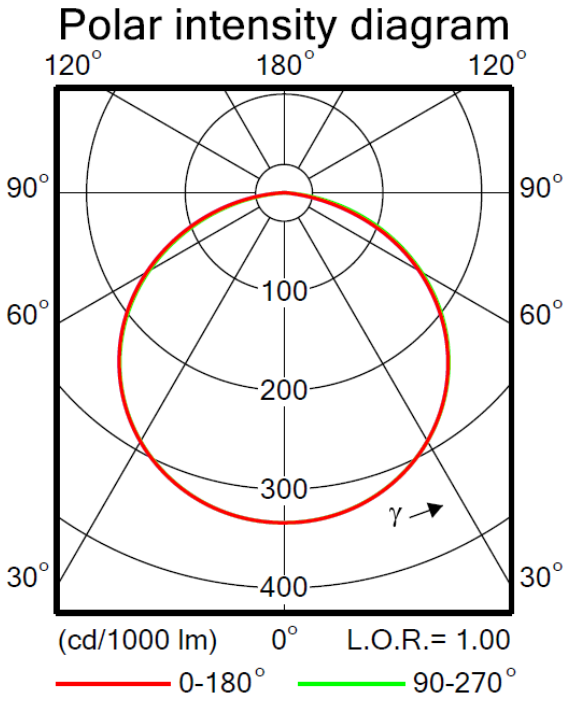
Parameter	Min	Typ	Max	Unit
Luminous flux	947	1024	1101	lm
Efficacy	122	136		lm/W
Correlated color temperature (CCT)		5000		K
Color consistency			3	SDCM
CRI	80			
R9	50			
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	850	lm	lm/W
80% I-nom 172mA	Tc 25 °C	857	144
	Tc-nom 45 °C	840	142
	Tc-max 70 °C	800	137
I-nom 215mA	Tc 25 °C	1046	138
	Tc-nom 45 °C	1024	136
	Tc-max 70 °C	976	131
I-max 400mA	Tc 25 °C	1790	117
	Tc-nom 45 °C	1753	115
	Tc-max 70 °C	1666	111



Beam shape


Polar intensity diagram
120°
180°
120°
90°
90°
60°
60°
100
200
300
γ
30°
30°
400
(cd/1000 lm)
0°
L.O.R.= 1.00
0-180°
90-270°

Electrical characteristics

Fortimo LED Strip CED 1ft MF FC HV5[2700K]

Parameter	Min	Typ	Max	Unit
Forward voltage	33.5	35.3	36.0	V
Power consumption		7.59		W = kWh/1000h
Number of modules in series per chain			9	

Fortimo LED Strip CED 1ft MF FC HV5 [3000K]

Parameter	Min	Typ	Max	Unit
Forward voltage	33.5	35.3	36.0	V
Power consumption		7.58		W = kWh/1000h
Number of modules in series per chain			9	

Fortimo LED Strip CED 1ft MF FC HV5 [3500K]

Parameter	Min	Typ	Max	Unit
Forward voltage	33.4	35.2	35.9	V
Power consumption		7.57		W = kWh/1000h
Number of modules in series per chain			9	

Fortimo LED Strip CED 1ft MF FC HV5 [4000K]

Parameter	Min	Typ	Max	Unit
Forward voltage	33.4	35.2	35.9	V
Power consumption		7.56		W = kWh/1000h
Number of modules in series per chain			9	

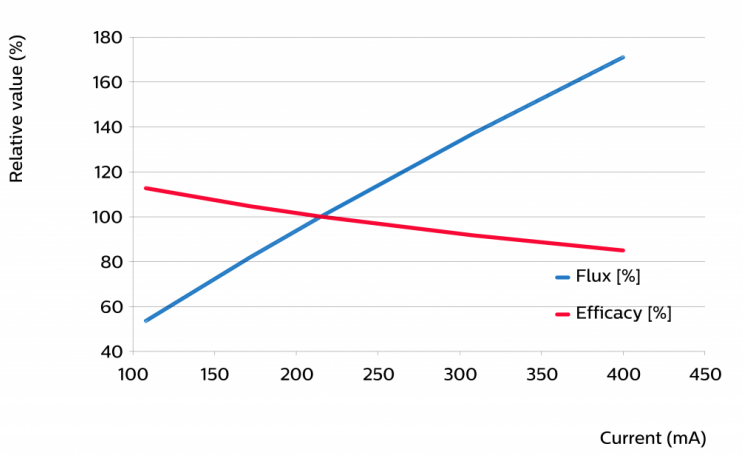
Fortimo LED Strip CED 1ft MF FC HV5 [5000K]

Parameter	Min	Typ	Max	Unit
Forward voltage	33.3	35.1	35.8	V
Power consumption		7.55		W = kWh/1000h
Number of modules in series per chain			9	

Tuning information

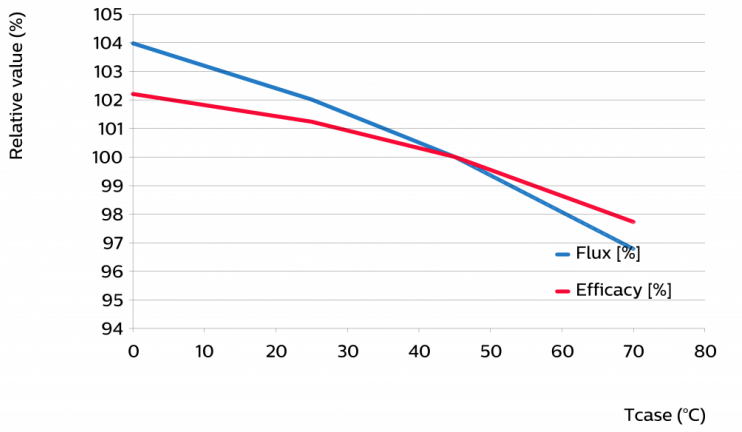
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
400	171	85
308	137	92
215	100	100
172	82	105
108	54	113



Flux and efficacy versus temperature at Tc (at I nominal)

Tc [°C]	Flux [%]	Efficacy [%]
70	97	98
45	100	100
25	102	101
0	104	102



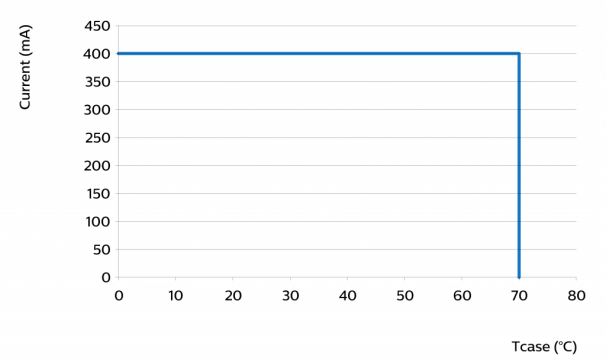
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 172mA	Tc 25°C	>70	>70	>70	>70	>70	>70	>70	>70	>70
	Tc-nom 45°C	>70	>70	>70	>70	>70	>70	70	68	67
	Tc-life 70°C	>70	>70	>70	>70	>70	>70	54	52	52
I-nom 215 mA	Tc 25°C	>70	>70	>70	>70	>70	>70	>70	>70	>70
	Tc-nom 45°C	>70	>70	>70	>70	>70	>70	67	65	64
	Tc-life 70°C	>70	>70	>70	>70	>70	>70	51	50	49
I-life 400mA	Tc 25°C	>70	>70	>70	>70	>70	>70	>70	>70	>70
	Tc-nom 45°C	>70	>70	>70	>70	>70	>70	59	58	57
	Tc-life 70°C	>70	>70	>70	>70	>70	>70	45	44	44

Lifetime

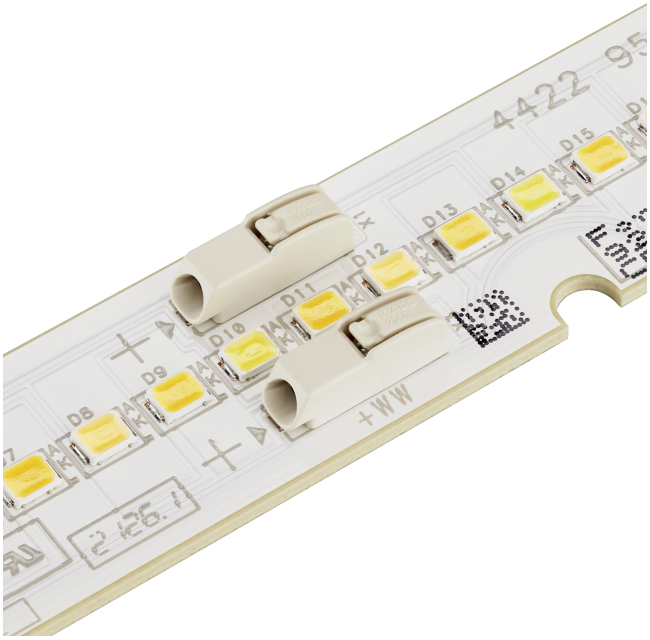
Parameter	Value	Unit
M70F50 nominal	>70000	hours
M70F50 life	>70000	hours

Performance Window



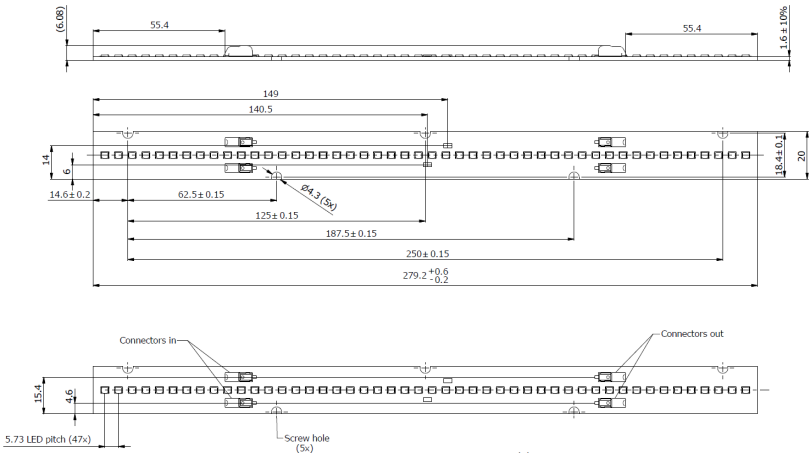
Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.25…0.75	mm^2	solid wire
	18…24	AWG	solid wire
Input wire strip length	7.5…8.5	mm	
Input wire cross-section	0.33…0.5	mm^2	stranded wire
	20…22	AWG	stranded wire
Input wire strip length	7.5…8.5	mm	



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	279	279.2	279.8	mm
Width	19.8	20	20.2	mm
Height PCB	1.45	1.6	1.75	mm
Height total		6.1		mm
Product mass		20		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		400	mA
Case temperature (Tc-max)		80	°C
Working voltage		350	V_{dc}

Application information

Certificates and Standards
CE
ENEC
ENEC+

Environmental
RoHS/REACH

Application	
Dimming	Yes

UK importer address: 3 Guildford Business Park, GU2 8XG

14/03/2022

www.philips.com/oem

PHILIPS **Fortimo™** LICHTMODULE DER ZUKUNFT

Stand: 27.08.2024

Kurzanleitung
Philips MasterConnect App

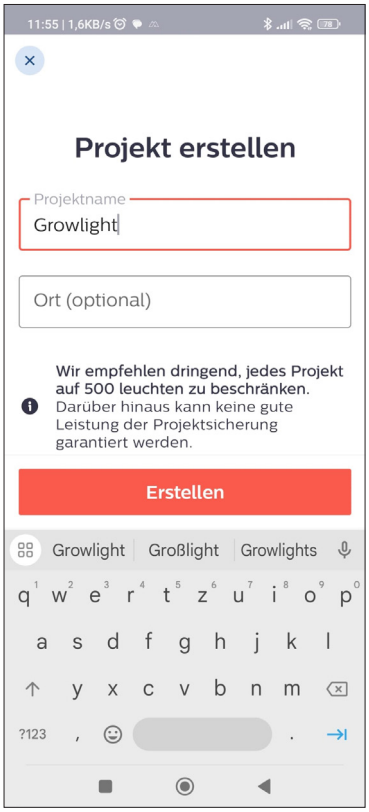
1. Laden Sie die Philips MasterConnect App aus dem Appstore (iPhone) oder Google Play Store (Android) herunter:

Appstore (iPhone)

Google Play Store (Android)

2. Starten Sie die App und legen Sie ein Benutzerkonto an

3. Erstellen Sie ein Projekt und führen Sie ein eventuelles Update durch.

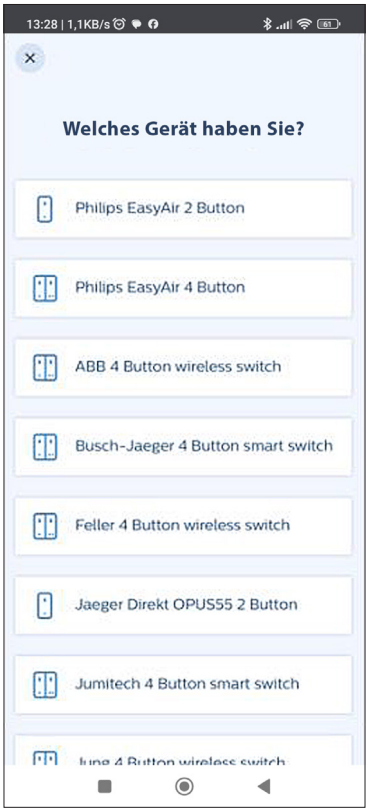


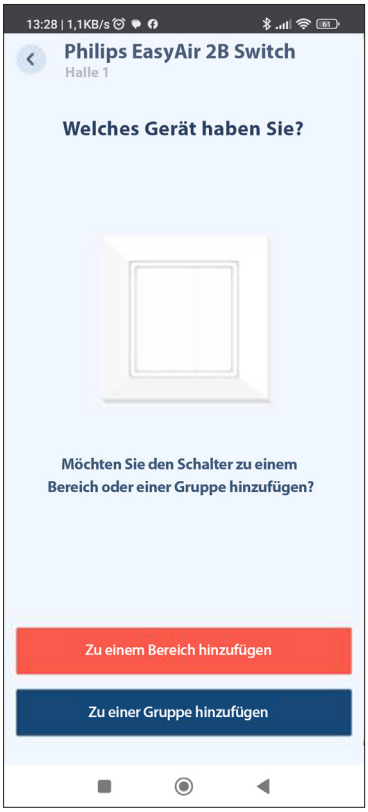
4. Erstellen Sie nun eine Gruppe durch klicken auf das Rote +

5. Hinzufügen von Leuchten durch klicken auf das Rote **+**
Wurde ein Gerät gefunden wie zum Beispiel EasyAir **SNS210 MC_5464,** dann klicken Sie auf hinzufügen.

6. Nach erfolgreichem Einbinden des Gerätes können über die Schieberegler oben rechts verschiedene Einstellungen vorgenbommen werden.

6. Falls Sie einen Zigbee 3.0 Serienschalter verwenden, so können Sie diesen ebenfalls hinzufügen. Nach Einrichtung des Serienschalter, folgen Sie den Anweisungen der App.





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PHILIPS Fortimo™ LICHTMODULE DER ZUKUNFT

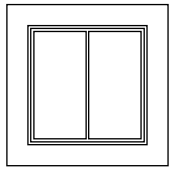
www.fortimo.de

Halogenkauf LIGHTECH® GmbH
Schlehenweg 4
29690 Schwarmstedt
Deutschland

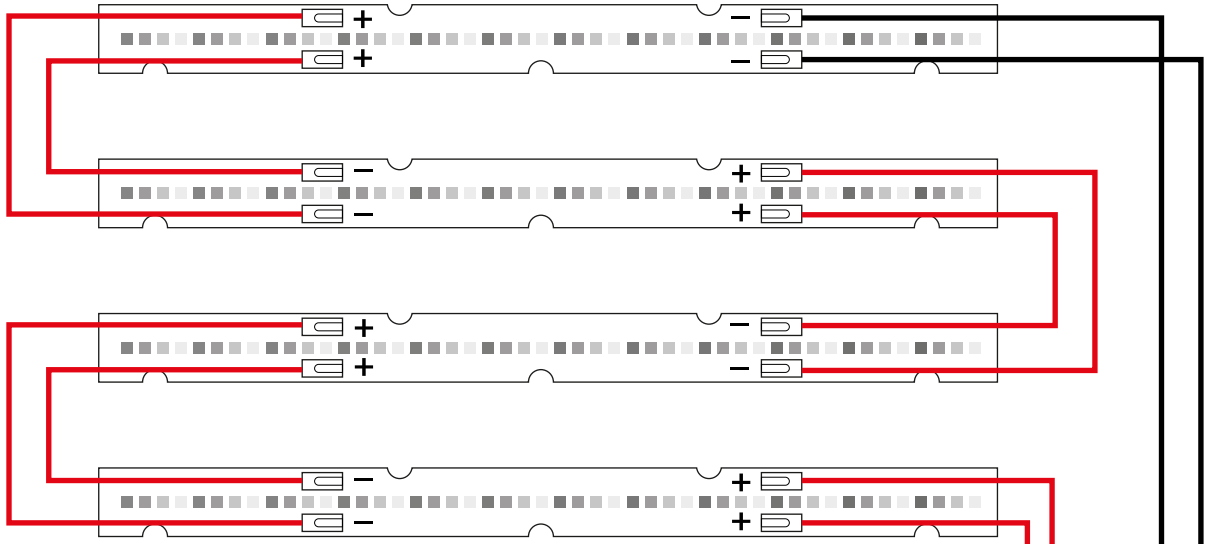
PHILIPS **Fortimo**™ LICHTMODULE DER ZUKUNFT

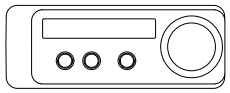
Stand: 20.08.2024

Art.-Nr. PH28077900
Philips EasyAir 4B Switch
ZigBee 3.0 wireless Serientaster
(optional)

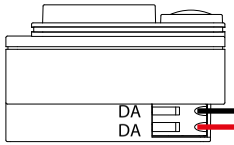


Art.-Nr. PH38566500
Fortimo LED Strip BioUp CED 1ft
Einstellbare Farbtemperatur: 2700K bis 5000K





Art.-Nr. PH45906900
EasyAir SN212/w MC weiss,
13mA, 200 mW Sensor,
zur Verwendung in drahtlosen
Systemen



Art.-Nr. PH55270400
Xitanium Driver 75W 0,7 - 2,0 A, 54V, SR 230V

Steuerung über
Philips MasterConnect App

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Stand: 27.08.2024

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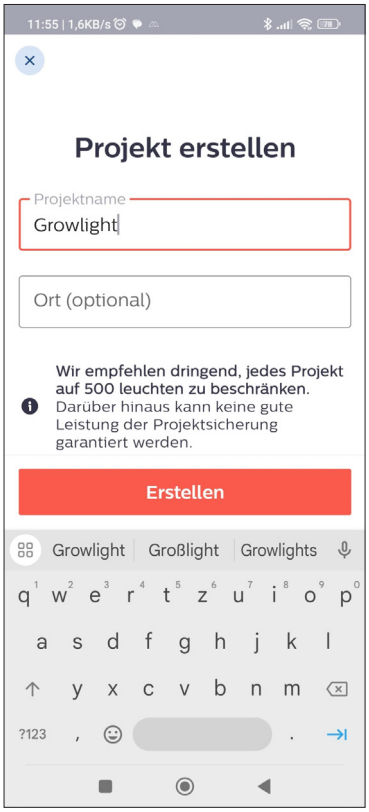

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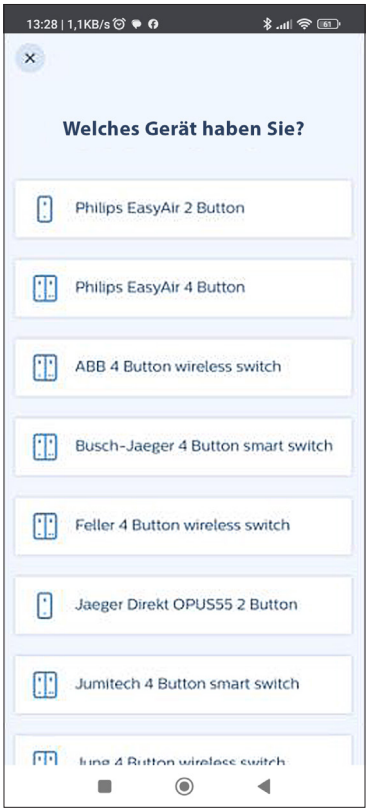

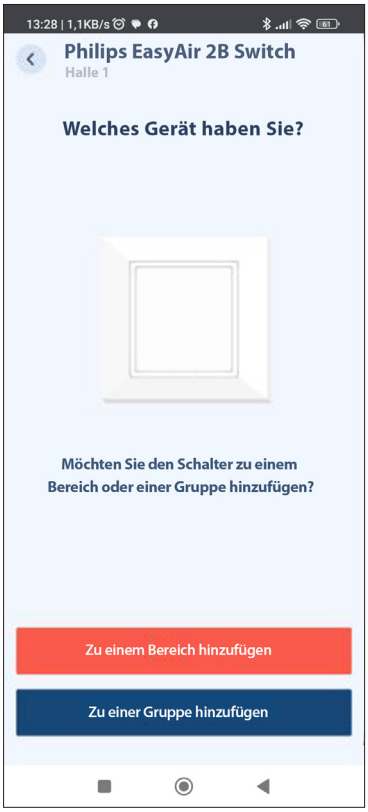

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PHILIPS Fortimo™ LICHTMODULE DER ZUKUNFT

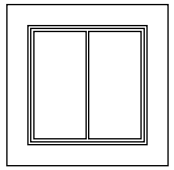
www.fortimo.de

Halogenkauf LIGHTECH® GmbH
Schlehenweg 4
29690 Schwarmstedt
Deutschland

PHILIPS **Fortimo**™ LICHTMODULE DER ZUKUNFT

Stand: 20.08.2024

Art.-Nr. PH28077900
Philips EasyAir 4B Switch
ZigBee 3.0 wireless Serientaster
(optional)



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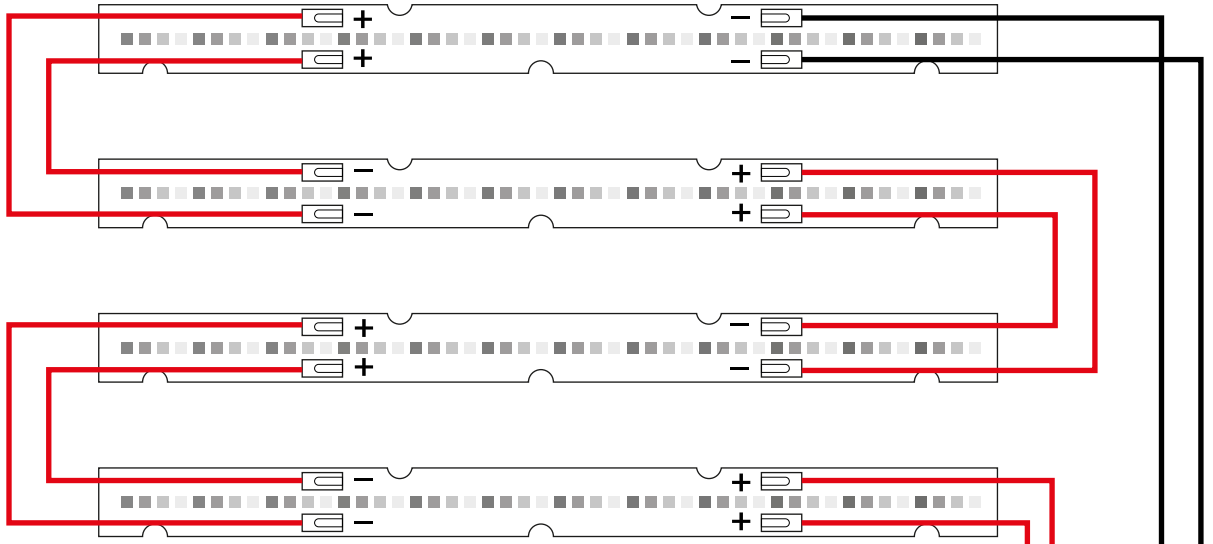
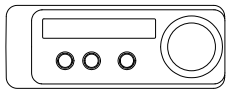
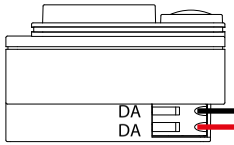




Art.-Nr. PH45906900
EasyAir SN212/w MC weiss,
13mA, 200 mW Sensor,
zur Verwendung in drahtlosen
Systemen

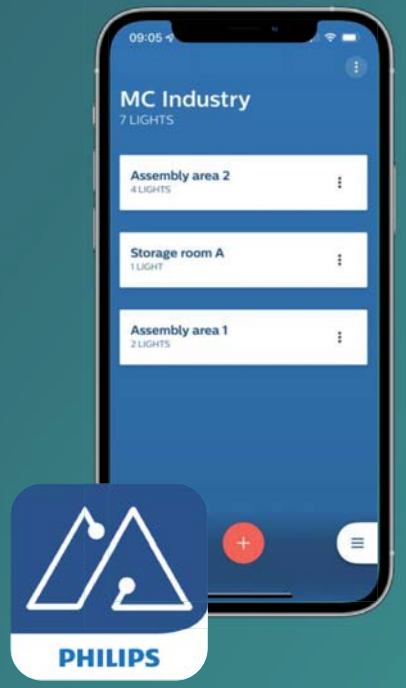


Art.-Nr. PH55270400
Xitanium Driver 75W 0,7 - 2,0 A, 54V, SR 230V

Steuerung über
Philips MasterConnect App

Philips MasterConnect App

Installer Manual



Philips MasterConnect app - Installer Manual
December 2023

Published Versions

2020.03 First published version without version number – MC1 release
v2020.11.04 – MC2 release (FlexTune)
v2021.01.13 – MC3 release (Project Backup and Access Sharing)
v2021.02.15 – Update (Mainly regarding FW1.0.5)
v2021.03.09 – Update (Removal of Gateway and Problem reporting, update Known Limitations)
v2021.04.12 – Update (After release of FW1.2.12)
v2021.04.21 – Update (Mainly regarding Gateway)
v2021.05.19 – Update (Generating QR-code, Occupancy Zoning)
v2021.09.07 – MC4 release (New sensors, Zoning)
v2021.12.21 – Update (Mainly regarding Known Limitations)
v2022.02.17 – Update (Max number of devices in a project)
v2022.03.31 – Update (MC Lamps)
v2022.06.16 – MC5 release (New sensors, large networks)
v2022.07.22 – Update (Out-of-the-box sensor recognition)
v2022.09.21 – Update (New app version 1.12.0)
v2023.04.06 – Update (New app version 1.12.5, EasyAir SNS212 MC)
v2023.08.08 – Update (Launch SNS212 MC)
v2023.08.23 – Update (Required Android version 10 or higher)
v2023.11.16 – Update (A few remarks added or removed)
v2023.12.22 – MasterConnect App 2.0 release (hybrid networks)

Contents

About the document

This document is an instruction guide for installers and end users of the MasterConnect (MC) systems working with the Philips MasterConnect app. The combination forms a cost-effective and easy-to-install solution for wireless control of new luminaires, ideal for energy-savings. Commissioning and configuration during and after installation is quick and easy using the Philips MasterConnect app. This app works via Bluetooth Low Energy (BLE) technology and is available for free on App Store and Google Play Store.

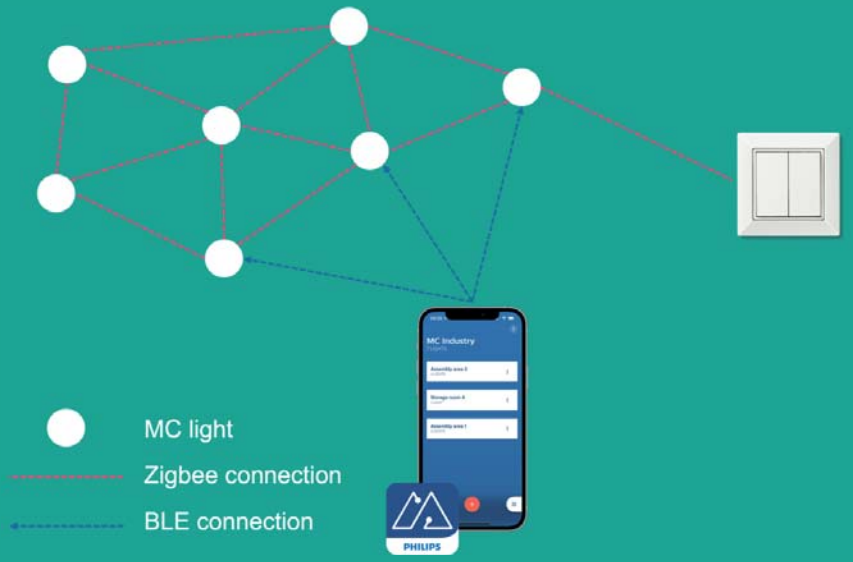
This manual consists out of five parts:

System	High level description of a MasterConnect System
Setup	In detail description how to setup a system
Configuration	All information about configuration options
Maintenance	Operations you might need once the system is commissioned
Troubleshooting	Options to improve your System in case it does not function as expected

System

System architecture

A stand-alone system sets up multiple MasterConnect nodes - such as Xitanium Wireless Drivers MC, EasyAir SNS21x MC sensors or EasySense SNS21x MC – into a single network or group, enabling sophisticated automatic light control as well as manual switch control over the group. The system can be set up via a phone app called 'Philips MasterConnect' which makes the phone act as a gateway. Therefore, a stand-alone system simply comprises MasterConnect devices, a manual switch, and the Philips MasterConnect app.
For setting up the system, the app opens a Bluetooth Low Energy (BLE) connection between the app and the 1st MC device. The app creates a network ID-key, exchanges BLE security credentials to add a MC device to group A. When an installer proceeds to add the next device to the same group, it then assigns the same network id & key to the 2nd device. The process of adding more MC devices can continue up to 120 devices, beyond which creating another group is advised. Each of the MC devices when added to a group, gets connected with other MC devices in a ZigBee mesh sharing the same assigned network id. For adding a manual switch, the app opens the ZigBee Green Power (ZGP) network, and the installer can commission a ZGP switch to manually control the lights.
Once a group is created, the light behavior can be configured from the Philips MasterConnect app to meet application requirements.



System components

Different components are available to compose a system. These components include:

Lights
Lights describe luminaires with integrated MasterConnect nodes. This can be a MasterConnect wireless driver, a MasterConnect wireless node, a MasterConnect sensor or a MasterConnect lamp. All MC nodes include Bluetooth and Zigbee radio.

Switches
Switches can be used to manually control a MasterConnect system. These switches operate on Zigbee GreenPower and can be self-powered (energy harvesting). There are two-button and four-button versions available.

Sensors
External, Zigbee-based sensors can be sued to bring motion and daylight control to MasterConnect systems without luminaire-integrated sensors. These sensors are available for office and industry applications in an occupancy and an occupancy-daylight version. They can be added to a group or a zone.

Gateways
Gateways can be used to add reporting and scheduling features to a MasterConnect system. These are supplied by partners.

Philips MasterConnect app Availability

Phone requirements
The Philips MasterConnect app can be installed on most modern smartphones with Android or iOS operating system.
The app is available on both Google PlayStore (for Android-based) and App Store for iPhones.

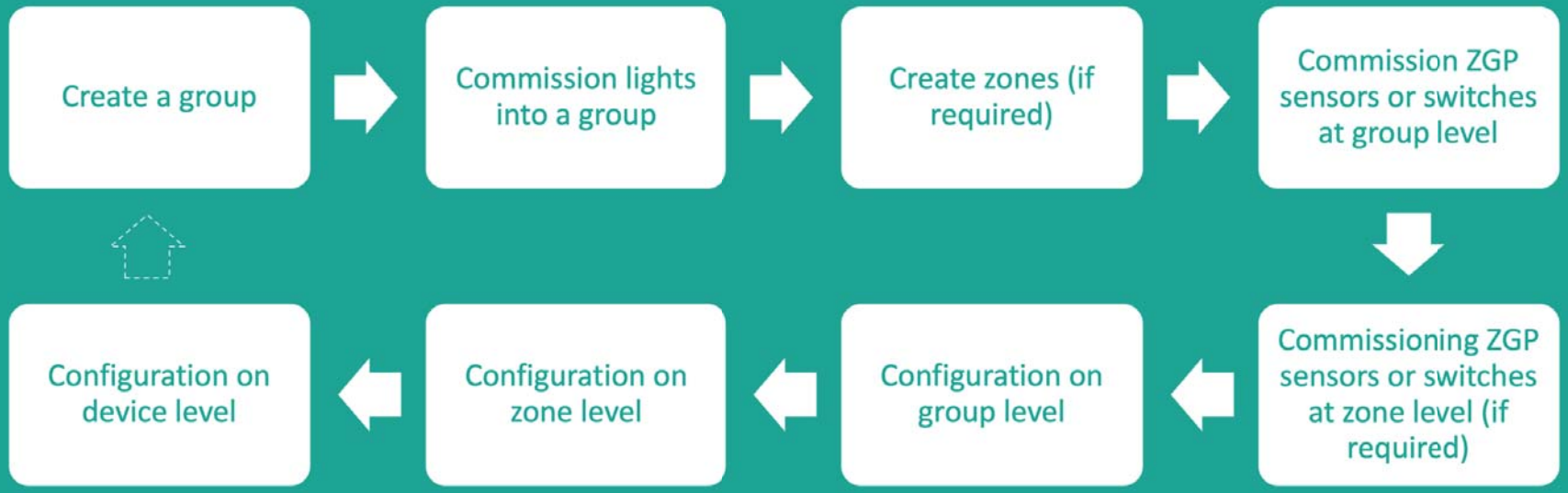
The minimum phone requirements are:
- Android-based phones: version 10 or higher
- iPhones: iOS version 15 or higher.
- Bluetooth: BLE version 4.2 or higher.

Remark
- The list of smartphone types in the market is long and increasing. System performance can vary for different combinations of the operating system, version of the BLE device and Bluetooth implementation in the phone model. Alterations from industry can have an impact too. Therefore, although we expect good performance in most cases, we do not guarantee expected performance of Philips MasterConnect app.
- It is recommended to test your mobile device with a wireless lighting system with Philips MasterConnect app.
- Huawei phones are not officially supported.
- Samsung J3 is not officially supported.
- Xiaomi Redmi Note 8 Pro and Xiaomi Redmi 8A are not recommended because of less stable BLE communication.
- iPads and Android tablets have not been tested.

Setup

How to Setup a System – Overview Diagram

The diagram below shows the advised order of Setup steps of your system. This order minimizes commissioning and configuration time (not all steps are always needed):

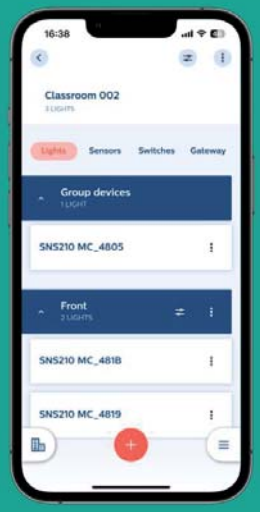


App screen names

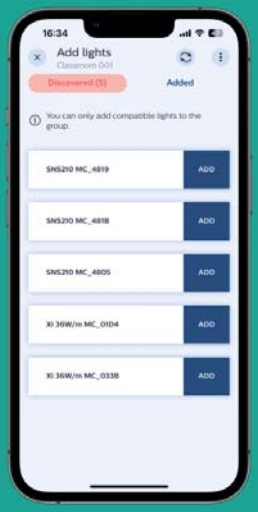
Purpose
This section is meant to list the name of the key screens that are used in this manual.

Project screen

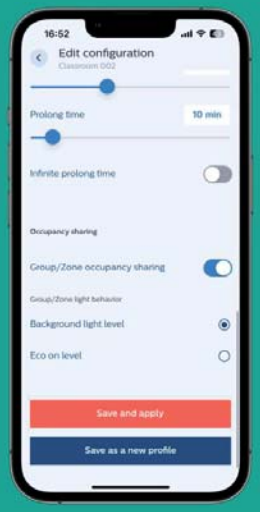
Group screen / overview



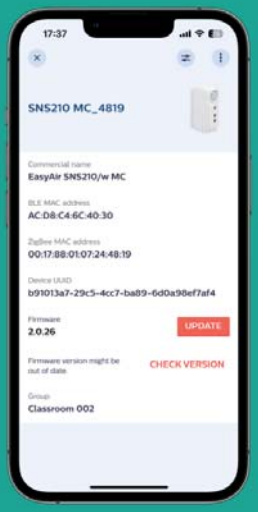
Commissioning screen



Configuration screen



Device detail screen

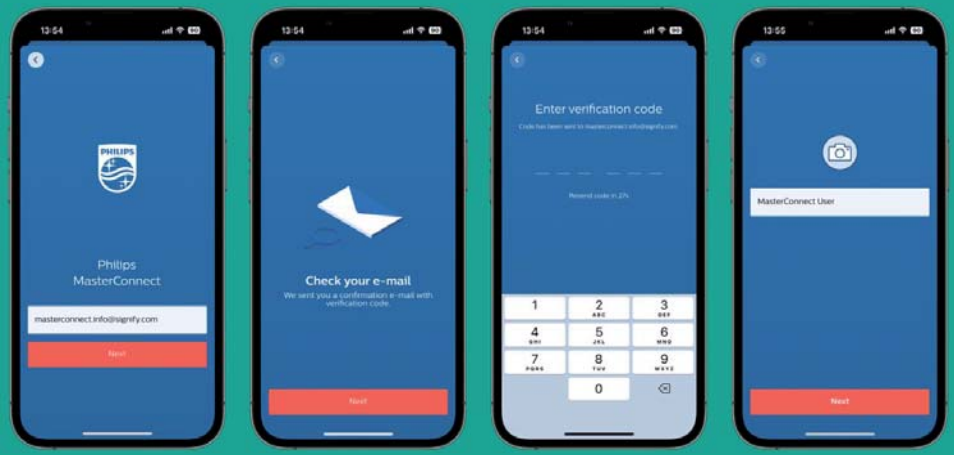


Login

Purpose
Only registered users get access to setup or maintain a MasterConnect lighting system using the Philips MasterConnect app.

How to
- Download and install the Philips MasterConnect app from the Apple App Store or Google Play Store. Search for 'Philips MasterConnect'.
- When opening the app for the first time, you will be asked to read and accept our Terms of Use.
- After accepting, register with your email address. You will receive an email with a 6-digit verification code that needs to be filled in the app.
- Complete the login by assigning a name to your account.

Step-by-step guide



Remarks

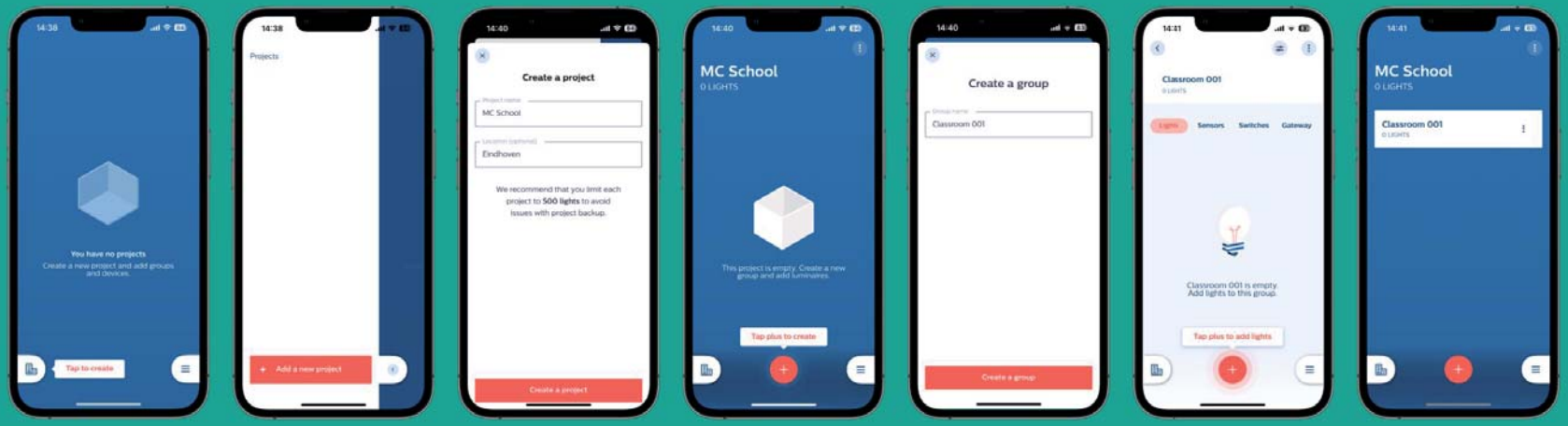
- Make sure that you have a stable Internet connection.
- A verification code is obtained at every log-in; no password needs to be remembered.
- Regularly check for app-updates, it is recommended to use the most recent version for best performance and most options. Usually 'auto-update' can be enabled in the smartphone settings.
- If you also work with the Philips Field Apps for SNS200 or SNH200, use a different e-mail account to log-in to the Philips MasterConnect app.

Plan a project and wireless groups

Purpose
Define a new lighting project and plan the luminaire groups, in which the wireless devices need to operate together.

How to
- Creation of the first project is prompted automatically. For another project, click on the building icon to get a list of earlier projects made under the same account, and add a new one.
- Give a name to the lighting project and optionally fill in the location. Create the project.
- For each group of luminaires that need to work together, a group needs to be created. A group is defined by a name that needs to be unique per project.
- Creation of the first group is prompted automatically after project creation. For more groups push “+” on the project screen.

Step-by-step guide



Group limitations

Purpose
When using and planning a wireless network with Philips MasterConnect, you should keep these group size limitations in mind.

Devices running on firmware 2 or 3:
- max. number of devices in a group: 120
- max. number of zones per group: 15
- max. number of switches per group: 15
- max. number of switches per zone: 5
- max. number of SR-drivers per sensor: 4 (limited to 1 driver per sensor for support of Tunable White and Energy Reporting features)
- max. number of sensors per SR-driver: 1

Devices running on firmware 1:
- max. number of devices in a group:
    - 40 (use cases without switches)
    - 30 (use cases including switch)
    - 20 (all use cases including group level energy reporting)
- max. number of zones per group: 5
- max. number of switches per group: 5
- max. number of switches per zone: 5 (see remarks in Adding switches section)
- max. number of SR-drivers per SNS: 4 (limited to 1 driver per sensor for support of Tunable White and Energy Reporting features)
- max. number of sensors per SR-driver: 1

Grouping - commissioning

Purpose
The created groups can be used to connect lights. To assign lights to a group, they need to be grouped (or commissioned). Depending on the MasterConnect node, the lights can be commissioned using a list-based approach or using a torch light.

- Lights with integrated sensors (SNS21x MC, SNH21x MC, SNHB21x MC)
  There are two ways to add these kinds of lights to a group:
  - Through point and trigger approach using a flashlight/torchlight or
  - Through the received signal strength (RSSI), also known as list-based commissioning
- Lights with integrated wireless drivers, wireless node (SNS41x MC) or MasterConnect LED lamps
  There is one way to add these kinds of lights to a group:
  - Through the received signal strength (RSSI), also known as list-based commissioning

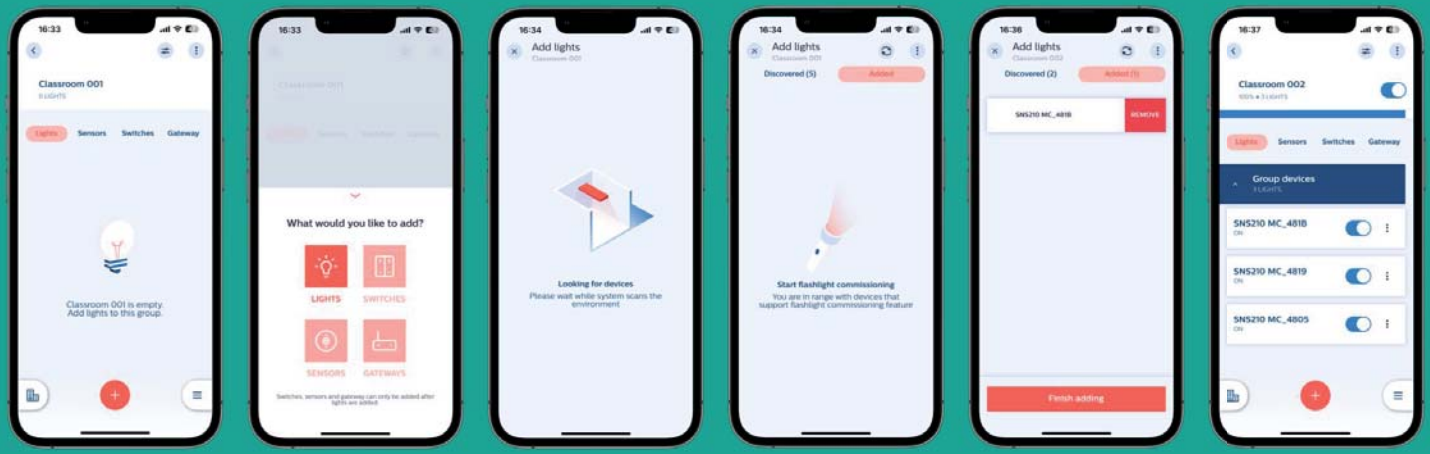
Remarks
- Ensure that Bluetooth is activated on the smartphone used. In case Bluetooth is disabled, Philips MasterConnect app will prompt for activation, which the user needs to confirm. Allow for Location Access services to be enabled, when requested by the app.
- Ensure that all lights of your system are powered on.
- Lights that are added to a group are considered claimed devices and therefore, not available for other groups, projects, or users.
- Xitanium wireless drivers, EasyAir SNS410 MC and lights with integrated MC sensors can be commissioned in one group when using firmware 2 or higher. Otherwise, they must be commissioned in different groups. Xitanium wireless drivers and SNS410 MC nodes can be combined in one group.
- The maximum distance as specified in the datasheet, between luminaires, and between the user and the luminaires must be respected.
- Firmware versions 1 and 2 as well as 1 and 3 may not be mixed in a group. Firmware 2 and 3 can be combined in the same group.
- When creating a new network or adding a device to an existing group, please note that the behavior during first occupancy cycle might deviate slightly. After the first cycle was completed, the lights show the same light behavior when occupancy is detected next.

Torchlight commissioning

Purpose
Lights with an integrated MasterConnect sensor can be added to a group by pointing to them with a torchlight.

How to
- Open the group, tap “+” and select “Lights” to start discovering all the MC nodes that are in close reach for commissioning.
- Please wait 10 seconds for the lights to be discovered.
- Direct the light of a torchlight to the MasterConnect sensor that you like to add to a group for a couple of seconds.
- The smartphone responds to the detection with a sound and a brief vibration. On the 2nd beep, the selected light dims down and shows up in the “Added” tap in the app. The light is now commissioned. Wait for another 3 seconds before proceeding to the next light.
- When all luminaires for a group have been selected, choose “Finish adding”. The devices that are bind to that group are now displayed in the group overview.

Step-by-step guide



Remarks

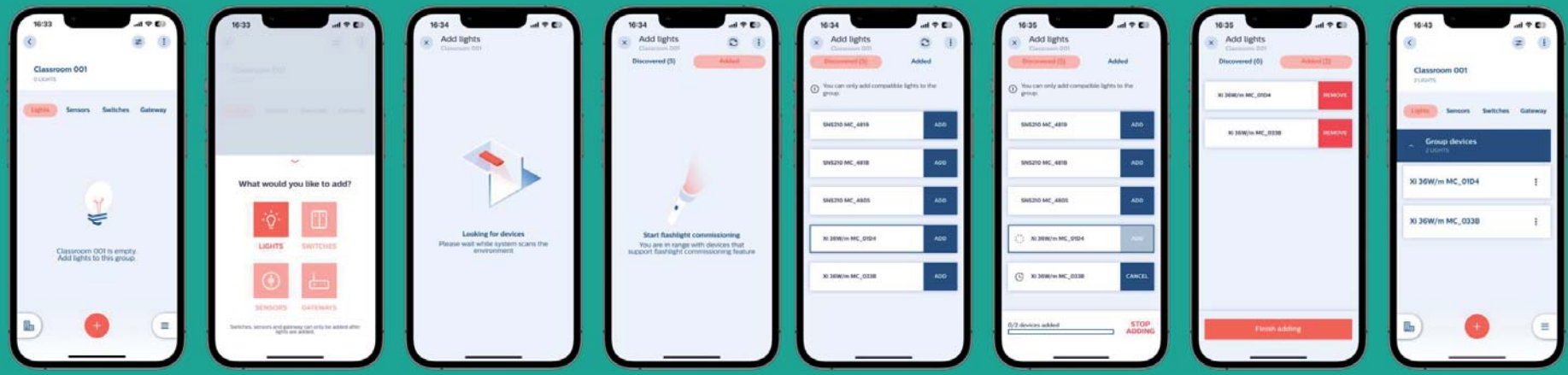
- Use a torchlight with a well-defined light cone. Please refer to the design-in guide of the product for more information.
- Typically, illuminance of the sensor should increase by ≥5000lx suddenly.
- It is advised to wait for 2 beeps, after which a light will show up in “Added” tab.
- In case a light is not added when torched, please re-try, or use the list-based commissioning.
- In case a light can't be torched it might be that it was not in the scan list because of a too big range, e.g., in case of a long corridor. A re-scan of the lights with closer range is required to add this light to the list.
- It is strongly recommended not to change the flashlight sensitivity in the app settings section.

List-based commissioning

Purpose
Lights with an integrated MC node can be added using a list overview.

How to
- Open the group, tap “+” and select “Lights” to start discovering all the MC nodes that are in close reach for commissioning. Please wait 10 seconds.
- If not selected already, click on the “Discovered” tab. A list of all the lights with wireless component sorted by signal strength is shown.
- To identify a luminaire in the app, click on the device name: the corresponding luminaire will blink several times.
- Press “Add” for all those lights that need to be added to the group. When multiple devices are added simultaneously, a loading bar pops up. Press “Finish adding” to finalize.

Step-by-step guide



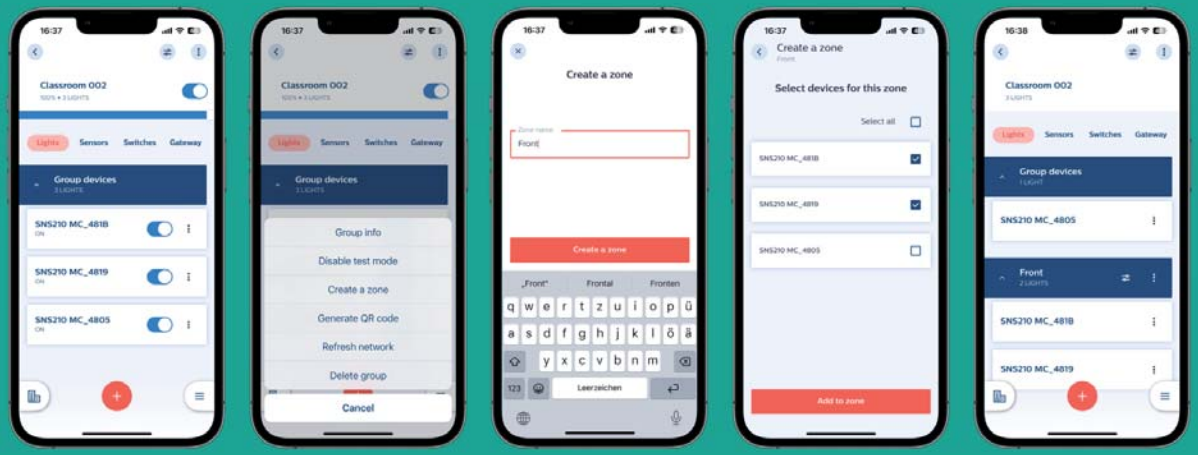
Remarks
- In case not all lights are listed, please retry. The lights are sorted based on the signal strength received by the smartphone and only those with the strongest signal are listed.

Zoning

Purpose
A group of lights can be split into different zones which can be controlled by different switches or sensors.

How to
- Tap the three dots and choose “create a zone”. After naming the zone, the luminaires for that zone can be selected. Finally choose “Add to a zone”.
- To identify a luminaire in the app, click on the device name: the corresponding luminaire will blink several times.
- Repeat this procedure for all the zones needed.

Step-by-step guide



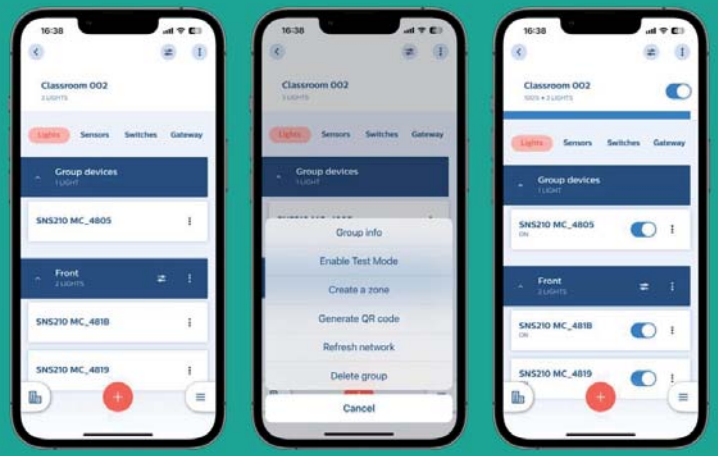
Remarks
- The separation into zones can be verified via ‘Enable Test Mode’. For details, see page 22 about the test mode.
- When moving a light into an existing zone or out of a zone, make sure you are in range of that device (within 5m distance).
- When creating a large-scale zone with MC lamps, set up the zone with a maximum of 10 MC lamps first and add more MC lamps to it in packages of 10 max.

Installer test

Purpose
To make a quick check that all luminaires in a group are well-commissioned and work as expected. A simple switch on/off or dimming command can be given to the group to verify that commissioning was done as desired.

How to
- Tap the three dots and choose “Enable Test Mode”. Now the whole group of lights or individual luminaires can be switched on and off with the app.
- With the blue bar the dim level of the luminaires in the group can be controlled. Verify that all luminaires respond properly! In test mode the response of the luminaires is not immediate and might need a few seconds.
- After testing leave the test environment by going back one screen (arrow in upper left corner).

Step-by-step guide



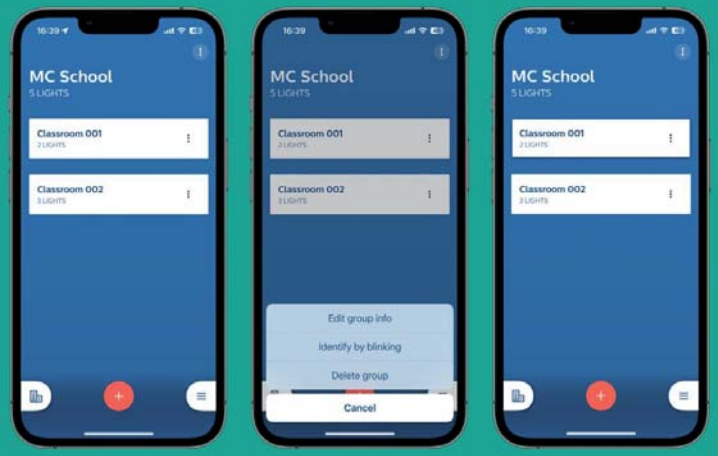
Remarks
- Dim levels of the luminaires using the test mode are influenced by the configured field task levels of the devices. A field task level of 100% is recommended.

Identifying groups and nodes by blinking

Purpose
You can easily identify a group or node with the command “Turn on identifying by blinking”.

How to - identify on group level
- Press the three dots right of the group name.
- Select “Identifying by blinking” from the list.
- The luminaires in the Group start to blink. The blinking will stop automatically after a while.

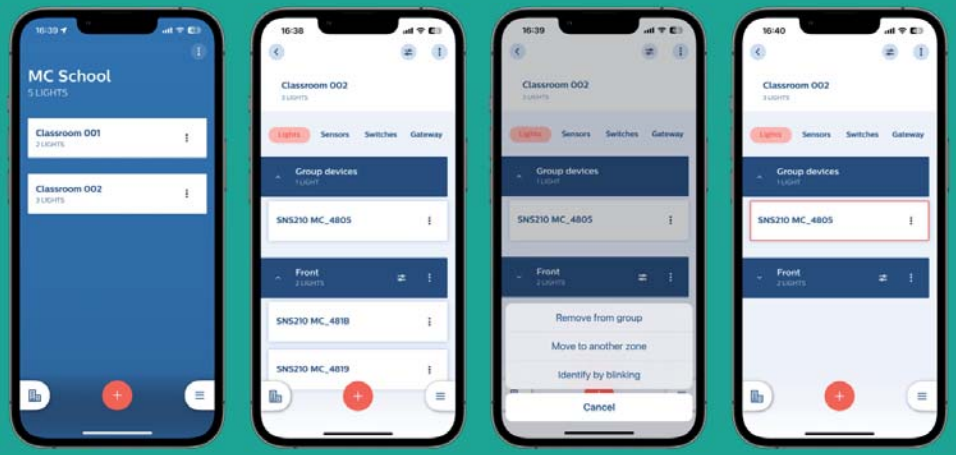
Step-by-step guide – identify on group level



How to - identify on Node level

- Open the group.
- Press the three dots right of the node name
- Select “Identifying by blinking” from the list.
- The node starts to blink. The blinking will stop automatically after a while.

Step-by-step guide – identify on node level

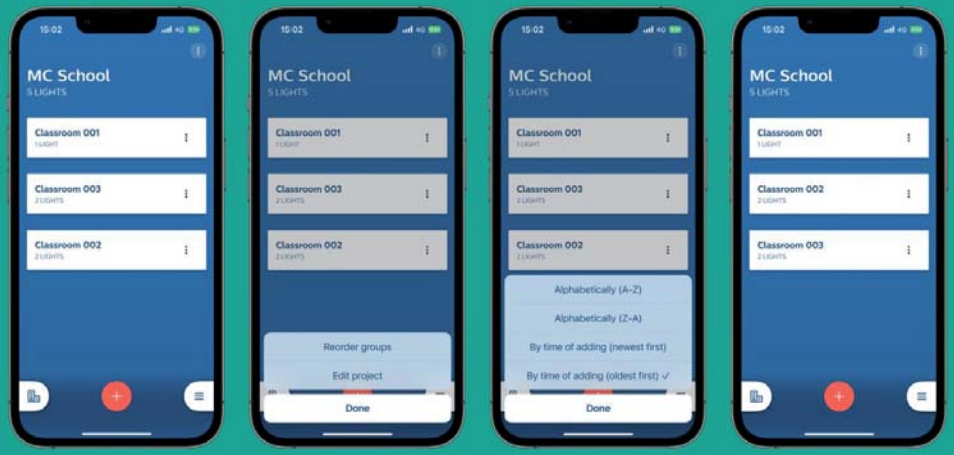


Arrange your groups

Purpose
Arrange your groups in the order you prefer.

How to
- Open the right-hand three-dot menu and choose reorder groups.
- Choose the arrangement you prefer.

Step-by-step guide



Adding switches

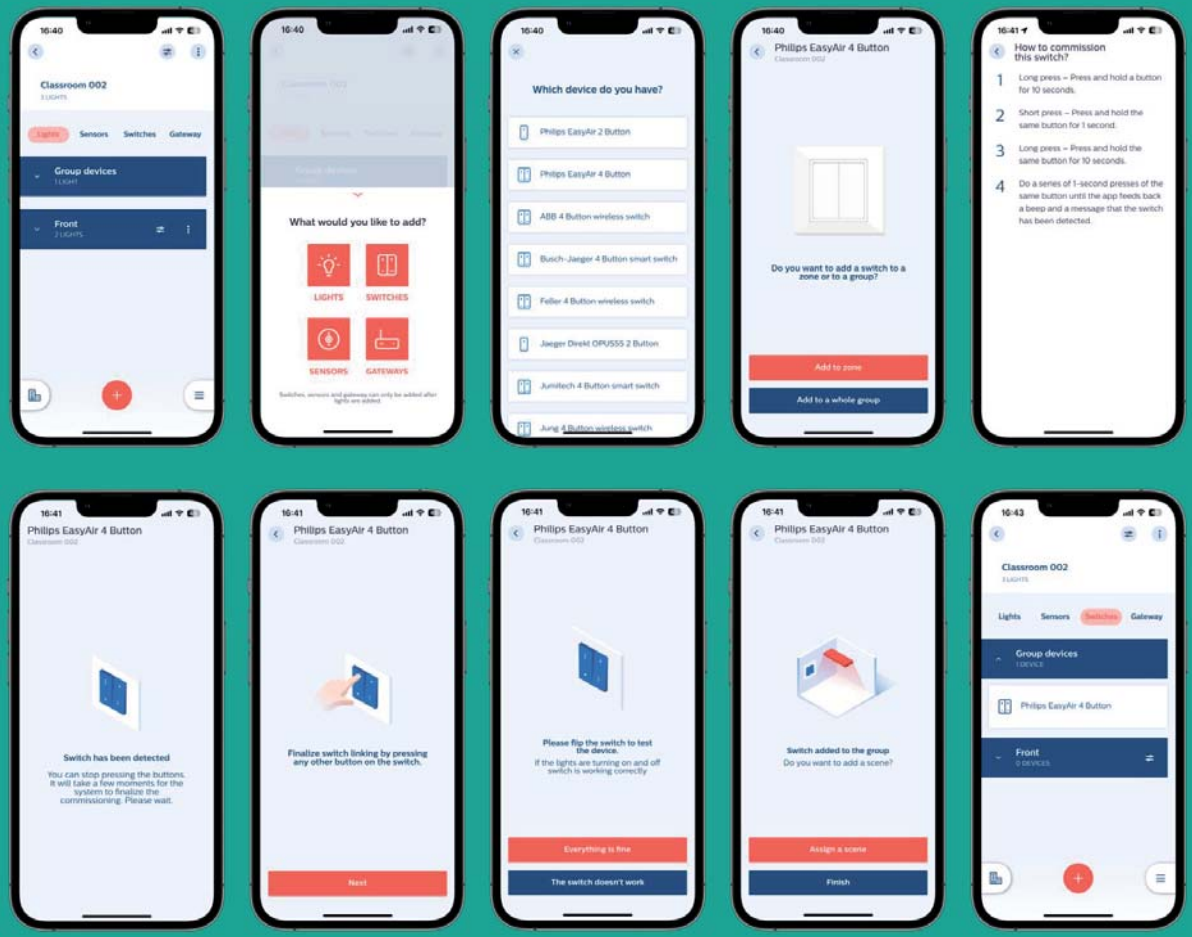
Purpose
A wireless Zigbee switch can be added to a group or zone for manual lighting control. Features of the switch are shown below. Position of each feature on the switch can vary depending on manufacturer.

Feature-position may vary based on the switch model.

How to

- Click on the “+” on the group screen and select “Switch”.
- From the drop-down list of compatible switches select the brand and type of switch you like to add.
- Next indicate whether you would like to add to a zone or to the whole group.
- Follow the switch commissioning instructions shown in the app or on our website precisely.
- Once commissioned, the app requests to test if the switch works correctly.
- Test the switch by making another button press, and once it works as expected press “Everything is fine”.
- In case of a four-button switch, you can assign and customize scenes in the next step.

Step-by-step guide



Remarks:

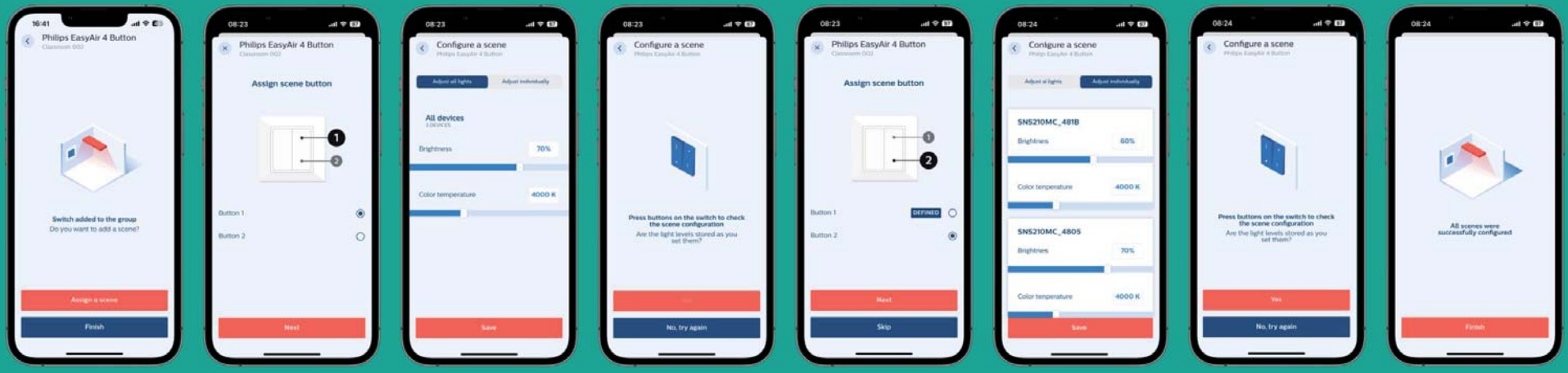
- Please follow the instructions carefully, e.g., press the correct buttons and do not press sequences too fast.
- Add all luminaires in a group first and then add a switch. Switch binding mechanism is to each node within the Zigbee group at the time of commissioning. For firmware versions 1.x, no switch binding takes place, when new nodes are commissioned after the switch was added.
- A switch can be added either to a group or to a zone.
- All switches attached within a group should belong to a single brand. Combining switches from different brands is not recommended.
- In case switches are used for a group and at the same time for zones of that group, three things need to be considered:
  - The switch of the group should be added first.
  - Only 2-button switches should be used for the group.
  - In the zones 4-button switches with scene setting can be used.
- If two or more zones are used with a 4-button switch, the maximum number of lights is 20 per zone.
- In case the switch is not detected during the commissioning procedure, please re-try.
- The backside of the switch may show an “O” and an “I indicator. The switch needs to be mounted such that ‘I’ is at the TOP and ‘O’ at the BOTTOM.
- Do not remove the rocker from the switch module. If the rocker is placed back incorrectly, the switch does not function properly.
- During commissioning of ZGP switches (in test setups) the devices should not be too close to the lights (between 2m and 5m distance) to avoid commissioning failures.

Configuring scenes

Purpose
Different lighting configuration settings can be stored in scenes. With any 4-button wireless switch, up to 2 scenes can be configured.

How to
- Choose “Assign a scene” at the end of the switch commissioning or select the device from the group overview.
- Select the button with which that scene will be switched on and off.
- The light levels of all the luminaires in the scene can be set individually or get the same value when set together.
- Test the scene setting by pressing the selected button of the wireless switch.
- Set the second scene for the second scene button and select light levels and CCTs.
- Once all scenes have been configured and all light levels are as expected, tap “Finish”.

Step-by-step guide

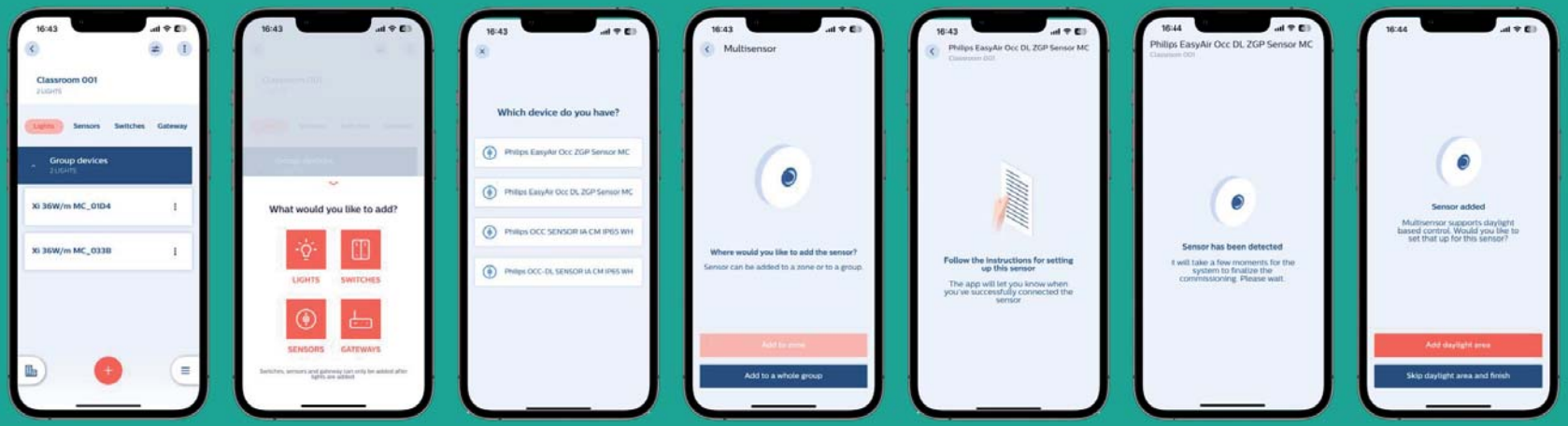


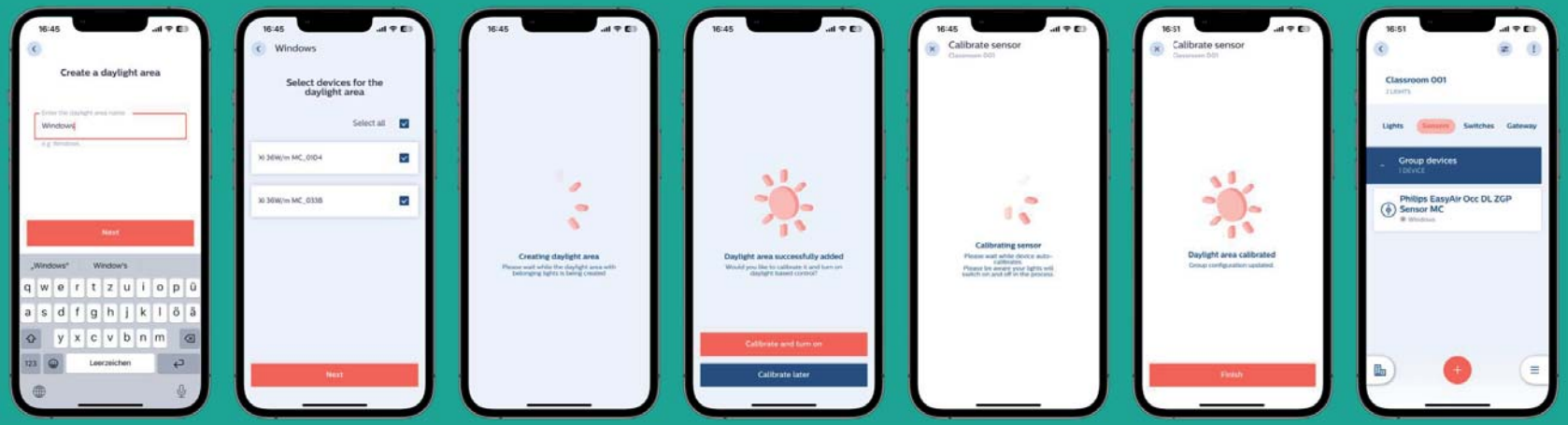
Adding external ZGP-Sensors

Purpose
To control a group or a zone with one sensor, external ZGP-sensors can be commissioned to a group or to a zone, consisting of lights with wireless drivers or lights with SNS410.

How to – add a sensor
- Click on the “+” on the group screen and select “Sensors”.
- From the drop-down list of available sensors, select the type of sensor you like to add.
- Next indicate whether you would like to add the sensor to a zone or to the whole group.
- Follow the instructions for setting up the sensor.
- When the sensor is added, you can choose to finish the process or assign lights to a daylight area, see page 33 for more explanation.

Step-by-step guide – add a sensor





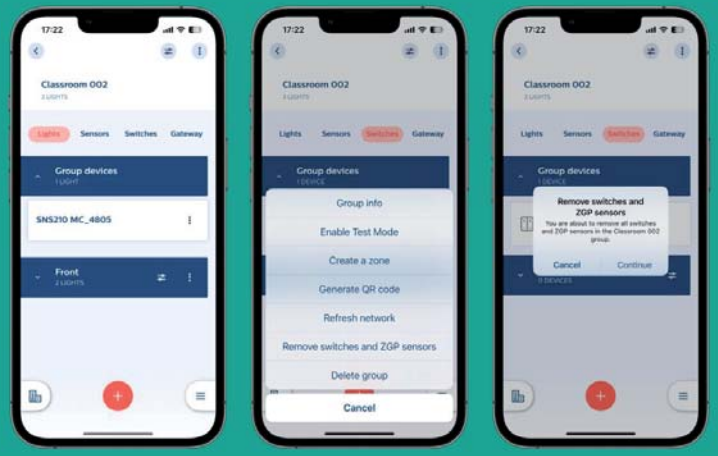
Remarks:

- You can add more than one sensor to a group or zone.
- You cannot add ZGP sensors to groups consisting out of wireless drivers and luminaire-integrated sensors (hybrid networks). This will be enabled with a future app update.
- With ZGP-sensor the group size must not exceed 25 lights for firmware 1.
- During commissioning of ZGP sensors (in test setups) the devices should not be too close to the lights (between 2m and 5m distance) to avoid commissioning failures.
- In case ZGP-sensors are used for a group, and at the same time for zones of that group, the sensor(s) of the group must be added first.
- With firmware 2.1.1, situations may occur when sensors cannot be added to the same group it was previously removed from. Try using a different sensor or to recommission the entire group.

How to - removing am external ZGP-sensor

- A sensor can be removed by following the steps below.
- When you remove a sensor, you must remove all sensors and switches in the group/zone. Additionally, you must reset the sensor if you want to reuse it.

Step-by-step guide – reset an external ZGP-sensor

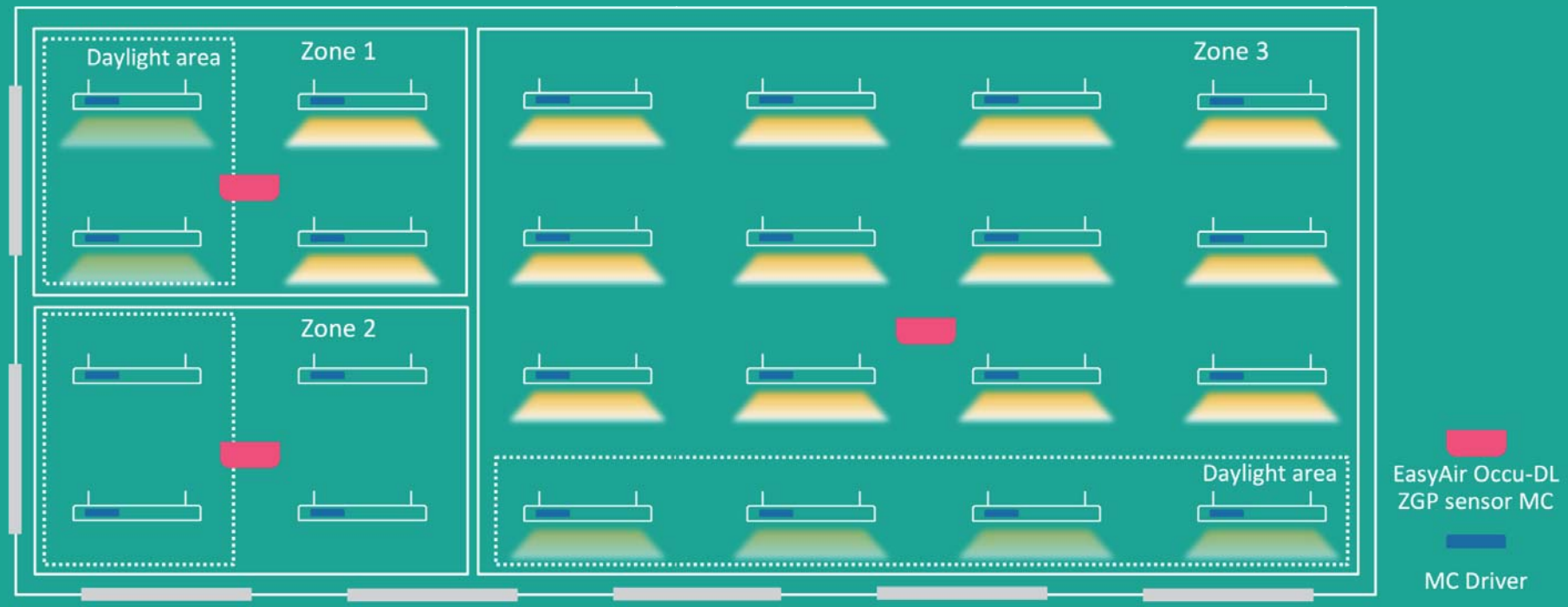


How to - reset an external ZGP-sensor

- A sensor can be reset as indicated in the sensor manual. Usually there is a reset button that must be pressed for several seconds.
- This action is useful if, for instance, a sensor is still assigned to a group, but the group cannot be assessed.

Daylight Area with external ZGP-sensors

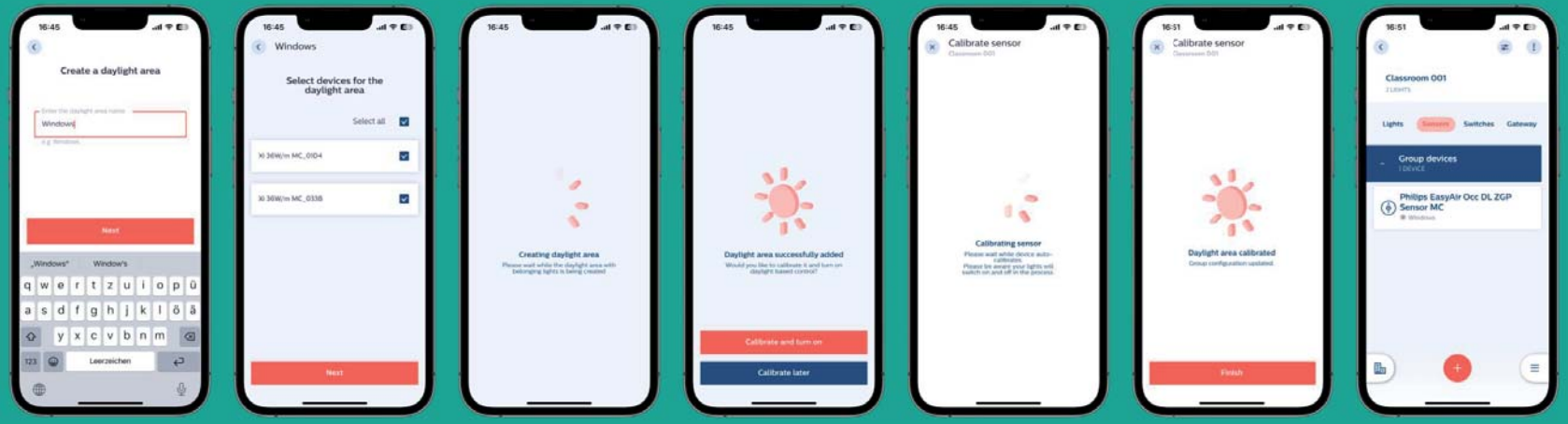
Purpose
Lights assigned to a daylight area, dim down when the amount of daylight as sensed by internal sensor, increases. You can assign daylight areas to a group and/or to a zone. Only the lights in the daylight area will follow daylight regulation. Typically, those are the lights close to the window.



How to

- Choose “Create daylight area” at the end of the sensor commissioning or via the device info screen of the sensor from the group overview.
- Assign a name for the daylight area.
- Select devices for the daylight area and click next.
- Choose “Calibrate and turn on” to activate the calibration process. This process can be skipped by selecting “Calibrate later” and done via the device info screen from the group overview.
- After the calibration is done, hit “Finish” to finalize the commissioning.

Step-by-step guide



Remarks:

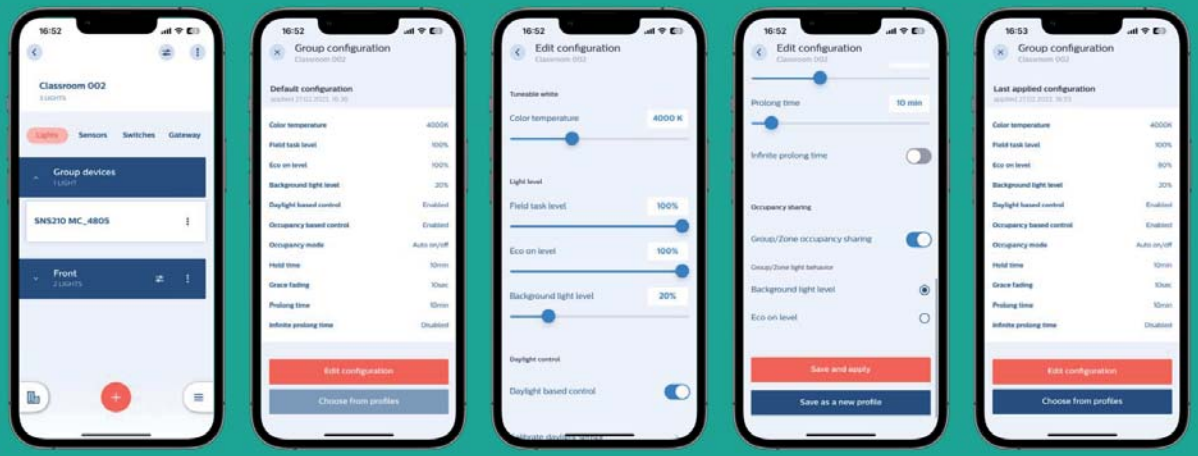
- A daylight area can be in a group or in a zone but cannot include lights of different zones, or lights of a zone and lights outside that zone.
- Up to 25 lights can be moved into a daylight area.
- For best lighting performance, it is recommended to calibrate daylight areas at night times.
- Lights can be moved from one daylight area to another and can be added or removed. But repeated actions can cause wrong light behavior. It is recommended to plan daylight areas carefully in advance.

Group Configuration

Purpose
To customize light levels, light behavior, and response times of all lights within a group.

How to
- Enter the group overview screen.
- Tap the second icon from the top right.
- Choose “Edit configuration” and change the parameters according to your needs.
- Press "Save and apply" to modify configuration.

Step-by-step guide



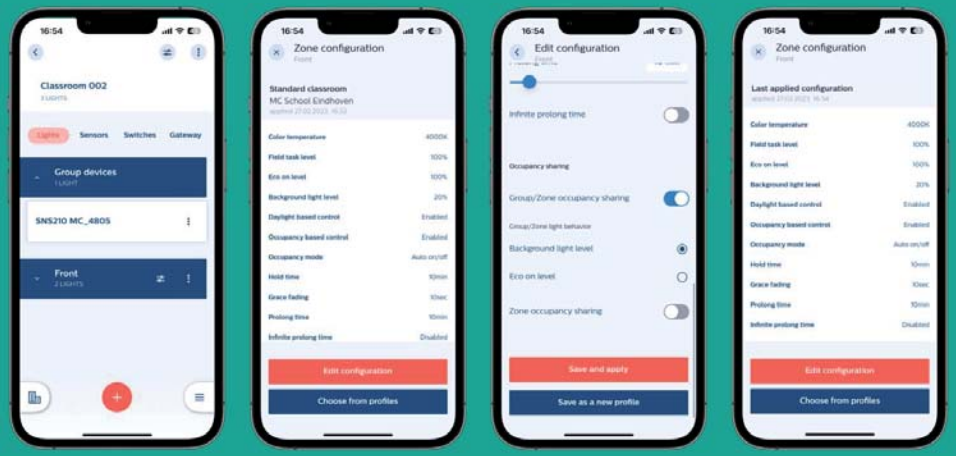
Remarks
- The lighting parameters related to the sensors are explained in section “Configuration” in later part of the document.

Zone Level Configuration

Purpose
To customize light levels, light behavior, and response times of all lights within a zone.

How to
- Enter the group overview screen.
- Tap the configuration icon next to the zone name (second icon from the right).
- Choose “Edit configuration” and change the parameters according to your needs.
- Press "Save and apply" to modify configuration.

Step-by-step guide

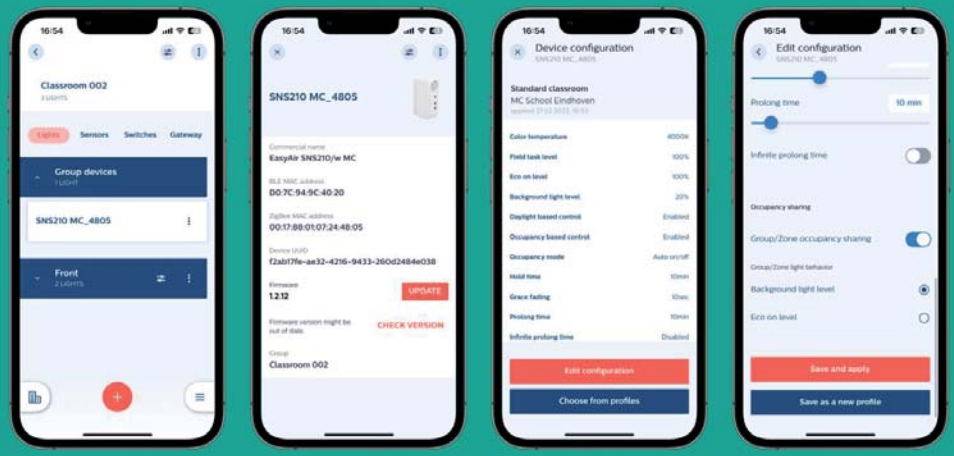


Single Light Configuration

Purpose
To customize light levels, light behavior, and response times of a single device.

How to
- Enter the group overview screen and select a device by clicking on the name of the device.
- Tap the configuration icon at the top of the screen (second icon from the right).
- Choose “Edit configuration” and change the parameters according to your needs.
- Press "Save and apply" to modify configuration.

Step-by-step guide



Remarks
- If a device does not respond to a single light configuration setting, it is recommended to trigger “Refresh network” as described on page 78.

Daylight regulation

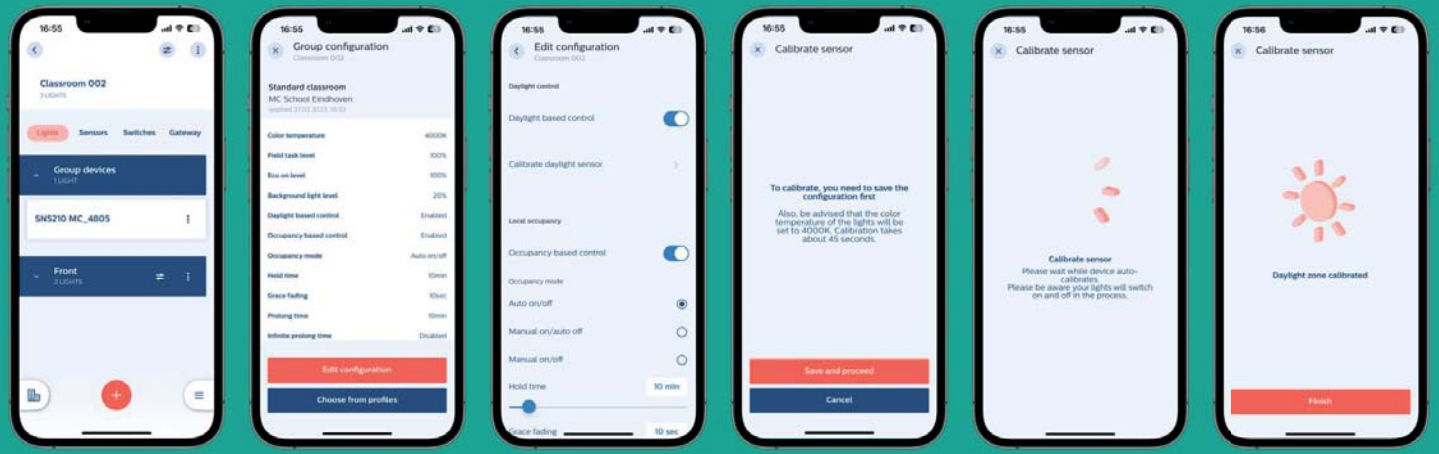
Purpose

In the presence of daylight, the output from a luminaire is regulated to achieve a target light level on the working plane to save energy.
The light output from the luminaire will still be bound by Eco-on level on the upper side and Back Ground level on the lower side (see figures on pages 55, 56, and 57).

How to

- Enter the group and configuration screen for a device, zone, or group.
- Choose “Edit configuration” and change the light level parameters.
- Activate “Daylight based control” and choose “Calibrate daylight sensor”.
- Choose “Save and proceed” to start the calibration.
- Finalize process by selecting “Finish”.

Step-by-step guide



Remarks

- Any time after configurating the Eco-on level, a calibration routine shall be initiated. When the calibration routine is run, the light level adjusts to the full light output (given by the operating current of the luminaire) times the percentage value set for the Eco-on level. By adjusting the operating current of the luminaire and the Eco-on level in the app, a user has full control on the light level realized on the desk.
- If no calibration is performed, the light output adjusts approximately to 500 lux times the value set for the Eco-on level. If the Eco-on level is set to 80% for example, the light output from the luminaire adjusts to 400 lux on desk level.
- The calibration for daylight dependent light regulation needs to be done in the absence of daylight, i.e., at night or with blinds closed.
- When the calibration is run, the light output of the luminaires first goes to a low level and to a high level before it regulates to the set light level. This procedure takes approximately 1 minute for luminaire-integrated sensors, 5 minutes for wireless drivers, and 7.5 minutes for MC lamps.
- The calibration must not be interrupted. Termination of a running calibration can compromise a following calibration process. In case the process has been accidentally terminated, please wait 7 minutes before restarting the calibration.
- The lux levels are an estimation for a typical office configuration; the precise level depends on the amount of light reflecting surfaces in the field of view of the sensor. With different reflecting surfaces below the luminaires, e.g., light desks or dark carpets, the light output of the luminaires can be different. If the light level is not as wanted, please do the calibration, and adjust the light level via the Eco-on level.
- To determine the optimum Eco-on level it is recommended to turn off daylight regulation temporary before calibration, and to measure illuminance as a function of Eco-on level.
- Daylight areas must be created before switching on Daylight based control.
- In case daylight-based control is disabled, luminaires with SNS212 MC switch on at field task level after a power cycle. This is different to SNS210 MC which switches on at Eco-on level. After the first occupancy cycle, SNS212 MC and SNS210 MC are aligned, and both go to Eco-on when presence is detected.

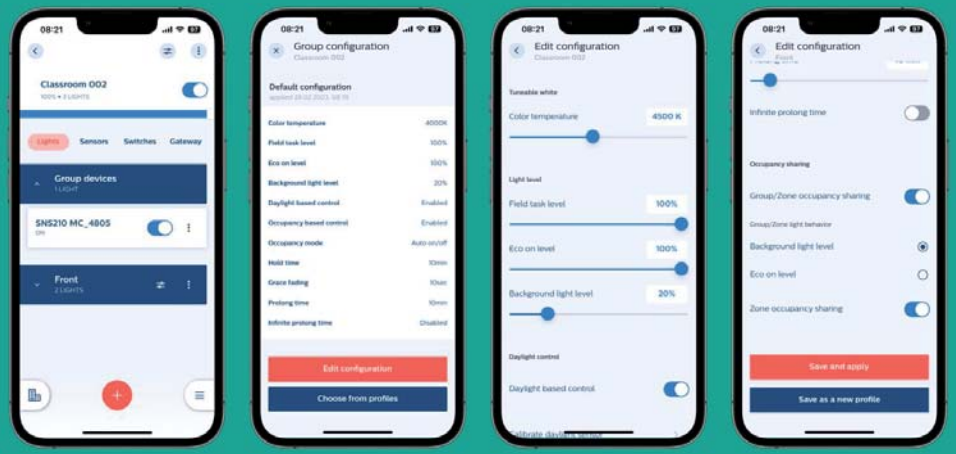
Tunable White – Configuring CCT levels

Purpose
When SNS21x MC is used with a FlexTune SR driver or when the wireless MC FlexTune driver is used, the Color Temperature (CCT) of the luminaire is an additional configuration parameter. This applies to the automatic/manual ON level as well as the two scene recall levels (short press of the scene buttons).
In addition to the scene recalls, press, and hold of the Scene-1 button will gradually increase the CCT and press and hold the Scene-2button will gradually decrease the CCT.

How to – configure CCT for AUTO-ON

- Configure the color temperature (CCT) for the automatic/manual ON-level in the “Edit configuration” screen.

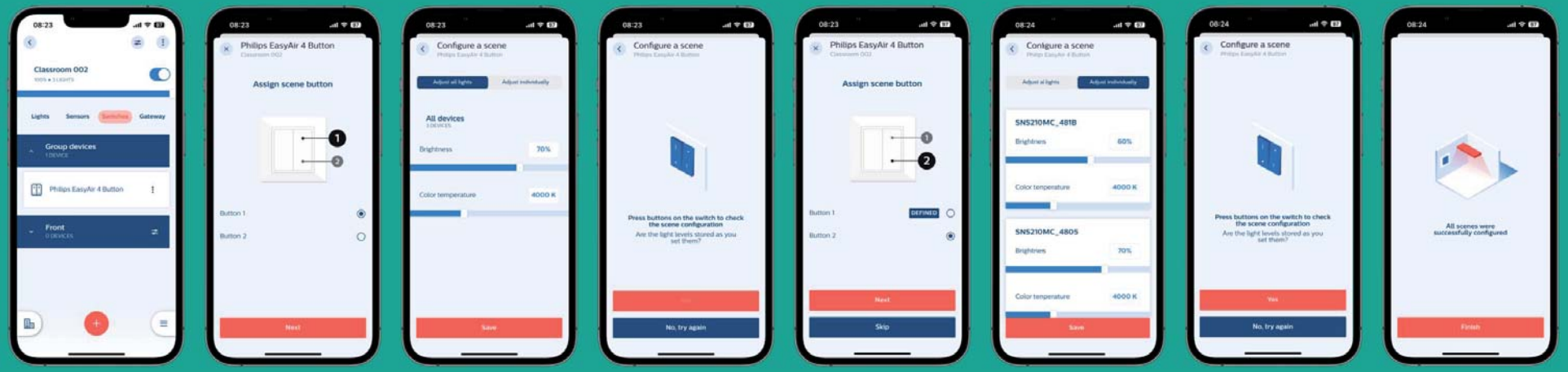
Step-by-step guide – configure CCT for AUTO-ON



How to – configure CCT for scenes

- Configure the color temperature (CCT) for the Scene buttons in the “Configure a scene” flow as shown below. This can be done for each of 2 the scene buttons on the 4 button ZGP switch. The Brightness can be configured as well.

Step-by-step guide – configure CCT for scenes



Remarks:

- When configuring a scene with a four-button switch, two sliders appear on the screen: one for light-level setting and one for CCT setting. While adjusting the light level, the system directly responds. While adjusting the CCT, the system does not respond immediately, and the set values appear after “save and apply” the configuration.
- Mixing Tunable White fixtures with non-Tunable White fixtures in one group is not supported.
- In case different types of tunable white fixtures are mixed in a group, e.g., when combining TW point drivers with SNS410 + TW linear drivers, the system with smallest CCT range must be commissioned first (TW linear driver in this example) to avoid issues at the edges of the CCT range.

Circadian Rhythm

Purpose
A Human Centric Lighting (HCL) profile can be used to mimic the changes in color temperature of natural sunlight.
The profile needs to be installed on a ubisys gateway with BLE dongle for peripheral use in MasterConnect.

Our partner ubisys Technologies GmbH provides an instruction video on how to load the profile onto the gateway using an app from ubisys, you can find it on their website via this link.
The default profile “HCL for Philips EasyAir SNS21x MC” starts with warm white light in the morning goes to cold white at mid-day and becomes warm white in the evening again.

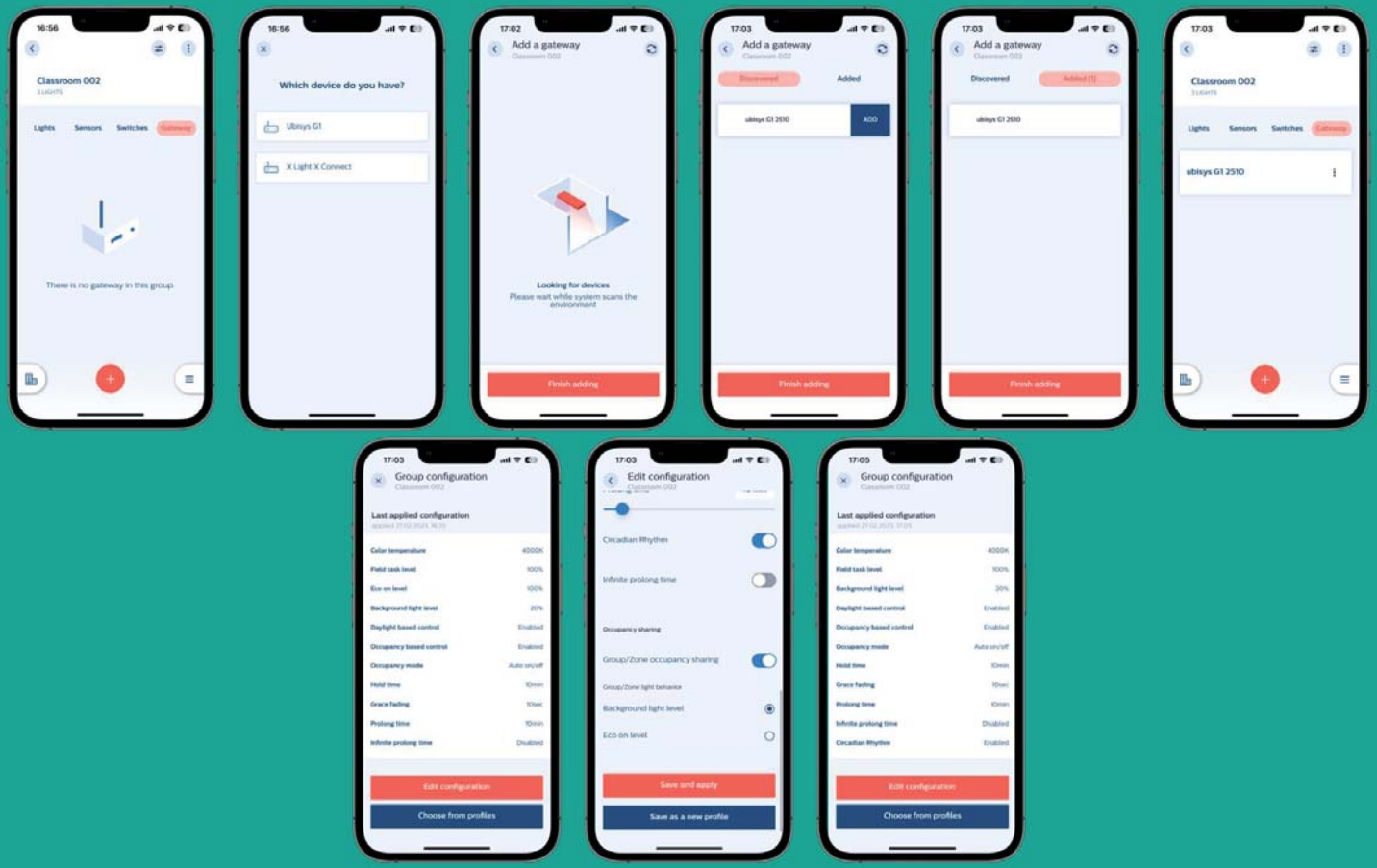
It is also possible to set customized lighting profiles with the Ubisys app: sample points (time, CCT and intensity) can be set throughout the day. In between those points CCT and intensity change gradually. When using a customized profile make sure that in the ubisys app the steering interval is set to 30s and that the parameter “suppress insignificant changes” is put to “no”.
The gateway needs to be commissioned in MasterConnect. After commissioning the parameter “Circadian Rhythm” needs to be enabled.

When Circadian Rhythm is enabled, the Eco-on level is not a configuration parameter anymore because light intensities are now controlled by the gateway.

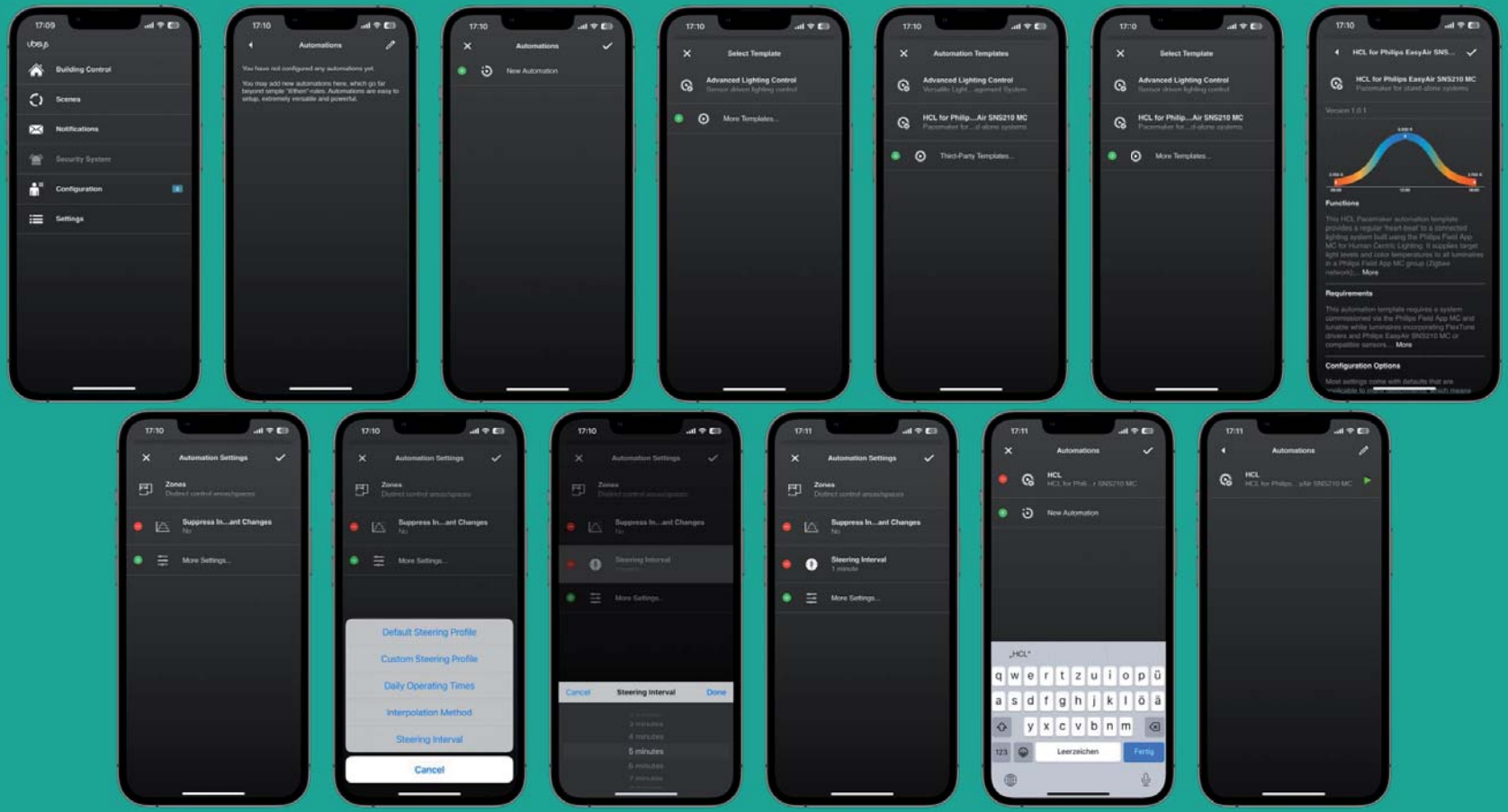
How to – adding a peripheral gateway and changing the configuration

- Click on the “+” on the group screen and select “Gateway”.
- Choose the gateway you want to commission.
- Select the right gateway from the scan list by clicking “Add” and “Finish adding”.
- Enter the group configuration screen and choose “Edit configuration”
- Activate “Circadian Rhythm” and confirm by pressing “Save and apply”.

Step-by-step guide – adding a peripheral gateway and changing the configuration



Step-by-step guide – ubisys App



Remark

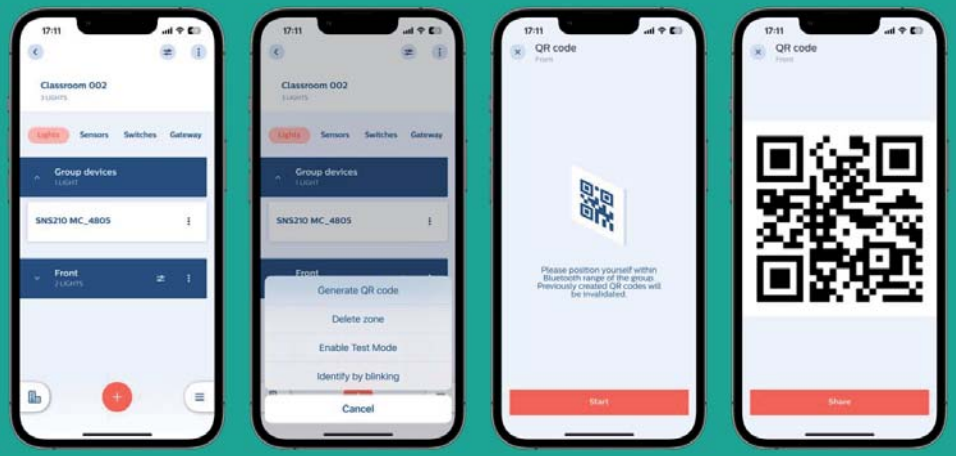
- When working with a peripheral gateway in combination with a Circadian Rhythm lighting profile, please work as follows: first add all the lights that should be included, then add the gateway. If you want to add lights later, please remove the gateway, add the new lights, and add the gateway again.
- During commissioning of the gateway in MasterConnect the gateway needs to be in Bluetooth range of the smartphone, i.e., within 5m.
- On the Ubisys gateway an automatic update of sensor firmware via the gateway is enabled by default as soon as the gateway is commissioned. So, if the gateway in a MasterConnect system is connected to internet, the firmware upgrade can happen without control of the user. This is an unwanted situation and can result in unexpected light behavior because the Philips MasterConnect app is not updated automatically either. Therefore, it is recommended to disable automatic firmware upgrade via the gateway, see annex on page 92.
- When using a customized profile make sure that in the ubisys app the steering interval is set to 30s and that the parameter “suppress insignificant changes” is put to “no”.
- Circadian does not work as expected in combination with Infinite Prolong time.

Generating QR Code

Purpose
To provide lighting control access for end users via smartphone or tablet with the Philips MC control app.

How to
- Generating a QR code can be done on group or zone level.
- To generate QR code for a zone click on the 3 dots next to the zone name and select “Generate QR Code”.
- To generate QR code for a group click on the 3 group dots at the top right and select “Generate QR Code”.
- Confirm the creation by choosing “Start”.
- A QR is ready to be shared and can be printed for placement at the intended application area, making it accessible for scanning by an end-user.

Step-by-step guide



Remarks

- It is not supported to mix tunable white and single-color white lights in one group.
- For QR generation the user needs to be in range of the lights.
- Within one group QR codes should be generated either for the whole group or for one or more zones, but not for the group and a zone.
- The light settings of scenes 1 and 2 that show up with the Philips MasterConnect Control app, can be adjusted by setting scenes using a 4B switch before the QR code is generated. However, this adjustment of scenes for end user control is only possible if the firmware versions FW 1.2.12 and higher.
- For groups with MC lamps, QR codes for Philips MasterConnect Control app cannot be generated.

Configuration

List of Configurable Parameters

MC devices can be configured using the Philips MasterConnect app. The following parameters can be configured via the app for an entire group of lights or a single light. Note that not all parameters are available for all MC devices.

Field Task Level
Field task Level can be tuned to reduce the maximum output of a luminaire to a certain percentage of the maximum power of the driver. With a manual switch override, a user could dim up to this level. Task light level is a configurable parameter and can be adjusted to a value between 1% and 100% through the app.

Eco-on Level
A configurable light level to enable eco-friendly light behavior, enabling energy savings. In automatic behavior, lights switch on to Eco-on Level and it can be set to a value between Field Task level and Background Light Level.

Background Light Level
A configurable light level that can be set as the lowest dim level and enables comfort for end users. This light level comes into play when the hold time has expired.

Daylight based control
When enabled, daylight-based dimming is activated to further enable energy savings. With this feature, when there is plenty of daylight, the light output from the luminaire adjusts to maintain a certain light level. Daylight based control is locally done for every light within a group. For more details see page 38.

Group/Zone occupancy sharing
A configurable feature which enables luminaire-integrated sensors to share its local occupancy detection status with the rest of the group. This can enable granular dimming i.e., when presence is detected within the group, the luminaires in non-occupied areas or ‘elsewhere’ areas can be configured to stay at a desired light level (specified by Group light behavior parameter). In case occupancy-based control is disabled while group occupancy sharing being enabled, elsewhere occupancy is taken as local occupancy trigger.

Zone occupancy sharing
This parameter appears for a Zone only when the ‘Group/Zone occupancy sharing’ is enabled for the parent Group.
If ‘Zone occupancy sharing’ is enabled as well, occupancy is shared only with the other lights in the same zone; if it is disabled, occupancy is shared with the whole group.

Group/Zone light behavior
Enables choice of light behavior for the rest of the group i.e., to determine the light levels of lights within a group that reside in non-occupied areas. Group light behavior enables granular dimming of lights within a group and brings comfort to users via lighting.

Occupancy based Control
When enabled, occupancy detection takes place to control the lighting.

Occupancy mode
This feature can be configured to maximize lighting control behavior with wireless switches. The mode options are auto on/off, manual on/off and manual on/auto off. For more details, see Page 52.

Hold time
A configurable timer that begins once occupancy is no longer detected. Lights continue to be at Eco-on level for a period set as Hold Time, before dimming down to Background Light Level. If occupancy is detected again during Hold Time, the timer stops, and the automated occupancy cycle re-starts.

Grace fading
The transition period where the lights are being dimmed down from the Eco-on light level to the Background light level. This is a configurable parameter and enables slow change of light levels for improved comfort.

Prolong time
A configurable timer that keeps the lights at Background Light Level for a certain time set as Prolong Time before switching off. Prolong Time comes into effect after the elapse of Hold Time period. In case Group light behavior is set to Eco-on level, lights in non-occupied areas continue to remain to Eco-on light level.

Infinite prolong time
When enabled, lights do not switch off and continue to be in Background light level or Eco on level (when set via Group Light Behavior parameter).

Color Temperature
Setting of the Color Temperature for the automatic and manual on level, more details can be found in the section Tenable White – Configuring CCT levels on page 40.

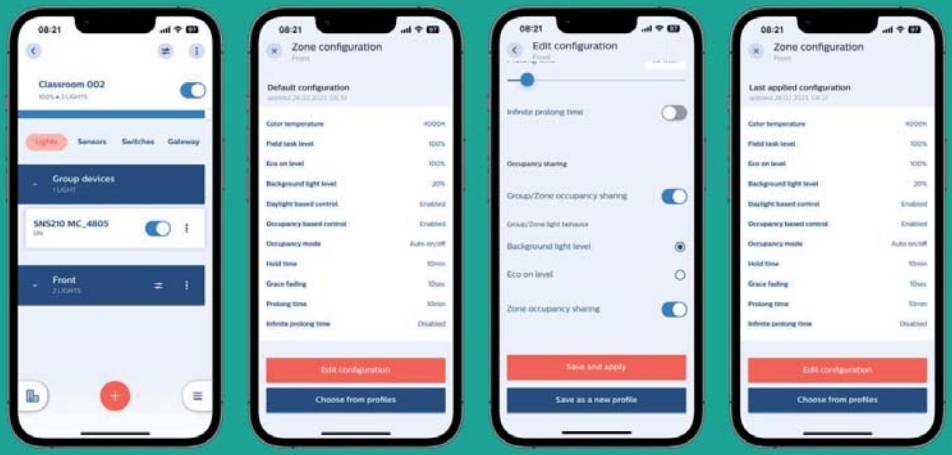
Circadian Rhythm
This feature can be enabled or disabled, allowing a peripheral gateway to run HCL schedules.

Occupancy sharing within a group or a zone

Purpose
Individual lights with SNS21x MC sensors within a group or a zone can share occupancy. If one light is triggered, it also triggers the other lights in the group or zone.

How to
- If ‘Group/Zone occupancy sharing’ is enabled, the light shares occupancy.
- If ‘Zone occupancy sharing’ is enabled as well, occupancy is shared with the other lights in the zone only; if it is disabled, occupancy is shared with the whole group.

Step-by-step guide



Occupancy modes

This feature can be configured to maximize lighting control behavior together with wireless switches. The mode options are auto-on/auto-off, manual-on/manual-off and manual-on/auto-off.

Auto on/Auto off
Lights are switched on and off automatically based on occupancy detection and timer settings. This is the default operating mode for the sensor. In this automatic behavior, lights always switch on to Eco on level. For more details, see Figure 1 on page 53, Figure 2 on page 55, and
Figure 3 on page 56.

Manual on/Auto off
Lights are turned on with a manual command from a wireless switch. A manual on command switches on the lights to Eco-on level and can be further tuned up to Task Level. Lights turn off automatically once vacancy is detected, and timers expire. This mode is typically selected to achieve maximum energy savings. For more details, see Figure 4 on page 57.

Manual on/Manual off
Lights are turned on and off manually through a wireless switch. This is typically used in applications which just need wireless manual control for switch on/off or dimming functionality. This setting must be selected for a MasterConnect System consisting of Xitanium Wireless Drivers only.

Auto-on / Auto-off mode

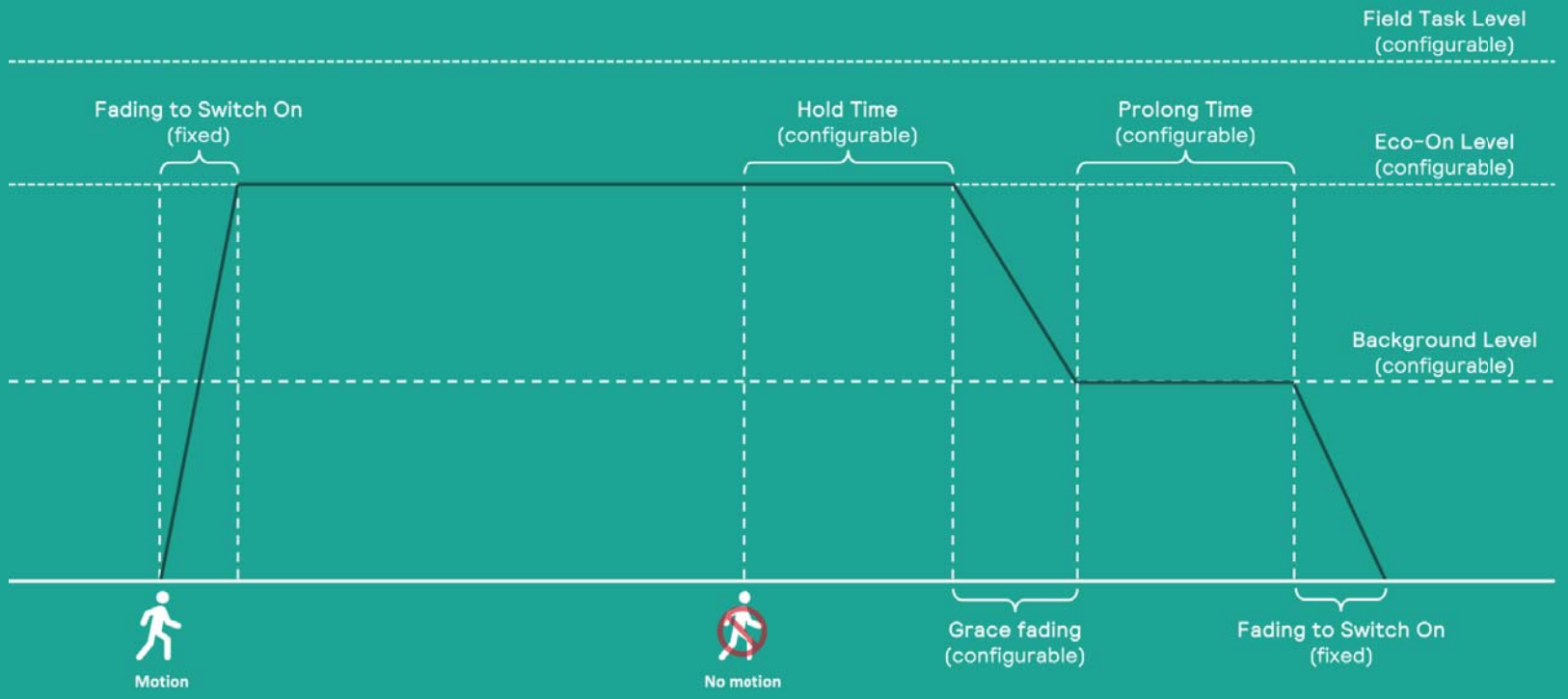


Figure 1 shows the occupancy cycle during automatic light behavior with Eco-on Level set lower than Field Task Level. On occupancy detection, lights switch on to Eco on level. Once vacancy is detected, Hold time starts. During Hold time, lights remain at Eco on level and then dim down to Background light level, with a configurable Grace Fading time. Lights remain at this dim level until Prolong Time expires; after which lights switch off.

Auto-on / Auto-off with Daylight Dimming

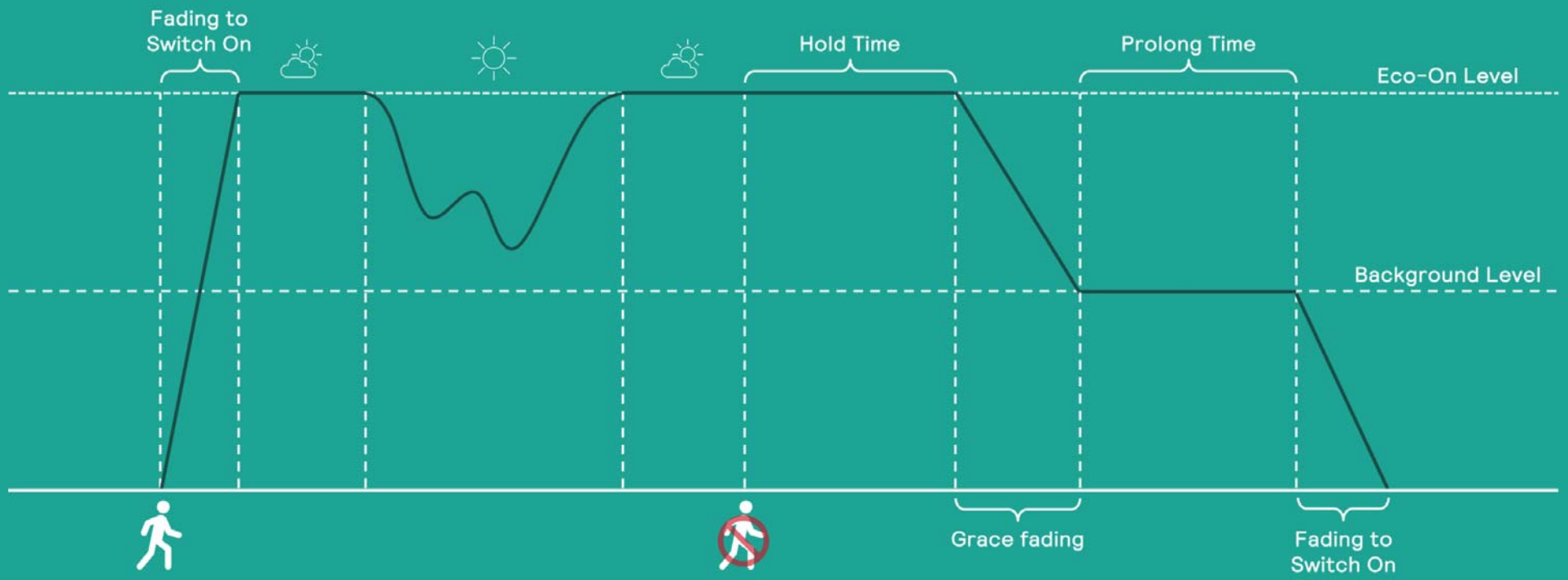


Figure 2 shows how daylight dimming takes place during Auto on/Auto off mode. Once occupancy is not detected anymore, the timers (Hold time and Prolong time) start. Once the timers expire, lights switch off.

Auto-on / Auto-off with Manual Override

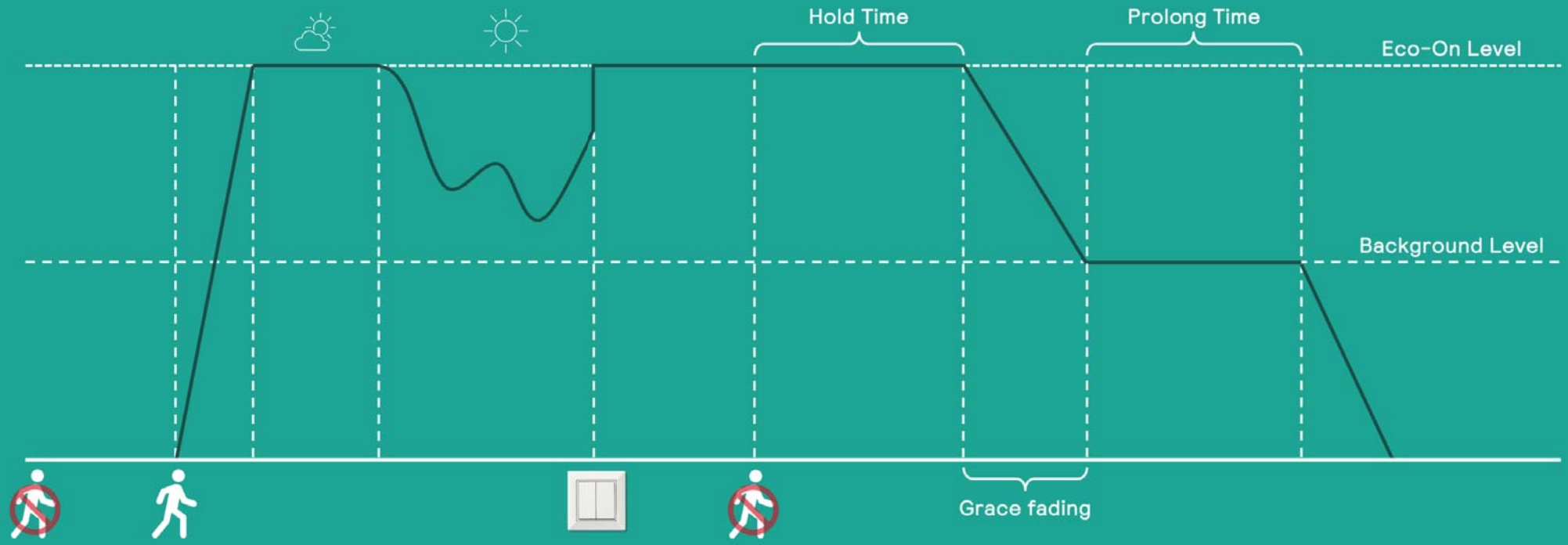


Figure 3 shows how daylight dimming takes place during Auto on/Auto off mode and the effect of manual overrides.
In case of manual override with a switch, lights can be dimmed up or down between the Task Level and Minimum dimming level. When no occupancy is detected anymore, the timers (Hold Time and Prolong Time) get started.
In case occupancy is re-detected during Hold time, the existing light behavior continues, and the timers are reset.
In case occupancy is re-detected during Prolong Time (or after), automatic light behavior starts, and the timers are reset (as shown).

Manual On / Auto Off

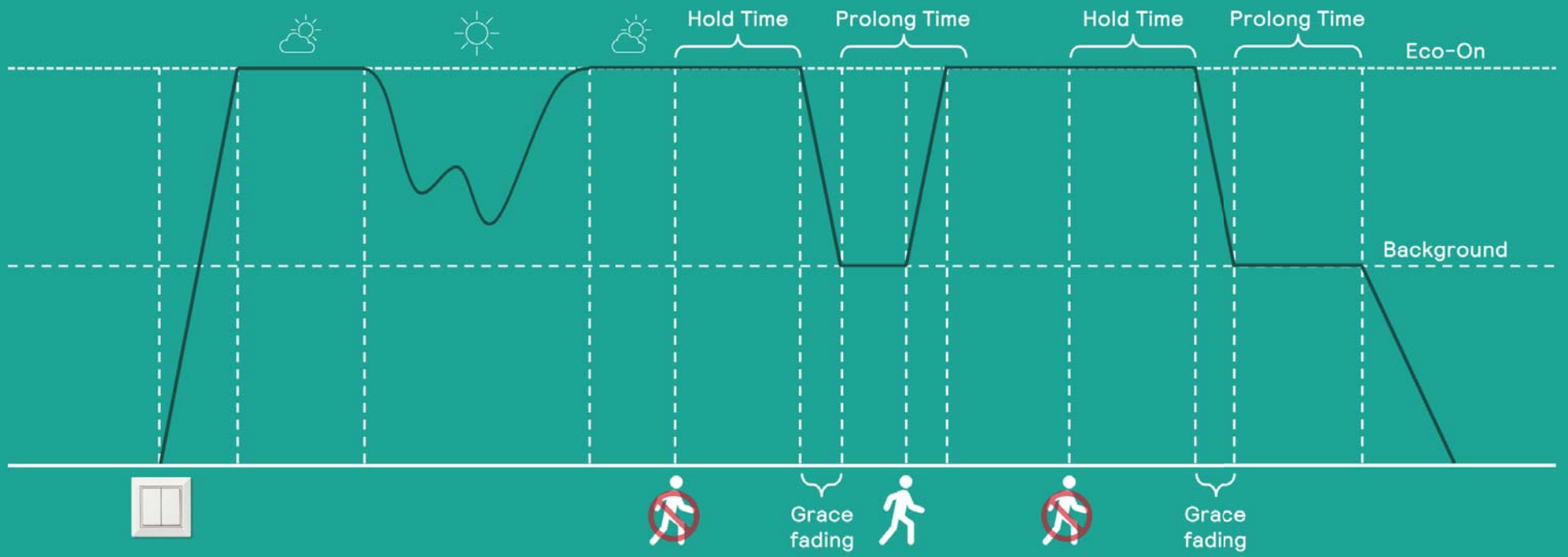


Figure 4 shows how daylight dimming takes place during Manual on/Auto off mode. Occupancy detection starts to determine the light behavior soon after manual trigger.

Summary of Configuration Parameters

Parameter	Description	Range*
Field Task Level	Maximum dim level	1% - 100%
Eco-on level	Switch-on light level	1% - Field Task Level
Background light level	Non-occupied light level	1% - Eco-on Level
Daylight based control	Activate or deactivate daylight regulation	Enabled / Disabled
Occupancy mode	Mode selection for customized light behavior	Auto on / off Manual on / off Manual on / auto off
Occupancy based control	Activate or deactivate occupancy detection	Enabled / Disabled
Group / Zone occupancy sharing	Activate or deactivate sharing of local occupancy	Enabled / Disabled
Zone occupancy sharing	Select occupancy on zone instead of group level	Enabled / disabled

Parameter	Description	Range*
Group / zone light behavior	Light level of non-occupied lights when occupancy is shared by other lights.	Background light level / Eco-on level
Hold time	Timer for the eco-on level after the last movement has been detected.	2 – 100 min (1) 6 – 100 min (2) 7 – 100 min (3)
Grace fading	Dimming transition time from the Eco-on to the background light level	1 – 25 sec
Prolong time	The time for which lights remain at the background light level.	2 – 100 min (1, 2) 1 – 100 min (3)
Infinite prolong time	When enabled, lights continue to stay on and do not switch off.	Enabled / disabled
Color temperature	White tone of tunable white lights when switching on.	Driver range
Circadian Rhythm	This feature allows a peripheral gateway to run HCL schedules.	Enabled / disabled

* Range can differ based on the product combination in a group.

1	Luminaire-integrated sensors
2	Xitanium MC Driver
	EasyAir SNS41x MC
3	MasterConnect Lamps

Energy Reporting

The Philips MasterConnect app can be used to retrieve energy usage reports at group level. Each reading stores the time stamp along with the total energy (in kWh) used by all the light fixtures in the group. The screen displays the previous and current readings along with the energy used for this time interval. The interval data provides a quick snapshot for the energy consumed for a desired period, for example, 1 hour or 1month between readings. All the past reports are also stored in “History” and can be retrieved by the user at a later point. Light fixture energy data is for this report is read from the real measured energy counters of the Xitanium SR Drivers connected to EasySense SNS21x MC.

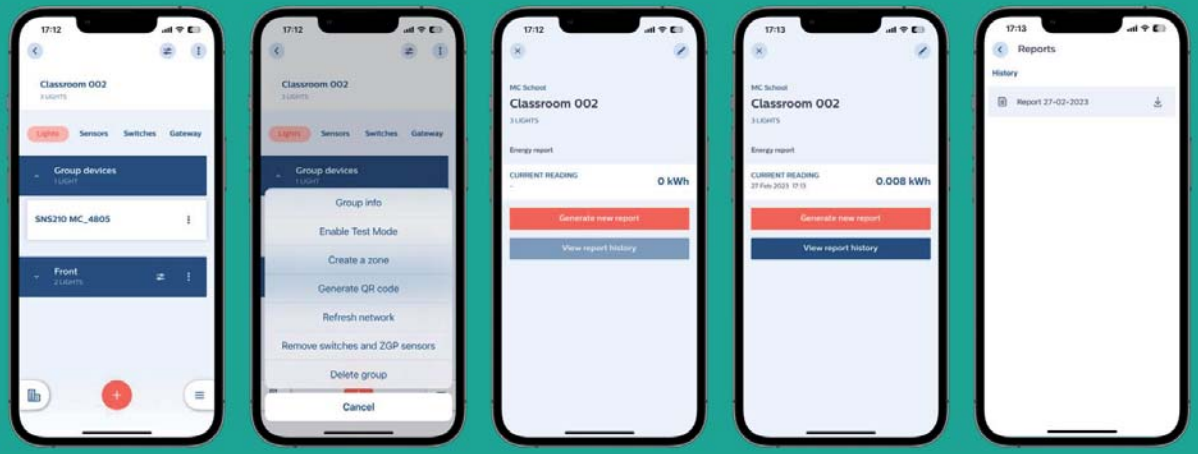
Following parameters are displayed:

- Previous Reading: Time stamp (date and time) and the total energy used by the group of lights at the time of last reading.
- Current Reading: Time stamp (date and time) and the total energy used by the group of lights at this reading. This number is set to zero at first commissioning of the group.
- Interval: The time interval between above two readings and the energy used by the group of lights during this period.

How to

- Open a group and select the menu via the 3 dots in the top right.
- Choose “Group info” from the list.
- Choose “Generate new report” to read out the energy data from the device.
- Choose “View report history” to export data as a csv file.

Step-by-step guide



Remarks

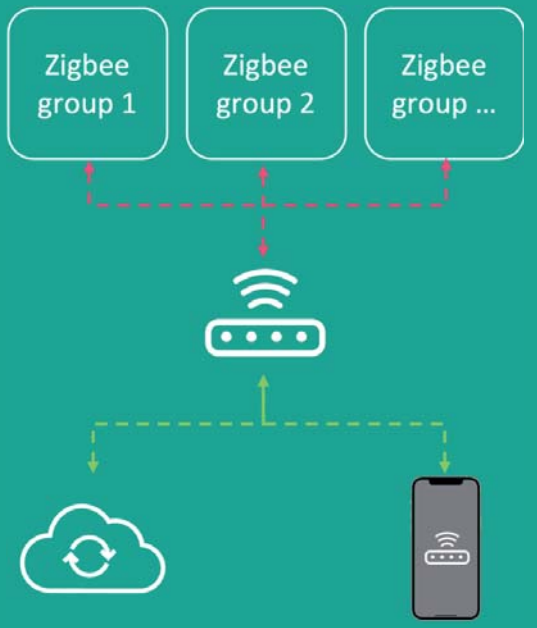
- For SNS410 MC, and wireless drivers, energy reporting is limited to 20 devices.
- In rare cases a report may fail to capture all the devices in the allotted time. If this happens, we recommend waiting for a few minutes and generating another report. The “current reading” number will always be correct when all the devices are captured. The Xitanium SR drivers in the fixtures maintain a continuous and accurate counter for energy used.
- If the app indicates that the reported energy is not complete because a device has been missed, it is recommended to trigger “Refresh network”.

Gateway

Purpose
Enabling projects with a coordinating role of a gateway and dashboard.

How to
- The Philips MasterConnect system can be setup in standalone way and works without a gateway. Out of the box, MasterConnect products can be commissioned via the Philips MasterConnect app but are also open for joining Zigbee networks of gateways from partner companies like ubisys technologies GmbH.
- To commission Philips MC wireless products with partner gateways, software and apps of the partners need to be used.
- When using a customized profile make sure that in the ubisys app the steering interval is set to 30s and that the parameter “suppress insignificant changes” is put to “no”.
- Please refer to gateway suppliers for more information on how to set up a system with their gateway.

Remark:
- If a device is coupled automatically to an (arbitrary) open Zigbee network, it can be recommissioned with the Philips MasterConnect app. This is a desired feature. If a device is coupled automatically to a trusted Gateway, you can recommission it as well. This is an undesired situation and will be repaired in the future via the Gateway.
- If ZGP-sensors are used, the refresh time for lighting profiles is limited to ≥2.5 minutes.



Device claiming

- MasterConnect devices out of the factory start out with open interfaces for BLE and Zigbee communication for easy set up.
- Zigbee device communications become encrypted with secret keys and thus, secure on the first commissioning of MasterConnect devices into a project.
- Once commissioned, the MasterConnect devices from a project will only be visible for users that claimed it first (and for invited users).

Remark

- Due to the open Zigbee interface, the MC devices may join another open (rogue) Zigbee network if significant time elapses between installation of luminaires and commissioning with the Philips MasterConnect app. In this case, the app will still discover these devices and allow commissioning of these devices into a proper MC network.

Maintenance

Save a configuration profile

Purpose
Profiles are used for saving a combination of configuration parameters (e.g., light levels, occupancy and daylight control and timers) for specific applications.

How to
- When changing a configuration instead of “Save and apply” select “Save as a new profile” and give the profile a name and optionally a location description.
- To recall a profile, click on “Choose from profiles” instead of “Edit configuration”. Select the right profile from the list and tap “Choose”.

Step-by-step guide

Remarks
- Editing and deleting profiles is not possible. To store a new configuration a new profile should be made.
- Profiles are stored locally on a phone and not backed up in the cloud.
- It is recommended to provide meaningful names to the profiles based on associated application – e.g., private office, corridor, classroom etc. for easy re-use at a future point.

Project Backup and Access Sharing

Purpose
The Philips MasterConnect app offers the capability to store user created projects in the cloud. This capability allows users to access their projects (even when a phone is lost) and give project access to specific contributors.

Definitions
Upload:
- Local data of a project are transferred to the Cloud.
- When a Project has been created or edited, the app will ask if you want to upload the Project. Each time you upload a project the version in the cloud will be overwritten.

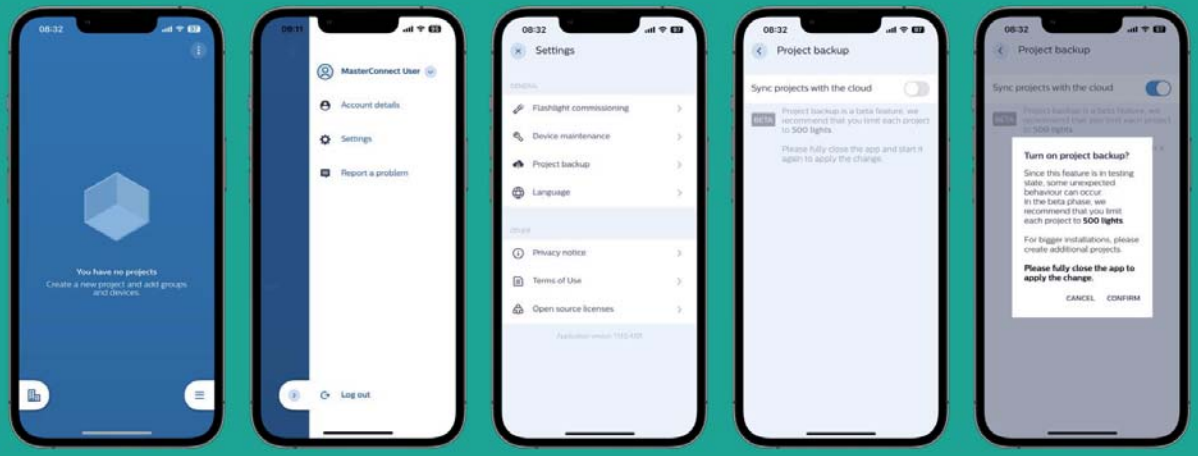
Download:
- Cloud data of a project are transferred to your device.
- Each time you download a project the local version will be overwritten.

Sync:
- The app checks the local and the Cloud data of your projects. Projects that have an updated version in the Cloud will be downloaded, projects that have an updated local version will be uploaded.

How to – activate project backup feature

- To use project backup, enter the “Settings” from the right-hand menu.
- Choose “Project backup” and enable the “Sync project with the cloud” option.
- On iOS, please fully close and reopen the app to apply the change.

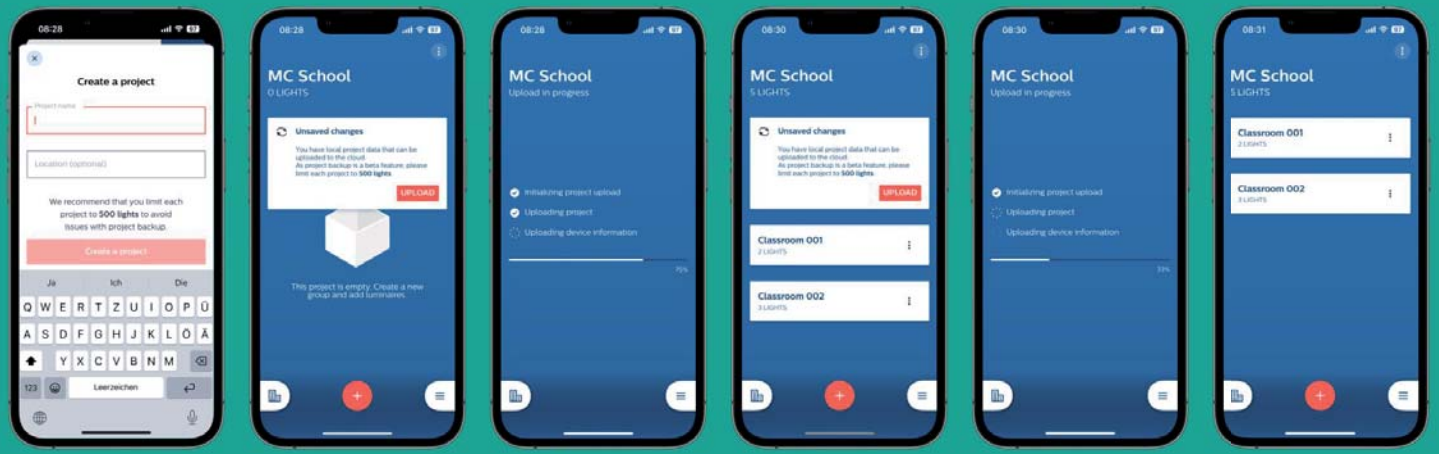
Step-by-step guide – activate project backup feature



How to – upload a project

- When a project has been created or updated, the user will be prompted to upload the project to the cloud.
- Click on upload to transfer changes to the cloud. This will overwrite the previous version of the project in the cloud.

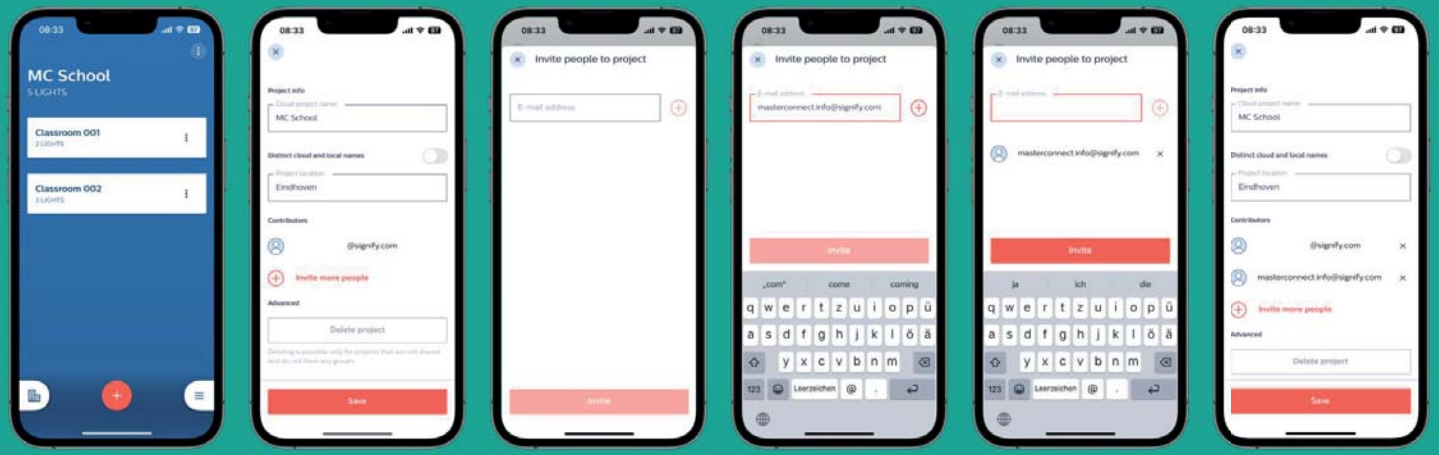
Step-by-step guide – upload a project



How to – invite a contributor

- After uploading a project, open the project edit screen by clicking on the 3 dots at the top right and selecting “Edit project” from the list.
- Choose “Invite more people” and enter the email address of the user.
- Confirm by clicking the plus and invite.
- Save the changes by choosing “Save”.

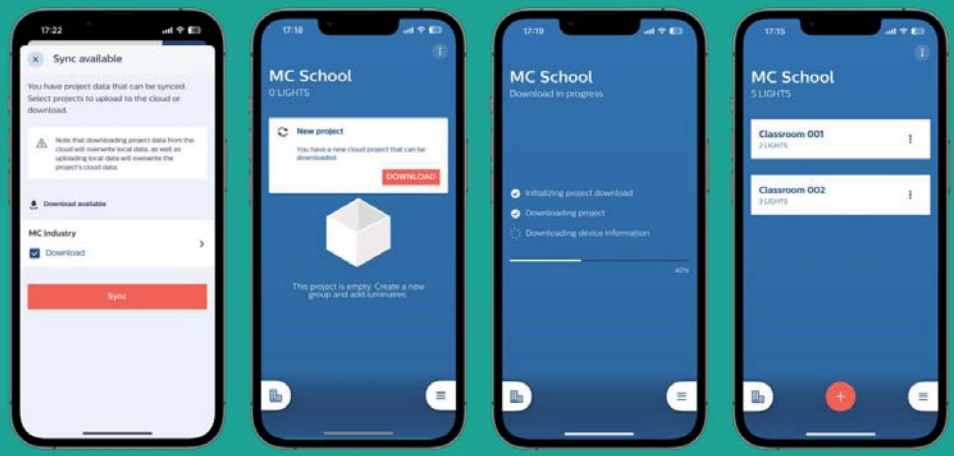
Step-by-step guide – invite a contributor



How to – download a project

- When opening the app or changing to a project, the user will be prompted to download changes that are available in the cloud.

Step-by-step guide – download a project



Remarks

General:

- Device Wi-Fi must be enabled (but commissioning can still take place offline).
- The Internet connection must be stable during synchronization. If the upload fails due to a broken connection, it might be needed to log out from the app, and in again, to recover the process.
- Do not reset a device that is saved in the cloud. It is not removed from the project but cannot be controlled anymore.
- To retrieve lost devices, please contact your local account manager for support.

Contributors & accounts:

- When creating a project with a newly registered user, it may take up to 30 min to activate the project backup feature.
- Only users who have already registered for Philips MasterConnect app can be added as contributors.
- A contributor who invites a new contributor shall not invite his own account which is currently used.

Projects:

- Up- or downloading projects with daylight areas is only possible with app version 1.9.0. or newer.
- Profiles are not part of the cloud back up process.
- Scene parameters are stored in the devices, however, parameter settings from the app are not backed up in the cloud.
- Simultaneous editing the same project on different phones is not allowed.
- When another user has modified a joint project, a notification about the changes only appears when restarting the app.
- Projects can only be deleted when all contributors have been removed first from the contributor list.

Syncing & Sharing:

- It is recommended to always check if uploading, downloading, and syncing have been completed successfully. Downloading of an incomplete project can result in loss of project data when changes are applied.
- Energy reports are not backed up in the Cloud. Therefore, after downloading a project from the Cloud, previously generated energy reports will not be shown. Nevertheless, when generating a new report, this report will be based on all previously generated energy data and provides accurate information.
- Project backup sometimes fails. If it continues to fail after a retry, please use the “Report a Problem” feature (see page 91) to send the app data logs to the MasterConnect Team for analysis.
- The time for syncing depends on the number of devices in a project (typically 4 seconds per device). Please remain patient.
- **Ensure the screen timeout/auto lock is not activated during Syncing.** Please adapt the phone settings accordingly.

- Project size must not exceed 500 devices.
- Do not use another app during up- or download.
- When deleting or adding devices to a group, always sync (upload) the project to the Cloud. This syncing must be done every time a change is done per group. Make sure the project is synced successfully by checking the syncing notification.
- After sharing access to a new contributor, it can take some minutes for the new contributor to get the project fully downloaded.
- If “Distinct cloud and local names” is enabled, each contributor of a project can adjust a project name. This name can differ from the one originally used when the project was created and backed-up in the cloud at that moment. Each contributor can use a different name for the same project.

Working in one project simultaneously:

- You cannot work simultaneously in one project. If installers want to work simultaneously in one building, we suggest the following way of working:
- User 1 creates project “Floor 1” and adds User 2 as contributor. User 1 commissions project “Floor 1”.
- User 2 creates project “Floor 2” and adds User 1 as contributor. User 2 commissions project “Floor 2”
- If needed more projects and users can be added.
- All users are continuously updated about the status of all floors and work on their own projects only.

Remove components from network – standard method

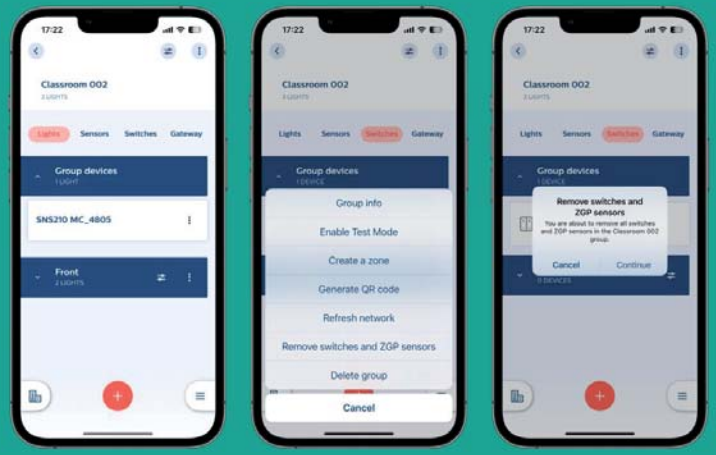
Purpose

Each MasterConnect components is secured and cannot be used by another user that has not access to the project. In case any adaptations are needed on an existing installation, these MasterConnect wireless components need to be removed from the app. Only then, the removed devices can be used in other groups, projects or by other users. Either entire group or single devices can be removed via the Philips MasterConnect app.

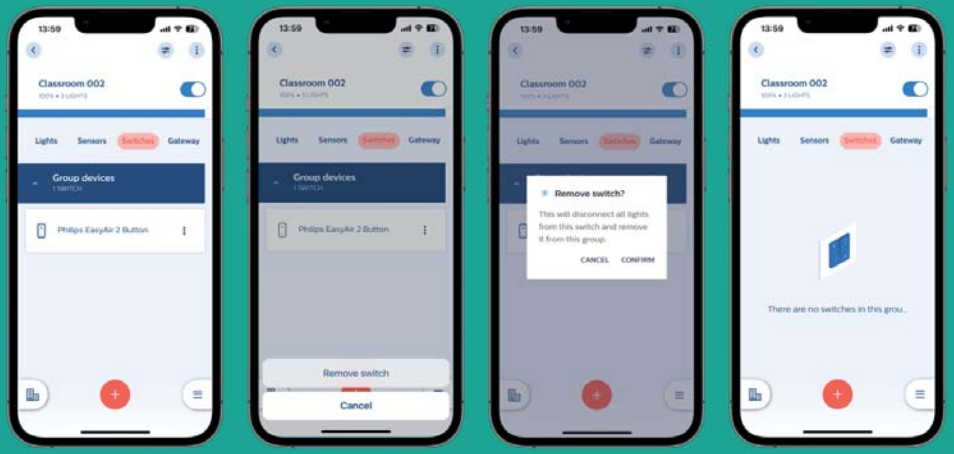
How to

- Remove a single light: In the group overview, choose the light to be removed by clicking on the three dots next to the light and choose “Remove from group”. The intensity of the light goes to full light level. Repeat this step for other individual lights in the group.
- Remove switches: In the group overview, click on the three dots and choose “Remove switches and ZGP sensors”.
- If ZGP switches are used in groups with SNS210 MC with FW 2.0.21 and/or SNS212 MC, they can also be removed individually: click on the three dots next to the switch name and choose “Remove switch”.
- Remove sensors: In the group overview, click on the three dots and choose “Remove switches and ZGP sensors”.
- Remove group: In the group overview, click on the three dots and choose “Remove group”. As feedback, the intensity of all lights goes to full light level.
- Please, make sure that all lights connected to a switch or ZGP sensor are powered on when the switch or sensor is removed.

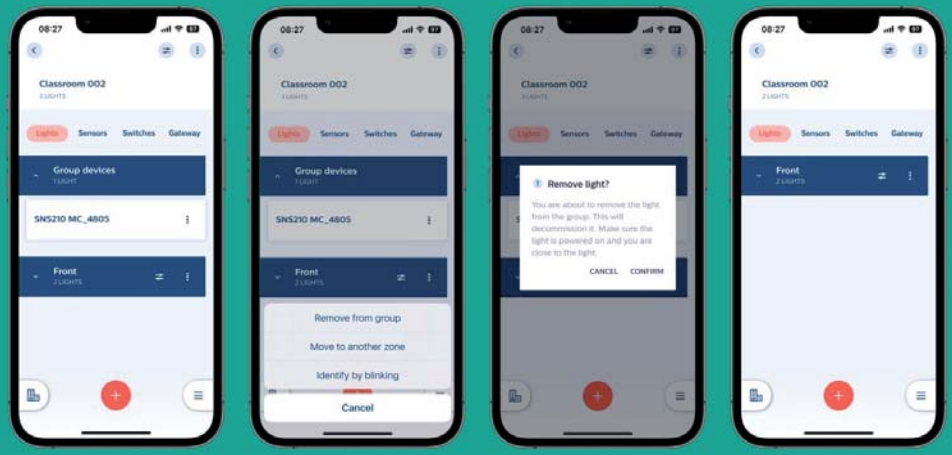
Step-by-step guide – switch and sensor removal (all in one group)



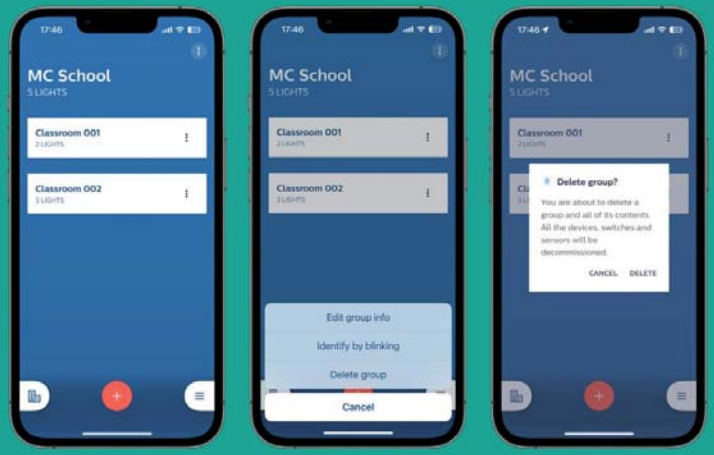
Step-by-Step guide – single switch removal



Step-by-step guide – single light removal



Step-by-step guide – group deletion



Remarks

- When Remove Group does not finish in first attempt, advise to make a second attempt to finish.
- For the removal of switches all devices of the group controlled by a switch need to be in range of the smartphone.

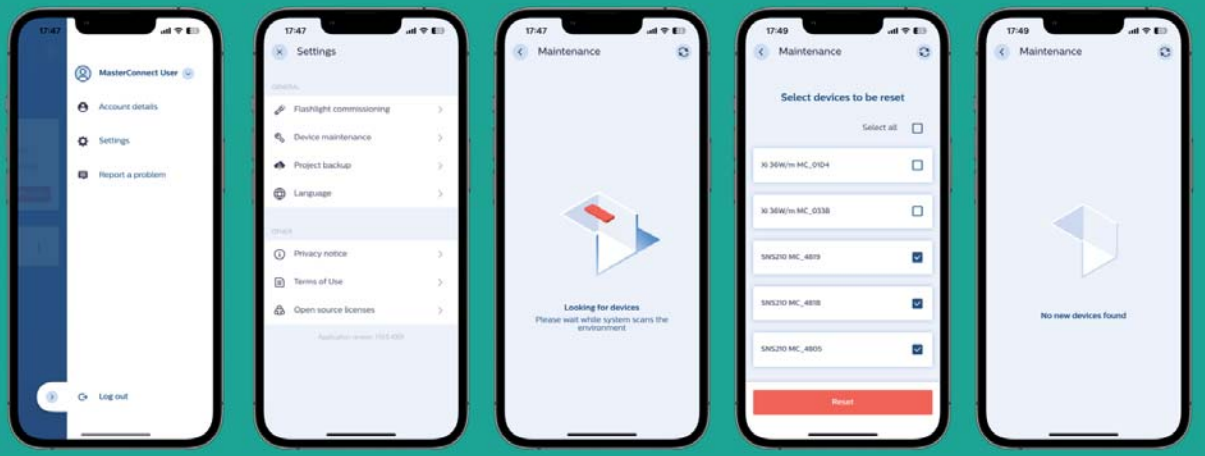
Remove components from network – Safe Mode

Purpose
In some cases, for instance when a cell phone is lost, components cannot be removed via the standard method. In that situation, lights can be reset via the Safe Mode.

How to
The luminaires must be powered ON for more than 15 seconds.

- Power OFF mains for more than 10 seconds but less than 15 seconds (disconnect device form mains).
- Power ON mains for 2 to 3 seconds (reconnect device to mains).
- Repeat above process for 4 more times.
- On the 5th cycle, leave the fixtures powered ON at the end. You should see a short dim-down/dim-up signal (in case of SNS21x MC). Sensors are now in Safe Mode.
- Scan with “Device Maintenance” in the “Settings” section of the app to discover the sensors that are now In Safe Mode and Reset them, see screenshots below:

Step-by-step guide



Remarks

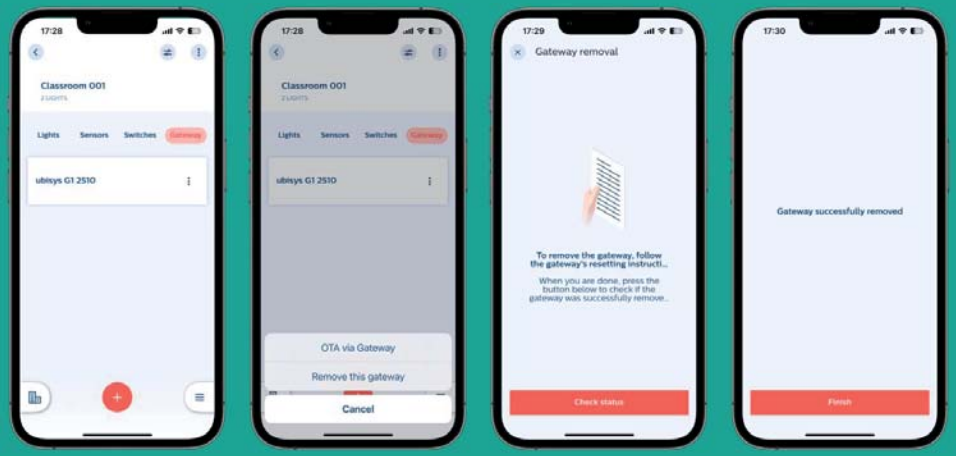
- In case a project is on several phones, a light reset on phone A via Safe mode is not automatically removed from the project on phone B. If that light is recommissioned in the project using phone B, it is needed to reapply the configuration to the light for proper light behavior.

Remove a Gateway

Purpose
When a gateway needs to be removed from a group.

How to
- In the “Gateway” section of the group overview, click on the three dots next to the gateway.
- Choose “Remove this gateway”.
- Reset the gateway as described by the gateway instructions.
- Choose “Check status” to confirm the gateway is reset and select “Finish” to complete the process.

Step-by-step guide



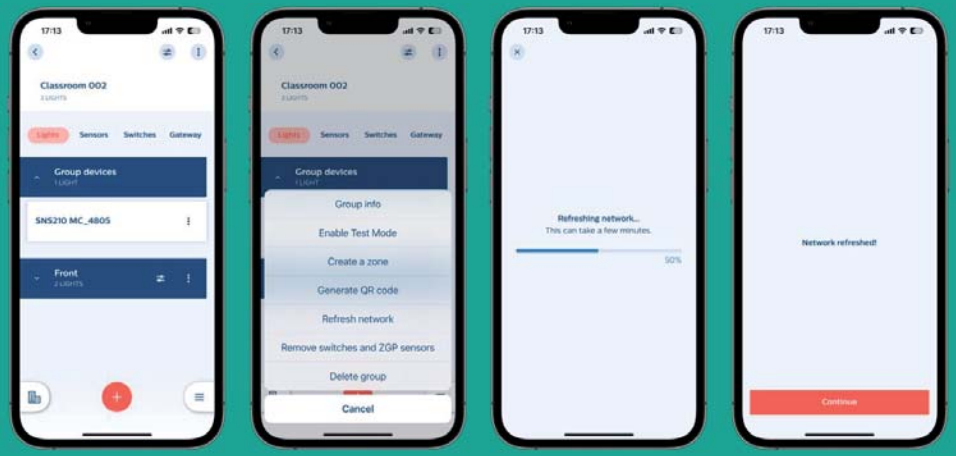
Remarks
- Before removing the gateway from the group, Circadian Rhythm shall be set to "Disabled" in the Group Configuration.

Refresh network

Purpose
In some cases, lights may not respond to configuration and energy report generation commands. Perform a refresh network to get the latest device data.

How to
- In the group overview, click the three dots and select “Refresh network”.
- Finish the process by clicking on “Continue”.

Step-by-step guide

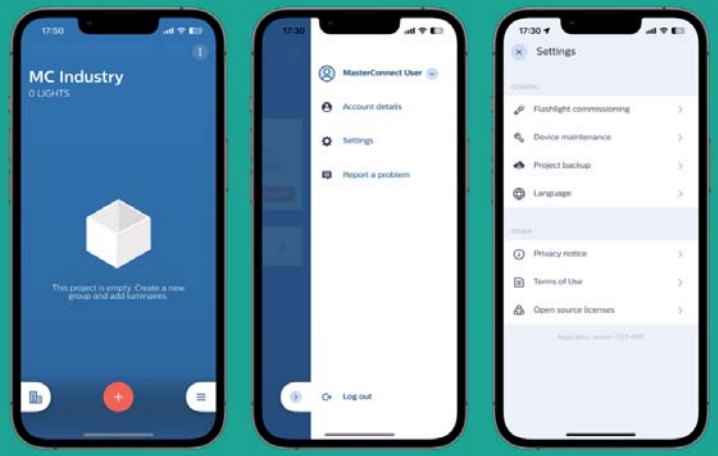


How to check for app version

Purpose
To look up the version number of the Philips MasterConnect app that is used.

How to
- Open the right-hand menu and choose settings.
- The version number can be found at the bottom of the screen.

Step-by-step guide

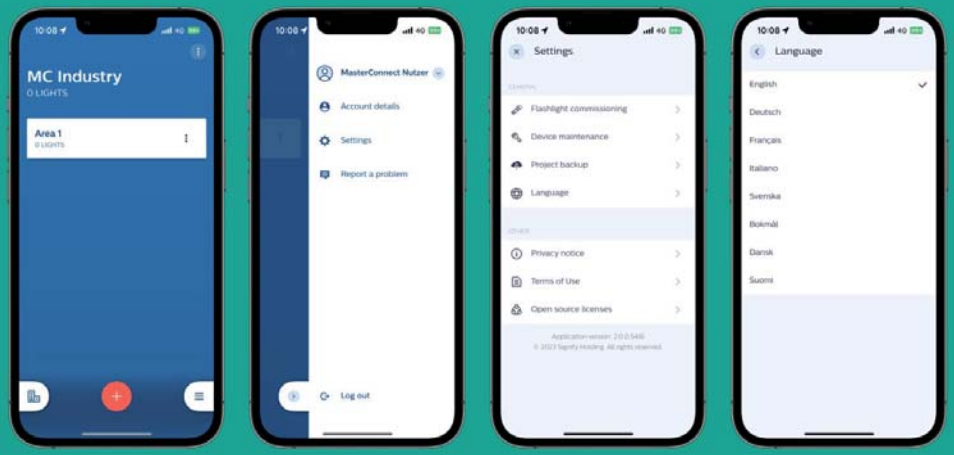


Set your language

Purpose
Change the app language for simplified app use.

How to
- Open the right-hand menu and choose settings.
- Click on “Settings” and choose “Language”.
- Choose the language that you prefer.

Step-by-step guide

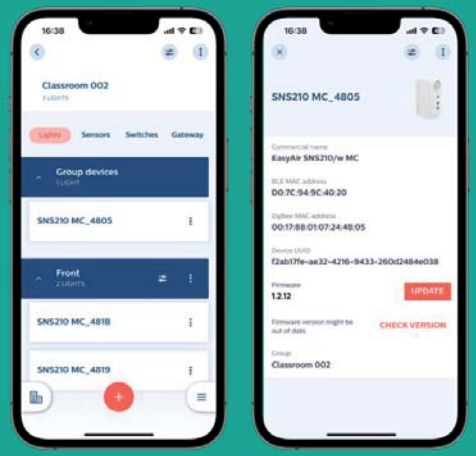


Device details

Purpose
All information of a device can be obtained.

How to
- Tap on the name of the device you want to learn more about.

Step-by-step guide

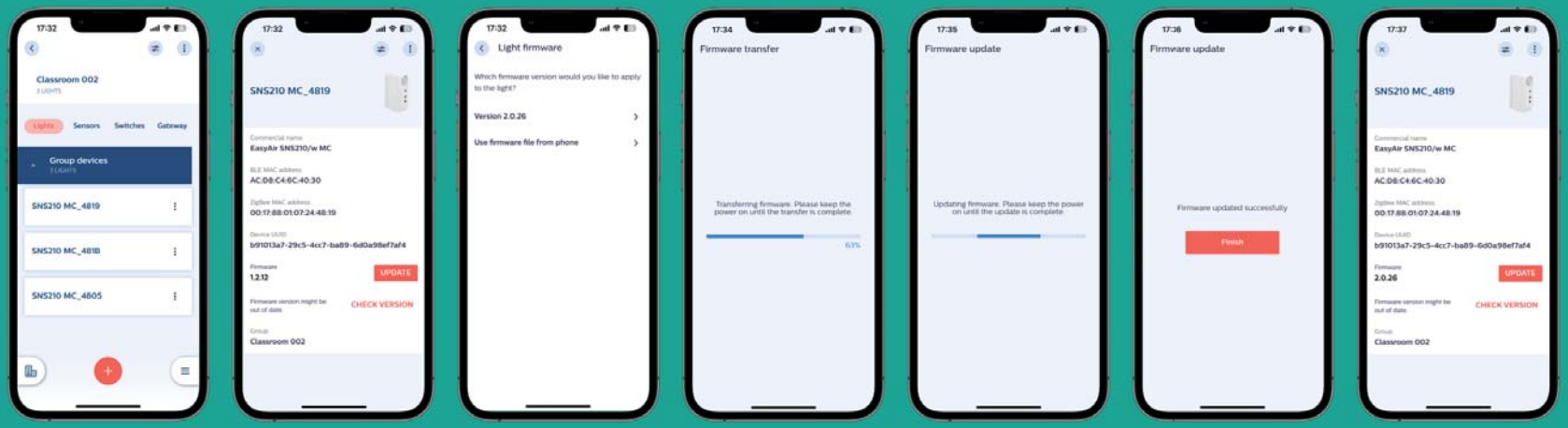


Over the Air update

Purpose
To enable a firmware update of MasterConnect components such as luminaire-integrated sensors via the app. Such updates may include new released features, security, and bug fixes.

How to
- Open the device details of a device and click on “Update”.
- Select the latest version from the list and choose “Finish” after the update has been completed.

Step-by-step guide



Remarks

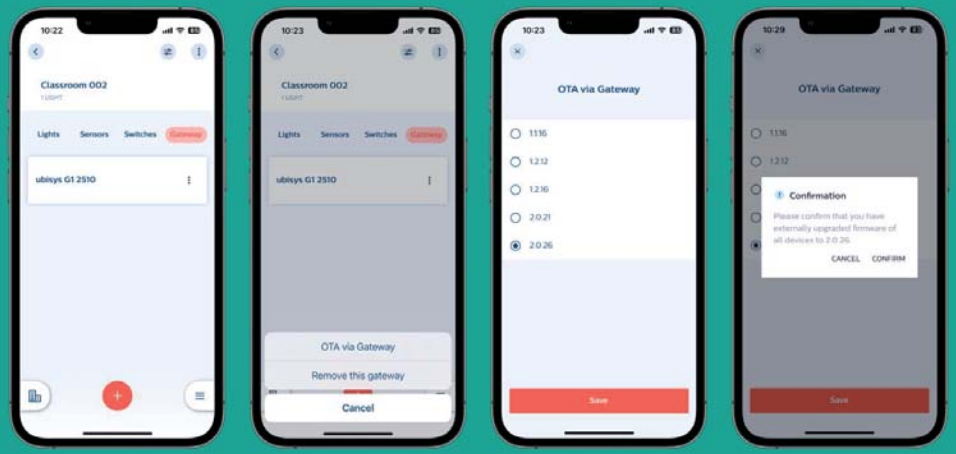
- It is recommended to restart the smartphone to clean the internal BLE memory before starting the BLE upgrade process.
- Do not interrupt the upgrade process. Keep the smartphone in close reach of the device getting upgraded.
- The upgrade is done at device level.
- If an upgrade fails, an error message is displayed. Please try again.
- It may happen that the firmware is properly loaded but the new firmware is not yet shown on the device info screen. By clicking “check version” the app connects to the device and corrects the display if needed.
- After firmware upgrade from FW 1.0.5, 1.1.11, 1.1.16, 1.2.12, 1.2.16 to any higher FW-version, recommissioning is required to make use of the latest functionality and to avoid unexpected behavior.
- Before updating from firmware 1 to firmware 2, please remove all switches, and commission them again after the entire group has been updated.
- If the MasterConnect system is used with a supported peripheral gateway it is also possible to distribute a firmware upgrade to the sensors via the gateway. Please contact your Signify account manager for support.
- If group light behavior is set to “Eco-On level”, a firmware upgrade via the gateway may change the group light behavior to “Background light level”. To correct this, please change the group light behavior to “Background light level”, apply the settings and change it back to “Eco-On level” afterwards.

Zigbee OTA via gateway

Purpose
When using a gateway in a peripheral mode the gateway can be used to distribute firmware updates to device. After updating using a gateway, please confirm the update in the app.

How to
- Open the group that has been updated via the gateway.
- Choose the “Gateway” tab and click on the three dots next to the gateway name.
- Select “OTA via Gateway” and choose the new firmware version from the list. Confirm by pressing “Save”.

Step-by-step guide



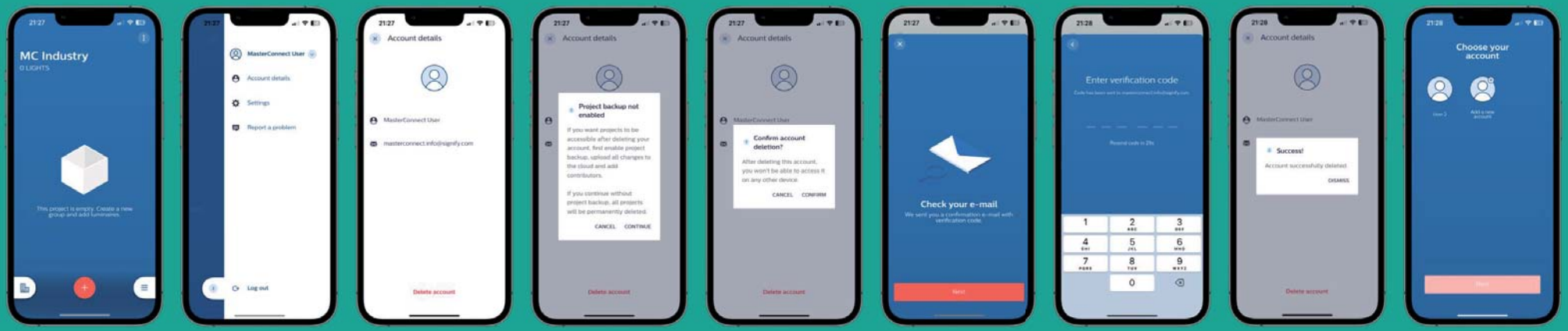
Remarks
- See remarks in the “Over the air update” section of this manual.
- In case group actions fail after the Zigbee OTA, please perform “Check version” on the device detail screen to verify the success of the Zigbee OTA.

Account deletion

Purpose
This section describes how you can delete an account form the Philips MasterConnect App.

How to
- On one of the project screens, press the three lines in the right bottom corner
- Press “Account details” and select “Delete account”.
- Please review any warnings and if you understand and accept them, press "Continue” and “Confirm”
- Check your email for a six-digit verification code, press “Next”, and fill in the code
- Your account will be deleted, and the app will confirm it has been deleted successfully. Press “Dismiss” to return to the login screen

Step-by-step guide



Remarks
- On iOS systems, ensure that the MasterConnect app does not go to background during the account deletion process. Do not use another app and take care that the screen time out/auto lock is not activated.

Troubleshooting

Known Limitations

These limitations are valid for FW version 2 or higher when combining luminaire-integrated sensors with wireless drivers in one network:

- Luminaire-integrated sensors can only be added in the same group as wireless drivers and SNS41x when using firmware 2 or higher.
- You cannot create zones consisting out of wireless drivers and luminaire-integrated sensors. This will be enabled with a future app update.
- You cannot add ZGP sensors to groups consisting out of wireless drivers and luminaire-integrated sensors. This will be enabled with a future app update.
- Ensure that all areas are well covered with occupancy sensors. When using AUTO ON/OFF, the automatic occupancy cycling is based on the detection of luminaires with an integrated sensor. In case only areas with wireless drivers are occupied, the group might turn off after the timers have passed.
- When combining wireless drivers and luminaire-integrated sensors in one group, daylight dependent regulation will only take place on luminaires with an integrated sensor. This will be changed in a later app release.
- The default settings of a group consisting out of luminaire-integrated sensors and wireless drivers can be different from what you are used to. Please verify the configuration matches with the project requirements after commissioning. If certain parameters are different or cannot be changed, please try to re-commission the entire group.
- After an update to firmware 2 from firmware 1, recommissioning is required before starting a combined network out of luminaire-integrated sensors and wireless drivers.
- Mixing TW and not-TW is not supported.

These limitations are valid for FW version 2.0.21 (SNS210, SNH210), 3.0.24 (SNS212), 1.2.16 (WDR and SNS410), 2.1.1 (WDR and SNS410) and 6.5.3 (MC lamps):

- Occasionally, project backup can fail. If it continues to fail after a retry, please use the “Report a Problem” feature (see page 91) to send the app data logs to the MasterConnect Team for analysis.
- When Circadian Rhythm is enabled AND infinite prolong time is selected, unexpected light behavior may occur, lights may not dim down to background light level.
- Mixing TW and not-TW is not supported.
- A mix of firmware versions may cause unpredicted behavior.
- After removing MC lamps from a project - either by removing them from a group, deleting the whole group or by resetting them via Safe Mode - it occasionally happens that light behavior of these MC lamps is not correct after recommissioning. In that case the MC lamps need to be decommissioned and recommissioned once more.
- In case of an open Zigbee network close to luminaire-integrated sensors, the out-of-the-box sensor behavior may stop working, and the lights remain in their latest state. See, feature “Out-of-the-box sensor behavior” in the Troubleshoot Tips table from page 89 on.
- In case a system with MC lamps with occupancy mode setting “Auto on/off” or “Manual on/auto off” is switched off with a ZGP switch or via test mode while, the area is occupied, lamps turn on at background level after the hold time and turn off again after the prolong time.

- In case occupancy sharing is disabled, prolong time is 4 minutes longer than indicated in the app. With firmware 2.1.1, situations may occur when sensors cannot be added to the same group it was previously removed from. Try using a different sensor or to recommission the entire group.

Remark

- In Annex 3 (page 93) you can find a complete overview of the known limitations for earlier versions of the firmware.
- Always use the latest app version.

Troubleshooting Tips

Feature	Potential issue	Advised workaround
Login	Occasionally an error message is received, or no confirmation code is received via email.	A re-try with a new account with same email address and username typically resolves the problem Otherwise re-try with another email address
Commissioning RSSI List based	At times, app reports an error	A re-try typically resolves the problem Ensure the smartphone is within range during commissioning Ensure the phone in use is from the recommended phone list
Commissioning Torchlight List based	At times, commissioning using torchlight is not always successful	Wait for additional 3 seconds after the 2nd beep before proceeding to the next light
Adding a wireless switch	Switch commissioning fails	For non-Philips switches, remember to exit the linking mode on the switch by pressing any other button on the switch (as given in the switch instruction sheet). Test the switch by pressing ON/OFF buttons Ensure ZGP switch commissioning is carried out as described by manufacturer. Also available on our website Make sure only 1 brand of switches are used within a group
Group removal after commissioning	Removal on group level may not fully succeed. Occasionally a device may not get reset leading to unsuccessful re-commissioning thereafter	A complete reset is advised via the Safe Mode. Please contact your OEM or Philips representative / customer care for further support.
A luminaire does not pick up the group configuration settings.	Luminaire does not show the right light behavior of the group	Always verify that all luminaires operate according to new settings. If not: This single luminaire must be reconfigured via a single device configuration.

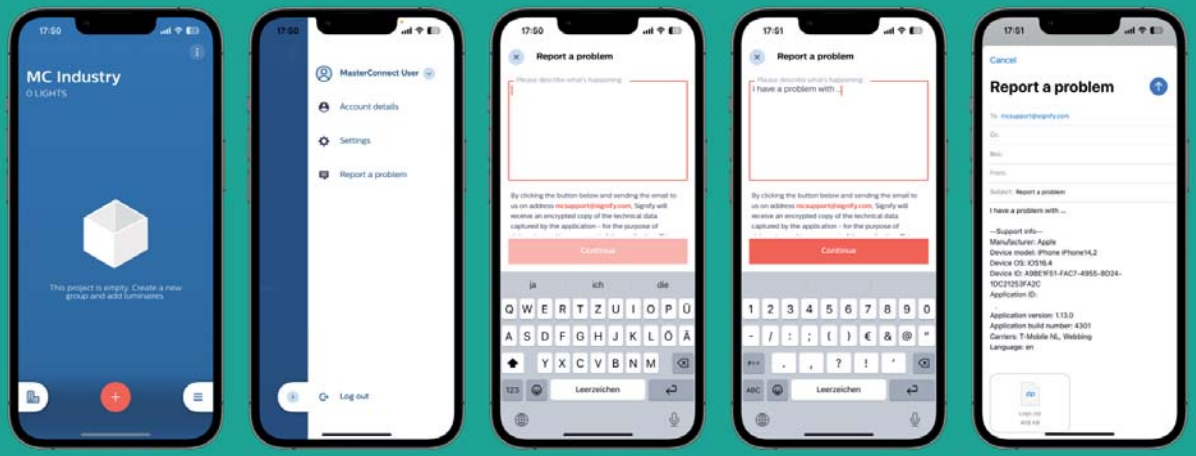
Configuration	Some luminaires do not take over the configuration that is sent, without a warning in the app	The configuration of lights with Philips MasterConnect app can be impacted by other strong wireless traffic. Switch off RF-devises, like for example Wi-Fi routers, close to the system during the configuration process. Always verify that all luminaires operate according to new settings. When the configuration is ready the RF devices can be switched on again
Commissioning of ZGP sensors	Sometimes occupancy detection does not work	Recommissioning of the ZGP sensor: via the sensors tab on group level choose “remove switches and ZGP sensors”. It is not possible to remove a single ZGP device only. Do a hardware reset of the removed ZGP sensor(s) via the button at the rear side. Refresh network, see below in the next feature.
Refresh network	A light doesn’t respond to a single light configuration setting. In test mode individual lights don’t respond to app commands (i.e., blinking), while with group commands all lights still react. Energy reading is not complete, misses a light.	It can happen that in a mesh network one of the lights changes its short address. By the action ‘Refresh network’, this is corrected.
Remove Components from network – Safe mode	The power cycling procedure does not work	Please, reach out to your local account manager for further assistance.
Out-of-the-box sensor behavior	As our sensors include an auto-joining feature, they will join open Zigbee networks in their surroundings. Once connected, sensors will wait for commands of that gateway and remain in their last state (ON or OFF). This behavior is according to our specification but might come across as unintentional if not known. Closed Zigbee networks (normal state) do not affect the behavior.	Commission the sensors using the Philips MasterConnect app, finish the commissioning using the gateway (if applicable), or close the Zigbee network in the area and restart the sensors.

How to report a problem

Purpose
In case you run into issues, you can use „Report a problem”-button to report and share relevant data with Signify.

How to
- Select the right-hand menu and choose “Report a problem”.
- Describe the issue and press “Continue”.
- Select an email option for sharing the report with mcsupport@signify.com.
- Send the email with the description and relevant data to Signify.

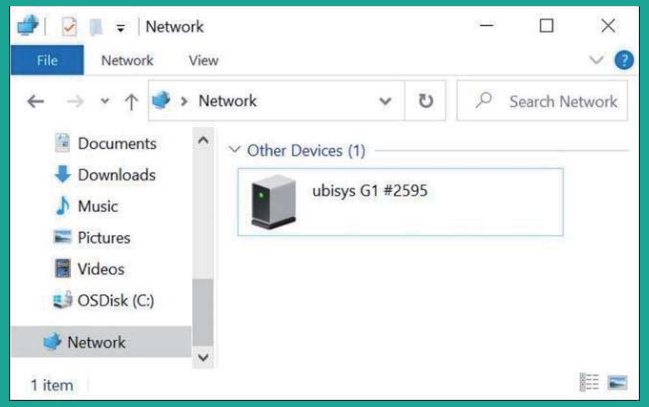
Step-by-step guide

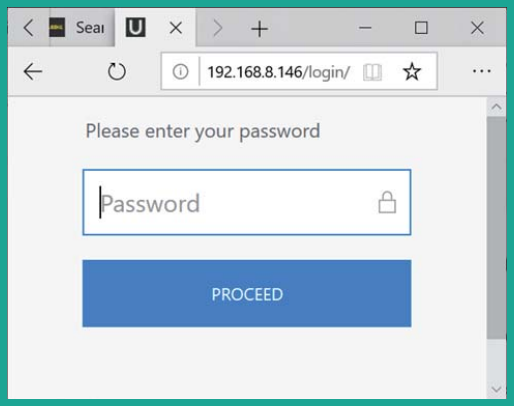


Annex 1: Disabling automatic firmware upgrades via the Gateway

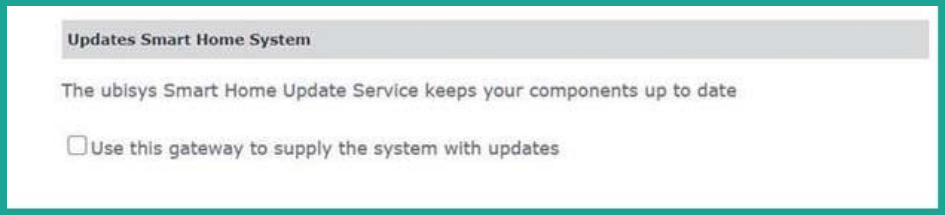
Purpose

- Automatic firmware upgrade needs to be disabled after the Gateway has been commissioned.
- Gateway and smartphone/laptop need to be connected to the same local network, e.g., via a router. The Gateway is connected via an ethernet cable.
-





- The Gateway will then be visible on the Network on Windows explorer.
- By double clicking on the Gateway icon, you will be taken to the gateway's website. Note: if no password has been set, it is "admin".
- At the tab "Updates" please uncheck "Use this gateway to supply the system with updates".



Annex 2: Custom Naming of Lights

Purpose

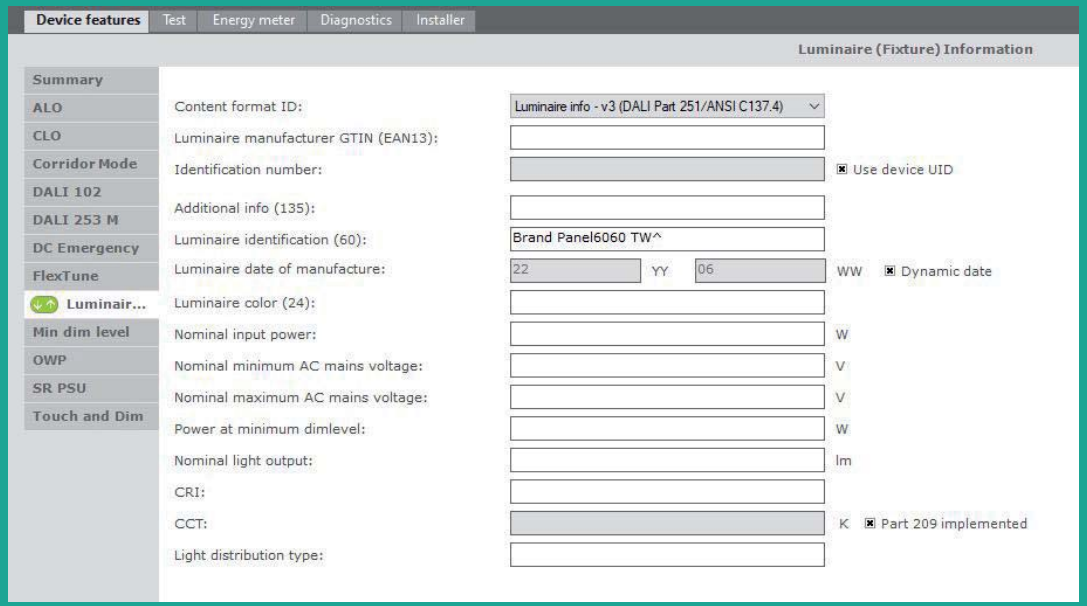
Lights can be given a customized name via a registry in the driver memory bank with MultiOne. Use your own brand and luminaire name instead of default product names. The name is programmed inside the SR or wireless MC driver using the existing tools for MultiOne by Signify.

How to

- Use the Luminaire identification field that is part of Luminaire Info (DALI part 251)
- This Luminaire identification field is available for SR drivers and wireless MC drivers
- Use MultiOne to write a custom name into the driver. Following structure needs to be followed:
    - Custom name
    - Delimiting character: ^ or ;
    - Example: Brand Spot 930;

Remarks

- This option is available for SNS21x MC and SNH(B)210 MC with FW 2.0.20 or newer in combination with D4i SR drivers.
- Custom naming via driver is fully optional. When field is not filled (properly), the app will show the default product name.
- Please choose one delimiting character:
    - Changes on Bluetooth interface (MC app): ;
    - Changes on ZB and BLE interface (MC app or GW): ^
- Please only use universal characters. Avoid symbols and special characters.
- The length of the custom name in the MC app is limited to 15 characters. Longer names can be used for the ZB interface and will be shortened by the MC app if needed.



Annex 3: Known Limitations previous Firmware versions

	Known Limitations	Luminaire-integrated sensors	1.0.5	1.1.11		1.1.16	1.2.12			2.0.20	2.0.21	2.1.1	3.0.24
		Wireless drivers and nodes			1.1.12			1.2.14 1.2.15	1.2.16			2.1.1	
1	When occupancy sharing is disabled the sensors of a group still do not work standalone: all lights of the group still go to Eco-on level when occupancy is detected. Only granular dimming does not occur.												
2	When daylight-based control is enabled, the following limitations apply: The calibration routine for daylight regulation takes longer (about 7 minutes) than with higher firmware versions. For luminaires, where the calibration fails due to too little light reflections from dark surfaces (e.g., a dark grey carpet) in the field of view of the daylight sensor, the luminaire goes to maximum light output. In contrast to higher firmware versions the light level is not capped at the Eco-on level. If this results in luminaires with too high light output, we recommend disabling daylight regulation of these luminaires. In case daylight control is enabled, a double 'ON' press on a wireless switch is needed for lights to go to Eco on level. The 1st button press brings the lights to Background light level; a 2nd button press will bring the lights to Eco on level. Two occupancy triggers are needed for the lights to go to Eco-on level. In case people enter a room the luminaire that triggers occupancy first goes to background light level only while the other luminaires go to Eco-on when they trigger presence too. Within some minutes the light of the first luminaire slowly increases to Eco-on.												
3	When group occupancy sharing is disabled on a single device, that device does not go to BG but remains in Eco during prolong time.												
4	The reset of components from the network in Safe Mode as describe in our manual is not possible. For alternatives, please contact your local account manager.												
5	Tunable White is not supported.												
6	Occupancy sensing is only possible per group (so, not per zone).												
7	Circadian Rhythm is not supported yet.												
8	Daylight harvesting function is not supported in the Manual ON/OFF mode.												
9	If Occupancy Based Control is disabled for one or more devices (e.g., for lights next to a fan), automatic light behavior is incorrect after: short press "On" or short press "Off" on the switch added to the group. Short press "On": Lights with Occupancy Based Control disabled will remain at Eco-On level, the other lights in the group will remain in Background level when there is no occupancy. Short press "Off": All lights remain off, even when there is occupancy detected after Hold Time and Prolong Time expired. The system can be recovered either by a long press (dim up / dim down) or a scene recall on the switch.												

	Known Limitations	Luminaire-integrated sensors	1.0.5	1.1.11		1.1.16	1.2.12			2.0.20	2.0.21	2.1.1	3.0.24
		Wireless drivers and nodes			1.1.12			1.2.14 1.2.15	1.2.16			2.1.1	
10	In the Auto ON/Auto OFF mode, pressing the switch to turn OFF lights may delay Auto ON. Sometimes lights do not turn on automatically at all. Manual ON press is suggested to turn the lights back ON.												
11	The use of a peripheral gateway for Circadian Rhythm can result in unwanted light behavior.												
12	If a group contains two zones and a separate switch is commissioned to each zone, the following behavior can be expected: • 4B-switch of zone A, press “on”: zone A goes to Eco On, zone B to BG. • 2B-switch of zone B, press “on”: zone B goes to Eco On, zone A to BG. 4B-switch of zone A, press “scene”: zone A goes to scene setting, zone B remains off.												
13	Wireless drivers with FW 1.1.12 do not work with stand-alone ZGP sensors.												
14	After commissioning of lights with wireless drivers or with SNS410 MC radio nodes, it can happen that during a period of 3 minutes some of the lights turn off. This behavior is not desired and will be corrected. In the meantime, a message pops up in the Philips MasterConnect app: “Some lights can turn off, please turn on via the ‘Test mode’ sliders in the app.” After confirmation, the ‘Test mode’ screen opens automatically, and the lights can be put in the same state.												
15	When a gateway with an automation profile is added to a group, circadian rhythm must be switched on in the MC-app, otherwise, unpredictable light behavior will occur.												
16	Adding and removing individual lights from daylight area is not possible. The daylight area needs to be recreated.												
17	Group/zone size beyond 25 devices, coupled to a ZGP sensor or switch is not proven to be reliable.												
18	Project backup sometimes fails. If it continues to fail after a retry, please use the “Report a Problem” feature to send the app data logs to the MasterConnect Team for analysis.												
19	When Circadian Rhythm is enabled AND infinite prolong time is selected, unexpected light behavior may occur; lights may not dim down to background light level.												
20	Wireless drivers and SNS410 CANNOT be added in the same group as SNS210.												
21	After ZigBee/BLE OTA coming from an older firmware, recommissioning is needed.												
22	Mixing TW and not-TW is not supported.												
23	A mix of firmware 1 versions may cause unpredicted behavior.												
24	With an open Zigbee network close to luminaire-integrated sensors, the out-of-the-box sensor behavior may stop working, and the lights remain in their latest state. Find more info in the Troubleshoot Tips section.												

References

Apps

Philips MasterConnect [iOS]	https://apps.apple.com/us/app/philips-masterconnect/id1484451186
Philips MasterConnect [Android]	https://play.google.com/store/apps/details?id=com.signify.masterconnect&hl=en&gl=US
Philips MasterConnect Control app [iOS]	https://apps.apple.com/us/app/philips-mc-control-app/id1567594477
Philips MasterConnect Control app [Android]	https://play.google.com/store/apps/details?id=com.signify.masterconnect.enduserapp&hl=en&gl=US

Weblinks

MasterConnect website:	https://www.lighting.philips.co.uk/oem-emea/products/connected-lighting/masterconnect
Technical documentation:	https://www.lighting.philips.co.uk/oem-emea/support/technical-downloads
MasterConnect LED Lamps:	https://www.lighting.philips.com/main/products/master-connect
OEM Warranty:	https://www.lighting.philips.co.uk/oem-emea/support/warranty

Contact

Commercial questions:	masterconnect.info@signify.com
Technical problem:	mcsupport@signify.com

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www.lighting.philips.co.uk/oem-emea/products/connected-lighting