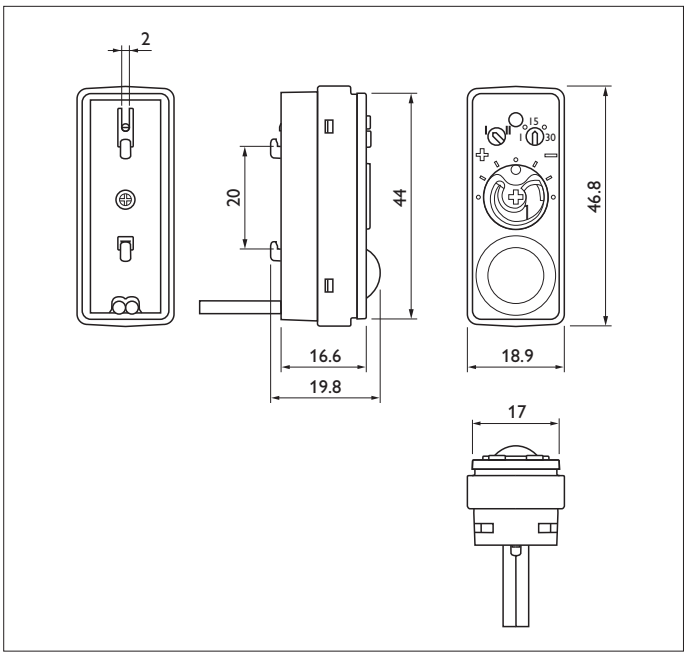
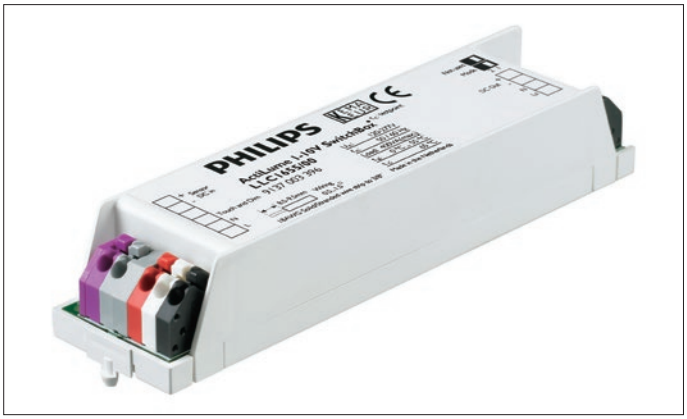
LRI1655, LLC1655 Datasheet

ActiLume 1-10V System



Dimensions LRI1655 in mm



Product details

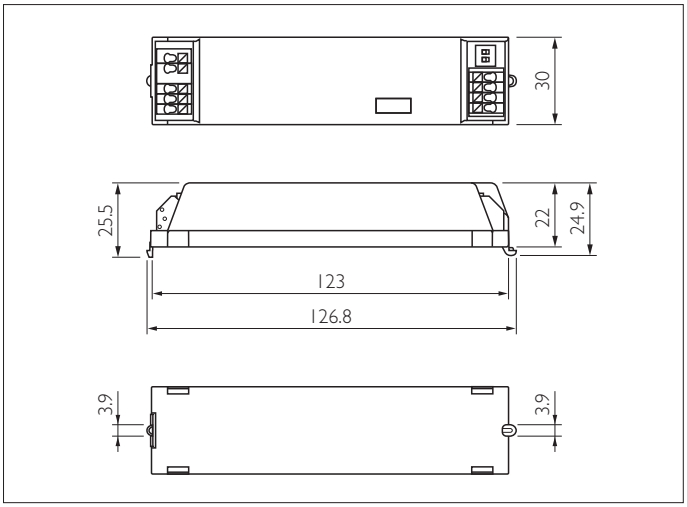
The ActiLume 1-10V luminaire-based sensor enables daylight regulation and dimming when no presence is detected. The delay time can be customized between 1 and 30 minutes.
The ActiLume 1-10V system consists of a sensor and a SwitchBox. The sensor can work independently of the SwitchBox.
In combination with the SwitchBox, the luminaire will be switched off when enough daylight is present and/or when no presence is detected.

Features

- If needed, ActiLume 1-10V can be adjusted manually, using a rotating diaphragm to adjust the set point. The sensitivity of the sensor can be changed within a range from 1/3 to 3.
- Push-button to activate 100 hours burn-in mode for the lamps.
- With the rotary control it is possible to deactivate daylight sensing (setting 1 = default)
- With the rotary control it is possible to select a delay time between 1 and 30 minutes (default is 15 min).
- In combination with the SwitchBox, up to 3 HFR 254 TL5 ballasts can be switched, resulting in extremely low stand-by losses (< 350 mW).
- Personal control via the Touch and Dim functionality on the SwitchBox.

Application areas

- Free Floor standing luminaires, Pending luminaires, single luminaire solutions
- Toilets
- Corridors
- Staircases
- Storage locations

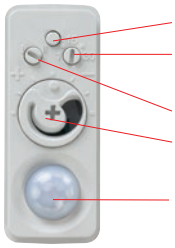


Dimensions LLC1655 in mm

CE

PHILIPS

Specifications



Sensor
100 hours Burn in pushbutton
Delay timer knob
I / II selector
Light detection
Movement detection by PIR

Daylight sensing (DS):
When there is more than enough light; the light will dim. The dimming will be in line with LuxSense and Actilume MicroLuxSense functionality. Tweaking of the light level is done by rotating the diaphragm (same as Actilume MicroLuxSense). The minimum dim level corresponds to 2.5V on the dim input of the ballast.

Presence detection (PD)
When no presence is detected the luminaire will be dimmed down to a dim level corresponding to 2.5V on the dim input of the ballast used.

2 selectors above the light sensor
- Adjustments dial to set the delay time between 1 and 30 minutes.
- On the sensor there is an adjustment dial to chose between:
  - Setting I = Presence detection only. (default factory setting)
  - Setting II = Presence detection and Daylight Sensing.

Top middle selector: Burn-in button
On the sensor there is a button to activate a burn-in mode. This burn-in mode is to switch on/off the functionality of daylight and presence detection for 100 hours to ensure a proper burn-in of the fluorescent lamp. After 100hrs of burning in the system will automatically switch to the normal operating mode. The activation/ deactivation of the burn-in mode is confirmed by blinking of the lamps
- When the burn in button is pressed for >1 second but < 3 seconds, the system is in a burn-in mode. The confirmation comes with one blink
- When pressed > 3 seconds but < 5 seconds, the burn-in will be deactivated. The confirmation comes with two blinks.

Smart Timer function
The sensor will automatically lengthen the delay time when the sensor detects presence directly after the moment it has given the signal "no presence" (will double the delay time once), this to reduce the annoyance of false "no presence" triggers.

Application limitations
Detection of sensor designed for ceiling heights < 3.5m

Multiple Luminaires on one sensor
- It is possible to connect up to 20 ballast to one sensor, but than a connection between the different luminaires has to be made. With respect to these connections the following has to be realized:
  - cost of making the connection possible
  - additional cost of mains rated cabling
  - installation time and the chance of mistakes (polarity sensitive)

Recommendation: use one sensor in one Luminaire

SwitchBox

The Sensor will give a signal over the 1-10V connection when the SwitchBox can switch off the ballast.
When the ballast is switched off, the Sensor will be fed by the SwitchBox to ensure that daylight en presence detection still works.
On the SwitchBox there is a dip switch to set the moment when the ballast will be switched off
- Mode 1 is at 150% of light (when used with HF-R ballasts) (default factory setting)
- Mode 2 is at 250% of light (at excessive daylight or when used in combination with HF-P ballasts).

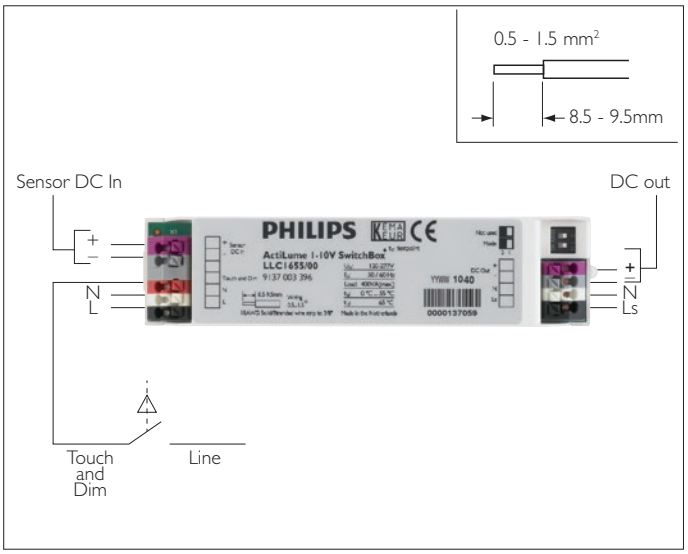
Personal Control
On the SwitchBox there is "Touch and Dim" input according Philips standard.
When "Touch and Dim" is used to override the automatic function, the setting will be forgotten when the SwitchBox has switched off the ballast due to no presence.

No HF-Regulator but HF-Performer installed
When the 1-10V lines from the SwitchBox are not connected to the ballast, the switchbox will conclude an HF-Performer is connected and will only listen to the 250% signal this to ensure that no oscillation will take place.

In standby the power consumption is less than 350 mW. In standby mode SwitchBox feeds the ActiLume 1-10V Sensor.
The SwitchBox is suitable for 120 to 277V mains 50/60Hz
The SwitchBox is a simple relay that detects 0-crossing and switches on during next pass. The switch box can switch multiple ballasts:
- 3 ballast HF-R 258 TL-D EII or
- 2 ballast HF-R 280 TL5 EII (capacitive load depending)

However, the capacitive load should be kept below 66uF since higher capacitive loads will damage the relay-contacts inside the switchbox.

Connectors: Wago 250. Color connectors in line with UL requirements. (UL pending)



Wiring

Installation

There are three ways to mount the sensor:
- clip onto the lamp
- attach onto the optics
- insert in the luminaire housing

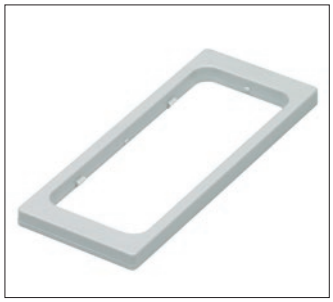
In the first two cases the distance between the sensor and lamp is usually <8cm. In this case the sensor should be mounted at the electrically "cold" side of the lamp (wired by the long leads of the ballast). In the third situation the sensor can be mounted at the electrically "hot" side (the short leads of the ballast) of the lamp as long as the distance between the sensor and "hot" lamp side is >8cm.

Accessories

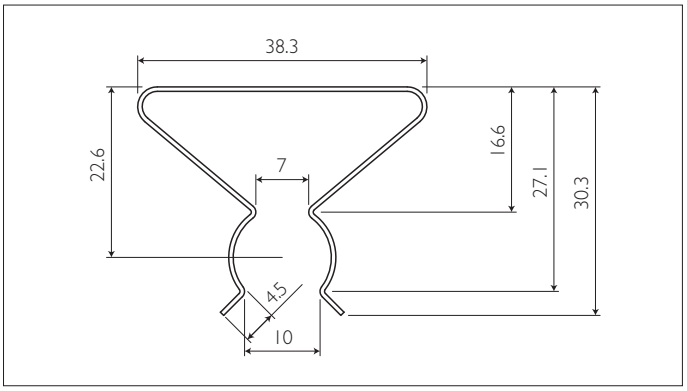
For easy mounting of a sensor to a lamp a clip is created which can be used for all sensors of the ActiLume family. There is a separate clip for TL-D and one for TL5.

The Ring (LCA8001) can be used to increase the size of the sensor when the sensor is placed between the lamella of the luminaire.

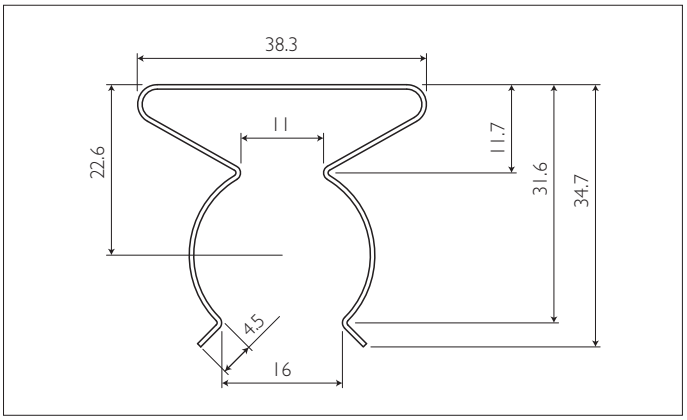
Clip



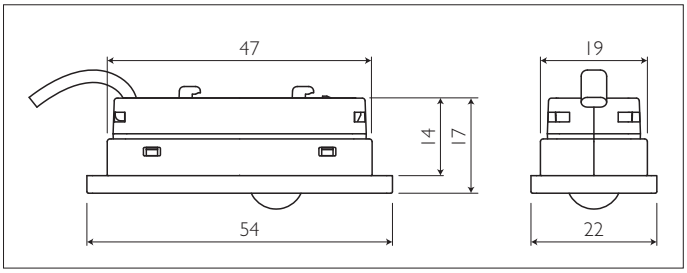
Ring



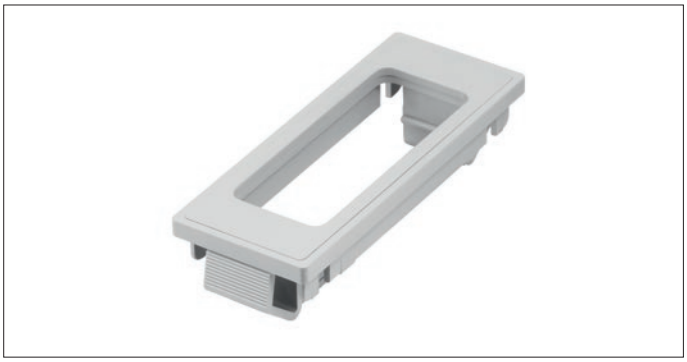
LCA8002 Dimensions in mm

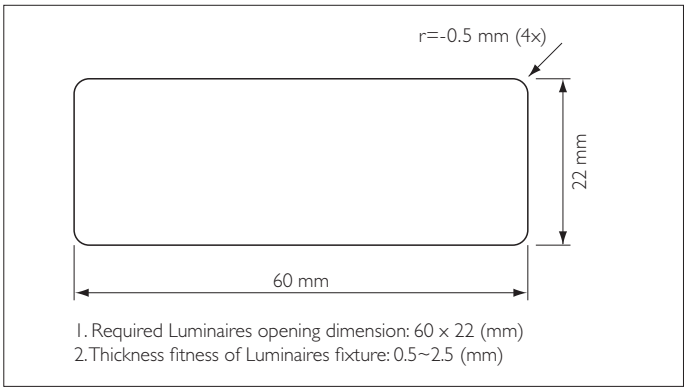


LCA8003 Dimensions in mm



LCA8001 Dimensions in mm





1. Required Luminaires opening dimension: 60 x 22 (mm)
2. Thickness fitness of Luminaires fixture: 0.5~2.5 (mm)

LCA8005

Manual adjustment

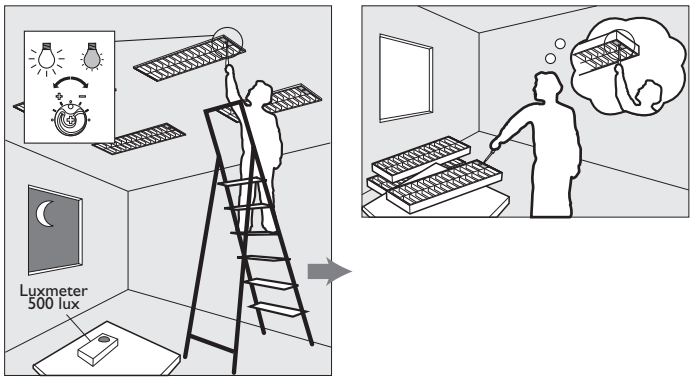
The set point of the sensor can be changed manually by using a screwdriver to turn the diaphragm on the front of the sensor. The housing is equipped with an indication of the default setting.

Note This manual adjust facility should preferably only be used in the commissioning phase and not by the user of the room.

Commissioning

Under normal circumstances the factory setting is such that in office environments, no adjustments with the rotary control are required.

However, if commissioning is needed; the following steps can be executed:



- Find a room in the building that can be considered to be representative for the whole building.
- Install the luminaires with daylight control in this room and convince yourself that the installed light level and the required light level are reasonably close to each other (within 30% range, say 600 lux and 500 lux respectively). Light levels should be measured on the table, preferably without daylight contribution (e.g. at night).
- Manually adjust the rotary control such that the required light level is realized. Memorize the position of the diaphragm.
- Instruct installer to copy the position of the rotary control ring of every luminaire to be installed in comparable circumstances.

A separate document is available that describes the commissioning process in detail.

Technical data

Environmental conditions

ActiLume 1-10V Sensor LRI1655

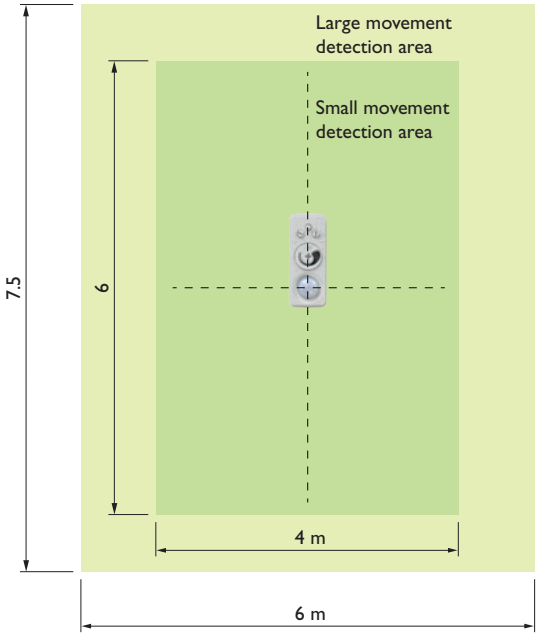
Operation conditions	
Ambient temperature	5°C to 55°C
Rel. humidity	5% to 90%, no condensation
Max. allowed temperature	55°C Anywhere on the sensor housing
Storage conditions	
Ambient temperature	-25°C to 70°C
Rel. humidity	5% to 95% at 25°C
Safety	When connected to the control input of a Philips HFR ballast, the outside of the sensor has double isolation to mains connected parts.
Connection	2x1mm^2, flying leads (PVC free), length 1 meter.
Color coding of cable	pink + ,gray –. When connected wrongly to the ballast dim input, the ballast input is short circuited, resulting in minimum light output.
Housing material	Polycarbonate UL94 V-0
Glow wire test	850°C/30sec
Color bottom part	Ultra Dark Gray (similar to RAL 7024)
Color cover part	Light Gray (similar to RAL 7035) White (similar to RAL 9016) Ultra Dark Gray (similar to RAL 7024)
Weight/dimensions	Approx. 25 grams/47x19x19 mm
EMC According to	EN55015 Ed. 7.1
Control signal input	
- operating voltage	+2.5 - +10V_{DC}
- operating current	sink 100µA-3mA (sufficient for 20 Philips HFR ballasts)
- control voltage variation	< 0,7V over current and temp. range
- default setting	5V_{DC} at 37.5 lux/140µA (factory calibration tool)
- step response	within 2 sec. on 5V after power-up in case of insufficient ambient light
- max. input voltage	15 V_{DC} (maximum rating)
- max. current sink	50 mA (maximum rating)
Optical characteristics	- It is assumed that the reflection in a room is such that a light level of 500 lux on a table (0.8 m in height) will result in 25 lux seen by the controller at ceiling height (2.5 m) under a viewing angle of 45° - The opening angle can be adapted by the diaphragm control, realizing an attenuation factor between 1/3 and 3.

ActiLume 1-10V SwitchBox LLC1655

Operation conditions	
Ambient temperature	0°C to 55°C
Rel. humidity	5% to 90%, no condensation
Max. allowed temperature	65°C at Tc testpoint
Storage conditions	
Ambient temperature	-25°C to 70°C
Rel. humidity	5% to 95% at 25°C
Connections	Wago 250 connectors
Color coding of connectors	Inputs
pink =	1-10V +
gray =	1-10V –
red =	Touch and Dim
white =	mains Neutral
black =	mains Line
Outputs	
pink =	1-10V +
gray =	1-10V –
white =	mains Neutral
black =	mains Line
Housing material	Polyphenylene Oxide (PPHOX), Noryl PX9406 by Sabic, UL94 V-0
Glow wire test	850°C/30sec
Color housing	White (WH8581)
Weight/dimensions	Approx. 51 grams/22x31x123 mm
Control signal input	
- 1-10V input current	Sourcing 120 µA
- max. input voltage	Protected against accidental mains voltage connection
Control signal output	
- 1-10V output voltage	+2.5 - +10V_{DC}
- 1-10V output current	sinking 20 mA (maximum rating)
Max. switching capacity	400VA (max. capacitive load 66uF)
Input voltage range	
- Nominal range	120 to 277V
- Performance range(-8% / +6%)	110 to 294V
- Safety range (-10% / +10%)	108 to 305V
Input mains frequency range	
- Nominal range	50 to 60Hz
- Performance range(-8% / +6%)	46 to 64Hz
- Safety range (-10% / +10%)	45 to 66Hz
Approvals/marking	CE KEMA KEUR

Detection area of the movement detector

If the sensor is mounted at a ceiling height of 2.5m the detection area of the PIR is as follows:



Packing data

Type	Box dimensions (cm)	Qty	Material	Weight (Kg) net	gross
LRI1655/00	20x17.5x11	12	Cardboard	0.3	0.504
LRI1655/05	20x17.5x11	12	Cardboard	0.3	0.504
LRI1655/06	20x17.5x11	12	Cardboard	0.3	0.504
LLC1655/00	19x13.6x7.5	12	Cardboard	0.612	0.732
LCA8001/00	21.6x9.3x7	100	Cardboard	0.15	0.221
LCA8002/00	21.6x9.3x7	50	Cardboard	0.429	0.5
LCA8003/00	21.6x9.3x7	50	Cardboard	0.429	0.5
LCA8005/00	22x9.7x7.1	50	Cardboard	0.780	0.810
LCA8005/05	22x9.7x7.1	50	Cardboard	0.780	0.810

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
LRI1655/00 ActiLume 1-10V sensor 100cm	12	9137 003 39503	8727900 942989	8727900 942996	942989 00
LRI1655/05 ActiLume 1-10V sensor 100cm W	12	9137 003 54903	8718291 752219	8718291 752226	752219 00
LRI1655/06 ActiLume 1-10V sensor 100cm D	12	9137 003 59903	8718291 740971	8718291 740988	740971 00
LLC1655/00 ActiLume 1-10V SwitchBox	12	9137 003 39603	8727900 953107	8727900 953114	953107 00
LCA8001/00 Ring for cover set of 100pce	1	9137 003 38303	8727900 882780	8727900 882797	882780 00
LCA8002/00 ActiLume Clip TL5 set 50pce	1	9137 003 40803	8727900 952940	8727900 952957	952940 00
LCA8003/00 ActiLume Clip TL-D set 50pce	1	9137 003 40903	8727900 952988	8727900 952995	952988 00
LCA8005/00 ActiLume Mounting Clip 50pce	1	9137 003 48803	8718291 196242	8718291 196259	196242 00
LCA8005/05 ActiLume Mounting Clip 50pce W	1	9137 003 55103	8718291 719632	8718291 719649	719632 00