PUTTING A STOP TO ENERGY WASTE

Y

MOTION AND LIGHTING MANAGEMENT SENSORS

DESIGN AND APPLICATION GUIDE



CATALOGUE PAGES INSIDE

THE **GLOBAL SPECIALIST** IN ELECTRICAL AND DIGITAL BUILDING INFRASTRUCTURES





This document will help you in selecting, design, installing and commissionning a lighting management solution. It will also help you in defining and implementing the optimum lighting management solution for specific type of building space.



- p. 1 | Design steps for implementing motion & lighting management solutions
- p. 13 | Application examples for specific building spaces
- p. 22 | Catalogue pages

DESIGN STEPS FOR IMPLEMENTING MOTION & LIGHTING MANAGEMENT SOLUTIONS

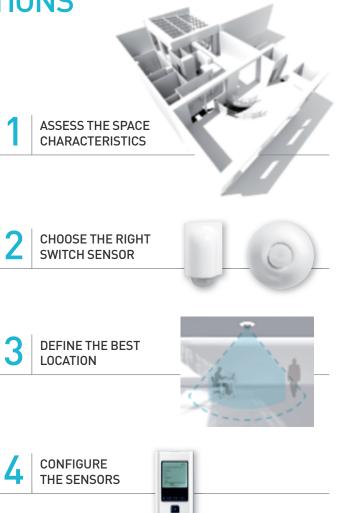
Our wide range of switch sensors, comprising Motion and Lighting Management sensors, is designed to reduce the amount of time lighting is left on unnecessarily, for example if an area is unoccupied or if there is sufficient natural light.

Our Lighting Management sensors can be used to:

- monitor the detection area for occupancy
- When a person is sensed the lighting is automatically switched on.
 In case of sensors equipped with a built in light level sensor, the lighting will be kept off when enough natural light is available.
- control lighting (up to 60% savings on lighting energy costs according to EN 15193).
- When the area is vacated: the lighting is switched off after a preset time delay.

- control HVAC circuits and roller blind circuits (either via the sensor or a room controller).

In our range, you are sure to find the Motion or Lighting Management sensor that will suit any area and control your lighting efficiently.



STEP 1

ASSESS THE SPACE CHARACTERISTICS

There is a dedicated solution for each area (type, configuration, activity, etc.). It is therefore essential to take the following criteria into account:

- room/space size and shape (number of m²)
- occupant activity and non-activity areas
- location of walls, doors and windows
- partition height and location
- ceiling height
- areas benefiting (or not) from natural light
- location of shelves, book cases, file cabinets, and large equipment
- large objects that would block or alter a sensor's coverage
- location of HVAC ducts and fans
- location of desk/workspace orientation with regard to walls, partitions and other obstacles.

To ensure you a perfect installation of the sensors and the best quality detection, here are some application examples:













P. 14 OUTDOOR CAR PARK P. 15 WAREHOUSE

P. 16 STAIRWAY

P. 17 CORRIDOR

P. 18 INDIVIDUAL OFFICE

P. 19 CLASSROOM

P. 20 OPEN SPACE

P. 21 MEETING ROOM



Special attention should be paid to high levels of vibration and/or air flow, extreme temperature conditions, and unusually low levels of activity because these issues may help identify the best technology solution

STEP 2 **CHOOSE** THE RIGHT SENSOR

Legrand has 2 categories of sensor according to the area concerned and the type of detection:

MOTION SENSORS

- For areas with little or no natural light.
- For passageways.
- Automatic switch-on according to whether or not there is motion and low light level, automatic switch-off after the delay.

LIGHTING MANAGEMENT SENSORS

- For areas with natural light.
- For work areas and passageways.
- Manual or automatic switch-on and automatic switch-off, according to whether or not there is anyone present and the natural light level.
- Dimming and HVAC/roller blind control for BUS sensors used with controllers.
- Can be adjusted using configuration tool.

MOTION SENSORS

For areas with little or no natural light

These sensors are particularly suitable for areas where there is no natural light, and for passageways such as bathrooms, corridors, equipment rooms, etc.

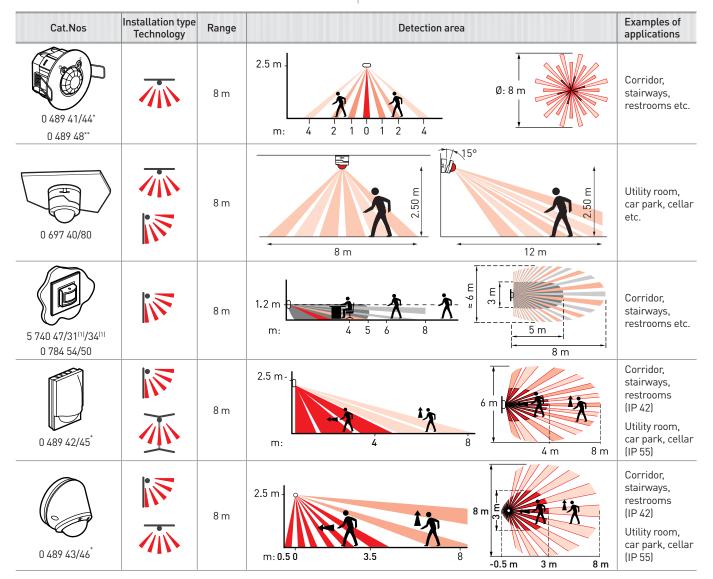
1 DETECTION TECHNOLOGY:



Passive infrared (PIR) technology Passive infrared technology detects

occupancy by reacting to infrared energy sources, such as a human body in motion.

2 COVERAGE PATTERNS



* blister version - ⁽¹⁾ without neutral - ** surface ceiling mounting version

STEP 2 _ CHOOSE THE RIGHT SENSOR

LIGHTING MANAGEMENT SENSORS

For areas with natural light

These sensors are particularly suitable for areas with natural light, whatever the type of building: shops, offices, healthcare buildings, recreation areas, warehouses or workshops, etc.

The sensors have built-in adjustable lux sensors:

- lighting Management sensors will keep the lighting switched off if there is sufficient natural light
- lighting Management sensors associated with room controllers will dim automatically while maintaining a pre-set lux level according to natural daylight and will control several lighting and ventilation circuits.

1 DETECTION TECHNOLOGY



Passive infrared (PIR) technology

Passive infrared technology detects occupancy by reacting to infrared energy sources, such as a human body in motion.



Dual technology (DT)

Sensors that employ PIR + US sensing technologies are usually referred to as "dual technology". Our Dual technology ensures maximum sensitivity and coverage in tough applications for optimum reliability and energy saving.

2 PRODUCT FEATURES

2-1. Occupancy and vacancy detection

Vacancy/Occupancy mode selection

Most Legrand sensors can work using occupancy mode (by default) or vacancy mode.



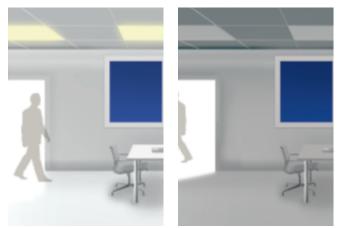
Occupancy mode means that lights are automatically switched on or off according to occupancy.



Vacancy mode means that lights are manually switched on and automatically switched off according to vacancy.

Vacancy mode offers extra energy savings.





Sensors will switch on lighting automatically when a person enters the room, and switch lighting off automatically when no movement is detected.

Application:

energy saving and cost effective, can be used instead of a conventional switch.





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

Application:

commonly used for improved energy saving and to comply with regulations.

2-2. Daylight

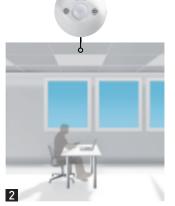


Daylighting set point = Regulation

The light level feature keeps the lighting OFF when natural light levels rise above a pre-set level. This setting is adjustable and can be overridden. This function is enabled by default. The mesurement is continuous.



No presence detected, daylight, lights off



Presence detected, sufficient daylight, lights off





Presence detected, insufficient daylight, all lights on

No presence detected, lights off

3 COMBINATION: BUS SENSOR + FALSE CEILING **CONTROLLERS**

Sensors can be combined with a room controller to manage a number of circuits in passageways with natural light, outdoors, damp areas or in work areas.

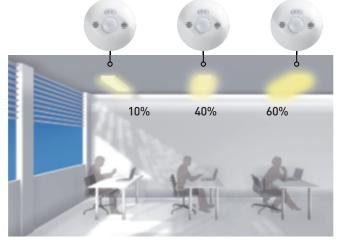
Combining a sensor and a room controller provides additional functions to:

■ lighting management: on-off or dimming (DALI, 1-10 V, halogen/incandescent/LED).

Eq: dimming the window side (access to natural light) and the corridor side separately.

• your installation: blinds, heating, fan control etc.

This combination makes your building flexible and gives you more energy savings.

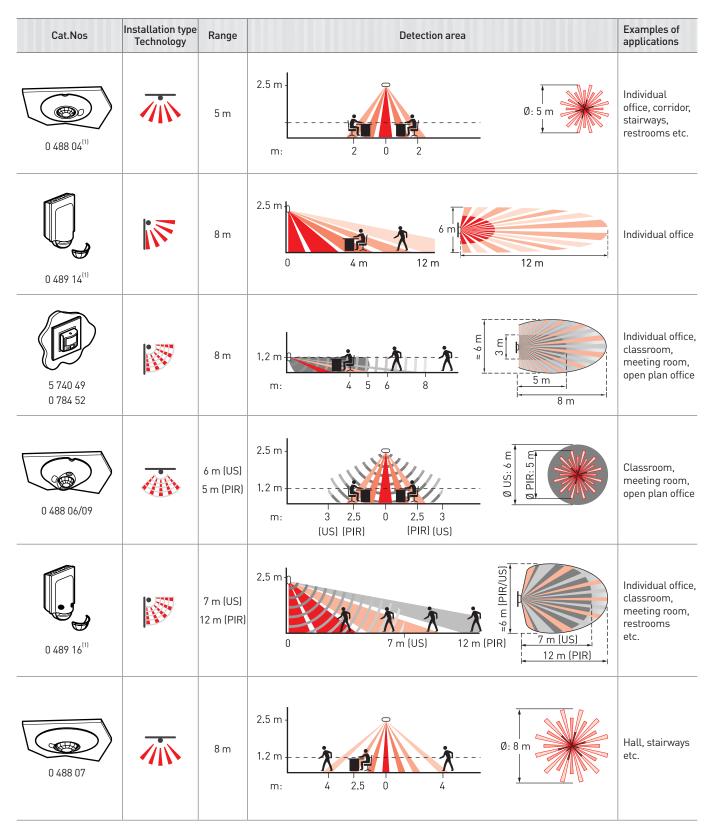


The daylight is unevenly distributed in an area A sensor is combined with each row of luminaires and measures presence and light level.

The dimming controller regulates each row of luminaires and supplements the external light to obtain the required light level.

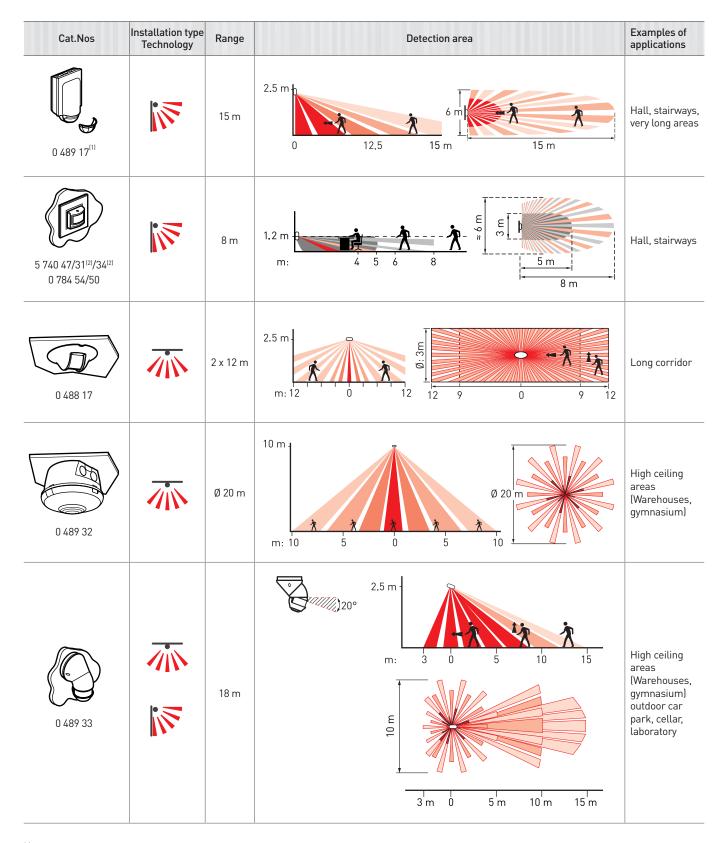
STEP 2 _ CHOOSE THE RIGHT SENSOR

4 COVERAGE PATTERNS



⁽¹⁾ 1 lighting output & 1 fan output

⁽²⁾ without neutral

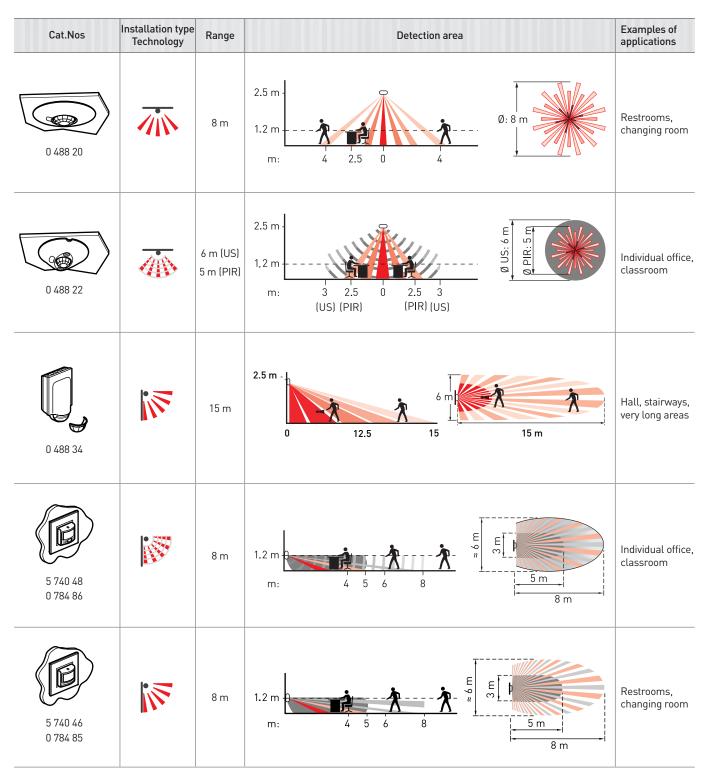


⁽¹⁾ 1 lighting output & 1 fan output

⁽²⁾ without neutral

STEP 2 _ CHOOSE THE RIGHT SENSOR

4 BUS SENSORS (TO BE USED WITH FALSE CEILING CONTROLLERS)



5 FALSE CEILING CONTROLLER - CONTROL OF MORE CIRCUITS

In order to control several circuits (lighting, fans, blinds), Lighting Management sensors can be used with room controllers.

The following chart indicates which room controller to use:

		DIMMING						
	ON-OFF	DALI	1-10 V		Ŷ	Ŷ		
1 lighting circuit in the same room	0 488 50	0 488 51	0 488 52		0 488 45			
1 lighting circuit + fan output in the same room	0 488 50	0 488 51	0 488 52		-			
2 lighting circuits in the same room	0 488 50	0 488 51	0 488 52		0 488 45			
2 lighting circuits + 1 fan output in the same room	-	0 488 51	-		-			
2 lighting circuits (2 inputs, 2 outputs) in 2 rooms	0 488 41	-	0 488 42 (1000 VA)		0 488 45			
4 lighting circuits (4 inputs, 4 outputs) in 4 rooms	0 488 43	0 488 44 (max. 32 ballasts)	0 488 43		_			
2 lighting circuits + 1 blind output + 1 fan output (4 inputs, 4 outputs) in the same room	0 488 47	-	0 488 47		-			

⁽¹⁾ Refer to the load table in the data sheet available online in the e-catalogue (**Note:** some commercially available dimmable LEDs are not compatible).



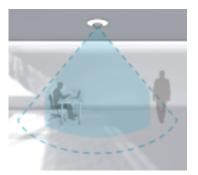
Whether it is a matter of work areas or passageways, the presence sensors must be chosen and positioned in line with the following recommendations:

1 WORK AREAS

These are areas in which people spend time, such as individual or open plan offices, meeting rooms, classrooms, etc.

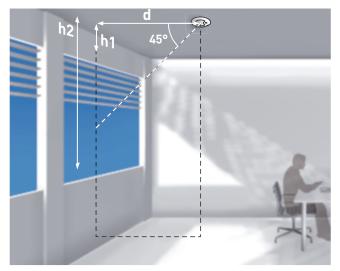
Positioning

For optimum detection, the sensor must have an unobstructed view (no obstacles in the sensor's detection field).



People who are seated must be completely within the area to be monitored, and preferably as close as possible to the sensor (the detection area for seated people is much smaller than that for people who are moving around).

In small spaces preference should be given to wall-mounted sensors placed in a corner. In large, open plan offices preference should be given to ceiling sensors (with their detection areas overlapping).

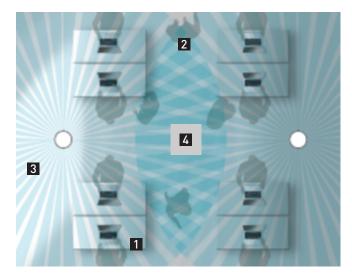


For optimum light level measurement, the sensor must be positioned between a minimum distance (to be determined) and 4 metres maximum from the source of natural light (large or small window, etc.). The ideal distance is calculated using the formula **d= (h1+h2)/2)**.

Recommendations

The sensors must not:

- be positioned less than 1 m from sources of heat or cold (radiators, air conditioning units, etc.) which could cause "false detection"
- have a luminous flux (luminaire, window) in direct view, to ensure correct measurement of the light level.



- 1- Seated person
- 2- Moving person
- 3- Window
- 4- Air conditioning unit



Dual technology detection should be given preference as it combines 2 detection technologies (IR + US), providing very reliable detection of people who are seated.

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2 PASSAGEWAYS

These are areas in which people "move around", such as corridors, halls, stairways, archive areas, toilets, etc.

Positioning

For optimum detection, the sensor must have an unobstructed view (no obstacles in the sensor's detection field).

The following types of presence sensor can be used:

- for wall mounting, with an 180° detection area
- for ceiling mounting, with long range detection areas.



The detection areas in horizontal or vertical spaces where people move around must overlap, to avoid any blind spots.

The transverse detection performance is more important than the radial performance.

Recommendations

Access points (doors) must be fully covered by the detection areas.

The sensors must not have any luminous flux (luminaire, window) in direct view, to ensure correct measurement of the light level.



PIR detection should be given preference. It provides good detection performance for people moving around, with a long detection range.

STEP 4 CONFIGURE THE SENSORS

Lighting Management sensors are factory preset. The configuration tool, Cat.No 0 882 30, can be used to configure the sensors with customised settings by sending and receiving data via infrared: easy set-up and maintenance guaranteed! The following functions can then be adjusted:



Time delay

Each time there is a movement, a time delay - or inner clock – is restarted. The light stays on until this time delay has elapsed, as the space is considered to

be occupied. **Recommendation:**

10 to 15 minutes for work areas, 5 minutes for passageways.



Daylight setpoint

Value at which the load comes on if light level is below the light setting and goes off if it is above this threshold. The Daylight setpoint can be set up to a maximum of 1275 lux.

Recommendation:

passageway and corridors: 100 lux stairwavs: 150 lux offices: 300 - 500 lux.



Sensitivity

For each technology, the sensitivity setting is used to.

- reduce or increase the detection area
- reduce the disturbing effects of air currents, air conditioning and air flows from heating.

To set the sensitivity levels, go to the detection area and check that the sensor covers the strategic positions in the room (entrance door, desk).



Calibration

In order to set this calibration, it is necessary to measure the surrounding light level using

a luxmeter beforehand. The surrounding light level measured must then be transmitted to the sensor.

Steps for regulating the electric light factor:

- switch the light on and close the blinds
- wait 2 minutes
- measure the light level below the cell using a luxmeter.

Enter this value in the tool and send it to the cell. This calibration will be acknowledged during the next detection cycle.

4 DIFFERENT OPERATING MODES



Occupancy (Auto ON/Auto OFF mode) Automatic switch-on: on detection of presence if there is

an insufficient natural level of light.

- Automatic switch-off:
- if no presence is detected and at the end of the time delay set
- if there is a sufficient level of natural light (activated light regulation).

Any new detection causes an automatic switch on if there is insufficient light.

Walkthrough

- If there is no presence detected in the 20 seconds following an initial detection, the sensor will switch off after 3 minutes.
- If a new presence is detected in the 3 minutes following the initial detection, the device will switch off at the end of the time delay set.



Vacancy (Manual ON/Auto OFF mode)

Manual switch-on, automatic switch-off:

• where no presence is detected and at the end of the time delay set.

Following switch-off, any new detection within a 30-second period will cause the device to be switched on automatically. After 30 seconds, the device is switched on via a manual switch.

Partial ON/Group OFF mode

This mode is used to ungroup circuits that are switched on on detection and switched off at the end of detection. Example: on detection I switch on the main lighting and occasional lighting can be controlled manually at the same time. At the end of detection, the sensor orders the main lighting and the occasional lighting circuits to be switched off.







Outdoor parking



Switch-on and switchoff must be automatic according to whether or not the area is occupied and the natural light level. The sensor must withstand outdoor stresses.



CONTROL REQUIREMENTS

Lighting is switched on & off automatically.

Switch-on

Automatic by presence detection as soon as the natural light level is insufficient.

Switch-off

Automatic when the area is no longer occupied after a time delay.

SOLUTIONS

1 Use PIR sensors to provide a large coverage area in terms of length & width.



Cat.No 0 489 43

PIR outdoor motion sensor 360° coverage Range 8 m IP 55 For wall or ceiling mounting Cat.No 0 697 40

Adjustable PIR outdoor motion sensor Directional head to make sure lights switch on as soon as the door opens. 360° Range Ø 8m IP 55 Surface-mounting, on wall or ceiling.

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1



Warehouse high bay



Switch-on and switchoff must be automatic according to whether or not the area is occupied and the natural light level. The sensor must have a detection range suitable for very high areas.

CONTROL REQUIREMENTS

Lighting is switched on & off automatically.

Switch-on

Automatic by presence detection.

Switch-off

Automatic when the area is no longer occupied after a time delay, or as soon as the natural light level is sufficient.

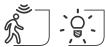




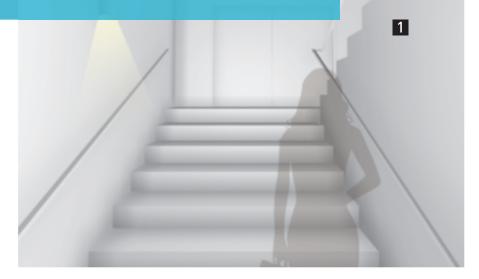
Cat.No 0 489 32 PIR sensor 360° Range Ø 20 m IP 55 (IP 66 with plastic cable glands) Surface mounting on ceiling.



Stairway



Switch-on must be triggered by a person passing and switch-off must be automatic after he/she has left.



CONTROL REQUIREMENTS

Lighting switched on & off automatically with a motion sensor installed on each floor.

Switch-on

Automatic by presence detection as soon as the natural light level is insufficient.

Switch-off

Automatic when the area is no longer occupied, after time delay.

SOLUTIONS



Cat.No 0 697 40 Adjustable PIR motion sensor Directional head to detect people mounting stairs 360° Range Ø 8 m IP 55 Surface-mounting on wall or ceiling (one sensor per floor).

Cat.No 0 784 54 PIR sensor Without neutral 180° Range 8 m Auto ON/OFF IP 41 Wall-mounting.

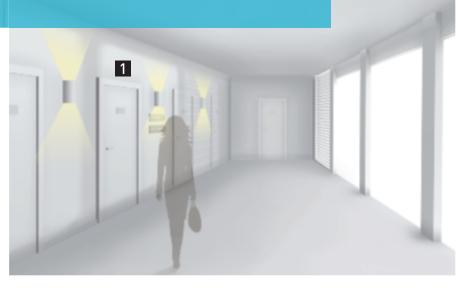
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Corridors



Switch-on must be triggered by a person passing and switch-off must be automatic after he/she has left, but only if there is insufficient natural light.



CONTROL REQUIREMENTS

Lighting is switched on & off automatically.

Switch-on

Automatic by presence detection as soon as the natural light level is insufficient.

Switch-off

Automatic when the area is no longer occupied after a time delay, or as soon as the natural light level is sufficient.

SOLUTIONS

1 Use PIR corridor sensors to provide long range front detection & ensure the detection areas overlap so that occupants are not left in the dark.



Cat.No 0 488 17

Infrared dual detection sensor 2x180° Side range 2 x 12 m IP 20 Ceiling mounted. **Cat.No 0 489 17** PIR sensor 180° Range 25 m IP 42 Surface mounted on a wall can be mounted in/on a corner using accessory.

Using 100 lux & a 5 minute time delay will provide the right level of lighting and maximum energy savings.



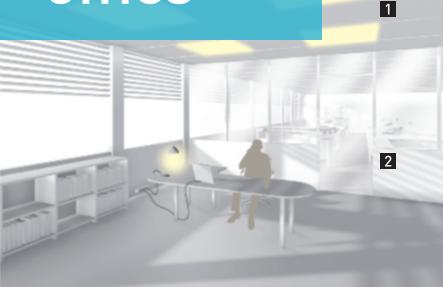
For installation of 2 circuits: 1/3 luminaires is permanent, controlled by a timer, the other 2/3 are controlled by motion sensors



Individual office



Switch-on and switchoff must be automatic according to whether or not the office is occupied and the natural light level.



CONTROL REQUIREMENTS

Lighting and fan are switched on manually and switched off automatically or manually.

Switch-on

Manual via push-button.

Switch-off

• As soon as the natural light level is sufficient.

• Automatic by detection that there is no-one present in the office (after time delay).

• Manual using the push-button.

SOLUTIONS

1 Use dual-tech sensors to provide precise detection & avoid false switch-off.



Cat.No 0 488 06 Dual-tech sensor 360° Range Ø 8 m Manual ON-Auto OFF Daylight control -300 lux IP 20 - Ceiling mounted.

Cat.No 5 740 49 Dual-tech sensor 180° Maximum range 8 m Manual ON-Auto OFF Daylight control - 300 lux. IP 41 Wall-mounting.

Cat.No 0 488 04 PIR sensor 360° Range Ø 5 m High density lens with fan control IP 41 Ceiling mounted.

2 The push-button Cat.No 5 720 31 can be used to control lighting circuits manually.



Using 350 lux & a 10 minute time delay combined with Vacancy detection will ensure maximum energy savings.







The lighting is dependent both on whether the areas are occupied and on differences in the natural light level in the classroom. An additional manual control can be used to dim the lighting.

CONTROL REQUIREMENTS

Lighting is switched on manually and switched off automatically or manually.

Switch-on

Manual via push-button for the room and the board.

Switch-off

• As soon as the natural light level is sufficient.

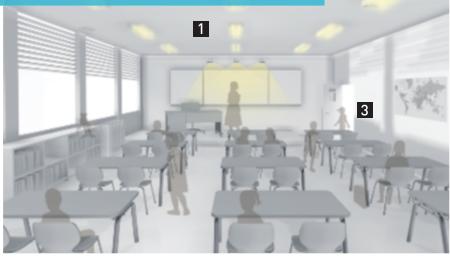
 Automatic when the area in the classroom is no longer occupied, after a time delay. Automatic switch-off of the board lighting is linked to that of the classroom lighting.

• Manual using the push-button.

Lighting regulation

The amount of artificial lighting is adapted according to the natural light, so that a minimum lighting level is constantly maintained.

Note: users can adjust the light level to their own requirements using the pushbutton. Automatic management will take over again while the user is absent. The area on the window side will thus have a lower level of artificial light than that on the opposite side.



SOLUTIONS



Cat.No 0 488 22 Dual-tech occupancy sensor Range Ø 20 m IP 20 Ceiling mounted.

Cat.No 0 488 51 Room controller for DALI and DSI dimming Occupancy mode, vacancy mode.

The room controller applies a dimming difference of 30, 50 or 80% between the window and the corridor side. Fixed directly to the false ceiling via cable ducting.

3 The push-button Cat.No 5 720 31 can be used to control lighting circuits manually.



Open space



The lighting must adapt to whether or not the office areas and aisles are occupied, while taking the natural light level into account.



Lighting is switched on manually and switched off automatically or manually.

Switch-on

Manual via push-button or touch screen.

Switch-off

• Gradual, as soon as the natural light level is sufficient.

• Automatic when the area in the open plan office is no longer occupied (after a time delay).

• Manual via push-button or touch screen.

Lighting regulation

The amount of artificial lighting is adapted according to the natural light, so that a minimum lighting level is constantly maintained.

Note: users can adjust the light level to their own requirements using the push-button. Automatic management will take over again while the user is absent.

The area on the window side will thus have a lower level of artificial light than that on the opposite side.



SOLUTIONS



Cat.No 0 488 22 Dual-tech occupancy sensor Range Ø 8 m IP 20 Ceiling mounted. **Cat.No 0 488 44** Dimming room controller for DALI protocol Fixed directly to the false ceiling via cable ducting.

3 The push-button **Cat.No 5 739 87** can be used to control control and dim lighting circuits manually.

4 The touch screen **Cat.No 5 739 58** can be used to activate scenarios.

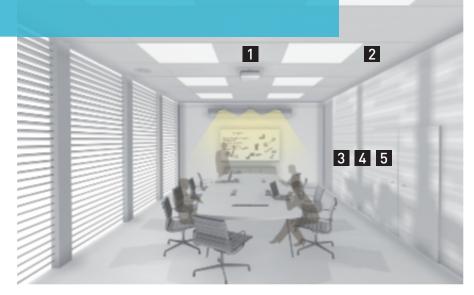
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Meeting room



Room occupants must be able to control and dim the light and also the blinds, screen and ventilation according to their requirements.



CONTROL REQUIREMENTS

Lighting and fan are switched on manually and switched off automatically or manually.

Switch-on

Manual via push-button or touch screen.

Switch-off

• Gradual, as soon as the natural light level is sufficient.

• Automatic by detection that there is no-one present in the meeting room (after time delay).

• Manual via push-button or touch screen.

Lighting regulation

The amount of artificial lighting is adapted according to the natural light, so that a minimum lighting level is constantly maintained.

Note: users can adjust the light level to their own requirements using the pushbutton. The area on the window side will thus have a lower level of artificial light than that on the opposite side. The scenario push-buttons, remote control or touch screen can be used to activate projection, end of projection, full light, etc. scenarios. The ventilation will switch from ECO mode to COMFORT mode when the presence of a person is detected.

SOLUTIONS



Cat.No 0 488 22 Dual-tech occupancy sensor Range Ø 8 m IP 20 Ceiling mounted. **Cat.No 0 488 47** Multi-application room controller: • 2 x 1-10 V dimming output

• 1 blind output

1 fan output

Fixed directly to the false ceiling via cable ducting.

3 The push-button **Cat.No 5 739 87** can be used to control and dim lighting circuits manually.

4 The touch screen **Cat.No 5 739 58** can be used to activate scenarios.

5 An additional remote control **Cat.No 0 882 32** can bring more flexibility for the occupants.

Motion and Lighting Management sensors for 1 circuit

selection chart

	MOTION S	ENSORS		
AREAS WITHOUT		INSTALLATION		
NATURAL LIGHT	Ceiling ⊼	Wa		
PASSAGEWAY		Surface mounting ⁽²⁾	Flush-mounting ⁽¹⁾	
Hall/lobby Stairways/hallways Storage areas/technical areas	0 489 41/0 489 44 ⁽⁶⁾	0 489 42/0 489 45 ⁽⁵⁾	5 740 31 ⁽⁴⁾ /34 ⁽⁴⁾ /47 - Without neutral 0 784 54/58 - Without neutral	
OUTDOOR AND DAMP AREAS				
Indoor/external car park IP 55 Indoor entrance areas	0 697 40/0 697 80	0 489 43/0 489 46 ⁽⁶⁾	-	
	LIGHTING MANAG	EMENT SENSORS		
AREAS WITH NATURAL LIGHT	Automatic ON/OFF Permanently checking for presence	and light level		
WORK AREAS				
Individual office/small room	0 488 04 ⁽³⁾	0 489 14	5 740 49 / 0 784 52	
Open plan office/classroom/ meeting room	0 488 06 ⁽¹⁾ /0 488 09	0 489 16 ⁽³⁾	5 740 49 / 0 784 52	
PASSAGEWAY				
Hall/lobby Stairways/hallways	0 488 07 ⁽¹⁾	0 489 17 ⁽³⁾	5 740 31 ⁽⁴⁾ /34 ⁽⁴⁾ /47 - Without neutral 0 784 54/58	
Hallways Very long areas	0 488 17 ⁽¹⁾	0 489 17 ⁽³⁾	5 740 31 ⁽⁴⁾ /34 ⁽⁴⁾ /47 - Without neutral 0 784 54/58 - Without neutral	
High ceiling areas (gymnasium, storage areas)	0 489 32 (Flush-mounting)	0 489 33	-	
Restrooms, bathrooms Dressing room	0 488 04 ⁽³⁾	0 489 16 ⁽³⁾	5 740 31 ⁽⁴⁾ /34 ⁽⁴⁾ /47 - Without neutral 0 784 50/54/58 - Without neutral	
OUTDOOR & DAMP AREAS			· · · · · · · · · · · · · · · · · · ·	
Indoor/outdoor car park lot Indoor entrance areas	0 489 32 0 489 32 0 489 32 0 489 33 Directional head	0 489 33 Directional head	-	

1: Surface mounting box option - 2: Corner mounting option - 3: 1 lighting output + 1 fan output - 4: Dedicated retrofit solution - 5: Blister version - 6: Surface ceiling mounting version

Lighting Management sensors and room controllers for multiple circuit control selection chart

CHOOSE THE SENSOR	Automatic ON/0	DFF Jecking for preser	nce and light leve	si .				
				STALLATION				
	Coi	ling 遗		Wall				
	Cei		Sur	face mounting	Flush-mounting			
WORK AREAS								
Individual office Classroom	0 488 22	2) Ø 8 m		-	5 740 48 / 0 784 86			
PASSAGEWAY								
Restrooms, changing rooms, etc.	0 488 20) Ø 8 m		0 488 34	5 740 46 / 0 784 85			
Hallways Very long areas	0 488 20	Ø8 m		0 488 34	-			
High ceiling areas (gymnasium, storage area, etc.)		-		-	-			
OUTDOOR & DAMP AREAS					· ·			
Car park lot, cellar, laboratory, test room, changing room		-		0 488 34	-			
AND THE OUTPUTS								
TO BE MANAGED	ON-OFF	DALI	1-10 V	DIMMING Halogen 🖉 - Incand	descent 🖗 - Dimmable LEDs 🖽 🌍			
1 lighting circuit in the same room	0 488 50	0 488 51	0 488 52		0 488 45			
1 lighting circuit + fan output in the same room	0 488 50	0 488 51	0 488 52	-				
2 lighting circuits in the same room	0 488 50	0 488 51	0 488 52	52 0 488 45				
2 lighting circuits + 1 fan output in the same room	-	0 488 51	-		-			
2 lighting circuits (2 inputs, 2 outputs) in 2 rooms	0 488 41	-	0 488 42 (1000 VA)					

1: Refer to the load table in the data sheet available online in the e-catalogue (Note: some commercially available dimmable LEDs are not compatible)

0 488 43

0 488 47

4 lighting circuits (4 inputs, 4 outputs)

2 lighting circuits + 1 blind output + 1 fan output (4 inputs, 4 outputs)

in 4 rooms

in the same room

0 488 44 (max.32 ballasts)

0 488 43

0 488 47

Motion sensors for 1 circuit

motion sensors for passageway without natural light



EC0

Selection chart p. 22

Automatic ON/OFF Manual adjustment of light level threshold and time delay via potentiometer

Pack	Cat.Nos	Ideal for passageways	Pack	Cat.Nos	Ideal for outdoor and damp areas
1		PIR IP 41 wall/surface-mounting motion sensor, 180° Range 8 m Recommended fixing height: 2.5 m 3-wire with neutral Light level threshold: 10s to 1275 lux Adjustable time delay: 10 s to 10 min Standby consumption: 0.75 W For direct surface-mounting on wall Range 8 m Recommended fixing height: 2.5 m	1		PIR IP 55 wall/surface-mounting motion sensor, 360° Range 8 m Recommended fixing height: 2.5 m 3-wire with neutral Light level threshold: 10 to 1275 lux Adjustable time delay: 10 s to 10 min Standby consumption: 0.75 W For direct surface-mounting on wall or ceiling Range 8 m Recommended fixing height: 2.5 m
		S-wire with neutral Light level threshold: 10s to 1275 lux Adjustable time delay: 10 s to 10 min Standby consumption: 0.75 W For direct surface-mounting on wall Blister format Wall mounted - Arteor PIR wall mounted motion sensors			S-wire with neutral Light level threshold: 10 to 1275 lux Adjustable time delay: 10 s to 10 min Standby consumption: 0.75 W For direct surface-mounting on wall or ceiling Blister format Ceiling mounted PIR wall and ceiling mounted motion sensor
1 1 1	5 740 34	180° infrared detection, range 8 m Recommended fixing height: 1.2 m IP 41 Light level threshold: 5 to 1275 lux Adjustable time delay: 5 s to 30 min Standby consumption: 0.2 W O White - with neutral O White - without neutral O White - without neutral			 Fixes directly to ceiling included included sensor 360° infrared detection with directional head, range Ø8 m Fixes directly to ceiling or wall (min. height: 1.70 m) 3-wire with neutral IP 55 Light level threshold: 1 to 1000 lux Adjustable time delay: 12 s to 16 min Standby consumption: 0.4 W Optimum distance between 2 sensors: 6 m
1 1	Mosaic 0 784 54	 ○ White - with neutral ○ White - without neutral 	1 1	0 697 40 0 697 80	
1	0 489 41	PIR IP 41 ceiling-mounting motion sensor, 360° Range Ø8 m Recommended fixing height: 2.50 m 3-wire with neutral Light level threshold: 10 to 1275 lux Adjustable time delay: 10 s to 10 min Consumption on standby: 0,75 W Optimum distance between 2 sensors: 6 m Fixes directly to a false ceiling with mounting claws (included) or installed in a Batibox box, depth 50 mm			
1		Range Ø8 m Recommended fixing height: 2.50 m 3-wire with neutral Light level threshold: 10 to 1275 lux Adjustable time delay: 10 s to 10 min Consumption on standby: 0,75 W Optimum distance between 2 sensors: 6 m Fixes directly to a false ceiling with mounting claws (included) or installed in a Batibox box, depth 50 mm Blister format			
1		PIR IP 42 ceiling-mounting motion sensor, 360° Range Ø8 m Recommended fixing height: 2.50 m 3-wire with neutral Light level threshold: 10 to 1275 lux Adjustable time delay: 10 s to 10 min Consumption on standby: 0.75 W For direct surface-mounting on ceiling Blister format			

L¹ legrand

Motion sensors for 1 circuit load table

Load table

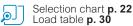
Cat.No	Halogen bulb	ELV halogen with ferromagnetic transformer	ELV halogen with electronic transformer	Fluorescent tube	Compact fluorescent bulb	<mark>р</mark> Г
5 740 47 / 0 784 54	2000 W	1000 VA	1000 VA	10 x (2 x 36 W)	250 W	250 W
5 740 34/31 / 0 784 58	40-400 W	40-400 VA	40-400 VA	-	-	-
0 489 42/45	1000 W	500 VA	500 VA	5 x (2 x 36 W)	250 W	250 W
0 489 41/44	1000 W	500 VA	500 VA	5 x (2 x 36 W)	250 W	250 W
0 489 48	1000 W	500 VA	500 VA	5 x (2 x 36 W)	250 W	250 W
0 489 43/46	1000 W	500 VA	500 VA	5 x (2 x 36 W)	250 W	250 W
0 697 40/80	2000 W	2000 VA	2000 VA	5 x (2 x 36 W)	250 W	250 W

Lighting Management sensors for 1 circuit

Lighting Management sensors for passageway with natural light







Check presence and natural light level continuously, switch off when there is sufficient natural light Occupancy mode (automatic ON/OFF factory setting). Can be used with pushbutton Cat.No 0 770 40 (or illuminated pushbutton Cat.No 0 770 33) for vacancy mode (manual switch-on and manual or automatic switch-off). Precise on-site adjustment using configuration tool Cat.No 0 882 30 (p. 31) Adjustable time delay: 5 s to 59 min. Light level threshold adjustable from 5 to 1275 lux

Pack	Cat.Nos	Ideal for passageways	Pack	Cat.Nos	Ideal for outdoor and damp areas
1	0 488 17	Ceiling mounted Fix directly to a false ceiling with mounting claws (included) or installed in a Batibox box, depth 50 mm, Cat.No 0 893 58 3-wire with neutral Standby consumption: 0.4 W Recommended fixing height: 2.5 m PIR ceiling mounted Lighting Management sensors 360° infrared with detection angle of 2 x 12 m Ideal for hallway IP 41	1	0 489 33	Wall or ceiling mounted PIR wall and ceiling mounted multi lens Lighting Management sensors 360° infrared detection with directional head, range 20 m Recommended fixing height: 2.5 m 3-wire with neutral IP 55 Standby consumption: 0.7 W Can be mounted in/on a corner using accessory Cat.No 0 489 72 (p. 31)
		Optimum distance between 2 sensors: 20 m Connection via automatic terminals			Ideal for high ceiling areas
1	0 488 07	Surface mounted on ceiling using accessory Cat.No 0 488 75 (p. 31) PIR ceiling mounted Lighting Management sensors 360° infrared detection, range Ø8 m Optimum distance between 2 sensors: 6 m Connection via automatic terminals Surface mounted on ceiling using accessory Cat.No 0 488 75 (p. 31) Surface mounted on wall	1	0 489 32	Ceiling mounted PIR ceiling mounted Lighting Management sensors 360° infrared detection, Ø20 m at 10 m high, Ø8 m at 2.5 m high 3-wire with neutral IP 55, IP 66 with cable gland Cat.No 0 980 23 Optimum distance between 2 sensors: 20 m Standby consumption: 0.4 W Compatible with Cablofil cable trays
1	0 489 17	PIR wall mounted Lighting Management sensors 180° infrared detection, range 20 m			Ideal for storage areas and restrooms
		Recommended fixing height: 2.5 m 3-wire with neutral IP 42 Additional 2 A contact for HVAC control based on presence data Standby consumption: 0.4 W Can be mounted in/on a corner using accessory Cat.No 0 489 71 (p. 31)	1 1 1	5 740 34 5 740 31	Wall mounted 180° infrared detection, range 8 m Recommended fixing height: 1.2 m Standby consumption: 0.2 W Optimum distance between 2 sensors: 6 m 2-wire cable (without neutral) IP 41 For installation in box, depth 40 mm min., or in surface mounting box Cat.No 0 802 81 2 modules O White - with neutral O White - without neutral O White - without neutral
			1 1		○ White - with neutral ○ White - without neutral

Lighting Management sensors for 1 circuit Lighting Management sensors for work areas with natural light





Selection chart **p. 22** Load table **p. 30**

Check presence and light level continuously, switch off when there is sufficient natural light Manual switch-on and manual or automatic switch-off (factory setting) Can be used with pushbutton Cat.No 0 770 40 (or illuminated pushbutton Cat.No 0 770 33) for manual switch-on and manual or automatic switch-off Infrared and ultrasonic motion sensors for workplaces, providing precise presence detection as soon as the wave transmitted by the sensor is modified (for example, by hand movement on a keyboard) Precise on-site adjustment using configuration tool (p. 31)

Pack	Cat.Nos	Ideal for work areas	Pack	Cat.Nos	Ideal for offices
		Suitable for meeting room, classroom, open plan office, etc. Ceiling mounted 360° infrared and ultrasonic detection, Ø8 m IP 20 3-wire with neutral Optimum distance between 2 sensors: 6 m Standby consumption: 0.8 W Fix directly to a false ceiling with mounting claws (included) or installed in a Batibox box, depth 50 mm	1		Wall mounted 180° infrared and ultrasonic detection, range 8 m Recommended fixing height: 1.20 m Standby consumption: 0.2 W Optimum distance between 2 sensors: 6 m 3-wire cable IP 41 For installation in box, depth 40 mm min., or in surface mounting box Cat.No 0 802 81 2 modules OWhite - with neutral
1	0 488 06	Dual technology ceiling mounted Lighting Management sensors Connection via automatic terminals	1	Mosaic	O White - with neutral
		Surface mounted on ceiling using accessory Cat.No 0 488 75 (p. 31)			Ideal for a individual office
1	0 488 09	Dual technology ceiling mounted Lighting Management sensors Fast connection			Ceiling mounted PIR ceiling mounted Lighting Management sensors 360° infrared detection, Ø8 m range 3-wire with neutral
1	0 489 14	Surface mounted on wall PIR technology wall mounted Lighting Management sensors with presence output 180° infrared detection, range (front) 8 m Recommended fixing height: 2.5 m 3-wire with neutral IP 42 Additional 2 A contact for HVAC control based on	1	0 488 04	Optimum distance between 2 sensors: 6 m Standby consumption: 0.4 W Fixes directly to a false ceiling with mounting claws (included) or installed in a Batibox box, depth 50 mm Surface mounted on ceiling using accessory Cat.No 0 488 75 (p. 31) IP 41 Additional 2 A contact for HVAC control based on
		presence data Consumption: 0.4 W on standby Optimum distance between 2 sensors: 10 m Surface mounted on ceiling using accessory Cat.No 0 489 71 (p. 31)		0 100 01	presence data
1	0 489 16	Dual technology wall mounted Lighting Management sensors with presence output 180° infrared and ultrasonic detection, range (front) 8 m Recommended fixing height: 2.5 m 3-wire with neutral IP 42 Additional 2 A contact for HVAC control based on presence data Consumption: 0.4 W on standby Optimum distance between 2 sensors: 10 m Surface mounted on ceiling using accessory Cat.No 0 489 71 (p. 31)			

Lighting Management sensors for managing several circuits

Lighting Management sensors for controllers for passageway and work areas with natural light















Connection to controller via cord or RJ 45 cable

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Sensor and controller selection chart p. 23

Check presence and light level continuously, switch off when there is sufficient natural light Automatic switch-on/off (factory setting) Precise on-site adjustment using configuration tool (p. 31) Connect to controllers by cord or RJ 45 cable or BUS/SCS cable to be fitted with RJ 45 connector Cat.No 0 488 72 (p. 31)

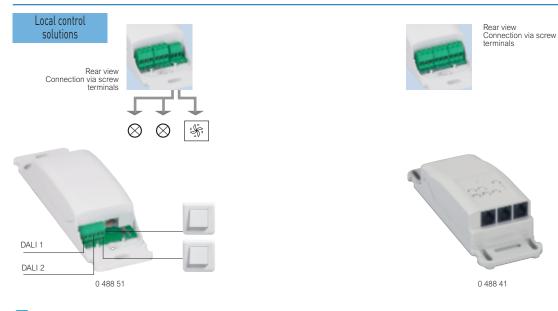
Pack	Cat.Nos	Ideal for large areas	Pack	Cat.Nos	Ideal for work areas
1	0 488 20	Ceiling mounted 360° infrared detection, range Ø8 m Optimum distance between 2 sensors: 6 m Consumption: 0.2 W on standby Fixes directly to a false ceiling with mounting claws (included) or installed in a Batibox box, depth 50 mm Surface mounted on ceiling using accessory Cat.No 0 488 75 (p. 31) IP 41	1	Arteor 5 740 48	Wall mounted 180° infrared and ultrasonic detection, range 8 m Recommended fixing height: 1.2 m IP 41 Consumption: 0.2 W on standby Integrated pushbutton For installation in box, depth 40 mm min., or in surface mounting box Cat.No 0 802 81 2 modules
1	Arteor 5 740 46 Mosaic	Recommended fixing height: 1.2 m IP 41 Consumption: 0.2 W on standby Integrated pushbutton For installation in box, depth 40 mm min., or in surface mounting box Cat.No 0 802 81 2 modules	1	Mosaic 0 784 85	
	0 784 86	Recommended fixing height: 1.2 m IP 41 Consumption: 0.2 W on standby Integrated pushbutton For installation in box, depth 40 mm min., or in surface mounting box Cat.No 0 802 81 2 modules	1	0 488 22	Ceiling mounted 360° infrared and ultrasonic detection, range Ø8 m Recommended fixing height: 2.50 m Optimum distance between 2 sensors: 6 m Consumption: 0.5 W on standby Fixes directly to a false ceiling with mounting claws (included) or installed in a Batibox box, depth 50 mm Surface mounted on ceiling using accessory
		Ideal for outdoor and damp areas PIR technology wall/surface-mounting Lighting			Cat.No 0 488 75 (p. 31) IP 20
1	0 488 34	management sensor, 180° Detection: 6 x 15 front range IP 55 Consumption: 20 mA on standby For direct surface-mounting on wall Can be mounted on an angle using accessory Cat.No 0 489 71 (p. 31)			

Lighting Management sensor for managing several circuits



ECO

multi-circuit ceiling mounted controllers for areas with natural light





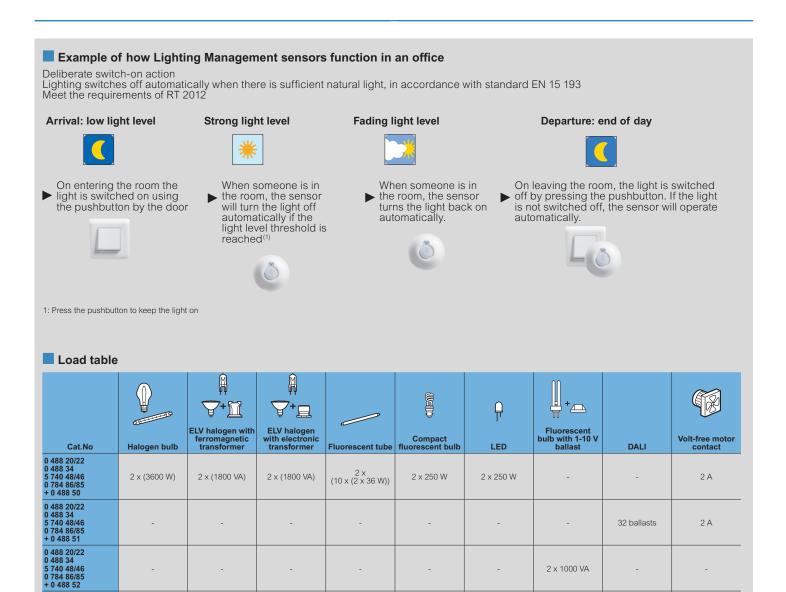
Sensor and controller selection chart p. 23

Ceiling mounted or installed in Cablofil cable trays (see Legrand Cable Management catalogue) Connection to sensors (Cat.Nos 0 488 20/22/34 and 0 784 85/86) by cord or RJ 45 cable or BUS/SCS cable to be fitted with RJ 45 connector Cat.No 0 488 72 (p. 31)

Pack	Cat.Nos	For controlling 1 or 2 circuits in one room	Pack	Cat.Nos	For controlling 4 lighting circuits
		1 sensor input, 2 inputs for auxiliaries 2 outputs Can be used with a pushbutton, including a pushbutton with LED indicator, Cat.Nos 0 770 40/33 for manual switch-on and manual or automatic switch-off			Can be controlled for each output by a sensor and/or an individual BUS control unit Addressing methods using sensors and control units: - automatic configuration - custom configuration by pressing the "Learn" button on the product
		ON/OFF			
1	0 488 50	2 x 16 A outputs Used to control 2 ON/OFF lighting circuits or 1 lighting circuit + 1 ventilation circuit Connection via screw terminals	1	0 488 43	Dimming - ballast 1-10 V or ON/OFF 4 outputs 1000 VA maximum per output
		Dimming - DALI ballast			Dimming - DALI ballast
1	0 488 51	2 DALI outputs (32 ballasts max.) and 1 ventilation output (volt-free contact)	1	0 488 44	4 outputs 32 ballasts maximum per output
		Used to dim the light level on the window side of a room (where there is more natural light) separately from the corridor side			For controlling 2 lighting circuits, 1 shutter and 1 HVAC contact
		Used to control a maximum of 32 DALI ballasts Connection via screw terminals			Can be controlled for each output by a sensor and/ or an individual BUS control unit Addressing methods using sensors and control
1	0 488 52	Dimming - 1-10 V ballast 2 x 1000 VA lighting outputs Used to dim the light level on the window side of a room (where there is more natural light) separately from the corridor side Connection via screw terminals	1	0 488 47	units: - automatic configuration - custom configuration by pressing the "Learn" button on the product 2 ON/OFF or 1-10 V dimming lighting outputs 1 output for roller blind
		For controlling 2 lighting circuits			1 ventilation output (volt-free contact)
		Can be controlled for each output by a sensor and/ or an individual BUS control unit Addressing methods using sensors and control units: - automatic configuration - custom configuration by pressing the "Learn" button on the product			
		ON/OFF			
1	0 488 41	2 x 16 A outputs			
		Dimming - 1-10 V ballast			
1	0 488 42	2 outputs 1000 VA maximum per output			
		Dimming - LV and ELV halogen			
1	0 488 45	2 outputs			

1000 W maximum per output

Motion sensors and Lighting Management sensors for controllers



1	: Operates	with dimmable LEDs	

2000 W

2000 W

2000 W

2000 W

40-400 W

2000 W

2000 W

2000 W

2000 W

2000 W

1000 VA

1000 VA

1000 VA

1000 VA

40-400 VA

1000 VA

40-400 VA

1000 VA

1000 VA

1000 VA

1000 VA

1000 VA

10 x (2 x 36 W)

-

10 x (2 x 36 W)

250 W

20-150 W⁽¹⁾

250 W

250 W

250 W

250 W

250 W

0 488 04

0 488 07

0 488 17

0 488 06/09

5 740 31/34 0 784 58

5 740 47/49 0 784 52/54

0 489 16

0 489 17

0 489 32

0 489 33

+++ E



2 A

2 A

2 A



Configuration tools and accessories

Lighting Management manual BUS controls



Connection:
To the BUS/SCS controller via cord or RJ 45 cable or BUS/SCS cable to be fitted with RJ 45-BUS/SCS connector Cat.No 0 488 72
Directly to the BUS/SCS cable (supplied with BUS/SCS connector Cat.No 3515 for connection to the BUS/SCS cable via tap-off)
To be fitted with Mosaic cover plates and Batibox support frames

Pack	Cat.Nos	ON/OFF lighting controls
1	0 784 75	Pushbutton control used to control 1 controller 1 way Used to control 1 lighting circuit (1 output) O White
1	0 784 72	2 way Used to control 2 lighting circuits (2 outputs) O White
		Switch multifunction controls
		Used to control several controllers (or several outputs on one or more controllers): ON/OFF, dimming, ventilation, roller blind 1 way
1	0 784 71	○ White
1	0 784 73	2 way O White
		Scenario controls
1	0 784 78	Used to control several controllers 2 scenarios 4 buttons used to manage the start and end of each scenario. Example: adjusting lighting levels, controlling lighting with blind, etc. O White
		Switch multifunction controls
1	0 675 52	Used to control several controllers (or several outputs on one or more controllers): ON/OFF, dimming, ventilation, roller shutters 2-way "Switch type" multifunctional control unit To be equipped with support frames and plates
		ON/OFF lighting controls
1	0 675 53	Push-button control used to control 1 controller 2-way ON/OFF control unit. To be equipped with support frames and plates
1	5 739 02	Scenario controls Push-button control used to control 1 controller 2 scenarios O White

00 00 00 RJ 45 connectors 0 488 72 0 0 0 ø ٥ 0 00 0 00 0 882 35 0 882 30 0 488 68

Pack	Cat.Nos	Configuration tools for Lighting Management sensors
1 1	0 882 35 0 882 30	All sensors are supplied with factory settings: - 500 lux light level threshold for ceiling mounted sensors, 300 lux for surface and flush mounting sensors - 15-minute time delay and walkthrough function activated The configuration tools are used to adjust these presets and the detection sensitivity. Step programming on preset buttons
		RJ 45-BUS/SCS connector
10	0 488 72	Used to connect controller(s) and sensor(s) to a BUS/SCS cable via tap-off Male connector
		RJ 45 doubler
10	0 488 68	Used to double the number of controller inputs
		Surface mounting boxes
5	0 488 75	Used for surface mounting ceiling mounted sensors For ceiling mounted sensors Cat.Nos 0 488 04/06/ 07/09/17/20 and 0 489 18/19/35/36
		Fixing accessories for installation in/on corners
1	0 489 71	Used to surface mount sensors in/on corners For surface mounting sensors Cat.Nos 0 488 34 and 0 489 14/16/17/20
1	0 489 72	For surface mounting sensor Cat.No 0 489 33
		Accessories
1 1		Protection basket for sensors Rotate accessory for surface-mounting boxes, for sensors Cat.Nos 048914/16/17/20

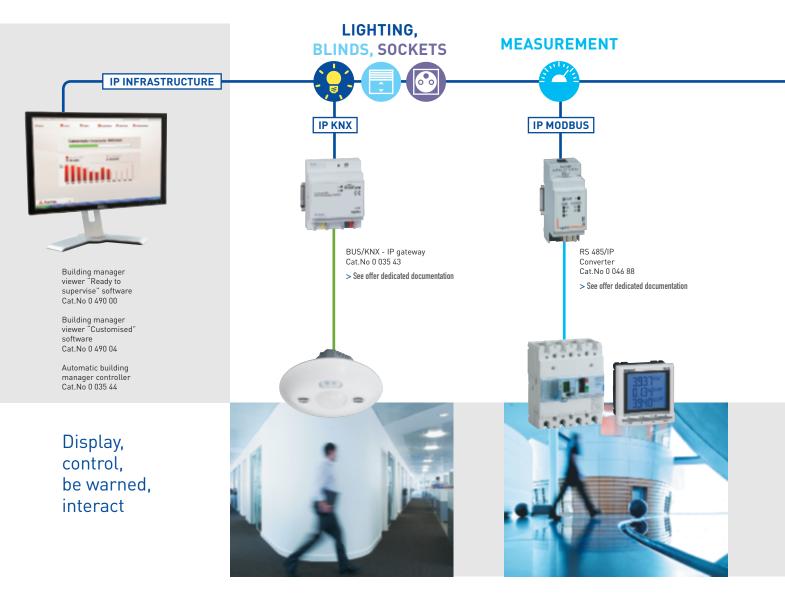
LEGRAND A MOTIVE FORCE IN BUILDINGS

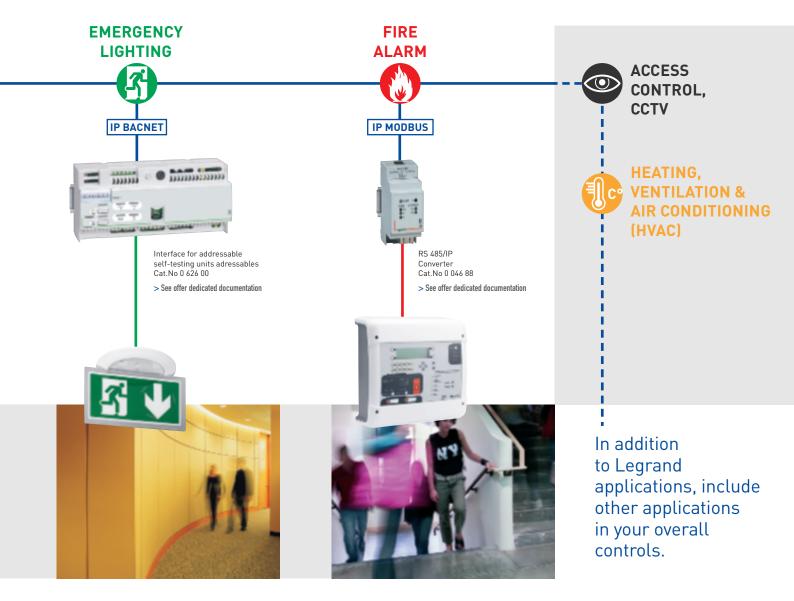
As well as the lighting, optimise operating performance

For optimum energy performance and maintenance, you need active management solutions for all the equipment in the building.

With global control, Legrand becomes an active part of new generation buildings, responding to all their requirements.

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