



EXTENDED APPLICATION RANGE



NORKA

XARA®

The NORKA lighting control system

2nd edition

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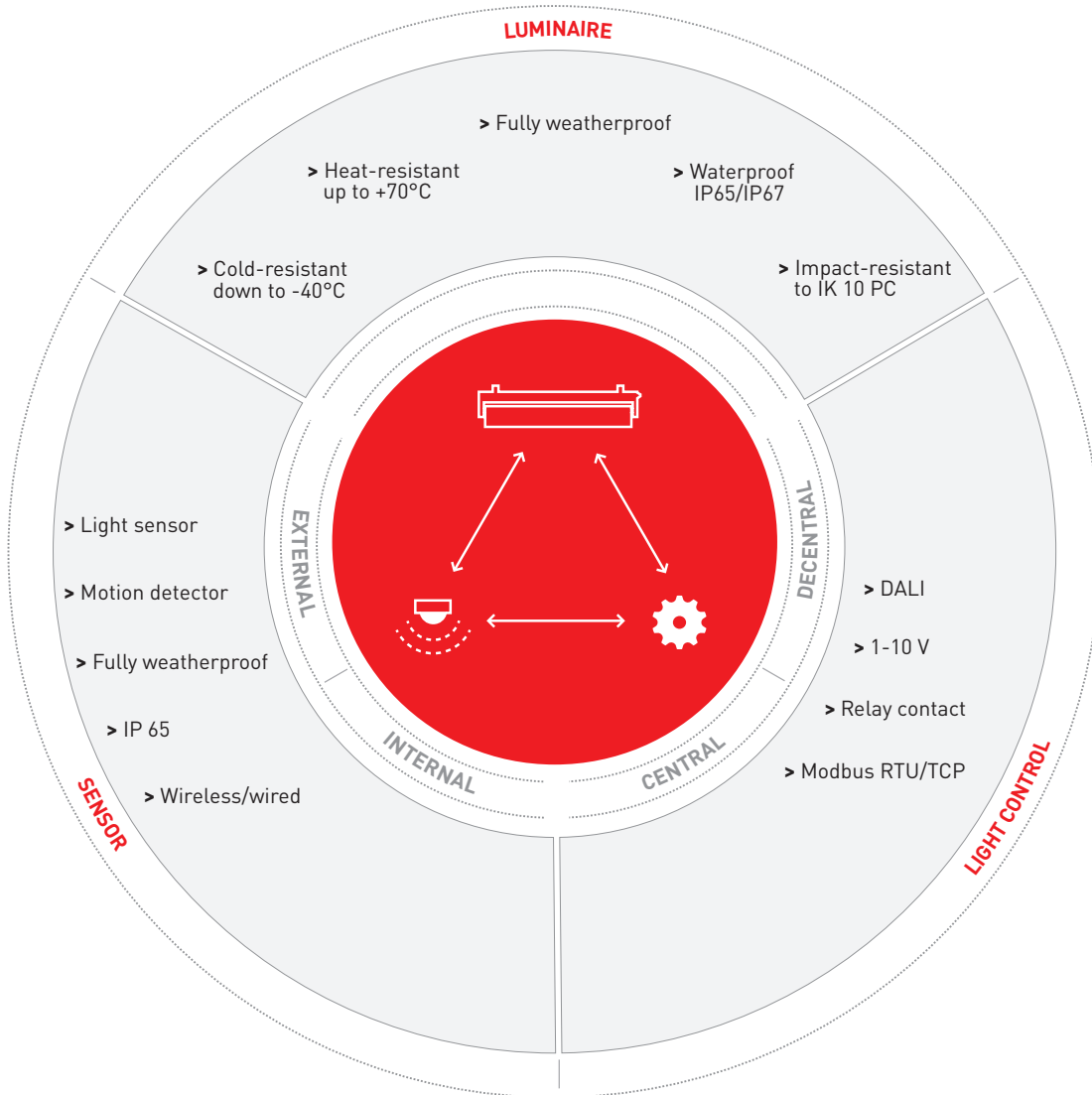
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XARA® LIGHTING CONTROL SYSTEM – ENERGY SAVINGS THROUGH INTELLIGENT LIGHTING MANAGEMENT



 XARA® lighting control system is synonymous with intelligent lighting management under extreme conditions. Our XARA® components are designed to fulfill the same high specifications as our luminaires. They are long-lived and reliable throughout their entire service life. The same as our luminaires, the components are employed in harsh environments and meet the most stringent of requirements in terms of function, pro-

tection rating, vibration resistance and impact resistance. They are designed for use in a wide range of temperatures. NORKA LED luminaires are highly efficient. The “focussed lighting”  concept lets you configure NORKA luminaires to perfectly match the lighting requirements, cutting energy consumption by more than 60%. You can save a further 30% by XARA® lighting control system.

The  XARA® lighting control system comprises components for local and for centralised control, software for configuration, control units such as touch panels, light sensors and motion detectors, radio-capable components and interface modules. These offer you maximum operating ease and even make radio-operated installations possible. So it couldn't be easier to integrate NORKA luminaires into building control systems – wired or wireless.

XARA® — EXTENDED APPLICATION RANGE

XARA® stands for eXtended Application RAnge. Just like NORKA luminaires, the XARA® lighting control system has been designed for harsh environments.

All XARA®-compatible luminaires from NORKA's product range can be equipped with these components. They are either built into the luminaire itself or installed in a separate housing.

XARA® INCLUDES INTELLIGENT BUILDING CONTROL COMPONENTS

- > Control units such as touch panels
- > Motion detectors and light sensors
- > Radio-capable components
- > Software for configuration
- > Interface modules

XARA® COMPONENTS GIVE YOU:

- > Lighting and lighting control system, all from a single source: NORKA
- > All luminaires and DALI components designed to match
- > Planning support from our XARA® planners
- > Simple integration of NORKA luminaires into complex building control systems
- > Wired and wireless installations possible
- > Integration of additional management functions for building control
- > 1:1 replacement possible in many areas
- > Save up to 90% energy by combined use with NORKA LED luminaires



ENERGY EFFICIENCY AND CONTROL SYSTEMS

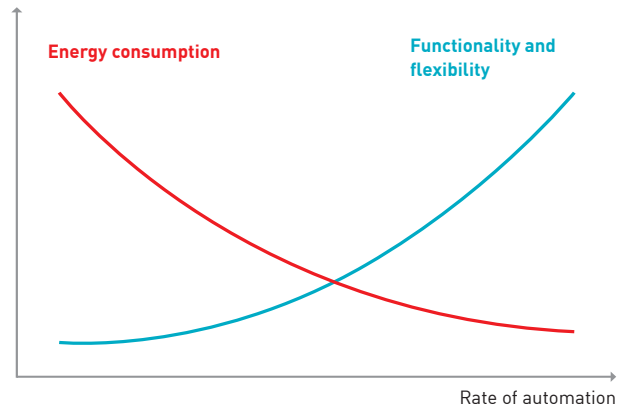
Today, both energy consumption and energy prices are steadily increasing while legal requirements prescribe energy savings.

Current luminaires and compact spotlights with LEDs already operate at a very high system efficiency. Additionally reducing energy consumption is possible by means of control systems. This is where the XARA® lighting control system truly shines.

The light sensors and motion detectors included in the XARA® lighting control system allow you to cut energy consumption by up to 90%. Sensors monitor a variety of parameters within the building and can have a direct impact on them. Intelligent control systems are particularly useful for managing the energy consumption of lighting systems.

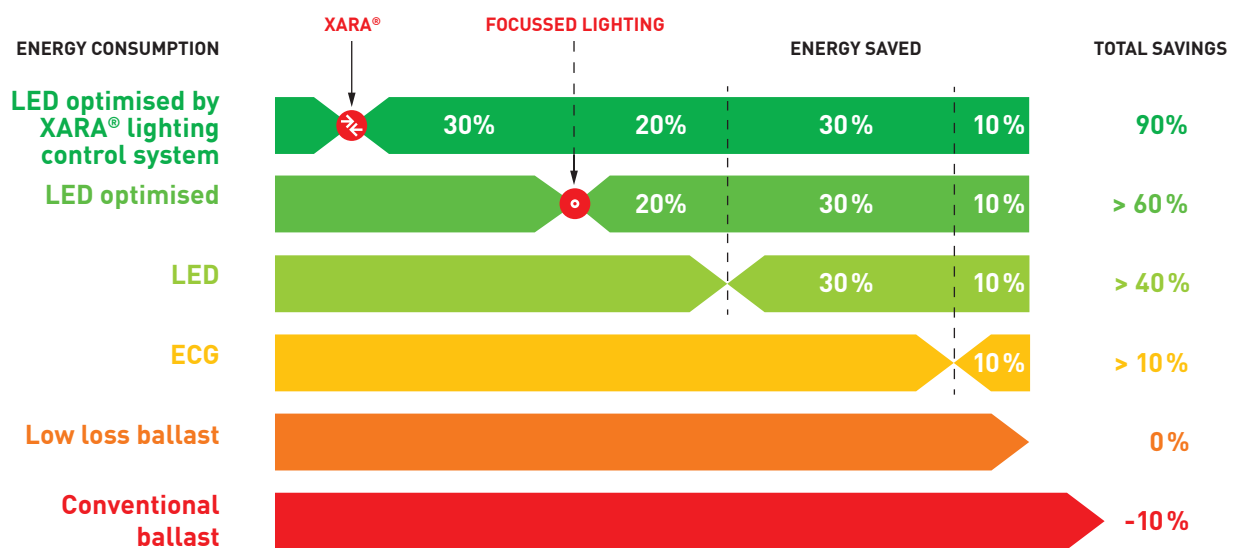
The greater the rate of automation, the lower the energy consumption. At the same time, you gain ease-of-operation and user benefit.

Our XARA® packages reflect these varying rates of automation.



The greater a control system's rate of automation, the lower the energy consumption.

POTENTIAL SAVINGS



UP TO 90% ENERGY SAVED

Using dimmable NORKA LED luminaire with optimised lumen package/luminaire length and operated by daylight-dependent and motion-linked lighting control compared with LLB and CB luminaires.

XARA® PACKAGES

The XARA® lighting control system comes in three distinct packages: BASIC, ADVANCED and PROFESSIONAL. The BASIC and ADVANCED packages are designed for local control. The system's overall function is determined by the separate components in the communications circuit. XARA® PROFESSIONAL employs centralised control. It utilises a single master controller to adjust all components. All packages employ lossless switching for the luminaires to avoid high switch-on currents and contact wear.

XARA® BASIC (new)

NORKA's plug-and-play solution. Luminaires with XARA® BASIC have predefined settings and are ready for immediate use. Customers can adjust the settings using adjuster screws or by remote control.

XARA® ADVANCED (formerly XARA® decentralised)

XARA® ADVANCED offers advanced functions and planning support. Suitable for systems of medium size and complexity. Simplified installation thanks to pre-parametrisation. Alternatively, the installer can carry out parametrisation on site.

The XARA® ADVANCED packages can be connected by cable, wireless or through a mixture of both. This provides great flexibility and allows for application in existing buildings as well as in newly constructed ones.

XARA® PROFESSIONAL (formerly XARA® centralised)

XARA® PROFESSIONAL offers maximum flexibility and a wide range of features. From integration in building control systems to status queries and energy monitoring: this package is ideal for systems of large size and high complexity.

XARA® functions

The XARA® lighting control system comes with a multitude of components and configurations. See below for an overview of the separate packages' features:

	BASIC	ADVANCED	PROFESSIONAL
Motion detection	■	■	■
Daylight threshold value & motion detection	■	■	■
Daylight-dependent adjustment		■	■
Daylight-dependent adjustment & motion detection		■	■
Integration of switching elements		■	■
Timed control		■	■
Integration of emergency luminaires		■	■
Wireless version also available		■	
Fault query for driver failure			■
Fault query for LED/lamp failure			■
VDE 0108-compliant test log for emergency luminaires			■
Web-based or touch panel visualisation			■
Watchdog function			■
Night lighting			■
Integration into building control system			■
Energy monitoring			■
Remote maintenance			■
Email/text message service			■
Customer-specific tailoring			■
Integration of luminaires by other manufacturers			■

SENSORS

XARA® motion detectors and light sensors are designed both for installation in a variety of NORKA luminaires and for use in an external housing. The sensors used employ either passive infrared (PIR) or radio-frequency (RF)/radar technology.

ADVANTAGES OF BUILT-IN SENSORS

Luminaire and sensor form a single unit and can be used in harsh environments. There is no need to connect a separate sensor so installation requirements are reduced. It takes almost no time at all to set up installations with autonomously activating individual luminaires or even complex master-slave lighting management systems. Our luminaires keep their high IP rating.

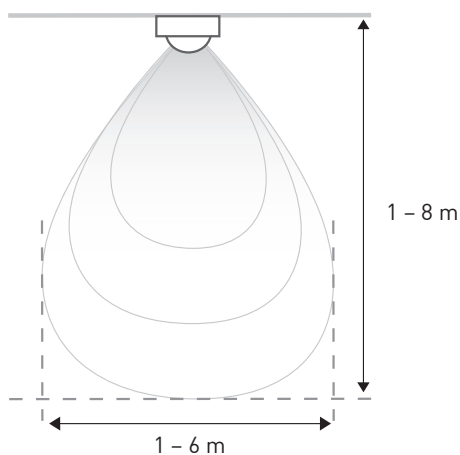
ADVANTAGES OF EXTERNALLY INSTALLED SENSORS

The sensors come in their own housing with a high IP rating and you can freely choose where to set them up. This makes them particularly suitable for retrofitting existing lighting systems. A distinct location also allows you to monitor especially critical areas.

For example, daylight sensors can monitor areas with little incident daylight to obtain a reference value and motion detectors can be installed directly at entries and exits.

CHARACTERISTICS OF RADIO-FREQUENCY/RADAR SENSORS (XARA® BASIC)

- > Multi-master-capable – several sensors can be included in a single DALI circuit
- > Motion detection and luminous intensity measurement
- > Active radio-frequency motion detector – temperature independent
- > Adjustable switch-off delay (20 seconds to 30 minutes)
- > Adjustable detection range
(1 to 8 m detection height, 1 to 6 m diameter)
- > Luminous intensity measured from 2 to 2,000 lux
- > Wide temperature range for operation from -20°C to +60°C
- > Corridor function
- > Remote control available

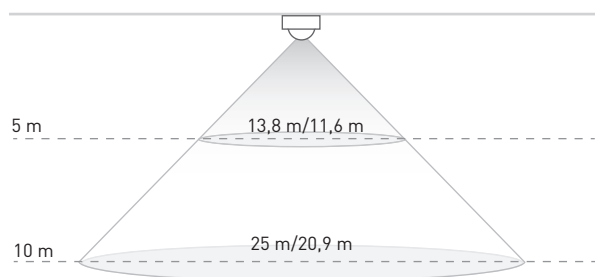


Adjustable detection range for radio-frequency sensor

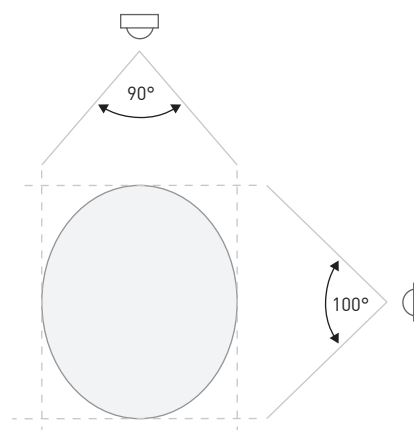
SENSORS

CHARACTERISTICS OF THE PASSIVE INFRARED SENSORS (PIR) (XARA® ADVANCED)

- > Multi-master-capable – several sensors can be included in a single DALI circuit
- > Motion detection and luminous intensity measurement (motion-dependent lighting control)
- > Passive infrared sensor for motion detection – unaffected by daytime/night-time
- > Motion detection across 92 zones at a temperature difference of only 4 Kelvin
- > Luminous intensity measured from 0 to 2,500 lux
- > Motion detector and light sensor easily configured using configuration software via DALI bus
- > When connected to mains, sensor integrates power supply for up to two additional DALI ballast units. This scenario eliminates the need for a separate DALI power supply.
- > Max. detection range 12 m/max. ceiling height 10 m
- > Wide temperature range for operation from -40°C to +70°C
- > Corridor function/parametrisable switch-off delay
- > Passive infrared sensor's aperture angle: 100° and 90°



Detection ellipses (length/width) of motion detector at 10 m and ceiling height of 5 m.

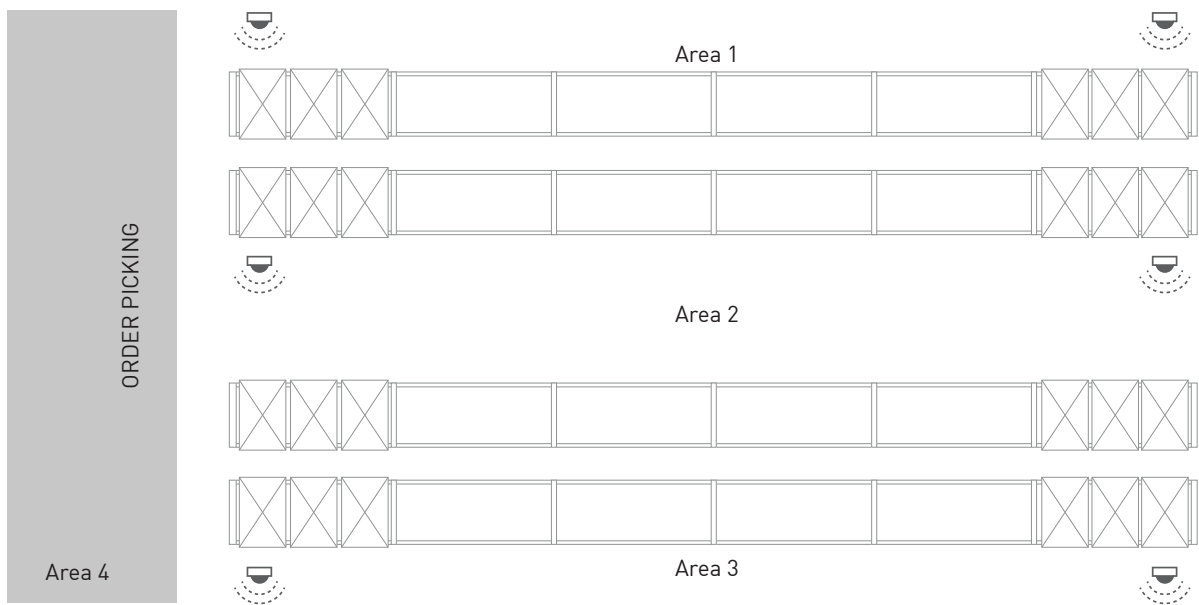


Detection angle of motion detector

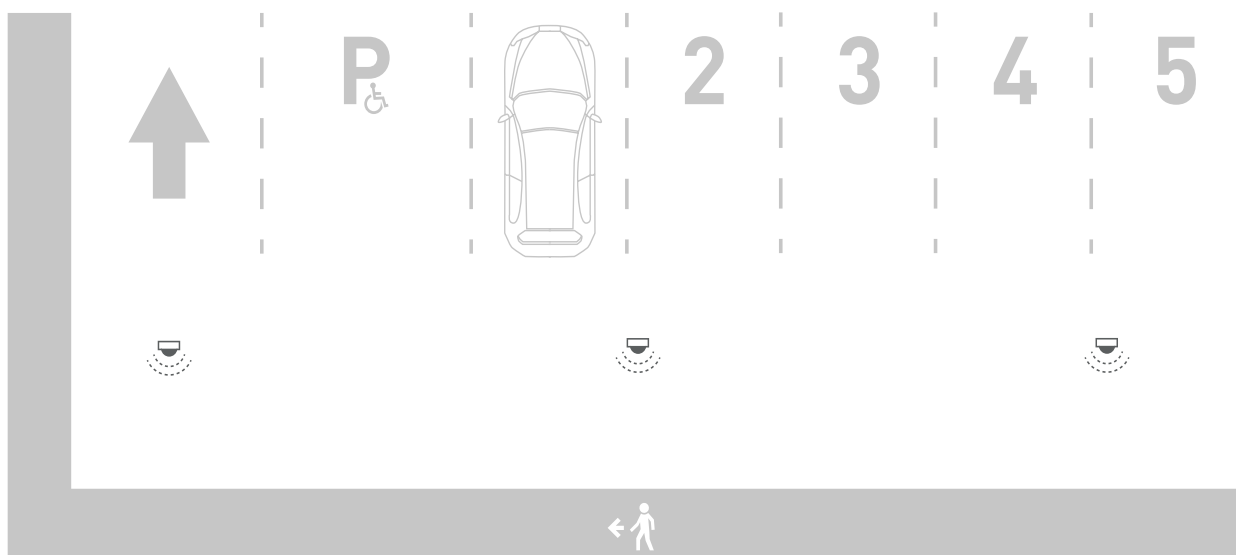
COLD STORE

Cold stores are not exposed to direct sunlight or incident daylight. The storage rooms are fully blacked out to prevent solar energy from causing additional heat build-up. This reduces the energy costs that extra cooling would incur. Until a few years ago, the lighting needed to be kept running continuously because the fluorescent lamps would not start up reliably at sub-zero temperatures. With LEDs that are resistant to low temperatures, luminaires in cold stores can be switched or dimmed in order to further reduce energy costs.

Corresponding control circuits utilise motion detectors. The sensors can be integrated in the luminaire or set up externally, ideally in the room's access area and at the beginning of each new shelf aisle. After a set switch-off delay of several minutes, the light in the individual shelf aisle is dimmed or switched off. This prevents unnecessary illumination of shelf aisles that only rarely require access.



MULTI-STOREY CAR PARK



Multi-storey car parks often remain open around the clock and are used at regular intervals linked either to downtown shopping hours or residents' daily routines. They experience little traffic before and after these peak times. The XARA® lighting control system operates based on precisely these usage intervals.

Motion detectors register people and vehicles. This way, only the light that is actually needed is gradually 'faded in'.

Hard on/off switching may cause anxiety in areas referred to as fear spaces, such as multi-storey car parks.

During periods in which no motion is detected, cutting-edge driver units dim the lighting to a preset value; this ensures permanent orientation lighting and makes sure that the building is never completely dark.

Motion detection can be set up zone-by-zone so that motion detected on the ground floor does not light up the entire building.

SPORTS HALL

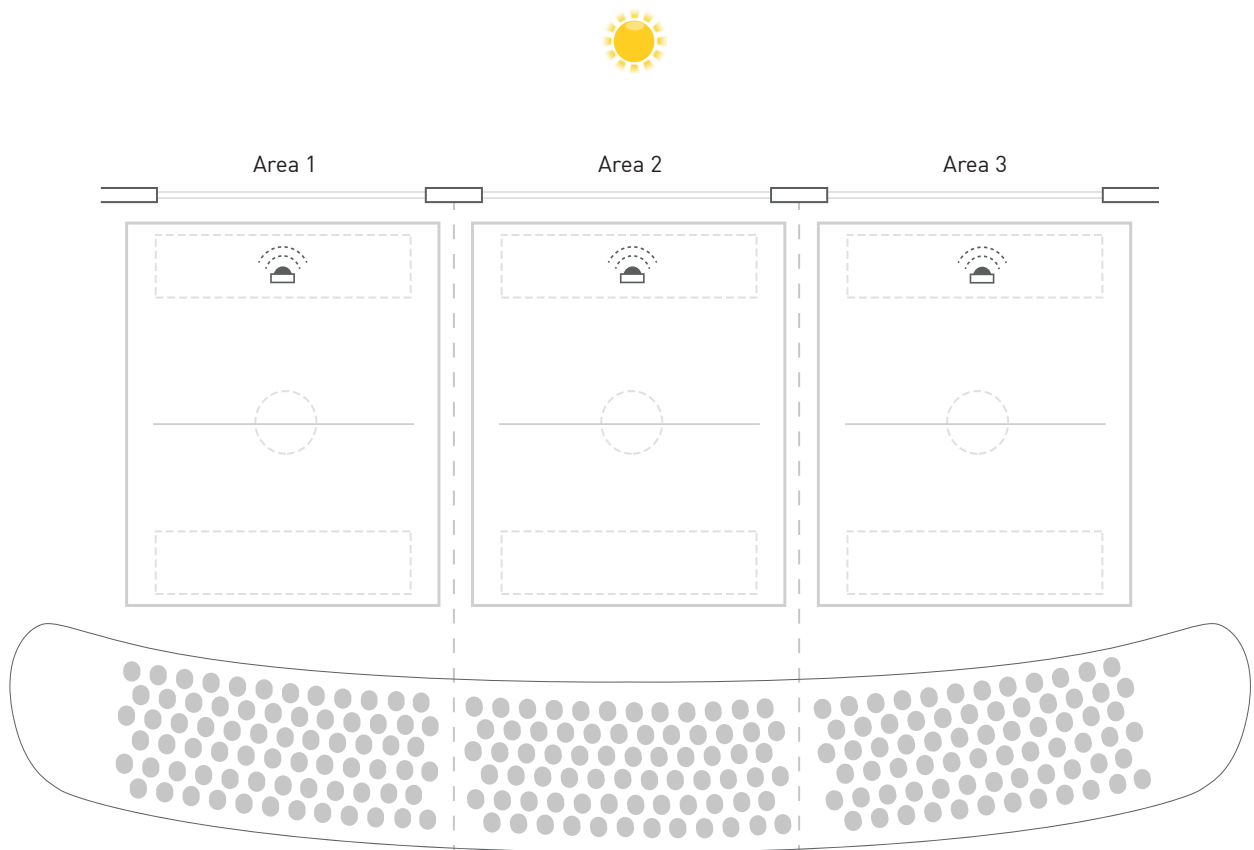
“Who forgot to turn the light off?”

We all remember phrases like this one from our school days. The lights in the sports hall were often left on unintentionally because the daylight outshone them.

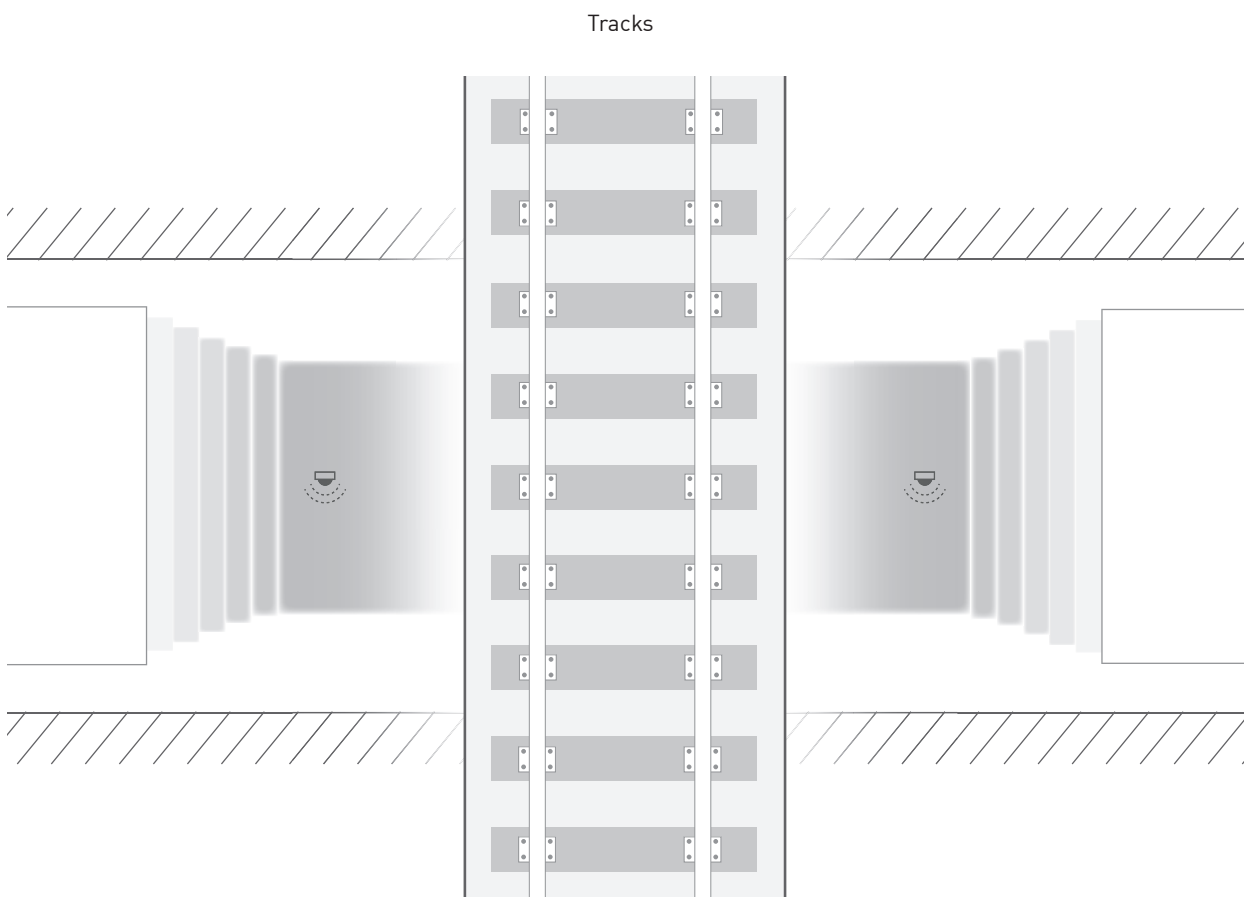
Partitionable sports halls are used for various purposes. PE classes are held in three sections of the gym at the same time, while the whole gym is given over to use for major events. Skylights and window fronts are exposed to daylight to different degrees, making one section of the gym almost too bright and warm while another becomes much too dark and perhaps even too cool.

Luminaires fitted with sensors adapt to the daylight conditions in each gym section and dim the lighting without disruptive switching. XARA® sensors additionally detect motion. When the gym is not in use, the light dims and switches off.

Above and beyond lighting management, XARA® can also take control of sun blinds, the heating or the ventilation system. The gym is automatically aired, heated and lit as required. The high rate of automation keeps everyone content and at the end of the day even cuts energy costs.



UNDERPASS



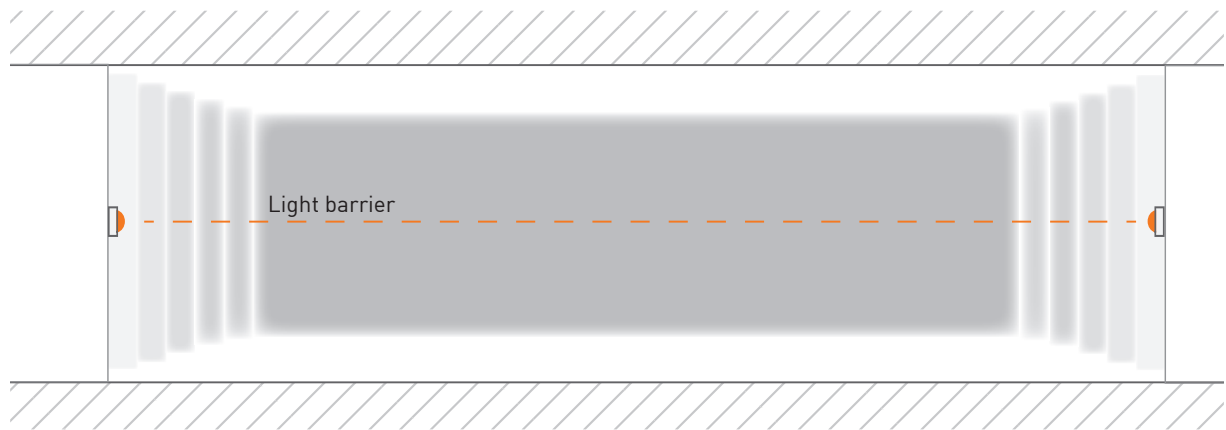
Many people find insufficiently illuminated underpasses scary. At the same time, many underpasses are similar to multi-storey car parks in that many or hardly any people come through depending on the time. The parties responsible for underpasses are required to keep them sufficiently lit, including the entry areas. It is common practice to program times for switching to full or half lighting based on people count.

Luminaires featuring the XARA® lighting control system detect people and ensure that full illumination is always available when required. When nobody is passing through, the lighting dims to a low level. The underpass never appears unlit. Integrating the sensor into what we call the master luminaire eliminates the need for any new, visible cables. This reduces the risk of vandalism.

WORK PIT

Sensors in work pits face challenges in the long detection ranges required and the low amount of movement. Detecting motion will not suffice here, as the jobs performed often entail remaining almost motionless over longer periods. Such scenarios require **presence detection**. This could be realised using a light barrier combined with a relay contact. It monitors the entire length of the pit and registers anyone inside it.

XARA® luminaires also feature the capacity for connection to sensors with a relay contact and thus allow you to engineer projects that cannot be realised using passive infrared or radio-frequency sensors.



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