

Corridor

Lighting Control Solutions



CP Electronics

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Use Corridor Lighting Control to save energy

Lighting corridors can be a costly exercise in larger buildings. People need to move around a building safely and effectively, but on an often irregular and short term basis.

Effective lighting control can help ensure energy savings are achieved as far as possible, while still providing safe function and performance of these essential yet momentary spaces.

CP Electronics has a market leading range of dedicated corridor lighting control solutions to suit all project demands from physical space constraints to installation deadlines and budgets.

The role of corridors

In Approved Document B, Fire Safety, a corridor is officially classified as:

“A space (including a protected stairway) mainly used as a means of access between a room and an exit from the building or compartment.”

The main functions of corridors are to provide the efficient movement of occupants within a building. They also play a part in partitioning different spaces such as offices and breakout areas and central lobbies or waiting areas.

More importantly, corridors provide the safe evacuation of a building’s occupants in the event of a fire or other disruptions in its mains supply.



Lighting control in corridors

Due to their purpose, lighting corridors can be costly, as they typically do not have long term tasks occurring. Often they are unoccupied, while the adjoining rooms are functioning.

Although corridors are limited by length*, by their nature corridors still pose unique challenges to lighting control both physically (detecting movement from relatively further away than office spaces) or operationally (being 'linked' to adjoining rooms that share the corridor).

Other corridor lighting control tasks include emergency lighting testing and security walkabouts, which have different demands. Users of corridors may be walking, sitting (or waiting) and even lying horizontally (hospital portage).

It is not uncommon for corridors to be designed as 'glazed walkways' where daylight is a large contributing factor towards illumination.

Other adjoining spaces such as stairwells require extra attention as the quality and safety of lighting is important for those using them.

* (Table 2 Limitations on travel distance Approved Document B1 volume 2 2010 HMG)

Contents

Standalone & Systems Compared	4
Jargon Buster	6
Standalone Presence Detectors	7
Vitesse Modular Connection System	10
An-10 Wireless Lighting Control System	12
Vitesse Plus Lighting Control System	14
RAPID Lighting Control System	16
Technology Guide	18

Lighting Control - Corridor solutions

There are two main types of corridor - dedicated or notional, and lighting control methods are tailored to suit.

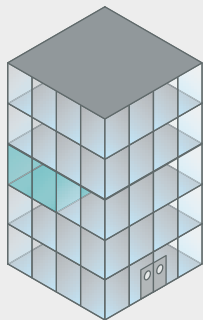
Dedicated corridors are distinct or walled, and are normally treated with a standalone strategy (microwave detectors).

Notional corridors apply to larger, open spaces and are likely to be tied into a centralised lighting control strategy, using mainly lighting control modules (LCMs).

Corridors or walkways with contributing light such as indirect exterior reflections like walls etc., should benefit from a 'maintained' level of illumination. By balancing natural and artificial light with dimming detectors further increases in energy savings can be achieved.

Corridor Solutions - From single spaces to large open plan offices, the following lighting control devices and systems can be tailored to suit specific requirements.

Room by room solution

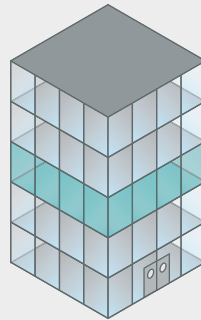


Standalone Presence Detectors

Standalone presence detectors provide flexibility in controlling lighting in circulation areas. Presence detectors should ideally be placed to cover all entry points, and respond to traffic behaviour.

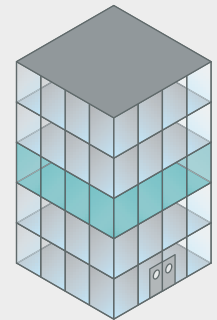
The control strategy can include a maintained level of lighting with lux level sensing.

Room by room / Floor by floor solutions



Vitesse Modular

Vitesse modular is a lighting connection system which has the flexibility of a standalone strategy but introduces more distributed control, with a pluggable and modular wiring format. 2-way to 16-way modules increase customisation resulting in low wastage lighting control.

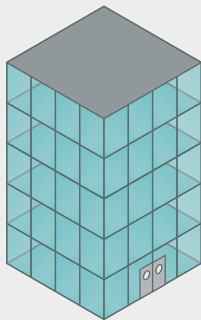


Vitesse Plus

Vitesse Plus takes floor by floor solutions to the next level. As well as drawing on the benefits of intelligent standalone detectors and modular wiring, it allows pre-set configurations, and step down illuminance, both vital to effective corridor lighting control. Each unit can drive 4 presence detectors and also communicate with local LCMs via RJ45 patch leads.

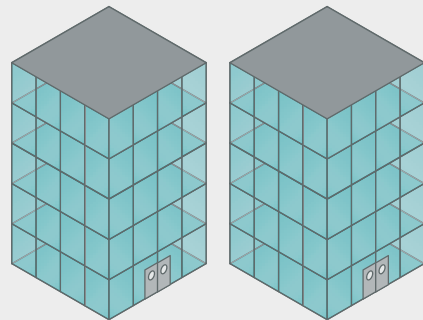


Building wide systems



An-10

As a fully functional wireless system, An-10 meets the demands of challenging building structures and prohibitive fabrics (e.g. asbestos) which restrict additional control wiring. With reliable communication meshes.



RAPID

The apex of lighting control solutions, RAPID brings together all the features of fully addressable, networked control. With presence or absence functionality, graduated dimming and maintained illuminance as before.

Jargon Buster

BIM (Building Information Modelling)

BIM describes the process of designing a building collaboratively using one digital system rather than as separate sets of drawings.

BMS (Building Management System)

A system that controls and monitors building's mechanical and electrical equipment.

Corridor hold

In a building, when lights are on in a room, the corridors lights are held on to allow for safe exit or movement around the building. Feature available on Vitesse Plus, An-10 and RAPID.

Daylight harvesting

Lights are dimmed up or down in respond to ambient levels of daylight to maintain a set light level as specified by the designer to meet the relevant standards required. Daylight harvesting is also known as Maintained illuminance and Daylight monitoring.

Emergency monitoring

Emergency lamps and ballasts are tested every few minutes to ensure presence, communications and detection of lamp failure.

Flexible test scheduling feature available on RAPID via graphical interface.

Energy measurement

Our patented Energy Measurement Technology provides actual energy usage data for all luminaires connected to the system. Energy Measurement allows for comprehensive metering of building wide lighting energy costs. Using a web based reporting suite reportable information is accessible via the front end PC or remotely. Feature available on RAPID.

Graduated dimming

The lighting within a space dims progressively from the source of natural illuminance in response to changes in natural light levels. Feature available on Vitesse Plus and RAPID.

LUX level switching

LUX level sensing detectors only turn lights on when natural light falls below a pre-set level. Also known as switching with LUX level sensing.

Maintained illuminance

See Daylight harvesting.

Microwave presence detectors

Microwave detectors emit high-frequency electro-magnetic waves any change in the receiving echo triggers the detector.

Notional corridors

Corridors of light, keeping working staff safe and secure whilst providing significant energy savings compared to illuminating an entire large open plan office for example. Feature available on Vitesse Plus and RAPID.

PIR presence detectors

PIR presence detectors work by detecting the movement of body heat. The 'switching' occurs due to an infrared signature being registered as differing from one point to another.

Remote monitoring

Monitoring systems from a remote device, not in the building. Feature available on RAPID.

Scene setting

Scene selection allows the recall of pre-programmed lighting levels to create different moods or to suit different uses within an environment. Feature available on Vitesse Plus, An-10 and RAPID.

SELV switching

Safety extra low voltage. A low voltage current runs between a switch and luminaire / system. This reduces the risk of shocks.

Step down illuminance

Luminaires are switched down to a lower illuminance when the room isn't occupied.

Switching or dimming

The detector or system has the ability to switch or dim the luminaires. Switching detectors simply presents lighting in an 'off' state or an 'on' state. Dimming differs by changing the light output of a specific luminaire or array of luminaires.

Switch detection time

If a switch is activated and no movement is detected the lights will switch off after a pre-set time, minimising unnecessary lit space.

Time delay function

The period of time set on a sensor that holds lights on after the last movement is detected.

Walk towards / walk across

The difference in detection range when walking towards or across the sensing area (sectors) of a PIR detector. See page 19.

Visit our Knowledge Hub for more technology information: cpelectronics.co.uk/knowledge-hub



Standalone Presence Detectors

Our wide range of standalone PIR detectors and microwave presence detectors are designed to reduce the amount of time lighting is left on unnecessarily, for example if an area is unoccupied or if there is sufficient natural light.

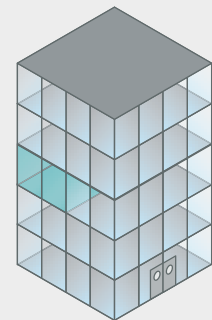
A presence detector monitors the detection zone for occupancy; if a person is sensed then the detector will automatically turn the lighting on. When the area is vacated, the lighting will turn off after a preset time delay. Most of our PIR and microwave detectors have a built in light level (LUX) sensor which will keep the lighting off if there is enough natural light available.

Controlling lighting with a presence detector can save up to 60% of lighting energy costs dependent on occupancy behaviour in the corridor, the amount of light available and types of lamps used. Our PIR and microwave presence detectors can also be used to control heating and ventilation.

Standalone detector suitability

Standalone detectors are best suited to controlling lighting in a single room or area. For example, an office or simple corridor.

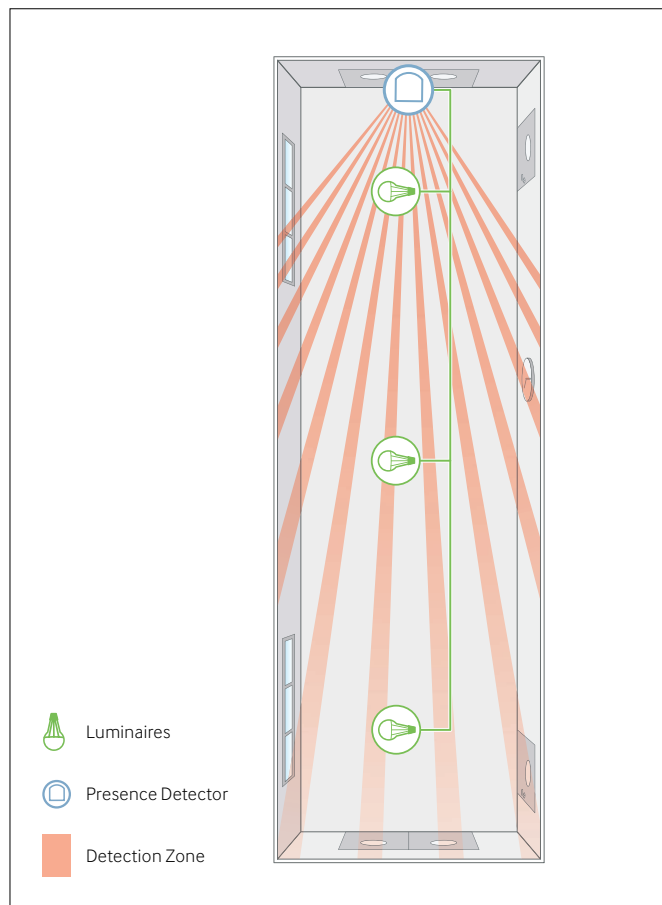
In a larger room or longer corridor multiple detectors can be employed to ensure that the entire area is covered.



Key Features

- Room by room lighting control
- Presence or absence detection
- LUX level sensing
- Switching or dimming
- Single circuit control.

EBDRC | Adjustable head, programmable, long range PIR presence detector

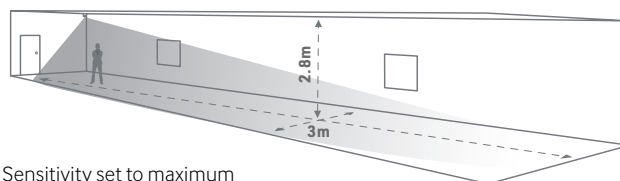


The EBDRC PIR series contains an adjustable head, and is fitted with a curtain lens for long range detection. This directional PIR is suitable for mounting in aisleway and corridor applications where a long narrow detection pattern is required.

- Presence detection with LUX level sensing – auto on, auto off
- Works in presence or absence mode
- Works with a wide range of lamps
- Adjust time delay and LUX settings via infrared handset
- Adjustable narrow detection pattern – ideal for corridor applications
- Range up to 24m at 2.8m mounting height
- Pluggable connections
- Integral power supply.

Detection pattern

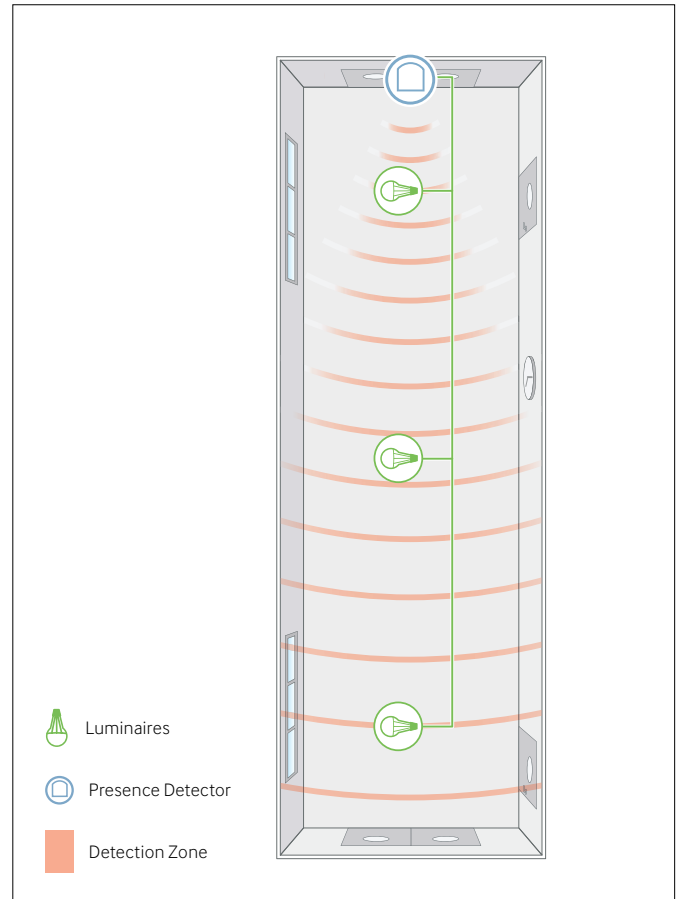
high < sensitivity > low



Sensitivity set to maximum
Detector head position must be set to 90°

Range	
Walk towards	10m
Walk across	24m

MWS3A | Adjustable head, programmable, long range, microwave presence detector

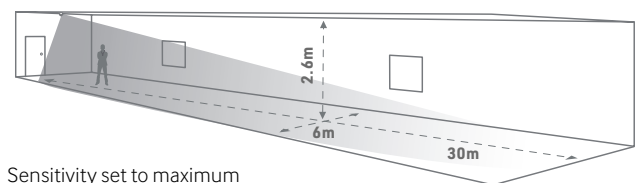


The MWS3A is a highly sensitive microwave detector featuring an adjustable head to allow it to detect movement in a horizontal plane at up to 30m.

- Presence detection with LUX level sensing – auto on, auto off
- Works in presence or absence mode
- Works with a wide range of lamps
- Adjust time delay and LUX settings via infrared handset
- Adjustable narrow detection pattern – ideal for corridor applications
- Lockable settings
- Range up to 30m at 2.6m mounting height
- Pluggable connections
- Integral power supply.

Detection pattern

high < sensitivity > low



Sensitivity set to maximum
Detector head position set to 80°



Vitesse Modular

As its name suggests, Vitesse Modular allows you to simply add 'modules' as and when they are needed. Vitesse Modular is a cost effective way of providing power and control for lighting installations in industrial, commercial and retail buildings.

Works in combination with our presence detectors

Allows groups of luminaires to be controlled by a single detector.

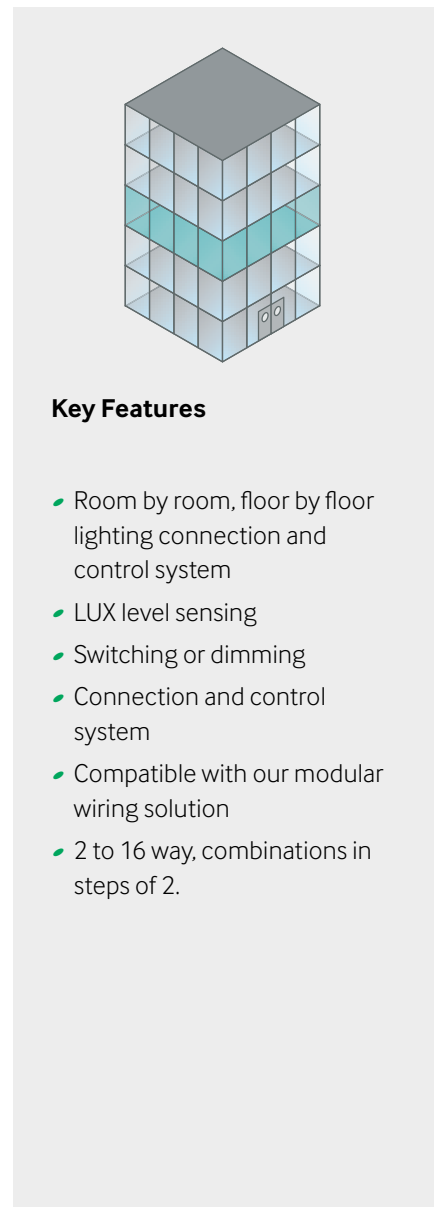
It grows and adapts to suit the installation

From 2-way to 16-way using extender modules. Vitesse Modular allows fast efficient installation with little to no waste.

Modules can be added (or removed) depending on future requirements.

Dedicated corridor solution

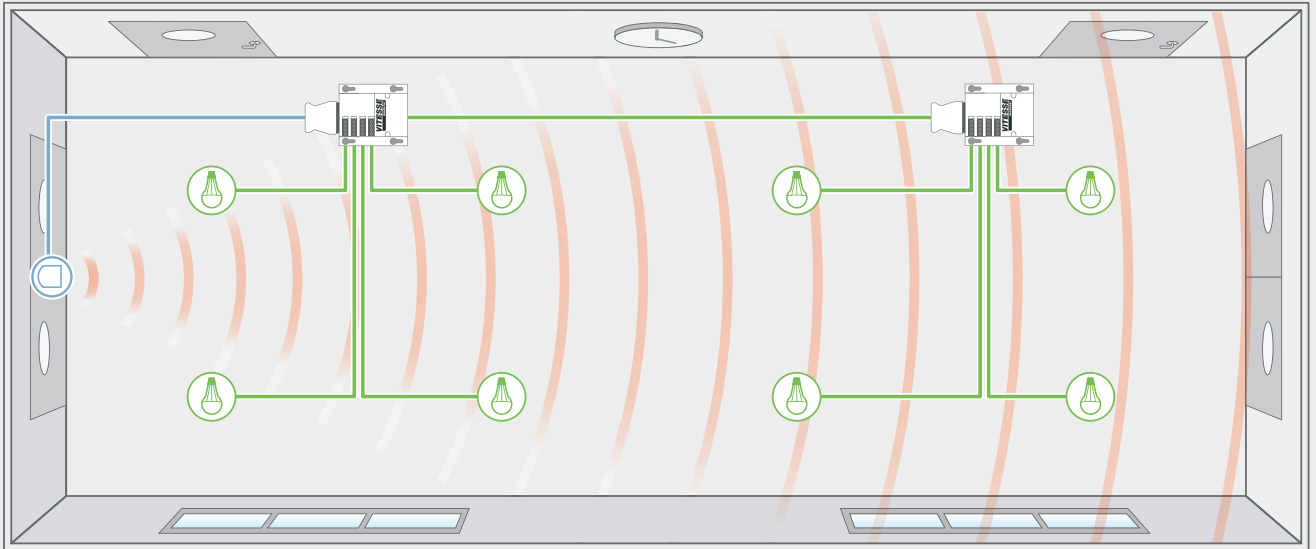
Vitesse Modular offers a dedicated corridor solution. Switching and dimming versions are available in a pre-wired configurations enabling Vitesse starter modules to be easily connected together and controlled via a single detector. See illustration opposite.



Key Features








- Room by room, floor by floor lighting connection and control system
- LUX level sensing
- Switching or dimming
- Connection and control system
- Compatible with our modular wiring solution
- 2 to 16 way, combinations in steps of 2.

Vitesse Modular | Sample Configuration



This sample configuration shows a starter module linked to a pre-wired corridor module. The detector is connected to the corridor module and switches all the luminaires plugged into the corridor and starter modules.

Key

-  Presence Detector
-  Luminaires
-  Luminaire Leads
-  Detector Leads
-  VITM Lighting Connection Module
-  Detection Zone
-  VITM4-SD5 Pre-wired Corridor Module (Switching)

VITM4-SD5 Pre-wired Corridor Module (Switching)



VITM6-SD5 Pre-wired Corridor Module (Dimming)





Vitesse Plus

It makes commissioning simpler and faster than ever before and is packed with energy saving features. Vitesse Plus is the perfect lighting control solution for classrooms, corridors, open plan offices and retail environments.

Time-saving pre-set menu

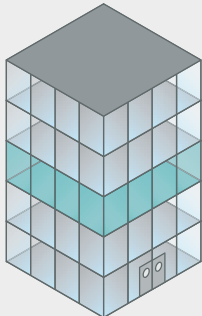
Vitesse Plus offers multiple pre-sets for a wide range of building spaces including corridors. Pre-set library documentation is supplied with every Vitesse Plus LCM (lighting control module) and is also available to download from our website.

Flexible and Feature Packed

LCMs can be linked to each other using RJ45 patch leads. This allows an input for one LCM (presence detector or switch input for example) to effect a change on another LCM.

Each Vitesse Plus LCM can monitor up to four detectors allowing it to switch or dim channels independently to provide maximum energy savings and safety for occupants of the area or corridor/s.

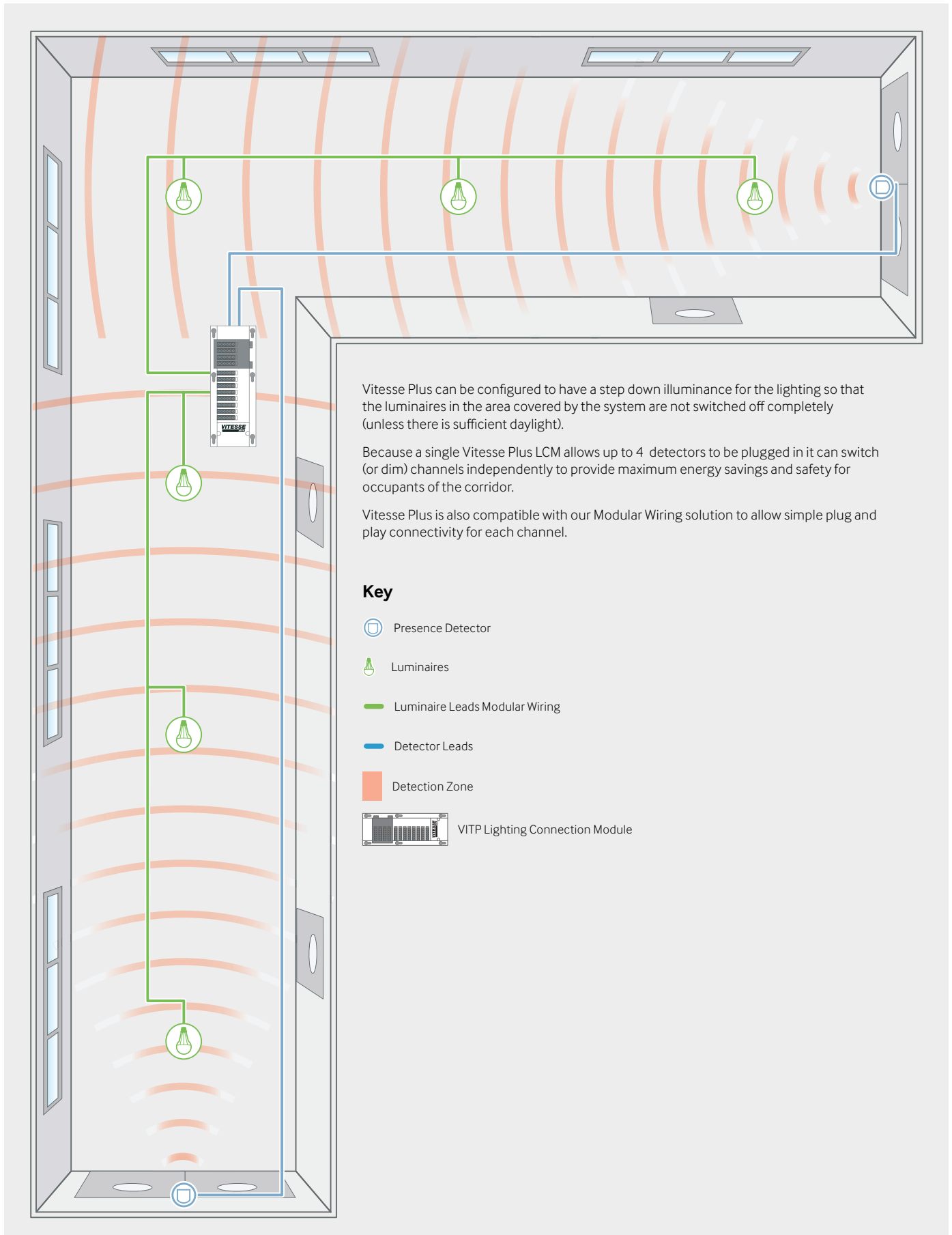
Vitesse Plus is also compatible with our Modular Wiring solution to allow simple plug and play connectivity for each channel.



Key Features

- Room by room, floor by floor lighting control system
- Presence detection
- LUX level sensing
- Switching or dimming
- Graduated dimming
- Connection and control system
- Step down illuminance
- Pre-set configurations
- Emergency lighting test
- Open port function
- Compatible with modular wiring solution
- Corridor hold
- SELV switch inputs
- 7-channels per module
- Scene setting.

Vitesse Plus | Sample Configuration





An-10 Wireless Lighting Control

An-10 technology allows you to install a fully featured, yet wireless lighting control system easily and with minimal disruption.

An-10 has been specifically created to take advantage of wireless (RF) technology, while at the same time offering all of the features demanded from modern day lighting control systems.

The system is ideal for retrofit applications and historic buildings where disturbing the building fabric (e.g. asbestos) is undesirable or impossible.

Flexible

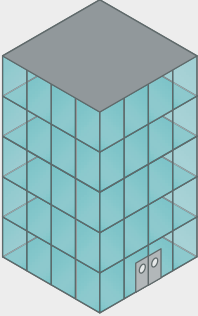
Every An-10 device within a system uses a number of different address codes that identify its place within that system and how it interacts with other devices. This allows the system to be highly flexible and reconfigurable should changes to lighting layout occur.

Dependable

Reliable performance is a key requirement for wireless control devices. An-10 uses a unique 'hybrid mesh' network topology, together with a solid communications protocol, that has been specifically designed to meet the needs of lighting control.

User interface

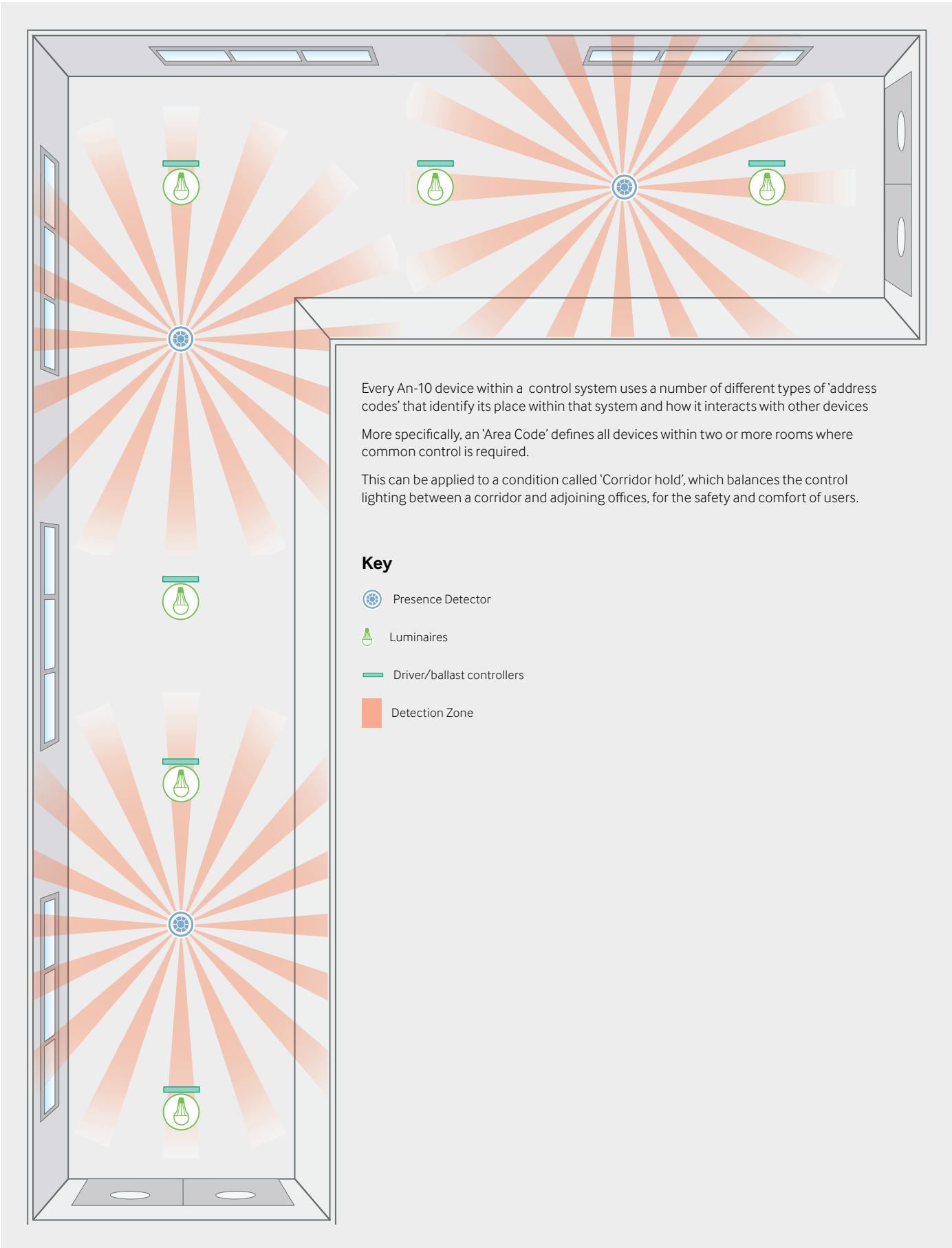
An-10 allows the creation and recall of preprogrammed lighting scenes to suit different uses within an environment. Scenes can be recalled with a dedicated scene control plate wirelessly connected to the An-10 input unit or a presence detector.



Key Features

- Floor, multi-floor or building, lighting control system
- Building, local, sub-local or area code for precise control zones
- Presence or absence detection
- LUX level sensing
- Switching or dimming
- Step down illuminance
- Corridor hold
- Daylight linked switching
- Maintained illuminance
- Scene setting.

An-10 | Sample Configuration





RAPID Lighting Control

RAPID is a fully addressable and networkable lighting control system. It combines all the flexibility of intelligent presence detectors, with the added benefit of addressable technology. Combined with a fully featured 'user interface' this gives a great deal of control to building managers remotely or on site.

RAPID is the complete lighting control solution.

Networking

RAPID can be configured to control rooms, floors or an entire multi-floor building. RAPID control modules are networked together on each floor, while individual floors are linked together using RAPID Area Controllers.

Remote Monitoring and Configuration

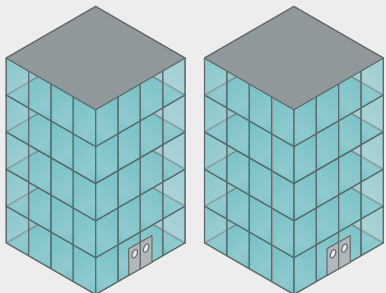
RAPID can be interfaced with a PC and proprietary software, which allows you to monitor and reconfigure any part of the lighting system. Event calendar features provide the ability to schedule lighting control events for specific events, cleaning, re-lamping and emergency testing of lights.

Notional Corridors

RAPID enables the system administrator to create notional corridors of light, keeping working staff safe and secure whilst providing significant energy savings.

Scene Setting and Recall

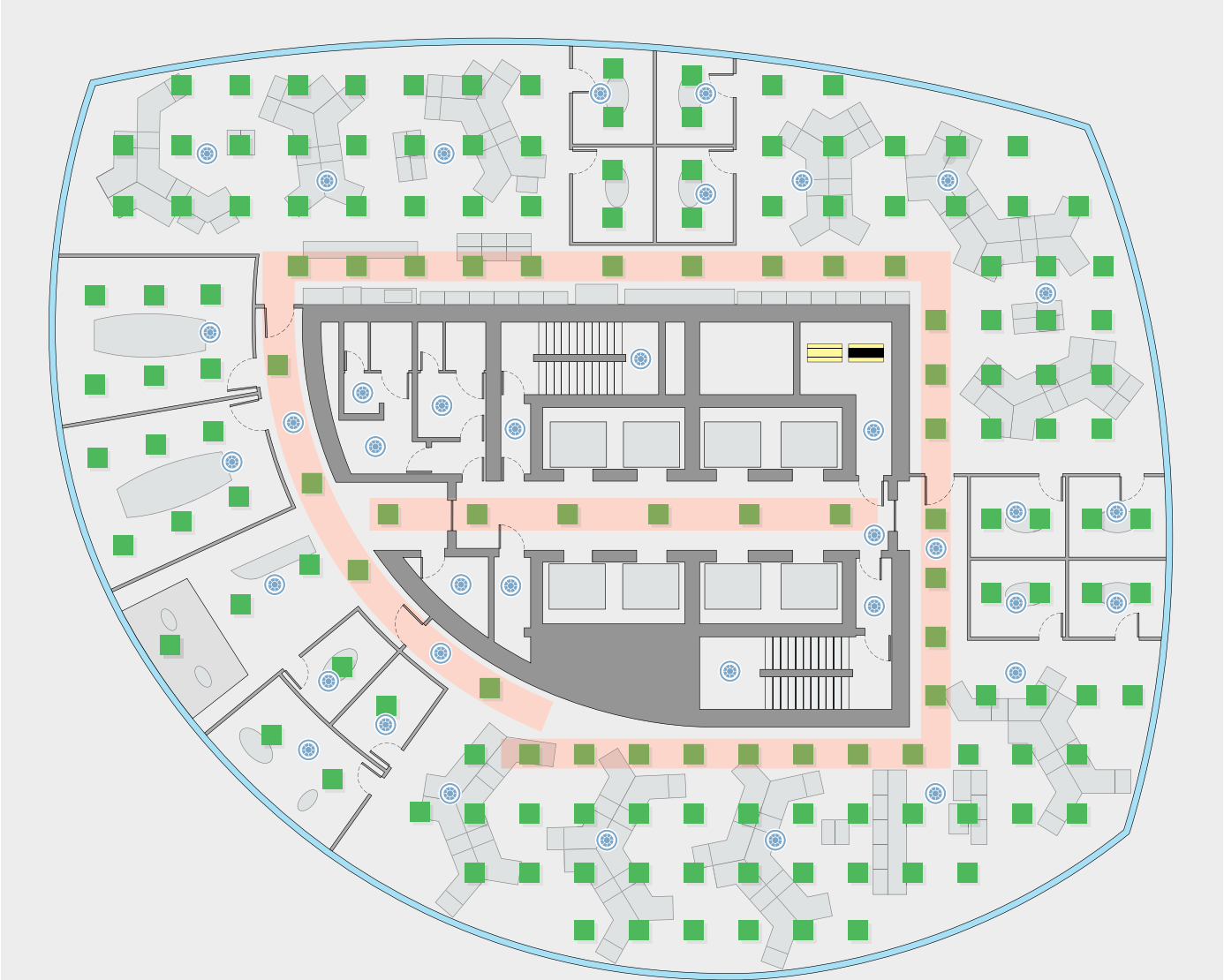
RAPID allows the room user to create and recall desired room lighting levels. Switching between scenes (e.g. meeting room) is easy and convenient with the stylish scene control panel.



Key Features

- Networkable, floor, multi-floor or building, lighting control system
- Presence or absence detection
- LUX level sensing
- Switching or dimming
- Graduated dimming
- Step down illuminance
- Corridor hold
- Remote monitoring
- Emergency monitoring
- Energy measurement
- Multi-room scene control
- BMS system gateway

RAPID | Sample Configuration



RAPID uses its strength as a fully addressable, networked system to answer the needs of notional corridor and dedicated corridor lighting control.

Many modern building spaces are multifunctional so that large open plan offices are supplemented with smaller break out areas and connecting corridors.

By its very nature RAPID can cope with both scenarios.

In these supplementing spaces, RAPID makes 'corridor hold' possible so that the occupancy and control in both rooms and circulation spaces are linked.

Occupants can therefore feel safe and comfortable when moving between rooms as the corridor reacts to their movement. So effectively a person, when leaving his/her office doesn't suddenly emerge into an unlit space.

For the open plan offices, RAPID can address groups of lights within a large array to create 'paths' of light (notional corridors), in two common conditions, 1. If an office floor is under occupied, such as late night working, or empty with security checks and 2. in an emergency situation when lighting has failed, and lights running on an independent supply can 'highlight' the best path out, effectively as an escape route.

Key

- Luminaires
- Presence Detector
- Notional corridors
- Lighting control modules
- Area controllers

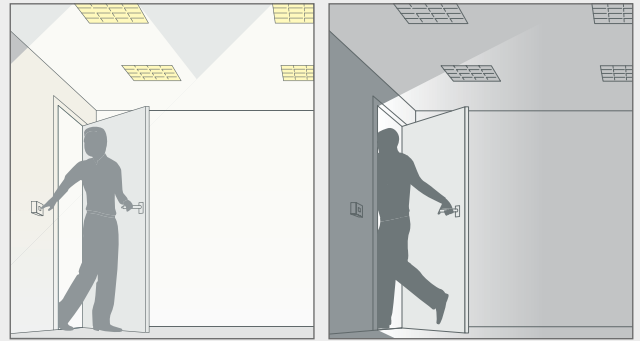
Technology Guide

Presence and absence detection explained

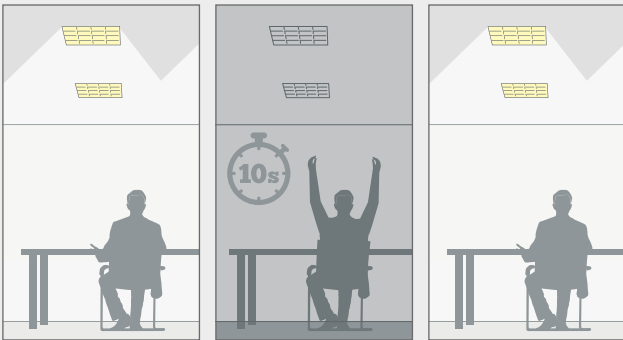
The choice between presence and absence detection for different spaces can make a big difference in user-friendliness and the amount of energy saved.



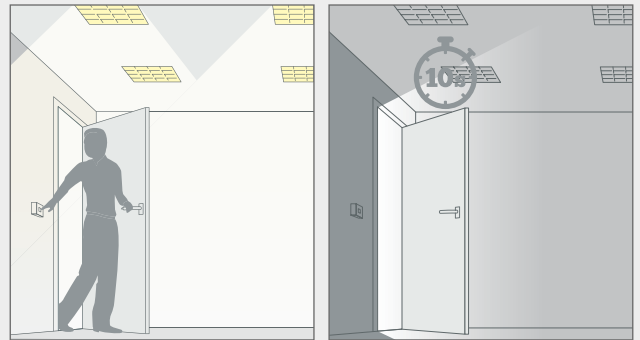
Presence Detection: Detectors will switch on lighting automatically when a person enters the room, and switches off lighting automatically when no movement is detected.



Absence Detection: Upon entering the room the person switches on the light as normal, but on leaving the detector switches off the lighting automatically. Lights can also be switched off manually.

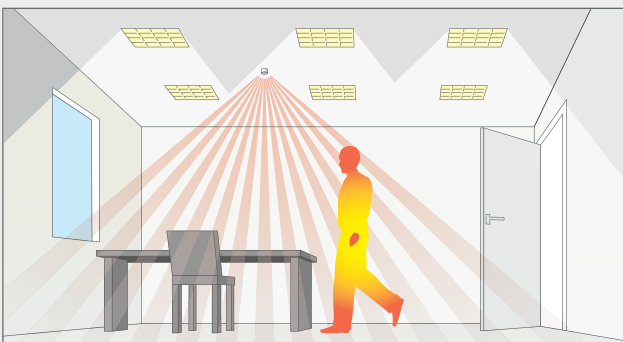


Absence Recovery: After an occupancy time out period has elapsed in absence mode, the unit temporarily enters a presence mode for 10 seconds allowing the occupants movement to bring the lights back on.

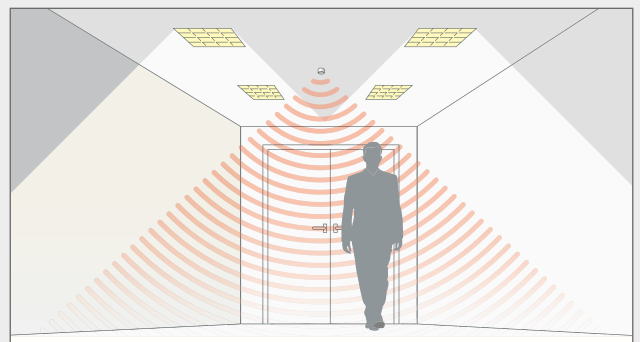


Switch Detection Time: This ensures that if a switch is activated and no movement is detected the lights will switch off after 10 seconds, minimising unnecessary lit space.

PIRs and microwave detectors compared

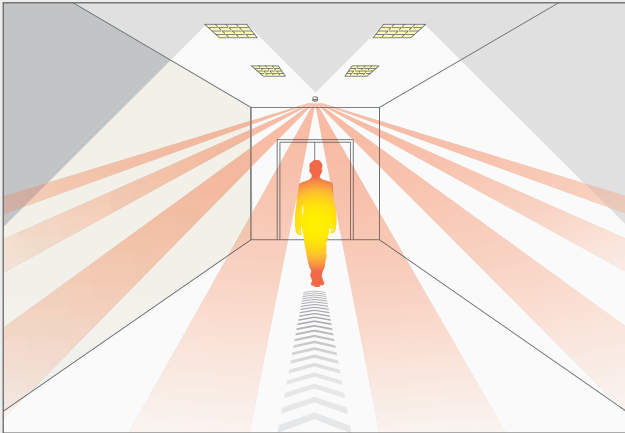


PIR (Passive Infrared) Detection: PIR detectors work on detecting the movement of body heat. They are better suited to smaller spaces or where a defined detection pattern is required.

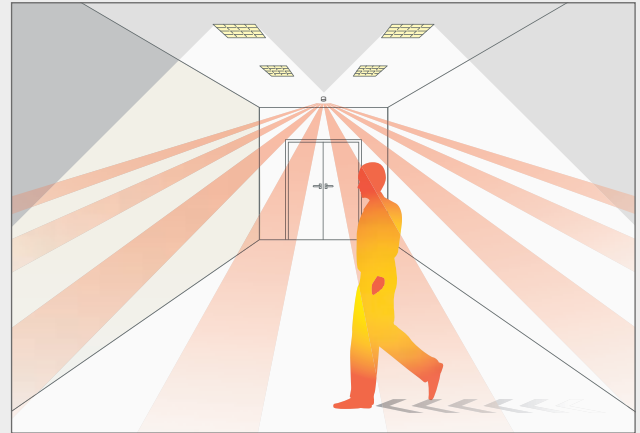


Microwave Detection: Microwave Detectors are sensitive to objects that move, with much greater coverage and sensitivity. They can detect through glass, therefore careful consideration on location is needed in certain applications.

Walk towards & walk across explained (PIR Detectors)



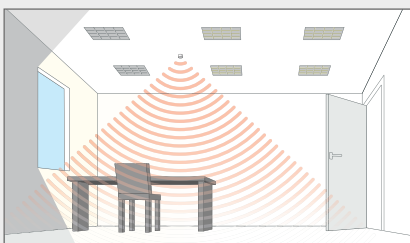
Walking towards the sensing area of a PIR detector may result in later detection as it is possible to walk towards the PIR sectors without crossing them (which is required for detection).



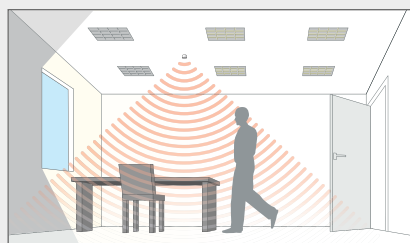
Walking across the detection area of a PIR detector results in a rapid detection because multiple sectors are crossed quickly triggering the detector.

Switching with LUX level sensing

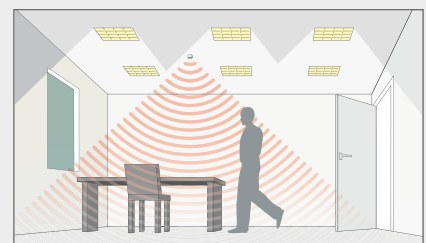
Most of our detectors have built-in adjustable LUX sensors which will keep the lighting switched off if there is sufficient natural light.



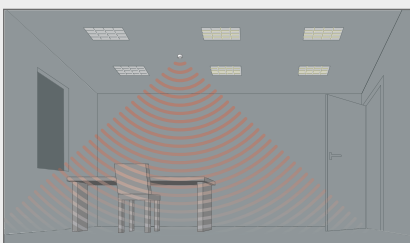
No presence detected, daylight, lights off.



Presence detected, sufficient daylight, lights off.



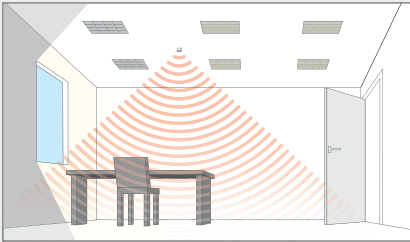
Presence detected, insufficient daylight, all lights on.



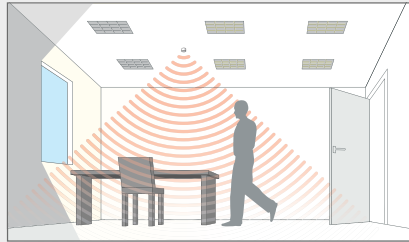
No presence detected, lights off.

Maintained illuminance with absence or presence detection

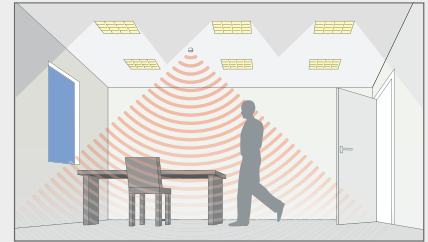
In addition to LUX level sensing, Dimming detectors are able to provide automatic control of lighting output.



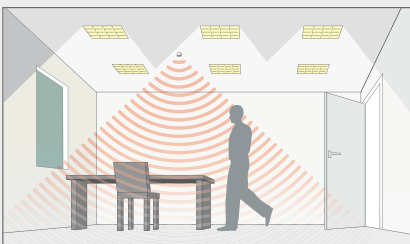
No presence detected, daylight, lights off.



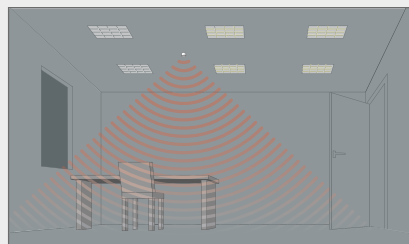
Presence detected, sufficient daylight, lights off.



Presence detected, some daylight. Lights on and dimmed to maintain pre-set LUX level.

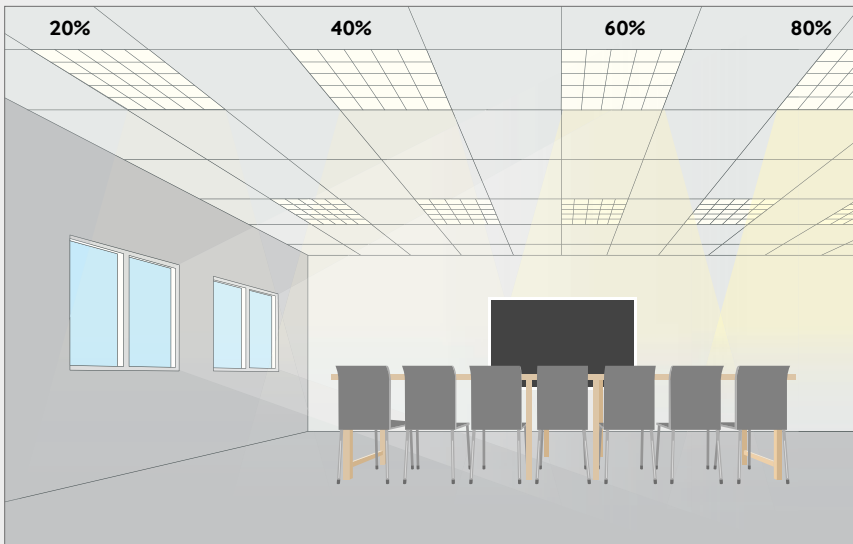


Presence detected, insufficient daylight. Detector measures and implements maintained illuminance.



No presence detected, lights off.

Graduated dimming



The lighting within a space dims progressively from the source of natural illuminance in response to changes in natural light levels. This maximises the use of daylight within a space and minimises energy consumption and over-lighting of the space.

Feature available on Vitesse Plus, An-10 and RAPID.



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