

Store Flex

Store Mini Kit / Store Kit /
Store Flex

Store centric lighting controls,
suitable for all retail solutions



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01 General



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- 1.3 Related documents

- 1.4 Abbreviations
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01 General

1.1 About the document

The document relates to Retail Store Flex, with the following variants:

- Store Mini Kit - Release 1.1
- Store Kit - Release 2.2 (with gateway or touchscreen)
- Store Flex – Release 1.6

This document describes the design of all architecture variants, but specifically of Store Flex, which is an advanced lighting control solution for retail applications. It is the most complete lighting solution in the market, capable of handling small optimized solutions up to highly advanced installations covering multiple areas, zones, presets and schedules.

1.2 Intended audience

The information in this guide is specifically intended for system designers, proposal managers, system architects and specifiers employed by Systems and Services, Customer IT Departments, etcetera.

1.3 Related documents

Refer to other documents for more information:

- **Quick start guide**
 - describes the installation, commissioning, configuration, and usage of the lighting system.
 - available for Store Mini Kit and Store Kit
- **User guide for Dynalite Store Control UI**
 - describes the usage and configuration of the lighting system with the user interface.
 - available for Store Kit and Store Flex
- **Commissioning guide**
 - describes the installation and commissioning of the lighting system.
 - available for Store Flex
- **Project intake form (Project template)**
 - simplifies the design process of a new site.
 - available for Store Flex
- **Bill of Materials**
 - overview of all components and their 12nc ordering codes.
 - available for Store Flex

01 General

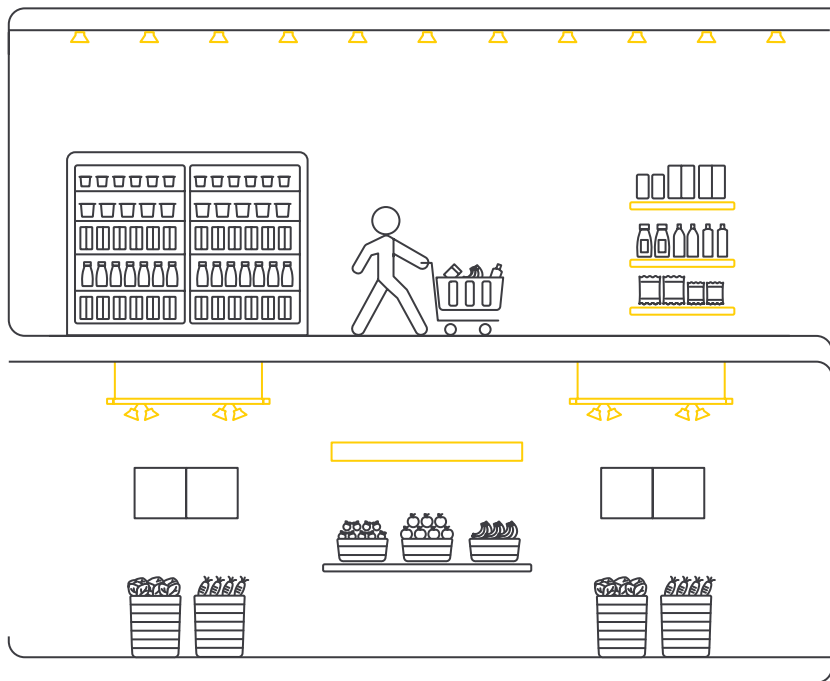
1.4 Abbreviations

The following abbreviations are used throughout the document:

Abbreviation	Explanation
BLA	Base Link Area
BMS	Building Management System
BoM	Bill of Materials
DACM	Dynet Antumbra Communication Module
DALI	Digital Addressable Lighting Interface communication protocol
DMX	Digital MultipleXed communication protocol
DSI	Digital Serial Interface communication protocol
HVAC	Heating, ventilation, and air conditioning
IR	Infrared
PDDEG-S	Philips Dynalite DIN-rail Ethernet Gateway – Supervisor (in short: Ethernet Gateway)
PDEG	Philips Dynalite Ethernet Gateway (in short: Ethernet Gateway)
PDZG-E	Philips Dynalite Zigbee Gateway - Ethernet (in short: Wireless Gateway)

Abbreviation	Explanation
PDTS	Philips Dynalite Touch Screen
PE	Photo electric
PIR	Passive Infrared
PWM	Pulse-Width Modulation phase cut dimming
STP	Shielded Twisted Pair
UI	User interface
BSR	Business Support Request
C4CS	Ticketing system capturing customer tickets
C-ROC	Signify Customer Remote Operating Center
C-SAT	Customer Satisfaction
CSI	Certified System Integrator
GSO	Global Software Operations
OTRS	Ticketing system capturing corporate tickets
SAP	Enterprise software for customer management

01 General



1.5 Terms and definitions

The following terms and definitions are used throughout the document:

Term	Definition
Format	A group of sites with similar design or style (In retail also known as the formula). Every site belongs to only one format (e.g., supermarket, convenience store).
Area	A lighting control area (for example Sales floor or Back of house)
Scene	A specific set of light levels that can be edited and recalled, sometimes also referred to as Preset.
Logical channel (or Zone)	A lighting control zone included inside an area (like Bakery spots or Bakery counter)
Schedules	Set of all scheduled events (simple events, special events, holidays) that automatically control the lighting of the sites in a specific format
Store Control UI	User interface of the system used on a tablet or touchscreen (in short: UI)

02 System description



- 2.1 Introduction
- 2.2 Variant description
- 2.3 Variant architectures

- 2.4 Formats and applications
- 2.5 Upgrade scenarios

02 System description



2.1 Introduction

There is basically a variant available for all kinds of application areas, starting from a basic pre-programmed system to an advanced system which can be tailored to the complexity of the store.

2.2 Variant description

Each Store variant consists of an onsite lighting system. Each variant it is designed to the needs of the customer and for use in specific store segments.

All variants are based on Dynalite components that, depending on the variant, allows for wired, wireless or hybrid control control solutions like DALI, Zigbee, 0-10V or relay switching to bring the highest level of lighting control to a store.

2.2.1 Store Mini Kit

- Offers simplified lighting controls functionality in a package that is installer-friendly (no expert knowledge needed) and extremely simple to operate.
- Once installed, a fully operational system is set up automatically.
- Aimed at express and convenience retail stores of small to medium size.
- It is pre-programmed in the factory, and its four configurable scenes control the lighting with a total of:
 - 4 DALI dimmable zones
 - 2 ON/OFF switchable zones
- Equipped with an Antumbra Display user interface for easy operation and configuration.
- Manual control of the lighting, no scheduler available
- Interfacing with a Building Management System (BMS) is possible via Dry Contact interface, allowing for automatic scene activation or scheduling.

02 System description

2.2.2 Store Kit

- Offers lighting controls functionality in a package that is installer-friendly (no expert knowledge needed) and simple to operate.
- Once installed, a fully operational system is set up automatically.
- Aimed at supermarkets, fashion, and DIY retail stores of medium to large sizes.
- The system can be used to control the lighting in the sales area, back-of-house and outdoor area.
- 32 configurable scenes control in total 24 zones:
 - 12 DALI dimmable zones
 - 12 ON/OFF switchable zones
- Possibility to add occupancy sensors to automatically control the lighting in the back-of-house.
- Available with a wall mounted touchscreen user interface, or a gateway allowing to control and configure the lighting directly from any customer smart devices (like a tablet) via a browser-based user interface (UI).

2.2.3 Store Flex

- Offers lighting controls functionality that is tailored to the needs of the customer.
- Expert knowledge is required for offsite preparation and onsite commissioning.
- Can be applied in all store formats but is mainly intended for the supermarket and hypermarket segment.
- The system can be used to control the lighting in the sales area, back-of-house and outdoor area.
- 32 configurable scenes control up to 48 zones in a mixed setup with no limitation in functionality:
 - DALI (both Broadcast and Addressable)
 - ON/OFF relay switching
 - 0 10 V/1 10 V dimming
 - phase cut dimming
 - DMX (for example to control RGB lighting)
 - Zigbee or Interact Ready devices
- Possibility to add occupancy sensors to automatically control the lighting in the per area or zone.
- Includes a gateway allowing to control and configure the lighting directly from any customer smart devices (like a tablet) via a browser-based user interface (UI).
- Alternatively, a wall mounted touchscreen user interface can also be used to control the lighting.

02 System description

Wireless

- Is an extension to wired Store Flex
- Uses Zigbee PRO standard to establish a wireless mesh network between a Wireless Gateway and its associated devices (also referred to as nodes).
 - Integrates Interact Ready wireless luminaires, equipped with wireless drivers, into Store Flex
 - Capable of Wireless Group Control (WGC) when using a SNS441 IA transceiver connected to a DALI Extender or SR Bridge to control luminaires via DALI broadcast.
- The Wireless Gateway enables the control of its associated nodes as part of an area or zone (logical channel)
- The area or zone can also be hybrid, consisting of wired and wireless nodes
- It's possible to link multiple areas or zones to a Wireless Gateway

2.2.4 Benefits

Each variant is targeted at retailers that value one or more of the principles of the system. The expected key benefits vary per variant to a greater or lesser extent:

- Maximize energy savings by easy scene and schedule management
- Improve in-store ambiance
- Easy to use user interface for controls and configuration of the system
- Easy installation and maintenance
- Future proof and upgradable

Upgrade scenario

Upgrade existing sites to grow the system with the store, expanding on features and insights without compromises on usability.

It is also possible to connect different sites to the cloud and start using Multisite System Manager, centrally managing and monitoring the lighting at all sites, making sure that all have the same look and feel.

02 System description

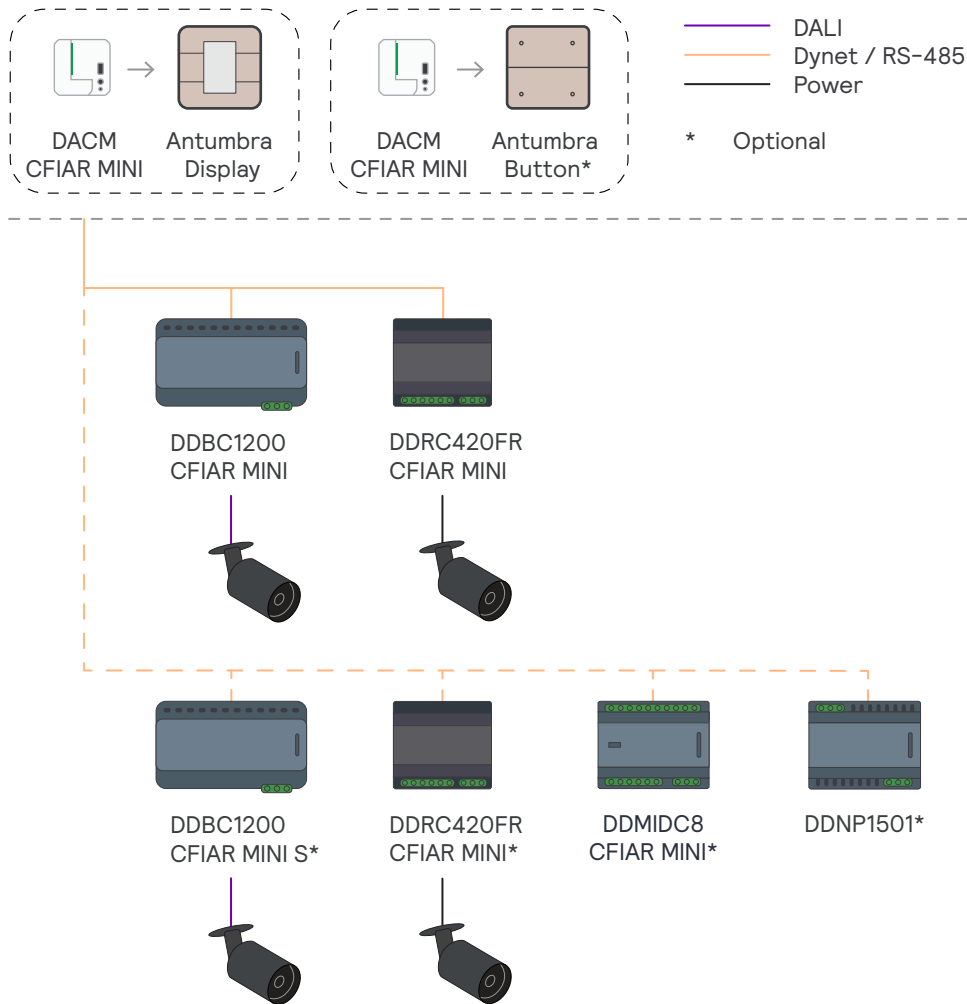


Figure 1. Simplified diagram for Store Mini Kit

2.3 Variant architectures

All Store Kit variants operate onsite with a wired architecture, consisting of Philips Dynalite lighting control components. For Store Flex, it is possible to use either a wired, wireless or hybrid architecture.

2.3.1 Store Mini Kit

The DACM CFIAR MINI Dynet communication module, attached to the Antumbra Display application module, acts as the brain and network interface, interconnecting the onsite hardware.

The Antumbra Display takes the role of user interface and can also be used to configure the light settings in the scenes.

Note

By adding multiple Antumbra Display or Antumbra Button application modules, a DDNP1501 might be required. This depends on power consumption calculation. For more information, see the Quick Start Guide for the Store Mini Kit, or visit www.dynalite.com.

02 System description

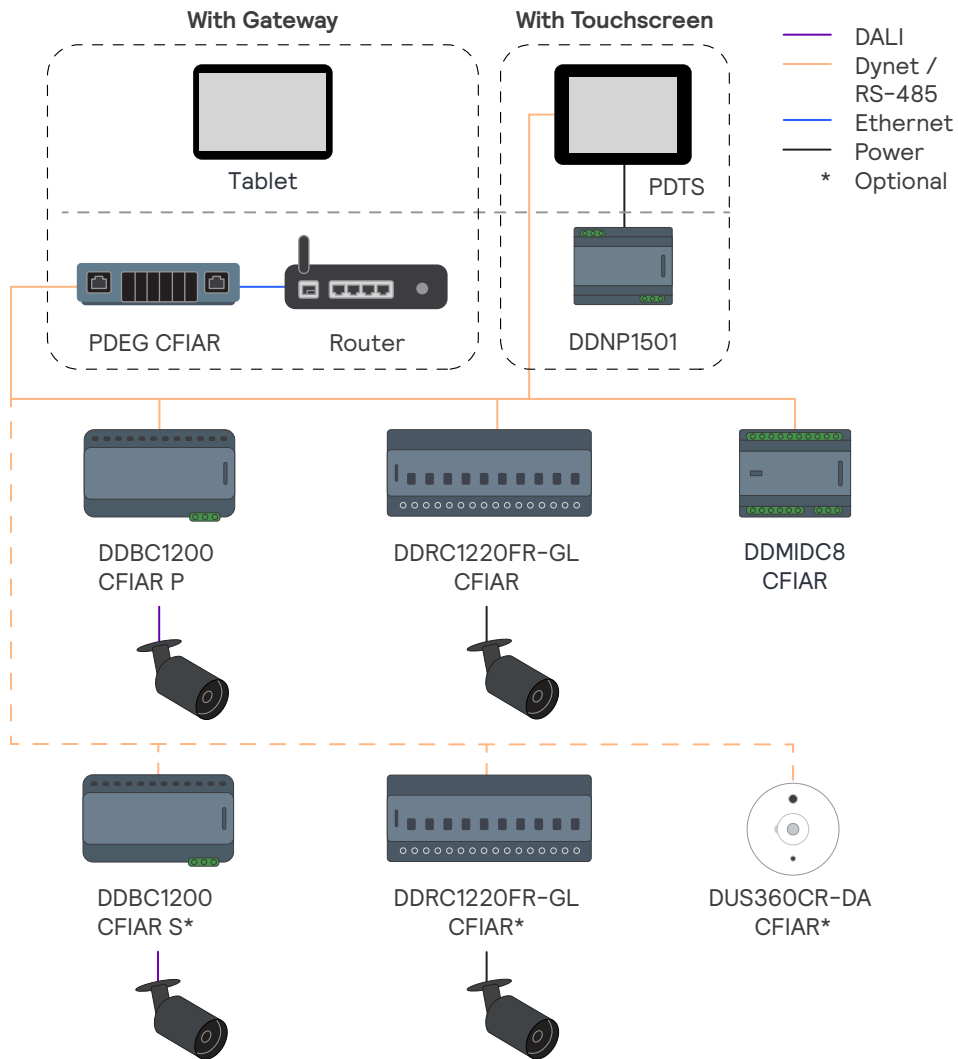


Figure 2. Simplified diagram for Store Kit

2.3.2 Store Kit

Kit with Gateway

The Ethernet Gateway (PDEG) functions as the 'central store controller', interconnecting the onsite hardware.

The device:

- Provides access to the Store Control UI that enables scenes and schedules management;
- A connected Wireless Access Point enables the Store Control UI to be accessible via a mobile device.

Note

The router and the mobile device (tablet) are not part of the Signify delivery.

Kit with Touchscreen

The Touchscreen (PDTS) functions as the 'central store controller', interconnecting the onsite hardware. The device:

- Provides access to the Store Control UI that enables scenes and schedules management.

02 System description

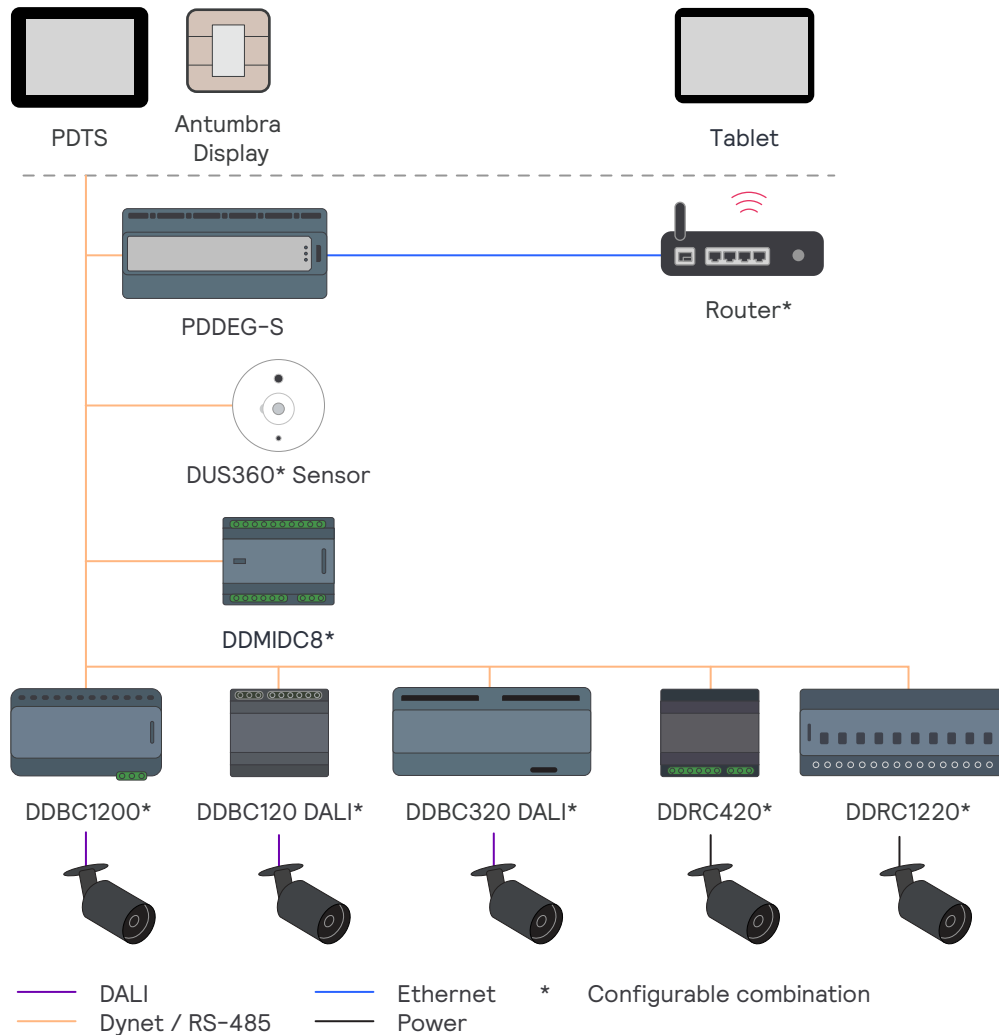


Figure 3. Simplified diagram for Store Flex

2.3.3 Store Flex

PDDEG-S Ethernet Gateway

The Ethernet Gateway (PDDEG-S) functions as the 'central store controller', interconnecting the onsite hardware. The device:

- Provides access to the Store Control UI that enables scenes and schedules management;
- A connected Wireless Access Point enables the Store Control UI to be accessible via a mobile device;
- Offers a fully futureproof system that is ready to upgrade to Multisite, where the PDDEG-S will act as Site Gateway, safeguarding secure cloud connection.
- Tailored to the needs of the customer.
- Supports BACnet, integrating with Building Management Systems (BMS)

Note

The router and the mobile device (tablet) are not part of the Signify delivery.

02 System description

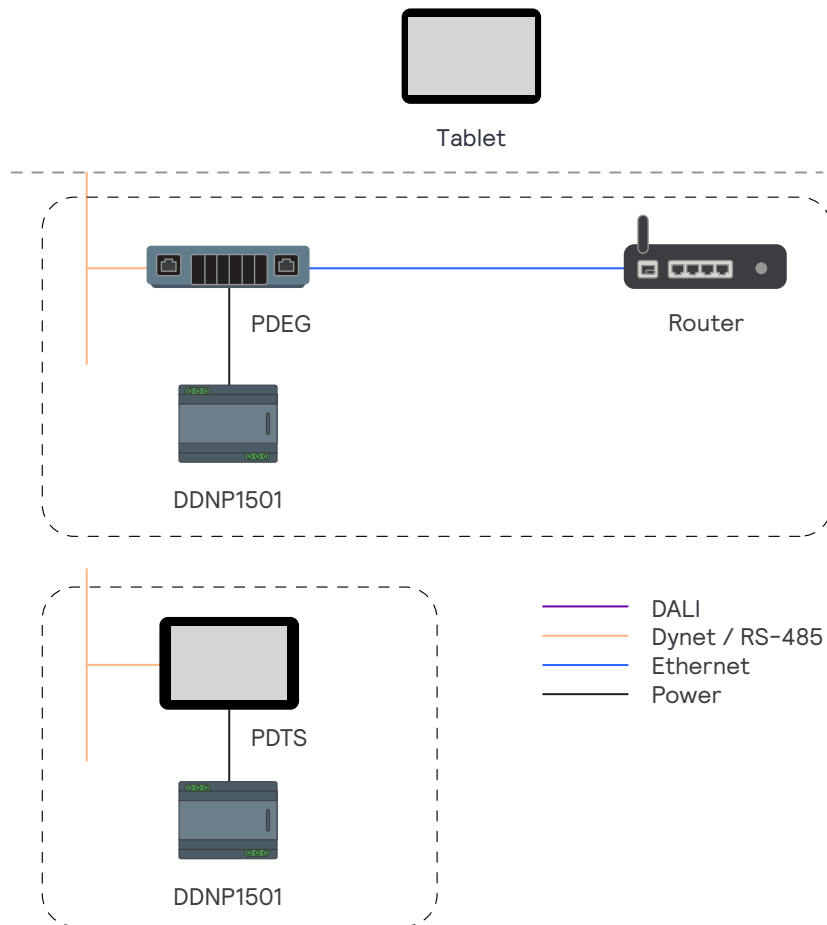


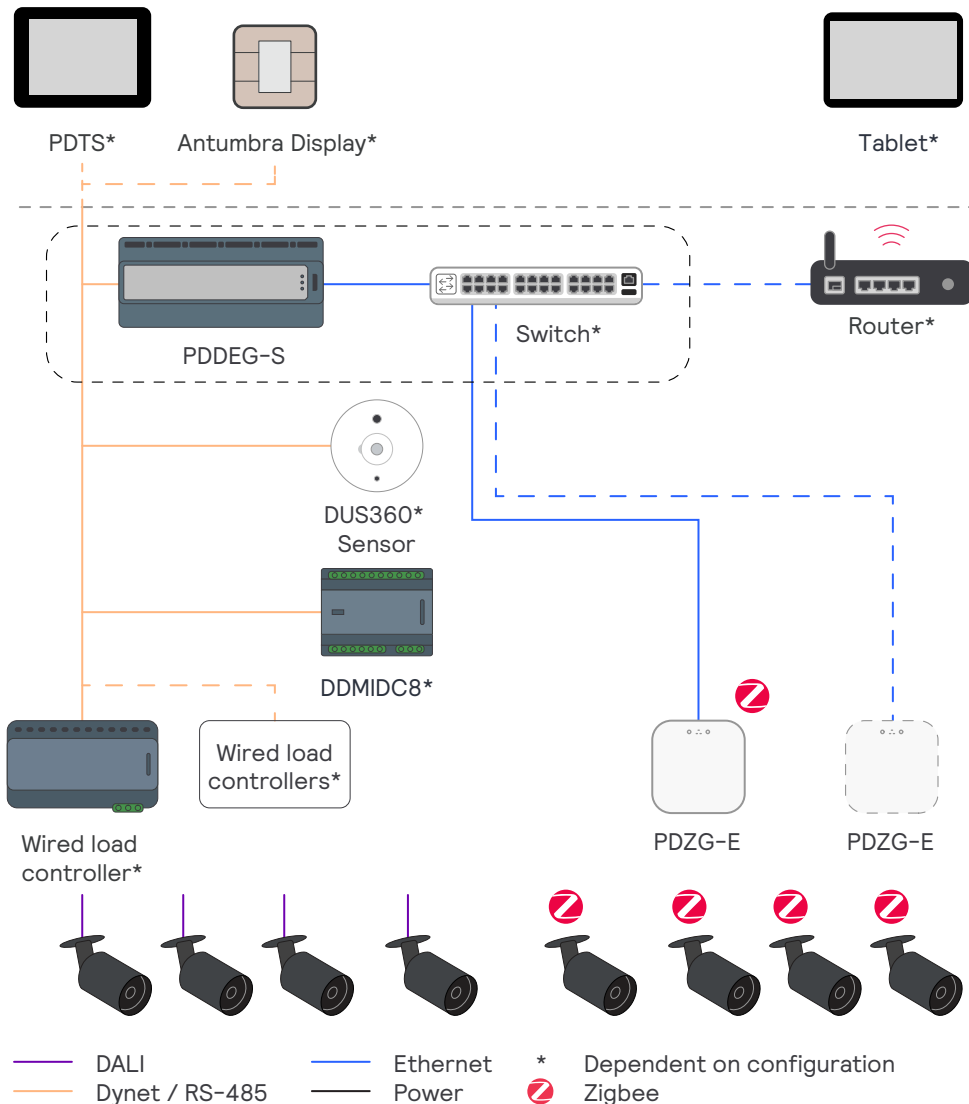
Figure 4. Simplified diagram for Store Flex with PDEG or PDTs

PDEG Ethernet Gateway or PDTs Touchscreen

Alternatively, the PDEG and PDTs can also be used as central store controllers.

- The devices include similar features as the PDDEG-S, providing access to the Store Control UI that enables scenes and schedules management.
- A DDNP1501 Network power supply is required.
- The PDEG Ethernet Gateway can connect to a Wireless Access Point to enable the Store Control UI to be accessible via a mobile device.
- The PDTs Touch Screen offers a local wall mounted user interface for the Store Control UI.
- When using a PDTs touchscreen in combination with a PDDEG-S or PDEG Ethernet Gateway, the PDTs can then only be used as a scene controller. In this specific case, configuration of schedules is not possible.
- Upgrade to Multisite is not possible without installation of a PDDEG-S that requires complete recommissioning of the system.

02 System description



2.3.4 Store Flex with wireless devices

The wireless architecture is an extension to the wired architecture of Store Flex.

As in wired Store Flex, the PDDEG-S functions as the 'central store controller'. A PDDEG-S Ethernet Gateway:

- Connects up to 25 PDZG-E Wireless Gateways to the system by using its Ethernet connectivity capabilities.
- Ensures the secure connection between the PDZG-E Wireless Gateways and the rest of the Dynet network

The PDZG-E Wireless Gateway:

- Links the wireless Zigbee network over Ethernet to the wired Dynet network;
- Connects up to 200 wireless nodes (luminaires and/or transceivers) via Zigbee

Store Flex wireless supports easy commissioning with the Philips Dynalite Enabler app, using the Bluetooth functionality of each luminaire and/or node.

02 System description

Note

As an alternative, also the PDTS Touchscreen can be used as 'central store controller'. However, a PDDEG-S Ethernet Gateway is still required to ensure the secure connection between the PDZG-E Wireless Gateways and the Dynet network.

2.3.5 Controllers

Store Mini Kit and Store Kit

- The Store Mini Kit makes use of a DDBC1200 and DDRC420 controller, and optionally the DDMIDC8, that are preconfigured in the factory for usage in this kit (hence the CFIAR MINI).
- The Store Kit makes use of a DDBC1200, DDRC1220 and DDMIDC8 controller, that too are preconfigured for use in this kit (hence the CFIAR).

Important

- Replacing any preconfigured controller with a standard one will make any kit inoperable.
- It's also not possible to use a controller configured for the Store Mini Kit in a Store Kit, and the other way around.

Store Flex

The correct combination of control components creates a robust controller network and brings the highest level of lighting control flexibility to a store, enabling:

- Wired load controllers (for example: DALI Broadcast, DALI Addressable, DMX, 0-10V, Relay)
- Wireless devices (Interact ready wireless luminaires, SNS441 IA transceivers)
- Daylight & occupancy sensing via Dynet sensors to dynamically adjust lighting to local conditions
- Scene control with dimming & zoning
- Local manual override, plus integrations with Building Management Systems (BMS), alarm systems, etcetera

Note

Currently, sensing and data collection is not supported via wireless nodes like the SNS210 IA. It is possible to use Dynet or DALI sensors instead.

02 System description

2.3.6 Topology

In the wired infrastructure, the central store controller connects to the control equipment by means of Dynet via RS-485 or Ethernet cabling. Luminaires are connected to the load controllers, depending on the type of luminaire, by means of power and/or control cables.

Wired architecture

In the wired architecture, the central store controller connects to the control equipment by means of Dynet via RS-485 or Ethernet cabling. Luminaires are connected to the load controllers, depending on the type of luminaire, by means of power and/or control cables.

Wireless architecture

In the wireless architecture, the function of the load controllers is taken over by the PDZG-E Wireless Gateway, that connects wireless devices to the associated network. The Wireless Gateways are via Ethernet connected to the central store controller. Each Wireless Gateway can connect up to 200 wireless nodes.

Wireless Group Control (WGC) is also possible, which is wireless control of a DALI broadcast group. This can be achieved by using one of the following devices:

- **SNS441 IA transceiver with a Xitanium SR Bridge**
A SR transceiver connected to the SR interface of the Bridge enables control of a group of luminaires via the DALI interface of the Bridge and the mains relay integrated in the Bridge. The Bridge supports a maximum of 20 DALI drivers per SR Bridge or up to 400 VA switching capacity . See the specifications of the SR Bridge for all details.
- **SNS441 IA transceiver with a DALI Extender**
Extends the SR bus, to which a SR transceiver can be connected, to the DALI bus, enabling multiple applications. The DALI Extender supports up to 20 DALI drivers. See the specifications of the DALI Extender for all details.



Note

Currently, sensing and data collection is not possible via wireless nodes.

02 System description

2.4 Formats and applications

2.4.1 Retail format use cases



Express & convenience

Convenience stores and express formats are smaller local stores.

Characteristics

- Stores with a smaller assortment
- Convenient formats are found in smaller villages, city centers or for example holiday resorts
- Express formats are typically found in places with high traffic

Typical size

Floor area:	$\leq 500 \text{ m}^2$
Light points:	≤ 200



Supermarket

Stores in this format are typically larger supermarkets, fashion, and DIY retail formats.

Characteristics

- Stores with a large assortment
- Supermarkets and fashion retails found in all kinds of shopping areas, e.g., city centers
- DIY retails mostly found at the edges of a town

Typical size

Floor area:	500 to $3,000 \text{ m}^2$
Light points:	200 to 1,000



Hypermarket

This format includes all very large stores that often have more assortments than groceries alone, or department stores.

Characteristics

- Stores with multiple assortments
- Hypermarkets/Wholesalers mostly found at the edges of a town
- Department stores often in the city centers

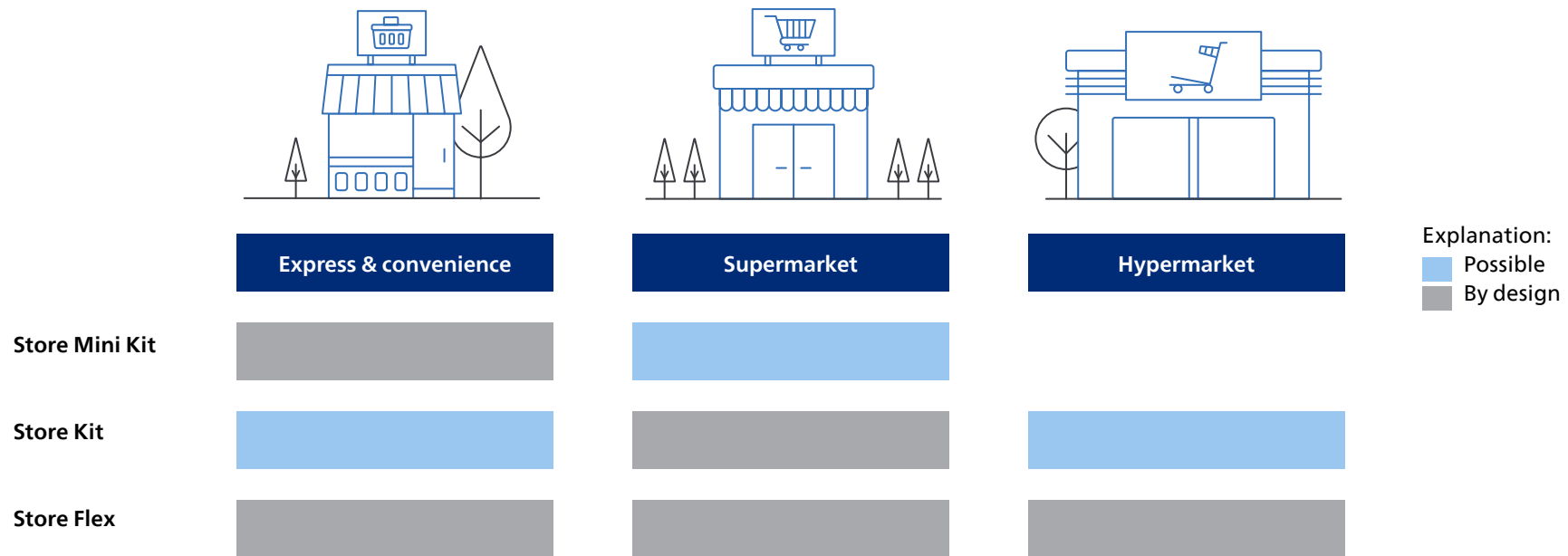
Typical size

Floor area:	3,000 to $10,000+ \text{ m}^2$
Light points:	1,000 to $5,000+$

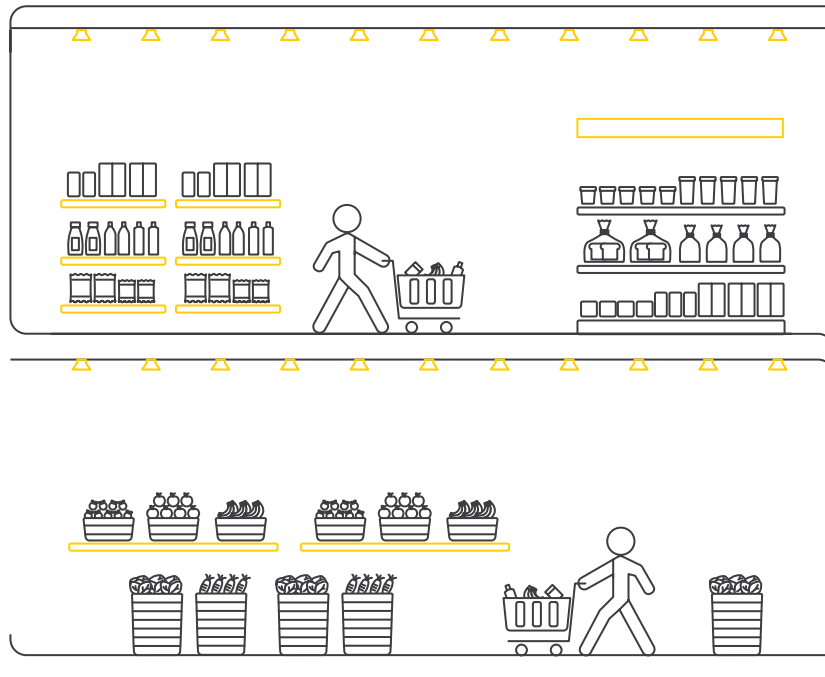
02 System description

2.4.2 Application areas

This section shows the different variants and their typical application areas.



02 System description



Store Mini Kit

- The Store Mini Kit is the ideal choice for use in smaller stores in the express and convenience format range.
- The Store Mini Kit can also be applied in medium sized stores of the supermarket format range.

Store Kit

- The typical application area suits both the medium to large retail formats
- Also suitable for use in express and convenience stores as well as hypermarkets.

Store Flex

- Store Flex is intentionally designed for use in the medium to large retail formats.
- Its flexible design also allows it for use in the smaller stores.
- For each application area, there are typical application examples with a controls setup that meets the requirements of most customers in that format. However, it is always possible to tailor this setup to the specific needs of the customer.

02 System description

2.4.3 Typical application examples for Store Flex



Express & convenience

DALI addressable

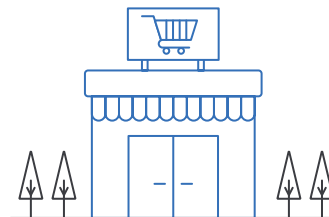
Controls

Ethernet gateway	1x PDDEG-S/PDEG/PDTS
DALI control	3x DDBC120-DALI or: 1x DDBC320 DALI
Relay control	1x DDRC420

DALI broadcast

Controls

Ethernet gateway	1x PDDEG-S/PDEG/PDTS
DALI control	1x DDBC1200
Relay control	1x DDRC420



Supermarket

DALI addressable

Controls

Ethernet gateway	1x PDDEG-S/PDEG/PDTS
DALI control	16x DDBC120-DALI or: 6x DDBC320 DALI
Relay control	1x DDRC1220
Dry contact input	1x DDMIDC8
Multi-sensor	3x DUS360CR

DALI broadcast

Controls

Ethernet gateway	1x PDDEG-S/PDEG/PDTS
DALI control	1x DDBC1200
Relay control	1x DDRC1220
Dry contact input	1x DDMIDC8
Multi-sensor	3x DUS360CR



Hypermarket

DALI addressable

Controls

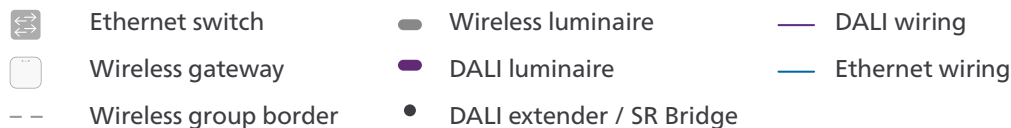
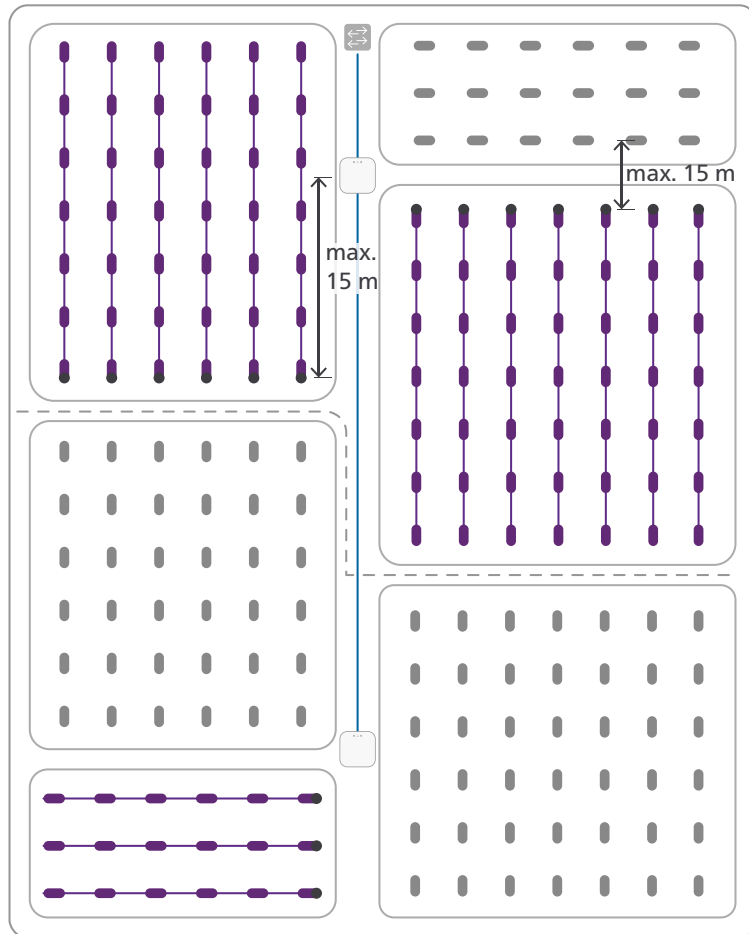
Ethernet gateway	1x PDDEG-S/PDEG/PDTS
DALI control	80x DDBC120-DALI or: 28x DDBC320 DALI
Relay control	3x DDRC1220
Dry contact input	1x DDMIDC8
Multi-sensor	15x DUS360CR

DALI broadcast

Controls

Ethernet gateway	1x PDDEG-S/PDEG/PDTS
DALI control	25x DDBC120-DALI
Relay control	3x DDRC1220
Dry contact input	1x DDMIDC8
Multi-sensor	15x DUS360CR

02 System description



2.4.4 Application example for Store Flex wireless

The example shows a building equipped with wireless luminaires and luminaires controlled via Wireless Group Control, connected to in total two Wireless Gateways. With each Wireless Gateway connected to an ethernet switch, the system saves considerably on control cabling and installer time.

When designing a system layout, keep the following guidelines in mind:

Location of the Wireless Gateway

The best location of the Wireless Gateway is in a high-density grid, with as much nodes as possible within reach, but at least more than two nodes in reach.

Maximum number of devices:

- Each Wireless Gateway can connect to maximum 200 wireless nodes.
- With Wireless Group Control:
 - A SR bridge controls maximum 20 DALI luminaires, or up to 400 VA switching capacity.
 - A DALI extender can connect to a maximum of 20 luminaires.

02 System description

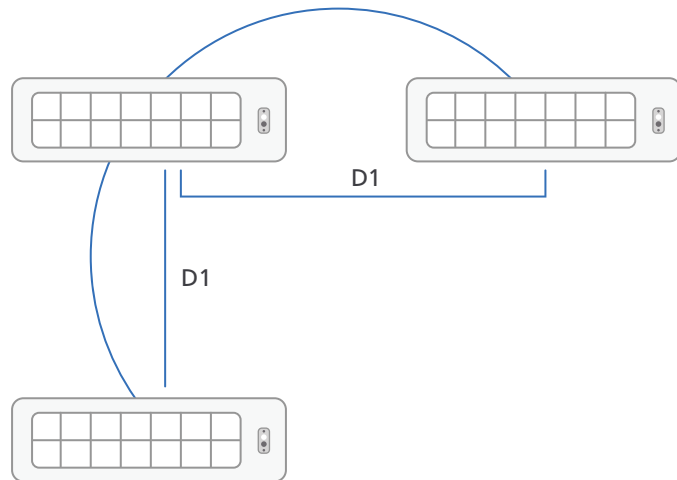


Figure 1. Application of wireless luminaires in an open space

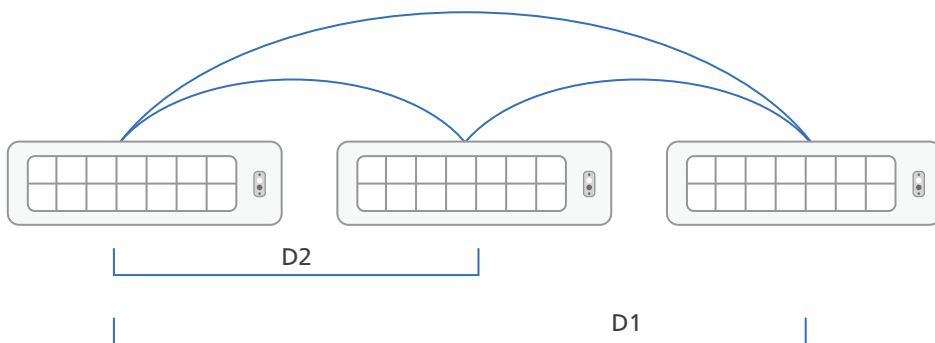


Figure 2. Application of wireless luminaires in a corridor

Recommended maximum distances:

- Keep the distance of each Wireless Gateway to the ethernet switch limited to 100 m (328 ft).
- In open ceilings (for example in the sales floor or back of house, the distance (D1) between two wireless devices (luminaire or node) is maximum 15 m (49 ft). See figure 1.
- In closed ceilings (recessed luminaires or nodes, for example in offices) the distance (D1) between two nodes is maximum 10 m (33 ft). See figure 1.
- When installing in a corridor, use half the distance (D2) between two wireless devices to ensure that there will be always a second device (D1) in reach in case one of the devices fails. See figure 2.

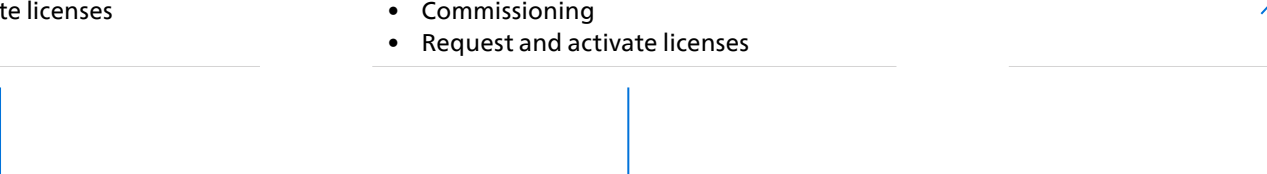
The system offers easy identification of the wireless devices by using the Philips Dynalite Enabler app in combination with discovery by means of Bluetooth. These devices can be assigned to their respective area or zone in the app.

02 System description

2.5 Upgrade scenarios

Store Flex systems using the PDDEG-S Ethernet Gateway are upgradable to Multisite. Also, the other variants of Store Flex are upgradable to Multisite.

Store Mini Kit/Store Kit	Store Flex	Multisite
Rollout scenario <ul style="list-style-type: none">• Philips Dynalite controls• Philips LED luminaires• Lighting design	Rollout scenario <ul style="list-style-type: none">• Philips Dynalite controls• Philips LED luminaires• Lighting design• Project management• Controls design• Commissioning	Rollout scenario <ul style="list-style-type: none">• Philips Dynalite controls• Philips LED luminaires• Lighting design• Project management• Controls design• Commissioning• License activation
Upgrade scenario <ul style="list-style-type: none">• Add or replace PDEG by PDDEG-S• Controls design review• Commissioning• Request and activate licenses	Upgrade scenario <ul style="list-style-type: none">• Add or replace PDEG by PDDEG-S (if not yet equipped with a PDDEG-S)• Controls design review• Commissioning• Request and activate licenses	Upgrade scenario



02 System description

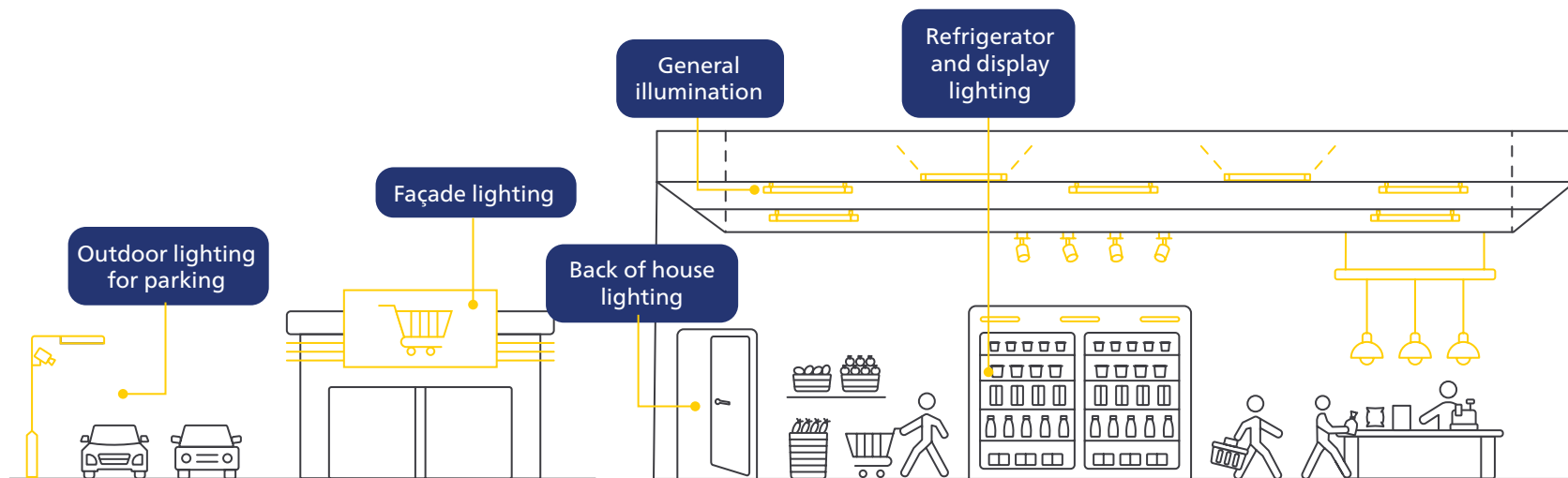


Figure 5. Store Kit and Store Flex: for store lighting and beyond, managing all lights: from outdoor, parking and façade lighting to lighting in the refrigerators, etcetera

03 Preparation and planning



- 3.1 Introduction
- 3.2 Variant characteristics
- 3.3 Offsite preparation for Store Flex

- 3.4 System design for Store Flex
- 3.5 System wiring
- 3.6 Wireless network

03 Preparation and planning

3.1 Introduction

The system design of a Store system differs from a standard Dynalite system. Each Store variant is a simplified, easy-to-use system, providing full control to the customer.

As the Store Mini Kit and Store Kit are pre-programmed, no specific preparation and planning is required. Store Flex, however, requires a design-in for the complete customer offer (luminaires and controls) and needs a trained Dynalite commissioning engineer on-site to further commission and configure the system.

3.2 Variant characteristics

When installing either variant of the Store system, it's important to correctly allocate the areas and zones. This can be achieved by separating the physical channels by means of wiring. This is especially crucial when designing a Store Flex project.

3.2.1 Store Mini Kit

The Store Mini Kit is delivered in a box that contains all the controller components needed for installation of the retail solution, as well as the Quick Start Guide.

03 Preparation and planning

Components

Essential components part of Store Mini Kit

Type number	Description
Store Mini Kit (12nc: 9137 033 55609)	
DDBC1200-CFIAR-MINI	Primary signal dimmer controller, configured for Mini Kit
DDRC420FR-CFIAR-MINI	Relay controller 4x 20 A (max. 80 A)
DACM-CFIAR-MINI	Dynet communication module, configured for Mini Kit
Ordered separately	
PADPE (12nc: per configuration)	Antumbra Display application module

Note

The Antumbra Display application module can be configured to the demands of the customer and needs to be ordered separately.

Optional components for Store Mini Kit

Type number	Description
DDBC1200 CFIAR MINI S (12nc: 9137 033 69609)	Secondary signal dimmer controller, configured for Mini Kit
DDMIDC8-CFIAR-MINI (12nc: 9137 033 66809)	Low level input integrator (dry contact interface)
DDNP1501 (12nc: 9137 030 90309)	Network power supply
PADPE (12nc: per configuration)	Antumbra Display application module
PA4BPE (12nc: per configuration)	Antumbra Button application module, 4 button
DACM-CFIAR-MINI (12nc: 9137 033 55709)	Dynet communication module, configured for Mini Kit

The sections on the next pages describe the components that are pre-programmed for the Store Mini Kit. See [Appendix A – System components](#) for the description of the other components.

03 Preparation and planning



DDBC1200 CFIAR MINI signal dimmer controller

The DDBC1200 controls the DALI dimmable LED lighting in the store via its 12 independent output channels.

Each channel can control up to 80 luminaires, with a maximum of 300 luminaires for the whole controller. In case there are more than 80 luminaires present in a zone, it is best practice to balance them over multiple channels that are assigned to that zone. The luminaires must be powered by a separate power supply in the store which must always be set permanently ON. The channels of the DDBC1200 CFIAR MINI do not power the luminaires.

Note

In case the system handles more than 300 luminaires, this can be made possible by adding one or more secondary signal dimmer controllers (DDBC1200 CFIAR MINI S). Adding secondary signal dimmer controllers has no influence on the total number of DALI zones, it enables adding more luminaires per zone.

03 Preparation and planning

- Luminaires in zone **Dim 1**
- Luminaires in zone **Dim 2**
- Luminaires in zone **Dim 3**
- Luminaires in zone **Dim 4**

Ch: 1 2 3 4 5 6 7 8 9 10 11 12



On the device, use the following channels assignment for connecting the DALI-luminaires in the store:

- Channels 1, 5, 9: zone **Dim 1**
- Channels 2, 6, 10: zone **Dim 2**
- Channels 3, 7, 11: zone **Dim 3**
- Channels 4, 8, 12: zone **Dim 4**

! Important

The DDBC1200 CFIAR MINI has a different 12nc compared to the device used in the Store Kit and therefore can only be used in the Store Mini Kit.

03 Preparation and planning

- Luminaires in zone **On/Off 1**
- Luminaires in zone **On/Off 2**

Channel 1 2 3 4



DDRC420FR CFIAR MINI relay controller

The DDRC420FR provides up to 4 independent output channels for controlling non-dimmable lighting (for example lighting in a display cabinet).

On the device, use the following channels assignment for connecting the switchable luminaires in the store:

- Channel 1, 3: zone **On/Off 1**
- Channel 2, 4: zone **On/Off 2**

03 Preparation and planning



DACM CFIAR MINI Dynet communication module

Acts as the brain and network interface for the Antumbra Display application module.

There are seven languages pre-programmed on the DACM. By setting the dip-switches on the device, the selected language shows on the Antumbra Display. The supported languages are English, French, Italian, Spanish, German, Polish and Russian.



Antumbra application module

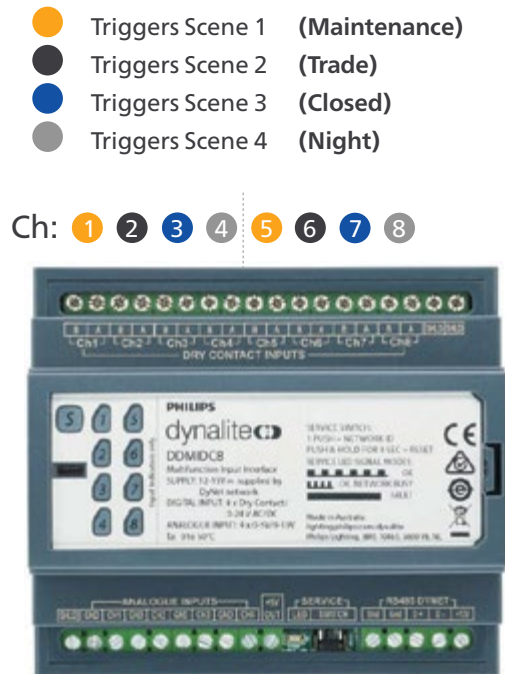
The Antumbra Display is the interface for the sore manager including a configuration menu that is protected by a PIN code. The display shows icons that represent the scene.

Additional Antumbra Button (and/or Antumbra Display) application modules can be installed as interface for the store staff.

You can configure and order the Antumbra using the configurator at:

<https://designstudio.dynalite.com/#/dl>

03 Preparation and planning



DDMIDC8 CFIAR MINI dry contact input controller

The optional DDMIDC8 allows triggering of the lighting presets by external inputs such as a third-party buttons or key-switches. Provides integration with BMS and/or external alarm systems.

- Eight software selectable digital inputs, configured as dry contacts
- All inputs are optically isolated for high noise immunity
- All inputs have LED status indicators

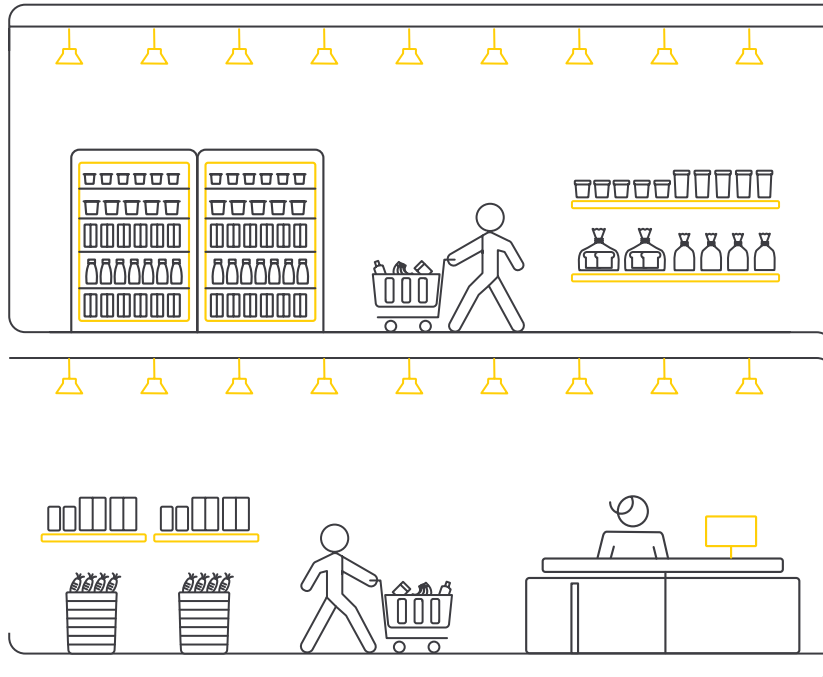
Note

Each scene can be triggered by two different inputs. This allows to interface with two external systems, for example, wall switches and alarm systems. Triggering an input always overrides the previous input.

On the device, use the following channels assignment for connecting the dry contact inputs:

- Channel 1, 5: Scene 1 **Maintenance**
- Channel 2, 6: Scene 2 **Trade**
- Channel 3, 7: Scene 3 **Closed**
- Channel 4, 8: Scene 4 **Night**

03 Preparation and planning



System limitations

- By default, the system can power five Antumbra Display application modules, or nine Antumbra Button application modules.
- In case a DDMIDC8 is present in the system, then the system can power four Antumbra Display application modules, or seven Antumbra Button application modules.
- Connecting more application modules or optional devices may require a DDNP1501 network power supply based on the power consumption calculation. All necessary information for this calculation can be found at www.dynalite.com.

03 Preparation and planning

3.2.2 Store Kit

The Store Kit is delivered in a box that contains all the controller components needed for installation of the retail solution, as well as the Quick Start Guide.

Components

Essential components part of Store Kit

Type number	Description
Store Kit - Gateway (12nc: 9137 032 46409)	
PDEG CFIAR CE	Ethernet Gateway
Store Kit - Touchscreen (12nc 9137 030 20909)	
PDTS CFIAR	Touchscreen
DDNP1501	Network power supply
Shared components in Store Kit – Gateway/Touchscreen	
DDBC1200 CFIAR P CE	Primary signal dimmer controller, configured for Kit
DDRC1220FR-GL CFIAR CE	Relay controller 12 x 20 A (max. 180 A)
DDMIDC8 CFIAR CE	Dry contact input controller

Note

When ordering a Store Kit with gateway, the Wi-Fi enabled router and the tablet are to be delivered by the customer.

Additional and optional components

Type number	Description
DDBC1200 CFIAR S CE (12nc: 9137 033 52109)	Secondary signal dimmer controller, configured for Kit
DDRC1220FR-GL CFIAR CE (12nc: 9137 032 46509)	Relay controller 12 x 20 A (max. 180 A)
DUS360CR-DA CFIAR (12nc: 9137 033 35109)	Motion sensor (Optional component for use in Back-of-house)

The sections on the next pages describe the components that are pre-programmed for the Store Kit. [See Appendix A – System components](#) for the description of the other components.

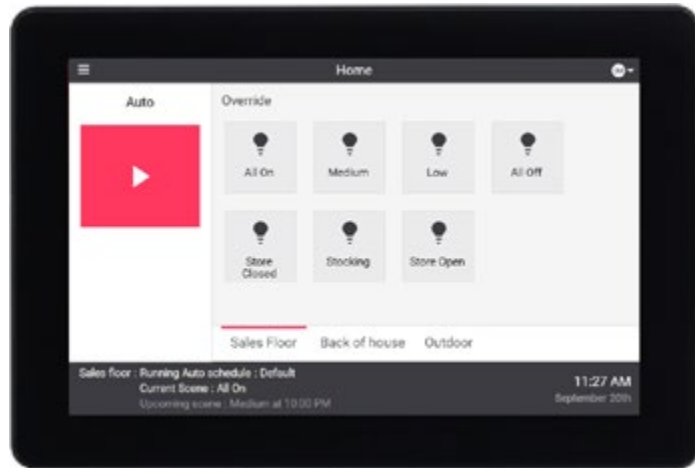
03 Preparation and planning



PDEG CFIAR Ethernet Gateway

The Philips Dynalite Ethernet Gateway, used in the Store Kit- Gateway, provides a multipurpose Ethernet connection to the lighting control system. It supports access to the lighting system via the Dynalite Store Control UI, delivering access to the inbuilt timeclock and schedule editor functions.

03 Preparation and planning



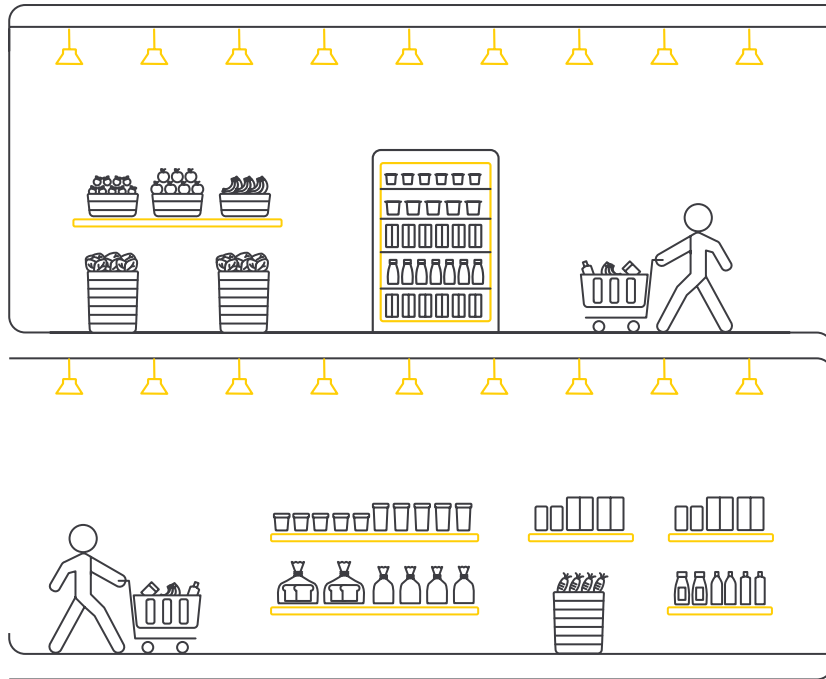
PDTS CFIAR Networked Touchscreen

The Philips Dynalite Touch Screen, used in the Store Kit – Touchscreen, allows the user to configure the system during installation and to reconfigure the system later if this is necessary using the Dynalite Store Control UI.

A DDNP1501 network power supply is required to provide power to the PDTS touchscreen and the communication bus.



03 Preparation and planning



DDBC1200 CFIAR P CE signal dimmer controller

The DDBC1200 controls the DALI dimmable LED lighting in the store via its 12 independent output channels.

Each channel of the DDBC1200 CFIAR DALI controller can control up to 80 luminaires, with a maximum of 300 luminaires for the whole controller. They must be powered by a separate power supply in the store which must always be set permanently ON. The channels of the DDBC1200 CFIAR do not power the luminaires.

Note

In case the system handles more than 300 luminaires, this can be made possible by adding one or more secondary signal dimmer controllers (DDBC1200 CFIAR S CE). Adding secondary signal dimmer controllers has no influence on the total number of DALI zones, it enables adding more luminaires per zone.

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- Sales floor luminaires
- Back-of-house luminaires
- Outdoor luminaires

Ch: 1 2 3 4 5 6 7 8 9 10 11 12



On the device, the channels are assigned to specific areas to which the DALI-luminaires in the store are connected:

- Channels 1 to 8: Sales floor
- Channels 9, 10, 12: Back-of-house
- Channel 11: Outdoor

! Important

The DDBC1200 CFIAR has a different 12nc compared to the device used in the Store Mini Kit and therefore can only be used in the Store Kit.

03 Preparation and planning

- Sales floor luminaires
- Back-of-house luminaires
- Outdoor luminaires

Ch: 1 2 3 4 5 6 7 8 9 10 11 12



DDRC1220FR CFIAR CE relay controller






The DDRC1220FR provides up to 12 independent output channels for controlling non-dimmable lighting (for example lighting in a display cabinet).

It's possible to add more than one DDRC1220-GL controller to the system. Make sure to order additional DDRC1220-GL CFIAR controllers separately.

On the device, use the following channels assignment for connecting the switchable luminaires in the store:

- Channel 1 to 8: Sales floor
- Channel 9, 10: Back-of-house
- Channel 11, 12: Outdoor

03 Preparation and planning

-  Sales floor and Back-of-house luminaires
-  Sales floor luminaires
-  Back-of-house luminaires
-  Outdoor luminaires
-  Panic and alarm

Ch:        



DDMIDC8 CFIAR dry contact input controller

The DDMIDC8 allows triggering of the lighting presets by external inputs such as a third-party buttons or key-switches. Provides integration with BMS and/or external alarm systems.

- Eight software selectable digital inputs, configured as dry contacts
- All inputs are optically isolated for high noise immunity
- All inputs have LED status indicators

On the device, use the following channels assignment for connecting the dry contact inputs:

- Channel 1, 2, 3: Sales floor and Back-of-house
- Channel 4: Sales floor
- Channel 5: Back-of-house
- Channel 6: Outdoor
- Channel 7, 8: Panic and alarm

03 Preparation and planning



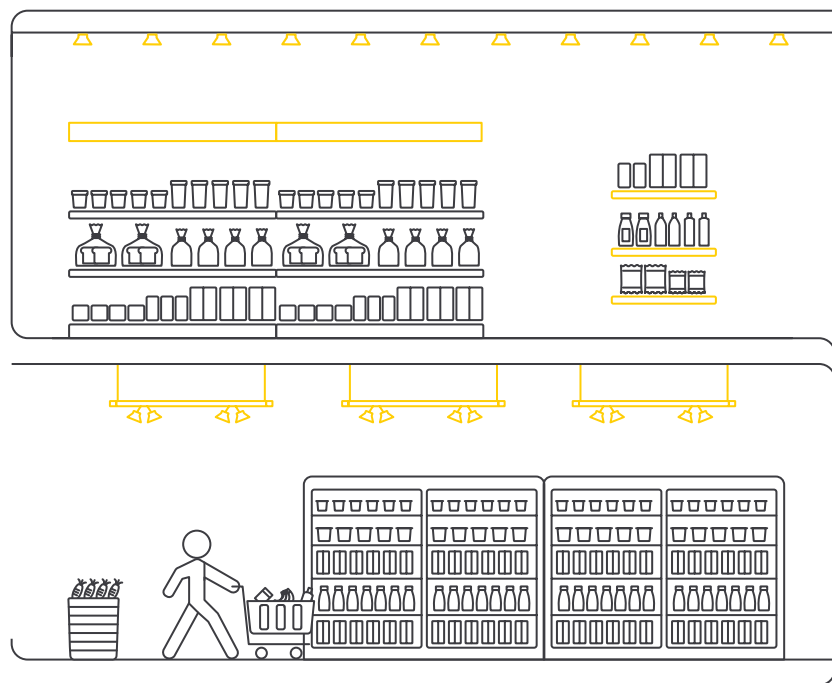
DUS360CR-DA CFIAR sensor

The optional DUS360CR-DA is intended for use in the Back-of-house only. It uses motion sensing to switch on luminaires automatically when members of staff enter the area.

The sensor is connected to the network in the same way as the other units.

It is possible to add up to seven sensors. When adding more sensors, make sure to install an additional Dynet power supply, for example the DDNP1501 network power supply.

03 Preparation and planning



Tablet and W-Fi enabled router

Note

The customer needs to supply these two devices.

Recommended minimum requirements for a tablet are:

	iOS	Android
Version	iPadOS 13 or newer	Android 7.0 or newer
Screen resolution	1536 x 2048	800 x 1280
Web browser	Recent version of Safari or Chrome	

Recommended minimum requirements for the router are:

- WPA2 security protocol
- DHCP and static IP assignment
- Minimum 2 physical LAN ports

03 Preparation and planning

3.2.3 Store Flex

During design and commissioning of a Store Flex system, pay attention to the following system characteristics:

1. The Store Flex system combines a modular Dynalite control topology with a user interface developed for a retail store. Currently, multiple types of control components are supported:
 - DALI individual addressable luminaire controllers
 - DALI broadcast controllers
 - Relay controllers
 - 0-10 V/1-10 V/DSI controllers
 - Dry contacts
 - Wired sensors and user interfaces
 - Phase cut dimmable controllers
 - Pulse Width Modulation (PWM) controllers
2. When implementing wireless control, the following components are supported:
 - Wireless Gateway
 - Interact Ready wireless luminaires
 - Wireless transceiver connected to a SR Bridge or DALI Extender

For tested and verified load controllers, see sections [3.4.1 Tested and verified load controllers and](#) [3.4.2 Tested and verified controllers for Wireless](#)

3. There are System Builder (SB) job file templates available for faster creation of a project specific job file. These templates include a basic configuration.

The following templates are available:

- 2 indoor areas, 1 outdoor area
- 1 indoor area, 1 outdoor area
- 3 indoor areas
- 2 indoor areas
- 1 indoor area

These job file templates are all available using a PDDEG-S as central store controller (preferred option), but also with a PDEG or PDTs as central store controller.

For more information about the job file templates, see section [3.4.4 System Builder job file templates](#).

⚠ Important

Only the job files for use with a PDDEG-S are suitable for application in projects using wireless.

📖 Note

Currently, sensing and data collection is not supported via wireless nodes like the SNS210 IA. It is possible to use Dynet or DALI sensors instead.

03 Preparation and planning

4. Pre-design of the project area configuration is crucial since the area allocation can only be achieved by separating the physical channels by means of wiring. The physical channels are mapped to the logical channels which can easily be renamed to the specific needs for these zones. For instance, Fresh food, Bakery etcetera. These names are shown in the UI.

Areas

Per retail format the areas are defined at a high level. Depending on the size of the format, it's possible to define multiple areas. A maximum of three areas can be created, for example:

- Sales Floor
- Back of house
- Outdoor

Zones and Channels

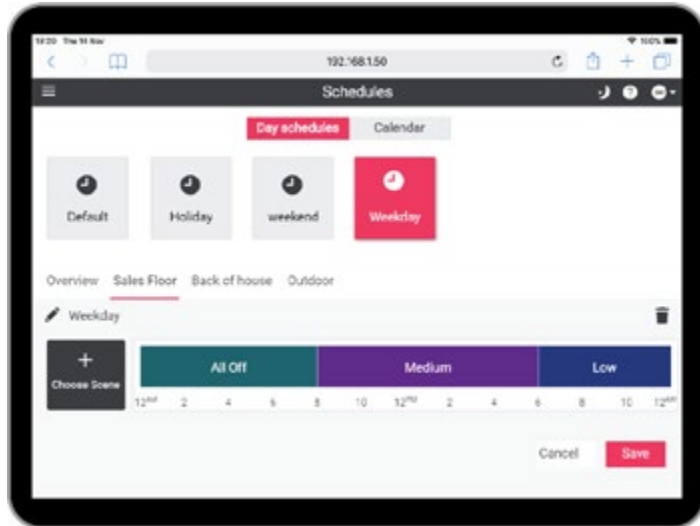
Per area you can identify up to 48 zones, for example on the Sales Floor:

- Bakery
- Meat
- Cash registers

Etcetera

Each zone is represented as a channel, which can be either dimmable or switchable. To make sure that the name of the zone is visible in the Store Control UI, each channel should be given the same name as the zone it corresponds with.

03 Preparation and planning



Scenes and Schedules

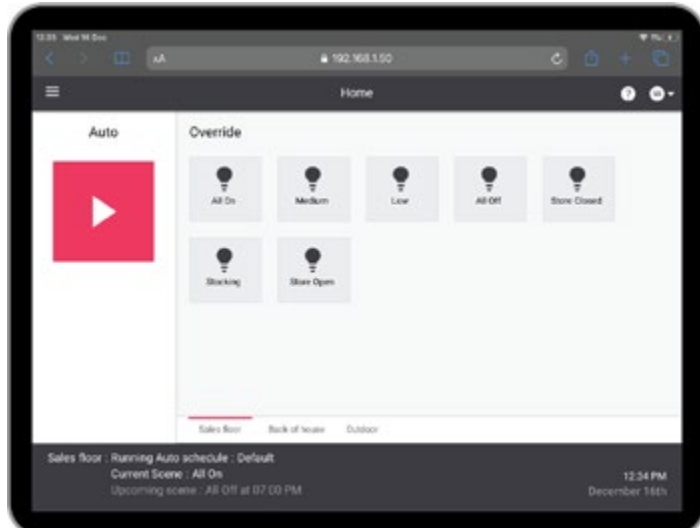
For each area you can create scenes:

- Indoor area: 32 scenes
- Outdoor area: 32 scenes (with day/night mode)

The system accommodates a maximum of 100 schedules of which up to five need to be reserved for standard configuration. The Ethernet Gateway takes care of the execution of the schedules.

The schedules need to be aligned with the needs of the customer and configured before handover of the system and can be edited afterwards using the Store Control UI.

03 Preparation and planning



3.2.4 Dynalite Store Control UI

Store Kit is delivered with the Dynalite Store Control UI pre-installed on either the Ethernet Gateway, which makes the UI accessible on a tablet or PC via the Wi-Fi router, or the PDTs touchscreen.

For Store Flex, a preconfigured Store Control UI package is readily available for download on the Partner Portal. Uploading of this package is done using System Builder.

The Store Control UI is a web-based interface that runs on a web browser installed on a device, independent if the device runs on Android, iOS or Windows, or on the dedicated PDTs touchscreen. The software recognizes the type of logical channel and adapts the user interface to it, showing a slider for dimmable channels and a switch button for a switchable channel.

03 Preparation and planning

3.3 Offsite preparation for Store Flex



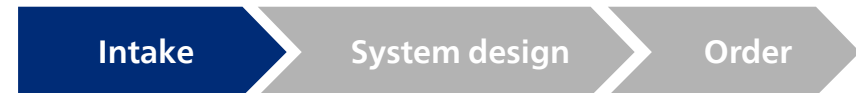
Trained experts carry out the off-site preparation that consists of the following steps:

- **Intake**
 - Complete project template and requirements document based on customer input and alignment
- **System design**
 - Lighting design: creation of the reflected ceiling plan
 - Controls design: creation of the customized project file
- **Ordering**
 - Order products (lighting and controls)

ⓘ Important

For projects that are configured with wireless devices, it's important that the prepared project file is saved in the cloud using a Dynalite account. Contact your local Signify representative for requesting the account.

3.3.1 Intake



During the intake, all customer information is captured in the Project Template (also known as Intake Form, see the [Store Flex Project Template](#)). Each section corresponds with a step in the offsite preparation of the project execution.

The information in the project template regarding the lighting control zones, lighting plan and other control options is used to prepare the digital twin of the lighting system upfront, simplifying the on-site commissioning effort so it can be done by your installer or a site engineer.

03 Preparation and planning

3.3.2 System design



Lighting design

The lighting designer uses the site layout/floor plan to create a lighting design. The specific requirements of the customer and the specifics of the site layout are considered when creating the lighting design, that results in the reflected ceiling plan and a luminaire count (lighting bill of materials).

Capturing the lighting design graphically in an (AutoCAD) drawing influences the speed and accuracy of the controls design.

Details of the lighting design can be provided in the project template.

Controls design

The controls designer combines the information provided in the project template and the reflected ceiling plan using the System Builder Design Mode (System Designer). This is a powerful tool that provides a quick and orderly process for designing a Dynalite lighting control system.

Note

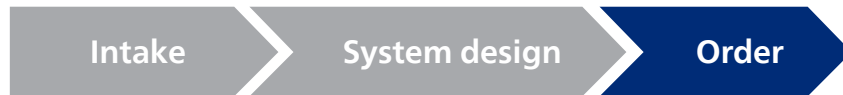
A technician license of System Builder is required before you can use System Designer. To request this license, in System Builder click **Help** and select **License**.

While using System Designer, it generates several output files:

- Bill of Materials (BoM)
- Project file
- Installation summary
- Wire diagram
- Load schedule report

03 Preparation and planning

3.3.3 Order



Both the lighting and controls designs require approval by the customer, after which the products will be ordered and delivered. When the site is ready for installation, the installer and/or the site engineer can start their activities.

3.3.4 Customer supplied components

ⓘ Important

For a Kit with Gateway as central store controller, the following items are not part of the kit delivery and need to be provided by the customer.

Tablet

Tablets add flexibility to the user for easy control and arrangement of project settings without depending on static/dedicated devices.

Recommended minimum requirements for a tablet are:

	iOS	Android
Version	iPadOS 13 or newer	Android 7.0 or newer
Screen resolution	1536 x 2048	800 x 1280
Web browser	Recent version of Safari or Chrome	

Wireless access point

The Wireless Access Point (AP) establishes the communication between the mobile device (for example the tablet) and the Store Control UI on the Ethernet Gateway.

For this purpose, a consumer router can be used. The minimal specifications are:

- Standards IEEE 802.3, IEEE 802.11g, IEEE 802.11b
- Internet port: 10/100 RJ-45 Port
- LAN: 10/100 RJ-45 Switched (most routers have four)
- Firewall
- WEP/Wireless security Wi-Fi Protected Access™2 (WPA2)

03 Preparation and planning

3.4 System design for Store Flex

3.4.1 Tested and verified controllers

The specifications of each controller type limit the number of luminaires that can be connected. Refer to the product data sheets on www.dynalite.com for detailed information.

DDBC120-DALI

- Single DALI control output, supporting one full DALI universe of 64 addresses.
- One feed-through relay rated at 20 A (500 A surge) for switching power to the drivers.

DDBC320-DALI

- Three DALI outputs, allowing to control up to 192 DALI devices.
- Three feed-through switched circuits rated at 20 A for DALI driver mains supply.

DDBC1200

- 12 control outputs, selectable to DALI, 0-10 V/1-10 V or DSI output capacity.
In DALI Broadcast mode: 80 DALI drivers per channel, 300 total.

DDRC420FR

- Four switched feed-through outputs at 20 A (inductive), maximum device load 80 A

DDRC1220FR-GL

- 12 switched feed-through outputs at 20 A (inductive), maximum device load 180 A

DDMIDC8

- Eight digital inputs, which can be individually configured as dry contact or 0-24 V AC/DC input
- Four 0-5/0-10 V analogue inputs

DDNG485

- Routes Dynet to third-party systems
- In DMX512 mode, capable of transmitting and receiving 512 DMX channels

03 Preparation and planning

3.4.2 Tested and verified controllers for Wireless

PDZG-E Wireless Gateway

- Seamlessly integrates wireless lighting control using Zigbee PRO wireless communication
- Ensures stable and robust lighting control in busy environments by wireless mesh networking
- Connects to the wired control topology ensuring full compatibility

SNS441 IA wireless transceiver

- Operates with the established Xitanium SR driver standard
- Enables Wireless Group Control when connected to a Xitanium SR Bridge or a DALI Extender

Xitanium SR Bridge

- Controls up to 20 DALI drivers
- Capable of connecting multiple drivers with a load of up to 400 VA
- Switches the connected drivers fully off, no standby power
- Programmable via the SR interface or SimpleSet.

DALI Extender

- Controls up to 20 DALI drivers
- Supports emergency luminaires

Note

Currently, emergency lighting is not supported in the Store Flex architecture.

03 Preparation and planning

3.4.3 Commonly used interfaces

Below is a short, not extensive, list of interfaces that are commonly used in Store Flex projects.

- **PAXBP, PATP, PADP**
Antumbra Button, Touch and Display panels
- **PDRx**
Revolution Button panels
- **PDTS**
Touchscreen
- **DUS360**
360° sensor (recessed/surface mounted)

3.4.4 Quantity of network devices

Theoretically, the RS-485 standard allows to connect an unlimited number of devices to a data cable. Practically, it's recommended to limit the number of devices per gateway (spur) to 100.

In case the system requires a higher number of devices on the gateway, this is possible. For more information, see the generic System Builder documentation.

3.4.5 Power supply

Because several devices are powered over the network, the quantity of consuming devices such as panels and sensors need to be considered. Typically, most panels and sensors will run between 10 to 15 Vdc at 25 mA.

In general, most Philips Dynalite load controllers generate approximately 100 mA to the Dynet network and will drive 4 or 5 consuming devices without the need for a secondary power supply. Refer to the product data sheets for calculation the power requirement for the Dynet communication bus.

In case of a large number of consuming devices, a secondary power supply (DDNP1501) can be added to boost the overall network voltage. The DDNP1501 can supply 15 Vdc at 1.5 A.

Note

The maximum current a single spur can draw is limited to 2 A.

03 Preparation and planning

3.4.6 System Builder job file templates

The available System Builder job file templates facilitate and significantly speed up commissioning.

There is a template available for each of the five corresponding scenarios, provided the system limitation of maximum three areas. These areas can be either all indoor, or a mix of indoor and outdoor areas.

Select the preferred template that best suits the project configuration.

System Builder job file template name	Description
Store Flex_PDDEG-S_Template1_2IA_1OA	2 Indoor areas + 1 Outdoor area
Store Flex_PDDEG-S_Template1_1IA_1OA	1 Indoor area + 1 Outdoor area
Store Flex_PDDEG-S_Template1_3IA	3 Indoor areas
Store Flex_PDDEG-S_Template1_2IA	2 Indoor areas
Store Flex_PDDEG-S_Template1_1IA	1 Indoor area

- Each job file template includes the specified store controller with 100 schedules available for configuration.
- In templates including an outdoor area, the first two schedules are reserved for sunset and sunrise.
- In all templates, each area requires a reserved schedule as system default: three areas equal three reserved schedules (named **Default #**)
- All schedule named **New Schedule #** give the end-user the possibility to create new schedules directly in the Store Control UI



Note

The table shows the template files available with the PDDEG-S. Identical templates are available with the PDEG or PDTS as store controller. Contact the Signify System Experts for more information.

03 Preparation and planning

3.5 System wiring

3.5.1 Dynet cables

Make sure to use the following cables:

- Dynet-STP-CABLE-LSZH (12nc: 913703898809)
- Dynet-SFLAT6-CABLE (12nc: 913703095009)

Or equivalent:

- Screened, stranded RS-485 (STP) data cable with three twisted pairs
- characteristic impedance the twisted pair between 100 to 120 Ω

Dynet STP-CABLE-LSZH cable characteristics

- Maximum 100 devices per cable (sensors, controllers, user panels)
- Maximum cable length is 1000 m
- Maximum cable length between the devices is 100 m

Dynet-SFLAT6-CABLE cable characteristics

- Maximum 10 devices per cable (sensors, controllers, user panels)
- Maximum cable length is 100 m
- Maximum cable length between the devices is 10 m

3.5.2 DALI cables

DALI cable cross sections

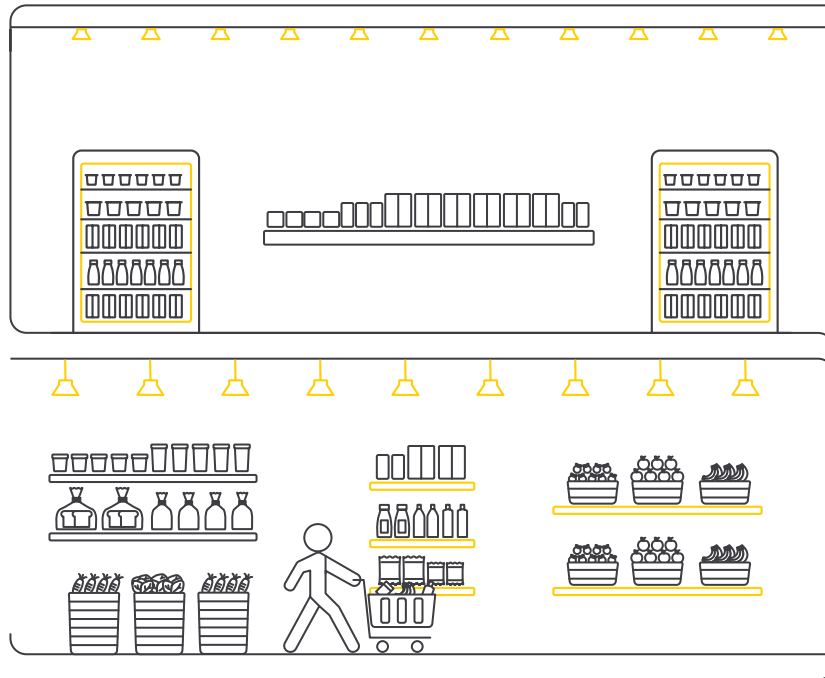
The maximum voltage drop on the DALI bus is 2 V.

Therefore, use cables with the specifications according to the table. DALI cables of over 300 m (1000 ft) are not allowed.

DALI conductor diameter

Length		Cross section	
≤ 100 m	≤ 330 ft	0.5 mm ²	AWG 20
100 to 150 m	330 - 500 ft	0.75 mm ²	AWG 18
150 to 300 m	500 - 1000 ft	1.5 mm ²	AWG 16

03 Preparation and planning

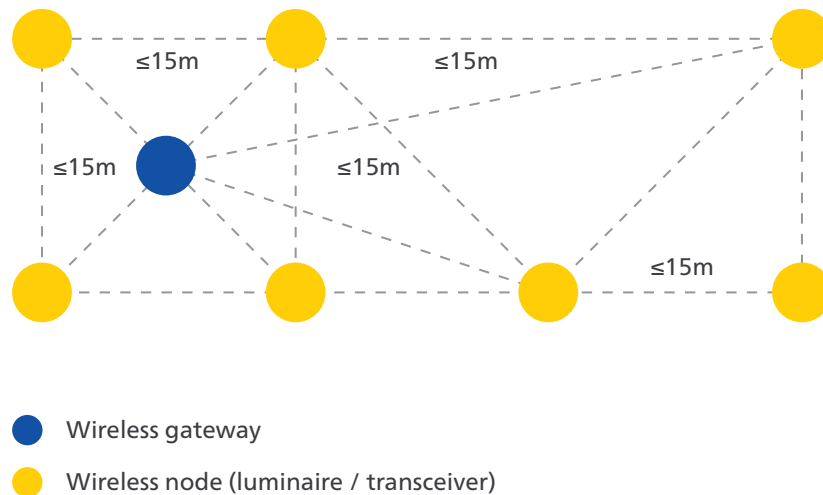


3.5.3 Built-in dry contacts

The maximum distance to the input source depends on the type of connection and the device used to create the connection. See the specification sheets of the specific components for more details regarding maximum cable lengths etcetera.

03 Preparation and planning

Mesh network



3.6 Wireless network

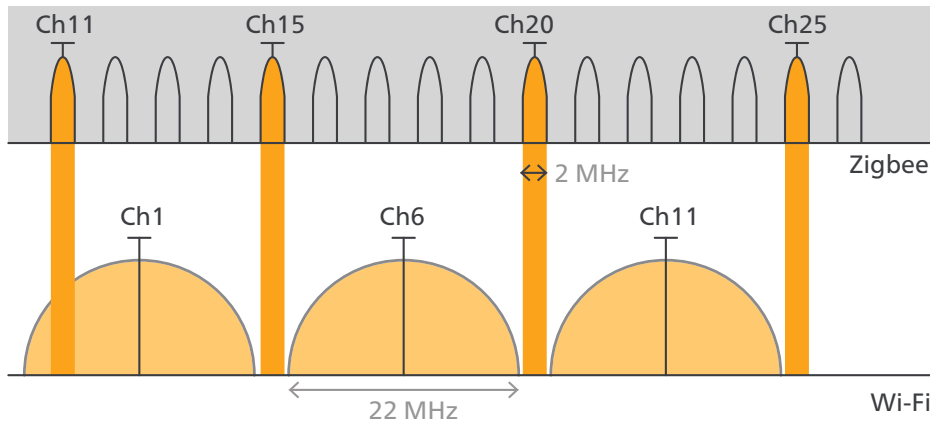
The wireless Zigbee network operates on the 2.4 GHz band, also used by for example Wi-Fi and Bluetooth. Although Wi-Fi and Zigbee can coexist, it is best to logically separate the two to avoid interference that occurs at high traffic load.

3.6.1 Wireless connection limits

The Wireless Gateways must be connected by means of Ethernet cabling to the central router/switch. The standard Ethernet connection length limit is 100 meters (328 feet).

The Wireless Gateway transmits wireless signals to the wireless nodes (luminaire or transceiver). The maximum distance from the Wireless Gateway to a node is 15 meters (49 feet), and the intermediate distance between the nodes is also maximum 15 meters (49 feet), offering a large area covering. Preferably at least two wireless nodes must be within each other's range to create a mesh network.

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3.6.2 Packages

Both Wi-Fi and Zigbee transmit data in small packages, which leaves room for other types of wireless data transmission. The packages sent in a Zigbee network are very small and will not compromise the throughput of a Wi-Fi system.

As Wi-Fi channels can be used by several devices at (virtually) the same time, any issues with the connection and throughput of a Wi-Fi system are caused by the Wi-Fi network itself, for example when it is used to the absolute maximum.

3.6.3 Channel selection

As Wi-Fi channels overlap each other, selecting non-overlapping channels is required in a well-managed Wi-Fi system to ensure the best possible communication. Using channels 1, 6 and 11 create a network with full coverage without access points interfering with each other. Using these channels also leaves gaps in the frequency band, that leaves room for the Zigbee channels 11, 15, 20 and 25, that are positioned in the gaps of the Wi-Fi band.

03 Preparation and planning

Device/Type	Max. permitted power	
	Transmitting power	Power ratio
Microwave	1000 W	60 dBm
Wi-Fi (at 2.4 GHz)	100 mW	20 dBm
Bluetooth	100 mW	20 dBm
Zigbee	2.5 mW	4 dBm

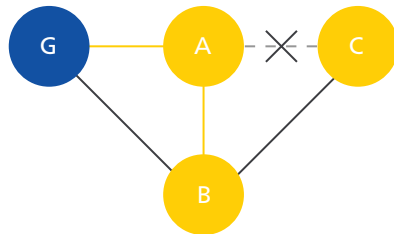
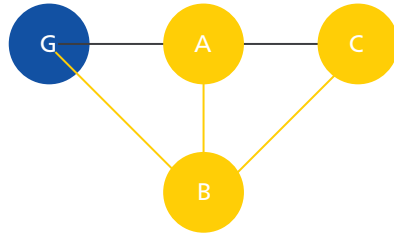
3.6.4 Interference

Devices using Ultra High Frequency radio signals are sensitive to interference. However, systems using frequencies in the 2.4 GHz band are designed to coexist. Also, for the wireless Zigbee network, the transmitting powers are significantly lower when compared to Wi-Fi, mobile telephony etcetera. The table shows the relation between the maximum permitted powers for several types of radio signals possibly causing interference.

3.6.5 Operational distances of Zigbee devices

Wireless Zigbee devices (for example gateway, luminaires, transceivers) are guaranteed to work up to a distance of 15 m (49 ft) between the devices. Larger distances often work depending on the environment but are not guaranteed.

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- Wireless gateway
- Wireless node (luminaire / transceiver)

3.6.6 Routing between wireless devices

Note

In this example, each bullet can be identified as a wireless device (luminaire or node).

The devices in a wireless system are guaranteed to work if the distance between the wireless gateway and at least one of the nodes in the network is less than or equal to 15 m (49 ft). It is preferred to have at least two nodes within the range of each node or gateway, as the wireless Zigbee network uses mesh routing, as shown.

The connection from node C to the gateway G can go via node A. If for some reason the connection between the nodes C and A is blocked, the network automatically routes the traffic through node B.

This requires the nodes to be installed within the reach of at least two other nodes within 15 m (49 ft).

04 Installation and commissioning



4.1 Onsite installation and commissioning for Store Flex

04 Installation and commissioning

4.1 Onsite installation & commissioning for Store Flex



The installer and commissioning engineer take care of the on-site installation that consists of the following steps:

- **Installation**
 - All lights and controls installed and functional
- **Commissioning**
 - Downloading the latest device firmware versions from www.dynalite.com;
 - Download the UI-files from the Partner Portal
- **Validation**
 - End-to-end validation of controls and lights
 - Final project file
- **Site delivery**
 - Ready to use
 - Handover of the site to the customer

4.1.1 Installation

Installation activities consist of the following:



- Installation and wiring of the luminaires, including power and DALI, following the local guidelines and directives.
- Installation and wiring of the Dynalite network controllers, including sensors and user interfaces, according to the documentation produced during the offsite preparation.
- Installation and setup of the Wireless Access Point, if applicable.

04 Installation and commissioning

4.1.2 Commissioning

For wired, the commissioning activities consist of the



following:

- Using System Builder to deploy the prepared project file into the Dynet network.
- Upgrade the firmware of the Gateway
- Commissioning of the wired controllers, assigning the luminaires to the correct areas, physical channels and logical channels.

For wireless, additional commissioning consists of the following:

- Using the Enabler app on a mobile device to discover wireless nodes.
- With the Enabler app, assign the wireless nodes to the correct Wireless Gateway and associated areas or logical channels. Hybrid areas consisting of wired and wireless devices are possible.

ⓘ Important

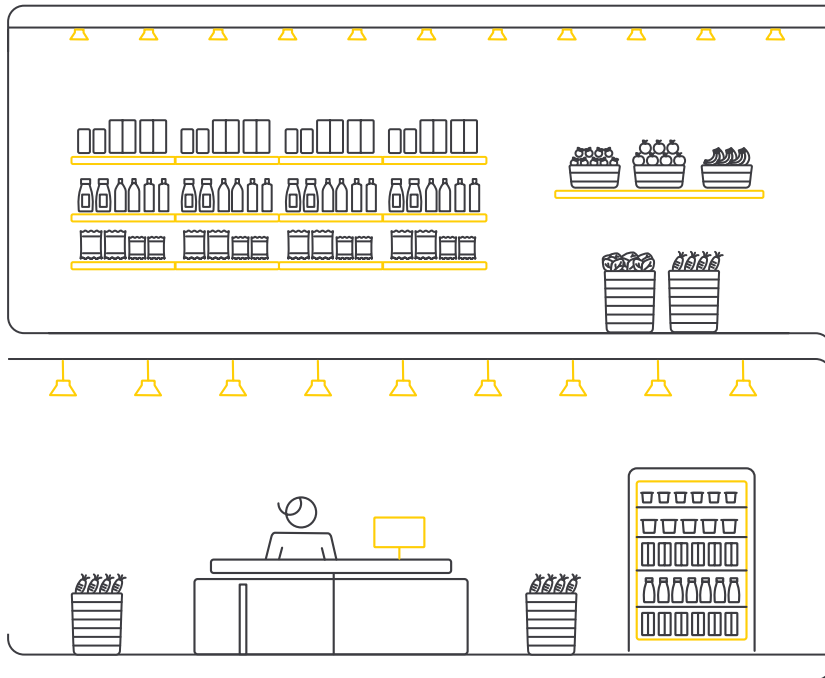
A Dynalite account is required for usage of the Enabler app. Contact your local Signify representative for requesting the account.

4.1.3 Validation Connection testing



The in-store controllers have manual override buttons, which will help the site engineer to confirm the correct physical power connection. Control protocol tests can only be performed with System Builder as a tool, or on the mobile device, by moving the sliders in the Scenes page for each channel. Refer to the respective product installation guides for correct test procedures.

04 Installation and commissioning



4.1.4 Site delivery

After fully commissioning the Store Flex system, the site



engineer delivers the project to the market organization. At this stage, the market organizes a formal handshake with the customer, which can be held on-site or remotely. For a successful handover, prepare the following:

- Provide a copy of the latest User Guide.
- Using the user guide, train the customer on the usage of the system.

05 Use of the interfaces



5.1 Store Mini Kit

5.2 Dynalite Store Control UI

05 Use of the interfaces

5.1 Store Mini Kit

The UI of the Store Mini Kit is very simple to operate by simple pushing one of the buttons that correspond with a scene.

Via the configuration menu, accessible with a PIN-code, the scene settings can be adjusted.

Note

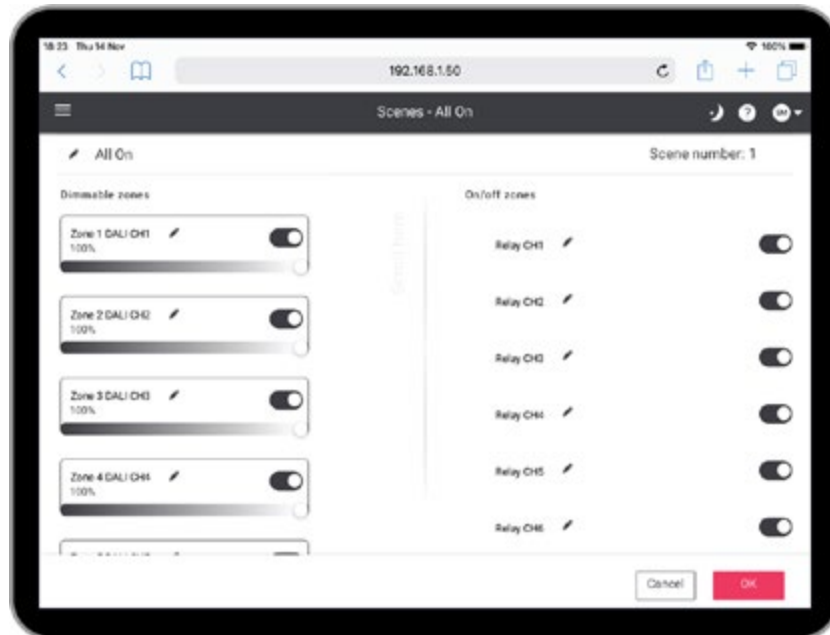
See the Quick Start Guide of the Store Mini Kit for a complete description of the system, including installation, operation, and configuration.



Note

When powered, the trade scene is selected automatically.

05 Use of the interfaces



5.2 Dynalite Store Control UI

The user interface is easy accessible via a web browser or on the PDTs touchscreen.

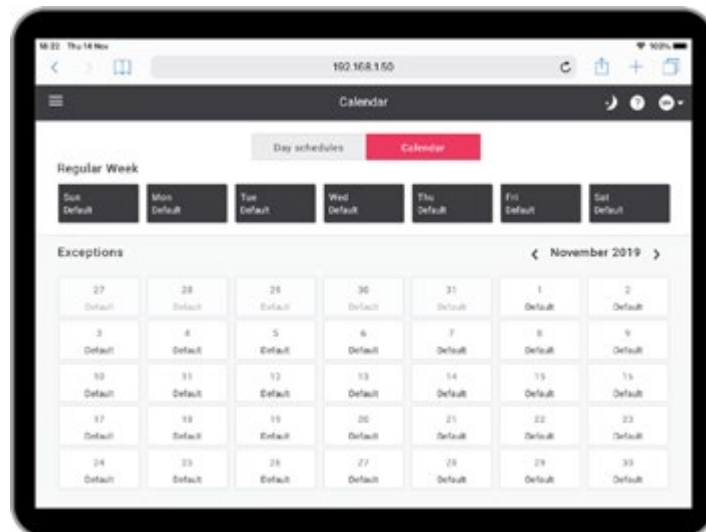
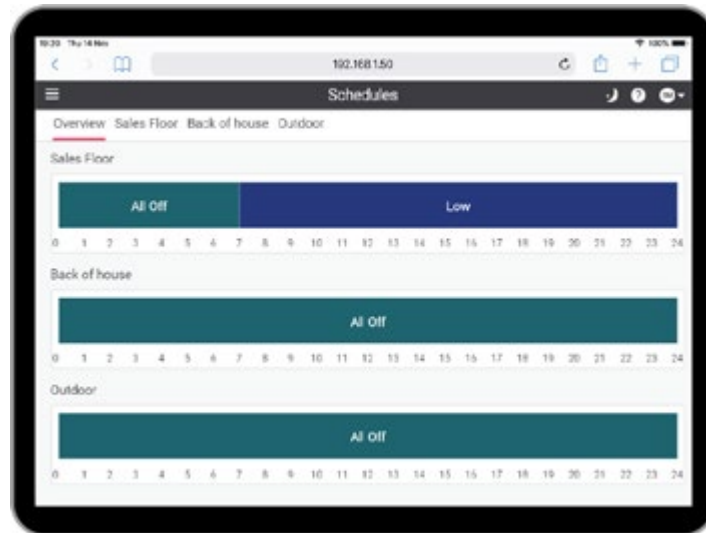
5.2.1 Scenes

A scene represents the lighting level of dimmable and switchable areas. Depending on the requirements on the site, the dimmable areas can be set up with the required light levels of the areas and switched On/Off by the relay channels.

Note

See the User Guide of the Store Control UI for a complete description of the user interface, including operation and configuration.

05 Use of the interfaces



5.2.2 Schedules

The schedule is the timetable for the site, representing the work hours of the personnel in the store; it shows how lighting scenes will be processed over a period of 7 days.

The calendar shows an overview on which day a schedule runs.

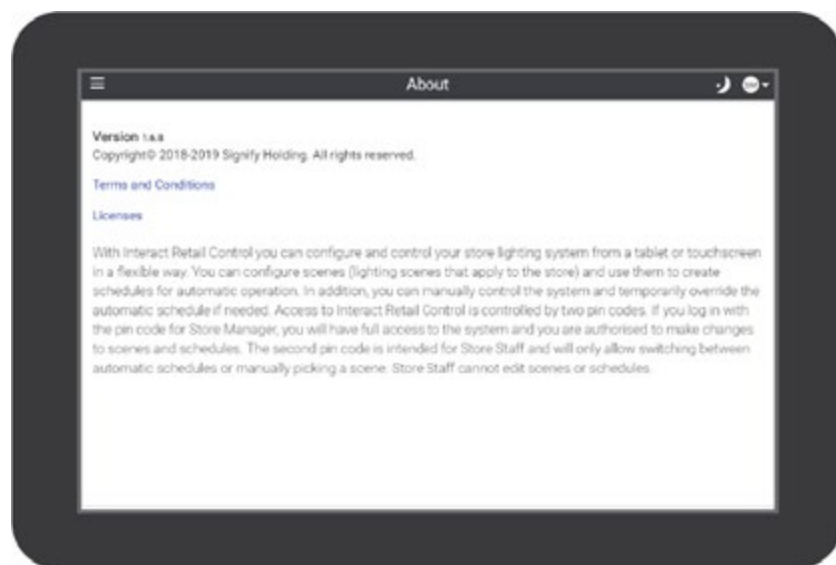
06 Product details information



6.1 Software

6.2 Terms and conditions

06 Product details information



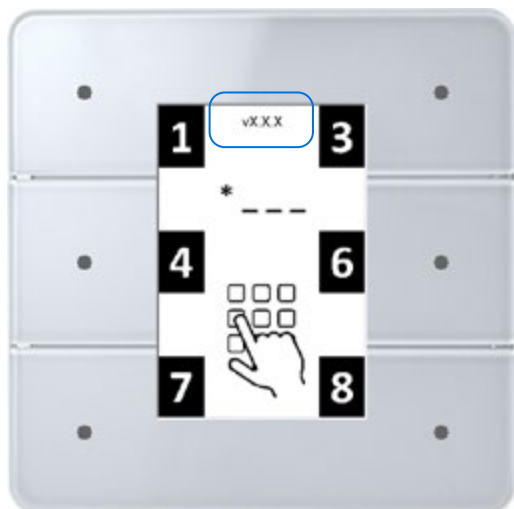
The Multisite system comprises different components of Dynalite. Each individual device has its own datasheet and installation instructions. Please refer to www.dynalite.com or www.partner.portal.signify.com. Access to the Dynalite Distributor Support and Signify Partner Portal requires a username and password.

6.1 Software

6.1.1 Store Control UI

The **About** menu shows version information, links to the **Terms and Conditions** and **Licenses**, as well as a detailed description of the software.

06 Product details information



6.1.2 Store Mini Kit

The system version number of the Store Mini Kit shows on the login page of the user interface, used when editing scenes and zones. See the Quick Start Guide of the Store Mini Kit for more information.

6.2 Terms and conditions

Please refer to www.signify.com/global/terms-of-use and www.signify.com/global/privacy/legal-information/privacy-notice for the terms and conditions on using software and packages provided by Signify.

Appendix A - System components



- A1 Lighting network components
- A2 Controllers
- A3 Optional components

Appendix A - System components



A1 Lighting network components

PDDEG-S or PDEG Ethernet Gateway

The Philips Dynalite PDDEG-S provides gateway services between Ethernet and Dynet devices, enabling secure online access to the Philips lighting control system.

The gateway enables lighting control via the Store Control UI, access to the timeclock and schedule editor functions. It provides bridging functionality between the Ethernet backbone and the Dynet fieldbus devices.

⚠ Important

- The PDEG Ethernet Gateway is not compatible when planning to upgrade to Store Flex Architecture - Multisite.
- Usage of BACnet also requires a PDDEG-S as central store controller.

📖 Note

The PDEG Ethernet Gateway requires power from the Dynet network or a DDNP1501 power supply.

Appendix A - System components

PDZG-E Wireless Gateway

The Philips Dynalite ZigBee Gateway Ethernet is a wireless communication hub that connects wireless nodes (luminaires or wireless group controllers) to the lighting control system. The PDZG-E translates between Ethernet and Zigbee.



Appendix A - System components



PDTS Touchscreen

The PDTS offers intelligent control and direct access to scheduling, scene editing and diagnostics.

Note

The PDTS Touchscreen requires power from a DDNP1501 power supply.

Appendix A - System components



A2 Controllers

DDBC120-DALI MultiMaster DALI Driver controller

The Philips Dynalite DDBC120-DALI delivers cost-effective control of DALI drivers through provision of a full universe of 64 DALI drivers. The device communicates seamlessly with Philips Dynalite DALI sensors and user interfaces.



DDBC320-DALI DALI-2 Driver Controller

The Philips Dynalite DDBC320-D features three DALI outputs, allowing control of up to 192 DALI devices. It also features 3 x 20 A feed-through switched circuits for DALI driver mains supply.

Appendix A - System components



DDBC1200 Signal dimmer controller

The Philips Dynalite DDBC1200 features 12 independent output channels, each selectable to DALI Broadcast, 0-10 V, or DSI control.



DDRC420FR Relay controller

The Philips Dynalite DDRC420FR provides control of any type of switched load. This four-channel device supports all types of switched loads up to 20 A inductive.

Appendix A - System components



DDRC1220FR-GL Relay controller

The Philips Dynalite DDRC1220FR-GL provides control of any type of switched load. All types of switched loads up to 20 A inductive are supported. The maximum load may be limited by 500 A inrush rating.



DDMIDC8 Dry contact interface

Dry contact connections allow installation in electrical wall boxes for easy integration with third-party user interfaces. With this option it is possible to integrate security systems with the lighting system, by receiving input from the security system and run a special task according to the requirements. Multiple DDMIDC8 devices can be used in the system to add more dry-contact inputs required in a project.

Appendix A - System components



DDNG485 RS-485/DMX512 Gateway

The Philips Dynalite DDNG485 is a flexible network communications bridge designed for RS-485 networks. The two opto-isolated RS-485 ports enable the DDNG485 to implement a trunk and spur topology on large project sites, with the bridge providing a high-speed backbone opto-coupled to many lower speed spurs.

The device also supports DMX for seamless integration of RGB lighting into the lighting control system.



SNS441 IA Transceiver

The SNS441 IA transceiver is the ideal solution to wirelessly connect luminaires connected to a DALI Extender or Xitanium SR Bridge to the Zigbee network. It uses a simple two-wire connection between transceiver and the SR device (SR driver or SR bridge), thus eliminating the need for multiple components and auxiliary devices. The result is a cost effective and easy design-in solution ideal for energy-savings.

Appendix A - System components



Xitanium SR Bridge

The Xitanium SR Bridge is used to control multiple luminaires with one SR sensor or to make existing luminaires sensor ready. The Bridge features all the elements of the SR interface. The SR sensor is connected to the Bridge via the SR interface while a group of luminaires can be controlled both via the Bridge DALI interface and the mains relay integrated in the Bridge.

Appendix A - System components



DALI Extender

The DALI Extender extends the SR bus to the DALI bus and enables multiple applications requiring connecting SR devices to DALI drivers or DALI emergency drivers. The DALI Extender provides supply to the SR bus and the DALI bus.

This device enables longer cost-effective trunking lines with a lower number of sensors, and remote testing of emergency luminaires.

The DALI Extender can be installed independently or be built-in to luminaire.

Note

Currently, emergency lighting is not supported.

Appendix A - System components



A3 Optional components

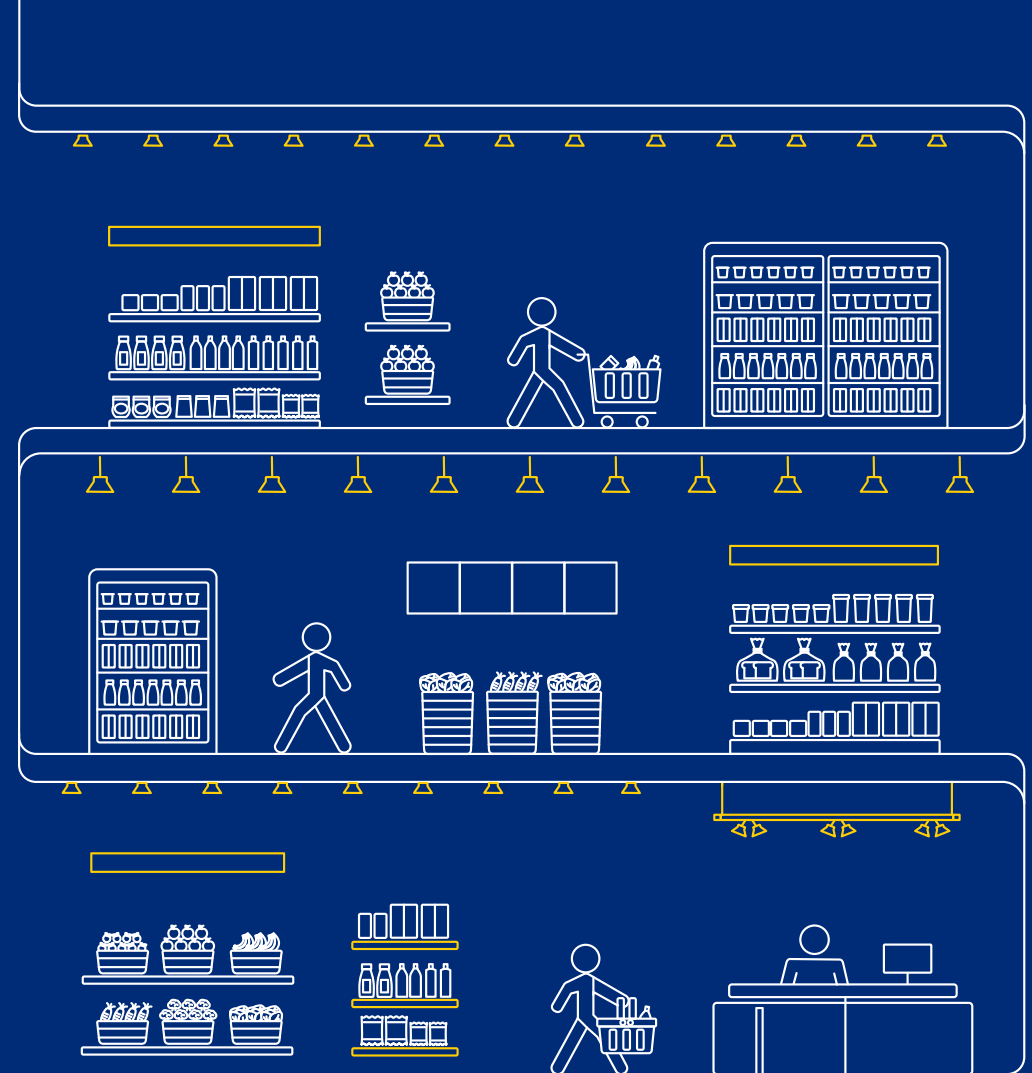
DUS360CR Multifunction sensor

The Philips Dynalite DUS360CR is a recess mountable 360 degrees multifunction sensor that combines motion detection (PIR), infrared remote-control reception (IR) and ambient light level detection (PE) into one device in multiple applications.



DDNP1501 Network Power Supply

The Philips Dynalite DDNP1501 is a 15 V DC 1.5 A regulated power supply designed to supplement the Dynet network DC supply.



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R03, May 2024

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