PUTTING A STOP TO ENERGY WASTE

SWITCH SENSORS DESIGN AND

DESIGN AND APPLICATION GUIDE





CATALOGUE PAGES INSIDE



This document will help you in selecting, laying out, 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.



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DESIGN STEPS FOR IMPLEMENTING MOTION & LIGHTING MANAGEMENT SOLUTIONS

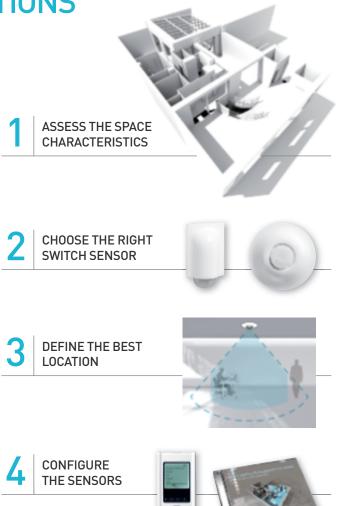
Our wide range of switch sensors, comprising Motion and Lighting Management sensors, is designed to reduce the amount of time lighting is left on unnecessarily, for example if an area is unoccupied or if there is sufficient natural light.

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.
- When the area is vacated: the lighting is switched off after a preset time delay.
 control lighting (up to 60% savings on lighting energy costs according to EN 15193).
 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:



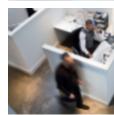














P. 14 OUTDOOR CAR PARK P. 15 WAREHOUSE

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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

MOTION SENSORS For areas with 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:

N

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

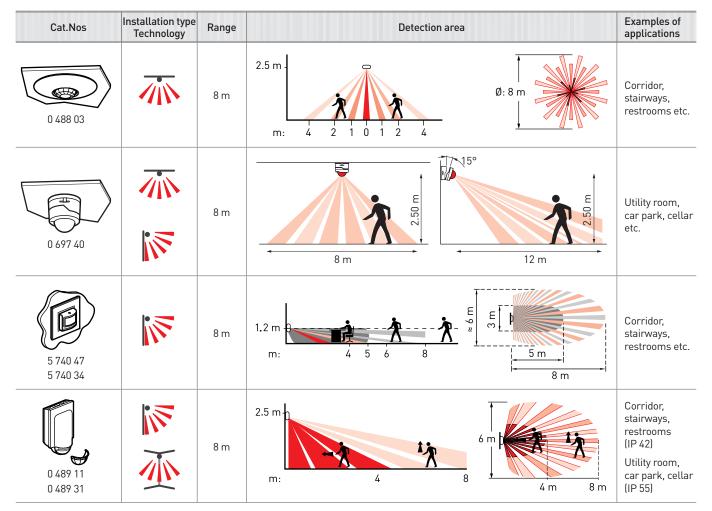
Legrand has 2 categories of sensor according to the area concerned and the type of detection:

MOTION SENSORS

- For areas with little or no natural light.
- For passageways.
- Automatic switch-on/off according to whether or not there is anyone present.

LIGHTING MANAGEMENT SENSORS

- For areas with natural light.
- For passageways and/or work areas.
- 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.



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. Vacancy mode offers extra energy savings.

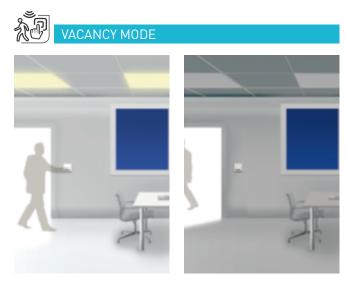




Sensors will switch on lighting automatically when a person enters the room, and switch lighting off automatically when no movement is detected.

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.



No presence detected, daylight, lights off



Presence detected, sufficient daylight, lights off



Presence detected, insufficient daylight, all lights on



No presence detected, lights off



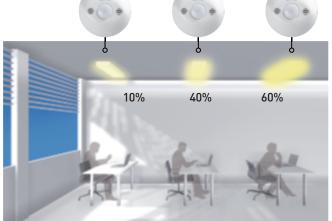
Combining a sensor and a room controller provides additional functions to:

■ 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.

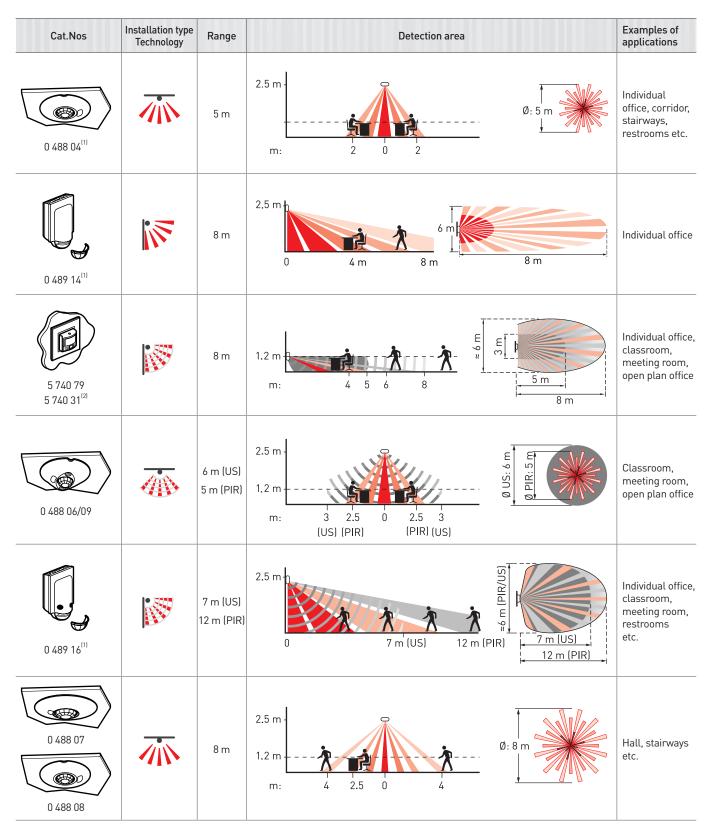


The daylight is unevenly distributed in an area A sensor is combined with each row of luminaires and measures presence and light level.

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

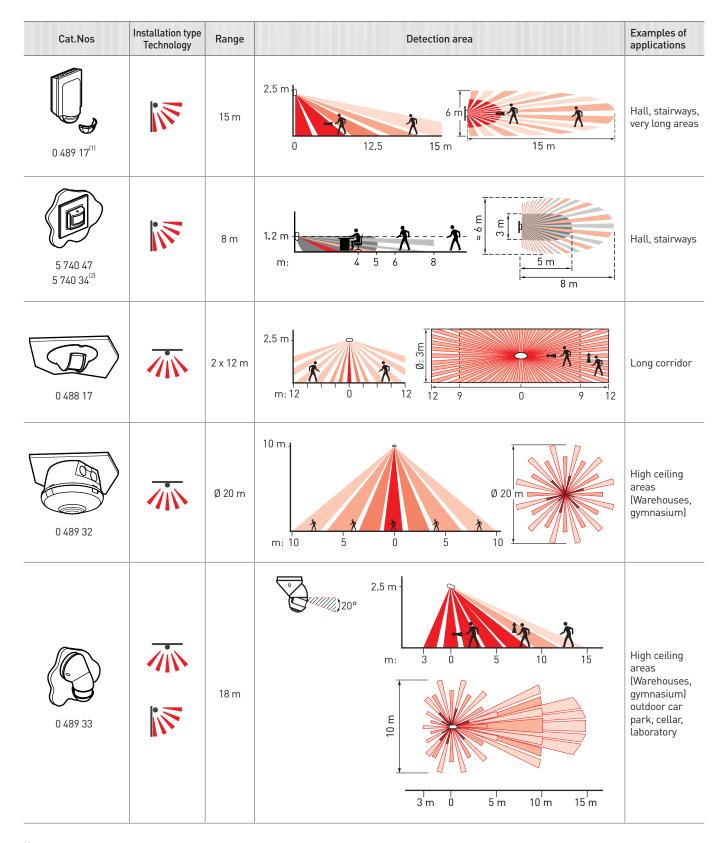
STEP 2 _ CHOOSE THE RIGHT SENSOR

4 COVERAGE PATTERNS



⁽¹⁾ 1 lighting output & 1 fan output

⁽²⁾ without neutral

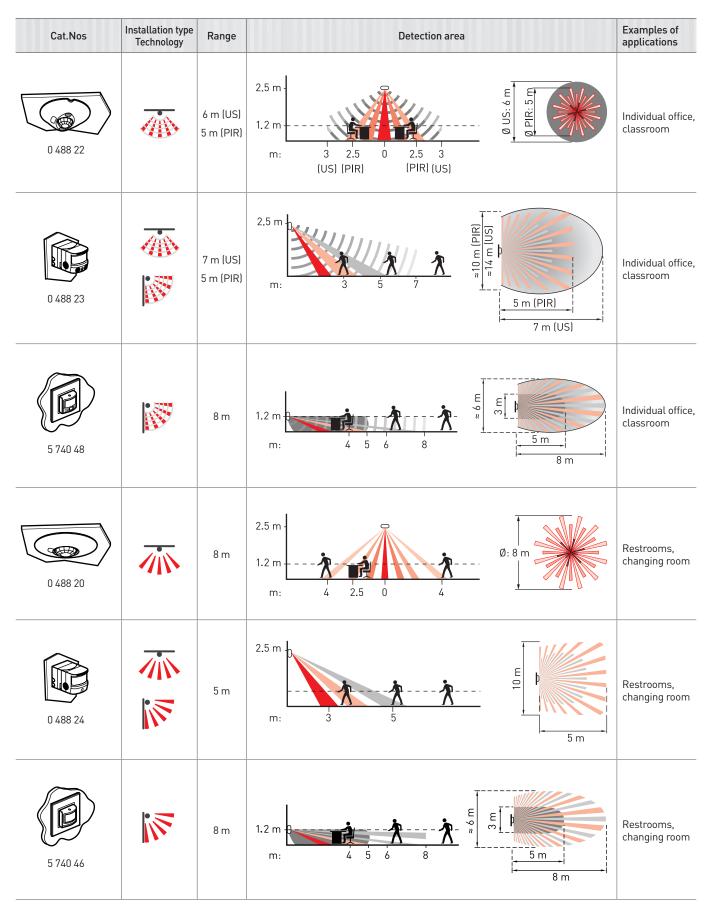


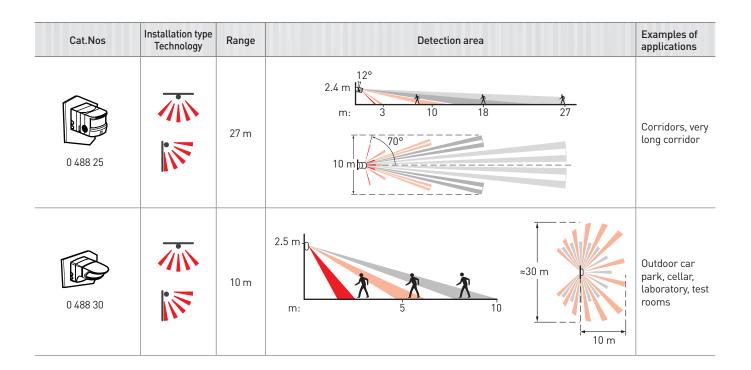
⁽¹⁾ 1 lighting output & 1 fan output

⁽²⁾ without neutral

STEP 2 _ CHOOSE THE RIGHT SENSOR

4 ROOM CONTROLLER





5 ROOM CONTROLLER - CONTROL OF 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		
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).



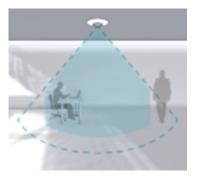
Whether it is a matter of work areas or passageways, the presence sensors must be chosen and positioned in line with the following recommendations:

1 WORK AREAS

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

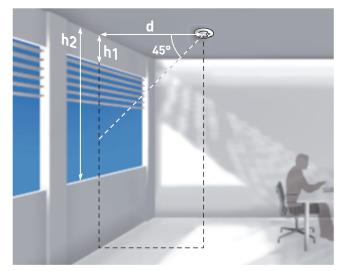
Positioning

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).

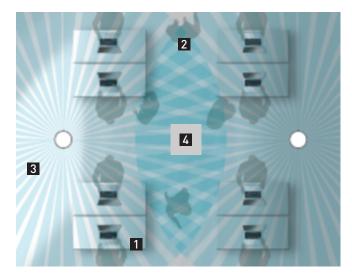


For optimum light level measurement, the sensor must be positioned between a minimum distance (to be determined) and 4 metres maximum from the source of natural light (large or small window, etc.). The ideal distance is calculated using the formula **d= (h1+h2)/2**).

Recommendations

The presence 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 room 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: • n 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
- or 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 automatically switched ON & OFF.

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



Cat.No 0 489 33

PIR outdoor motion sensor 270° with directional head Range 20 m IP 55 For wall or ceiling mounted

Fixed above a door, its double lens will switch on the lights as soon as the door opens. It will also provide detection over very long areas. 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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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.

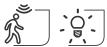




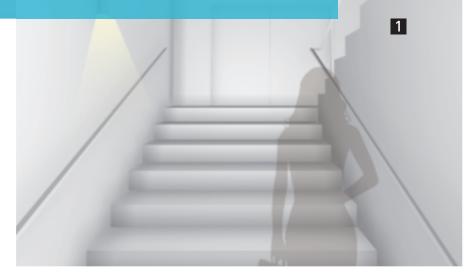
Cat.No 0 489 32 PIR sensor 360° Range Ø 20 m IP 55 (IP 66 with plastic cable glands) Surface mounting on ceiling.



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 57 PIR sensor Replace your push-buttons wired to a timer without changing the wiring 180° Range 8 m Auto ON/OFF IP 41 Wall-mounting.

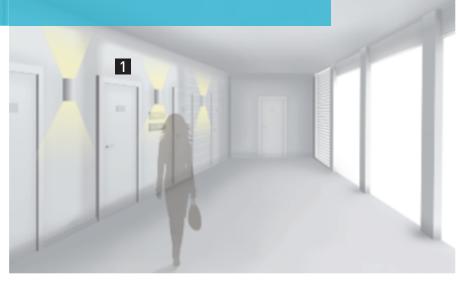
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Corridors



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.

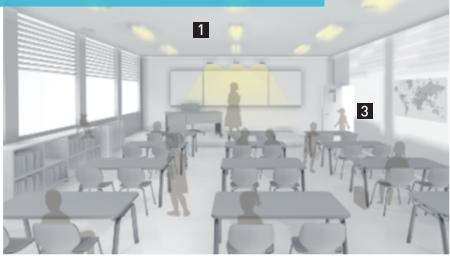
 Automatic when the area in the classroom is no longer occupied, after a time delay. Automatic switch-off of the board lighting is linked to that of the classroom lighting.

• 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.

CONTROL REQUIREMENTS

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.

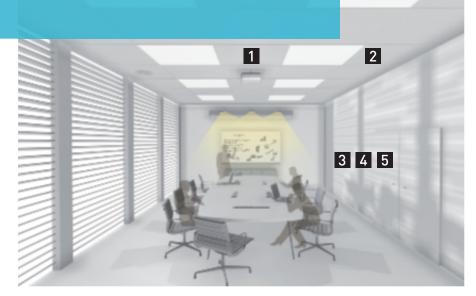
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Meeting room



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 SENSORS						
		INSTALLATION					
AREAS WITHOUT NATURAL LIGHT	Ceiling ⊼	Ŵ	/all 🎼				
		Surface mounting ⁽²⁾	Flush-mounting ⁽¹⁾				
PASSAGEWAY							
Hall/lobby Stairways/hallways Storage areas/technical areas	0 488 03 ⁽¹⁾	0 489 11	5 740 47 ⁽¹⁾ 5 740 34 ⁽⁴⁾ - Without neutral				
OUTDOOR AND DAMP AREAS							
Indoor/external car park IP 55 Indoor entrance areas	0 697 40/0 697 80	0 489 31 Fixed head	-				

LIGHTING MANAGEMENT SENSORS						
AREAS WITH NATURAL LIGHT	Automatic On-Off Checking permanently the presence	and daylight level				
WORK AREAS						
Individual office/small room	0 488 00/0 488 04 ⁽³⁾	0 489 14	β m	5 740 49/5 740 31 ⁽¹⁾		
Open plan office/classroom/ meeting room	0 488 06 ⁽¹⁾ 0 488 09	0 489 16 ⁽³⁾	3 m	5 740 49/5 740 31 ⁽¹⁾		
PASSAGEWAY		1				
Hall/lobby Stairways/hallways	0 488 07 ⁽¹⁾ /0 488 08 ⁽¹⁾	0 489 17 ⁽³⁾	20 m	5 740 47 ⁽¹⁾ /5 740 34 ⁽⁴⁾ - Without neutral		
Hallways Very long areas	0 488 17 ⁽¹⁾	0 489 17 ⁽³⁾	20 m	للمن المنابع منابع مناب		
High ceiling areas (gymnasium, storage areas)	0 489 32 (Flush-mounting)		270° 0 m	-		
Restrooms, bathrooms Dressing room	0 488 04 ⁽³⁾	0 489 16 ⁽³⁾	3 m	للمن المنابع منابع مناب		
OUTDOOR & DAMP AREAS		1				
Indoor/outdoor car park lot Indoor entrance areas	0 489 32 0 489 32 0 489 32 0 489 33 Directional head		270° 0 m head	-		

1: Surface mounting box option - 2: corner mounting option - 3: 1 lighting output + 1 fan output - 4: Dedicated retrofit solution

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

CHOOSE THE SENSOR	Automatic On-Off Checking permanently the presence	and the light level						
	INSTALLATION							
	Ceiling 🍝	١	Wall 🗐					
		Surface mounting	Flush-mounting					
WORK AREAS								
Individual office Classroom	0 488 22	0 488 23	5 740 48					
PASSAGEWAY								
Restrooms, changing rooms	0 488 20	0 488 24	5 740 46					
Hallways Very long areas	0 488 20	0 488 25	-					
High ceiling areas (gymnasium, storage area)	-	0 488 25	-					
OUTDOOR & DAMP AREAS								
Car park lot, cellar, laboratory, test room, changing room	-	0 488 30						

AND THE OUTPUTS TO BE MANAGED				DIMMING
	ON-OFF	DALI	1-10 V	Halogen ${igveen}$ - Incandescent ${igveen}$ - Dimmable LEDs ${}^{\scriptscriptstyle (1)}$ ${igodown$
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)

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Motion sensors for 1 circuit

motion sensors for passageway without natural light



Selection chart p. 22

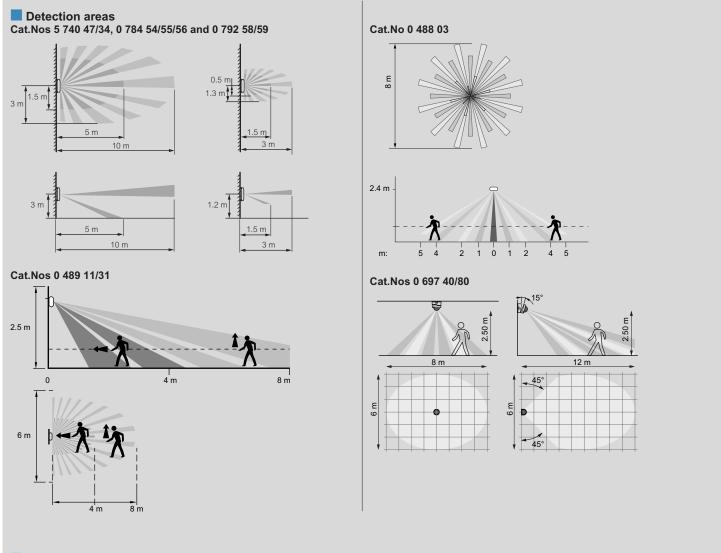
Automatic on/off Manual adjustment of light level threshold and time delay via potentiometer All load 8.5 A - 240 V

Pack	Cat.Nos	Ideal for passageways	Pack	Cat.Nos	Ideal for outdoor and damp areas
1	0 489 11	Surface mounted on wall PIR wall mounted motion sensor 180° infrared detection, range 8 m Recommended fixing height: 2.5 m 3-wire with neutral IP 42 Light level threshold: 1 to 1000 lux Adjustable time delay: 5 s to 30 min Standby consumption: 0.7 W For direct surface mounting on wall Can be mounted in/on a corner using accessory Cat.No 0 489 71 (p. 28)	1	0 489 31	Surface mounted on wall PIR wall mounted motion sensor 180° infrared detection, range 8 m Recommended fixing height: 2.5 m 3-wire with neutral IP 55 Light level threshold: 5 to 1275 lux Adjustable time delay: 5 s to 30 min Standby consumption: 0.7 W For direct surface mounting on wall Can be mounted in/on a corner using accessory Cat.No 0 489 71 (p. 28)
1 1		Wall mounted - Arteor PIR wall mounted motion sensors 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			Ceiling mounted PIR wall and ceiling mounted motion 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
1	0 784 57	Wall mounted - Mosaic PIR wall mounted motion sensor 180° infrared detection, range 8 m Recommended fixing height: 1.2 m IP 41 Without neutral, ideal to replace push-buttons wired to a timer The time delay settings must be the same between the sensor and the timer O White	1	0 697 40 0 697 80	
6		Ceiling mounted PIR ceiling motion sensor 360° infrared detection, range Ø8 m Recommended fixing height: 2.50 m 3-wire with neutral IP 41 Light level threshold: 1 to 1000 lux Adjustable time delay: 5 s to 30 min Consumption: 0.4 W on standby 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 Can be surface mounted on ceiling using accessory Cat.No 0 488 75 (p. 28)			

ECO

Motion sensors for 1 circuit

detection areas and load table



Load table

Cat.No	Halogen bulb	ELV halogen with ferromagnetic transformer	ELV halogen with electronic transformer	Fluorescent tube	Compact fluorescent bulb	р LED
5 740 47	2000 W	1000 VA	1000 VA	10 x (2 x 36 W)	250 W	250 W
5 740 34	40 x 400 W	40 - 400 VA	40 - 400 VA	-	-	-
0 489 11	2000 W	1000 VA	1000 VA	10 x (2 x 36 W)	250 W	250 W
0 488 03	2000 W	1000 VA	1000 VA	10 x (2 x 36 W)	250 W	250 W
0 489 31	2000 W	1000 VA	1000 VA	10 x (2 x 36 W)	250 W	250 W
0 697 40/80	2000 W	1000 VA	1000 VA	10 x (2 x 36 W)	250 W	250 W

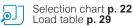
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Lighting Management sensors for 1 circuit

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 switch-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. 28) 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 270° 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. 28)
		Optimum distance between 2 sensors: 20 m Connection via automatic terminals			Ideal for high ceiling areas
1		Surface mounted on ceiling using accessory Cat.No 0 488 75 (p. 28) 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. 28) PIR ceiling mounted Lighting Management sensors 360° infrared detection, range Ø8 m	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
		Optimum distance between 2 sensors: 6 m			Ideal for storage areas and restrooms
		Fast connection Surface mounted on wall			Wall mounted
1	0 489 17	PIR wall mounted Lighting Management sensors 180° infrared detection, range 20 m 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. 28)	1	5 740 34	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 PIR flush mounted Lighting Management sensors without neutral O White

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





Selection chart **p. 22** Load table **p. 29**

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. 28)

Pack	Cat.Nos	Ideal for work areas	Pack	Cat.Nos	Ideal for offices
1		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 Dual technology ceiling mounted Lighting Management sensors Connection via automatic terminals Surface mounted on ceiling using accessory Cat.No 0 488 75 (p. 28)	1	5 740 49	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 Dual technology flush mounted Lighting Management sensors with neutral O White
1	0 488 09	Dual technology ceiling mounted Lighting Management sensors			Ideal for a individual office
1		Fast connection 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 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. 28) 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	1 1		Ceiling mounted PIR ceiling mounted Lighting Management sensors 360° infrared detection, Ø8 m range 3-wire with neutral 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. 28) IP 41 Without 2 A contact for HVAC control Additional 2 A contact for HVAC control based on presence data
		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. 28)			

Configuration tools and accessories

00 0 RJ 45 connectors 0 488 72 0 æ 0 0 882 30 0 488 68 0 882 35

Pack	Cat.Nos	Configuration tools for Lighting
1 1		Management sensors 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 Digital programming to one decimal place on the digital screen Instant programming control Used to display the parameters of each sensor Option to store settings in the memory and to apply them to other sensors Standard preset configurations for each room type (office, hallway, etc.) according to EN 12 464
		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/ 07/17/20/22/35/99
		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 94/95/ 16/17

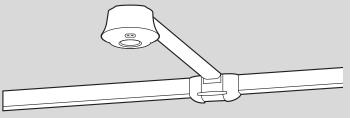
1 0 489 72 16/17 1 0 489 72 For surface mounting sensor Cat.No 0 489 33

Configuration tools and accessories

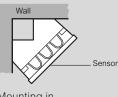
Customising settings on-site

All sensors are preset in the factory 500 lux light level threshold for ceiling mounted sensors and 300 lux for surface mounting sensors • 15-minute time delay and walkthrough function activated The configuration tools are used to adjust the preset settings and the detection sensitivity

Installing surface mounting boxes Cat.Nos 0 488 74/75



Installing fixing accessories in/on a corner (view from above)

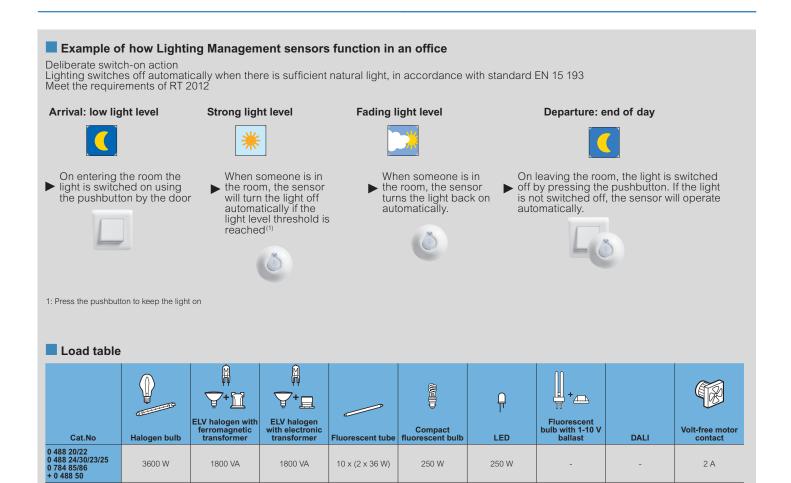




Mounting in internal corner

Mounting on external corner

Motion sensors and Lighting Management sensors for controllers



0 489 32	2000 W	
0 489 33	2000 W	

2000 W

2000 W

2000 W

2000 W

40-400 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)

250 W

20-150 W

250 VA

250 VA

250 VA

250 VA

250 VA

1: Operates with dimmable LEDs

0 488 20/22 0 488 24/30/23/25 0 784 85/86 + 0 488 51

0 488 20/22 0 488 24/30/23/25 0 784 85/86 + 0 488 52

0 488 04

0 488 07/08

0 488 06/09

0 784 53 - 0 792 53

0 784 52 - 0 792 52

0 488 17

0 489 16

0 489 17



Best practice guide for office buildings available at www.legrand.com

32 ballasts

1000 VA

2 A

2 A

2 A

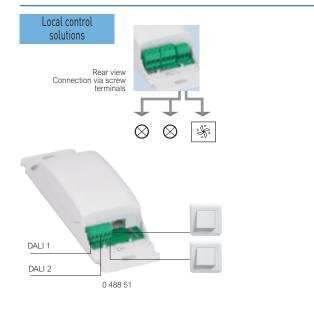
2 A

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Lighting Management sensor for managing several circuits



multi-circuit ceiling mounted controllers for areas with natural light



Rear view Connection via screw terminals



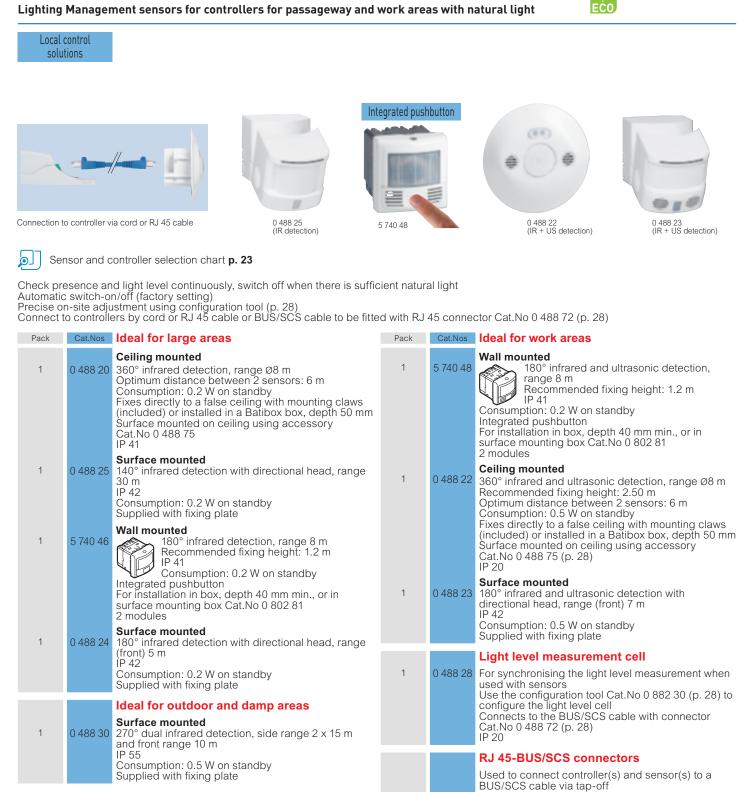
Sensor and controller selection chart p. 23

Ceiling mounted or installed in Cablofil cable trays (see Legrand Cable Management catalogue) Connection to sensors (Cat.Nos 0 488 20/22/30/24/23/25 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 ON/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
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
1	0 488 51	Dimming - DALI ballast 2 DALI outputs (32 ballasts max.) and 1 ventilation output (volt-free contact)	1	0 488 44	4 outputs 32 ballasts maximum per output
1	0 488 52	Used to dim the light level on the window side of a room (where there is more natural light) separately from the corridor side Used to control a maximum of 32 DALI ballasts Connection via screw terminals 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	For controlling 2 lighting circuits, 1 shutter and 1 HVAC 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 2 ON/OFF or 1-10 V dimming lighting outputs 1 output for roller blind 1 ventilation output (volt-free contact)
		For controlling 2 lighting circuits			r ventilation output (voit-nee 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			

Lighting Management sensors for managing several circuits





0 488 72 Male connector 0 488 73 Female connector

10 10

BUS/SCS OR BUS/KNX LIGHTING MANAGEMENT

Local or global control,

the choice is yours!

Once you have selected your sensors and controls, you can opt for a local BUS/SCS solution or a BUS/KNX building control system.

LOCAL CONTROL

BUS/SCS wiring enables local and remote presence and light level detection and management, shutter control, time management and scenario management functions. Ideal for meeting rooms, small businesses or office spaces etc.



>>

BUILDING CONTROL

In addition to local control. BUS/KNX wiring enables supervision and integration of other building applications, such as emergency lighting, HVAC and fire alarms.

An ideal solution to the needs of energy performance, operating performance and ease of maintenance.



RADIO/ZIGBEE®: THE PERFECT COMPLEMENT TO **BUS/SCS**



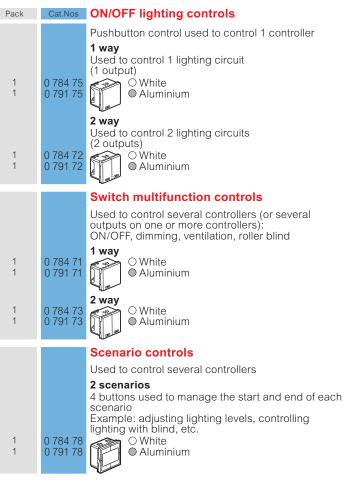
As an addition to BUS/SCS wiring, the Radio/ZigBee® offer can be used to install new radio control points without damaging walls.

Ideal for refurbishment installations or glazed surfaces.

Lighting Management individual and centralised 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 (p. 28) - 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

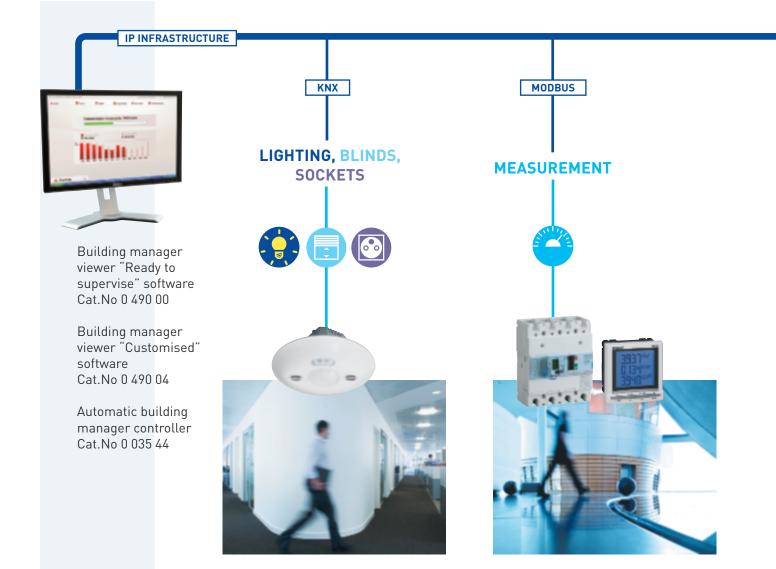


As well as the lighting, optimise operating performance

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.

ISOZ 50000/HQE/LEED/BREEAM/SMART GRID READY



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