

Lighting Controls

# Commissioning light regulation

At a glance



TRIDONIC

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## 1. About this document

Constant light control makes it possible to match the lighting in a room to the naturally available ambient light. To do this, the ambient light sensor monitors the illuminance in the room, compares it to the previously set brightness setpoint and dims the light until the received illuminance matches the desired setpoint. If several DALI MSensors 02 are used in the same luminaire group, the light is dimmed until the light value is no longer less than the setpoint at every sensor.

The Constant light control function ensures that the illuminance in the room remains constant and changes due to variable amounts of ambient light in the room are compensated for. This produces greater comfort, illumination is always properly adjusted, and it also saves energy.

This document is intended to provide assistance when designing a light control.

## 2. Detection area of the ambient light sensor

The detection area of the sensors is sized so that a relatively large area, rather than just an individual location on the task area, is covered and assessed. This ensures that objects being moved around cannot cause incorrect measurements.

The detection areas of the sensors used can be taken from their data sheet.

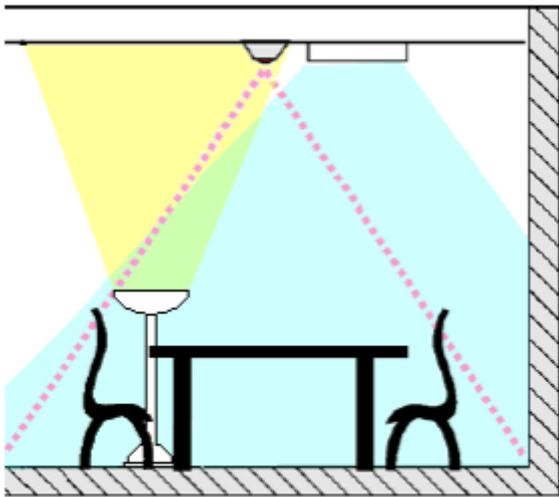
## 3. Position the ambient light sensor correctly

Ambient light control is based on measuring reflected artificial light and daylight. This light must be detected correctly and completely. Prevent measurements being falsified by other light sources. Positioning the ambient light sensor correctly is crucial:

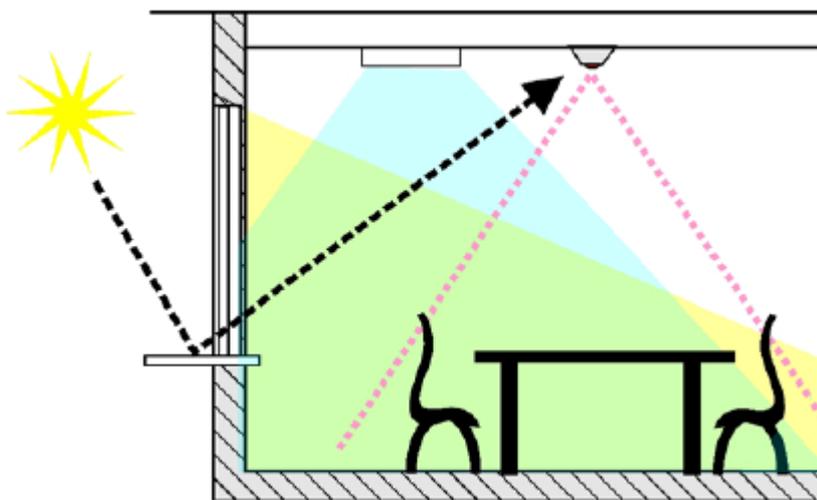
1. In order to be able to control ambient lighting properly, the sensor must be able to detect the light from the controlled luminaires completely.

\_ Position the sensor so that the sensor's detection area lies within the area that is lit by the controlled luminaires.

2. If the sensor is directly exposed to other light sources, this falsifies the results obtained and the reflected artificial light and daylight can no longer be detected correctly.



- \_ Position the sensor so that it is not directly exposed to other artificial light sources (e.g. free-standing luminaires in the room).



- \_ Position the sensor so that it is not directly exposed to sunlight:
  - \_ Make sure that the detection area of the sensor lies within the room.
  - \_ Make sure that the sensor is far enough away from any window area.
  - \_ Make sure that any glare or sunlight reflected by shiny glass or metal surfaces cannot hit the sensor.

3. If more than one sensor is being used in a room it is possible that the detection areas of the sensors may overlap. Overlapping detection areas may cause the different control circuits to affect one another and this may lead to false results.

- \_ Position the sensors so that their detection areas do not overlap.

## 4. Setting up the regulation

In order for the control to function properly in later operation, the following procedure must be followed.

Basically, it should be noted that when setting the control, disruptive factors that influence the sensor value must be minimized. To ensure this, the control should be stopped when the proportion of natural light is low and the area under the sensor does not change.

- \_ Dim the lights to 100 %, wait until the value that is output by the sensor is stable and does not change for a certain period of time (note down this this upper value from the sensor)
- \_ Dim the lights to 1 %, wait until the value output by the sensor is stable and does not change for a certain period of time (note down this this lower value from the sensor)
- \_ These two values limit the regulation range, the later set regulation value must be in between for the regulation to be able to regulate
- \_ Now the lighting is dimmed to the desired value using a lux meter. Wait until the value that is output by the sensor is stable and does not change for a certain period of time. The value that is now output by the sensor is the value which is entered in the regulation as the regulation value
- \_ If the regulation is subsequently activated, the system will always try to regulate to this this value (within a certain tolerance range)

### CAUTION!

- \_ Not waiting long enough until the sensor value has settled means that the control has been set to some value but not to the desired one
- \_ Reflections from reflective surfaces in the vicinity of the sensor worsen the desired behavior of the control system or make it unusable
- \_ The value in the app / display reflects the value measured on the sensor head and can deviate from the values measured by the lux meter! This is especially true when the sensor is on the ceiling and the lux meter is on the table! Deviations are irrelevant for the function of the control!
- \_ The light control should be set very slowly and moderately, rapid changes are perceived as disturbing and unpleasant.
- \_ Any change under the sensor has a direct influence on the control! (Move furniture. Change the height of the table, spread out plans on the table ...)
- \_ The maximum accuracy of the regulation is limited, regulating within a few lux is not possible!