interact

Install

Interact Pro

Version v2.4

27 June 2023

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Version: version 2.4

Version Date: 2023-06-27

1. About the document

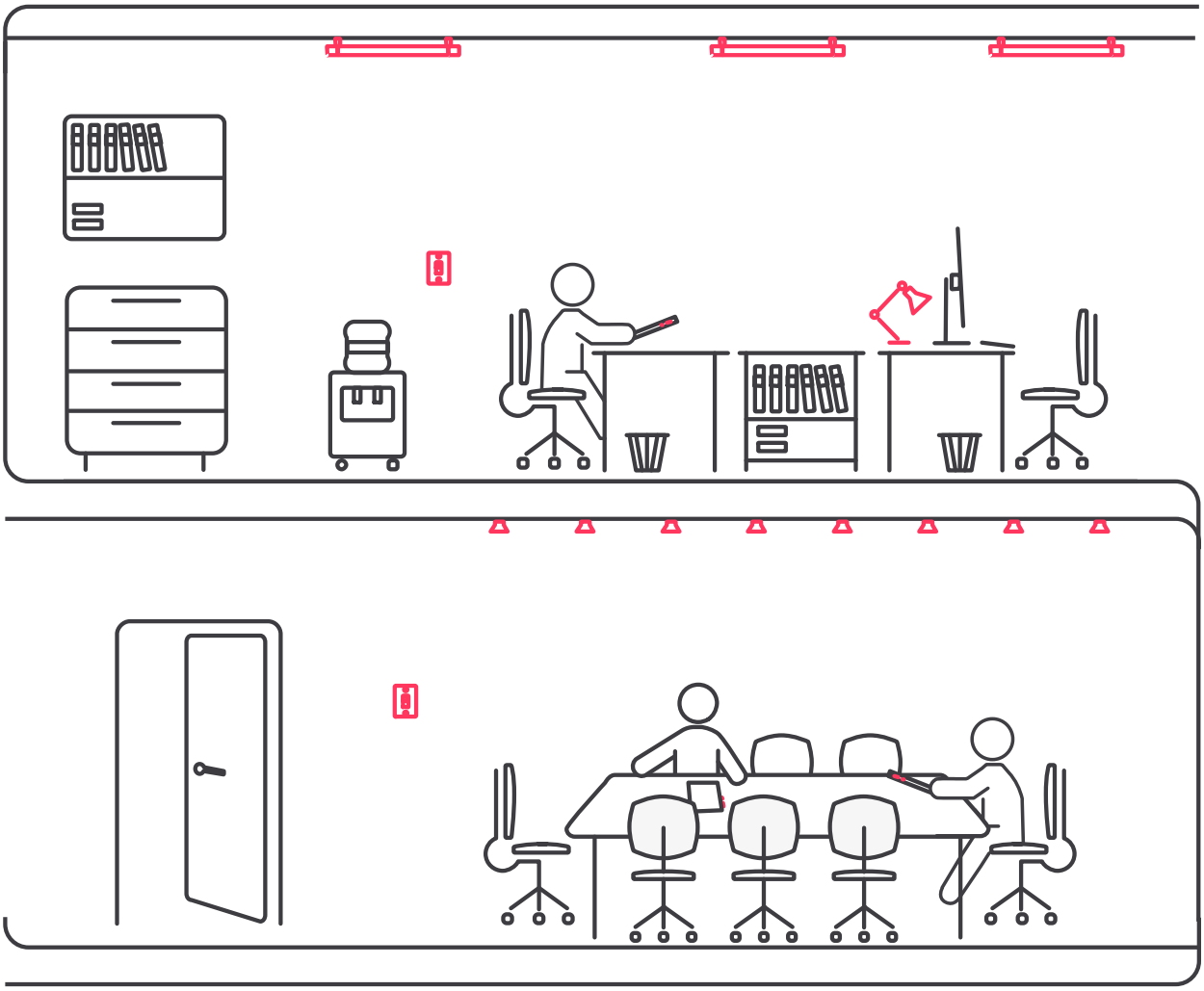
The document relates to version 2.4 of the Interact Pro connected lighting system.

2. Introduction

2.1. Target audience

The proposition is aimed at small and medium enterprises (SME), often privately held. The target audiences for this document are:

- Service provider
- Installer on the job



2.2. Purpose and intended audience

This document describes the installation and deployment of the lighting system.

Following all instructions closely, from installation of components and software to commissioning with the dedicated Interact Pro app, results in a functioning system.

Refer to other documents for more information:

- *System Guide*
  describes the system design and how this design can support the requirements of a customer.
- *Networking Guide*
  describes the IT design of the system and the prerequisites for the IT network of the customer.
- *Maintentance Guide*
  describes elemental fault finding and simple procedures how to solve.

Two distinct technical roles can be observed:

- *Wholesale/distributor*
  Supports the Service provider/Installer in technical matters during the consultation, bidding and system definition processes.
- *Service provider/installer*
  Creates the statement of work for the customer, installs the lighting system with the required components and commissions the system. As service provider, also the service of the system can be part of the agreement with the customer.

This document does not explicitly distinguish between the knowledge required for these roles. Rather, each section in this document focuses on a specific aspect of the process.

This approach was chosen as that there is no strict separation between the knowledge needed for both roles. It is thus recommended to read all sections in order (as sections are built upon previous ones) but skip paragraphs that are not relevant for the specific role of the reader.

The aim of this document is to provide sufficient knowledge to interact with the customer or third-party experts during all stages of the system lifecycle.

2.3. Roles and responsabilities

This topic describes the user roles and their responsibilities in Interact Pro.

User roles

User type	Description
Service provider (Distributor/CSI)	• Point of contact for the customer and provides support • Manages the projects & designs the installation • Invites installers, owners and users to the project
Technical installer	• Installs the physical devices • Commissions the project • Provides technical assistance at the project site
Owner	• Manages and controls the lighting system • Invites new users
User (Interact Pro connected-only)	• Controls the assigned lighting groups

2.3.1. Portal and app permissions

Manage users

Action/Role	Service provider	Installer	Owner	User
Request access	✓	✓	✗	✗
Invite others	✓	✓	○	✗
Delete others	✓	✓	○	✗

Commission and update

Action/Role	Service provider	Installer	Owner	User
Commission project	Mobile app	Mobile app	Mobile app	✗
Firmware update (Interact Pro connected-only)	✓	✓	✓	✗

Manage projects

Action/Role	Service provider	Installer	Owner	User
Create projects	✓	✓	✗	✗
Manage projects	✓	✓	○	✗
Create groups and zones	✓	✓	✓	✗

Use

Action/Role	Service provider	Installer	Owner	User
Energy & health (Interact Pro connected-only)	Web app	Web app	Web app	✕
Energy reports (Interact Pro connected-only)	Web app	Web app	✕	✕
Manage scenes	✓	✓	✓	✕
Manage schedules (Interact Pro connected-only)	✓	✓	✓	✕
Manage groups	✓	✓	✓	✕
Control lights	✓	✓	✓	✓

Reference

- ✓ - possible
- ✕ - not possible
- ◯ - possible with limited functionality
- Web app - only available in the web app
- Mobile app - only available in the mobile app

2.4. Abbreviations

Abbreviation	Explanation
ACL	Access Control List
AES	connected Encryption Standard
IoT	Internet of Things
MER/SER	Main Equipment Room / Satellite Equipment Room
MQTT	Message Queuing Telemetry Transport
IAP	Interact Pro
OTA	Over the Air
SME	Small and Medium Size Enterprises
UPS	Uninterruptible Power Supply
WG	Wireless Gateway
ZGP	ZigBee Green Power, technology used in sensors and switches

2.5. Terms & definitions

2.5.1. Terms and definitions

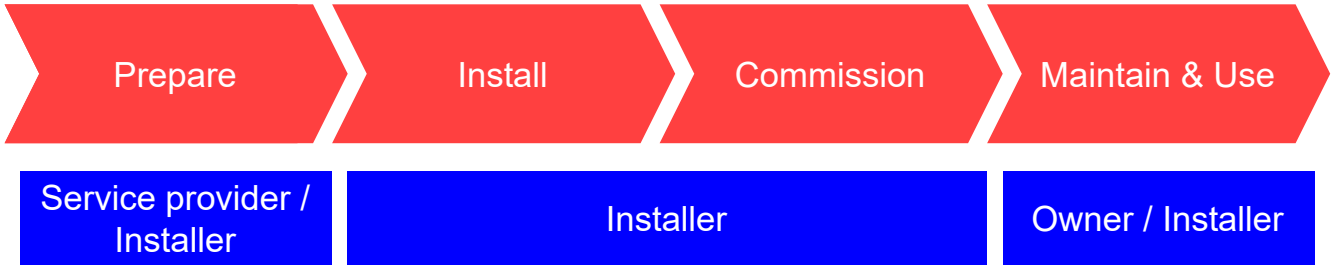
Term	Definition
Access port	A switch or router port which is used to connect to an “end device”. An end device in this context is for example the Wireless Gateway.
IPv4	Internet Protocol version 4; IPv4 consists of a set of protocols that together enable communication of packets between network interfaces that are identified by 32 bit IPv4 addresses.
Light point	Either a lamp or a luminaire. When using smart lamps in a luminaire, the luminaire can consist of multiple light points. When using luminaires, each single luminaire counts as a light point.
Task level	Configurable light level on the task plane used when there is occupancy detected.
Background level	Configurable light level, used to save energy when there is no occupancy detected.
Hold time	Configurable delay time from the moment the last movement has been detected until the start of the grace fading time.
Prolong time	Configurable time the light level is maintained at background level after expiration of the hold time.
Vacant level	Configurable light level used when an area is vacated after expiration of both the hold and prolong time. Prevents the light to switch off completely in case of security reasons (for example security cameras), or for comfort reasons. The level can also be set to completely off.

3. Project introduction

With the Interact Pro system, customers are offered an intelligent, modular and state-of-the-art lighting system, that is easy to install, use and maintain.

For service providers, recommending and installing Interact Pro gives the chance to become the trusted partner for their customers in this new and expanding field of connected lighting.

The basic project flow below helps defining, installing and using an Interact Pro system from start to finish.



3.1. Initiate

In the initiate phase, the customer along with the service provider discuss the needs, options and solutions for the lighting installation.

The initiate phase is concluded with:

- a bill of material of devices needed
- a high-level statement of work, covering a concise description of activities to finalize

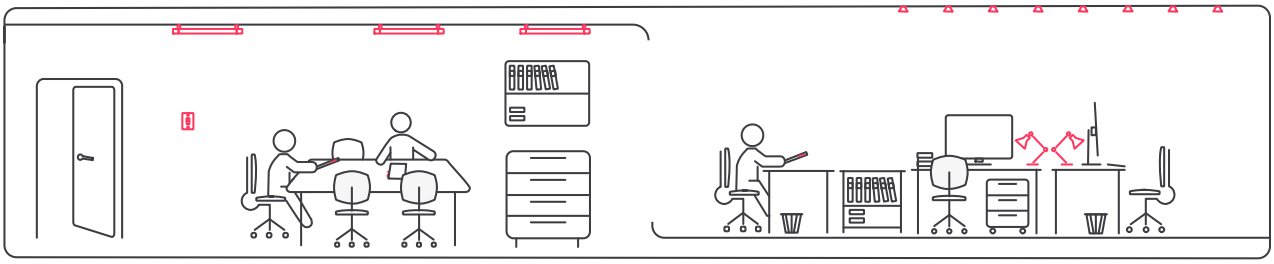
Examples of data to be captured:

- The project details
- Name and address of the customer
- Contact details of the contact person
- Usage of the building, area types etcetera
- Discuss the details of the Interact Pro system
- Type and number of luminaires, sensors, switches
- Number of groups and zones
- Scenes and lighting behavior

> **Note**
>
> For this step, it can be useful to have the floorplans of the building available.

Refer also to Appendix Floorplan design guidance.

- Create, invite and appoint the users necessary for this phase of the project
- Installer on the job
- Business owner (contact person)
  The high-level statement of work describes the works of the installation and commissioning phases and can be used to capture the status of each phase.



3.2. Prepare, install and commission

The install and commission phases divide the project execution in the building of the customer into logical parts and includes system installation at the customer site and the complete commissioning until handover. Most of the activities can be identified in lighting network installation, but limited IT network installation is required also.

These activities divide up into the following phases:

- Offsite preparation
  The service provider prepares the physical install and the commissioning; refer to chapter Preparation
- Onsite installation
  The installer on the job executes the installation of the WG, light points, sensors and, if applicable, switches; refer to chapter Install the project
- Onsite commissioning
  The installer on the job commissions the system using the app, refer to chapter Commission the project

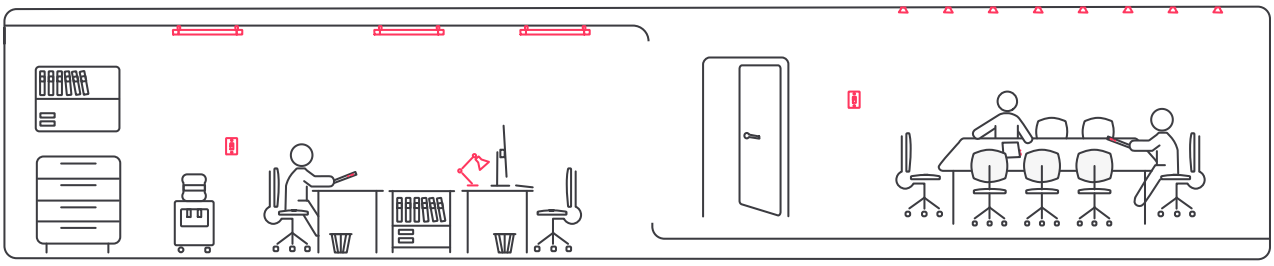
Note

Due to the nature of the installer business, both the service provider and the installer on the job can be the same person.
The system can generate a report in both the portal and the app. This report is a useful document at handover of the system to the customer, as it captures all details of the installed system.

3.3. Operate

After commissioning, the installer hands over to the customer of the Interact Pro system by inviting him so that he can access the project with the Interact Pro app.

An Interact Pro lighting system is easy to operate. Adding sensors to the system ensures the light turn off after a certain amount of time when the sensor does not detect occupancy any longer. Additional to this, it is also possible to create schedules to enhance employee experience and save even more energy. Lighting of individual groups can be adjusted using the app or a ZGP switch.



3.4. Service and maintenance

In connected , the service provider can offer an extended relationship with the customer, for example by providing services. This is possible by means of a contract, in which the contract period and the lifecycle services on the system are offered.

This includes:

- Operations
  - Remote monitoring
  - System optimization
  - Performance management
- Maintenance
  - System health check
  - Remote diagnosis and fault finding
- Performance and optimization
  - Data analytics
  - Reporting

The portal is used primarily by the service provider and the customer but it can remain available for the installer too. It is a platform for the service provider to monitor the systems in his portfolio remotely and provide solutions without sending someone over to the customer. The customer can manage and monitor the system in his building, having a clear overview of the status of the installation.

4. Preparation

Before going to a project onsite, it is advised to minimally download the Interact Pro app and to create an account that can be used to commission onsite with a mobile phone. Ultimately, an installer account is required to access the Interact Pro with the appropriate credentials to execute all commissioning steps onsite.

standalone also offers user management via the portal. Also some offsite preparation can be done via the portal in the own office prior to going onsite. This will limit some of the work to be done during installation and commissioning.

A typical project preparation consists of:

- Download (or update) the app or the portal (connected only)
- Create project, capturing the project details from the initiate phase
- Create groups and zones, as defined in initiate phase
- Invite and/or allocate installer to the project (if not the same as the first account)



Note

It is advised to invite the owner (customer) only after formal hand-over of the commissioned installation.

4.1. Getting access

In order to commmission or use standalone or connected, it is necessary to request access to the application. This can be done either via the mobile app or via the portal (connected only). Users that self-register via the app or portal get the *service provider* role. Once the registration is complete, either of the following steps has to be executed to become an *installer* for a project:

- create a project as service provider (adds the *installer* role)
- invite another user as installer to your organization and allocate that user to the project

For Foundation, the most straightforward way to start is to register using the app and create the project for the job at hand. Note that it is always possible to remove an installer from the project after completion of the install and commissioning. As service provider, it is also possible to invite new personas with administrator rights like the service provider (administrator) role. This is especially handy for larger organizations where multiple people prepare projects. These personas have an overview of all projects the service provider has in portfolio.

The registration is fully based on the unique email addresses of the personas.

Note

User management is also important for standalone to enable explicit hand over access rights to the customer or other installers. This mechanism prevents unauthorized access to a lighting system. Without such a mechanism, any user of the Interact Pro app would be able to control any project with the app.

4.1.1. Mobile app

The Interact Pro app is the tool to configure a lighting system after install. Download the Interact Pro app from either Apple's App Store (for iOS) or Google's Play store.



After downloading, as an installer you have to register yourself by tapping **Request access** on the login screen of the app The app will guide you through all the necessary steps to set up an account with password.[1]. After creating the account, log into the app and create the first project using the sign at the left-bottom of the screen. This account will then have *installer* role permissions and can be used to commission the project.

Self-registration with the app is the same for standalone and connected. As part of the commissioning process, you can indicate whether you want to use gateways or not.

Important

In Interact Pro - Foundation, security credentials to access a project are stored on the mobile phone. The app shows in the project overview screen that a project is locked. It asks you whether it needs to synchronize with the cloud before you unlock it. Unlocking is needed when you want to transfer access to another phone or user (that has proper access rights to the app and the project). When a project is synchronized, the security credentials are backed up in the cloud.

1 . Self-registering will create an account with *service provider* role



Warning

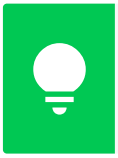
Do not delete or update the app when one or more projects are locked (for access by others). If you do, the project is not accessible anymore and it needs to be recommissioned.

4.1.2. Portal

The Interact Pro portal can also be used to create accounts to obtain access to the portal and the app. The portal is primarily used for connected features but is useful for standalone to get access to up-to-date documentation by tapping *Help and documentation*.

The Interact Pro Portal can be accessed via the following URLs:

- sme.interact-lighting.com
- sme.interact-lighting.cn (China only)



Tip

Change the language of the interface in the top-right corner.

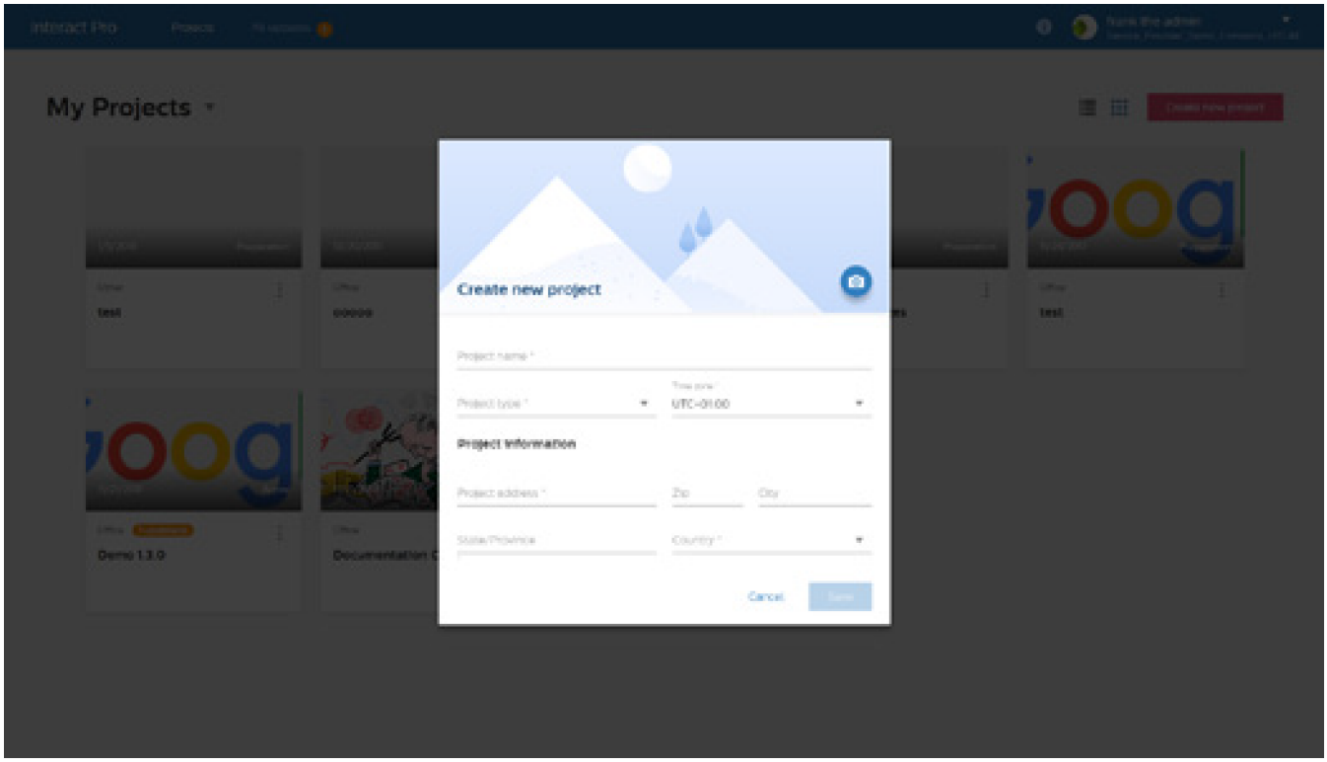
To create an account using the portal, tap **Request access**. The application will guide you through all the steps required to setup an account.

4.2. Use the portal

The portal allows to create a project and to invite and assign other users to it.

4.2.1. Create project

Use the **Create new project** button in the top-left corner to create a project in the portal. The application will ask you to fill in some details on the project. You can edit these settings later.



Tip

It is possible to add a photo to the project details for easy identification of a project.

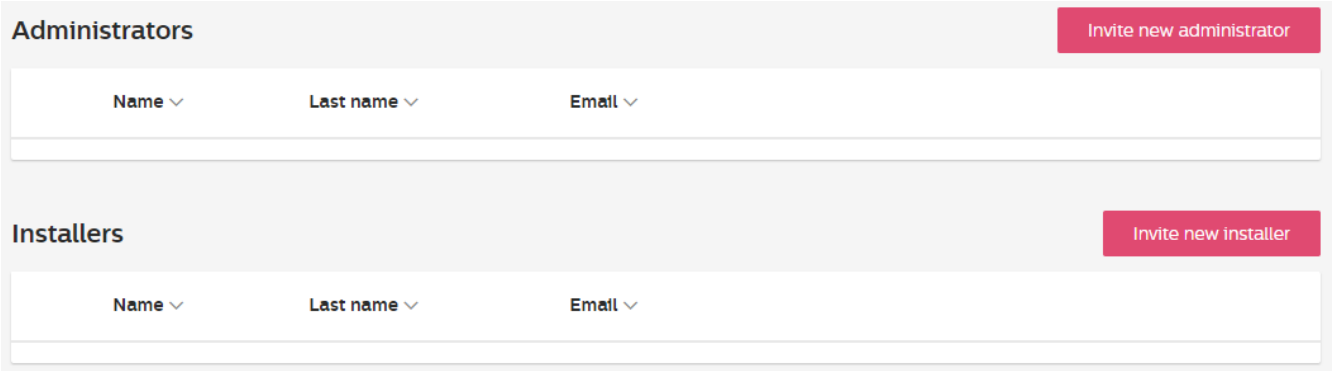
4.2.2. User management

The Interact Pro portal identifies the following types of User management:

- Service provider organization
  Manage the users that are allowed to use the portal or app as an administrator or installer.
  When logged in as administrator, all functionality is available.
- Project level
  Grant access to the project to personas in the organization of the business owner (customer and user).

The rights for user management differ per persona logged in:

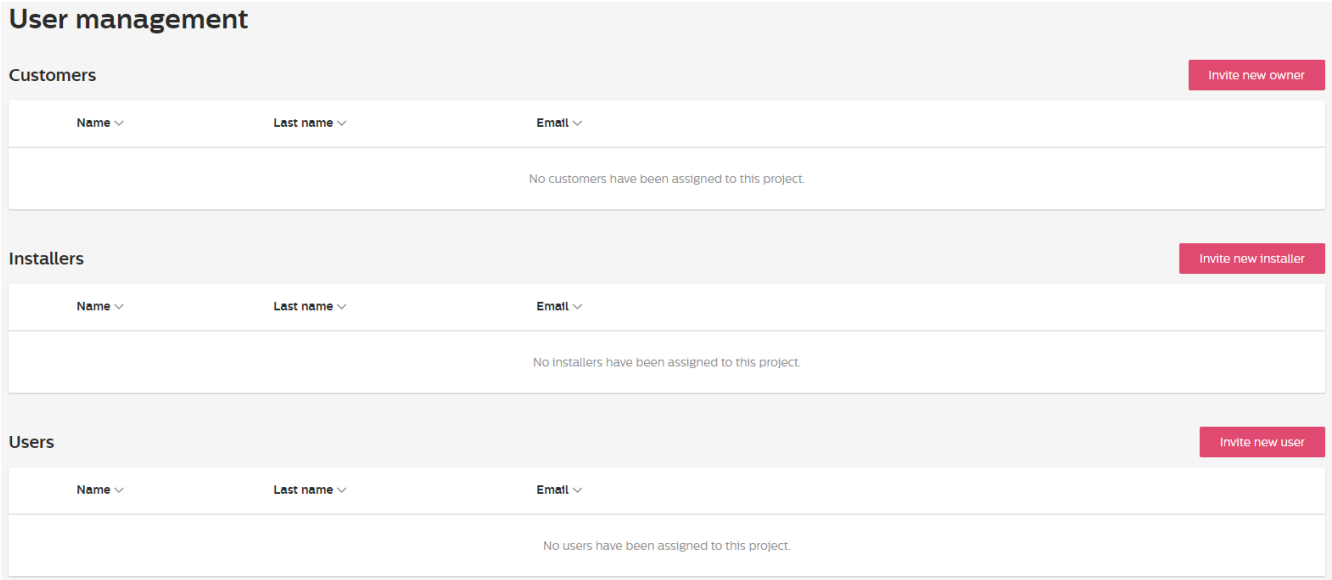
Service provider (administrator)	Installer	Customer (System administrator)
Add Administrator and Installer in organization	Add Customer and User in assigned projects	Add Customer and User in own system
Add Customer, User in all projects in portfolio		



Manage Service provider organization

1. Click the **User name** at the top right corner and select Organization.
2. Click **Invite new** ... to add a new person.
3. Complete the form and click **Invite**.

The invited person receives an email with instructions how to complete the registration. It is therefore of highest importance to enter a correct email address.

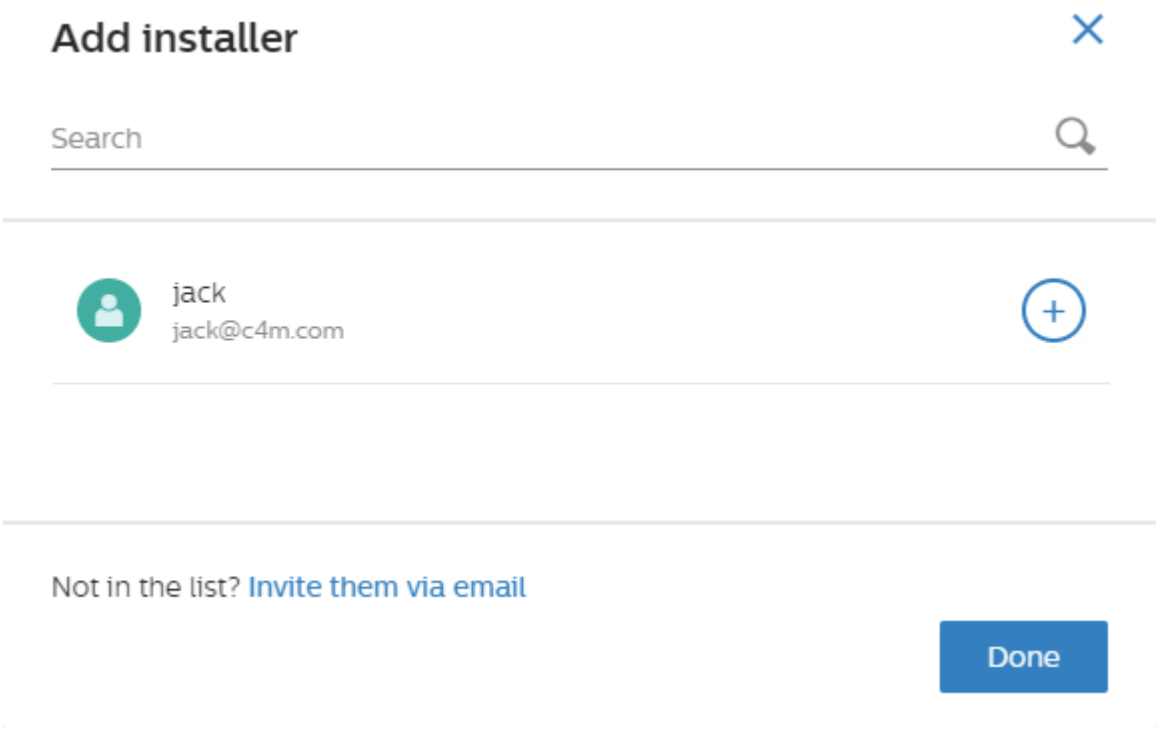


Manage project users

1. Click to open the **User management**.
2. Click **Invite new** ... to add a new person.
   Proceed with the next step corresponding with the role in the table below.

Customers	Users
Complete the form and click **Invite**.	3. Enter the email address. 4. Select the User permissions 5. Click Invite.

The invited person receives an email with instructions how to complete the registration. It is therefore of highest importance to enter a correct email address.



Add installer to a project

1. Click to open the **User management**.
2. Click **Invite new installer**.
3. Click + in the list of available installers
4. Click **Done** to finish

5. Install the project

Connected lighting brings with it a long list of advantages, which all center on simplicity.

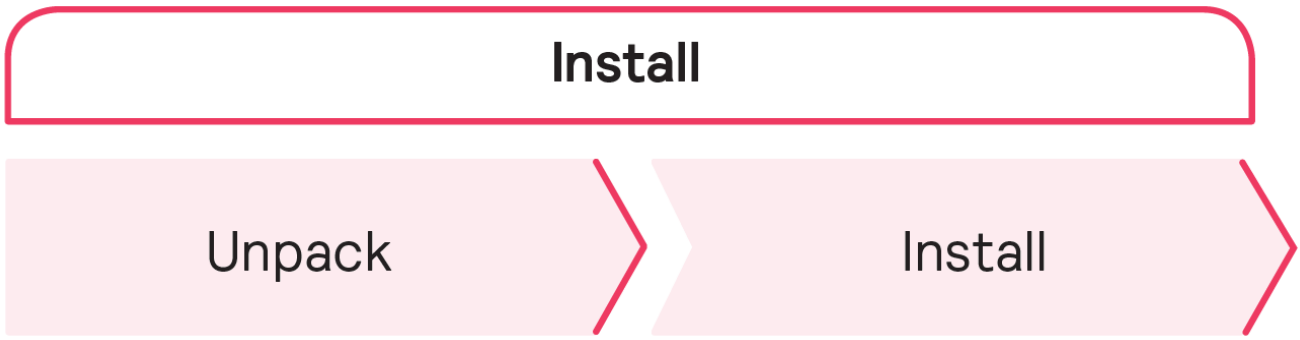
As a cloud connected lighting system, the Interact Pro system supports wireless Interact-ready luminaries and lamps and a basic set of wireless switches and sensors.

One of the many things that make this lighting system so unique is its combination of simple functionality and innovative performance. This is seen in the clear set components that drive its many functions.

Thanks to its wireless setup and intuitive mobile app, installation and commissioning is done quickly and easily. As installer on the job, the focus is on the typical activities to be done at the site of the customer.

5.1. Introduction

Before starting to install the light points and Wireless Gateway, make sure that the necessary installation works for power and data outlets are finalized.



5.2. Unpack

Check if the delivered items match the number and types of the ordered materials. When unpacking the products, handle with care to prevent any damage to the property of the customer or the unpacked goods.

While installing a new project or extending an existing project, validate the type of lights that you are about to install. The second generation of lights supports Bluetooth and often the use of a pointing device for commissioning whereas the first generation only supports adding them to a light network via Zigbee technology.

5.3. Install

5.3.1. Install Wireless Gateway

The installation requirements of a Wireless Gateway are:

In the office space at a visible location to be able to scan the QR code during commissioning

- At a high altitude to prevent accidental disconnections
  - Against a wall
  - Against the dropped ceiling
- Within the reach of at least two light points within 10 m (33 ft)
- A non-switched power outlet and a network outlet

Wireless Gateway location

Install the Wireless Gateway to the agreed location, but do not fix it there. This is necessary to enable optimization of the location of the Wireless Gateway to improve the wireless communication between the Wireless Gateway and the associated light points. A gateway needs to be within the maximum allowed distance of at least one light to be able to connect the lights:

- For generation 1 lights, the light points associate themselves automatically to the lighting network when **Discover lights** is tapped. This creates a mesh network of lights and the gateway that can be further commissioned.
- For standalone projects to be upgraded to connected , the gateway retrieves the network credentials from the cloud and associates itself with a light network that has already lights added to it.

The location of the Wireless Gateway is critical, as interference between Wi Fi and Zigbee signals can potentially occur. Wi-Fi sniffing tools on a laptop with Wi-Fi may help to determine the strength of Wi-Fi channels at a certain location. This helps to find the most optimal spots for the placement of the Wireless Gateway and reduce wireless interference.

After physical installation, the Wireless Gateway is connected to the power outlet and the network outlet. The network outlet must be connected to network router or switch of the customer.

Cable lengths

The maximum cable length that can be used between the router and Wireless Gateway is maximum 100 m (330 ft).

LCN1870 gateway (for demand response, North America only)

This gateway needs to be connected to a third party device to implement an OpenADR solution. It only communicates via its Ethernet port to implement demand response functionality.

5.3.2. Install light points

Install the lights according to the installation instructions packed with the product.

When powered and prior to commissioning, lights are turned on by default. If it is desired to switch the off (via mains) because the commissioning process planned for later later, turn them on prior to starting commissioning. Lights that are switched off by mains can’t contribute to setup and maintain the wireless

network. Only switch on or off lights when there is a strict need as part of the commissioning process (typically when troubleshooting).

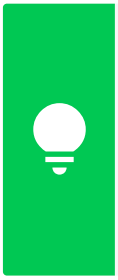
5.3.3. Install ZGP sensors and switches

Install ZGP sensors and switches according to the installation instructions packed with the product.



Warning

You need to remove a plastic battery protection clip for specific products for first time use. It is best to do this when adding them to the appropriate group during commissioning



Tip

ZGP sensors and switches can be named. You can annotate or label that name/code on the back of a sensor or switch to facilitate support and maintenance.

6. Commission the project

6.1. Concepts used for commissioning

Before starting with commissioning, it is important to understand a number of key concepts (terminology) used in the app. The app itself also provides online help on these concepts.

6.1.1. Light Networks

A light network is used to cluster a set of lights that use a unique Zigbee network to communicate. It serves as a placeholder or proxy so that a gateway can be added to enable connected features. Proper choice of light networks allows seamless addition of gateways at a later stage. A typical project consists of one or more light networks. Lights added to different light networks can not be grouped or controlled together.

For small projects, typically only one light network is needed. There are a number of situations where multiple light networks are required:

- projects having more than 200 lights or 50 ZGP controls (system limitation to ensure quality of service),
- projects with lights at multiple floors (RF signal quality),
- projects in buildings with reinforced walls (RF signal quality),
- projects with a distance larger then 10m (30ft) between lights (RF signal strength).

Multiple light networks are needed because of system limitations or RF signal quality.

6.1.2. Groups and zones

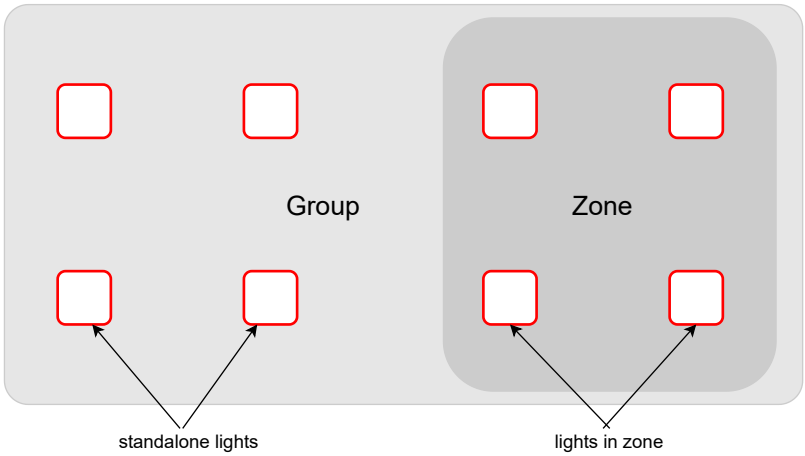
To be able to control sets of lights in a room or space, they need to be added to a group. Lights in a group act together on control via sensors, switches and the app. The app enables to set up a group with the desired control behavior.

Interact Pro supports the following concepts:

- a **group** is a set of standalone lights and/or zones
- a **zone** is a set of lights within the group

The group level is used to switch lights on or off. Features like occupancy control (using sensors) or manual switching using a switch or the app work on group level. All standalone lights and the lights in the zones of the group will act on such control. Zones support two important functionalities:

- lights in a zone can be set as a unit when defining scenes
- daylight regulation works on lights in zones only



6.2. Create project and light networks

A project consists of one or more light networks. The following commissioning flow is used:



connected supports both lights from generation 1 (without Bluetooth) that always require a gateway and lights of generation 2 that can be directly added to the system using Bluetooth. For lights with IR (InfraRed) capability, the adding process can be accelerated using an IR remote as pointing device for selecting and adding a light to a group. standalone only supports lights of generation 2 and can be commissioned without a gateway. Gateway(s) can be added anytime to enable the features of a connected system (Advanced).

6.2.1. Creating a project

After log on into the app the first time, an empty project screen is displayed. Press the **+** in the bottom-right corner of the screen to create the first project. Creating the project, also assigns the *installer* role authorization for this project.

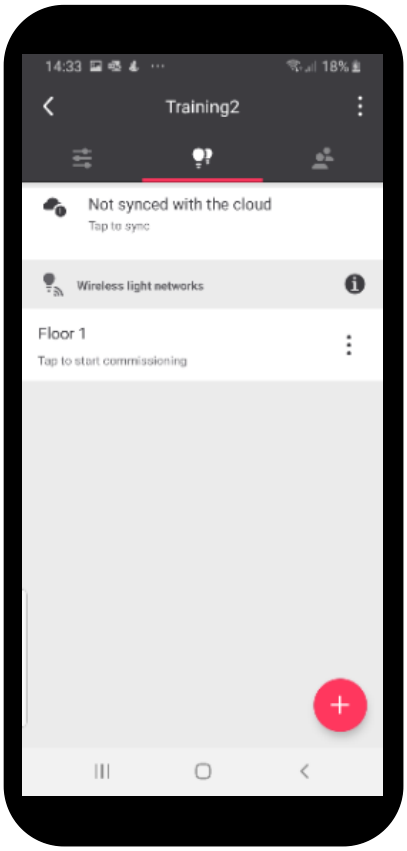
After selecting the project, it is locked. This restricts access to the project to the phone the app is running on and the Interact Pro account used on that phone. After commissioning, a new account has to be created to hand over the project to the customer (*owner* role).

Note

An installer can create and manage multiple projects with one account.

6.2.2. Creating a light network and gateways

The app asks you to create the first light network.



As an example, the screenshot above shows what to expect after creating a light network called **Floor 1**. It also displays an important message *Not synced with the cloud*. Next to unlocking the project (which automatically triggers a sync), it is important that a backup is created of the most crucial credentials of the project. This allows for

- using another phone with the same account when for some reason the current phone can't be used anymore
- using another account (and another phone) to access the project

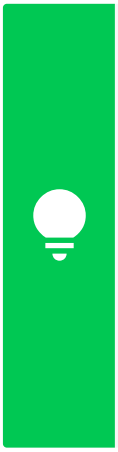
This mechanism prevents that anyone that downloaded the app on a phone can start connecting to the light system and it also allows for a secure handover to other people that need access to the project.

Tip

If a job of installing and commissioning a project takes multiple days, it is good practice to unlock the project before leaving the premises. It will prevent that work can't continue if for some reason another phone needs to be used the next day.

The next step is to decide whether you want to commission with or without gateways.

- For Bluetooth-enabled lights, you can choose whether or not to commission with gateways.
- When lights of generation 1 are installed, you have to use gateways for commissioning.
- With a combination of lights installed, you also have to use gateways for commissioning.



Tip

If you have Bluetooth-enabled lights (generation 2), it is recommended to start the commissioning process without gateways. Bluetooth communication between the phone and the lights is much faster than Zigbee communication via the gateway. When the objective is to commission an connected project, start commissioning without gateways and configure all functionality. When this is completed, add the gateways and optionally create schedules as desired.

If multiple lighting networks are created to commission a project, you have to either select the *without gateway(s)* option for all light networks or *with gateway(s)*. When adding gateways, add a gateway for each light network in project. It is not recommended to have projects with mixed connection status for a prolonged period of time.

6.3. Commissioning groups

In order to set up the desired light behavior for the project, all lights that are installed have to be grouped, linked with the appropriate control devices and the desired control behavior settings have to be configured using the Interact Pro app.

6.4. Add scenes

To add scenes, use the following steps:

1. Select a project and go to group view
2. Tap on **settings** icon from the scenes section
3. Create a new scene and define the desired parameters
4. Tap **Save**

6.5. Configure tunable white

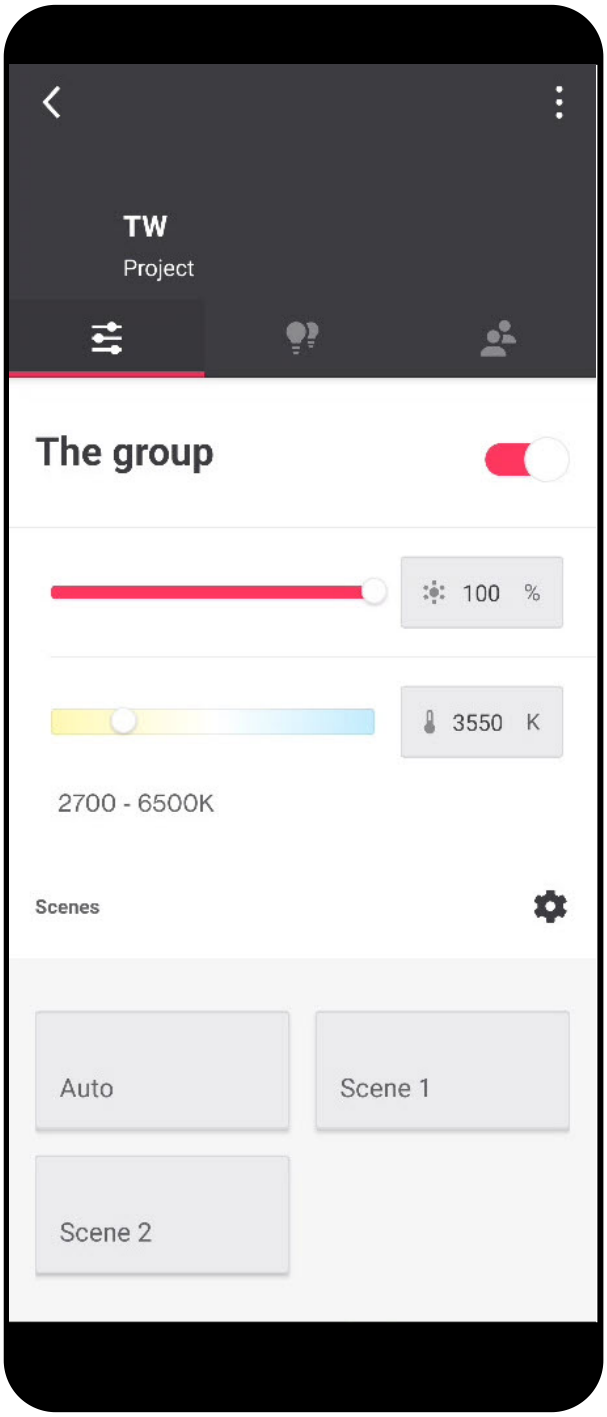


Important

Only certain lights support tunable white. For the full list of lights that support tunable white, contact your representative or support.

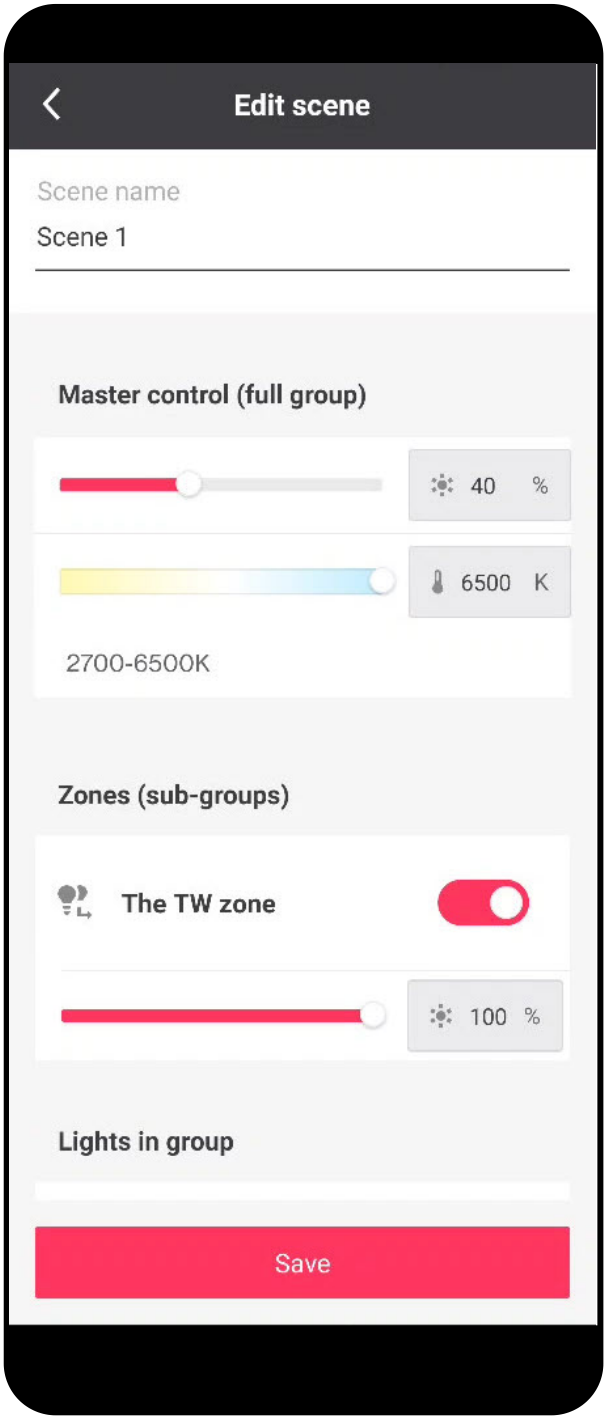
The tunable white feature can be configured while adding or editing scenes or by configuring light behavior of a group.

To change the color temperature of a group:



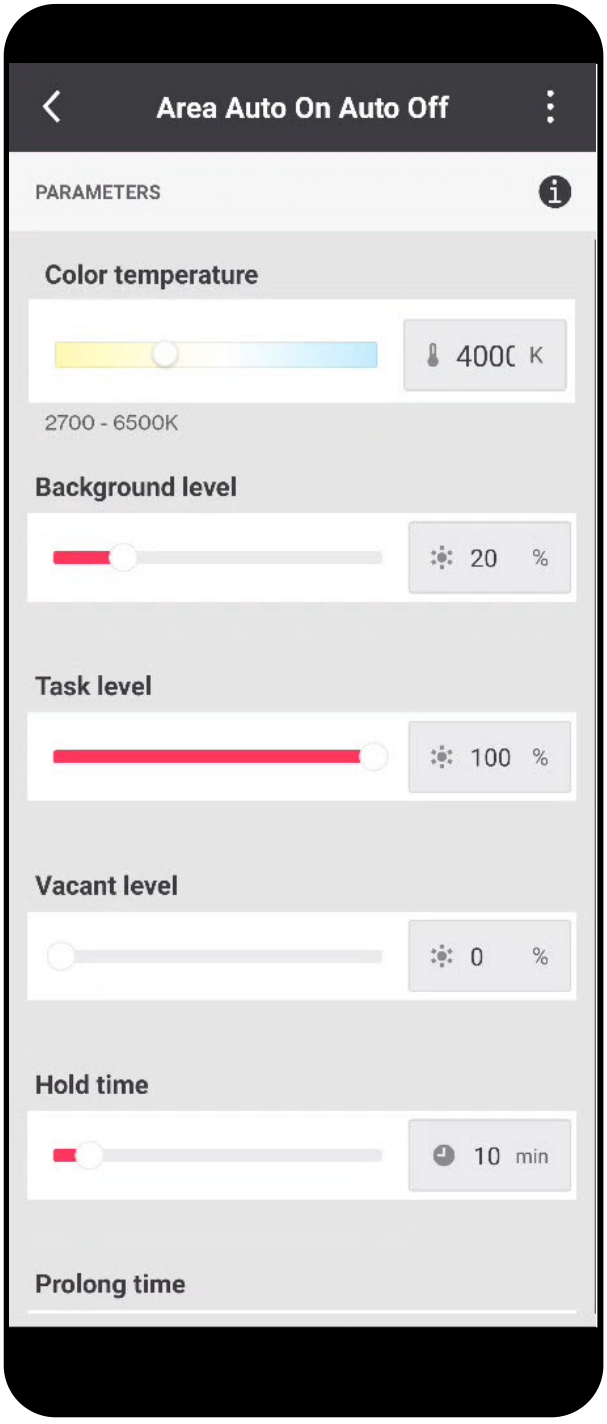
1. Go to the group view
2. Select the color temperature by using the slider

To change the color temperature of a scene:



1. Create or edit a scene
2. Select the color temperature of the group by using the color temperature slider

To change the color temperature light behavior template:



1. Select or add a new light behavior
2. Select the color temperature by using the slider

6.6. Scan and add lights

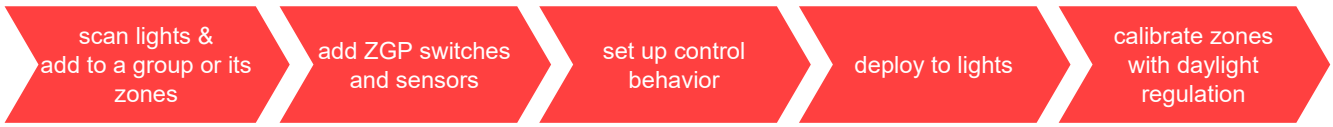
connected supports both lights from generation 1 (without Bluetooth) that always require a gateway and lights of generation 2 that can be directly added to the system using Bluetooth. For lights with IR (InfraRed) capability, the adding process can be accelerated using an IR remote as pointing device for selecting and

adding a light to a group. standalone only supports lights of generation 2 and can be commissioned without a gateway. Gateway(s) can be added anytime to enable the features of a connected system (Advanced).

First, we describe how lights are discovered/scanned for the different types of luminaires and how this fits the overall process steps for setting up a group of lights. Then the other steps are explained in more detail.

6.6.1. Scan and add lights (Bluetooth)

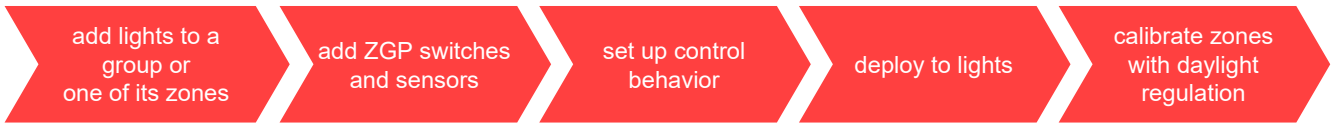
For each of the light networks in the project, the steps in the figure below have to be executed for each group that is going to be created:



6.6.2. Scan and add lights (Zigbee only)

Lights of generation 1 need to connect to a gateway before they can be grouped. This is the flow that has been used in the original version of Interact Pro and that is still supported by the current app for connected.

For each gateway added in the project, **after discovery of the lights for that gateway**, the steps in the figure below need to be executed for each group that is going to be created.



Note

Only projects with gateways can be used in combination with lights of generation 1. Lights of generation 1 can sent Bluetooth beacons for sorting purposes (for instance after an update) but they lack the security credentials to add them via Bluetooth to the system.

The discovery process terminates if it can't find new lights in a period of 5 minutes. Each time a new light is found, the period is extended for 5 minutes. When all lights are discovered, the process can be stopped with the app.

Important

Lights of generation 1 send out messages for a limited amount of time. When the app starts a discovery process, the gateway for which the process has been started adds lights that announce itself to its network. For new installs or in situations were the lights have been powered for more than 24 hours, a power cycle of those lights is required to make sure that each of the lights is sending these messages. If possible, power cycle those lights that you want to be discovered is beneficial for fast discovery.

6.7. Add a ZGP switch to a group

1. Tap **Controls**
2. Tap **Add switch**.
3. Tap the appropriate switch type. The app shows all switches that are supported by the system (see below). The system guides you through all the steps you need to execute to add it to the system. Note that the steps are different for different switches.



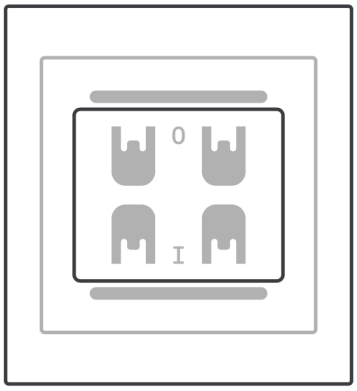
1. UID8450 (EU/RoW), UID8451 (US) or UID8470 (EU/RoW)
    - UID8470: kinetic switch that requires an explicit confirmation step for commissioning. You have to remove the rocker to configure the switch. Please make sure that the orientation of the rocker is correct after commissioning (see also installing switches).
2. UID8480 (EU/RoW): 4 button kinetic switch. You don't have to remove the rocker to commission this switch.

3 . SWS200 (US): 4 button battery powered switch.

6.7.1. Commissioning UID8470

The plastic cover of the switch has to be removed to select the appropriate button for the first step of commissioning. You need to pay attention during install but also when executing this step, that the orientation of the wireless module but also of the cover is correct.

You can remove both the plastic cover (rocker) and the wireless module at the same time. Make sure that when you turn it to its backside, the text is not upside down. Looking at the front of the switch, look for the 0 and 1 symbols between the buttons, the **0** should be at the top and the **1** (I) at the bottom (see picture below).



When you click back the rocker, look at the back and make sure that the side with the two plastic knobs is at the right hand side when clicked back to the wireless module.

6.7.2. Commissioning UID8480

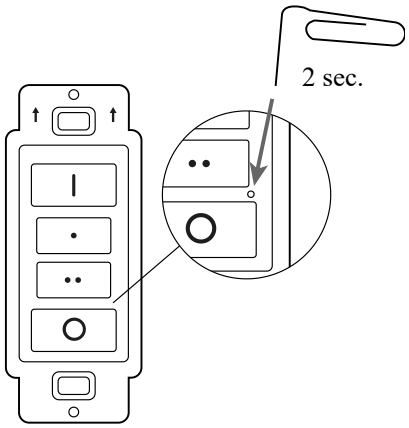
For this switch, you can leave the plastic covers (rockers) assembled. Do check the orientation of the switch (up versus down) when pressing the buttons.

When the switch is added to the group, the app offers an option to configure it: the two left buttons of this switch can be used to bind a scene (if already defined). Adding or changing scenes can be done at any time, if no scenes have been defined yet simply skip this option. The default behavior of the buttons at the left is the same as the buttons at the right.

6.7.3. Commissioning SWS200

The app guides you through the steps for a new switch (remove battery protection). However, if a SWS200 switch has been used in another project, it needs to be reset before it can be added again to a group.

Reset it by pressing the reset button for 2 seconds by using a tiny metal pin (paperclip) to press the button inside the hole above the *0* button (see figure below). After reset, the switch can be commissioned again.



The switch can be used to turn the lights on or off, or dim the lights up or down. Using the switch is a manual override of the light level set by automated control. The 4 button switches can also be used to configure with two scenes that can then be set using the switch.

6.8. Add a ZGP sensor

ZGP sensors are used for control features for lights without sensing capability:

- Sensors enable automatic switching of the lights based on occupancy.
- Multi-sensors enable daylight regulation that adapts the dim level of the lights to the ingress of light to maintain a more equal light level.

Examples are CoreLine luminaires and MasterConnect lamps. For lights with sensing capability, an additional ZGP sensor can be used to implement use cases where occupancy detection is needed outside the area covered by the lights with sensing capability.

The process for adding sensors is similar for an occupancy sensor and a multi-sensor. However, an occupancy sensor has to be added to a group and controls occupancy on group level, whereas a multi-sensor has to be added to a zone in a group. A multi-sensor drives occupancy control on group level but daylight regulation for the lights in the zone it is added to.

Important

Only one multi-sensor can be added to a zone. For lights without sensing capability, occupancy coverage can be achieved by adding additional occupancy sensors to the group.

6.8.1. Add an occupancy sensor to a group

1. Tap **Controls** at the group level in the app.
2. Tap **Add sensor**.
3. Select the sensor type:

Regular sensor for office applications

- Industrial sensor for applications up to 8m height. This sensor is IP65 rated.

4. The app guides you through the commission steps for the type of sensor selected.



Tip

When giving the sensor a name, write down its name on the back of the sensor. This facilitates maintenance and support of sensors when needed.

After adding the sensor to the network, as a convenience, the app asks you to configure the **Switch on/off behavior** (see screen below). Pending on the selection, the corresponding behavior is saved. You can also ignore this step by clicking the X in the top-left corner.

6.8.2. Add a multi sensor to a zone in a group

In order to enable daylight regulation for a number of lights in a group, these lights need to be in zone and one multi-sensor needs to be assigned to each zone in that group.

1. Tap **Controls** at the group level in the app.
2. Tap **Add sensor**.
3. Select the sensor type:
   - Regular sensor for office applications
   - Industrial sensor for applications up to 8m height. This sensor is IP65 rated.
4. The app guides you through the commission steps for the type of sensor selected.



Important

Make sure that you assign a multi sensor in this case.

6.9. High end trim

With high end trim, you limit the maximum light level of the lights in a group. The light output of this setting is used by the system as the 100% level for all other features and therefore, if used, it needs to be set before defining light levels as part of other light control features. It is typically used to cap an excess of installed power in a group. Over the years its value can be adjusted to compensate for degradation of light output of devices over time.



Important

If high end trim is used, it is important to set its value before any of the other lighting features. When set, its corresponding light output level is the maximum of any of the other features. As the system uses an exponential curve to associate level with light output, it is highly recommended to not set the value of high end trim too low as that reduces the operating

window for other features. A value between 80% and 100% is therefore recommended if high end trim is used.

6.9.1. Set the maximum output level using high end trim

1. (Optional) Select the applicable light network
2. (Optional) Select the group
3. Tap **Control**: setting up control is a logical action after adding all the lights for a specific space/room and if used, start with high end trim.
4. Tap **High end trim**
5. Use the slider to set the light output to the desired level.

Note

When the settings are deployed, high end trim is applied to all lights in the group.

Tip

Use a lux meter to validate whether the light level on the work surface is as desired.

6.9.2. Using high end trim to set maximum output power

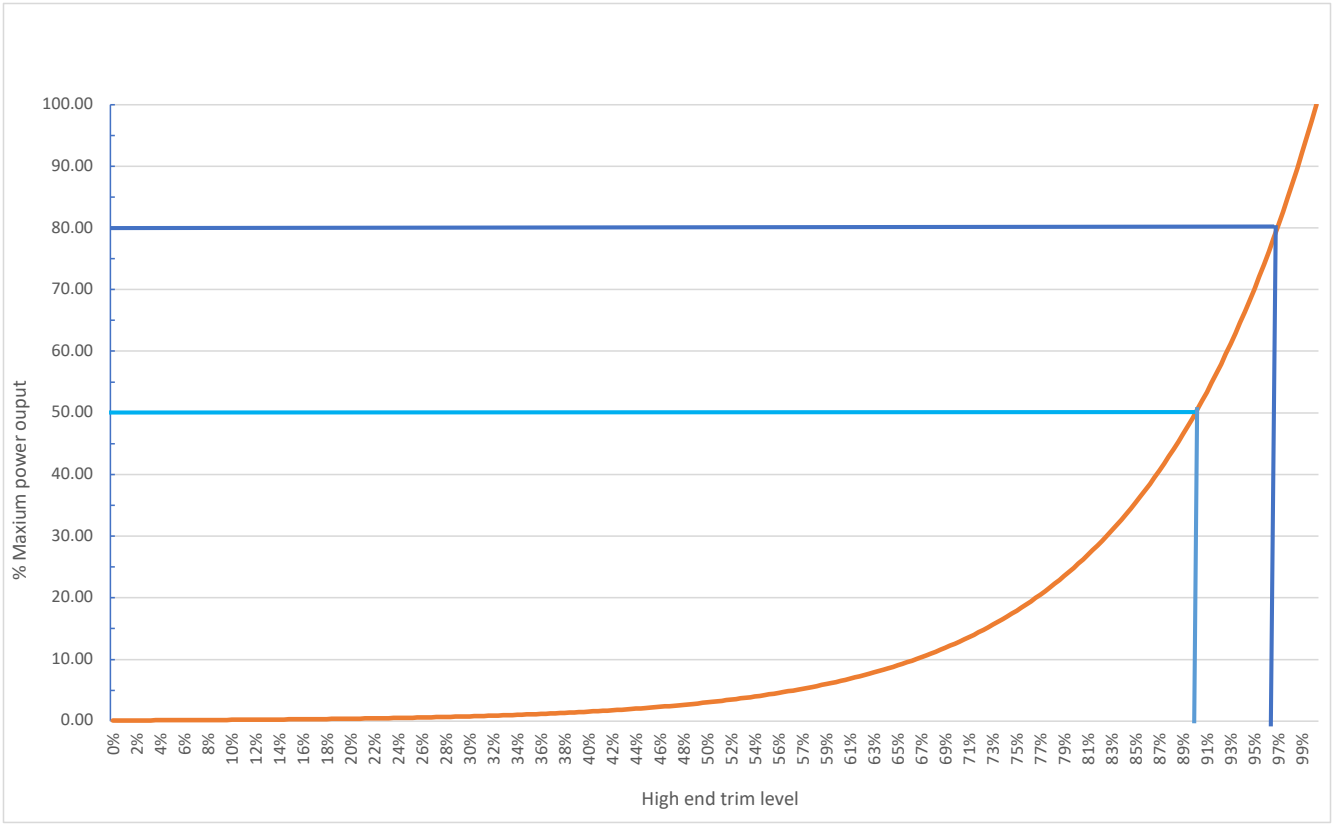
When the high end trim slider is moved, the visual perception of the resulting power output of the lights is linear.

As an example, moving from 95% to 90% is perceived as a similar reduction in light level as moving from 75 to 70%. To achieve this, the lumen output of lights changes exponentially and thus also the power changes exponentially when moving the slider.

If you want to use high end trim to reduce a specific amount of power, for instance 50%, you can use the graph below that depicts the relation between slider setting and power. You need to set the level in the app to 90% to achieve the 50% of this example.

Note

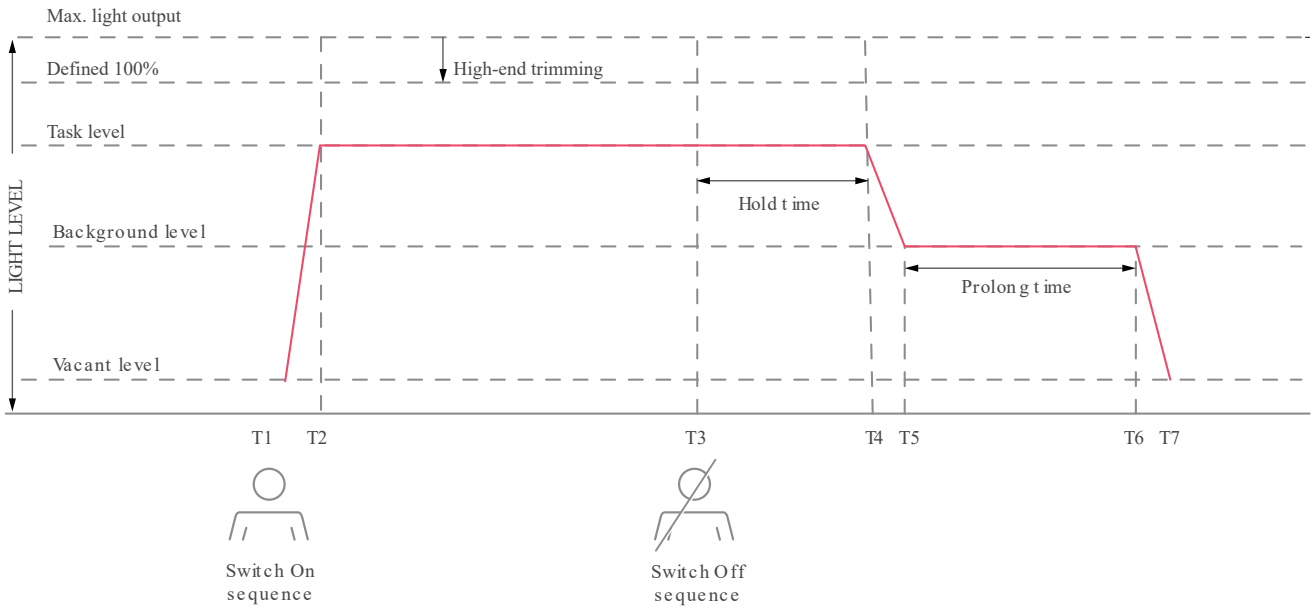
The app doesn't show the reduction in power.



6.10. Switch on/off behavior

Occupancy sensing allows for automatic switch on or off of groups of lights pending on the detection of occupancy. Daylight sensing allows for regulating the lights to a desired set point pending on the ingress of daylight. To enable how a group of lights acts on occupancy and whether lights in zones need to be regulated for ingress of daylight, the system allows to configure a number of so called switch on/off behaviors. After selecting a behavior, optionally parameters can be adapted to further tailor the behavior of the system to the requirements.

When using occupancy based control, the lights follow a well-defined pattern after the occupancy state of the group changes (see figure below). The light levels and the length of the time period can be defined when setting a specific behavior. Also, pending on the luminaire type (with or without sensor) and the behavior selected, there is some variation how individual lights in groups and zones act to occupancy.



When occupancy is detected by one of the sensors in the group, the lights in the group go from *vacant level* to *task level* (T1 → T2).[2] When no occupancy is detected anymore by one of the sensors, the *hold time* period starts (T3). Upon expiration of the hold time, the lights are dimmed down to the *background level* (T4 → T5) and remains at this level for the duration of the *prolong time*. Upon expiration of the prolong time, the lights dim down to *vacant level* (T6 → T7).

Switch on/off behaviors

Behavior	Controls needed
Area Manual On Manual Off	ZGP switch
Area Manual On Auto Off	ZGP occupancy sensor, luminaire sensor, ZGP switch
Area Auto On Auto Off	ZGP occupancy sensor, luminaire sensor
Area Manual On Auto Off with DDR	ZGP multi-sensor, luminaire sensor, ZGP switch
Area Auto On Auto Off with DDR	ZGP multi-sensor, luminaire sensor
Light Auto On Auto Off	luminaire sensor
Light Auto On Auto Off with DDR	luminaire sensor

- ZGP switches can be added to any group for local override
- Light behaviors are specifically targeted for luminaires with sensor

6.10.1. Selecting a switch on/off behavior

1. (Optional) Select the applicable light network
2. (Optional) Select the group

2. Lights in daylight regulated zones go to their setpoint.

Select the **Control** tab

4. Tap **Switch on/off behavior**
5. Select the behavior required for the group
6. (Optional) Click the pencil to the right to edit the default parameters of the group.
7. Tap **Save**

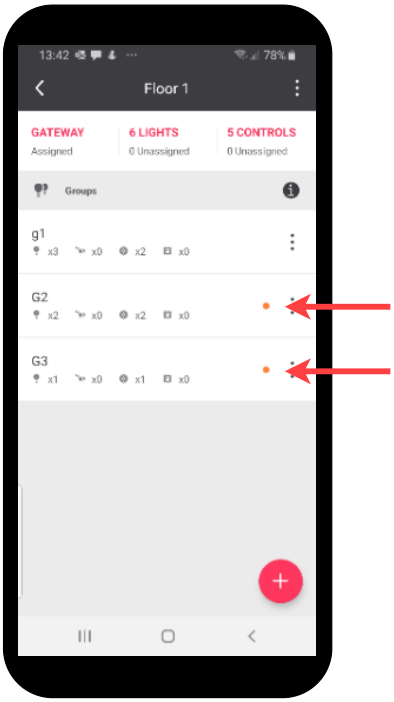
6.11. Deploy settings

In Interact Pro , all changes made to a group are saved in the app and/or the backend (Advanced). It is decoupled from actually transferring the changes to the lights in the group, which can be time consuming. Therefore, it is most efficient to execute all steps to set up a group before transferring them. The app warns that a group is not in sync with the settings saved using a warning.

Tap **Deploy settings**

It transfers the settings saved to the lights in the group after which it starts executing its control behavior.

Groups with a pending deployment action are marked with an orange indicator. When **Control** is selected for such a group, a message reminds you to deploy the settings to the lights. As an example, in the picture below changes have been made to the groups G2 and G3 that require deployment. Click each of the groups, to deploy the settings to the lights.



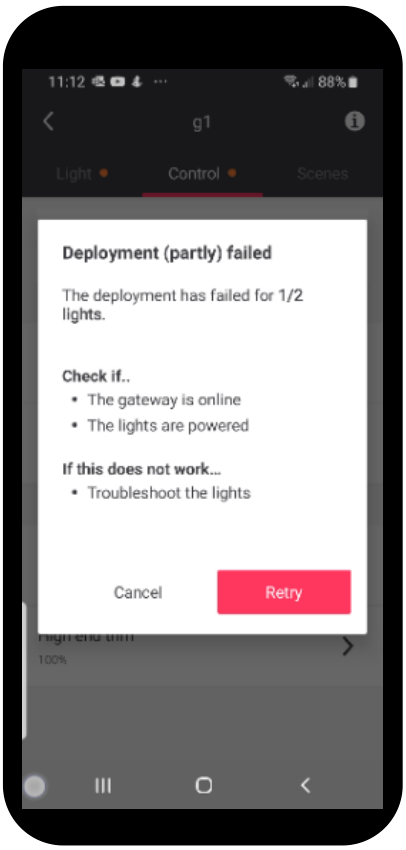
6.11.1. Handling deployment failures

Deployment of settings implies wireless transmission of data to those lights and this may fail. The app shows this using an orange indicator[3].

3. This indicator is used by the app to flag that there is an outstanding action to execute.

If the settings deployment process fails, a **Retry** option is available. Before retrying to deploy check if the Wireless Gateway is online and lights are powered.

The figure below shows an example how the app reports a partial failure of deployment and what to do next.

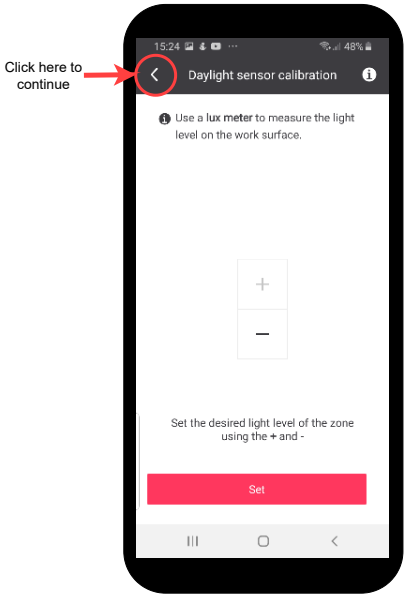


6.12. Calibrate the lights for daylight regulation

In order to control the intensity level of the lights in the zone pending on the ingress of daylight, the lights have to be calibrated.

1. Go to the group with the zone(s) to be calibrated.
2. Tap **Controls**.
3. Tap **Daylight sensor calibration**
4. Select the zone and adjust the default level to the required set point
5. Start the calibration

The app shows a message that the calibration takes 6 minutes. To proceed to the next group, tap **<** in the top-left corner of the screen (see figure below). The calibration continues in the background and end after a maximum of 6 minutes.



Important

Make sure to have as little influence as possible from other light sources (outside the group in particular ingress light). It is recommended to close the blinds and/or to perform calibration after sunset.

Tip

Use a lux meter in case you want to validate the actual light level on the work surface when setting the control point for calibration.

For groups with multiple zones or standalone lights with sensors, the *current behavior* of the system is that you only need to calibrate one of the zones in the group.

All lights within its group are calibrated to the set point selected for that zone. This has the following implications:

- for groups with multiple zones, all lights across the zones regulate to the same set point used for calibration rather than the set point of each zone
- for groups with lights outside a zone, these lights regulate pending on ingress of daylight. These lights can not be set at a fixed dim level which is the case for setups with discrete sensors and lights without sensor.

A side-effect of above is that there is no waiting time involved in calibrating each zone sequentially. You can immediately proceed to commission the next group.

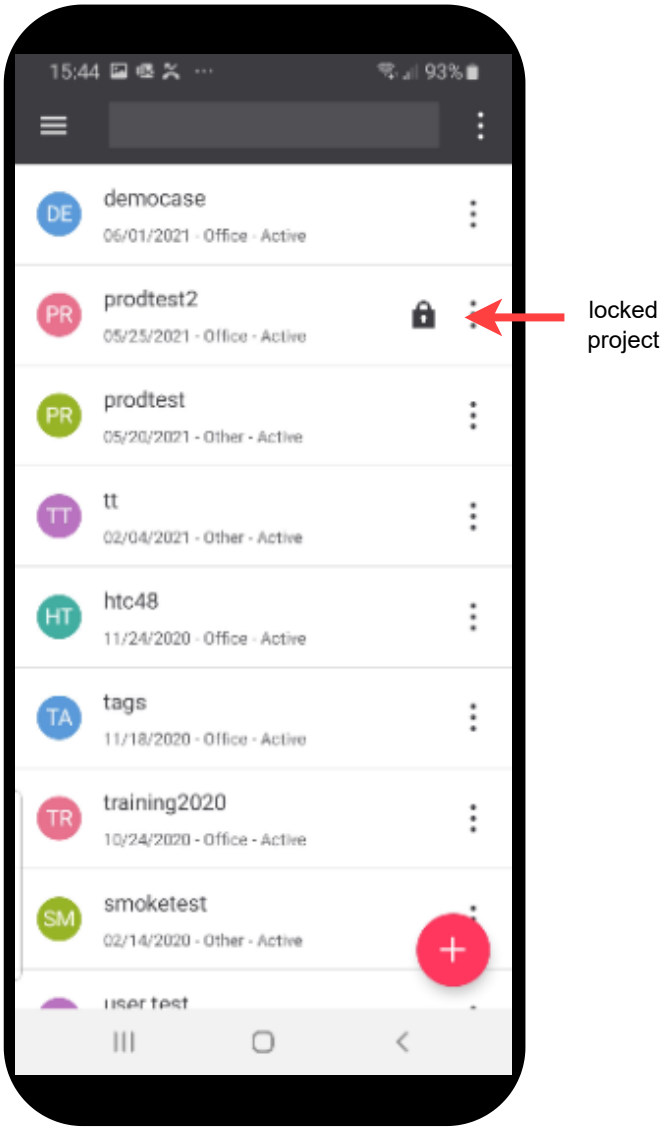
Important

Start the light engine when calibration has finished by turning the group off and on. It is recommended to go through all groups with daylight regulation after the install to execute this action, for instance by walking into the space or turning the lights on with the app.

6.13. Project handover and user management

6.13.1. Project locks in Interact Pro - Foundation

standalone locks and unlocks projects per phone and user identity. This lock prevents concurrent access to the system via Bluetooth: it implies that a lock has to be removed before another user can access the project. Security credentials are the means to prevent that anyone with an Interact Pro app can access an arbitrary Interact Pro project. The figure below shows a project overview with a project that has been locked.



Project screen with locked project

The project lock mechanism is combined with a backup function called *cloud sync* that is used to store security credentials to the cloud. This enables the transfer of those credentials to another phone and user (with proper access rights to the project in the app).

It is highly recommended to unlock a project when a commissioning job is interrupted and before logging out of the app. Here are a number of examples why this is important, each of the cases are not standard but also not that uncommon:

- Installer forgets the phone and wants to continue the next day with another phone.
- Installer gets sick and a co-worker continues the installation process with another phone.
- Problems with the phone used and want to switch to another one.

Unlocking a project can be done, by right-clicking on the 3 dots at the right-hand side of a locked project. Tap **Unlock**.

6.13.2. Project handover from installer to owner (customer) in Interact Pro - Foundation

After completion of the commissioning process, the installer has to provide access to the customer (Owner role). The following steps need to be executed by the installer:

1. Invites an Owner via his preferred email address (that he wants to use to access the system)
2. Unlocks the project
3. **(Optional)** Logs out

The customer has to execute the following steps:

1. Accepts the invitation email sent by the system and creates account credentials.
2. Logs into the app with the newly created credentials.
3. **(Optional)** Invites another person as Owner (for backup reasons)

6.13.3. Project handover from installer to owner (customer) in connected

After completion of the commissioning process, the installer has to provide access to the customer (Owner role). The following steps need to be executed by the installer:

- Invites an Owner via his preferred email address (that he wants to use to access the system)

The customer has to execute the following steps:

1. Accepts the invitation email sent by the system and creates account credentials.
2. Logs into the app with the newly created credentials.

(Optional) Invites another person as Owner (for backup reasons)

4. **(Optional)** Deletes installer accounts to deny future access
5. **(Optional)** Invites users with restricted group access for personal control.

6.13.4. Roles in Interact Pro

It is important to understand that there are some rules and constraints using roles:

- Self-registration creates an account with Service Provider role
  - **Create project** adds Installer role to a Service Provider role
- All other roles (Installer, Owner and User) are by invitation!
- Owners can delete Installers
- Owners can only access one project
- Users can only access one project
- Installers and service providers ae linked to an organizational entity: the concept of a *freelance* installer that can be added and removed to any project is not possible today

7. Commissioning additional functionality for North America

7.1. Switch Relay

The RFSR10 supports a number of commissioning modes to allow it to be added to the system using the Interact Pro app. It can be discovered via Zigbee or scanned via Bluetooth. Switch relays are installed invisble behind the ceiling but during commissioning it is important to have access to the device.

If not done already during install, you can validate whether it is powered by pressing the commissioning button (hole at the side of the device) shortly (1 second). This will toggle the relay from on to off or vice versa which produces an audible and recognizable sound of a relay that is switching. Pending on mounting, there is also a white LED on the top side that should be on.

The device will announce itself via Zigbee or Bluetooth. In case, you want to reset the device to make sure that it will announcing itself, the following commands are available:

- **Press the button for 10 seconds and release** triggers the device to leave the network and become factory new. When it not commissioned, it gets the device into commissioning mode. Use the app to add the device to your group of choice.
- **Press the button for 20 seconds and release** triggers a reset of the device.

When the device is in auto joining (Zigbee), the LED is blinking. Once it has joined the network it is on.

7.1.1. Process

It is recommended to add switch relay devices to the group or its zones, when also the lights are added: typically you add first the regular devices that support Bluetooth and/or Zigbee followed by the Zigbee Green Power devices.

Recapitulating, the recommended commissioning steps for each group are:

1. Add lights
    a. Luminaires
    b. smart lamps
    c. switch relays, ...
2. Add ZGP switches and sensors
3. Configure switch on/off behavior
4. Deploy settings (to the lights)
5. (Optional) Calibrate zone(s) of the group

7.2. Demand response

Demand response is a change in the power consumption of an electric utility customer to better match the demand for power with the supply: it is designed to reduce demand of energy during peak periods and/or to avoid emergencies. connected supports two methods to enable demand response: manual and automatic via OpenADR. Both options have to be configured in the portal accessible via https://sme.interact-lighting.com/

After logging into the portal, go the Demand response tab.



Note

Demand response is a feature that is supported for connected systems (connected).

7.2.1. Manual setting via portal

1. Select the energy reduction level
2. Enter the active time to specify the period to reduce demand
3. Click **Activate**

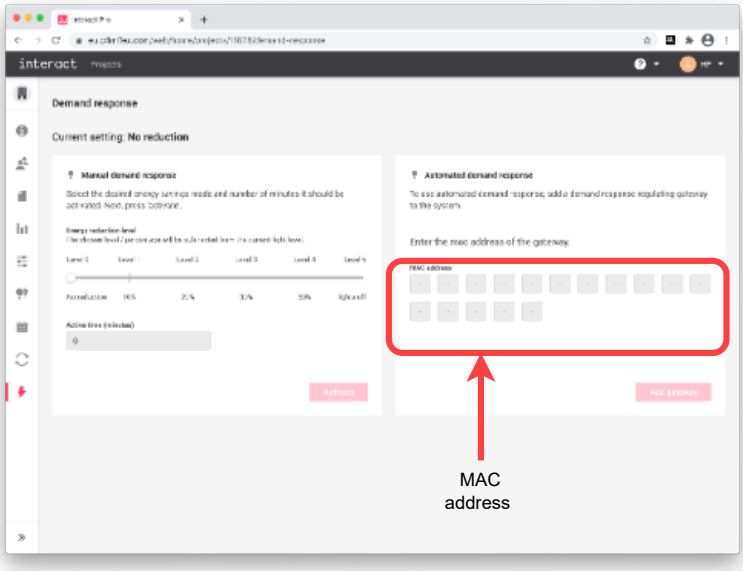
After activation, the power is reduced as specified.

7.2.2. Automated demand response using OpenADR

The LCN1870 gateway used for automated demand response needs to be powered when it is added to the system via the portal. When this process has completed, it is off during times when there is no need for load shedding / demand reduction and it is turned on via a relay in the EISSBox3 when a demand reduction period is in effect. See installation instructions.

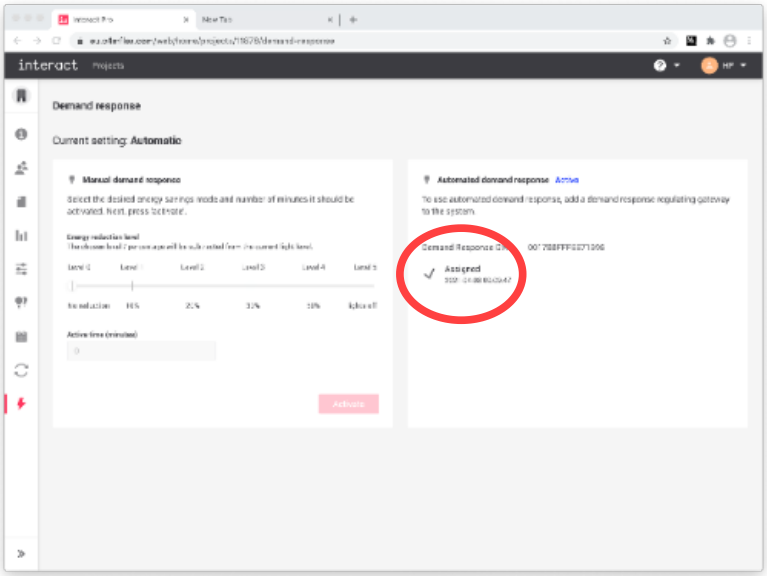
To activate automatic demand response, execute the following steps:

1. Type the MAC address of the gateway that you can find at the back of the LCN1870 gateway



2 . Click **Add gateway**.

When activated, that you can validate by checking the LED indicators of the gateway, the following screen is displayed:



After activation and when connected to the EISSBox3, the gateway is powered down in a period without the need for demand reduction (the 3 LED indicators are off).

Note

The energy reduction level for automated demand response is level 2 (20% reduction).

8. Software updates

The Interact Pro app, portal and cloud services are updated regularly to enable new functionality, incorporate user feedback and to fix issues. When such a release is made available, all projects automatically start using the new cloud services and portal. The app has to be updated explicitly; pending on the release content, the cloud services may also enforce an update of the app. This is shown when the app is being accessed after such a release has been made available.

standalone can be installed without the need of actually updating the system devices. The software of those devices, although it may not be the latest, supports all of the features of Interact Pro - Foundation.[4]

As part of a release, new software can be made available for system devices in a project. Factory new devices, when installed in a new project, typically don't have the most recent software loaded. connected allows a user to start an update of system devices in his project. When a connected system has system devices with an older version of the software, it triggers a notification indicating to update the system. The user can start the update at a convenient time:

- Over-the-air (OTA) updates of Zigbee devices typically take 1 to 4 hours.
- As long as the update is in progress, the app can't be used. It shows that an update is in progress.[5]

Firmware updates are important to be able to fully use all functionality of the system and to keep the installation secure.

When performing a firmware update of system devices, make sure:

- that you have installed the latest version of the Interact Pro app
- that all devices are powered
- that the gateway is powered and connected to the internet.



Note

In Interact Pro , the system turns lights on or off via its control features. Keep the gateway and lights always mains powered! This also allows remote control and monitoring.

A software update of system devices can be started using the app or the portal.

In cases that a full project update is not successful, there are some typical error recovery scenarios. Check the conditions listed above: very often, it turns out that some devices are not mains powered during the time of the update which prevents them to get updated. If this is the case, tap **Retry update**.

4 . In special cases, a need to update devices for an standalone system may arise, for instance in case of a serious issue. In such a case, the system should be connected (temporarily) using gateways to update all devices in the project. If desired, these gateways can be removed after completion of the update.
5 . The portal can be used including the *Control* tab to control the lights.

The update process consists of downloading the new software to the devices, flashing the devices and deploying the settings for each light. The process may also fail during the deployment phase as lights have to be reachable for deployment. The app will show using a orange dot indicator which groups and which lights in those groups have failed.

You can right click at the right hand side of a light and select the troubleshoot function to fix it.

When errors keep appearing during an update, contact Signify support.

Important

It is important that when an update has partially succeeded, that is some devices have got the latest software and some devices failed to update, to finish the update such that the system has a consistent set of software versions. As long as there are failures, some of the control functionality may not work.

9. Appendix – Floorplan design guidance

9.1. Buildings and areas

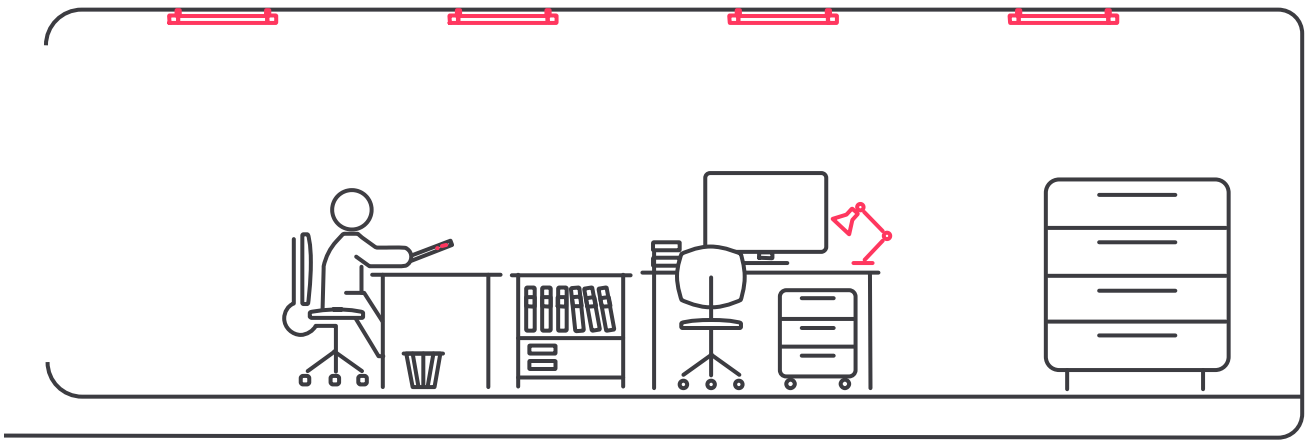
This section contains a description of typical buildings and areas to provide a better understanding a better understanding of the characteristics of a building. The size of the building influences the layout and the size of the areas. The Interact Pro system is designed for use in the following building types:

9.1.1. Building types

- Office buildings Building mainly used for office-oriented activities, including small industrial operations that require a desk.
- Industry and warehouse buildings Workshops for industrial activities, warehouses with racks containing stock, requiring special attention to the lighting
- Retail buildings Building of which most of the floor space is occupied for commercial activities, but can consists a small office and a stockroom or warehouse
- Combinations, for example an office with a small workshop for industrial activities and a warehouse

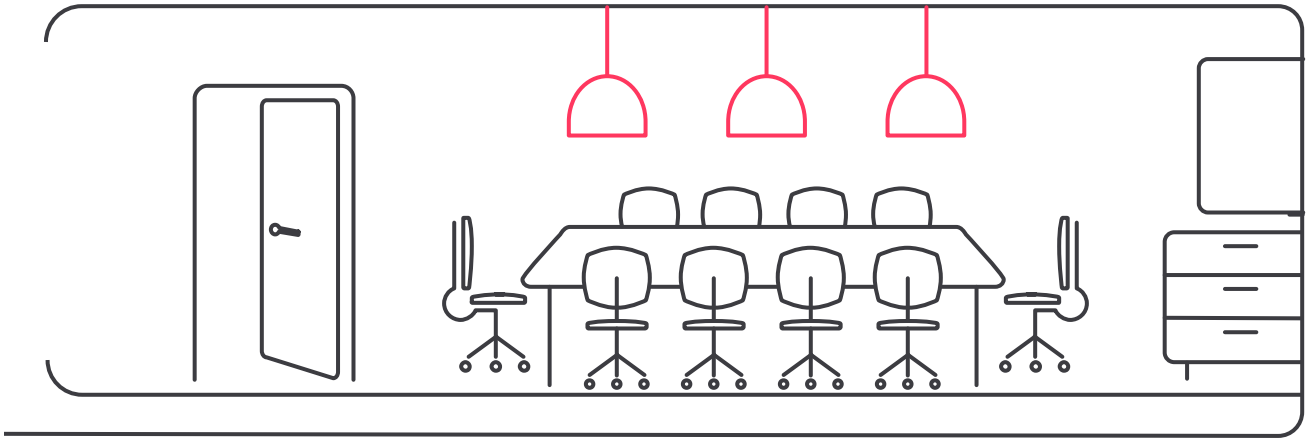
9.1.2. Areas

Open plan and cell office



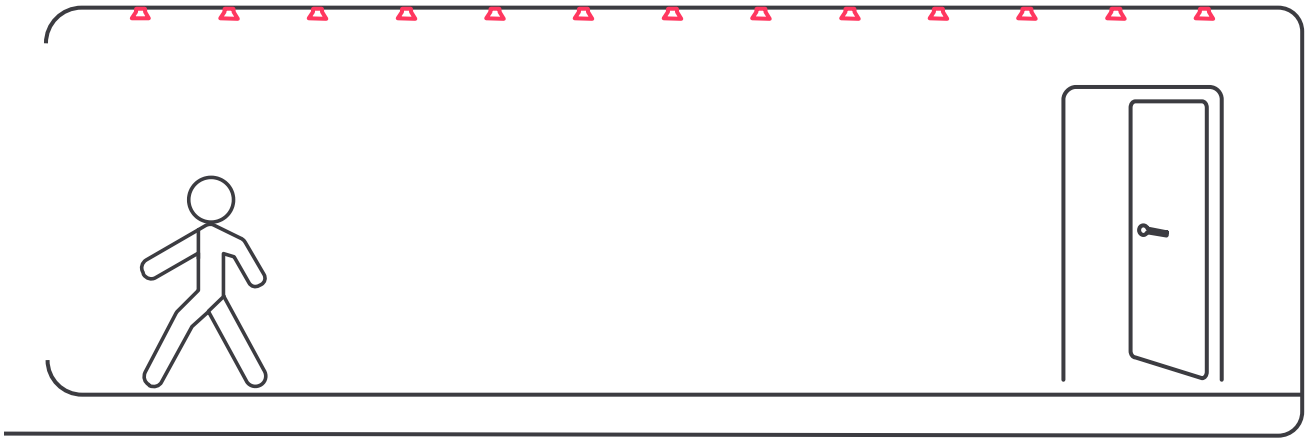
In an office workspace, lighting helps people to concentrate, communicate and cooperate. The correct light creates a healthy, comfortable and inspiring environment.

Meeting room



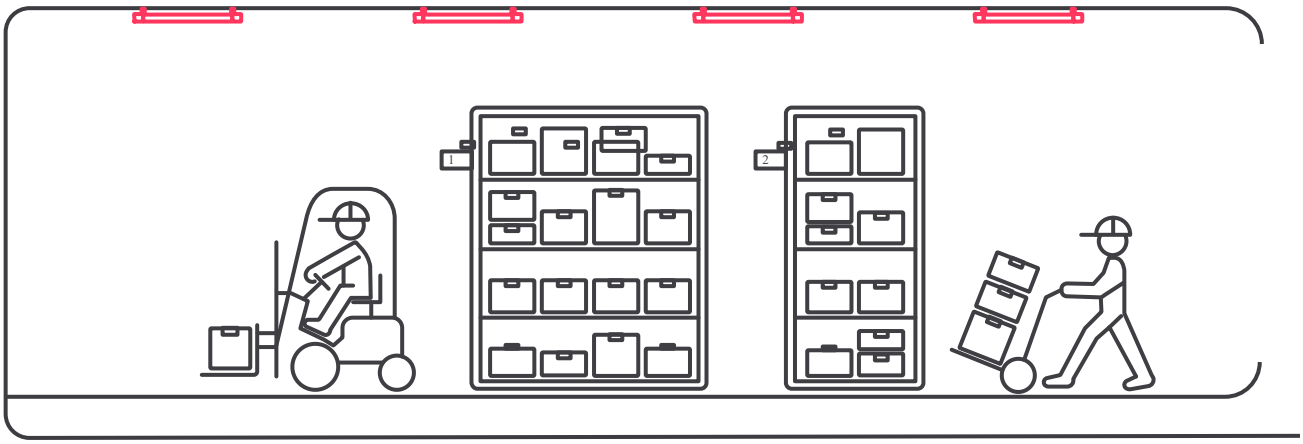
In a meeting room, the lighting should be changeable for the different situations the room can be used for. Either for meetings, trainings or conference calls, the correct light creates a comfortable and inspiring environment.

Corridor



Corridor lighting needs to facilitate the movement of people and must provide a clear view without consuming more energy than needed.

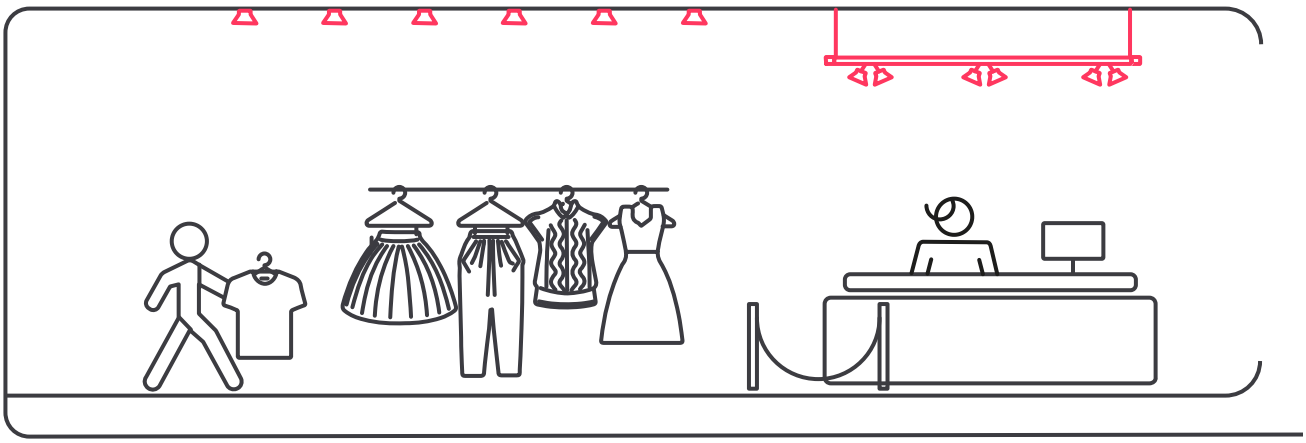
Small industry and storage



Industrial applications require effective lighting on a large scale, which means that low energy consumption and low maintenance are a must. But the lighting also needs to create a clear, safe and pleasant environment.

Small storage spaces can be found in every type of building, but especially also in buildings with industrial spaces. These spaces can be cramped and busy. With the correct lighting, the accessibility and navigation improve significantly.

Small retail



Small-scale stores offer an intimate shopping experience. Effective lighting brings out the best features of the shop: overall illumination that enhances a welcoming environment, plus attractively lit windows and displays.

9.2. Criteria for floorplan design

Design the light plan and discuss the locations of the sensors and user interfaces. The light plan is also the basis for the underlying power grid, to make sure the lighting network is properly divided over the power supply of the building.

The position of the WG must be carefully chosen. The device requires a LAN-connection to the IT infrastructure, to enable the connection to the cloud via the IT infrastructure in the building. The WG requires also a power outlet. The location of the WG must be close to at least two light points, to make sure the WG is able to build-up the wireless network to all the luminaires.

9.2.1. Criteria for retrofit projects

The following criteria can help to select the retrofit option.



Note

The list is not extensive as there are many more criteria that can be thought of.

- **Cost**: cost prize of material compared to labor cost makes it worth investigating to replace fixtures rather than replacing exchanging lamps to make a more interesting business case.
- **Age of fixtures**: old T12 fixtures are possibly not suited for the lamp replacement, buildings with fixtures equipped with HF-ballast are probably not interesting for any retrofit option.
- **Lumen output**: an important parameter in the selection process, as the lumen output of the light points combined with the fixed grid distances determines the task level (lux level on the task plane). It is critical to select the correct lumen output, as it is not foreseen to tune the light level during commissioning to the correct level for each area. For daylight regulation, this is translated to a setpoint at the sensor by automatic calibration, refer to Appendix B section Daylight regulation control.
- **Aesthetic aspects**: if a customer has the intention to improve the look and feel of the ceiling, this can be achieved by replacement of the fixtures.
- **State of the ceiling**: it can be the case the ceiling is in a state that it is not allowed to open it, for example when it is expected to contain asbestos or other hazardous material. In this situation, the choice is limited to replacement of lamps, as this does not require the ceiling to be opened.
- **Hole-for-hole replacement**: With the choice for luminaire replacement, the current luminaires will be replaced one-on-one with a new luminaire. No need for extra holes, the only addition is the attachment of a sensor to the ceiling. This makes the implementation of Interact Pro in an existing building fairly simple.

9.3. Design floorplans for offices

9.3.1. Lighting design insights for open plan offices

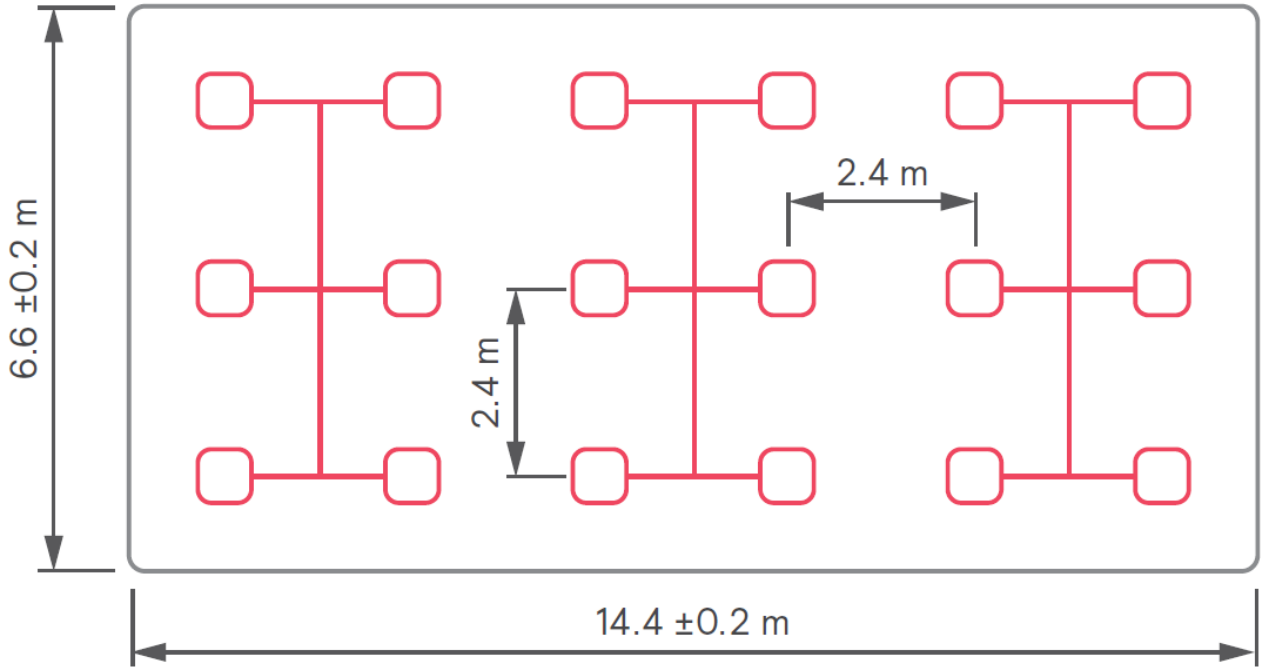
- Use luminaires with proper office light distribution and low glare ratio to minimize reflected glare on displays

Locate controls (sensors) above desks to create optimum effect for presence detection

- Wide light beams create bright walls and ceilings and make the entire space to look more spacious and pleasant
- High levels of illuminance (≥ 500 lux) increase visibility

Application needs

- Grouping of the light points
- Task tuning of the light points
- Add a switch to the area

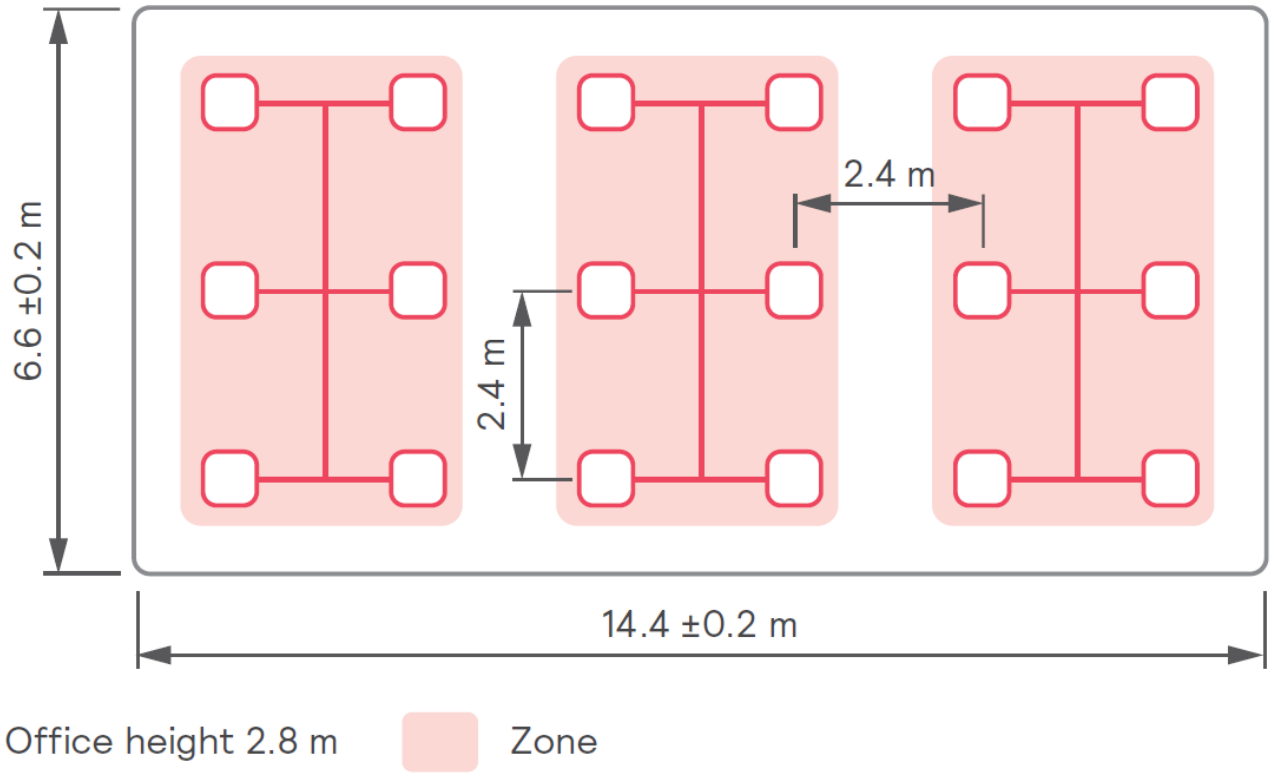


Office height 2.8 m

connected

- Creation of zones
- Add a sensor to a zone
- Define relationships between zones
- Add switches to switch off a zone

Adaptable for application in cell office, coffee corner or lobby area.



Typical luminaires used

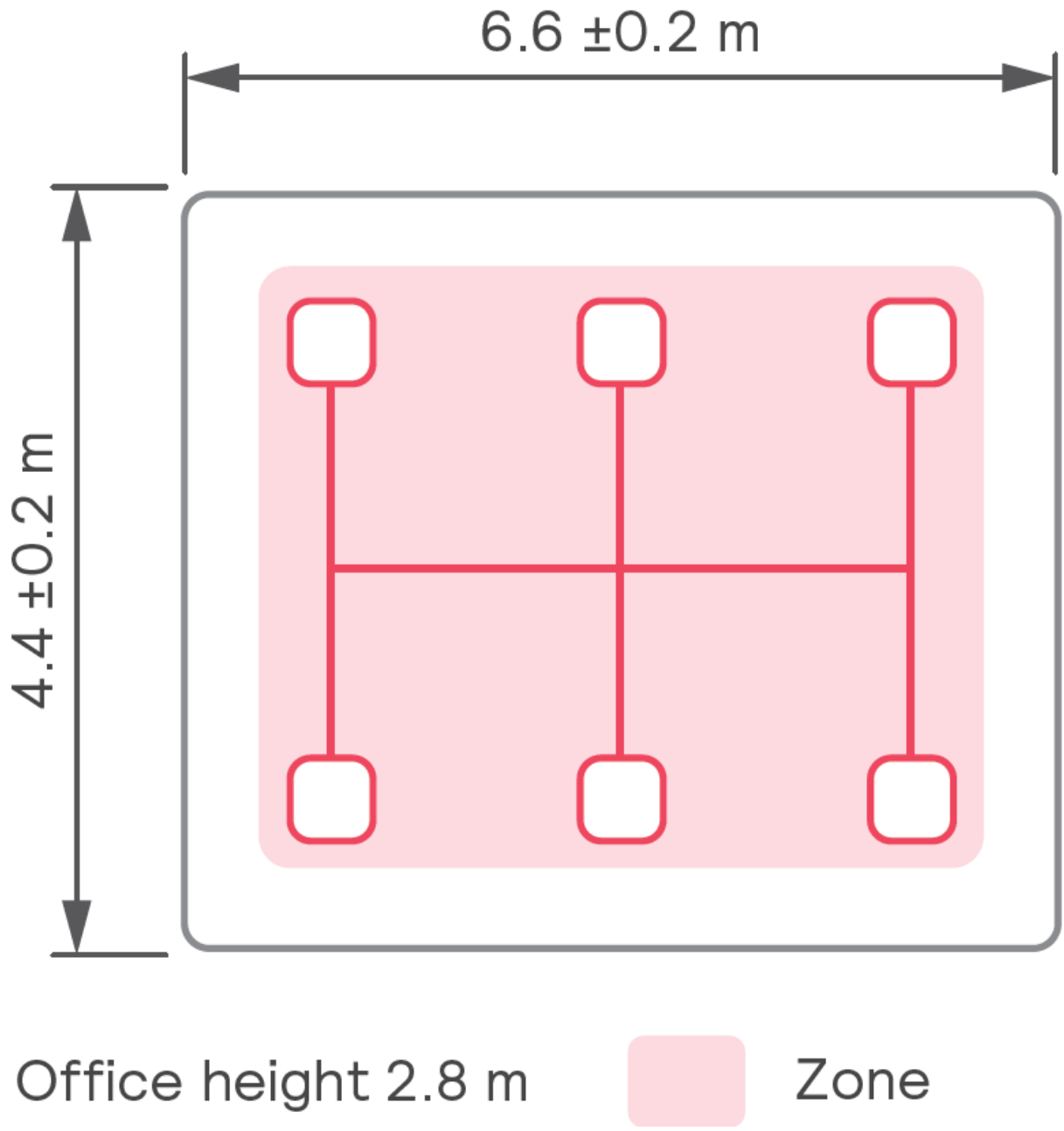
Panels, troffers

9.3.2. Lighting design insights for cell offices

- Use luminaires with proper office light distribution and low glare ratio to minimize reflected glare on displays
- Locate controls (sensors) above desks to create optimum effect for presence detection
- Wide light beams create bright walls and ceilings and make the entire space to look more spacious and pleasant
- High levels of illuminance (≥ 500 lux) increase visibility

Application needs

- Grouping of the luminaires
- Task tuning of the luminaires
- Add a switch to the area



connected

- Add a sensor to the room
- Creation a single zone

Typical luminaires used

Panels, troffer

9.3.3. Lighting design insights for meeting rooms

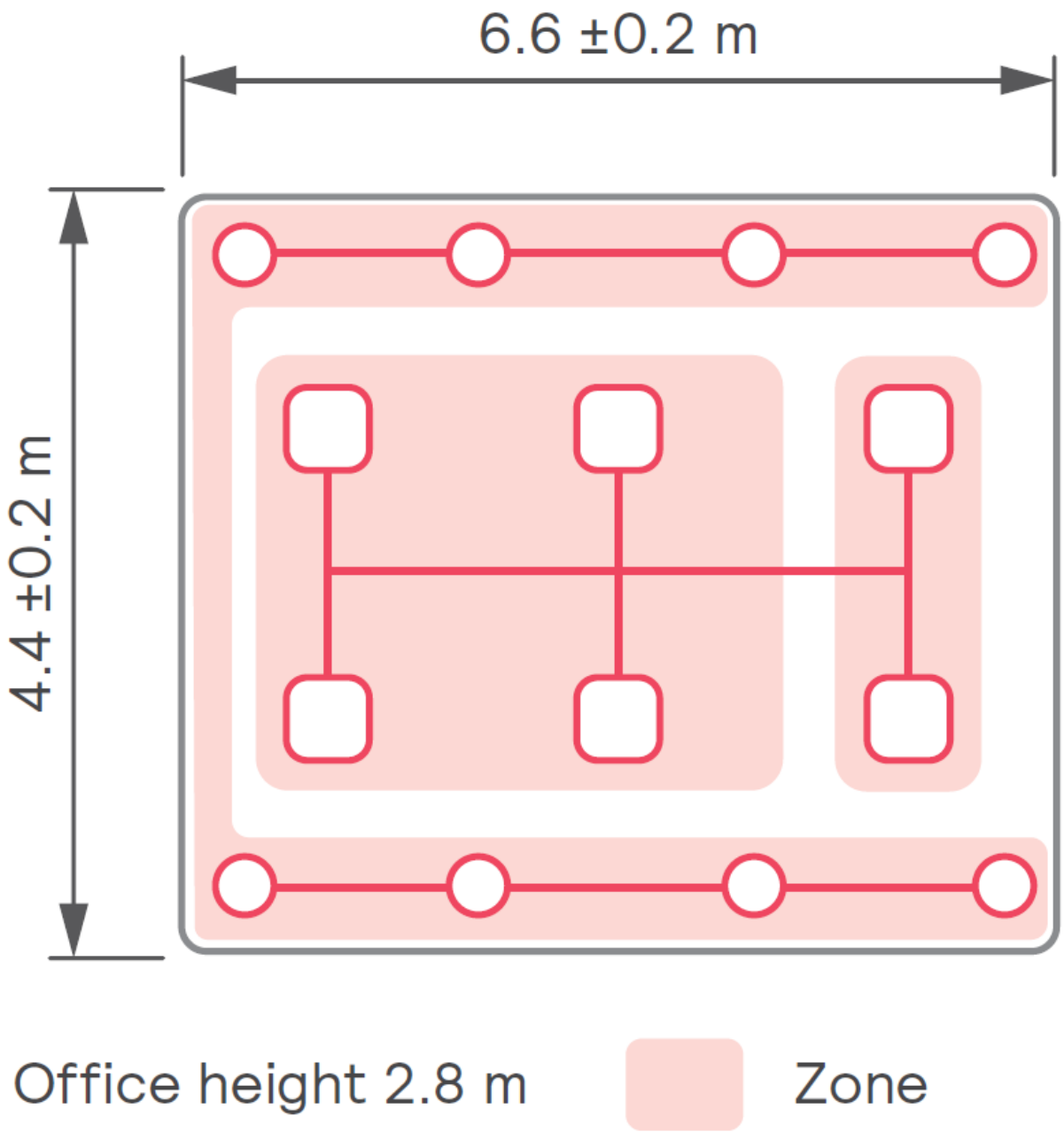
- Use luminaires with proper office light distribution and low glare ratio to minimize reflected glare on displays
- Locate controls (sensors) above the conference table to create optimum effect for presence detection

Wide light beams create bright walls and ceilings and make the entire space to look more spacious and pleasant

- Use downlights or pendulum luminaires to adapt the scenes to different situations
- Create a different zone for the luminaires above a screen to create a higher contrast
- High levels of illuminance (≥ 500 lux) increase visibility

Application needs

- Grouping of the luminaires
- Task tuning of the luminaires
- Add a switch to the area



connected

- Add a sensor to the room
- Creation of zones
- Add possibility to recall scenes

Typical luminaires used

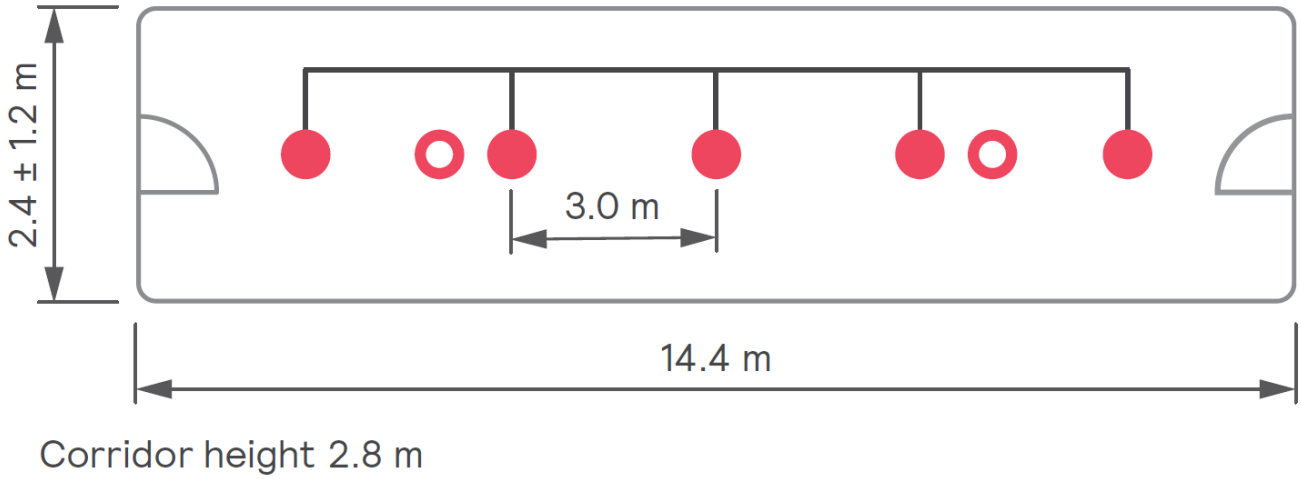
Panels, troffers, downlights

9.3.4. Lighting design insights for corridors

- Wide light beams create a sufficiently bright environment and good vertical illuminance
- Guide occupants through the corridor by providing sufficient light on doors and walls
- Locate controls (sensors) at entrances and exits to prevent going into a dark corridor
- Illuminance requirement at the floor of ≥ 100 lux

Application needs

- Grouping of the light points
- Task tuning of the light points
- Add a switch to the area



Corridor height 2.8 m

connected

- Add sensor, preferably a sensor with a large detection area
- Create schedules to switch the corridor on or off
- Dim during a certain period of the day
- Corridor hold functionality

Typical luminaires used

Downlights

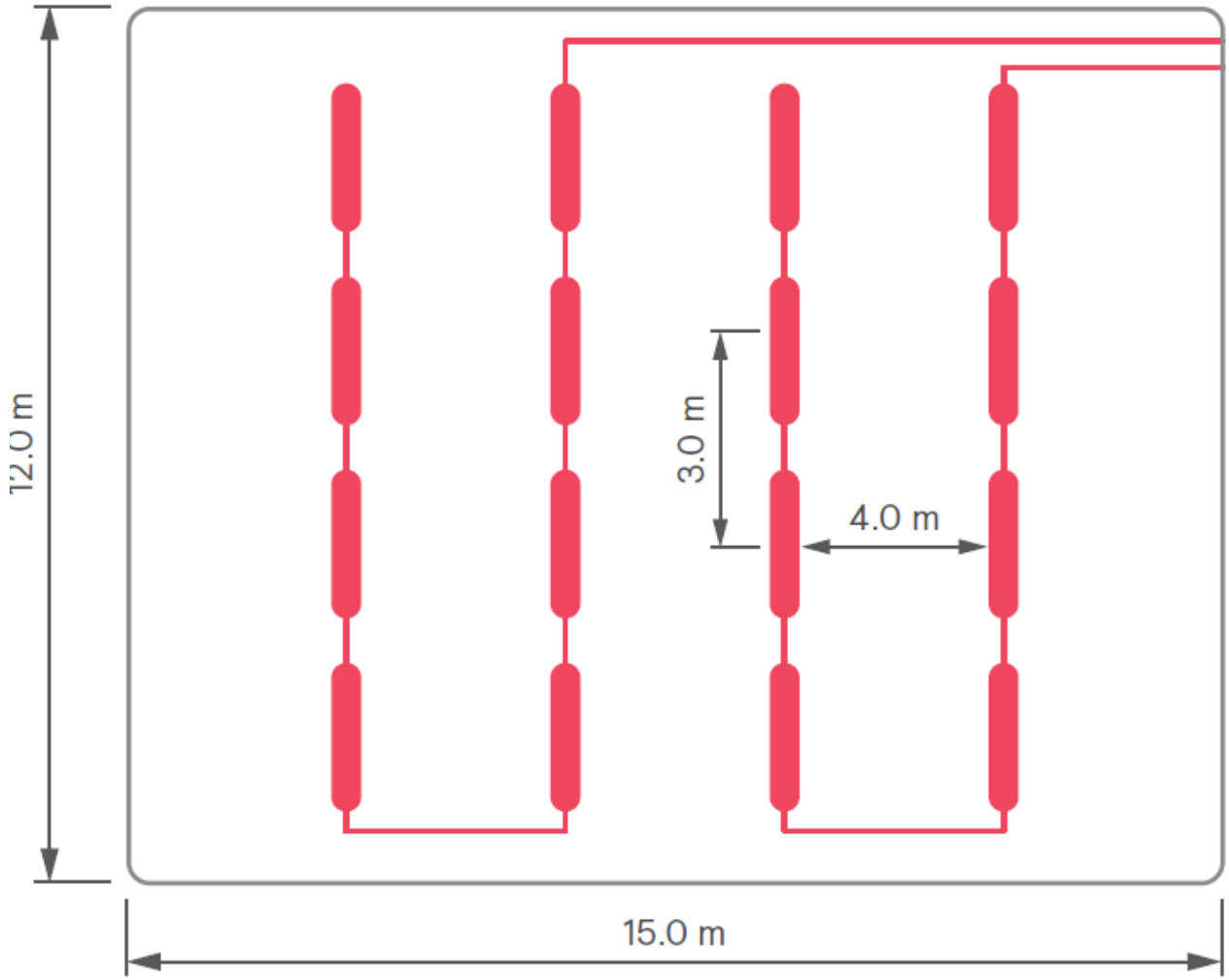
9.4. Design floorplans for small industry and storage

9.4.1. Lighting design insights for small industry areas

- Use wide light beams to increase uniformity, which contributes to a comfortable workspace without disturbing shadows
- Shelves and drawers affect the distribution of the light. Position the luminaires between these elements to create a good vertical illuminance
- Locate controls (sensors) at entrances and exits to prevent going into a dark area, consider furniture to maintain detection coverage
- Take high furniture or machinery into account, as these can block the detection zone of the sensors
- Industrial areas require an illuminance of ≥ 300 lux at task level; storage rooms 100 lux at the floor and archives 200 lux at the floor; higher levels increase visibility

Application needs

- Grouping of the light points [.underline]# # [.underline]# #
- Task tuning of the light points
- Add a switch to the area



Hall height 4.0 m

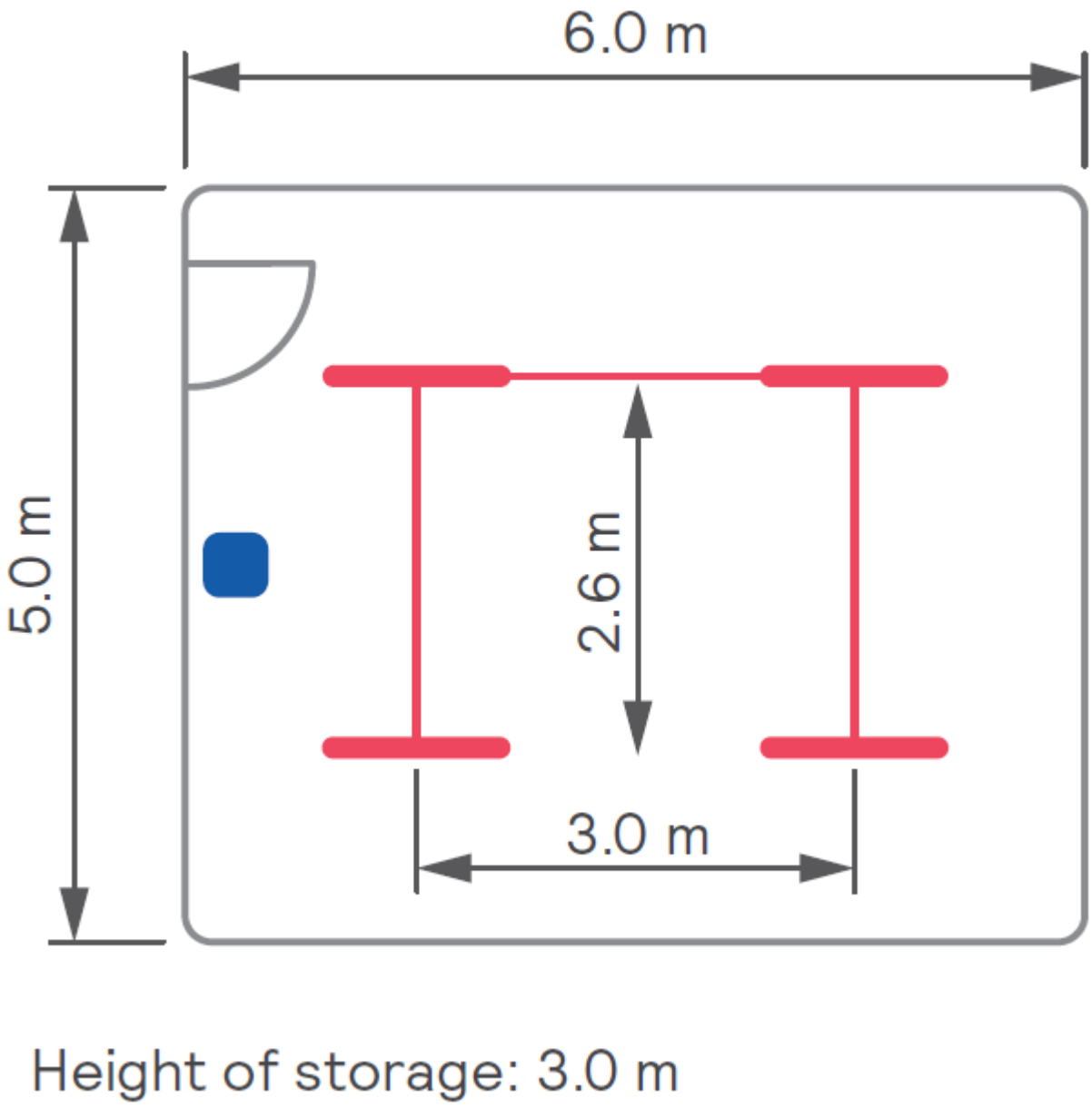
connected

- Add sensor, preferably a high- bay sensor with a large detection area Hall height 4.0 m

Typical luminaires used

Waterproof, batten, high-bay

9.4.2. Lighting design insights for storage areas



Typical luminaires used

Batten

9.5. Design floorplans for small retail

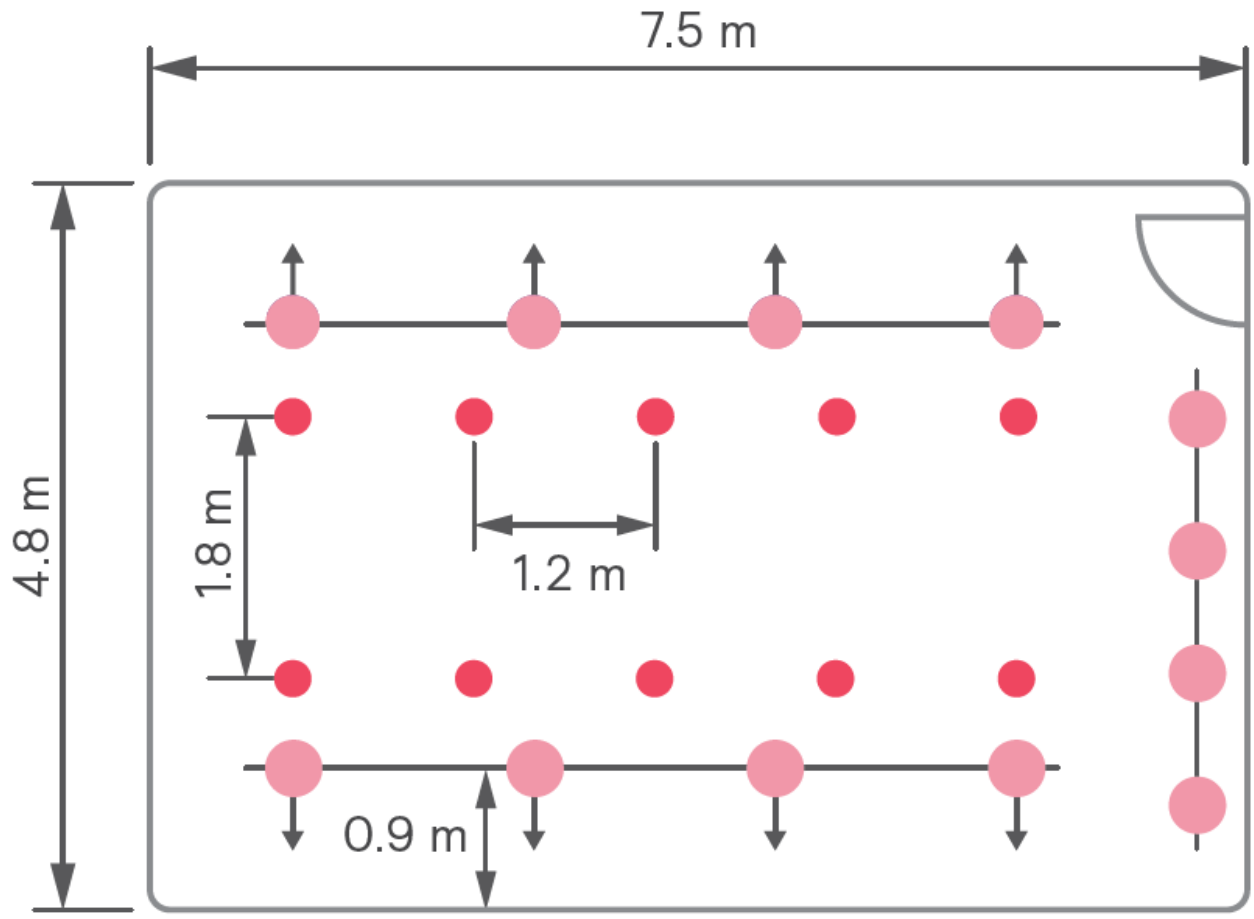
Small-scale stores offer an intimate shopping experience. Effective lighting brings out the best features of the shop: overall illumination that enhances a welcoming environment, plus attractively lit windows and displays.

9.5.1. Lighting design insights for small retail

- Wide light beams create a sufficiently bright environment and good vertical illuminance
- Guide occupants through the corridor by providing sufficient light on doors and walls
- Locate controls (sensors) at entrances and exits to prevent going into a dark corridor
- Illuminance requirement at the floor of ≥ 100 lux

Application needs

- Grouping of the light points
- Task tuning of the light points



Height of small retail space: 2.6 m

Typical luminaires used

Troffer, downlight, spot

9.6. Lighting behavior

This section explains the types of lighting behavior in more detail.

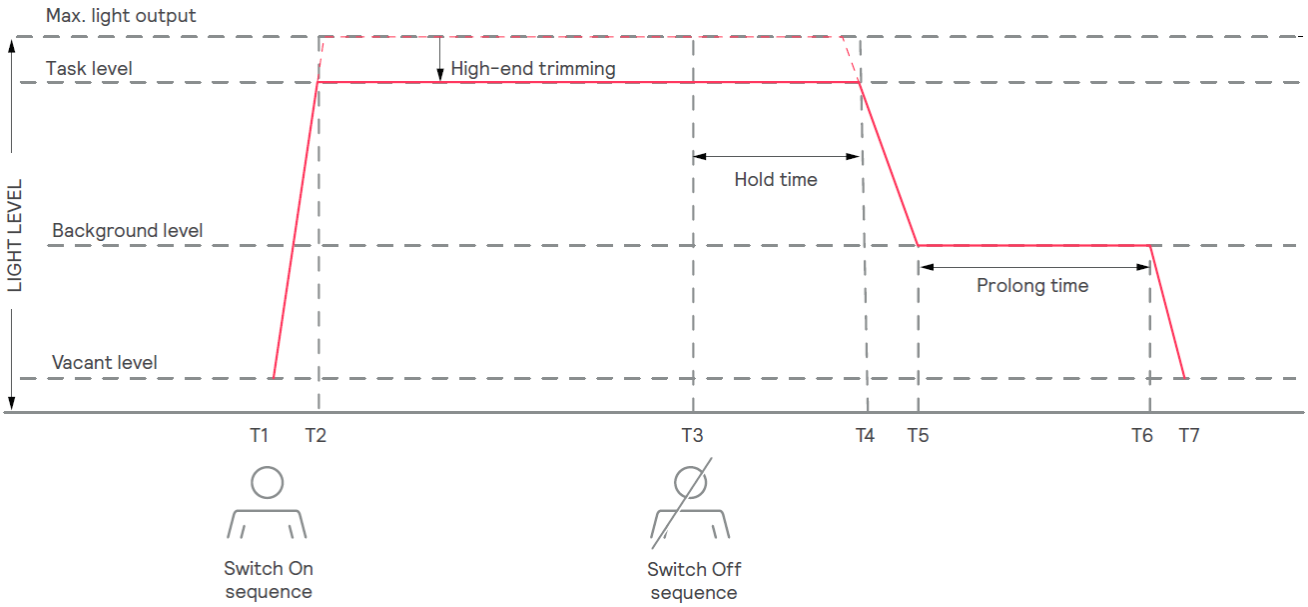
9.6.1. Occupancy based control

Auto On / Auto Off

Light points in the area are switched on in the whole area when occupancy is detected. The following types exist:

- All light points are switched on to task level upon detecting occupancy. The task level is determined by the lumen output of the light points. Combined with the fixed grid distances, this provides the lux level on the task surface. It is critical to select the correct lumen output, as tuning the light level to the correct level is not foreseen for each area during commissioning. For daylight regulation, the task level is translated to a setpoint at the sensor by automatic calibration.
- Light points are grouped within the area. If occupancy is detected in the group, all light points in the group are switched on to task level.

> **Note**
>
> The options Prolong time and Vacant level are scheduled for a future release.



Manual control

Light points need to be switched on to task level manually on entering the room, using a manual control device such as a ZigBee Green Power (ZGP) wall switch. Upon leaving the area the automatic switch-off

sequence starts.

The following types exist:

- All light points are switched on to task level
- Light points are grouped within the area.
  If occupancy is detected in the group, all light points in the group are switched on to task level.

A manual control action (On, Off, Dim) overrides the automatic behavior, setting the light to the requested value.

Daylight dependent regulation

Light points that must respond to daylight are part of a zone together with a multi sensor, that is capable of sensing light levels and occupancy. The zone is part of a larger group with other light points.

The light points in the zone respond the same to switching events as the other light point in the group, but also respond to the light sensing capabilities of the sensor and dim to the task level (see below) when the ingress of daylight high.

In case of a failure of the wireless network and/or WG, the wireless light points will operate as usual. If the failure persists, the loss of connection is reported as an alarm.

Scene control

Scenes are especially handy in areas where the lighting requirements differ per situation. This is for example the case in meeting rooms, where it might be necessary to dim the lights close to a screen on which content is projected.

Schedules

Schedules define a certain behavior to groups in the lighting system, for example switching the lights on automatically at a defined time

10. Third-party integration

10.1. Integrate a NatureConnect project with Interact Pro

This topic details the steps required to integrate Interact Pro with NatureConnect.

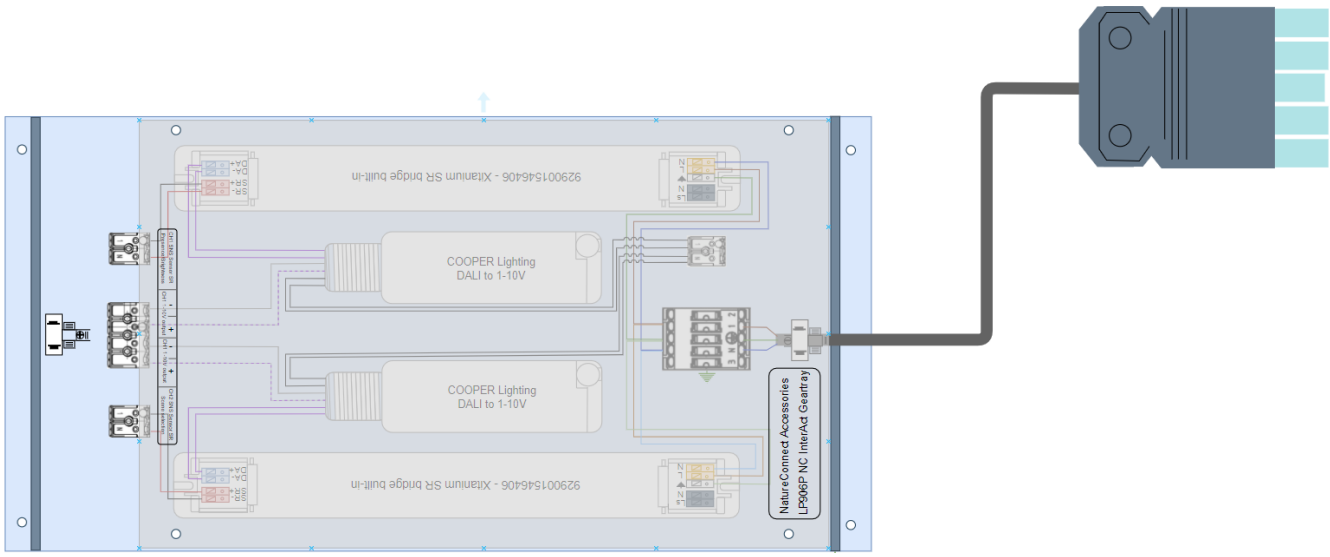
Important

Before integrating NatureConnect with Interact Pro see how to design a NatureConnect project with Interact Pro

10.1.1. Install

To install the NatureConnect devices, use the following steps:

Unpack the gear tray, sensors and switch



Ensure the following:

- Wire for connection between Gear tray - Cabinet:
  - Input wire cross-section (solid conductor wire): 0.5 - 2.5 mm²
  - Input for wire ends with ferrule to the maximum diameter stated: max. ø 1.8mm
  - Input for tinned wire ends: max. ø 1.8 mm
- Wire for connection between Gear tray and Sensors:
  - Input wire cross-section (solid conductor wire) 0.25 to 0.75mm2 / 24 to 18 AWG
  - Input wire cross-section (stranded wire) 0.3 to 0.5mm2 / 22 to 20 AWG

Note

Input wire cross-section (solid conductor wire): 0.5mm2

Important

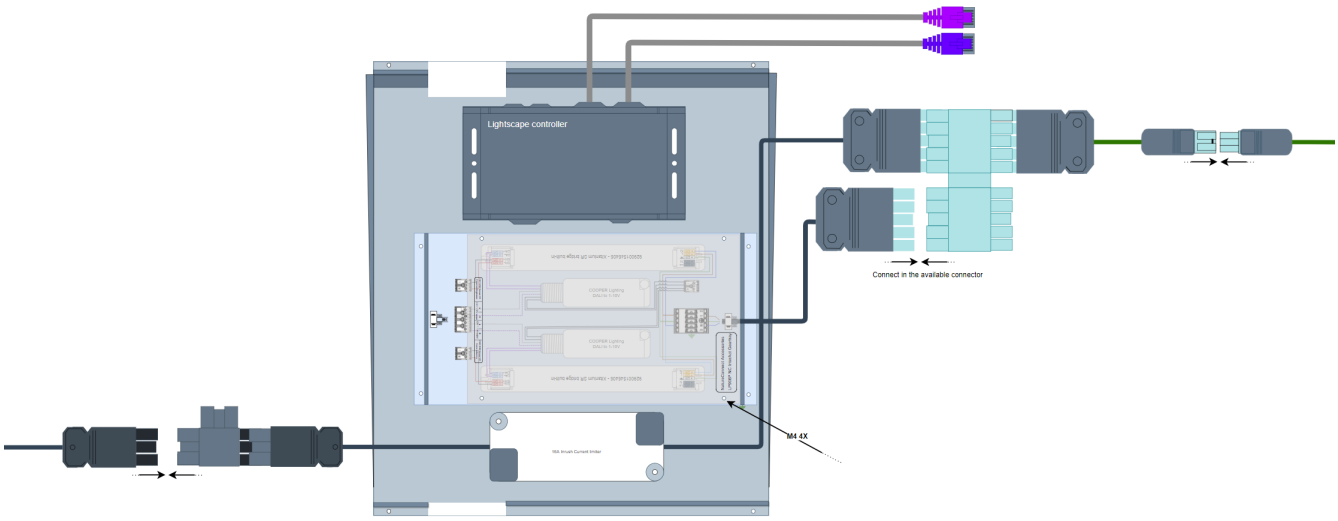
The installation instructions for the sensor and switch can be found in their respective specification sheets.

Assemble the NatureConnect gear tray

Danger

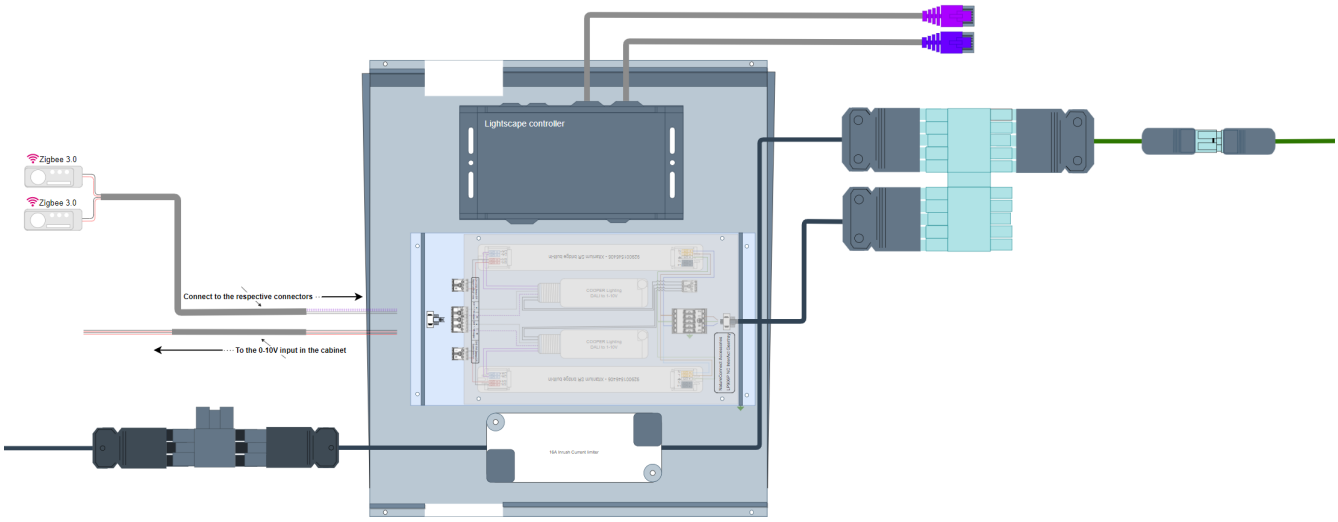
Use the instructions provided in the gear tray!

Attach the NC Interact gear tray into the island main gear tray as the following:



Connect the gear tray to sensors & cabinet

Connect the gear tray to the control cabinet and sensors as follows:



10.1.2. Commission Interact Pro with NatureConnect

Create two groups with the following specification:

Tip

See how to add groups.

Group 1

- Group name: `Group 1 - Presence`
- Room Type: `Meeting room`
- Group behavior: `Group Auto On Auto Off`

Group 2

- Group name: `Group 2 - Scene selection`
- Room Type: `Meeting room`
- Group behavior: `Group Manual On Auto Off`

Note

Each group has a different control scope. The first is aimed at sensing and controls light on/off/dimming light behavior, while the second is controlling the scenes via the light switch.

Add sensors & switch

Warning

To avoid EMI issues cables between sensors and gear tray should be maximum 3m long.



Tip

See how to add a ZGP sensor.

Add the following to each group:

Group 1 – Presence – 1x sensor

- Fixture type – `SNS210 IA`

Group 2 – Scene Selection – 1x sensor & 1x switch

- Fixture type – `SNS210 IA`
- Switch type: `UID8480/10 ZGP Dim 4B`

Link groups to Wireless Gateway

On the same floor:

- Link the groups to the Wireless Gateway. This in turn links all sensors and switches to the Wireless Gateway

Add scenes



Important

A scene is added only for `Group 2 - Scene selection`

Select the `Group 2 - Scene selection` and add the following scenes:

Day rhythm

- Scene name: `Day rhythm`
- Light level (Zones): `90%`
- Light level (Lights not in zone): `100%`

Energize

- Scene name: `Energize`
- Light level (Zones): `57%`
- Light level (Lights not in zone): `100%`

Relax

- Scene name: `Relax`
- Light level (Zones): `43%`
- Light level (Lights not in zone): `100%`

Present

- Scene name: `Present`

Light level (Zones): `29%`

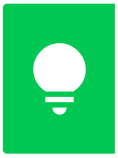
- Light level (Lights not in zone): `100%`

Off

- Scene name: `Off`
- Light level (Zones): `10%`
- Light level (Lights not in zone): `100%`

Deploy all scenes and validate the project.

Assign scenes to the 4-button switch



Tip

See how to assign a scene to the 4-button switch switch.

Assign the scenes to the ZGP 4-button switch (`UID8480/10 ZGP Dim 4B`).



Important

The `Day rhythm` and `Off` scenes are physically assigned to the right-side buttons of the switch.

Learn more about Interact
www.interact-lighting.com

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