TRILUX
SIMPLIFY YOUR LIGHT.

LIVELINK

LIGHTGRID

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1 INTRODUCTION

1.1 SAFETY INFORMATION

- Commissioning (electrical) must only be carried out by an electrician.
- Work with electrical devices must only be carried out with disconnected power supply.
- Valid safety and accident prevention regulations must be adhered to.
- For assembly, also observe the corresponding assembly steps from the assembly instructions of the components used.
- LiveLink LightGrid is not intended for any application other than those specified here. Other applications are considered improper. If LiveLink is used improperly, safe operation is not guaranteed.

1.2 BASIC FUNCTIONS

LiveLink LightGrid is a light management system with which Trilux Smart Connect luminaires (identified by "SMC") can be interconnected and controlled. In addition, the wired ceiling lighting can be integrated by means of a ceiling controller. The luminaires can be individually configured with the LiveLink LightGrid app.

Automatic or semi-automatic control for optimum lighting quality and efficiency can be implemented by using push-buttons, touch panels or scenes.

Integration of existing DALI luminaires is possible.

1.3 SYSTEM OVERVIEW

The TRILUX LiveLink LightGrid light management system is based on a Bluetooth network that can interconnect Smart Connect luminaires. Optionally, the ceiling lighting can also be integrated.

Smart Connect luminaires require a power supply of 230V in order to establish a Bluetooth network and to be recognised in the system. Up to 12 wireless devices can be integrated into this network. In addition to these luminaires, up to 32 DALI luminaires and two push-buttons can be integrated via a ceiling controller.

As well as the DALI control elements and operating elements, Bluetooth push-buttons and Bluetooth touch panels can also be integrated.

For the given installation, all wireless components that are combined in the Bluetooth network serve as the control unit. This allows flexible access via app, as there is no central control unit.

A Bluetooth-enabled smartphone or tablet is required for commissioning.

2 SYSTEM AND FUNCTIONS

2.1 LIVELINK LIGHTGRID NETWORK COMPONENTS

2.1.1 LIGHTGRID CONTROLLER

The controller – the connection of two systems

The controller is a control device for mixed white lighting systems with bidirectional control. It offers connection options for 32 DALI loads as well as for two external push-buttons (230V AC) and one sensor. In addition, Smart Connect luminaires and DALI luminaires can be interconnected via the integrated Bluetooth module.

Compact design

Thanks to compact dimensions with a height of 30 mm, the control unit can easily be accommodated – even under low suspended ceilings. This enables an uncomplicated upgrade of existing DALI lighting or a new installation in combination with Smart Connect luminaires.

Convenient control via push-button, touch panel, tablet or smartphone

The luminaires or luminaire groups can be controlled either with a standard installation push-button, a radio pushbutton, the LightGrid touch panel or via an app installed on a tablet or smartphone. The push-buttons can be freely assigned – this enables luminaire groups to also be controlled manually or lighting scenes called up.

Controller for the LiveLink LightGrid system:
LiveLink LightGrid Controller

Technical data	
Input voltage	230 - 240V AC / 100 - 280V DC
Input current	50mA
Input frequency	50/60Hz
Battery	Lithium button cell CR1632 3V
DALI devices	max. 32
DALI output current	64mA
Radio technology	Bluetooth
Radio range	max. 25m (optimum)
Protection rating	IP20
Housing temperature tc	+65°C
Ambient temperature ta	-10 - 45°C
Length	143mm
Width	42,5mm
Height	30mm
Standards	EN 55015 EN 61547 EN 41347-1 EN 41347-11 EN 55032 EN 55024
DALI cable length	max. 300 m
Cable length of push-buttons	max. 25 m
Permissible cable cross-section	0,5 - 1.5mm²
TOC	7896500

2.1.2 CONTROLS

2.1.2.1 PUSH-BUTTONS

The LiveLink LightGrid system is compatible with standard 230V push-buttons and LiveLink WP EASYFIT EWSSB radio buttons. The push-buttons are battery-free and wire-free push-buttons for controlling LiveLink Smart Connect luminaires. These push-buttons are available as twofold and fourfold push-button versions. They are integrated via QR code scanning in the LiveLink LightGrid app. Up to 4 radio buttons can be integrated into one luminaire group. Mounting is by means of an adhesive pad or screws.

Push-button example for a LiveLink LightGrid system:
LiveLink WP EasyFit EWSSB

Technical data	
Input voltage	Electrodynamic energy converter
Radio frequency	2403 to 2480 GHz
Ambient temperature	-25 - 65°C
Radio range	10 m
Protection rating	IP20
Length	82mm
Width	82mm
Height	15mm
TOC	7508400 7972300

2.1.2.2 TOUCH PANEL

The LiveLink LightGrid touch panel is a control module that enables HCL control, programming of scenes and individual control. The user-friendly interface allows the operator to adjust or save the colour temperature or brightness. The touch panel enables up to four scenes to be stored. Configuring the parameter settings is carried out via the LiveLink LightGrid app. Mounting is via a standard flush-mounted box with a GIRA double cover frame.. The scope of supply of the touch panel includes the mounting frame, the power supply unit and the touch panel.

Touch panel for a LiveLink LightGrid system:
LiveLink LightGrid touch panel

Technical data (touch panel)	
Input voltage	9 - 24V DC
Input current	max. 30 mA
Radio technology	Bluetooth
Radio range	max. 25m (in open field)
Protection rating	IP20
Ambient temperature ta	-20 - 45°C
Standards	EN 60950 EN 55022/B EN 6100-4
TOC	7896600

Technical data (power supply unit)	
Input voltage	220 - 240V AC
Input frequency	50/60Hz
Output voltage	12 V DC
Output current	0.5 A
Nominal power	6 W
Ambient temperature ta	-10 - 50°C
Length	50mm
Width	Ø 54mm
Heigth	26mm

2.1.3 SENSORS

To achieve the best possible result with a light management system, it needs sensors. The sensors are used to detect presence or absence and for constant light control. The optimal interaction of light management and sensor technology can reduce energy consumption by more than half compared to conventional control of lighting.

2.1.3.1 LIVELINK LIGHTGRID SENSOR HF

The LiveLink LightGrid Sensor HF high-frequency sensor is ideal for mid-sized to large offices, conference rooms, meeting rooms and classrooms. Due to its size, it can be used as a recessed or surface-mounted ceiling sensor. The sensor is highly compact and blends harmoniously into the ceiling design thanks to its discreet appearance. In conjunction with the LiveLink LightGrid Controller, the sensor is used to detect motion and changes of light. The sensor is connected to the controller via a separately orderable RJ10 cable.

Features and functions

- Mounting height to 4 m
- Motion detection 3m x 3m
- Presence detection 5m x 5m
- Flush-mounting ring or surface-mounting box
- Connection via separate RJ10 data line

Sensor for a LiveLink LightGrid system:
LiveLink LightGrid Sensor HF

Technical data	
Input voltage	7 - 12V DC
Input current	20mA at 9V
Connection cable	RJ10
Protection rating	IP20
Ambient temperature ta	-20 - 45°C
Permissible cable length	50m
TOC	7896800

2.1.3.2 LIVELINK LIGHTGRID SENSOR PIR

The LiveLink LightGrid Sensor PIR passive infrared sensor is ideal for mid-sized to large offices, conference rooms, meeting rooms and classrooms. Due to its size, it can be used as a recessed or surface-mounted ceiling sensor. The sensor is highly compact and blends harmoniously into the ceiling design thanks to its discreet appearance. In conjunction with the LiveLink LightGrid Controller, the sensor is used to detect changes in movement of light. The sensor is connected to the controller via a separately orderable RJ10 cable.

Features and functions

- Mounting height to 4 m
- Motion detection 3m x 3m
- Presence detection 5m x 5m
- Flush-mounting ring or surface-mounting box
- Connection via separate RJ10 data line

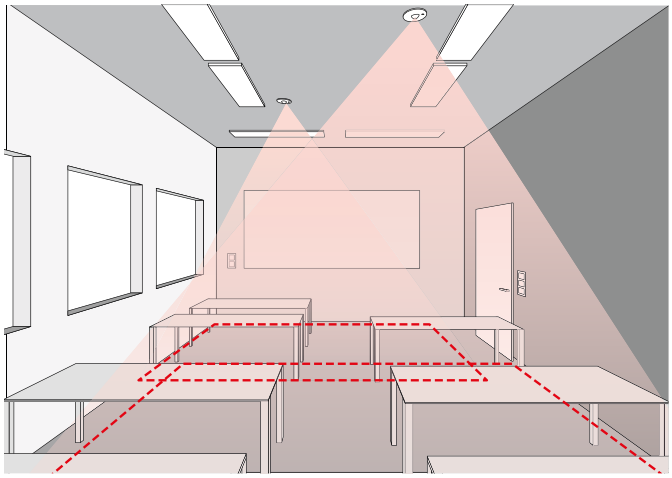
Sensor for a LiveLink LightGrid system:
LiveLink LightGrid Sensor PIR

Technical data	
Input voltage	7 - 12V DC
Input current	20mA at 9V
Connection cable	RJ10
Protection rating	IP20
Ambient temperature ta	-20 - 45°C
Permissible cable length	50 m
TOC	7896700

2.1.3.3 SENSOR PLACEMENT

Presence detection

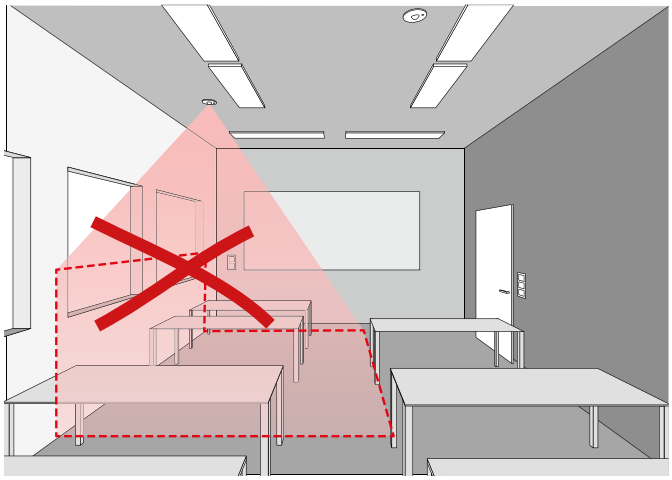
- The detection range of the sensor must be considered (see the sensor data sheet). On the one hand, the sensor should detect working and movement areas in the room, but in the case of automatic switch-on (fully automatic, see chapter "Behaviour in operation"), it should also detect the entrance if possible so that the light is switched on early. If the detection range of a sensor is not sufficient, further sensors must be planned in.
- If high frequency sensors or radar sensors are used it must be considered that the detection may pass through thin walls. Also, the narrow detection range (see product data sheet) must be taken into account.



Daylight-dependent control

It is important for the function of daylight-dependent control that light sensors or combined presence and light sensors are positioned in suitable locations. The sensor should be positioned in the area of the visual task.

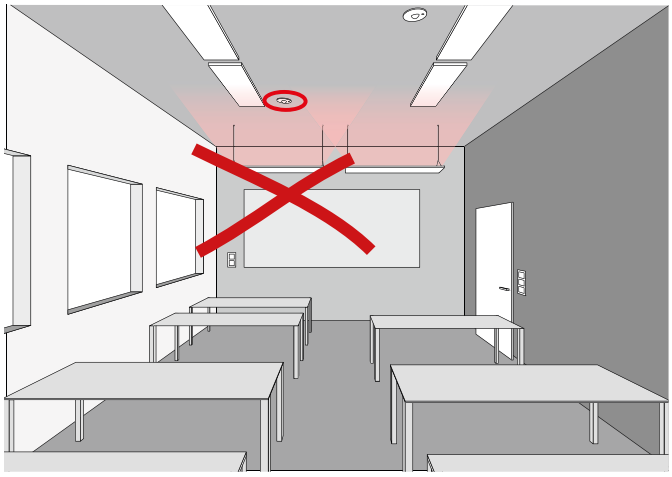
- For large visual task areas, the sensor should be positioned in such a way to take into account the part of the area least supplied with daylight.
- If there are several work areas arranged in the room with very different daylight supply levels, the work area with the lowest level of daylight must be taken into account. For higher energy savings, independent control areas can be set up with separate light sensors.
- The measured surface below the sensor should have a medium reflectance value and should reflect diffusely (not specular).
- The sensor must be positioned so that no interfering light falls on the measuring surface (e.g. direct light on windowsill, see the diagram).
- No objects should be placed on the measuring surface that impair the measurement, such as pallets, tall pieces of furniture or large objects with varying reflectance values.



Sources of interference

Avoid positioning near the following sources of interference:

- Heat sources influence the measurement of passive infrared sensors (PIR). Maintain sufficient distance to the heat sources. This applies to e.g. fan heaters, open doors and windows, pets, light bulbs/halogen spotlights and moving objects.
- Sources of light interference such as luminaires whose indirect light component shines directly on the sensor
- Daylight reflections e.g. from mirrors
- Radio- or Wi-Fi transmitters at a distance of approx. 1 metre



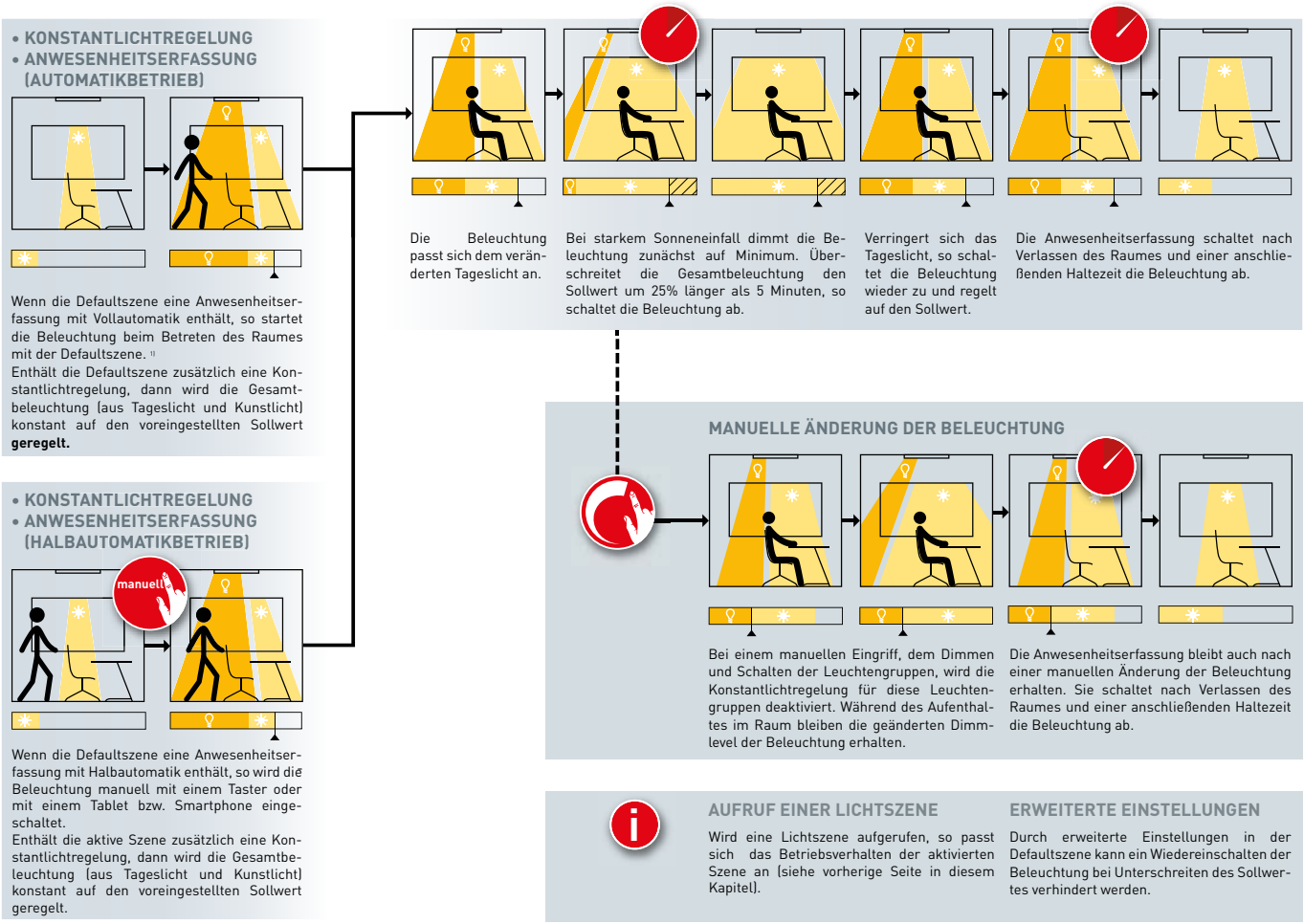
2.1.3.4 BEHAVIOUR OF THE LIGHT CONTROL DURING OPERATION

The behaviour of the light control in operation is defined during commissioning with the Install app. For this purpose, a default lighting scene is defined which is activated when the lighting is switched on with the automatic presence detection or a group push-button.

The following should also be observed:

- The switching and control behaviour of the lighting is fundamentally individually defined in each light scene and light sequence.
- When a light scene or light sequence is called up, the switching and control behaviour of the selected light scene is enabled.
- Automatic switch-off of all luminaire groups by the presence detection (upon expiry of the switch-off delay or inverse time) results in an automatic recall of the default light scene.

In order to achieve energy-saving operation, it is generally recommended to equip the default light scene with automatic switch-off of the complete lighting and, if necessary, daylight-dependent control of suitable luminaire groups. The subsequent behaviour of the lighting system is described in the schematic diagram below.



1) Nach manuellem Ausschalten erfolgt ein automatisches Wiedereinschalten erst nach Ablauf der Inverszeit (= Abschaltzeit)

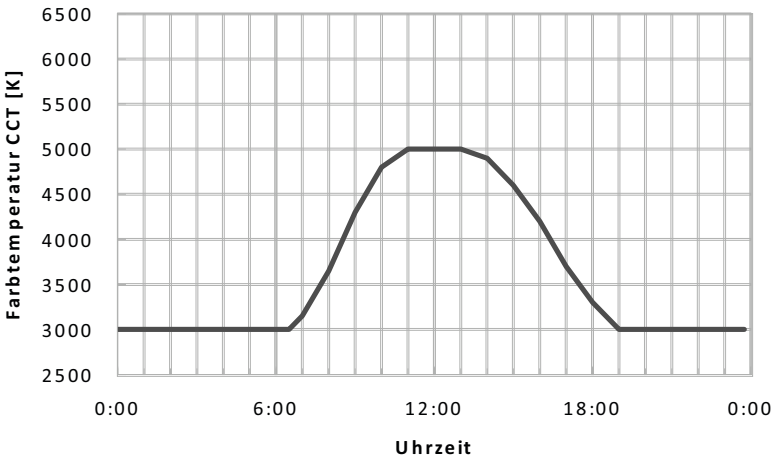
2.1.4 WHAT IS HUMAN CENTRIC LIGHTING (HCL)?

TRILUX Active luminaires together with the automatic circadian LiveLink control form a powerful system that helps people to fulfil their visual tasks and at the same time supports their daytime rhythm.

Current scientific findings demonstrate that all forms of lighting (artificial and natural), in addition to their visual impact, also have a biological effect on people. The benefits of this effect can only be optimally used and the risks avoided with correct and responsible use.

The reference for TRILUX is always natural daylight with its colour temperature, dynamism and intensity. Our aim is to supplement daylight with artificial light as needed when the latter is not available or is insufficient.

TRILUX LiveLink light controls enable such colour temperature control in combination with Active luminaires with variable colour temperature. The system already has an optimised, factory-set daytime sequence. If the HCL function is activated in a light scene, this "circadian" progression is automatically called up when the lighting is switched on. The preset daytime sequence refers to the location.



The TRILUX HCL-curve

2.1.5 SMART CONNECT LUMINAIRES

LiveLink Smart Connect luminaires are stand-alone desktop and standing luminaires. These can communicate with the ceiling luminaires in a network through a LiveLink LightGrid Controller, providing uniform general lighting. The HCL-curves of the individual luminaires also synchronise with each other, and the user can individually adjust the colour temperature of the luminaires.

2.1.5.1 BICULT

Bicult is an innovative desktop luminaire with a direct light component for individual workstation illumination and an indirect light component for general room illumination. With integrated light management for the synchronous daytime- and seasonally dependent control of light colour (circadian control) of both light emission surfaces. Manual setting of the light colour and separate switching and dimming of both light components is possible via three illuminated controls. Through integration into the LiveLink LightGrid system, control via app, push-button or touch panel is also possible. LiveLink LightGrid luminaires are identified by the marking "+SMC" (Smart Connect).

Luminaire for a LiveLink LightGrid system:
Bicult

Technical data	
Input voltage	230-240V AC
Input frequency	50/60Hz
Protection rating	IP20
Ambient temperature ta	25°C
TOC	7958159, 7958159, 7958259, 7958359, 7958559, 7958559, 7958659, 7958759, 7958859, 7958959, 7959059, 7959159

2.1.5.2 LUCEO

Luceo is an exclusive LED standing luminaire with direct and indirect light components for the standard-compliant illumination of single and double workstations. The luminaire features an integrated daylight- and HF presence sensor with motion direction detection. The ceiling lighting can be connected with the standing luminaires via the LiveLink LightGrid Controller. The initial detection of movement by any luminaire within the group causes all group devices to switch on at basic lighting level (approx. 300 lx, indirect component). Subsequent detection in the close range of a luminaire triggers this into workstation mode by switching on the direct component. The luminaires are parameterised via the LiveLink LightGrid app. Manual adjustment of the light colour and separate switching and dimming of both light components is possible via three illuminated controls. Through integration into the LiveLink LightGrid system, control via app, push-button or touch panel is also possible. LiveLink LightGrid luminaires are identified by the marking "+SMC" (Smart Connect).

Luminaire for a LiveLink LightGrid system: Luceo

Technical data	
Input voltage	220-240V AC
Input frequency	50/60Hz
Protection rating	IP20
Ambient temperature ta	25°C
TOC	7959859, 7959959, 7960059, 7960159, 7960259, 7960359, 7960459, 7960559, 7960659, 7960759, 7960859, 7960959, 7961059, 7961159, 7961259, 7961359, 7961459, 7961559, 7961659, 7941759, 7941859, 7961959, 7962059, 7962159, 7962259, 7962359, 7962459

2.1.5.3 CULTEGA

Cultega is a compact desktop luminaire with flat, round luminaire head, three adjustment joints and a base. Luminaire with Active configuration for optional automatic control of the light colour. The luminaire is controlled via the controls on the luminaire head or with the Smart Connect variant via Workplace App. LiveLink LightGrid luminaires are identified by the marking "+SMC" (Smart Connect).

Luminaire for a LiveLink LightGrid system: Cultega

Technical data	
Input voltage	220-240V AC
Input frequency	50/60Hz
Protection rating	IP20
Ambient temperature ta	25°C
TOC	7854759 7854859 7855559 7855659

2.2 CONTROL AND OPERATION

The LiveLink LightGrid light control system can be operated manually during operation with (wireless) push-buttons, touch panels or on the luminaires themselves. Alternatively, the system can be controlled with the **LiveLink LightGrid** app or the LiveLink Workplace app.

For operation with push-buttons, a distinction must be made between two functions:

- A group push-button switches and dims a selection of luminaires defined during commissioning.
- A light scene push-button calls up a light scene that was set up during commissioning.

For the **group push-button**, the selection of luminaires to be operated can consist of several luminaire groups, as defined during commissioning. The luminaire groups can be assigned in different combinations to several group push-buttons. Briefly pressing the button triggers the switching function. If parts of the affected luminaire selection are switched on and others are switched off when the button is briefly pressed, their switching state is first synchronised. Whether complete switching on or off takes place is defined during commissioning. The luminaires can then be switched together. Pressing and holding the button dims the luminaires. Renewed pressing and holding changes the dimming direction.

A **light scene push-button** calls up a light level preset during commissioning. The selection of luminaires to be operated can also include several luminaire groups with differently preset light levels. All luminaire groups not included in the light scene remain unaffected. The luminaire groups that have been set up can be assigned to different light scenes. Up to four preset light scenes can be created and used.

Assignment of the installed push-buttons to the light scenes or switching and dimming groups takes place during commissioning.

The **touch panel** can call up four preset or newly created scenes that were created during commissioning. The scenes can have different dimming levels or light levels. The light level and light colour can be adjusted individually with the two sliders in the middle. Individual scenes can be saved by pressing and holding a scene button. The system can also be switched on or off using the two buttons ("On" / "Off").

An **app with a graphical user interface** is available for operation with a tablet; this displays the touch panel interface. All luminaires that have been set up can be switched and dimmed with the app. All set-up light scenes can be called up.

In addition, the app can be used to make extensive adjustments to the system's default settings defined during commissioning (see "**Practical tips**" below**)**.

In addition to manual operation, operation of the lighting is controlled by **automatic functions of** the LiveLink LightGrid. These are

- **daylight-dependent control** of luminaire groups,
- **presence-dependent switching on** of luminaire groups,
- **presence-dependent switching off** of luminaire groups,
- **presence-dependent lowering** of the lighting level of the luminaire groups,
- **lowering the lighting level** of the luminaire groups **depending on the time of day**,
- **circadian variation of the colour temperature** of the light

The automatic functions are based on the time setting or the evaluation of signals from sensors. These functions as well as assignment of the sensors to the luminaire groups can also be freely configured with the app mentioned on this page. In particular, luminaire groups can also be assigned to several selections regarding automatic functions.

Practical tips:
For light scene push-buttons, labelling often proves necessary in practice. Labelling can also be helpful for group push-buttons if a spatial assignment of the luminaire groups to be operated to the position of the installed push-button is not clear. Extensive assignments of different selections of luminaire groups to different functions can cause complex behaviour in the operation of the overall lighting – this can become unmanageable for the user. If required, adjustments to the system configuration to meet individual requirements for operating behaviour and operating functions can be made in the app.

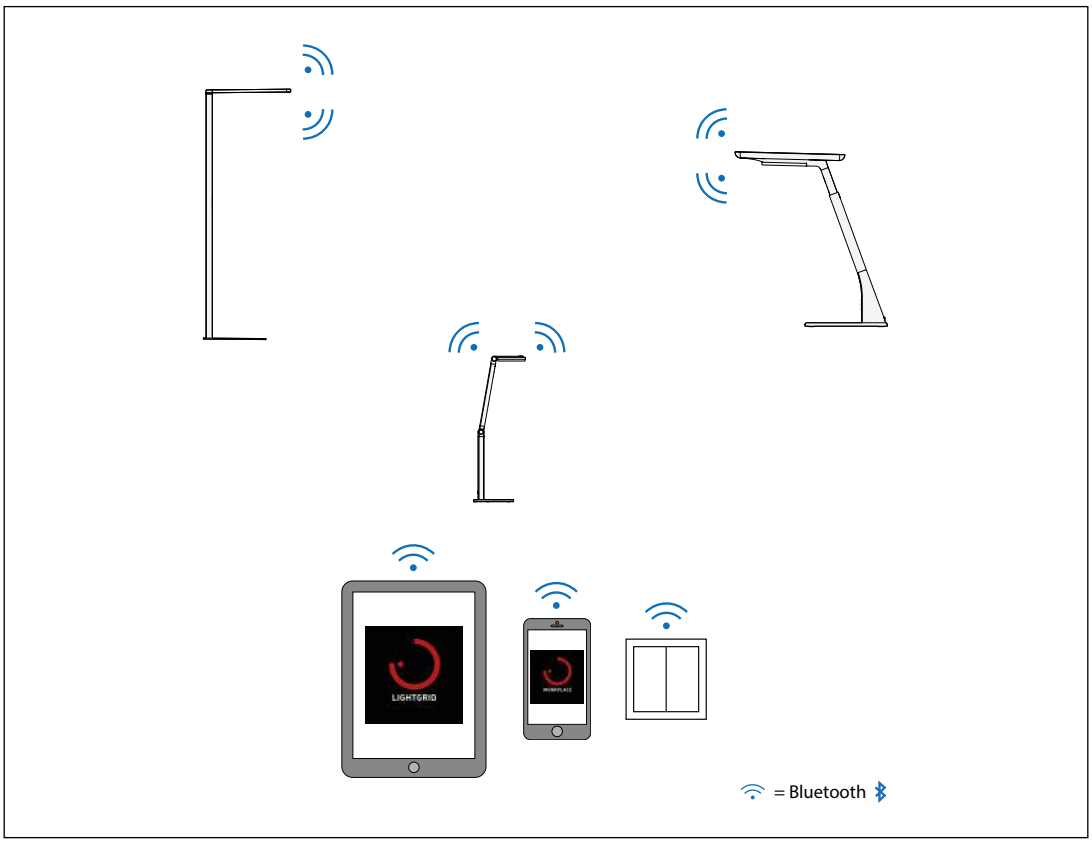
Every obstacle between the radio components, depending on spatial conditions, worsens the radio wave propagation. The radio waves are weakened by reflection, attenuation, diffraction and interference. Therefore, an optimal installation location of the radio components is decisive for an optimal radio connection, bearing in mind the maximum radio range of the radio components.

Radio waves penetrate relatively well through simple glass (not metalized), dry wood, chipboard, plastic, plasterboard etc. Very poorly penetrated are e.g. all metal parts, metal walls, concrete with steel reinforcement, shielding fabric or shielding materials. Above all, enclosing and shading the radio components with metal parts should be avoided.

2.3 SYSTEM PLANNING

2.3.1 STAND-ALONE

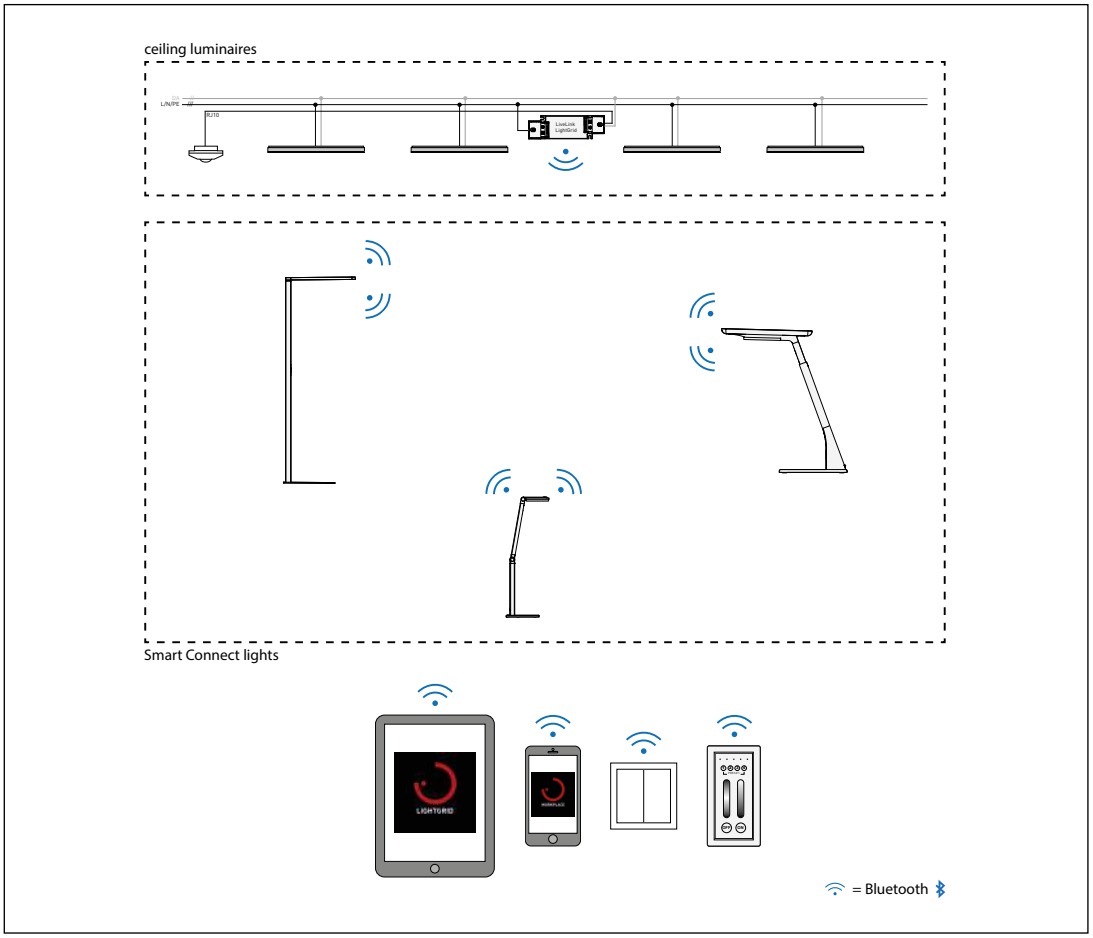
In stand-alone mode, up to twelve Smart Connect luminaires can be interconnected, which creates a Bluetooth mesh network. Within this network, all sensors of the luminaires function as control units, enabling the lighting to be individually regulated. The system can be operated fully or semi-automatically via tablet or radio button. The LiveLink LightGrid app and a Bluetooth-capable tablet or smartphone are required for commissioning.



2.3.2 HYBRID SYSTEM

In the hybrid system, up to twelve Smart Connect luminaires can be interconnected, which creates a Bluetooth mesh network. A ceiling controller can also be added, allowing the network to be expanded by a further 32 DALI devices. These are centrally managed by the controller, which is counted as one wireless device. By integrating the controller, Bluetooth touch panels can be added to the system. Within this network, all sensors of the luminaires function as control units, enabling the lighting to be individually regulated.

The system can be operated fully or semi-automatically via tablet, (wireless) push-button or touch panel. The LiveLink LightGrid app and a Bluetooth-capable tablet or smartphone are required for commissioning.



2.4 GENERAL HARDWARE RESET

A hardware reset on the components resets them to the factory settings. This means that all settings made are reset to the delivery status. The passwords are also affected by the reset.

2.4.1 CONTROLLER RESET

If a Bluetooth connection to a luminaire is no longer possible or communication problems exist in the mesh network, the affected luminaire or group can be reset.

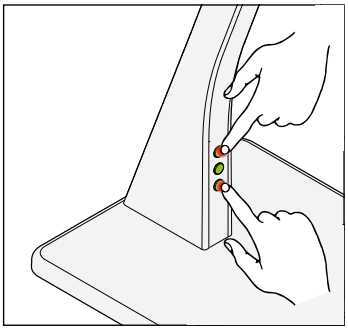
The reset is carried out by a sequence of switch-off and switch-on pulses by switching the line circuit breaker in the electrical subdistribution:

- **switch off for at least 5s and switch on for a maximum of 3s**

  (This process must be carried out a **total of 6 times.** The system must then remain switched on **after the sixth time**.)

2.4.2 DESKTOP- AND STANDING LUMINAIRES RESET

If a Bluetooth connection to a luminaire is no longer possible or communication problems exist in the mesh network, the affected luminaire or group can be reset.



Carry out the reset as follows:

1. Switch off the power supply to the luminaire
2. Press the top and bottom push-buttons on the luminaire (Cultega luminaire: press the two available buttons)
3. Hold down the buttons and switch the power supply on again
4. As soon as the push-button LEDs flash, pressing and holding can be ended
5. Afterwards the light can be added to the BLE network again

2.5 SECURITY

Bluetooth Low Energy (BLE) security

When the app connects to the BLE device, it creates a network ID key (for each group), and at the same time an exchange of BLE security data takes place. If further devices are added to a group, these devices are also assigned the same network ID and key.

3 COMMISSIONING

3.1 APP USE

The LiveLink LightGrid app is used to configure luminaire groups, sensor functions, general lighting and push-buttons. The respective settings can be individually adjusted in the app.

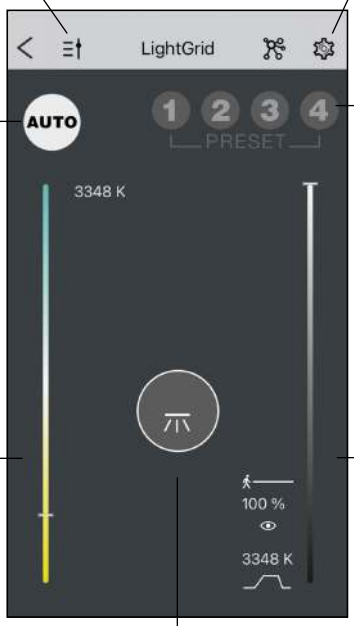
Note:
Before opening the LiveLink LightGrid app, make sure the Bluetooth function is activated on the smartphone.

3.1.1 OVERVIEW

Display options
Display or hide the set values for constant light control and the motion sensor.

Automatic mode
Switch automatic mode on/off.

Colour temperature control
Setting of the colour temperature value in the range of 2700K - 6500K.



Settings
Configuration options for further lighting/luminaire settings

Scenes
Call up four pre-configured or individual scenes. Press and hold to save scenes.

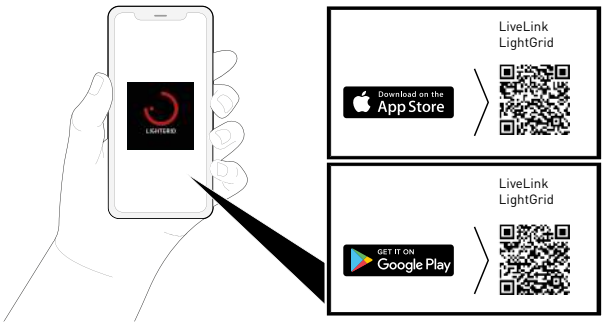
Motion sensor
Representation of the sensitivity of the motion sensor in percent.

On/off switch
Switch the selected lighting on or off.

3.1.2 QR CODES

The LiveLink LightGrid app is used to configure luminaire groups, sensor functions, the swarm function and push-buttons. The respective settings can be individually adjusted in the app.

Note:
Before opening the LiveLink LightGrid app, make sure the Bluetooth function is activated on the smartphone or tablet.



3.1.3 LEGEND ICONS

- Scan QR code
- Search
- Close / cancel
- Confirm / save changes
- Back
- Flash disabled
- Edit
- Update
- Take photo
- Delete
- Enable / disable display mode
- Enable network control
- Play HCL-curve (normal speed)
- Play HCL-curve (double speed)
- Play HCL-curve (triple speed)
- Sunrise
- Sunset
- Current status (time of day)
- Settings
- Settings (error / problem detected)
- Automatic mode
- Switch on luminaire
- Switch-off time enabled
- Illuminance
- Movement detected
- Colour temperature
- HCL-curve enabled
- Caution
- Continue
- Scan QR code
- Print
- Sensor 1 - motion sensor enabled
- Movement detected
- Presence detected
- CO2 traffic light enabled

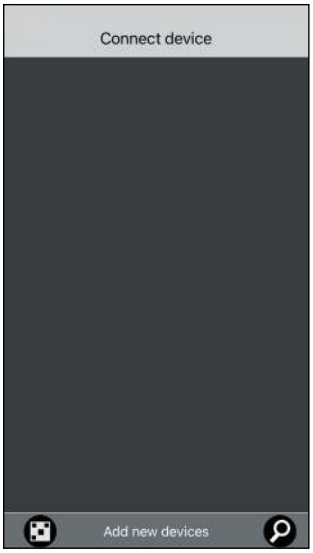
3.1.4 APPLICATION

3.1.4.1 LAUNCHING THE APP

Launching the LiveLink "LightGrid" app
The LiveLink LightGrid app is started by tapping the app icon.

3.1.4.2 CONNECTING DEVICES

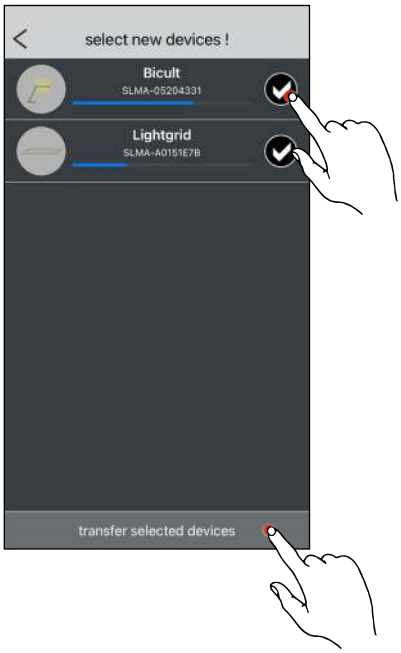
Connect device
After opening the LiveLink LightGrid app, a window is displayed in which you can search for devices. The search can be a manual search (magnifying glass icon) or by scanning a QR code (QR code icon).



Manual device search
The manual search for a luminaire opens by tapping the magnifying glass icon. A pop-up window then opens in which the device password (by default "1234") must be entered. The entry must be confirmed by tapping the tick.

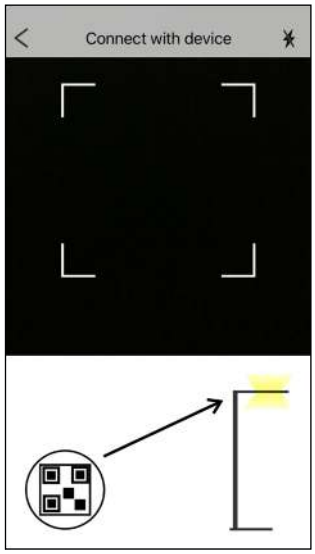
Select new devices

As soon as the password is confirmed during the manual search, all luminaires subject to this password and within radio range are displayed. By tapping the luminaire symbol, the respective luminaire can be identified in the room. Tap the respective luminaires to select them. A tick appears for the selected luminaires as confirmation. The selection must then be confirmed by tapping the grey button "adopt selected devices".



Device search via QR code

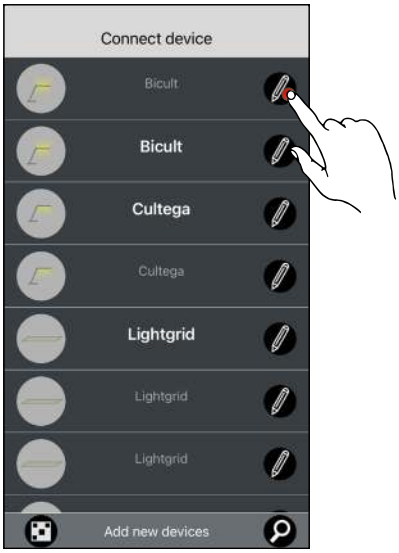
Tap the QR code icon to open the device search via QR code. A window with a camera field opens, enabling the QR code on the corresponding luminaire to be scanned.



3.1.4.3 EDIT DEVICE PROFILE

Connected devices

As soon as the added devices are displayed, their connections can be edited by tapping the pencil icon for the respective luminaire.



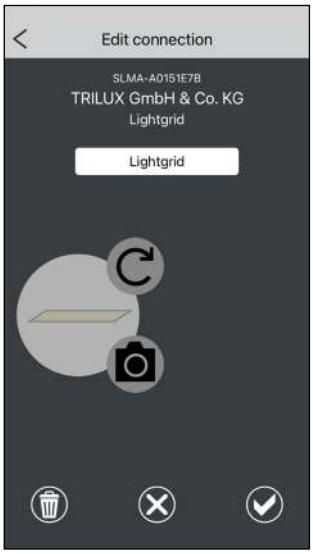
Edit connection

If editing of a connected device is selected, a new window opens with the following information:

- Luminaire serial number
- Luminaire photo
- Image or photo of the luminaire

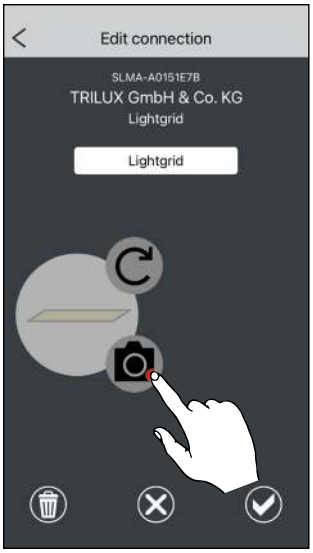
The following settings can also be made:

- Update photo
- Add photo
- Delete connection
- Cancel process
- Save changes



Add photo

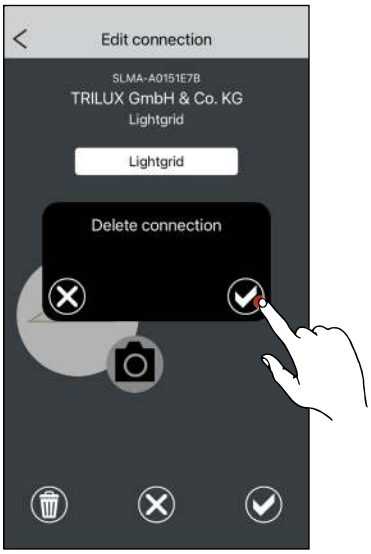
Tap the camera icon to add a photo of the respective luminaire.



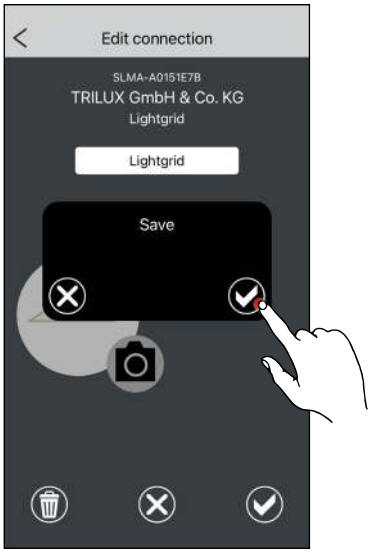
Take photo

After tapping the camera icon, the camera option opens automatically and a photo of the physical luminaire can be taken. Confirm a suitable photo by tapping the tick.

Delete connection
Tap the trash can icon at bottom left to delete an existing connection. The deletion process must then be confirmed by tapping the tick.

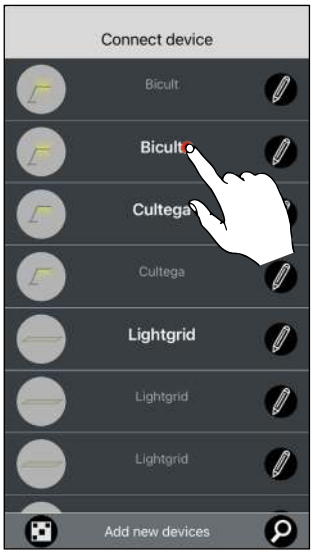


Save
Tap the tick symbol at bottom right to save the changes made. Tap the tick to confirm the saving process.



3.1.4.4 CONNECTION SETUP

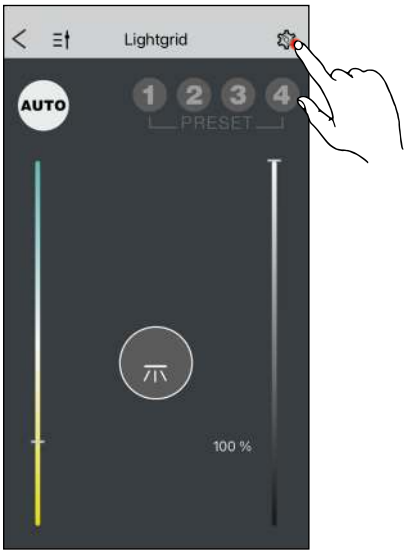
Connect device
By tapping the respective luminaire, the LiveLink LightGrid app connects to the selected device.



Device menu

The device menu displays the following setting options:

- Enable / disable display mode
- Enable network control
- Settings
- Automatic mode
- Presets
- Colour temperature control
- Switch luminaire on/off
- Dimming level

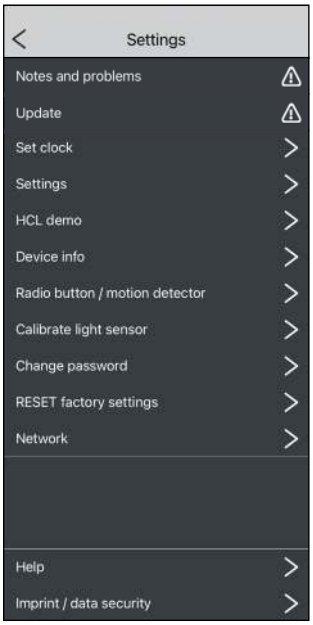


3.1.4.5 SETTING OPTIONS

Settings

Tapping the settings icon opens the following setting options:

- Notes and problems
- Update
- Set clock
- Settings
- HCL demo
- Device info
- Radio button / motion detector
- Calibrate light sensor
- Change password
- Reset factory settings
- Network
- Help
- Imprint / data protection

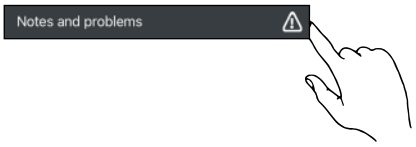


Note:

With the Cultega luminaire the following settings are not or are only partially displayed:

- Radio button / motion detector
- Calibrate light sensor

Notes and problems
Tap on the setting option "Notes and problems" to edit these. This option only appears if there are indications or problems.

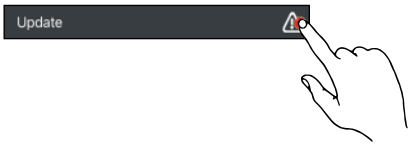


Edit notes and problems
This setting option lists existing notes and problems. Tapping on the tick confirms that any notes and problems have been noted.

The following problems can be identified:

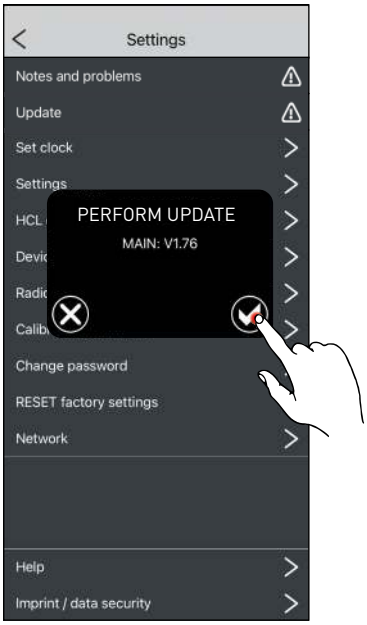
- MDT = motion detector enabled in the settings, but not connected or wiring error
- Light sensor = light sensor enabled in the settings, but not connected or wiring error

Update
Tap the "Update" setting option to display available updates.



Perform update
The available update is displayed. Tap the tick to carry out the update. Tapping the cross cancels the process.

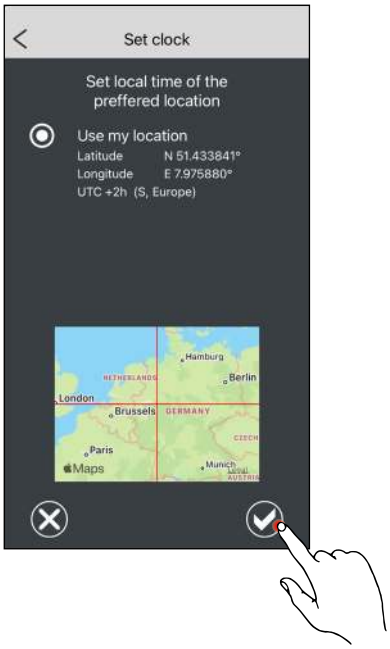
Note:
Updates must be carried out manually for all luminaires. The system components should have the latest version to ensure the best possible performance and safety.



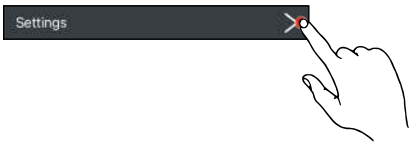
Set clock
Tap the setting option "Set clock" to individually set the time.

Note:
After selecting the setting option "Set clock" for the first time, your agreement will be requested once for use of the location (GPS). This is necessary to determine the HCL-curve suitable for the location.

Set local time
Select "Use my location" to enable the app to use the current location. This is additionally displayed visually on a map. Tap the tick to confirm the selection.

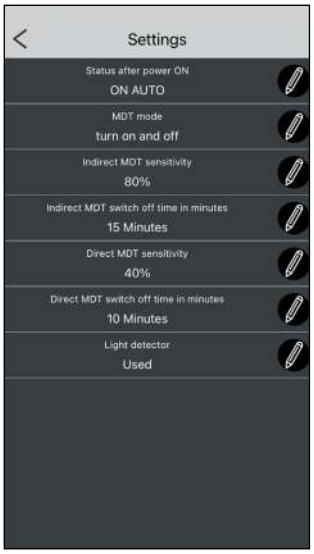


Settings
Tap the "Settings" option to set luminaire-specific parameters.



Settings – Luceo and Bicult
In the "Settings" area, the following parameters can be managed for Luceo and Bicult luminaires:

- Status after Power ON
- MDT (motion detector) mode
- Indirect MDT (motion detector) sensitivity
- Direct MDT (motion detector) sensitivity
- Direct MDT (motion detector) switch-off time in minutes
- Light detector

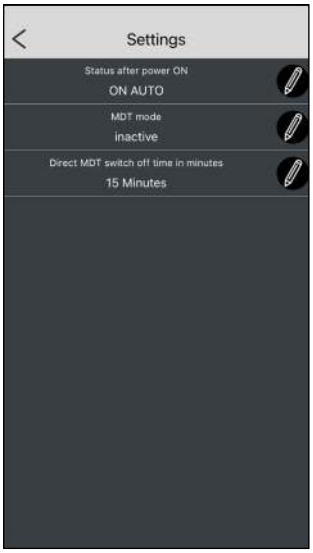


Settings – Cultega

In the "Settings" area, only the following parameters can be managed for Cultega luminaires due to lack of sensors:

- Status after Power ON
- MDT (motion detector) mode
- Direct MDT (motion detector) switch-off time in minutes

Note:
The motion detector settings refer to the sensor values of the controller.



Settings – Controller

In the "Settings" area, the following parameters can be managed for the LightGrid Controller:

- 230V push-button input 1
- 230V push-button input 2
- Status after Power ON
- MDT (motion detector) mode
- Indirect MDT (motion detector) sensitivity
- Indirect MDT (motion detector) switch-off time in minutes
- Direct MDT (motion detector) sensitivity
- Direct MDT (motion detector) switch-off time in minutes
- Light detector

Settings

The following section explains the parameters of the settings in more detail.

Note:
The following screenshots show the factory settings for the individual parameters.

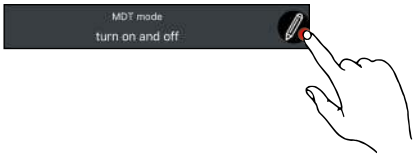
Status after Power ON

For the "Status after Power ON" parameter, the following options can be selected:

Setting options	
OFF	Switches luminaire off
ON AUTO	Switches on automatic mode
ON MANUAL	Switches on manual mode
ON SCENE 1	Switches on Scene 1
ON SCENE 2	Switches on Scene 2
ON SCENE 3	Switches on Scene 3
ON SCENE 4	Switches on Scene 4
ON LAST STATE	Switches on last active state

MDT (motion detector) mode

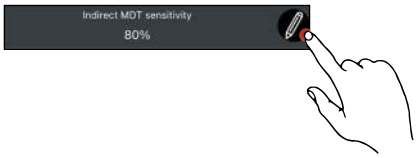
For the "MDT mode" (motion detector mode) parameter, the following options can be selected:



Setting options	
inactive	Motion sensor disabled
only switch off	Luminaire is switched off when motion is detected
turn on and off	Luminaire is switched on when motion is detected and switched off when no motion is detected
on only at night, off always	Luminaire is switched on at night when motion is detected and switched off when no motion is detected, otherwise it is switched off

Indirect MDT (motion detector) sensitivity

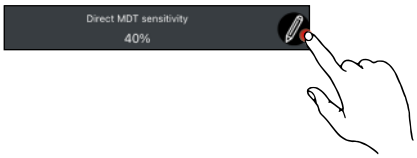
The "Indirect MDT (motion detector) sensitivity" parameter sets the sensitivity of the motion detector for the indirect light. The following options are available:



Setting options	
1%	Motion detector sensitivity of 1%
10%	Motion detector sensitivity of 10%
20%	Motion detector sensitivity of 20%
30%	Motion detector sensitivity of 30%
40%	Motion detector sensitivity of 40%
50%	Motion detector sensitivity of 50%
60%	Motion detector sensitivity of 60%
70%	Motion detector sensitivity of 70%
80%	Motion detector sensitivity of 80%
90%	Motion detector sensitivity of 90%
100%	Motion detector sensitivity of 100% (highly sensitive)

Direct MDT (motion detector) sensitivity

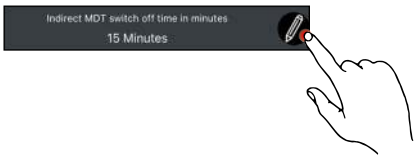
The "Direct MDT (motion detector) sensitivity" parameter sets the sensitivity of the motion detector for the direct light. The following options are available:



Setting options	
1%	Motion detector sensitivity of 1%
10%	Motion detector sensitivity of 10%
20%	Motion detector sensitivity of 20%
30%	Motion detector sensitivity of 30%
40%	Motion detector sensitivity of 40%
50%	Motion detector sensitivity of 50%
60%	Motion detector sensitivity of 60%
70%	Motion detector sensitivity of 70%
80%	Motion detector sensitivity of 80%
90%	Motion detector sensitivity of 90%
100%	Motion detector sensitivity of 100% (highly sensitive)

Indirect MDT (motion detector) switch-off time in minutes

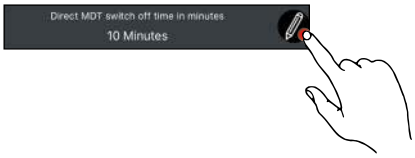
The "Indirect MDT (motion detector) switch-off time in minutes" parameter defines the time after which the motion detector switches off the indirect light in the absence of movement. The following options are available:



Setting options	
1 minute	Switch-off after 1 minute
2 minutes	Switch-off after 2 minutes
3 minutes	Switch-off after 3 minutes
4 minutes	Switch-off after 4 minutes
5 minutes	Switch-off after 5 minutes
10 minutes	Switch-off after 10 minutes
15 minutes	Switch-off after 15 minutes
20 minutes	Switch-off after 20 minutes
25 minutes	Switch-off after 25 minutes
30 minutes	Switch-off after 30 minutes
40 minutes	Switch-off after 40 minutes
50 minutes	Switch-off after 50 minutes
1 hour	Switch-off after 1 hour
2 hours	Switch-off after 2 hours
3 hours	Switch-off after 3 hours
4 hours	Switch-off after 4 hours

Direct MDT (motion detector) switch-off time in minutes

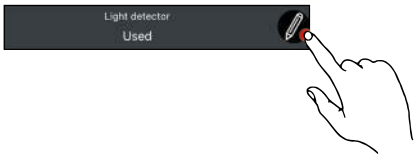
The "Direct MDT (motion detector) switch-off time in minutes" parameter defines the time after which the motion detector switches off the direct light in the absence of movement. The following options are available:



Setting options	
1 minute	Switch-off after 1 minute
2 minutes	Switch-off after 2 minutes
3 minutes	Switch-off after 3 minutes
4 minutes	Switch-off after 4 minutes
5 minutes	Switch-off after 5 minutes
10 minutes	Switch-off after 10 minutes
15 minutes	Switch-off after 15 minutes
20 minutes	Switch-off after 20 minutes
25 minutes	Switch-off after 25 minutes
30 minutes	Switch-off after 30 minutes
40 minutes	Switch-off after 40 minutes
50 minutes	Switch-off after 50 minutes
1 hour	Switch-off after 1 hour
2 hours	Switch-off after 2 hours
3 hours	Switch-off after 3 hours
4 hours	Switch-off after 4 hours

Light detector

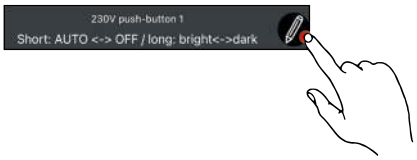
The "Light detector" parameter enables the light sensor for daylight control. The following options are available:



Setting options	
do not use	The light detector is disabled
used	The light detector is enabled

230V push-button 1

With the "230V push-button 1" parameter, a function can be assigned to the push-button input T1 on the controller. The following is a default option:

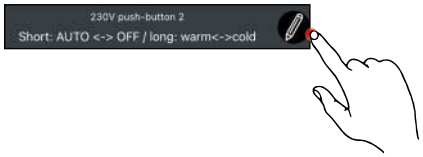


Setting options	
Short: AUTO <-> OFF /	Short button press: Switch automatic mode on or off
Long: bright <-> dark	Long button press: Touchdimm

Note:
Further setting options for the "230V push-button 1" parameter are listed in a table in the appendix.

230V push-button 2

With the "230V push-button 2" parameter, a function can be assigned to the push-button input T2 on the controller. The following option is a default option:

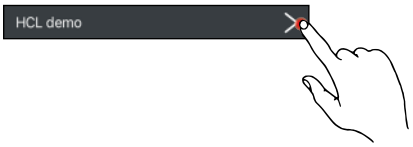


Setting options	
Short: AUTO <-> OFF /	Short button press: Switch automatic mode on or off
Long: warm <-> cool	Long button press: Colour Touch Dim

Note:
Further setting options for the "230V push-button 2" parameter are listed in a table in the appendix.

HCL demo

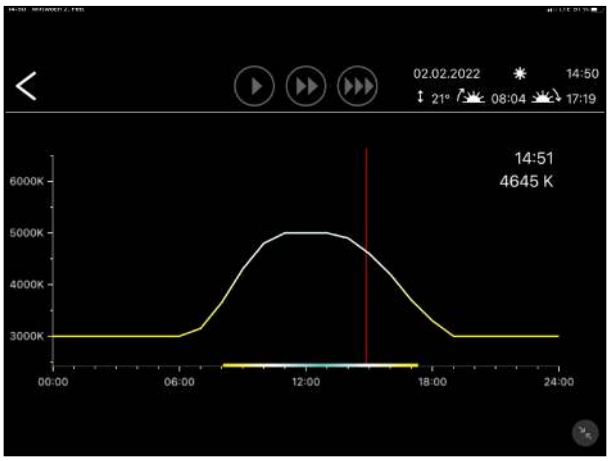
Tap the "HCL demo" setting option to call up a demo of the HCL-curve.



HCL demo

In the "HCL demo" setting option, the HCL-curve adjusted to the location is displayed. The following detail information is displayed:

- Date
- Sun status
- Time
- Temperature
- Sunrise (time)
- Sunset (time)
- Diagram of HCL-curve:
  dependence on time and colour temperature

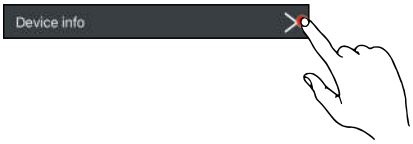


Note:

Tap on the play button to visually run through the daytime sequence based on the HCL-curve. The HCL-curve can also be manually changed by moving the red line. The red line indicates at which time the demo is. The respective time and colour temperature in Kelvin are additionally displayed in the upper right corner of the diagram.

Device info

Tap the "Device info" setting option to see the general information of the luminaire.



Device info of the luminaire

The "Device info" setting option displays the following information:

- Time
  (time, date, sunrise, sunset, longitude and latitude)
- Device info
  (manufacturer, serial number, type, designation, operating hours)
- Version
  (APP, MAIN, BLE)

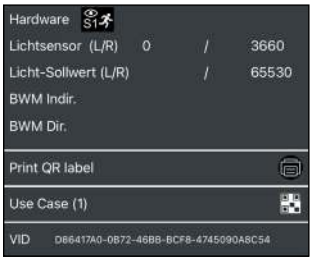
Note:

Tap and hold the area below the "Version" area for 5 seconds to display the following extended device information:

Extended device info of the luminaire

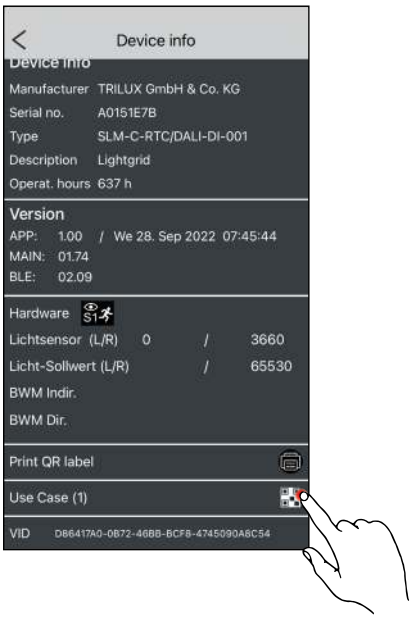
The "Device info" setting option displays the following extended device information:

- Hardware
- Light sensor
  L=current light value/R=reference value (unit: bit)
- Light setpoint
  L=current light value/R=reference value (unit: bit)
- MDT (motion detector) indirect
  (icon is displayed when movement or presence is detected)
- MDT (motion detector) direct
  (icon is displayed when movement or presence is detected)
- Print QR label
- Use Case
  (current use case is displayed; new use cases can be added by scanning a QR code)
- VID
  (Virtual Local Network ID)



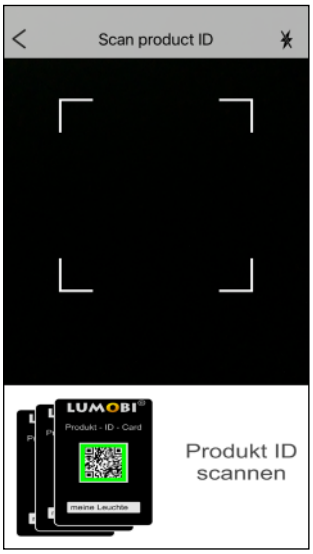
Change Use Case

Tap the QR code to enter another use case by means of a QR code scan



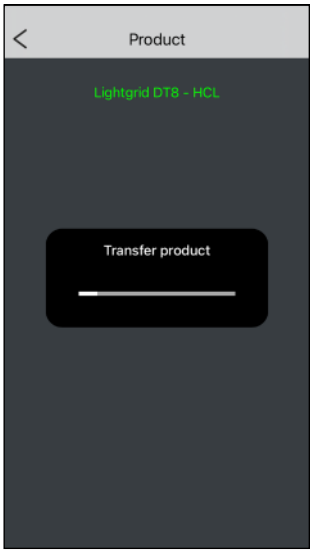
Scan product ID

After selecting the QR code icon, the camera opens automatically to scan the QR code. The QR code contains the device information and settings, i.e. a QR code contains the factory settings for the product.



Transfer project

After scanning the QR code, the settings stored on the QR code are transferred to the device. The name of the settings is displayed in green letters

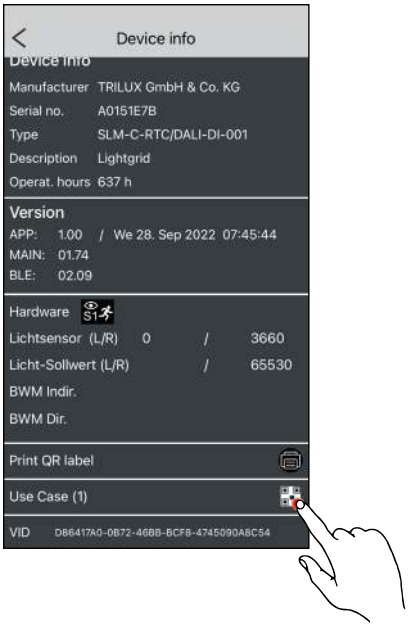


DALI ECG programming

With a DT6 variant of the controller, the DALI ECGs (electronic control gear units) must be assigned. This is done via the "Dali ECG" setting option. Tap the magnifying glass icon to open the setting option.

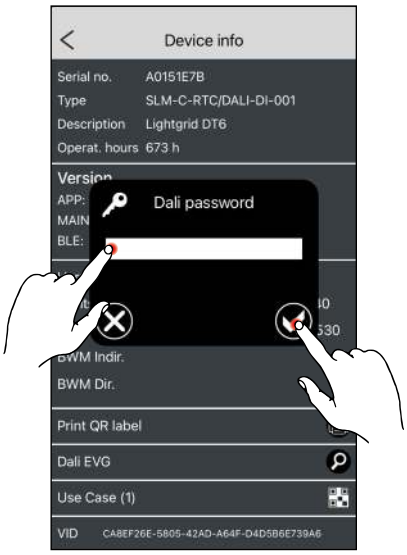
Note:

If **more than three ECGs (electronic control gear units)** are installed in a luminaire, a search run must also be started and an assignment must be carried out.



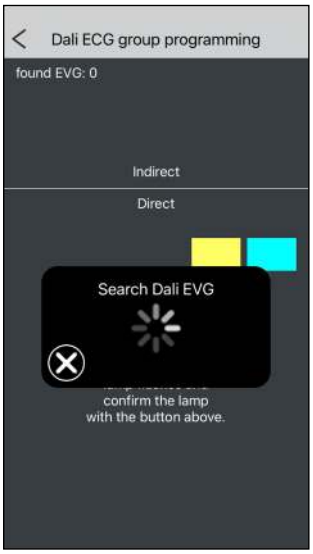
Password for DALI

Tapping the magnifying glass icon displays a pop-up window in which the password ("1995") for DALI must be entered. Tap the tick to confirm the password entry.



Search DALI EVG
After the password has been confirmed, all available ECGs connected to the controller are searched for.

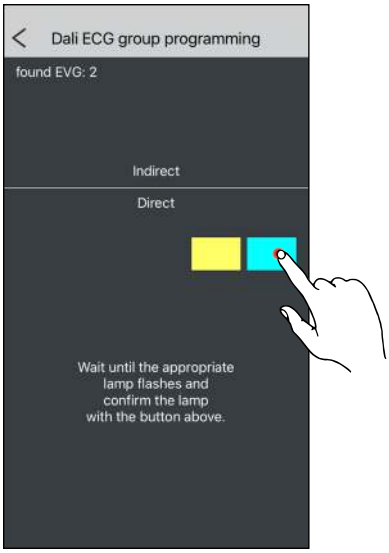
Note:
If there are more than three ECGs (electronic control gear units), this procedure must also be carried out.



DALI ECG group programming
As soon as all control gear units have been located, the system actuates them one after the other (visual feedback by flashing). When the corresponding control gear unit is actuated, it must be assigned by tapping the button in the colour of its colour temperature:

- yellow = warm white
- blue = cool white

The device info is automatically displayed again after all control gear units have been successfully assigned.



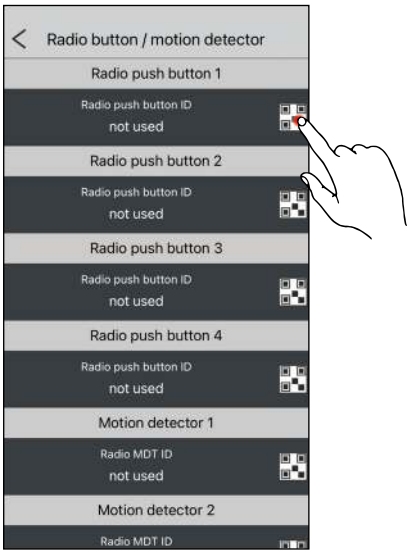
Radio button / motion detector
Tap the "Radio button / motion detector" setting option to integrate radio buttons.

Note:
The integration of (wireless) motion detectors is not supported by Trilux.

Radio button overview

In the radio button overview, up to four fourfold radio buttons can be integrated by scanning a QR code. Tapping the QR code icon opens the camera for scanning.

Note:
The four radio buttons are automatically assigned preset functions after scanning (see: Radio button overview – after scanning).



Scan radio button

To integrate a radio button, the QR code on the push-button must be scanned. The lower area shows where the QR code is located on the push-button.

Radio button overview – after scanning

After scanning a Radio button, the following parameters are displayed:

- Radio push button ID
- Button upper left (fourfold push-button only)
- Button bottom left (fourfold push-button only)
- Button upper right
- Button bottom right

The automatically preset functions can be edited by tapping the pencil icon. If necessary, the radio button can be removed by tapping the trash can icon.

Note:
Further setting options for radio buttons are listed in a table in the appendix.

	Radio push-button 1 - setting options (preset)
Button upper left (fourfold push-button only)	Room ON AUTO MAX
Button bottom left (fourfold push-button only)	Group OFF BWM (motion sensor) - ON ready
Button upper right	ON AUTO MAX
Button bottom right	Room OFF

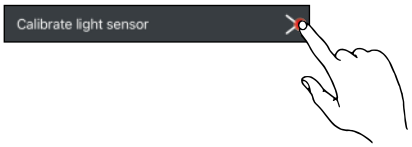
	Radio push-button 2 - setting options (preset)
Button upper left (fourfold push-button only)	ON AUTO MAX <-> OFF
Button bottom left (fourfold push-button only)	CCT AUTO/MANUAL + dim CCT
Button upper right	Indirect AUTO/OFF + dim bright
Button bottom right	Direct right AUTO/OFF + dim bright

	Radio push-button 3 - setting options (preset)
Button upper left (fourfold push-button only)	ON AUTO MAX <-> OFF
Button bottom left (fourfold push-button only)	CCT AUTO/MANUAL + dim CCT
Button upper right	Indirect AUTO/OFF + dim bright
Button bottom right	Direct right AUTO/OFF + dim bright

	Radio push-button 4 - setting options (preset)
Button upper left (fourfold push-button only)	SCENE 1
Button bottom left (fourfold push-button only)	OFF
Button upper right	SCENE 2
Button bottom right	SCENE 3

Calibrate light sensor

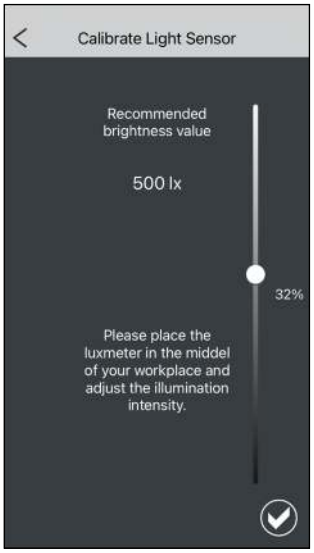
Tap the "Calibrate light sensor" setting option to calibrate the light sensor.



Calibration of the light sensor

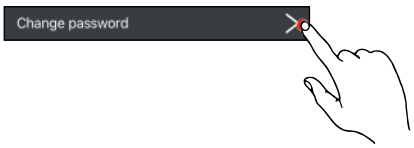
Illuminance can be managed in the light sensor calibration area. For proper calibration, the luxmeter must be placed in the centre of the work area and the room should be darkened so that there is no daylight. Then the illuminance must be adjusted (see instructions on the screen). The illuminance (in percent) can be adjusted manually with the slider on the right-hand side. The recommended illuminance is also displayed on the screen; this is 500lx by default. Tap the tick to apply the changed settings.

Note:
During calibration, the luxmeter should be placed at the darkest or a defined measuring point of the working area in order to be able to reproduce the measurement and to achieve sufficient illuminance everywhere.



Change password

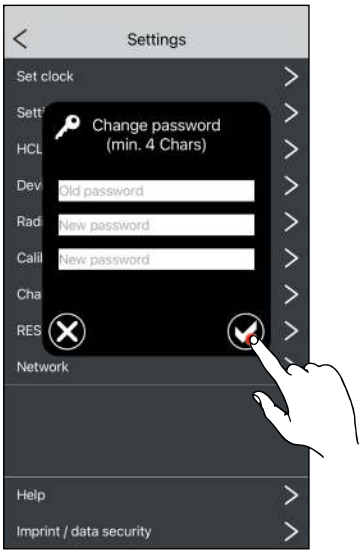
Tap the "Change password" setting option to change the device password.



New password

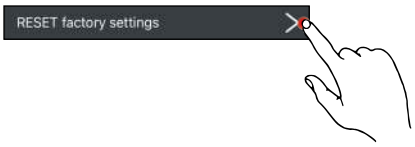
To be able to change the device password, the old password (by default "1234") must first be entered. The new password must then be entered twice. Tap the tick to confirm the entry.

Note:
Secure passwords should be at least 10 characters long, consist of upper and lower case letters and special characters.



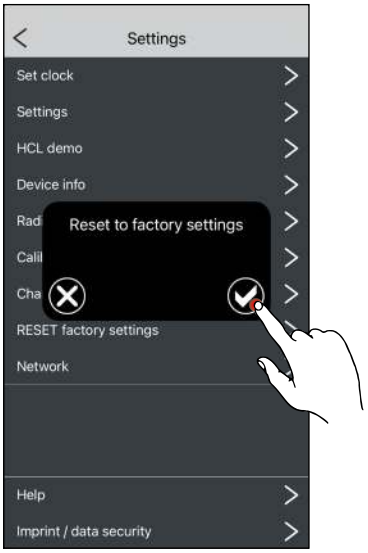
RESET factory settings

Tap the "RESET factory settings" setting option to reset the connected luminaire to delivery state. This does not include the device password.



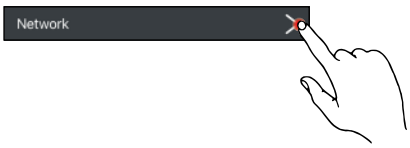
Reset luminaire to factory settings

By tapping the tick, the connected luminaire can be reset to the factory settings. Tapping the cross cancels the process.



Network

Tap the "Network" settings option to manage the network settings. To open the network settings, the password "5678" must be entered.



Network settings

The following parameters can be set in the network settings area:

- Mesh network
- Room network name
- Group
- Repeater
- Swarm mode
- Swarm MDT (motion detector) switch-off time
- Swarm HCL-curve calculation
- Swarm HCL-curve type
- HCL-curve used by swarm
- Gateway indirect MDT (motion detector) instance (2 min) – currently not supported
- Gateway direct MDT (motion detector) instance (2 min) – currently not supported

Mesh network

With the "Mesh network" parameter, the following options for the mesh network can be selected:

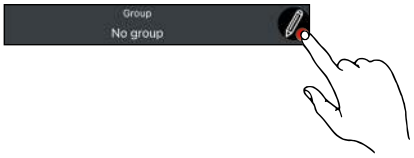
Setting options	
OFF	The luminaire is not integrated in the mesh network
ON	The luminaire is integrated in the mesh network
ON + APP local scenes	The luminaire is integrated in the mesh network and the local scenes (pre-configured, device-specific scenes) can be called up from the app
ON + APP my scenes	The luminaire is integrated in the mesh network and the self-defined scenes can be called up from the app

Room network name

With the "Room network name" parameter, the network of the room can be named individually.

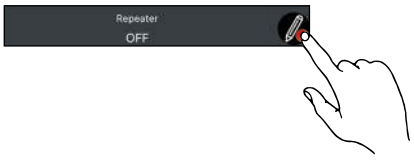
Group

With the "Group" parameter, a luminaire can be assigned to a group. The luminaire can be assigned to one of the 32 different groups.



Repeater

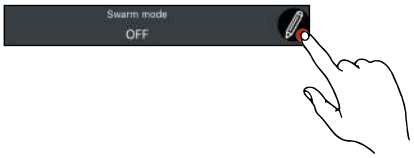
The "Repeater" parameter enables or disables the repeater function. If the repeater function is switched on, the device acts as a signal amplifier (repeater).



Note:
The repeater should only be switched on when there are delays in the system to strengthen the signal. Too many repeaters will slow down the signal.

Swarm mode

With the "Swarm mode" parameter, the functional range of the swarm mode can be defined. The following options are available:



Setting options	
OFF	Motion sensor disabled
ON room (only luminaires in the vicinity)	Swarm mode activated: all luminaires in the room that are within the reception range of the luminaire are actuated.
ON group (only luminaires in the vicinity)	Swarm mode activated: all luminaires in the group that are within the reception range of the luminaire are actuated.
ON complete room (all luminaires)	Swarm mode activated: all luminaires in the room are actuated.
ON complete group (all luminaires)	Swarm mode activated: all luminaires in the group are actuated.

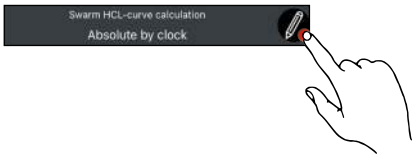
Swarm MDT (motion detector) switch-off delay

With the "Swarm MDT (motion detector) switch-off delay" parameter, you can set how long the lighting should remain switched on in the absence of movement. The following options are available:

Setting options	
1 minute	Switch-off after 1 minute
2 minutes	Switch-off after 2 minutes
3 minutes	Switch-off after 3 minutes
4 minutes	Switch-off after 4 minutes
5 minutes	Switch-off after 5 minutes
10 minutes	Switch-off after 10 minutes
15 minutes	Switch-off after 15 minutes
20 minutes	Switch-off after 20 minutes
25 minutes	Switch-off after 25 minutes
30 minutes	Switch-off after 30 minutes
40 minutes	Switch-off after 40 minutes
50 minutes	Switch-off after 50 minutes
1 hour	Switch-off after 1 hour
2 hours	Switch-off after 2 hours
3 hours	Switch-off after 3 hours
4 hours	Switch-off after 4 hours

Swarm HCL-curve calculation

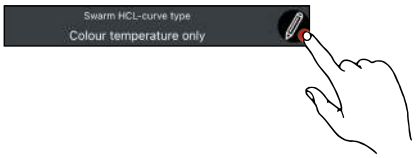
The "Swarm HCL-curve calculation" parameter can be used to set how the HCL-curve is calculated for the swarm. The following options are available:



Setting options	
absolute, according to time	Absolute curve calculation according to the time
relative, according to position of the sun	Relative curve calculation according to the position of the sun

Swarm HCL-Curve type

The "Swarm HCL-curve type" parameter can be used to select which variables are to be influenced when running the HCL-curve. The following options are available:



Setting options	
colour temperature only	When the HCL-curve is run, only the colour temperature of the lighting is adjusted according to time of day / position of sun
Colour temperature and brightness	When the HCL-curve is run, the colour temperature and brightness of the lighting are adjusted according to time of day / position of sun

HCL-curve used by swarm

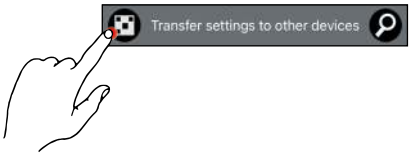
The "HCL-curve used by swarm" parameter can be used to select which HCL-curve is to be used for the swarm. The following options are available:

Setting options	
Curve 1 (Sp)	HCL-curve adapted to the spring season
Curve 2 (Su)	HCL-curve adapted to the summer season
Curve 3 (Au)	HCL-curve adapted to the autumn season
Curve 4 (Wi)	HCL-curve adapted to the winter season

Note:
The curve only has to be selected once. Afterwards, the system adjusts automatically in the following time based on the selected curve.

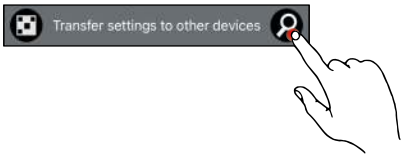
Transfer settings to other devices – QR code

Tap the QR code icon to transfer the settings made to other devices and thus added to the network. The camera opens and the QR code of the devices – to which the settings are to be transferred – can be scanned.



Transfer settings to other devices – search

Optionally, tap the magnifying glass icon to start an automatic search in which the devices to be reached can be displayed and selected.



Network settings – devices in vicinity

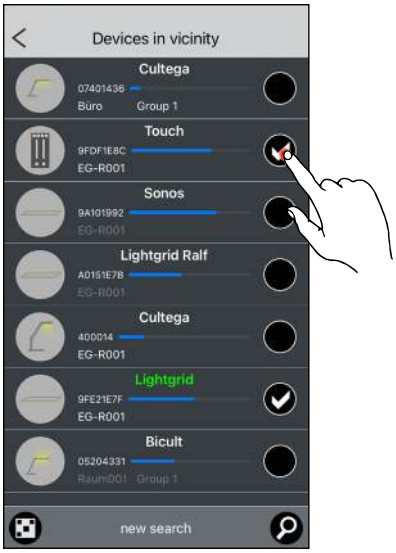
After the search for devices in vicinity has been started (with the magnifying glass icon), an overview opens which lists all devices found. In addition, the network or group in which they are currently located and the signal strength are displayed (blue bar). The green font indicates the device that is currently being processed. Tap the magnifying glass or QR code again to search for devices again.

Note:
Touch panels can only be found in the automatic network scan (see "Transfer settings to other devices – search").

Add touch panel

Tapping the touch panel in the list opens its settings menu.

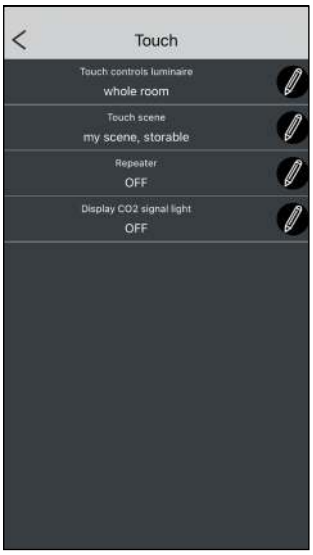
Note:
To add a touch panel, the mesh network must be switched on first.



Touch panel

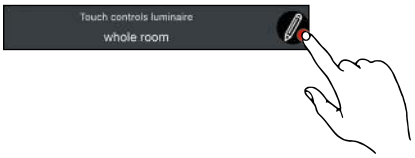
After the touch panel has been selected, a list with the following setting parameters appears:

- Touch controls luminaire
- Touch scene
- Repeater
- Display CO2 signal light



Touch controls luminaire

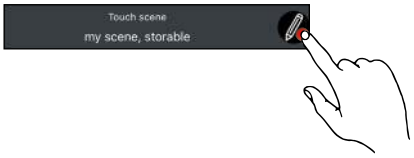
The "Touch controls luminaire" parameter enables selection of which luminaires are to be controlled by the touch panel. The following options are available:



Setting options	
whole room	All devices assigned to the room are controlled by the touch panel
Group 1	All devices assigned to group 1 are controlled by the touch panel
Group 2	All devices assigned to group 2 are controlled by the touch panel
Group 3	All devices assigned to group 3 are controlled by the touch panel
...	...
Group 32	All devices assigned to group 32 are controlled by the touch panel

Touch scene

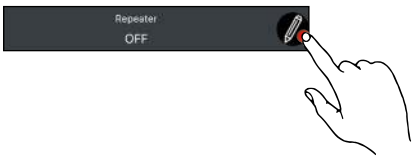
The "Touch scene" parameter can be used to set which scenes can be called up on the scene caller of the touch panel. The following options are available:



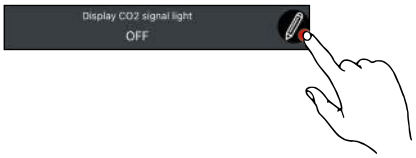
Setting options	
my scene	Calls up the stored scenes of the touch panel for all luminaires
my scene, storable	Calls up the stored scenes of the touch panel for all luminaires By tapping and holding scene buttons 1, 2, 3 or 4, the manually set scenes can be stored on these buttons.
local scene of the luminaire	Calls up the locally stored scenes of the individual luminaires. **Caution**: local scenes can vary depending on the luminaire.

Repeater

The "Repeater" parameter enables or disables the repeater function of the touch panel. If the repeater function is switched on, the touch panel acts as a signal amplifier (repeater).



Note:
The repeater should only be switched on when there are delays in the system to strengthen the signal. Too many repeaters will slow down the signal.



Display CO2 signal light

The "Display CO2 signal light" parameter can be used to set which data of the connected CO2 sensors the CO2 display of the touch panel should refer to.

Note:
The CO2 sensors are currently not included as standard with the Live-Link LightGrid system. If you have any questions regarding the integration and use of these sensors, please contact the LMS Light Management Support of Trilux (lms@trilux.com).

The following options are available:

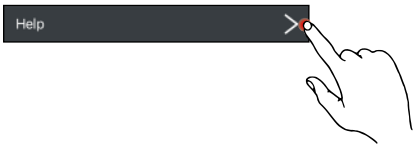
Setting options	
OFF	CO2 display on the touch panel is disabled
All sensors group 1	CO2 display on the touch panel refers to the mean value of all sensors from group 1
All sensors group 2	CO2 display on the touch panel refers to the mean value of all sensors from group 2
All sensors group 3	CO2 display on the touch panel refers to the mean value of all sensors from group 3
...	
All sensors group 32	CO2 display on the touch panel refers to the mean value of all sensors from group 1
All sensors in the room	CO2 display on the touch panel refers to the mean value of all sensors from the room

Network settings – added devices

Once a device has been selected and set up, it is added to the active network. Successful adding to the network is indicated by the tick to the right of the device name.

Help

Tap the "Help" setting to access the system manual of the LiveLink LightGrid system.



Imprint / data security

Tap the "Imprint / data security" setting to access the company information and Trilux data security regulation.

4 APPENDIX

4.1 SETTING OPTIONS

4.1.1 230V PUSH-BUTTON INPUT

230V push-button input	
do not use	no function
Pulse: MANUAL <-> OFF	Switch manual mode on and off by push-button pulse
Pulse: AUTO <-> OFF	Switch automatic mode on and off by push-button pulse
Pulse: -> OFF BWM (motion sensor) ready	Switch off lighting and activate motion sensor by push-button pulse
Pulse: -> OFF	Switch off lighting by push-button pulse
Pulse: -> Scene 1	Call up scene 1 by push-button pulse
Pulse: -> Scene 2	Call up scene 2 by push-button pulse
Pulse: -> Scene 3	Call up scene 3 by push-button pulse
Pulse: -> Scene 4	Call up scene 4 by push-button pulse
Pulse: Scene 1 <-> OFF	Call up scene 1 or switch off lighting by push-button pulse
Pulse: Scene 2 <-> OFF	Call up scene 2 or switch off lighting by push-button pulse
Pulse: Scene 3 <-> OFF	Call up scene 3 or switch off lighting by push-button pulse
Pulse: Scene 4 <-> OFF	Call up scene 4 or switch off lighting by push-button pulse
Short: AUTO <-> OFF / long: bright <-> dark	Short button press: switch automatic mode on or off Long button press: Touchdimm
Short: AUTO <-> OFF / long: warm <-> cool	Short button press: switch automatic mode on or off Long button press: Colour Touchdimm
Short: MANUAL <-> OFF / long: bright <-> dark	Short button press: switch manual mode on or off Long button press: Touchdimm
Short: MANUAL <-> OFF / long: warm <-> cool	Short button press: switch manual mode on or off Long button press: Colour Touchdimm
Long: bright <-> dark	Long button press: Touchdimm: luminaire is dimmed down
Long: warm <-> cool	Long button press: Colour Touchdimm: Press and hold the push-button and the luminaire dims to the cool white light range. Another long press dims the luminaire to the warm white light range.
external BWM (motion sensor) Direct	Signal input is via a motion sensor that enables the direct component of the lighting
external BWM (motion sensor) Indirect	Signal input is via a motion sensor that enables the indirect component of the lighting
external BWM (motion sensor) Dir+Indir	Signal input is via a motion sensor that enables the direct and indirect component of the lighting
Pulse: OFF group	Push-button pulse switches off the assigned group of the controller
Pulse: OFF group BWM (motion sensor) ready	Push-button pulse switches off the assigned group of the controller and the motion sensor is activated
Pulse: OFF group room	Push-button pulse switches off the assigned group and room of the controller
Pulse: OFF group room BWM (motion sensor) ready	Push-button pulse switches off the assigned group and room of the controller and the motion sensor is activated
Pulse: ON AUTO group	Push-button pulse switches on the assigned group of the controller and enables its automatic mode
Pulse: ON AUTO room	Push-button pulse switches on the assigned room of the controller and enables its automatic mode
Pulse: Scene 1 group	Push-button pulse enables scene 1 of the group
Pulse: Scene 2 group	Push-button pulse enables scene 2 of the group
Pulse: Scene 3 group	Push-button pulse enables scene 3 of the group
Pulse: Scene 4 group	Push-button pulse enables scene 4 of the group
Pulse: Scene 1 room	Push-button pulse enables scene 1 of the room
Pulse: Scene 2 room	Push-button pulse enables scene 2 of the room
Pulse: Scene 3 room	Push-button pulse enables scene 3 of the room
Pulse: Scene 4 room	Push-button pulse enables scene 4 of the room

Pulse: my scene 1 group	Push-button pulse enables self-defined scene 1 of the group
Pulse: my scene 2 group	Push-button pulse enables self-defined scene 2 of the group
Pulse: my scene 3 group	Push-button pulse enables self-defined scene 3 of the group
Pulse: my scene 4 group	Push-button pulse enables self-defined scene 4 of the group
Pulse: my scene 1 room	Push-button pulse enables self-defined scene 1 of the room
Pulse: my scene 2 room	Push-button pulse enables self-defined scene 2 of the room
Pulse: my scene 3 room	Push-button pulse enables self-defined scene 3 of the room
Pulse: my scene 4 room	Push-button pulse enables self-defined scene 4 of the room
Pulse: enable group push-button	Push-button pulse enables push-button for the group
Pulse: disable group push-button	Push-button pulse deactivates push-button for the group (except the enable push-button)
Pulse: enable room push-button	Push-button pulse enables push-button for the group
Pulse: disable room push-button	Push-button pulse deactivates push-button for the room (except the enable push-button)
HF/LF: disable/enable group push-button	Switch (not push-button) required. ON (High Flank) disables push-button for the group, OFF (Low Flank) enables push-button for the group
HF/LF: disable/enable room push-button	Switch (not push-button) required. ON (High Flank) disables push-button for the room, OFF (Low Flank) enables push-button for the room
Pulse: BWM (motion sensor) enable group	Push-button pulse enables the sensor of the room
Pulse: BWM (motion sensor) disable group	Push-button pulse deactivates the sensor of the room
Pulse: BWM (motion sensor) enable room	Push-button pulse enables the sensor of the room
Pulse: BWM (motion sensor) disable room	Push-button pulse deactivates the sensor of the room
HF/LF: BWM (motion sensor) disable/enable group	Switch (not push-button) required. ON (High Flank) disables motion sensor for the group, OFF (Low Flank) enables motion sensor for the group
HF/LF: BWM (motion sensor) disable/enable room	Switch (not push-button) required. ON (High Flank) disables motion sensor for the room, OFF (Low Flank) enables motion sensor for the room
Pulse: OFF room + BMW (motion sensor) disable	Push-button pulse switches the room off + motion sensor is disabled
Pulse: AUTO room + BMW (motion sensor) disable	Push-button pulse enables automatic mode of the room + motion sensor is disabled
Pulse: Scene 1 room + BMW (motion sensor) disable	Push-button pulse calls up scene 1 of the room + motion sensor is disabled
Pulse: Scene 4 room + BMW (motion sensor) disable	Push-button pulse calls up scene 4 of the room + motion sensor is disabled
Push-button pulse: scene 1 room + BMW (motion sensor) disable	Push-button pulse calls up self-defined scene 1 of the room + motion sensor is disabled
Push-button pulse: scene 4 room + BMW (motion sensor) disable	Push-button pulse calls up self-defined scene 4 of the room + motion sensor is disabled
Pulse: OFF group + BMW (motion sensor) disable	Push-button pulse switches the group off + motion sensor is disabled
Pulse: AUTO group + BMW (motion sensor) disable	Push-button pulse enables automatic mode of the group + motion sensor is disabled
Pulse: Scene 1 group + BMW (motion sensor) disable	Push-button pulse calls up scene 1 of the group + motion sensor is disabled
Pulse: Scene 4 group + BMW (motion sensor) disable	Push-button pulse calls up scene 4 of the group + motion sensor is disabled
Push-button pulse: scene 1 group + BMW (motion sensor) disable	Push-button pulse calls up self-defined scene 1 of the group + motion sensor is disabled
Push-button pulse: scene 4 group + BMW (motion sensor) disable	Push-button pulse calls up self-defined scene 4 of the group + motion sensor is disabled
T1	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)
T2	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)
T3	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)
T4	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)

T5	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)
T6	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)
T7	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)
T8	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)
Indirect AUTO/OFF + brighten	Indirect lighting is set to automatic mode/switched off + brighten
Direct right AUTO/OFF + brighten	Direct light component on the right is set to automatic mode/switched off + brighten
Direct left AUTO/OFF + brighten	Direct light component on the left is set to automatic mode/switched off + brighten
Direct right + indirect AUTO/OFF + brighten	Direct component on right + indirect component is set to automatic mode/switched off + brighten
Direct left + indirect AUTO/OFF + brighten	Direct light component on the left + indirect component is set to automatic mode/switched off + brighten
CCT AUTO/MANUAL + dim CCT	Colour temperature auto + manual switching / long press dims colour temperature

4.1.2 RADIO BUTTON

Wireless push-buttons	
no function	no function
Room OFF	Switch off room
Room OFF motion sensor ON	Switch off room and enable motion sensor
Room ON AUTO MAX	Switch on room and enable automatic mode; automatic HCL-curve + light control
Room ON MANUAL colour AUTO	Switch on room and enable manual mode; enable HCL-curve in automatic mode
Room ON MANUAL 100% colour AUTO	Switch on room and enable manual mode; enable HCL-curve in automatic mode and start at 100%
Room ON SCENE 1	Switch on room with scene 1
Room ON SCENE 2	Switch on room with scene 2
Room ON SCENE 3	Switch on room with scene 3
Room ON SCENE 4	Switch on room with scene 4
Room colour AUTO	Enable HCL sequence in automatic mode in the room
Room colour MANUAL	Enable HCL sequence in manual mode in the room
Room OFF + disable motion sensor	Switch off room and disable motion sensor
Room ON SCENE 1 + disable motion sensor	Switch on room with scene 1 + motion sensor is disabled
Room ON SCENE 2 + disable motion sensor	Switch on room with scene 2 + motion sensor is disabled
Room ON SCENE 3 + disable motion sensor	Switch on room with scene 3 + motion sensor is disabled
Room ON SCENE 4 + disable motion sensor	Switch on room with scene 4 + motion sensor is disabled
Room My SC1	Individual scene 1 is called up in the room
Room My SC2	Individual scene 2 is called up in the room
Room My SC4 + disable motion sensor	Individual scene 4 is called up in the room + motion sensor is disabled
Group OFF	Group is switched off
Group OFF motion sensor ON ready	Group is switched off and motion sensor is enabled
Group ON AUTO MAX	Group is switched on and automatic HCL-curve + light control
Group ON MANUAL colour AUTO	Switch on group and enable manual mode; enable HCL-curve in automatic mode
Group ON MANUAL 100% colour AUTO	Switch on group and enable manual mode; enable HCL-curve in automatic mode and start at 100%
Group ON SCENE 1	Switch on group with scene 1
Group ON SCENE 2	Switch on group with scene 2
Group ON SCENE 3	Switch on group with scene 3

Group ON SCENE 4	Switch on group with scene 4
Group colour AUTO	Enable HCL sequence in automatic mode in the group
Group colour MANUAL	Enable HCL sequence in manual mode in the group
Group OFF + disable motion sensor	Switch off group and disable motion sensor
Group ON SCENE 1 + disable motion sensor	Switch on group with scene 1 + motion sensor is disabled
Group ON SCENE 2 + disable motion sensor	Switch on group with scene 2 + motion sensor is disabled
Group ON SCENE 3 + disable motion sensor	Switch on group with scene 3 + motion sensor is disabled
Group ON SCENE 4 + disable motion sensor	Switch on group with scene 4 + motion sensor is disabled
Group My SC1	Individual scene 1 is called up in the group
Group My SC2	Individual scene 2 is called up in the group
Group My SC4 + disable motion sensor	Individual scene 4 is called up in the group + motion sensor is disabled
OFF	Switch off all luminaires
OFF motion sensor ON ready	All luminaires are switched off and motion sensor is enabled
ON MANUAL colour AUTO	All luminaires are switched on and automatic mode is enabled with maximum start value
ON MANUAL 100% colour AUTO	Switch on all luminaires and enable manual mode; enable HCL-curve in automatic mode
ON MANUAL last state	Switch on all luminaires and enable manual mode; last state is taken as start value
SCENE 1	Switch on all luminaires with scene 1
SCENE 2	Switch on all luminaires with scene 2
SCENE 3	Switch on all luminaires with scene 3
SCENE 4	Switch on all luminaires with scene 4
SCENE 1 <-> OFF	Call up scene 1 or switch off lighting
SCENE 2 <-> OFF	Call up scene 2 or switch off lighting
SCENE 3 <-> OFF	Call up scene 3 and dim until lighting is off
SCENE 4 <-> OFF	Call up scene 4 and dim until lighting is off
Colour AUTO	Enable automatic mode of HCL-curve
Colour MANUAL	Enable manual operation of HCL-curve
Colour AUTO <-> MANUAL	Switch colour temperature of HCL-curve - manual
ON AUTO MAX <-> OFF	Switch automatic HCL-curve + light control - off
ON AUTO 100% <-> OFF	Switch automatic HCL-curve + light 100% - off
ON MANUAL last state <-> OFF	Switch manual last state - off
INDIRECT MANUAL <-> OFF	Switch indirect light component manual - off
DIRECT MANUAL <-> OFF	Switch direct light component manual - off
DIRECT LEFT MANUAL <-> OFF	Switch direct light component left manual - off
DIRECT RIGHT MANUAL <-> OFF	Switch direct light component right manual - off
INDIRECT AUTO MAX <-> OFF	Switch indirect light component automatic HCL-curve + light control - off
DIRECT AUTO MAX <-> OFF	Switch direct light component automatic HCL-curve + light control - off
DIRECT RIGHT AUTO MAX <-> OFF	Switch direct light component right automatic HCL-curve + light control - off
DIRECT LEFT AUTO MAX <-> OFF	Switch direct light component left automatic HCL-curve + light control - off
OFF + motion sensor disabled	Switch off lighting and disable motion sensor
ON SCENE 1 + disable motion sensor	Call up scene 1 and disable motion sensor
ON SCENE 2 + disable motion sensor	Call up scene 2 and disable motion sensor
ON SCENE 3 + disable motion sensor	Call up scene 3 and disable motion sensor
ON SCENE 4 + disable motion sensor	Call up scene 4 and disable motion sensor
Indirect brighten up	Increase brightness of indirect light component
Indirect dim down	Decrease brightness of indirect light component
Direct right brighten up	Increase brightness of right direct light component
Direct right dim down	Decrease brightness of right direct light component
Direct left brighten up	Increase brightness of left direct light component
Direct left dim down	Decrease brightness of left direct light component
Direct brighten up	Increase brightness of direct light component
Direct dim down	Decrease brightness of direct light component

CCT increase	Increase colour temperature (cool)
CCT dim down	Decrease colour temperature (warm)
Indirect ON AUTO MAX	Switch on automatic mode of indirect light component Automatic HCL-curve + light control
GROUP indirect ON AUTO MAX	Switch on automatic mode of indirect light component of group Automatic HCL-curve + light control
ROOM indirect ON AUTO MAX	Switch on automatic mode of indirect light component of room Automatic HCL-curve + light control
Indirect ON 100% CCT AUTO	Switch on automatic mode of indirect light component Automatic HCL-curve + maximum light
GROUP indirect ON 100% CCT AUTO	Switch on automatic mode of indirect light component of group Automatic HCL-curve + maximum light
ROOM indirect ON 100% CCT AUTO	Switch on automatic mode of indirect light component of room Automatic HCL-curve + maximum light
Disable motion sensor	Disable motion sensor
Enable motion sensor	Enable motion sensor
Enable push-button	Enable push-button
Disable push-button	Disable push-button
Enable motion sensor+push-button	Enable motion sensor+push-button
Disable motion sensor+push-button	Disable motion sensor+push-button
Enable group motion sensor	Enable motion sensor of the group
Disable group motion sensor	Disable motion sensor of the group
Enable room motion sensor	Enable motion sensor of the room
Disable room motion sensor	Disable motion sensor of the room
Enable room push-button	Enable push-button of the room
Disable room push-button	Disable push-button of the room
Relay ON	Switch internal relay of LightGrid interface to ON
Relay OFF	Switch internal relay of LightGrid interface to OFF
Relay TOGGLE	Toggle internal relay of LightGrid interface
Relay ON Hold	Switch internal relay of LightGrid interface to ON as long as the push-button is pressed, then OFF again
Relay pulse ON 0.3s	Relay pulse of the LUMOBI interface of 0.3s
Indirect AUTO/OFF + dim bright	Set/switch off indirect light component in automatic mode and dim brightness
Direct right AUTO/OFF + dim bright	Set/switch off right direct light component in automatic mode and dim brightness
Direct left AUTO/OFF + dim bright	Set/switch off left direct light component in automatic mode and dim brightness
Direct AUTO/OFF + dim bright	Set/switch off direct light component in automatic mode and dim brightness
CCT AUTO/OFF + dim CCT	HCL-curve automatic / off - long press dim colour temperature
Test 1	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)
Test 2	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)
Test 3	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)
Test 4	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)
Test 5	Test function, used for internal and external tests (to test customer request functions before inclusion in scope of functions)

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