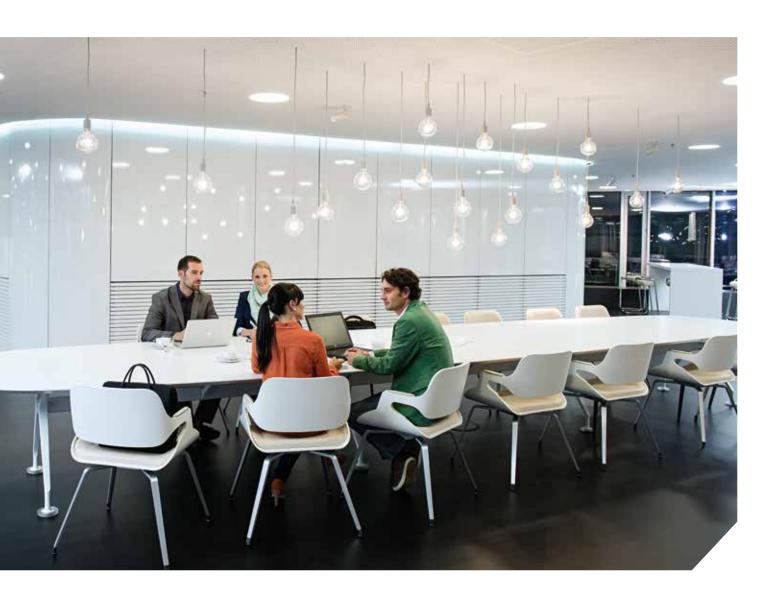


## Energy-efficient lighting Presence and motion detectors





### Solutions for indoor use

## Small rooms without daylight

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## Passage ways, corridors and staircases

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## Selection matrix Which detector for which application?



Indoors

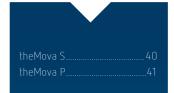
Walking motion Little daylight Ceiling installation Seated activities or little motion

Ceiling installation

Wall mounting

Switching operation

Dimming operation



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#### Outdoor use

With LED spotlight

Without LED spotlight

Wall mounting

Wall mounting

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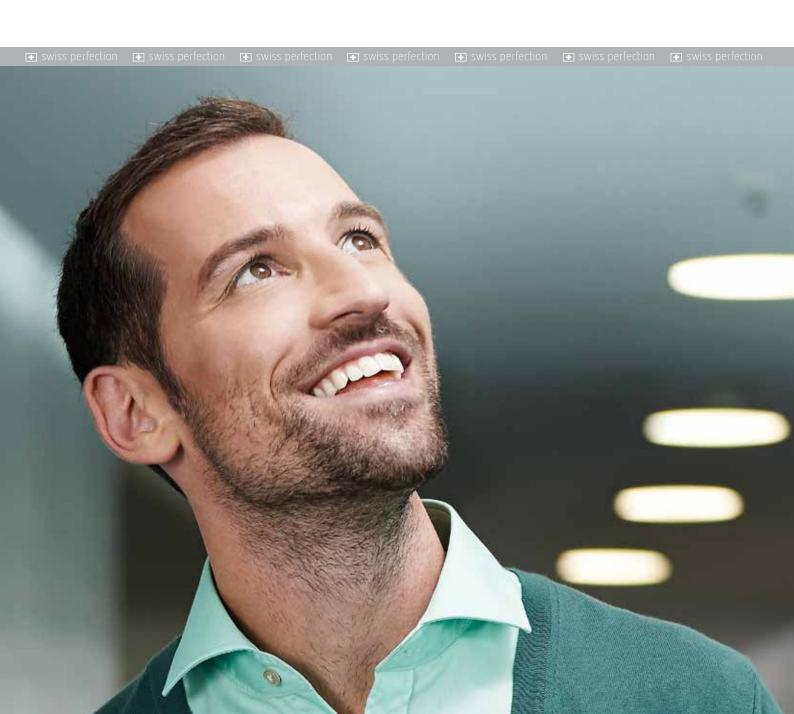


# Lighting control indoor

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## Presence detectors for energy-efficient lighting control

With the Theben presence detectors, you have every option for energy-efficient and intelligent lighting control. In addition to classic use for lighting control in offices, corridors and public buildings, you can also control heating and air-conditioning based on presence. This is how you save on energy costs and considerably reduce  $\mathrm{CO}_2$  emissions. Presence detectors react to the slightest of movements and measure room brightness at the same time. If no more movement is detected, or an individually set brightness value is exceeded, the presence detector automatically switches off the light.







<sup>1</sup> In accordance with guarantee conditions, see www.theben.de/en/guarantee







For its aesthetic design, the Prema has won several awards

### Technology: How does a presence detector work?

Presence detectors work according to the same principle as motion detectors: They detect thermal radiation in their surrounding, that is in their detection area. If thermal radiation is detected in the detection area, for example caused by a person approaching the presence detector, the presence detector converts the radiation into a measureable, electric signal, and the light is switched on.

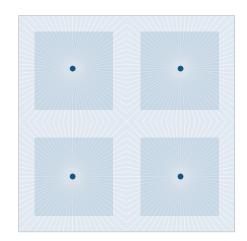
The difference between motion and presence detectors lies in the sensitivity of the sensors. Presence detectors have far more sensitive sensors than motion detectors and detect even the smallest of movements. The sensitive sensors divide the detection area of a presence detector evenly into up to 1000 zones. Like a chessboard, the zones run through the entire detection area. Even minimum changes in the thermal image, such as typing on the keyboard in an openplan office, will be detected. In contrast, a motion detector only responds to greater changes in the thermal image and is therefore mainly suited for applications with larger, walking movements or outdoor use.

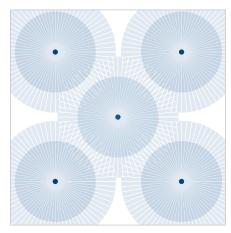
A further difference between motion and presence detectors lies in the light measurement. A motion detector measures brightness once, when the light is switched on because of a movement. If it continues to detect movements, e.g. in the morning in an office, the light remains switched on although daylight would be sufficient in the meantime and the set brightness value has already been exceeded. The light unnecessarily remains switched on. In contrast, presence detectors permanently measure the brightness: If an individually set brightness value is exceeded, the presence detector switches the light off, even if it detects movement. That saves energy costs and a large amount of CO<sub>2</sub>.



## Square detection area of 360°

As most rooms are square or rectangular, a square detection area simplifies planning enormously. The detection areas of the individual presence detectors can be lined next to each other with no gaps. In addition to simplified planning, there is another practical benefit: There are no "blind spots" or overlappings in the room. And movements are guaranteed to be reliably detected everywhere.





In contrast to presence detectors with a circular detection area, presence detectors with a square detection area ensure optimum coverage of rooms without unnecessary overlappings or gaps.

#### Presence detector







#### Motion detector







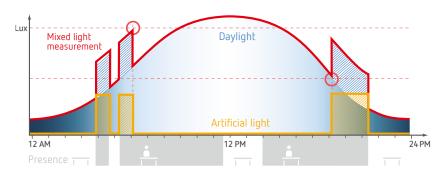
#### Light measurement in detail

Lighting control using presence detectors is based on detected movement on the one hand and on light measurement on the other. Presence detectors permanently measure the brightness inside the room. Through this permanent light measurement, the presence detector is able not only to switch on artificial light when there is not enough daylight, but also to switch it off again when there is sufficient daylight. It sounds very easy, but in fact the presence detector must be able to assess, whether there is enough daylight after switching off the artificial light.

#### Switching operation

During switching operation, the presence detector measures the sum of artificial lighting and daylight. In order to be able to switch off the artificial light at the right moment when there is increasing daylight, the presence detector must know the proportion of artificial light (see fig.). This value is automatically learned by the detector by constantly analysing the lighting switching processes in the room. This enables it to calculate the current daylight

intensity at any time from the measured total brightness. The advantage of mixed light measurement is that it works with any light source — whether LEDs, halogen or fluorescent lamps. Mixed light measurement is the base for constant light control.

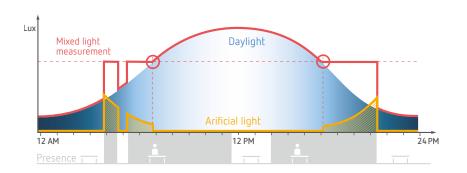




#### Constant light control

With constant light control, the presence detector permanently measures the sum of daylight and artificial light (see fig.). It determines the desired brightness value from these two light sources. On a misty or rainy morning the available daylight is less. In this case, the presence detector increases the proportion of artificial light, in order to reach the desired brightness in the room.

If the sun breaks through in the course of the morning and there is increased light through the windows, the presence detector reduces the proportion of artificial light. The brightness level in the room therefore remains constant, regardless of the incidence of daylight. Typical applications: Production buildings where a specific brightness level is required by law.



Information on motion detectors from page 52



## Planning and installation Correct installation of presence detectors

For optimum functioning of the presence detector and to avoid sources of interference, a few points have to be considered during installation: Everything inhibiting the sight of the presence detector must be avoided, such as suspended lamps, partitions, shelves or big plants. Sudden temperature changes in the surrounding of the presence detector — for instance caused by switching fan heaters or fans on or off —

simulate movement. Lamps which are switched on or off in the vicinity of the detection area (e.g. halogen lamps at a distance of <1 m) simulate movement and can lead to incorrect switching. Moving objects, such as machines, robots etc. simulate motion signals or temperature differences. Slowly warming objects, such as heat radiators (lateral distance from lines and radiators > 0.5 m), IT equipment (computers,

screens), sunny surfaces, or room ventilation systems do not disturb the function of the presence detector, as long as the warm air is not directly pointed at the presence detector. Application examples for the optimum positioning of the presence detector in various rooms can be found from page 18 onwards.









Caution: Do not install presence detectors next to suspended lamps, partitions, shelves, and indoor plants or devices that simulate motion, such as fans or machines.



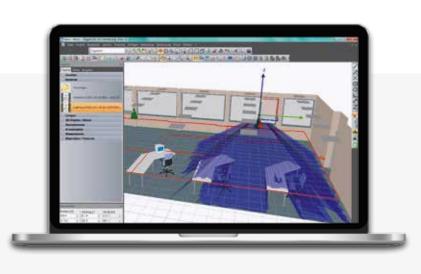
## Free planning software for safe detector positioning

Those who want to position the light correctly right from the start will benefit from the Relux light simulation, which in general is free of charge. Relux offers professional planning software for development and

implementation of complex lighting control tasks. The software for planners, architects and light designers is based on lighting solutions from various manufacturers and is appreciated by its users around the globe.

Since spring 2014, Theben is Relux member in the sensors product group. More info at www.relux.com





## Simple and efficient Practical advantages of presence detectors



Due to their very fine sensor technology, Theben presence detectors detect even smallest movements and temperature differences. In this way, they allow to exactly adjust light and climate to the needs of inhabitants and users. Depending on the model, the various presence detectors are available in the colours black, white, grey, silver or in special colours upon request.



## Square detection-area

The square detection area is ideal for most rooms in which presence detectors are installed. In this way, the individual detectors can be perfectly arranged. Without any gap or unnecessary

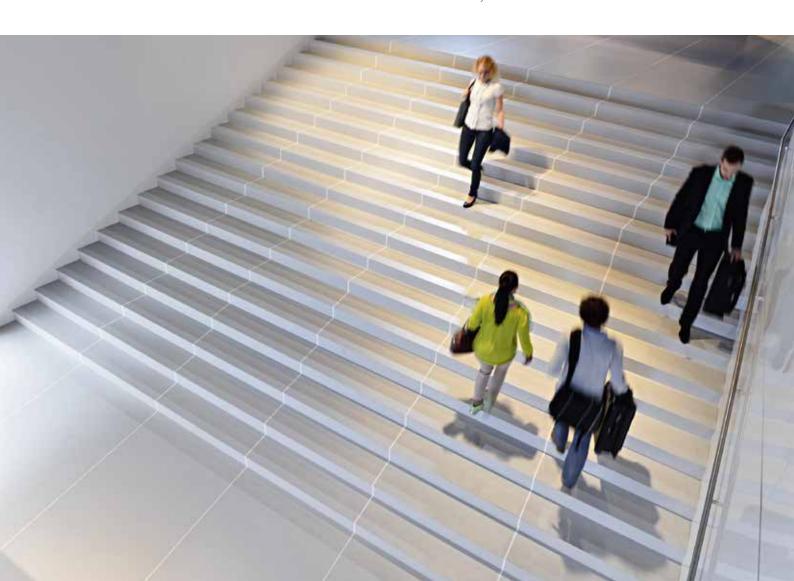
overlappings. Without blind spots. This makes planning easier, reduces the installation effort, saves energy and lowers costs — because, due to the square detection area, usually fewer detectors are needed.



## Self-learning time delay

Depending on how people behave inside the room, the time delay changes automatically. If the presence detector detects more movement, the time delay is shortened to just two minu-

tes. If people hardly move or only rarely, the time delay is increased to up to 20 minutes. This saves energy, increases comfort and allows people to work in their most efficient way: active and lively or still and focused.





## Sensitive room surveillance

A presence detector misses nothing. This is a particular advantage when the presence detector is integrated in the building system technology of large office or administration buildings. In this way the building management always know in which rooms people are still working.



#### Safe staircase light function

With presence detectors, nobody trips up. Not even on the stairs. The light can be turned on using the buttons, but it only goes off when there is no movement on the stairs anymore. This means that someone who is at the top of the stairs is not suddenly left in the dark because someone at the bottom has switched off the light.



### Illuminating short stays

In the event of a short stay, the light is only on for two minutes. Since presence detectors "detect", whether and how long someone is in the room. This means that whoever enters the room for a short period of time does not automatically trigger the time delay that has been set and therefore does not have to go without light.



## Individual light scenarios

Bright daylight or soft dimmed light — You can choose between two lighting scenarios you can define however the mood takes you. For example, in conference rooms where the light has to be dimmed for presentations. For exactly those lighting arrangements that are necessary for everyday situations. Settings can be made, saved and changed quickly and easily using the remote control.



### Easy to use remote control

With a remote control, settings can be easily made and changed from ground. This is faster, shortens installation times and lowers costs. And, moreover, it is safer.



#### Clever teachin function

Lighting conditions change quickly — it is good if you can simply save them when they are exactly how they should be. With the clever Teach-in function, the current lux value can be continuously saved. Without specialist knowledge. By the end user. It couldn't be easier.



## Constant lighting control

Some versions have constant lighting control, which permanently compares artificial light and daylight. They determine the desired brightness value from these two light sources. No matter how changeable the weather: The lighting conditions inside the room remain pleasantly constant.



## Sensitivity that can be set

It is up to you, how sensitive presence detectors respond to movements inside the room. The PIR sensors can be conveniently set using the remote control — according to the individual requirements of the users.



## Suitable for damp rooms

Presence and motion detectors with protection class IP 54 can also be used in damp rooms such as showers, changing rooms or toilets.



## Practical pulse function

The pulse function allows the presence detectors to be built into existing electrical installations with staircase light timer switches or KNX binary inputs without the need for expensive adjustments.



## Most simple energy saving setting

"eco" stands for optimum switching behaviour. "eco plus" for maximum energy savings. You decide what is best for you at the push of a button. Just as you want. Exactly how you need it. There is no easier way to save energy.



## Intelligent parallel switching

Presence detectors allow for more than just increasing the detection area via Master/ Slave switchings. Via Master/ Master/parallel switches the lighting conditions can be set in the detection area of individual devices independently, without depending on other devices and therefore individually. That is an advantage if, for instance, in open-plan offices, different lighting conditions are to be balanced between areas close to windows and the room's interior.



## High switching capacity

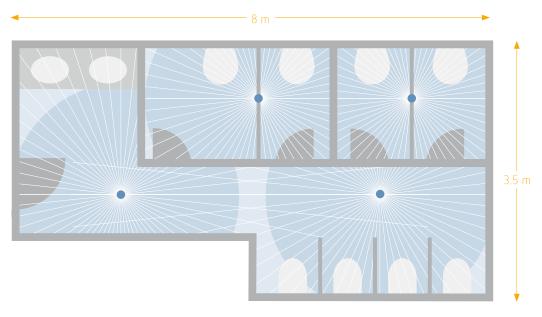
Theben presence and motion detectors have a high-performance relay with tungsten pre-contact or a zero-cross switching and can thus handle switch loads of up to 10 amperes. This allows several lamps to be connected at the same time and larger areas, such as loading ramps or hotel premises, to be lit. This improves planning security, lowers costs and reduces installation times.

## All functions at a glance Motion and presence detectors

Function	s	theMova S360-100	theMova S360-101	theMova P360-100	theRonda P360-100	theRonda P360-101	<b>thePrema</b> S360-100	thePrema S360-101	thePrema P360-101	Plano Centro 101
**	Square detection area						•	•	•	•
(\$\doc{\psi}{2}\)	Innovative light measurement								•	
	Self-learning time delay						•	•	•	•
-\u00f2'- 2min	Illuminating short stays				•	•	•	•	•	•
•	Clever teach-in function	•	•	•	•	•	•	•	•	•
есо	Most simple energy saving setting						•	•	•	
3	Safe staircase light- function						•	•	•	•
**************************************	Sensitivity that can be set	•	•	•	•	•	•	•	•	•
Ϋ́	Sensitive room surveillance						•	•	•	•
-\^-\^-	Constant lighting control									
10 A-3 AX 230 V~	High switching capacity			•	•	•	0	0	0	•
	Easy to use remote control	•	•	•	•	•	•	•	•	•
<u>□</u> 1 <u>□</u> 2	Individual lighting scenarios						•	•	•	•
⊗-M- ⊗-M-	Parallel connection						•	•	•	•
IP	Suitable for damp rooms	2	2							
								1 fro	m 2015	only in AP version

Plano Centro 201	Plano Centro 300	Presence Light 360	Presence Light 180	<b>compact</b> passage	<b>compact</b> passimo	compact office DALI	compact office DIM	<b>SPHINX</b> 104-360	<b>SPHINX</b> 104-360/2	SPHINX 104-360 DIMplus
•	•	•	•	•	•	•	•			
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## Automatic lighting control for sanitary and ancillary rooms



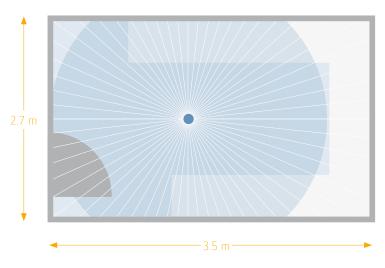
### **Toilets**

The aim is the implementation of an automatic, motion-dependent lighting and ventilation of a restaurant toilet without any daylight. The ventilation should be switched on automatically, when the presence of a guest is detected, in order to always have fresh air.

nstallation height 3 m

## Storage rooms

In a small storage room without windows, the light should go on automatically, as soon as someone enters the room, and — in order to save energy — should also go off after a defined time delay.



Installation height 3 m

#### theMova S360-101 AP

#### We recommend:

Motion detector the Mova S360-101 AP

- **•** Thanks to its higher protection rating of IP 54, it can be used in damp rooms
- ◆ Ventilation can be controlled via the presence channel. This makes the detector also suitable for copying rooms or similar rooms, in which the air exchange is of high importance
- **⊃** Technical data theMova S AP: page 40

#### Alternative:

If daylight is available, we recommend a presence detector such as PresenceLight 360:

- **⇒** High protection rating of IP 54
- Control of ventilation via lighting channel
- Technical data PresenceLight 360: page 48



High-performance KNX version





Since there is no window and thus no daylight comes in, a motion detector is absolutely sufficient. We recommend theMova S360-100DE:

- **⊃** Large detection area of Ø 7 m at an installation height of 3 m
- Reliable detection of all movements, as soon as the door opens
- Technical data theMova S: page 40

#### Alternative:

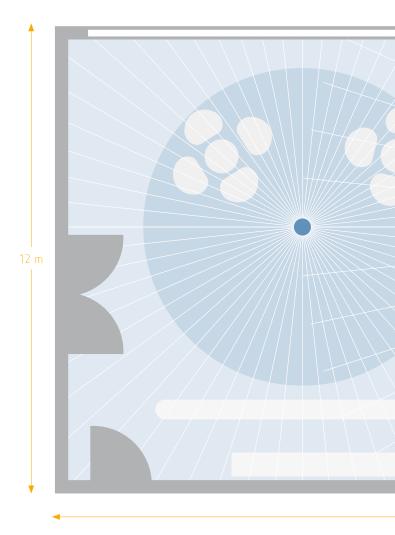
If people stay inside the room for a longer period, we recommend the Prema S.



High-performance KNX version theMova S360-100 DE



## Presence-dependent lighting control for foyers, lobbies and entrance areas



### Entrance hall

In an entrance hall of 6 m height in an office building, the light is to be controlled depending on presence.

In this case, we recommend the Ronda P:

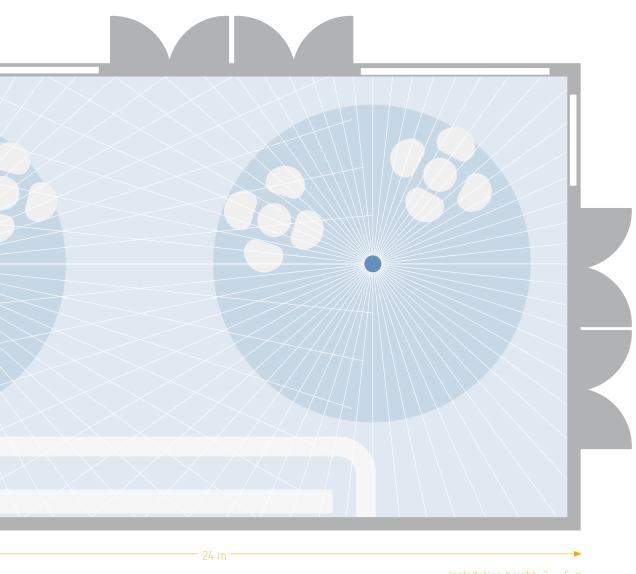
- The detector has a large, circular detection area, which reliably detects the walking movements in the hall from a great height
- **3** The detection area can be individually restricted with practical cover clips.
- ⇒ Technical data theRonda P: page 42

#### Alternative:

For applications in hotel lobbies or company canteens, in which seated activities predominate and slighter motions have to be detected, we recommend presence detectors, such as the Prema P or Plano Centro.



High-performance KNX version



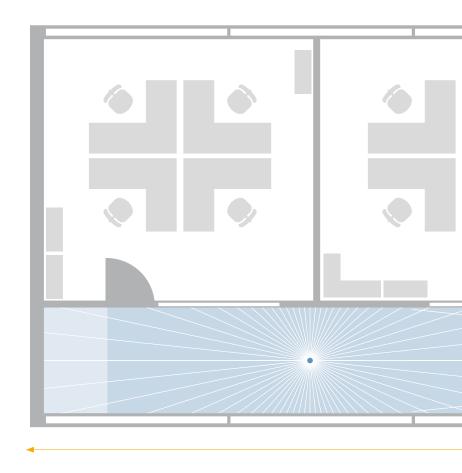
Installation height: 3 - 6 m



## Precise lighting control for corridors and escape routes

### Hall

A long hall with large windows requires automatic lighting. Opposite of the window fronts, there are office rooms with walls partly made of glass. The movements inside the offices should not influence the lighting control in the hall.



We recommend compact passage:

- ◆ Fewer detectors per area for coverage without gaps, thanks to a large, rectangular detection area of up to 30 m
- Optimum utilization of incident daylight and necessary artificial light, thanks to constant mixed light measurement. This reduces energy costs and CO<sub>2</sub> emissions
- The precise delimitation of the rectangular detection area to the adjacent office rooms prevents a detection of motions in there. In this way, the lighting in the

corridor is only switched on when someone is actually in the corridor

• Technical data compact passage: page 47



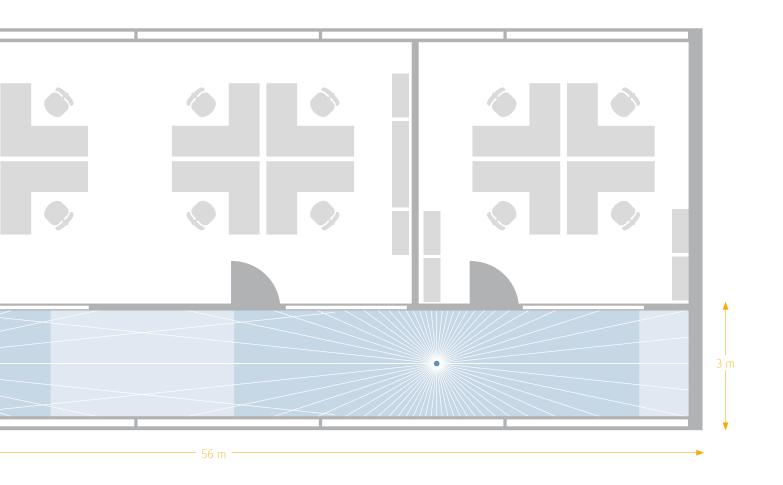
High-performance KNX version



High-performance 24 V version

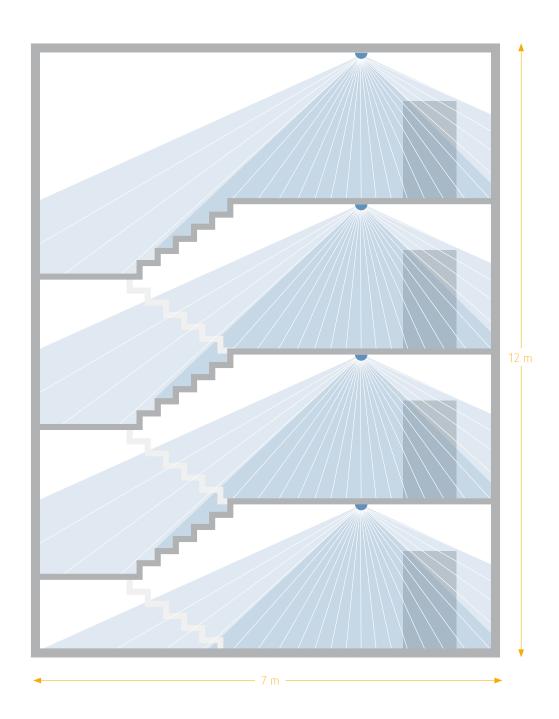
#### Alternative:

With its single-sided detection area, the compact passimo is ideal for beginning and end of hallways and corridors.





## Automatic lighting control for staircases without daylight



## Car park

Automatic lighting of a staircase without windows in a car park is required.

We recommend

theMova P for ceiling installation:

- ◆ Large detection area of up to 24 m and reliable detection also from great heights up to 10 metres\*
- → Technical data theMova P: page 41



High-performance KNX version



Easy area restriction with cover clips

#### theMova P



#### Alternative:

If wall mounting is desired and the staircase is subject to weather conditions, we recommend the Luxa P:

- Large detection area of up to 16 m
- Optimum alignment, thanks to pivotable and rotatable sensor head of the detector
- ⇒ High protection rating of IP 55
- **э**Technical data theLuxa P: page 73



High-performance KNX version



with cover clips

#### thel uva F



#### Relux

With the lighting planning software Relux Lighting simulation tool, which is free of charge, you can easily simulate detection areas, which allows for an optimum coverage of the area.

A complete coverage during planning ensures that all areas will be reliably detected.

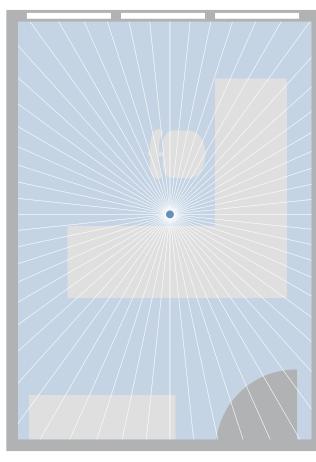


<sup>\*</sup> Additional information can be found in the technical

## Presence-dependent lighting control for office spaces and workplaces

### Individual office

A presence-dependent lighting and climate control of individual work places is required. Lighting should be comfortably switchable on and off from the desk using a remote control. In case of short stays in the room, the lighting should be switched on no longer than two minutes, in order to save energy. A dynamic adjustment of the time delay to the user behaviour is desirable.



Installation height 3 m

We recommend the Prema S:

- Room coverage without gap, thanks to square detection area
- Precise delimitation to the hall: Open office doors and movements in the corridor do not trigger the detector in the office
- Ventilation and climate control via presence channel
- Function "self learning time delay" shortens or extends the switch-on time of the lighting, depending on the number of detected movements
- Technical data thePrema S: page 42

#### 5 years guarantee

thePrema stands out thanks to its top quality and reliability. We offer you a five year guarantee for it.

(in accordance with guarantee conditions: www.theben.de/en/guarantee)

thePrema S has won several awards for its aesthetic design.



High-performance KNX version



Square detection area

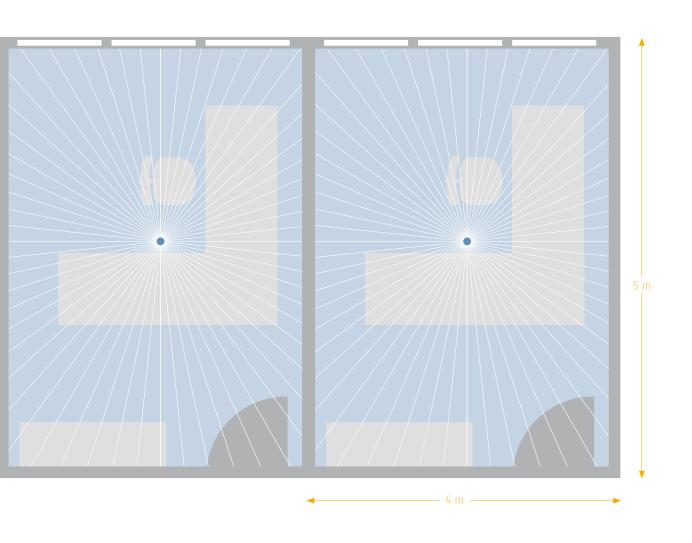
#### Alternative:

If the lighting is controlled via DALI-Bus, we recommend compact office DALI.

Technical data compact office DALI: page 46

#### theSenda P remote control

With theSenda P, installers can adjust virtually all functions of Theben presence and motion detectors with only one remote control. Fast, secure, from the ground up. Further information on page 37.

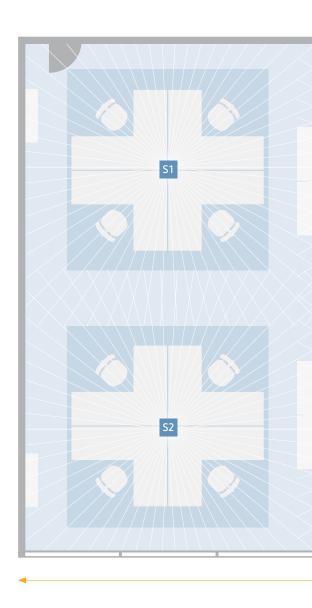




## Complex lighting management for large offices and halls

## Large office

Lighting management in a large office is required with light measurement at different spots — at the window front with incident daylight as well as on the dark side of the hall. Depending on the measured lux values, the lighting in the entire office is to be switched on.



We recommend the Prema P:

- Room coverage without gaps, thanks to square detection area
- Precise delimitation to the hall: Open office doors and movements in the corridor do not trigger the detector in the large office
- Ventilation and climate control via the presence channel
- Mixed light measurement takes incident daylight into account
- Combination of Master/Master and Master/Slave switchings reduce the cost for devices and ensure optimum utilization of daylight
- **э** Technical data thePrema: page 42

#### 5 years guarantee

thePrema stands out thanks to its top quality and reliability. We offer you a five year quarantee for it.

(in accordance with guarantee conditions: www.theben.de/en/guarantee)

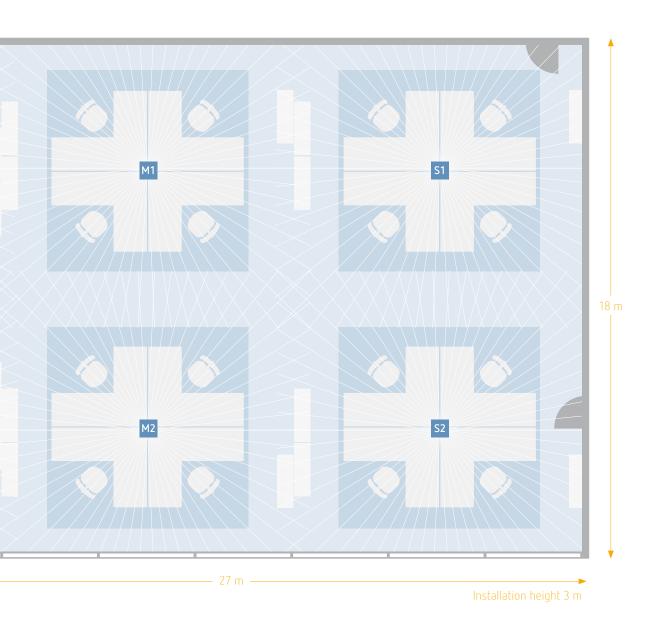
#### Design award

For its aesthetic design, the Prema P has won several awards.

#### Alternative:

PlanoCentro 101 and 201 show the same advantages in a nearly flush-mount design. Further information on PlanoCentro page 30.



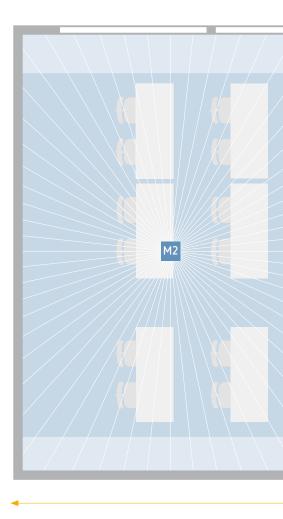




## Presence and brightness-dependent solutions for training, seminar and conference rooms

### Classrooms

In a classroom or seminar room, two rows of light are required to be controlled independently of each other as well as presence- and brightness-dependent. Lighting scenarios to be called up via remote control are desired. Incident daylight is to be utilized as much as possible. The white board lighting should be controlled separately.



We recommend PlanoCentro 300:

- Two independent light measurements measure the brightness at different spots inside the room by taking the incident daylight into account
- ◆ Thanks to the separate control of the lighting rows, the light in the darker half of the room remains switched on, while the light on the brighter side of the windows will be switched off
- **•** The white board lighting is controlled separately via the 3rd light channel
- Technical data PlanoCentro 300: page 45

#### Alternative:

PlanoCentro 201 if no third switching channel for white board lighting is required.

Ventilation can be controlled presencedependent via an HKL channel — for pleasant indoor climate. Otherwise, the detector has the same advantages as PlanoCentro 300.



High-performance KNX version

#### Award-winning

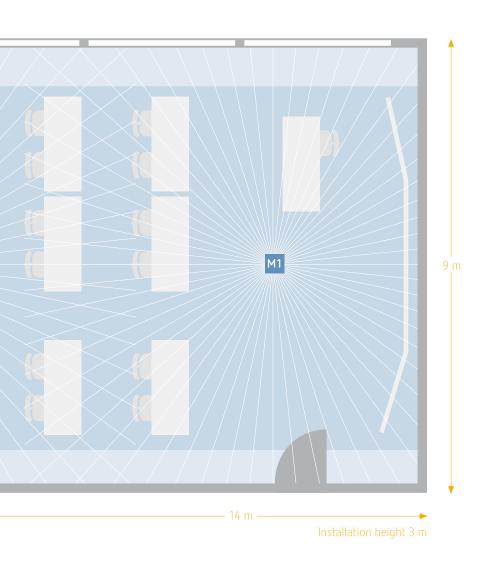


The cover of the PlanoCentro are available in white, silver and black. Special colours are also possible. In 2010, the PlanoCentro was awarded the iF award for its

elegant and slim design.

#### theSenda S remote control

It can be used to call up scenarios for presentations or cinema shows. The SendoPro management remote control can be used to optimally set the detector and to adjust its operation.



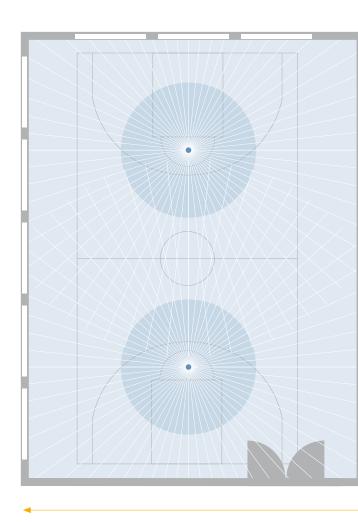
PlanoCentro



## Field-dependent lighting for gyms, tennis and sports halls

## Sports hall

When entering the field in a sports hall, the light should go on automatically. Each of the three fields should be switched independently. One field is 21 metres wide and 30 metres long. The sports hall has large window fronts with incident daylight.



We recommend the Ronda P:

- Detects motion even from great heights of up to 10 m\*
- Only two detectors per field required, thanks to the large detection area of up to Ø 24 m
- With theRonda P KNX, constant lighting control with optimum utilization of daylight is also possible
- ⇒ Technical data theRonda P: page 42

Alternative:

thePrema P, if Master/Slave or Master/ Master switching is required.

Safety cover as accessory:

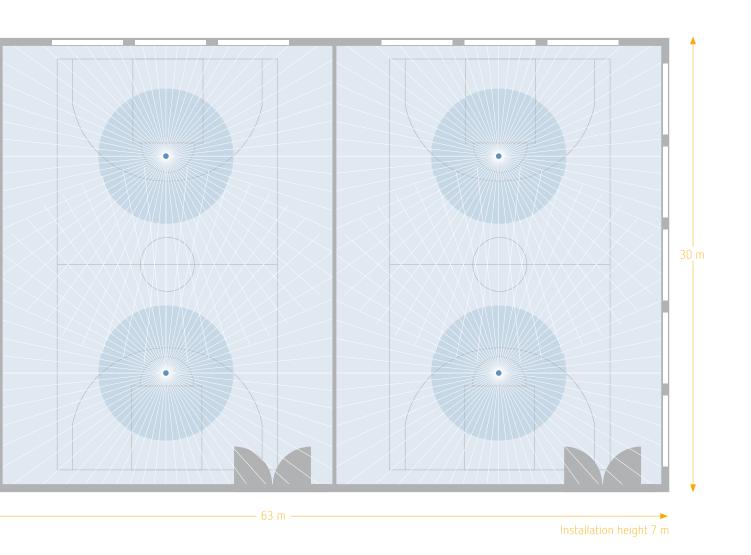
In order to protect the presence detector against balls, we offer safety covers (optional accessories).

Management remote control SendoPro It can be used to optimally and conveniently set the detector and adjust its operation.

ly set the detector and adjust its operation. Especially in sports halls with installation heights of 7 m and more, a real advantage for adjustments.



<sup>\*</sup> Further information can be found in the technical documentation at www.theben.de/en

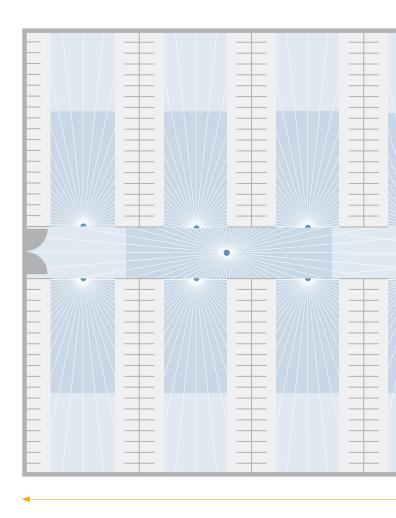




## Motion-dependent lighting for logistics centres, libraries and archives

### Warehouse

Motion-dependent lighting of individual aisles in a warehouse is required. Forklifts or employees in the central aisle should not trigger the lighting in the cross aisles. The lighting of the cross aisles should only be switched on when they are entered.



We recommend compact passage and compact passimo:

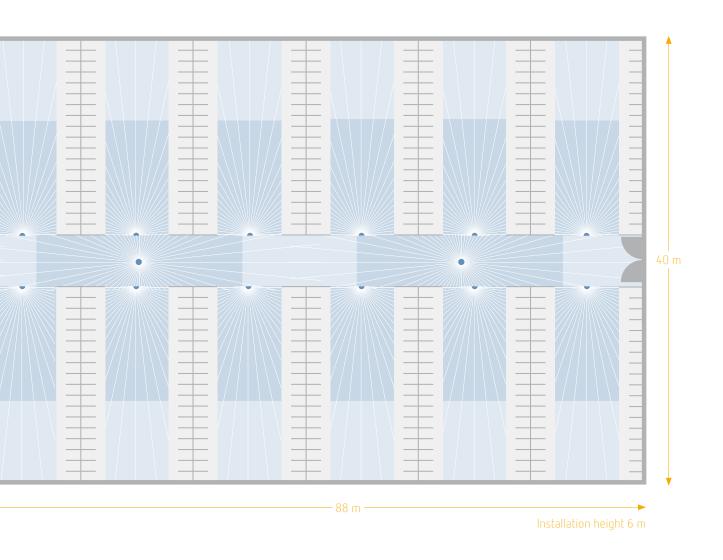
- No "moving light" thanks to precise delimitation of the detection areas of the warehouse aisles from the detection areas in the central aisle − the detectors of the cross aisles do not detect the movements in the central aisle. No other detector on the market offers this
- The compact passimo is ideal for installation directly above the entrances of the cross aisles, since it only detects
- single sided movements. Currently, no other detector offers this
- The compact passage has a rectangular detection area with up to 30 m and is therefore well suited for long aisles and corridors
- The detectors can even be installed at great heights of up to 6 m
- ◆ Technical data compact passage and compact passimo: page 47



High-performance KNX version



High-performance 24 V version





## Clever accessory theSenda S remote control



#### Switching or dimming

The lighting can of course also be switched on and off via remote control. Smooth dimming can be done via the button in two channels.



#### Calling scenes

You want to give a presentation. You call up the programmed scene by pushing the icon: The blinds go down, the projector goes on and the light will be dimmed. After each presentation you call up scene 1 – and it will be light again.



#### Presence simulation

During longer periods of absence, such as vacations or company holidays, you just switch to "Presence simulation". In this way, the switching cycles of the previous week will be called up. The advantage: The building looks alive and not abandoned. Burglars do not see that no one is at home.



#### Twilight switch

Via button D, the dimming function can be called up on the detector, and, from a defined lux value, the detector switches to permanent light.



#### One for all. All with one.

The remote controls the Senda S and P can be used to conveniently set a huge number of Theben motion and presence detectors.

theLuxa P



#### theMova



### Perfect service theSenda P remote control



#### 11 Pulse function

Simple installation into existing electrical installations with staircase light timer switches or KNX binary inputs.



#### Switching or dimming

#### Sensitivity

Adjustable sensitivity: Reduce or increase – depending on the application.

#### ◀ ★ Brightness value

Can be set between 5 and 800 lux. Teach-in possible.



#### Time delay

Light or presence time delay can be set in different time values.

#### SendoPro universal remote control

It supports the setting of further parameters, such as:

- ⇒ Change over of Spot/Wide light measurement
- ⇒ Any lux value can be set
- Time delay can be set as desired
- Read out of light measurement values
- ⇒ Switch-on delay



theRonda

thePrema

**PlanoCentro** 

DALI compact office









## Impressive references for applied energy efficiency

## Inventor of the presence detector

Those who select a ThebenHTS presence detector choose "the original". The ECO IR was developed at Theben's High Technology Systems Laboratory in Switzerland at the beginning of the 1990s. Since then, Theben has worked to maximise areas such as product application, ease of use and efficiency. It is also worth noting that with the ECO-IR ThebenHTS invented the Presence Detector and Square Detector Area, a double first in the market.

Their innovative lenses and sensitive sensors provide an outstanding detection quality. Equally innovative are special solutions such as the compact passimo model for warehouse aisles. ThebenHTS detectors are not only functional but also clearly a leader in terms of design: The first flush-mounted PlanoCentro presence detector received the TiF product design award 2010" for high-quality design. This is definitely not the last chapter in the success story of the ThebenHTS presence detector, which celebrated its 20th anniversary in 2012.

## Automated warehouse light at Coop, Switzerland

Over 1900 retail outlets in Switzerland want to be supplied with goods. The national distribution centre (NVZ) in Wangen near Olten is at the centre of this huge Coop logistics operation. As complex as the spacious high-rack warehouses are their lighting systems. Previously, the lighting was switched on permanently. In order to optimise energy consumption, the lighting only has to be switched on if someone is present in the warehouse aisles. Afterwards, it should go off automatically. In order to achieve this, Coop decided for lighting control via presence detectors.

The company opted for ThebenHTS compact passimo presence detectors. They have been specially developed for use in corridors and already proved to be impressive in the testing phase with the most accurate measurement at the aisle entry and a clear delimitation of the detection area from the neighbouring aisles. The presence detector also convincingly mastered the height of some warehouse aisles of up to six metres high. Following the tests, the whole warehouse in Wangen near Olten was converted from permanent to demand-actuated lighting. Meanwhile, Coop has completely refitted further warehouses. Currently, over 1300 ThebenHTS presence detectors are installed.



## Innovative lighting design for DIAL, Lüdenscheid

In 2012, the DIAL (Deutsches Institut für Angewandte Lichttechnik GmbH) in Lüdenscheid erected an impressive new building, which sets standards by its integral building system design. For DIAL it was clear that planning for building, building services engineering, and lighting will be down on their own. The institute especially emphasised the close interrelation of lighting planning, architecture, and lamp design. About 2000 m² floor space for office and conference rooms, laboratories as well as foyer, atrium, bistro, and catering zone were developed on three levels.

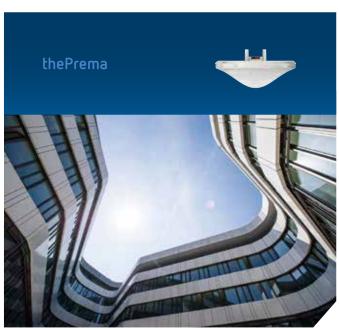
The company decided for Plano Centro KNX. The presence detector, fitting harmonically into any architecture, has been awarded the "iF Award" in 2010. In about 30 offices, the detectors control the lighting in accordance with the three different daylight sequences. A beautiful summer day is simulated. By means of its mixed light measurement, Plano Centro takes the incident daylight into account and accordingly reduces the portion of artificial light. This reduces lighting costs and  $\mathrm{CO}_2$  emissions. Thanks to its high detection quality, it reaches into the corners of the room, but also avoids faulty switchings. The PlanoCentro thus combines the ideal level of illumination for a room at the highest energy efficiency.



## Sustainable lighting concept for DGNB e.V., Stuttgart

Directly experience sustainable building — this is the objective of the German Sustainable Building Council (DGNB e.V.). The new DGNB rooms in Stuttgart show what this means. With the support of about 30 member companies, the new DGNB office in the Caleido in Tübinger Straße became a Living Showroom of sustainable building. Here, staff members and visitors can literally grasp the advantages of sustainably planned and constructed rooms. A sensitive interior design in accordance with the DGNB principles, such as user comfort, environmental compatibility, and lifecycle considerations optimally supplements the sustainable building approach.

Light and lighting control constitute an essential aspect of it. An energy efficient use in the office of the DGNB is ensured by thePrema P KNX. Since 7 July 2014 the new rooms are available to the members of the association, sustainability experts, interested people, and the employees of the office. In the future, during a guided tour of the building, they can all learn what sustainable building means in practice and what the benefits are for people and the environment, as well as the wallet.



HOCHTIEF Project development/countenance

Further references can be found at www. theben.de/en/references

## Motion detector the Mova Technical data







Features	theMova S360-100 DE	theMova S360-100 AP	theMova S360-101 DE
Detection area*	circular, 8 m diameter	circular, 8 m diameter	circular, 8 m diameter
Type of installation	Ceiling mounting	Ceiling installation, surface mounted	Ceiling mounting
Installation height	2 – 4 m	2 – 4 m	2 – 4 m
Detection angle	360°	360°	360°
Operating voltage	230 V AC/50 Hz	230 V AC/50 Hz	230 V AC/50 Hz
Power consumption	~ 0.5 W	~ 0.5 W	~ 0.5 W
Light channels	1	1	1
Relay light	230 V/10 A, μ contact	230 V/10 A, μ contact	230 V/10 A, μ contact
Switching capacity light (cos $\phi = 1$ , cos $\phi = 0.5$ )	2300 W, 1150 VA	2300 W, 1150 VA	2300 W, 1150 VA
Max. switching capacity LED guidance value	< 2 W: 25 W/> 2 W: 70 W	< 2 W: 25 W/> 2 W: 70 W	< 2 W: 25 W/> 2 W: 70 W
Brightness setting range	30 - 3000 lx/on	30 - 3000 lx/on	30 - 3000 lx/ on
Lighting time delay	10 s - 60 min	10 s - 60 min	10 s - 60 min
Presence channels	_	_	1
Switching capacity Presence	-	_	50 W / 50 VA
- Terminals	Plug-in terminals	Plug-in terminals	Plug-in terminals
Protection rating	IP 40 (fitted)	IP 54	IP 40 (fitted)
Permissible ambient temperature	-15 °C to +50 °C	-15 °C to +50 °C	-15 °C to +50 °C
Remote operation	yes	yes	yes
Teach-In	yes	yes	yes
Adjustable sensitivity	yes	yes	yes
Test detection area	yes	yes	yes
Article number			
Art. No. white (WH)	1030560	1030550	1030565
Art. No. grey (GR)**	1030561	1030551	1030566
Optional accessories			
theSenda S remote control	9070911	9070911	9070911
theSenda P remote control	9070910	9070910	9070910
SendoPro 868-A management remote control	9070675	9070675	9070675
Surface frame 110 A white (WH)	_	_	-
Surface frame 110 A grey (GR)	_	-	-
Ceiling installation box	-	_	-

Details at an installation height of 3 m
 Suitable for large installation heights of up to 10 m. Additional information can be found in the technical documentation.
 Available from spring 2015











theMova S360-101 AP	theMova P360-100 UP	theMova S360 KNX DE	theMova S360 KNX AP	theMova P360 KNX
circular, 8 m diameter	circular, 24 m diameter	circular, 8 m diameter	circular, 8 m diameter	circular, 24 m diameter
Ceiling installation, surface mounted	Ceiling mounting in flush-mounted box	Ceiling installation	Ceiling installation, surface mounted	Ceiling mounting in flush-mounted box
2 – 4 m	2 – 10 m**	2 – 4 m	2 – 4 m	2 - 10 m**
360°	360°	360°	360°	360°
230 V AC/50 Hz	110 V-230 V AC, 50/60 Hz	Via KNX bus	Via KNX bus	Via KNX bus
 ~ 0.5 W	~ 0.1 W	8 mA/9 mA with LED	8 mA/9 mA with LED	8 mA/9 mA with LED
1	1	1	1	1
230 V/10 A, μ contact	230 V/10 A, µ contact	-	-	-
2300 W, 1150 VA	only with 230 V: 2300 W, 1150 VA	-	-	-
< 2 W: 25 W/> 2 W: 70 W	< 2 W: 60 W/> 2 W: 180 W	_	-	_
30 - 3000 lx/ on	30 - 3000 lx/on	30 - 3000 lx/ on	30 - 3000 lx/on	30 - 3000 lx/on
10 s - 60 min	10 s – 60 min	30 s - 60 min	30 s - 60 min	30 s - 60 min
1	-	1	1	1
50 W / 50 VA	-	-	-	-
Plug-in terminals	Screw terminals	WAGO 243	WAGO 243	WAGO 243
IP 54	IP 40 (fitted)	IP 40 (fitted)	IP 54	IP 40 (fitted)
-15 °C to +50 °C	-15 °C to +50 °C	-15 °C to +50 °C	-15 °C to +50 °C	-15 °C to +50 °C
yes	yes	yes	yes	yes
yes	yes	yes	yes	yes
yes	yes	yes	yes	yes
yes	yes	yes	yes	yes
1030555	1030600	1039560	1039550	1039600
1030556	1030601	1039561	1039551	1039601
9070911	9070911	9070911	9070911	9070911
9070910	9070910	9070910	9070910	9070910
9070675	9070675	9070675	9070675	9070675
-	9070912	_	_	9070912
-	9070913	-	-	9070913
-	9070917	-	-	9070917

## Presence detectors theRonda and thePrema Technical data











Features	theRonda P360-100 UP	theRonda P360-101 UP	theRonda P360 KNX UP	thePrema S360-100 UP
Detection area seated/walking*	circular 8/24 m diameter	circular 8/24 m diameter	circular 8/24 m diameter	square 5 x 5 m/7 x 7 m
Installation height	2 – 10 m**	2 – 10 m**	2 – 10 m**	2 – 3.5 m
Detection angle	360°	360°	360°	360°
Operating voltage	110 V - 230 V AC, 50/60 Hz	110 V - 230 V AC, 50/60 Hz	Via KNX bus	230 V AC/50 Hz
Power consumption	~ 0.1 W	~ 0.1 W	8 mA/9 mA with LED	~ 0.4 W
Light measurement (mixed light)	1 x mixed light	1 x mixed light	1 x mixed light	1 x mixed light
Light channels	1	1	2	1
Switching capacity light (cos $\phi = 1$ , cos $\phi = 0.5$ )	only with 230 V: 2300 W, 1150 VA	only with 230 V: 2300 W, 1150 VA	_	2300 W, 1150 VA
Max. switching capacity LED guidance value	< 2 W : 60 W/> 2 W : 180 W	< 2 W : 60 W/> 2 W : 180 W	_	< 2 W: 25 W/> 2 W: 70 W
Brightness setting range	30 - 3000 lx/on	30 - 3000 lx/on	10 - 3000 lx/on	5 – 3000 lx/on
Lighting time delay	10 s - 60 min	10 s - 60 min	30 s - 60 min	10 s - 60 min
Standby brightness	_	_	1 – 25 %	-
Standby time	-	-	30 s - 60 min/inactive permanent on	-
Presence channels	-	1	2	-
Switching capacity Presence	-	50 W / 50 VA	-	_
Presence switch-on delay	_	0 s - 10 min	10 s - 30 min/inactive	-
Presence time delay	-	10 s - 120 min	10 s - 120 min	-
Protection rating (in fitted state)	IP 40	IP 40	IP 40	IP 40
Permissible ambient temperature	-15 °C to +50 °C	-15 °C to +50 °C	-15 °C to +50 °C	0 °C to +50 °C
Remote operation	yes	yes	yes	yes
Article number				
Art. No. white (WH)	2080000	2080005	2089000	2070500
Art. No. grey (GR)	2080001***	2080006***	2089001***	2070501
Optional accessories				
theSenda S remote control	9070911	9070911	9070911	9070911
theSenda P remote control	9070910	9070910	9070910	9070910
SendoPro 868-A management remote control	9070675	9070675	9070675	9070675
Surface frame white (WH)	9070912	9070912	9070912	9070912
Surface frame grey (GR)	9070913	9070913	9070913	9070913
Ceiling installation box	9070917	9070917	9070917	9070917

Details for an installation height of 3 m
 Suitable for large installation heights of up to 10 m. Additional information can be found in the technical documentation.
 Available from spring 2015
 In accordance with guarantee conditions, see www.theben.de/en/guarantee













thePrema S360-101 UP	thePrema S360 Slave UP	thePrema P360-101 UP	thePrema P360 Slave UP	thePrema S360 KNX UP	thePrema P360 KNX UP
square 5 x 5 m/7 x 7 m	square 5 x 5 m/7 x 7 m	square 7 x 7 m/9 x 9 m	square 7 x 7 m/9 x 9 m	square 7 x 7 m/9 x 9 m	square 7 x 7 m/9 x 9 m
2 – 3.5 m	2 – 3.5 m	2 – 10 m**	2 – 10 m**	2 – 3.5 m	2 – 10 m**
360°	360°	360°	360°	360°	360°
230 V AC/50 Hz	230 V AC/50 Hz	230 V AC/50 Hz	230 V AC/50 Hz	Via KNX bus	Via KNX bus
~ 0.5 W	~ 0.3 W	~ 0.5 W	~ 0.3 W	9 mA/13 mA with LED	9 mA/13 mA with LED
1 x mixed light	-	Spot/Wide	-	1 x mixed light, spot	3 x mixed light can be selected
1	_	1	-	2	3
2300 W, 1150 VA	-	2300 W, 1150 VA	-	_	-
< 2 W: 25 W/> 2 W: 70 W	_	< 2 W: 25 W/> 2 W: 70 W	_	_	_
5 – 3000 lx/on	-	5 – 3000 lx/on	-	5 – 3000 lx/on	5 – 3000 lx/on
10 s - 60 min	-	10 s - 60 min	-	30 s - 60 min	30 s - 60 min
-	-	_	-	1 – 25 %	1 – 25 %
-	-	-	-	30 s – 60 min/inactive permanent on	30 s — 60 min/inactive permanent on
1	-	1	-	2	2
50 W / 50 VA	_	50 W / 50 VA	-	-	_
0 s - 10 min	_	0 s - 10 min	_	10 s – 30 min/inactive	10 s – 30 min/inactive
10 s - 120 min	_	10 s - 120 min	_	10 s - 120 min	10 s - 120 min
IP 40	IP 40	IP 40	IP 40	IP 40	IP 40
0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C
yes	yes	yes	yes	yes	yes
2070505	2070530	2070005	2070030	2079500	2079000
2070506	2070531	2070006	2070031	2079501	2079001
9070911	-	9070911	-	9070911	9070911
9070910	9070910	9070910	9070910	9070910	9070910
9070675	9070675	9070675	9070675	9070675	9070675
9070912	9070912	9070912	9070912	9070918	9070918
9070913	9070913	9070913	9070913	9070919	9070919
9070917	9070917	9070917	9070917	9070917	9070917









**Award-winning**For its aesthetic design, thePrema has won several awards.

## Presence detector PlanoCentro Technical data









Features	PlanoCentro 101 E	PlanoCentro 101 U	PlanoCentro 201 E	PlanoCentro 201 U
Detection area seated/walking*	square 7 x 7 m/9 x 9 m	square 7 x 7 m/9 x 9 m	square 7 x 7 m/9 x 9 m	square 7 x 7 m/9 x 9 m
Detection angle	360°	360°	360°	360°
Installation height	2 – 3.5 m	2 – 3.5 m	2 – 3.5 m	2 – 3.5 m
Light channels	1	1	2	2
Switching capacity light (cos $\varphi = 1$ , cos $\varphi = 0.5$ )	2300 W, 1150 VA	2300 W, 1150 VA	2300 W, 1150 VA	2300 W, 1150 VA
Max. switching capacity LED guidance value	< 2 W: 60 W/> 2 W: 180 W	< 2 W: 60 W/> 2 W: 180 W	< 2W: 60W/> 2W: 180W	< 2W: 60W/> 2W: 180W
Lighting time delay	Pulse (0.5 s), 10 s – 60 min	Pulse (0.5 s), 10 s – 60 min	10 s - 60 min	10 s - 60 min
Brightness setting range	5 – 2000 lx/on	5 – 2000 lx/on	10 - 2000 lx/on	10 - 2000 lx/on
Light measurement (mixed light)	1 x mixed light	1 x mixed light	2 x mixed light	2 x mixed light
Presence channels	1	1	1	1
Switching capacity Presence	60 W/62.5 VA	60 W/62.5 VA	60 W/62.5 VA	60 W/62.5 VA
Presence switch-on delay	0 s - 10 min	0 s - 10 min	0 s - 10 min	0 s - 10 min
Presence time delay	10 s - 120 min	10 s - 120 min	10 s - 120 min	10 s – 120 min
Standby brightness	-	-	-	-
Standby time	-	-	-	-
Remote operation	yes	yes	yes	yes
Operating voltage, frequency	230 V AC, 50 Hz	230 V AC, 50 Hz	230 V AC, 50 Hz	230 V AC, 50 Hz
Power consumption	~ 0.8 W	~ 0.8 W	~ 1 W	~ 1 W
Permissible ambient temperature	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C
Protection rating (in fitted state)	IP 40	IP 40	IP 40	IP 40
Article number				
Art.No. white (WH)	2030102	2030202	2030502	2030602
Art.No. black (BK)	2030103	2030203	2030503	2030603
Art.No. silver (SR)	2030104	2030204	2030504	2030604
Optional accessories				
theSenda S remote control	9070911	9070911	9070911	9070911
theSenda P remote control	9070910	9070910	9070910	9070910
SendoPro 868-A management remote control	9070675	9070675	9070675	9070675
PlanoSet RQ EWH**	9070736	9070736	9070736	9070736
PlanoSet RR EWH***	9070740	9070740	9070740	9070740
PlanoBox 1 WH****	-	9070731	_	9070731

<sup>\*</sup> Details for an installation height of 3 m

\*\* Also available in black (9070737) and in silver (9070738).

\*\*\* Also available in black (9070741) and in silver (9070742).

\*\*\*\* Also available in black (9070732) and in silver (9070733).













PlanoCentro 300 E	PlanoCentro 300 U	PlanoCentro 000 E Slave	PlanoCentro 000 U Slave	PlanoCentro E A KNX	PlanoCentro U A KNX
square 7 x 7 m/9 x 9 m	square 7 x 7 m/9 x 9 m	square 7 x 7 m/9 x 9 m	square 7 x 7 m/9 x 9 m	square 7 x 7 m/9 x 9 m	square 7 x 7 m/9 x 9 m
360°	360°	360°	360°	360°	360°
2 – 3.5 m	2 – 3.5 m	2 – 3.5 m	2 – 3.5 m	2 – 3.5 m	2 – 3.5 m
3	3	_	_	2	2
2300 W, 1150 VA	2300 W, 1150 VA	_	_	-	_
< 2W: 60W/> 2W: 180W	< 2W: 60W/> 2W: 180W	-	_	_	_
10 s - 60 min	10 s – 60 min	-	-	30 s - 60 min	30 s – 60 min
10 - 2000 lx/on	10 – 2000 lx/on	_	-	5 – 2000 lx	5 – 2000 lx
2 x mixed light	2 x mixed light	_	_	2 x mixed light	2 x mixed light
_	_	_	_	1	1
_	_	_	_	-	_
_	-	_	_	10 s - 30 min/inactive	10 s – 30 min/inactive
_	_	_	_	10 s - 120 min	10 s – 120 min
_	-	_	_	5 % - 10 %	5 % - 10 %
_	-	_	_	30 s - 60 min/on	30 s - 60 min/on
yes	yes	yes	yes	yes	yes
230 V AC, 50 Hz	230 V AC, 50 Hz	230 V AC, 50 Hz	230 V AC, 50 Hz	KNX bus voltage	KNX bus voltage
~ 1 W	~ 1 W	~ 0.3 W	~ 0.3 W	~ 14 mA	~ 14 mA
0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C
IP 40	IP 40	IP 40	IP 40	IP 40	IP 40
2030302	2030402	2040102	2040202	2059102	2059202
2030303	2030403	2040103	2040203	2059103	2059203
2030304	2030404	2040104	2040204	2059104	2059204
9070911	9070911	_	-	9070911	9070911
9070910	9070910	9070910	9070910	9070910	9070910
9070675	9070675	9070675	9070675	9070675	9070675
9070736	9070736	9070736	9070736	9070736	9070736
9070740	9070740	9070740	9070740	9070740	9070740
-	9070731	-	9070731	_	9070731



## Presence detectors compact series Technical data









Features	DALI compact office	compact office DIM	compact office 24V	compact office 24V Lux
Detection area seated/walking*	square 4.5 x 4.5 m/7 x 7 m	square 4.5 x 4.5 m/7 x 7 m	square 4.5 x 4.5 m/7 x 7 m	square 4.5 x 4.5 m/7 x 7 m
Detection angle	360°	360°	360°	360°
Installation height	2 – 3 m	2 – 3 m	2 – 3 m	2 – 3 m
Light channels	1	1	1	1
Switching capacity light (cos $\phi$ = 1, cos $\phi$ = 0.5)	25 DALI devices	1200 W, 600 VA	50 W (24 V AC/DC)/ 460 VA (230 V AC)	50 W (24 V AC/DC)/ 460 VA (230 V AC)
Max. switching capacity LED guidance value	_	_	_	_
Lighting time delay	10 s - 60 min	10 s - 20 min	Pulse (0.5 s), 10 s – 20 min	Pulse (0.5 s), 10 s – 20 min
Brightness setting range	5 – 2000 lx	10 – 1500 lx	10 - 1500 lx/on	10 - 1500 lx/on
Light measurement (mixed light)	1 x mixed light	1 x mixed light	1 x mixed light	1 x mixed light
Presence channels	_	_	1	-
Switching capacity Presence	_	_	50 W (24 V AC/DC)/ 460 VA (230 V AC)	-
Presence switch-on delay	_	_	0 s - 10 min	-
Presence time delay	_	_	10 s - 120 min	-
Standby brightness	1 - 25 %	~ 10 %	_	-
Standby time	0 s - 60 min/on	0 s - 60 min/on	_	-
Remote operation	yes	yes	yes	yes
Operating voltage, frequency	230 V AC, 50 Hz	230 V AC, 50 Hz	24 V AC/DC	24 V AC/DC
Power consumption	~ 0.5 W	~ 0.8 W	~ 0.4 W	~ 0.5 W
Permissible ambient temperature	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C
Protection rating (in fitted state)	IP 40	IP 40	IP 40	IP 40
Article number				
Art. No. white (WH)	2010010	2010001	2014000	2014001
Art. No. black (BK)	2010011	2010803	2014800	2014803
Art. No. silver (SR)	2010012	2010804	2014801	2014804
Optional accessories				
theSenda S remote control	9070911	_	-	-
theSenda P remote control	9070910	_	-	-
Clic user remote control	-	9070515	9070515	9070515
SendoPro 868-A management remote control	9070675	9070675	9070675	9070675
Ceiling installation box 73A	9070917	9070917	9070917	9070917

 $<sup>^{\</sup>star}\,$  Details at an installation height of 3 m













compact passage	compact passage 24 V	compact passage KNX	compact passimo	compact passimo 24 V	compact passimo KNX
rectangular 20 x 4.5 m/30 x 4.5 m	rectangular 20 x 4.5 m/30 x 4.5 m	rectangular 20 x 4.5 m/30 x 4.5 m	rectangular 10 x 4.5 m/15 x 4.5 m	rectangular 10 x 4.5 m/15 x 4.5 m	rectangular 10 x 4.5 m/15 x 4.5 m
360°	360°	360°	360°	360°	360°
2 – 6 m	2 – 6 m	2 – 6 m	2 – 6 m	2 – 6 m	2 – 6 m
1	1	2	1	1	2
1200 W, 600 VA	50 W (24 V AC/DC)/ 460 VA (230 V AC)	-	1200 W, 600 VA	50 W (24 V AC/DC)/ 460 VA (230 V AC)	-
< 2 W: 25 W/> 2 W: 70 W	_	-	< 2 W: 25 W/> 2 W: 70 W	-	_
Pulse (0.5 s), 10 s – 20 min	Pulse (0.5 s), 10 s – 20 min	30 s – 20 min	Pulse (0.5 s), 10 s – 20 min	Pulse (0.5 s), 10 s – 20 min	30 s - 20 min
10 - 1500 lx/on	10 - 1500 lx/on	10 – 1500 lx	10 – 1500 lx/on	10 - 1500 lx/on	10 – 1500 lx
1 x mixed light	1 x mixed light	1 x mixed light	1 x mixed light	1 x mixed light	1 x mixed light
1	1	1	1	1	1
50 W / 50 VA	50 W (24 V AC/DC)/ 460 VA (230 V AC)	-	50 W/50 VA	50 W (24 V AC/DC)/ 460 VA (230 V AC)	-
0 s - 10 min	0 s - 10 min	0 s - 30 min	0 s - 10 min	0 s - 10 min	0 s - 30 min
10 s – 120 min	10 s – 120 min	30 s – 120 min	10 s – 120 min	10 s – 120 min	30 s – 120 min
-	-	10 %	-	-	10 %
-	_	0 s - 60 min/on	-	_	0 s - 60 min/on
yes	yes	yes	yes	yes	yes
230 V AC, 50 Hz	24 V AC/DC	KNX bus voltage	230 V AC, 50 Hz	24 V AC/DC	KNX bus voltage
~ 0.7 W	~ 0.4 W	~ 8 mA	~ 0.7 W	~ 0.4 W	~ 8 mA
0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C	0 °C to +50 °C
IP 40	IP 40	IP 40	IP 40	IP 40	IP 40
2010090	2014090	2019290	2010080	2014810	2019280
2010806	2014806	2019803	2010809	2014811	2019809
2010807	2014807	2019804	2010810	2014812	2019810
_	_	_	_	_	_
_	_	_	_	_	
9070515	9070515	9070515	9070515	9070515	9070515
9070675	9070675	9070675	9070675	9070675	9070675
9070917	9070917	9070917	9070917	9070917	9070917

## Presence detectors PresenceLight and SPHINX Technical data









Features	Presence Light 360	PresenceLight 360B KNX	Presence Light 180	PresenceLight 180B KNX
Detection area seated/walking*	square 4.5 x 4.5 m/7 x 7 m	square 4.5 x 4.5 m/7 x 7 m	Radius 7 m/16 m**	Radius 7 m/16 m**
Detection angle	360°	360°	180°	180°
Installation height	2 – 3 m	2 – 3 m	1.6 – 2.2 m	1.6 – 2.2 m
Light channels	1	2	1	2
Switching capacity light ( $\cos \varphi = 1$ , $\cos \varphi = 0.5$ )	1200 W, 600 VA	-	1200 W, 600 VA	-
Max. switching capacity LED guidance value	< 2 W: 25 W/> 2 W: 70 W	_	< 2 W: 25 W/> 2 W: 70 W	-
Lighting time delay	Pulse (0.5 s), 10 s – 20 min	30 s - 60 min	Pulse (0.5 s), 10 s – 20 min	30 s - 60 min
Brightness setting range	10 - 1500 lx/on	5 – 2000 lx	10 - 1500 lx/on	5 – 2000 lx
Light measurement (mixed light)	1 x mixed light	1 x mixed light	1 x mixed light	1 x mixed light
Presence channels	_	1	-	1
Switching capacity Presence	_	_	_	-
Presence switch-on delay	_	10 s – 30 min/inactive	-	10 s – 30 min/inactive
Presence time delay	_	10 s - 120 min	-	10 s – 120 min
Standby brightness	_	5 % - 10 %	-	5 % - 10 %
Standby time	_	30 s - 60 min/on	-	30 s - 60 min/on
Remote operation	yes	yes	yes	yes
Operating voltage, frequency	230 V AC, 50 Hz	KNX bus voltage	230 V AC, 50 Hz	KNX bus voltage
Power consumption	~ 0.7 W	~ 13 mA	~ 0.9 W	~ 13 mA
Permissible ambient temperature	-20 °C to +50 °C	-10 °C to +50 °C	-20 °C to +50 °C	-10 °C to +50 °C
Protection rating (in fitted state)	IP 54	IP 54	IP 54	IP 54
Article number				
Art. No. white (WH)	2000000	2009000	2000050	2009050
Art. No. black (BK)	2000800	2009812	2000803	2009815
Art. No. silver (SR)	2000801	2009813	2000804	2009816
Optional accessories				
theSenda S remote control	_	9070911	-	9070911
theSenda P remote control	_	9070910	_	9070910
Clic user remote control	9070515	-	9070515	-
SendoPro 868-A management remote control	9070675	9070675	9070675	9070675
SPHINX RC 104 remote control	-	-	-	-
SPHINX RC 104 Pro remote control	_	_	-	-
Ceiling installation box 73A	9070917	9070917	_	-

Details at an installation height of 3 m
 Details at an installation height of 2.2 m











SPHINX 104-360 AP	SPHINX 104-360	SPHINX 104-360/2 AP	SPHINX 104-360/2	SPHINX 104-360/2 DIMplus
circular 5 m/13 m diameter	circular 5 m/13 m diameter	circular 5 m/13 m diameter	circular 15 m/13 m diameter	circular 6 m/24 m diameter
360°	360°	360°	360°	360°
2 – 3.5 m	2 – 3.5 m			
1	1	1	1	1
2000 W, 900 VA	1800 W, 900 VA	2000 W, 900 VA	1800 W, 900 VA	1000 W, 900 VA
< 2 W: 25 W/> 2 W: 90 W	< 2 W: 25 W/> 2 W: 90 W	< 2 W: 25 W/> 2 W: 90 W	< 2 W: 25 W/> 2 W: 90 W	< 2 W: 25 W/> 2 W: 90 W
1 s - 20 min	1 s - 20 min			
10 – 2000 lx	5 – 2000 lx			
1 x mixed light	1 x mixed light			
_	-	1	1	1
-	_	150 W / 1250 VA	90 W/750 VA	60 W/500 VA
_	_	0 – 60 min	0 – 60 min	_
_	_	1 – 120 min	1 – 120 min	1 – 120 min
_	_	_	_	_
_	_	_	_	_
yes	yes	yes	yes	no
230 V AC, 50 Hz	230 V AC, 50/60 Hz			
1 W	1 W	1 W	1 W	1 W
-10 °C to +55 °C	-10 °C to +55 °C			
IP 41	IP 41	IP 41	IP 41	IP 40
1040360	1040370	1040362	1040372	1040374
_	_	_	_	_
_	_	_	_	_
-	_	-	-	
-	_	_	_	_
-	-	-	-	_
-	-	_	-	_
9070538	9070538	9070538	9070538	_
9070536	9070536	9070536	9070536	_
_	_	-	-	_





## Motion detectors for safe outdoor lighting

Light means security. A motion detector never leaves you in the dark and helps you cut energy costs at the same time, as lights do not stay on longer than absolutely necessary. The light comes on reliably when you do not have a free hand to operate the light switch. And, outdoor motion detectors also have an effect on uninvited guests outside: Which burglar wants to be put under the spotlight? This page contains some useful tips and advice on the selection, installation and set-up of motion detectors.







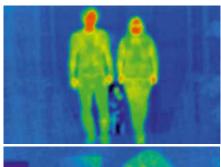
Award-winning: theLuxa S was awarded the "Plus X Award" for its elegant design and its outstanding functions.

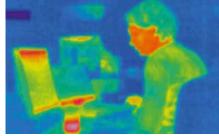
### Technology: How does a motion detector work?

Motion detectors work by using passive infrared sensors (short "PIR") and react to thermal radiation in the immediate surrounding. Static heat differences are not detected. The infrared sensors of the motion detectors react to thermal radiation that changes quickly, such as people ascending stairs or cars approaching a house. If a motion detector detects this thermal radiation in its detection area, it converts it into a measurable electrical signal: The light is switched on.

Motion detectors are not exclusively, but mainly designed for outdoor use. While presence detectors, due to their sensitive sensors, detect slightest movements, motion detectors especially detect more significant changes, such as walking, running or gesticulation. A further difference is the light measurement. In contrast to presence detectors, which permanently measure the light, motion detectors only measure the brightness when being switched on. There-

fore, they are not intended for indoor brightness control.





Motion detectors excellently detect significant spatial changes (upper thermal image). For slight motions, e. g. during seated activities (lower image), presence detectors are better suited

## HINT

Presence detectors for room monitoring are recommended in preference to motion detectors for lighting control in offices, class-rooms or meeting rooms. Presence detectors have significantly more sensitive sensors and register even minimal changes to the thermal image, such as typing on a keyboard.

More information on presence detectors from page 8



#### Motion detectors for outdoor use









#### For indoor use





## Which motion detector for which use?

There are motion detectors for outdoor and motion detectors for indoor use.

IP 55

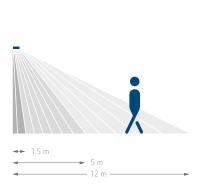
Motion detectors for outdoor use mostly have a higher protection rating, as they are exposed to rain and snow. However, also indoors the

protection rating is of high importance: Since motion detectors which are to be used in wet rooms, such as bathrooms or showers, must have an appropriate protection rating. Whether you mount the motion detector on the ceiling or at the wall depends on the particular circumstances. There are motion detectors for both and models that can only be installed on ceilings or on walls.

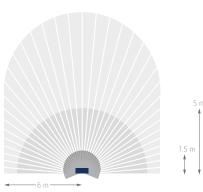
Apart from the selection of the installation location indoor or outdoor, the detection area plays an essential role. For monitoring a front door or a facade, a wall-mounted motion detector with a semi-circular detection area of 180° is usually sufficient. If you

want to monitor two sides of a building with one device, we recommend using a motion detector installed on the external corner of a building with a detection area of 300°. Creep under protection is important if you want to install the motion detector above the front door and detect movement directly under the device — that is when you step out of the front door.

## Installation Correct installation of motion detectors



Movements running in a transverse direction of the motion detector can be easier detected than movements that approach the motion detector directly. In case of directly approaching movements, it is difficult for the device to identify temperature changes. The detection area is therefore smaller than with transversal movements. As an examp-





Detection area, transversal movements

Detection area, directly approaching movements
Creep under protection

Motion detector

le, the detection area for transversal movements can therefore be up to 12 m and for direct approaching movements only 5 m. The higher the motion detector is mounted, the higher the detection area (maximum height: usually 5 m). As the passive and active zones in the detection area become bigger, sensitivity is reduced. Reflective

surfaces, such as mirrored facades or snow, can also influence the detection area and the reaction of the motion detector. In winter, open windows (escaping warm air) can lead to faulty responses.









Caution: Do not install the motion detector in the detection area of permanent triggers, such as direct sunlight, street lamps, heat sources, such as heater outlets or air conditioners, or trees or window curtains swaying in the wind.

## Start-up Correct setting of motion detectors





More space, easy handling, a clever concept – there are many reasons for Theben motion detectors to be installed and started up easier and faster. The best reasons you can find here.

#### Spacious socket

Particularly convenient - the spacious socket. It can be easily screwed to the wall an wired. The motion detector itself is just plugged on. Done. The socket comes for both versions — theLuxa and LUXA-LED.

#### Highly visible terminal labelling

It is nice when you can always see what each connection is for. With theLuxa this is not a problem. The terminal labelling is right above the connection. In this way it cannot be hidden by wires. That is not only more attractive, but also safer.

#### Secure fastening

Thanks to its blind terminal for earth conductors and the bracket for plug-in terminals, installation of theLuxa is quicker and safer. The earth conductor is neatly fixed, as it should be.

Once the motion detector is installed, the detection area can be set. The sensor heads of the motion detectors are rotatable. This ensures the optimum setting of the detection area. In order to avoid unnecessary activation — for example the light should not be switched on when pedestrians walk past on the pavement in front of your property — the detection area can be partially restricted. If you attach cover clips in front of the lens, the motion detector will not detect any movement in the covered segment. The light remains switched off.

Afterwards, you set the time delay and the lux value. Both is set via the potentiometers at the device. theLuxa P and theMova can also conveniently be set from the ground via remote control.

The correct setting of the lux value varies greatly, since every person experiences "too dark" or "too bright" differently. Here is a short overview of different light scenarios and their corresponding lux values:

Bright sunny day	100000	lχ
Overcast summer day	20000	lχ
In the shade in summer	10000	lχ
Operating theatre	10000	lχ
Overcast winter day	3500	lχ
TV studio lighting	1000	lχ
Office/room lighting	500	lχ
Corridor lighting	100	lχ
Street lighting	15	lχ
Candle at a distance of approx. 1	metre 1	lχ
Full moon night	0.25	lχ
Clear night sky (new moon)	0.001	lχ

The clever teach-in and test functions allow you a simple setting of the current lux value, without any technical knowledge.



### Switch on. View. Set. Mounting and installation videos.

#### Corner installation

This is how you install your motion detector on a corner of a house and cover two facades with only one device.



#### Time delay

How long should the light remain switched on if no motion is detected anymore? This is how you set the time delay.



#### Pulse function

This allows you to install motion detectors into existing electrical installations, in order to switch the staircase light, for instance.



#### www.youtube.com/TheThebenAG

You can find all videos on our YouTube channel.





## Convenient and safe Advantages of theLuxa





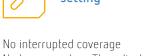
theLuxa motion detectors essentially contribute to saving energy as well as increasing comfort and safety. The light is automatically switched on only when needed, and only then. theLuxa motion detectors integrate harmonically into the facade and are available in white and in black.





#### Simple setting

No long searches: The adjusters are highly visible, easily accessible and easy to set using a screwdriver on the bottom of



the detector.



#### Simple and rainproof

theLuxa has protection rating IP 55 and can be installed anywhere outdoors, no matter how weatherproof the installation location.



#### Clever teach-in function

With the clever teach-in function, the current lux value can be permanently saved as a threshold. Without any specialist knowledge. By the end user. It couldn't be easier.



#### High switching capacity theLuxa S

With its zero-cross switching, theLuxa can handle switch loads of up to 10 amperes. This allows you to connect several lamps at the same time. For example when larger areas, such as loading ramps or hotel complexes, are to be illuminated. This gives you more security in your planning, lowers costs and reduces installation times, as you can save the additional modules that are otherwise needed. In the end, this is good for the environment, as the lifespan of the lamps is extended.



#### Suitable for flush-mounted boxes

If connections already exist, there is no need to drill new holes for theLuxa P. The detector can be fixed to a flush-mounted box (60 mm). Simply screw it on and it's ready.



#### Manual switching

The motion detector can also be switched on manually. This can be useful if you hear a sound outside and you want to switch on the outdoor lighting from inside.



#### Practical pulse function

The pulse function allows the motion detectors to be installed into existing electrical installations with staircase light timer switches or KNX binary inputs without expensive adjustments.



#### Convenient creep-under protection

theLuxa's creep under protection also covers the areas directly under and even a little behind the detector. This means that the light comes on when it is needed. Immediately, and not when you've already tripped over the first steps.



#### Swivelling sensor head

With its horizontally and vertically swivelling sensor head, theLuxa only detects movement in those areas where it really should.



#### Clever test function

With the clever test function, the detection area can be established. set and optimised immediately after installation. And this even in daylight and sunshine.

Further functions of theLuxa S360



#### Simple area restriction

The detection area can be individually restricted with practical cover clips. This means that unwanted activation of the detector due to movement next door or on the pavement can be avoided.



#### Elegant ceiling installation

With its swivelling sensor head, the theLuxa S360 can also be installed at the ceiling or at roof overhangs: This offers a greater scope for covering the optimal detection area.

Further functions of theLuxa P



#### High switching capacity theLuxa P

Its high-performance relay with tungsten pre-contact allows theLuxa P to handle switch loads of up to 10 amperes. This allows not only to connect several lamps and to light larger areas, such as loading ramps or hotel premises, but also using LEDs and energy saving lamps without any problem. This improves planning security, lowers costs and reduces installation times. Especially when using LEDs and energy saving lamps.



#### Floating contact

Thanks to this the theLuxa P can be directly and simply integrated into the building system technology. And it reduces installation costs, as no cut-off relays are required.



#### Highperformance **KNX** versions

theLuxa P KNX can be easily integrated via ETS into the building automation and is simple to configure. Brightness thresholds, duty cycle and sensitivity can also be configured via the-Serva KNX visualisation.



#### Easy to use remote control

With the theSenda P remote control, settings can be conveniently made and changed from the ground. This is faster, shortens installation times and lowers costs. And, moreover, it is safer.

### Brighter and more energy saving Advantages of installation and use of LUXA-LED





They turn night into day and reliably illuminate gateways, terraces and paths at every turn: The LUXA LED spotlights with integrated Theben motion detectors. The detectors are available in white and in black.



#### Clever test function

With the practical test function, the detection area can be established, set and optimised immediately after installation. Even in daylight and sunshine.



### Swivelling sensor head

With its sensor head that can be swivelled by 90°, the motion detector exactly detects movements in those areas where it really should



### Simple area setting

The detection area can be individually restricted with practical cover clips. This means that unwanted activation of the detector due to movements next door or on the pavement can be avoided.



#### High light output

If this is not illuminating: The 8 W of the LEDs corresponds to around 100 W of a traditional halogen lamp. The colour temperature of 6000 K is daylight white.



## Suitable for flush-mounted boxes

If connections already exist, there is no need to drill new holes for LUXA-LED. The devices can be fixed to a flush-mounted box (60 mm). Simply screw it on and it's ready.



### Manual switching

The LED spotlight with motion detector can also be switched on manually. This can be useful if you hear a sound outside and you want to switch on the outdoor lighting from inside.



### Sustainably energy-efficient

With respect to energy-saving, LUXA LED spotlights are ahead of the pack: With a power consumption of only 0.3 W in standby or 0.5 W with LUXA 102-180 LED 32 W, the detectors work extremely efficiently.



### Simple setting

No interrupted coverage, no long searches: The adjusters are highly visible and easily accessible on the bottom of the detector. Switch delay and brightness threshold can be set without any tool.



## Convenient creep-under protection

The creep under protection of LUXA-LED spotlights also covers the areas directly under and even a little behind the detector. This means that the light comes on when it is needed. Immediately, and not when you've already tripped over the first steps.



### More spacious socket

LUXA-LED has a socket with a large terminal area. This simplifies and speeds up the installation, as the detector itself is not in the way during installation and can be easily attached at the end.



## Flexible dimming function

The dimming function allows to switch on the spotlight permanently, when reaching the set lux value. This is especially useful on escape routes or in outside facilities of hospitals, senior residences or other care facilities

#### House number lighting >

Good when finding the right address also in the dark. With theLuxa, house number lighting is no problem. This pleases the paper boys — and the authorities: Since in many states, house number lighting is mandatory.



## Simple and rainproof

LUXA LED 32 W has protection class IP 55 and can be installed anywhere outdoors, no matter how weatherproof the installation location.



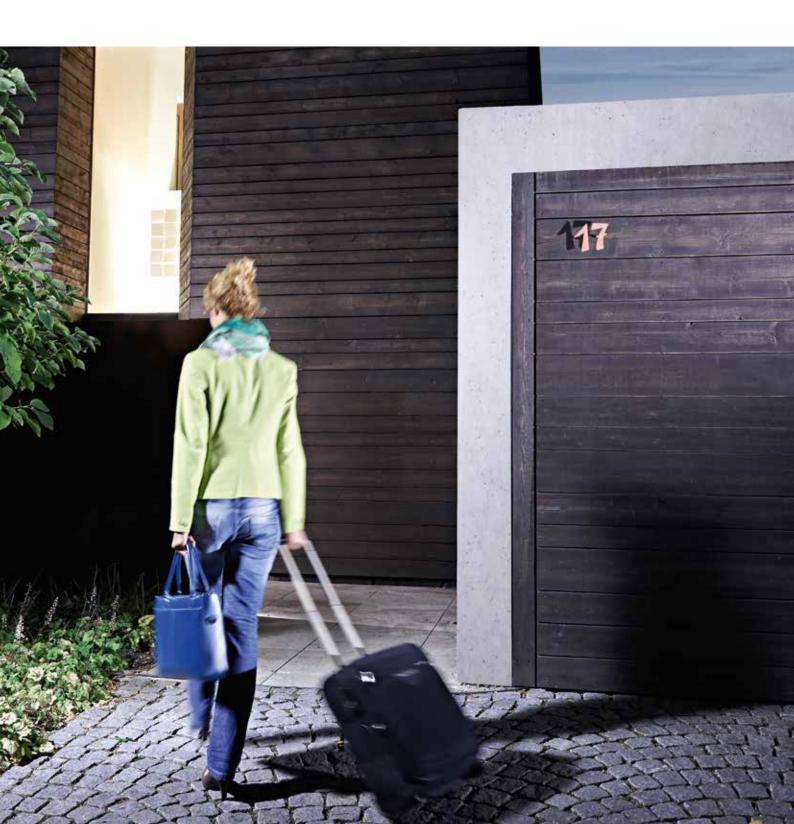
## Extendable via 2nd switching output

Additional devices, such as further LED spotlights without detector, can be connected via the additional relay output of the 32 W spotlight with motion detector.



## Master/Master switching

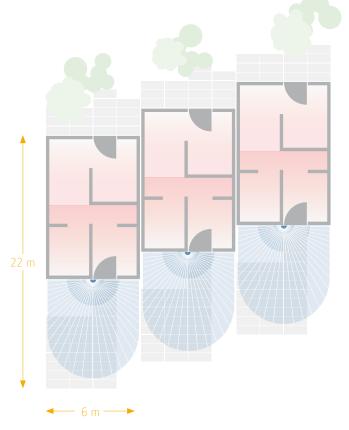
The area to be lit can be increased with the master/master switching of two devices.



Solutions for front doors, gateways and terraces

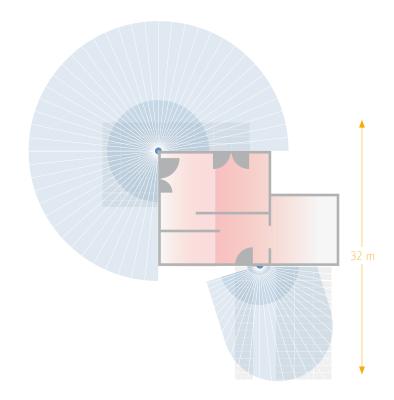
### Terraced house

The light at the front door should automatically be switched on, as soon as someone leaves the house or enters the property. The lighting of the adjoining properties should not be affected by this.



## Single-family house

Lighting for front door, terrace and gateway of a single-family house should be motion-dependent.



#### theLuxa S150 and S180

For motion-dependent control of an already installed exterior lamp, we recommend the Luxa S150/S180:

- Creep under protection
- Time delay and lux value easily adjustable
- **э** Technical data theLuxa: page 72

#### Alternative:

If no exterior lamp is present, we recommend LUXA 102-140 <u>LED 8W:</u>

- Bright LED spotlight with integrated motion detector
- Creep under protection
- Technical data LUXA-LED: page 74





Apart form the above mentioned theLuxa S150/S180 for motion-dependent control of an already installed exterior lamp, we recommend theLuxa S360, which can cover two facades at the same time:

- Corner and/or ceiling installation possible (only theLuxa S360)
- creep under protection
- Time delay and lux value can easily be set
- Technical data theLuxa: page 72

#### Alternative:

If no exterior lamp is present, we recommend LUXA 102-140 LED 16 W:

- ⇒ Bright LED spotlight with integrated motion detector
- Creep under protection
- Corner installation possible
- Technical data LUXA-LED: page 74





Practical corner installation possible

#### thal uva C260



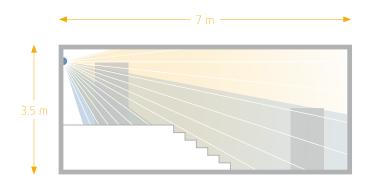


#### LUXA 102-140 LED 16W



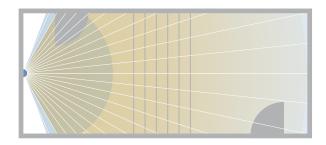


## Private home use basement stairs and carports



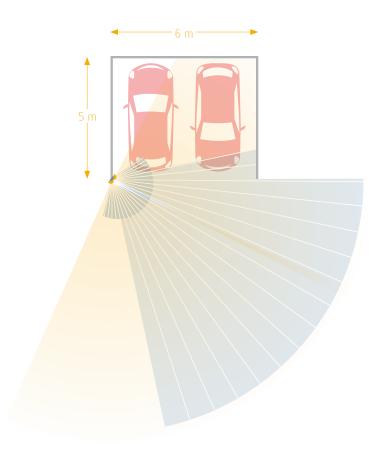
### Basement stairs

Dark basement stairs without windows and daylight is to be illuminated safely.



## Gateway with carport

Motion-dependent lighting of a gateway with carport is required. The light should illuminate the gateway as well as the carport, in order to ensure safe entering and exiting of the car.



#### LUXA 102-140 LED 8W

We recommend LUXA 102-140 LED 8 W:

- High performance LED spotlight illuminates the basement stairs bright as daylight
- Detection area with creep under protection reliably detects all movements
- Time delay and lux values easily adjustable at the device
- → Technical data LUXA-LED: page 74



If a lamp is already installed, which now has to be controlled motion-dependent, we recommend the Luxa S150/S180:

- Creep under protection
- Time delay and lux value easily adjustable
- Technical data theLuxa: page 72





LUXA 102-140 LED 16W

Corner angle

We recommend LUXA 102-140 LED 16 W:

- ⇒ High performance double LED spotlight
- Corner installation angle (optional accessory) for optimum illumination of two facades
- Both spotlights can be optimally aligned individually: one spotlight in the direction of the entrance or front door, the other one towards the carport
- Technical data LUXA-LED: page 74





Practical corner installation possible

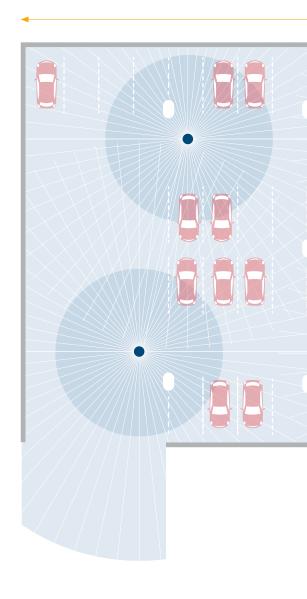




## Garages and garage entrances

## Underground garage

The lighting in a underground garage should be switched on motion-dependent, as soon as a person enters the underground garage through the staircase or when a car comes in.



We recommend theLuxa S360:

- Ceiling or wall mounting possible. Thanks to the flexibly adjustable sensor head even on the ceilings of the driveways
- Few detectors per area thanks to the large detection area of Ø 32 m
- ◆ High protection rating of IP 55 (humidity in a underground garage is therefore no problem)
- **⇒** Technical data theLuxa: page 72

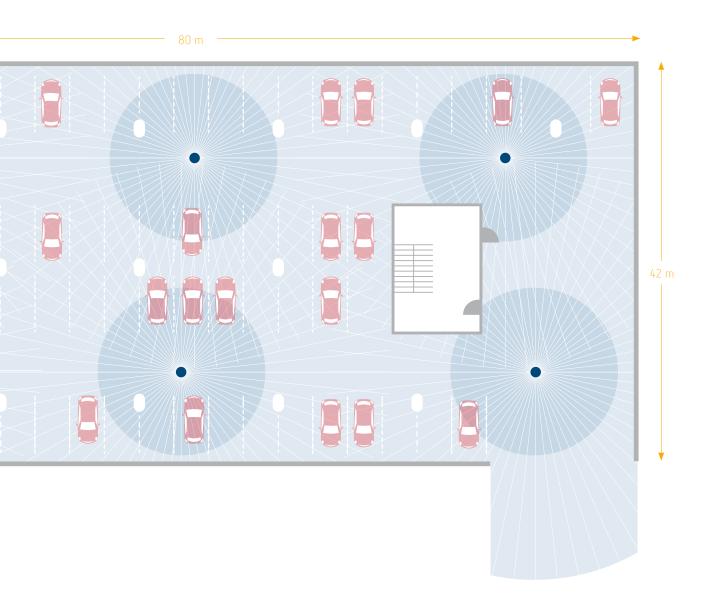
#### Alternative:

For smaller underground garages, motion detector the Mova P with optionally available surface frame is recommended:

- Also high protection rating of IP 44 (humidity in a underground garage is therefore no problem)
- Detection area of Ø 24 m
- Technical data the Mova P: page 41



Practical pulse function

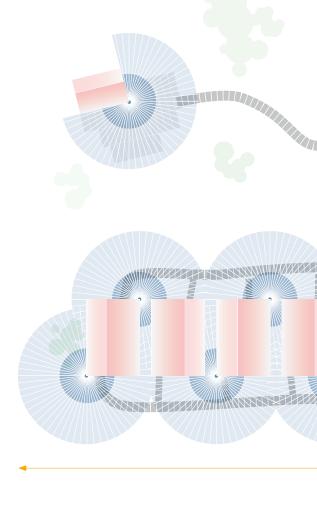




## Solutions for hotels, hospitals and administration buildings

## Garden and outdoor installation

The motion-dependent illumination of the extensive park at a hotel with main building, dining room and several apartments is required.



We recommend the Luxa P300 as the ideal motion detector for the automatic lighting of a hotel complex.

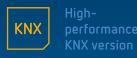
- Even from great installation heights, the detector offers a reliable detection
- Small number of detectors per area thanks to the large detection area of Ø 32 m
- High protection rating of IP 55 suited for outdoor use
- Corner installation possible for simultaneous detection of two facades
- Easily adjustable via remote control from the ground
- Technical data theLuxa P300: page 73

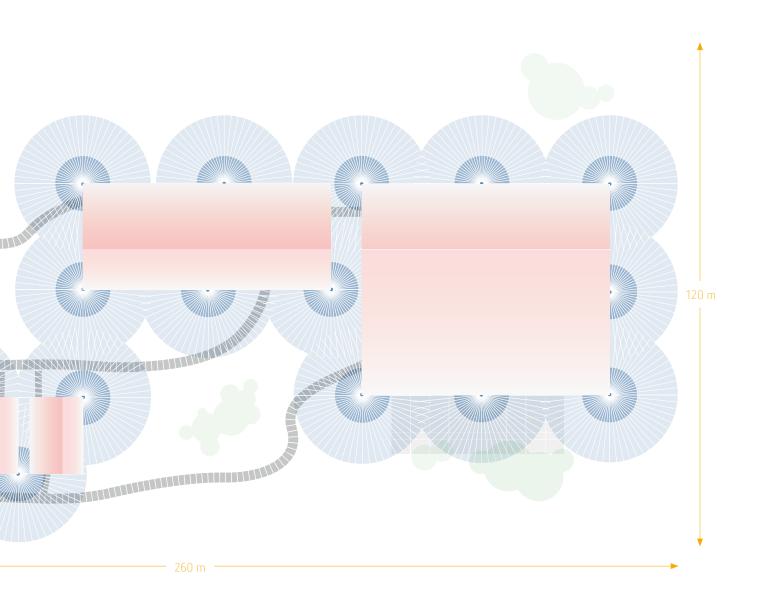
For KNX installations — the high performance KNX version the Luxa P 300 KNX:

- Simple integration into the building automation via ETS and easy to parameterize
- Brightness thresholds, duty cycle and sensitivity can also be configured via the KNX visualisation theServa S110

theSenda S remote control

With the Senda, installers can adjust virtually all functions of Theben presence and motion detectors with only one remote control. Fast, secure, from the ground up. Further information on page 37



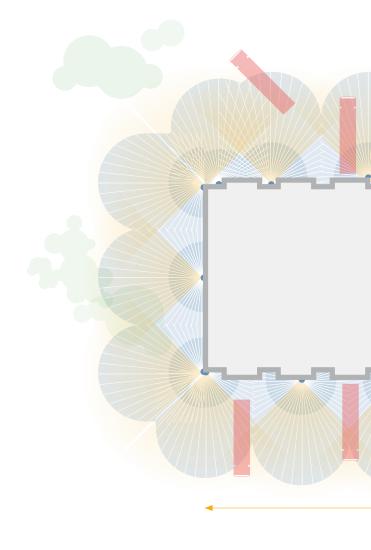




## Outside facilities of functional buildings factory halls and warehouses with parking area

# Loading ramps and company parking area

Motion dependent lighting of the outside facilities of a production plant with loading ramps and parking areas is required — also for safety reasons.



We recommend LUXA 102-180 LED 32 W:

- **⇒** Large detection area of up to 12 m
- The bright LEDs with an output of 2000 lm illuminate even large areas
- With additional relay output, to which further devices can be connected, e.g. further LED spotlights without detectors
- ◆ The area to be illuminated can be enlarged by a Master/Master switching of two devices
- ◆ Technical data LUXA 102-180 LED 32 W: page 74

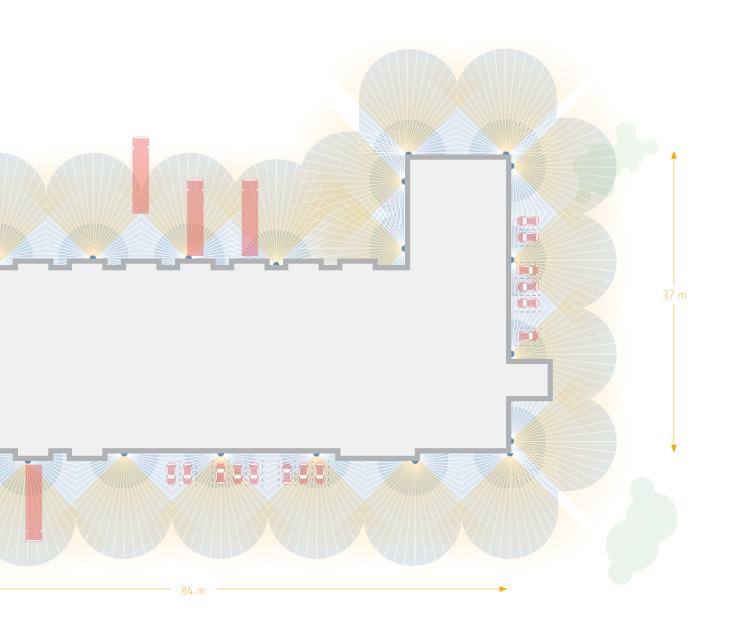


via second output



Master/ Master switching LUXA 102-180 LED 32W







## Motion detector theLuxa Technical data







Features	theLuxa S150	theLuxa S180	theLuxa S360
Detection angle	150°	180°	360°
Lateral detection area	12 m	12 m	16 m
Installation height	2 – 4 m	2 – 4 m	2 – 4 m
Type of installation	Wall mounting	Wall mounting	Ceiling & wall mounting
		creep un	der protection, pulse function, test function
Brightness setting range	5 – 1000/∞ lux	5 – 1000/∞ lux	5 – 1000/∞ lux
Duty cycle range	1 s - 20 min	1 s - 20 min	1 s - 20 min
Remote operation	no	no	no
Standby consumption	< 1 W	< 1 W	0.5 W
Switch contact	μ contact 230 V AC	μ contact 230 V AC	μ contact 230 V AC
Operating voltage	230 V AC/50 Hz	230 V AC/50 Hz	230 V AC/50 Hz
Zero-cross switching	yes	yes	yes
Switching capacity	10 A (cos $\Phi$ = 1) 3 AX (cos $\Phi$ = 0.3)	10 A ( $\cos \Phi = 1$ ) 3 AX ( $\cos \Phi = 0.3$ )	10 A (cos $\Phi$ = 1) 3 AX (cos $\Phi$ = 0.3)
Min. switching capacity	10 mA	10 mA	10 mA
LED lamps < 2 W	25 W	25 W	25 W
LED lamps 2 W - 8 W	90 W	90 W	90 W
LED lamps > 8 W	100 W	100 W	100 W
Incandescent and halogen lamp load	2300 W	2300 W	2300 W
Low-voltage halogen lamps	2300 W	2300 W	2300 W
Fluorescent lamps EVG	400 VA (42 μF)	400 VA (42 μF)	400 VA (42 μF)
Compact fluorescent lamps EVG	150 W	150 W	150 W
Ambient temperature	-25 °C to +45 °C	-25 °C to +45 °C	-25 °C to +45 °C
Protection rating (in accordance with EN 60529)	IP 55	IP 55	IP 55
Article number			
Art. No. white (WH)	1010500	1010505	1010510
Art. No. black (BK)	1010501	1010506	1010511
Optional accessories			
Spacer frame theLuxa WH	9070906	9070906	9070906
Spacer frame theLuxa BK	9070907	9070907	9070907
Corner angle theLuxa WH	9070902	9070902	Included in the scope of supply
Corner angle theLuxa BK	9070903	9070903	Included in the scope of supply
theSenda S remote control	_	_	-
theSenda P remote control	_	_	-











LIIELUXA PZZU	ClieLuxa P300	LITELUXA POUD KINA
220°	300°	300°
16 m	16 m	16 m
2 – 4 m	2 – 4 m	2 – 4 m
Ceiling & wall mounting	Ceiling & wall mounting	Ceiling & wall mounting
available in all theLuxa.		
5 – 1000/ ∞ lux	5 – 1000/∞ lux	5 – 1000/∞ lux
1 s - 20 min	1 s – 20 min	1 s - 20 min
yes	yes	yes
0.3 W	0.3 W	
Tungsten pre-contact	Tungsten pre-contact	-
230 V AC/50 Hz	230 V AC/50 Hz	KNX bus
no	no	
10 A (cos $Φ$ = 1) 10 AX (cos $Φ$ = 0.3)	10 A ( $\cos \Phi = 1$ ) 10 AX ( $\cos \Phi = 0.3$ )	-
100 mA	100 mA	-
60 W	60 W	_
180 W	180 W	_
200 W	200 W	
2300 W	2300 W	
2300 W	2300 W	
1300 VA (400 µF)	1300 VA (400 μF)	
300 W	300 W	- -
-25 °C to +45 °C	-25 °C to +45 °C	-25 °C to +45 °C
IP 55	IP 55	IP 55
1010605	1010610	1019610
1010606	1010611	1019611
Included in the scope of supply	Included in the scope of supply	Included in the scope of supply
Included in the scope of supply	Included in the scope of supply	Included in the scope of supply
-	Included in the scope of supply	Included in the scope of supply
-	Included in the scope of supply	Included in the scope of supply
9070911	9070911	9070911
9070910	9070910	9070910







## LED spotlight LUXA-LED Technical data







Features	LUXA 102-140 LED 8W	LUXA 102-140 LED 16W	LUXA 102-180 LED 32W
Version	LED spotlight with motion detector	LED spotlight with motion detector	LED spotlight with motion detector
Detection angle	90°	90°	180°
Lateral detection area	10 m	10 m	12 m
Creep under protection	140°	140°	220°
Adjustability of sensor	can be turned horizontally by ± 90°	can be turned horizontally by ± 90°	can be turned horizontally by ± 90°
Brightness setting range	5–200 lx or just presence dependent	5–200 lx or just presence dependent	5–200 lx or just presence dependent
Lighting time delay	5 s - 10 min	5 s – 10 min	5 s - 10 min
Test function	yes	yes	yes
Light-sensitive switches	yes	yes	yes
Standby output	0.3 W	0.3 W	0.5 W
Operating voltage	100 – 240 V AC	100 – 240 V AC	220 – 240 V AC
Frequency	50 – 60 Hz	50 – 60 Hz	50 – 60 Hz
Type of installation	Wall mounting	Wall mounting	Wall mounting
Additional light switch output	no	no	Relay 230V AC
Master/Master	no	no	yes
LED output (lighting current)	1x 8 W (430 lm)	2x 8 W (860 lm)	32 W (2000 lm)
Comparable halogen output	100 W	2x 100 W	230 W
Emission angle	approx. 75° horizontal and 60° vertic	al approx. 75° horizontal and 60° vertic	al approx. 75° horizontal and 55° vertical
Colour temperature	6000 K, daylight white	6000 K, daylight white	6000 K, daylight white
Adjustability of of spotlight	can be turned horizontally by ± 40° and swivelled down by 90°	can be turned horizontally by ± 40° and swivelled down by 90°	can be turned horizontally by ± 90° and swivelled down by 55°
Ambient temperature	-20 °C to +40 °C	-20 °C to +40 °C	-25 °C to +45 °C
Protection class			II
Protection rating	IP 44	IP 44	IP 55
Article number			
Art. No. white (WH)	1020971	1020973	1020975
Art. No. black (BK)	1020972	1020974	1020976
Optional accessories			
Corner angle LUXA white (WH)	9070756	9070756	-
Corner angle LUXA black (BK)	9070757	9070757	_







LUXA 102 FL LED 8W	LOXA 102 FL LED 16W	LUXA 102 FL LED 32W
LED spotlight without motion detector	LED spotlight without motion detector	LED spotlight without motion detector
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	
-	-	
-	-	
-	-	
100 – 240 V AC	100 – 240 V AC	220 – 240 V AC
50 – 60 Hz	50 – 60 Hz	50 – 60 Hz
Wall mounting	Wall mounting	Wall mounting
00	00	0
no	no	no
1x 8 W (430 lm)	2x 8 W (860 lm)	32 W (2000 lm)
100 W	2x 100 W	230 W
approx. 75° horizontal and 60° vertical	approx. 75° horizontal and 60° vertical	approx. 75° horizontal and 55° vertical
6000 K, daylight white	6000 K, daylight white	6000 K, daylight white
can be turned horizontally by $\pm40^{\circ}$ and swivelled down by $90^{\circ}$	can be turned horizontally by $\pm40^{\circ}$ and swivelled down by $90^{\circ}$	can be turned horizontally by $\pm90^\circ$ and swivelled down by $55^\circ$
-20 °C to +40 °C	-20 °C to +40 °C	-25 °C to +45 °C
II	II	II
IP 44	IP 44	IP 55
1020771	1020773	1020775
1020772	1020774	1020776
9070756	9070756	-
9070757	9070757	_

Theben is member of:





## theben

Theben AG
72401 Haigerloch | Germany
Phone +49 7474 692-0
Fax +49 7474 692-150
info@theben.de | www.theben.de

#### Service Hotline

hotline@theben.de Phone +49 7474 692-369 Monday to Thursday 7.00 am to 6.00 pm, Fr 7.00 am to 4.00 pm

