Energy efficient lighting control
A complete offering
- Energy savings
and lowest possible maintenance costs

The world is driving towards sustainability and companies and communities have to take concrete actions in order to comply with new requirements. Reducing energy consumption is a key factor in reaching sustainability objectives.

Today, lighting accounts for 20% of energy consumption on average. Efficient lighting is undervalued as a tool to achieve substantial energy savings. 70% of European lighting installations are inefficient and obsolete.

Aura offers comprehensive lighting solutions so that we can maximise your energy savings. By combining Long Life lamps, ballasts, control systems and complete luminaires we offer you solutions that minimize energy consumption, significantly reduce your maintenance costs, and significantly reduce CO₂ emissions.
What is lighting control?

Lighting control plays a critical role when planning energy efficient lighting installations. Lighting control systems can be used to detect presence and/or daylight level and either turn the lights on and off and/or adjust the light output up and down to the desired light level.

The result is large energy-saving opportunities and increased lighting comfort. The goal of an effective control system is to support the lighting application goals, which often translates to eliminating energy waste while providing a productive visual environment.

Short return on investment
Lighting controls can reduce lighting energy consumption by up to 80%, depending on your existing equipment. Controls can both reduce the amount of power drawn by the lighting system during operation and also the number of operating hours, thereby reducing energy consumption. These cost savings often result in a short return on investment in the new controls.

Lighting control methods
Lighting control can be done either through a centralised system like DALI, or through a decentralised system, placed directly in the area where you want to control the light. Centralized systems often require a larger initial investment and higher maintenance costs. Aura therefore focus on offering decentralised controls, ideal for many small and medium sized installations. The decentralised systems are user friendly and easy to service and it is easy to make necessary adjustments directly on site.

In the following pages we present a product overview of our range of lighting control products, based on some standard applications. They should be seen as examples only, since each application is unique. There are numerous ways to combine the components and to find the best alternative for your application we recommend that you consult an Aura representative.
Lighting control solutions for warehouses

Warehouses are often large areas divided into sections by shelves to store pallets of goods. The lighting solutions are often industrial type luminaires, continuously mounted, with narrow or medium beam reflectors following the pattern of the aisles between the shelves. Mounting height of the luminaries is between 10 and 15 meters. This area has to be maintained clear for the trucks to manoeuvre and lift the pallets. Therefore the detection sensors need to be mounted on the same height as the luminaries.

□ = Presence detectors
**Solution 1 - ON/OFF**

This simple solution switches the lights ON upon movement detection and OFF when no movement is detected. This solution consists of the following components:

- **Sensor**
  Advanced version - HC003V*

- **Ballast**
  Any kind of ballast (dimmable or non-dimmable)

**Solution 2 - High/Low dimming and OFF**

This solution includes what we refer to as corridor function, meaning that the light is run at 100% when there is presence. When there is no presence it dims down to a pre-set level (50/25/10%), after the defined hold time. Eventually, after the second stand by period, the light can be shut OFF completely (optional). This solution consists of the following components:

- **Sensor**
  Advanced version - HC003V*

- **Ballast**
  SensorDim Ballast

**Solution 3 - Lux control**

The main objective here is to take advantage of the natural daylight in the facility. A target lux level is set (5-1000 lux) and the daylight sensor and the lux control unit sends a signal to the ballasts how much artificial light is needed to obtain the target lux level. When there is no presence the light can be shut OFF completely after a defined hold time (optional). This gives a maximal saving of up to 80%, depending on the amount of natural light. This solution consists of the following components:

- **Sensor**
  Advanced sensor - HC003V*

- **Ballast**
  Any kind of 1-10V Dimmable Ballast

- **Daylight Sensor**
  DS01

- **Lux Controller**
  HC010X

* The choice of sensor depends on the area of detection and the mounting height. Pay attention to the max load indicated on every sensor. Make sure the sensors are strategically places overlooking the aisles. Some meters into the aisles in order to avoid detection of passing objects outside of the aisles. NB. The Hytronik sensors are radar based sensors thus penetrating through all non metallic objects. Do not place the sensors within luminaries with metallic louvres.
Lighting control solutions for factories and other industrial areas

Factories and other industrial areas are often more or less open, with machinery or other equipment. The lighting solutions are often industrial type luminaires, continuously mounted, using narrow or medium beam reflectors depending on the height of the ceiling. Mounting height of the luminaries is between 6 and 15 meters and the detection sensors need to be mounted on the same height as the luminaries. Areas where machines and robots are moving are not suitable for presence detection sensors. In these cases you are limited to only daylight sensors.
Solution 1 - ON/OFF

This simple solution switches the lights ON upon movement detection and OFF when no movement is detected. This solution consists of the following components:

- **Sensor**
  Advanced version - HC003V*

- **Ballast**
  Any kind of ballast (dimmable or non-dimmable)

Solution 2 - High/Low dimming and OFF

This solution includes what we refer to as corridor function, meaning that the light is run at 100% when there is presence. When there is no presence it dims down to a pre-set level (50/25/10%), after the defined hold time. Eventually, after the second stand by period, the light can be shut OFF completely (optional). This solution consists of the following components:

- **Sensor**
  Advanced version - HC003V*

- **Ballast**
  SensorDim Ballast

Solution 3 - Lux control

The main objective here is to take advantage of the natural daylight in the facility. A target lux level is set (5-1000 lux) and the daylight sensor and the lux control unit sends a signal to the ballasts how much artificial light is needed to obtain the target lux level. When there is no presence the light can be shut OFF completely after a defined hold time (optional). This gives a maximal saving of up to 80%, depending on the amount of natural light. This solution consists of the following components:

- **Sensor**
  Advanced sensor - HC003V*

- **Ballast**
  Any kind of 1-10V Dimmable Ballast

- **Daylight Sensor**
  DS01

- **Lux Controller**
  HC010X

* The choice of sensor depends on the area of detection and the mounting height. Pay attention to the max load indicated on every sensor. The Hytronik sensors are radar based sensors thus penetrating through all non metallic objects. Do not place the sensors within luminaries with metallic louvres.
Lighting control solution for class rooms and open office spaces

In class rooms and open office spaces people and pupils work at what we define as task areas. A minimum of 500 lux is required in order to be able to write and read without stress. Class rooms and offices are often sided by one or more windows through which daylight comes in. The optimal solution is therefore to combine daylight with artificial light to achieve the desired light level 500 lux. Our solution combines presence detection with a lux controller that ensures the correct light level, while minimizing energy use.
Solution - Lux control

The main objective here is to take advantage of the natural daylight in the room. A target lux level of 500 lux is set and the daylight sensor and the lux control unit sends a signal to the ballasts how much artificial light is needed to obtain the target lux level. When there is no presence the light can be shut OFF completely after a defined hold time (optional). This gives a maximal saving of up to 80%, depending on the amount of natural light. This solution consists of the following components:

- **Sensor**  
  Advanced version - HC003V*

- **Ballast**  
  Any kind of 1-10V Dimmable ballast

- **Daylight Sensor**  
  DS02

- **Lux Control**  
  HC010X

* The choice of sensor depends on the area of detection and the mounting height. Pay attention to the max load indicated on every sensor. The sensor, lux control and the daylight sensor are to be placed strategically as a group throughout the room covering the area of interest. Make sure to connect the luminaries and the sensors, in groups parallel to the windows in order to be able to dim the right portion of the room. For example if the class room has three rows of luminaries those rows have to be dimmed independently of each other. NB. The Hytronik sensors are radar based sensors thus penetrating through all non metallic objects. Do not place the sensors within luminaries with metallic louvres.
Lighting control solutions for corridors

There are corridors in every building: schools, office buildings, hotels, hospitals. Even pedestrian tunnels could be counted to this group. In corridors there is an uneven flow of people passing through at different times of the day, and periods of time where there is no presence at all. This means there is a huge potential for energy savings through lighting control. These solutions has a saving potential of up to 80% of the initial power consumption.

= Presence detector
= Daylight sensor
Solution 1 - High/Low dimming and OFF

This solution includes what we refer to as corridor function, meaning that the light is run at 100% when there is presence. When there is no presence it dims down to a pre-set level (50/25/10%), after the defined hold time. Eventually, after the second stand by period, the light can be shut OFF completely (optional). This solution consists of the following components:

- **Sensor**
  - Advanced sensor - HC003V*
- **Ballast**
  - SensorDim Ballast

Solution 2 - Lux control

The main objective here is to take advantage of the natural daylight in the corridor. A target lux level (5-1000 lux) is set and the daylight sensor and the lux control unit sends a signal to the ballasts how much artificial light is needed to obtain the target lux level. When there is no presence the light can be shut OFF completely after a defined hold time (optional). This gives a maximal saving of up to 80%, depending on the amount of natural light. This solution consists of the following components:

- **Sensor**
  - Advanced version - HC003V*
- **Ballast**
  - Any kind of 1-10V Dim Ballast
- **Daylight Sensor**
  - DS02
- **Lux Control**
  - HC010X

* The choice of sensor depends on the area of detection and placement of the sensor in the room. Make sure the sensors are strategically placed.

NB. The Hytronik sensors are radar based sensors thus penetrating through all non metallic objects. Do not place the sensors within luminaries with metallic louvres.
Lighting control solution for parking garages

A parking garage is often made up of many levels, with the entrance and exit at the same point. The intensity of the traffic is different depending on the time of day or night. The issue here is to adjust the illumination to the traffic flow and a good way to do it is to divide the parking lots into groups, each group controlled by a detector. Entrance and exit points should always have a 100% light level.

□ = Presence detectors
Solution - High/Low dimming

This solution includes what we refer to as corridor function, meaning that the light is run at 100% when there is presence. When there is no presence it dims down to a pre-set level (50/25/10%), after the defined hold time. For the sake of safety there should not be a total switch OFF in a parking garage. Drive in and exit areas should always be illuminated to 100%. This solution consists of the following components:

- **Sensor**
  Advanced sensor - HC003V*

- **Ballast**
  SensorDim Ballast

* The choice of sensor depends on the area of detection and placement of the sensor in the garage. Make sure the sensors are strategically placed overlooking the parking lots. NB. The Hytronik sensors are radar based sensors thus penetrating through all non metallic objects. Do not place the sensors within luminaries with metallic louvres.
Lighting control solution for staircases

Staircases are the lifeline of a building, connecting different parts and levels of a building. Most of the staircases are dark without any daylight and need therefore to be illuminated all the time. Old solutions to save energy was to use timers but they are inefficient since they switch on the entire staircase throughout all levels even though only one level needs to be illuminated.

Aura offers a simple solution that will enable to control the light individually for each level. This solution offers 100% light upon movement detection, dimming to pre chosen level (50/25/10%) when there is no presence. For the sake of safety there should not be a total switch OFF in a staircase. An entrance is the first impression of the building and we recommend to have it illuminated to 100%. This solution has a saving potential of up to 80% of the initial power consumption.
Solution 1 - High/Low dimming

This solution includes what we refer to as corridor function, meaning that the light is run at 100% when there is presence. When there is no presence it dims down to a pre-set level (50/25/10%), after the defined hold time. This solution consists of the following components:

- **Sensor**
  Advanced sensor - HC003V*

- **Ballast**
  SensorDim Ballast

* The choice of sensor depends on the area of detection and placement of the sensor in the room. Make sure the sensors are strategically placed.

NB. The Hytronik sensors are radar based sensors thus penetrating through all non-metallic objects. Do not place the sensors within luminaries with metallic louvres.
Aura develops and supplies Long Life light sources and solutions with a clear environmental and sustainable focus. With a lifetime that is three times longer than standard products, maintenance costs and environmental impact are cut by two thirds. Our energy-saving lighting solutions can lower your energy consumption by up to 80 percent, depending on your existing equipment. Aura helps you to reduce your costs and carbon footprint.

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