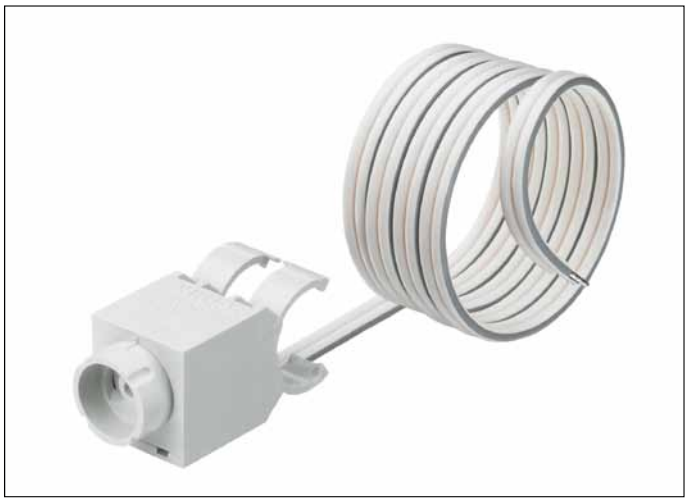
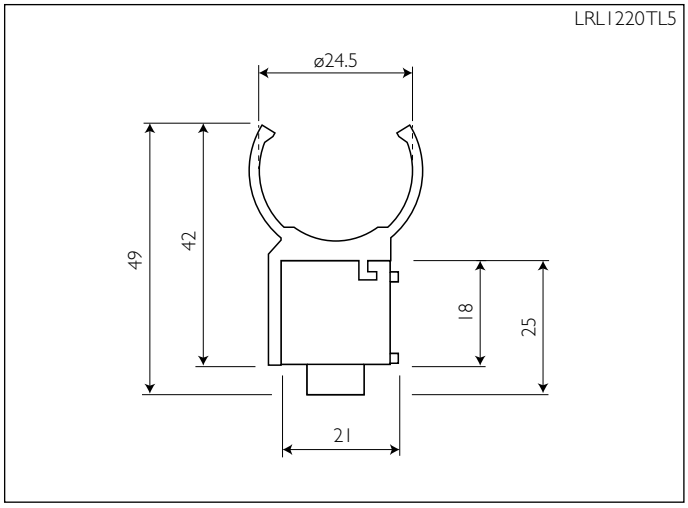
LuxSense Datasheet
LRL1220TL5/TL-D sensor



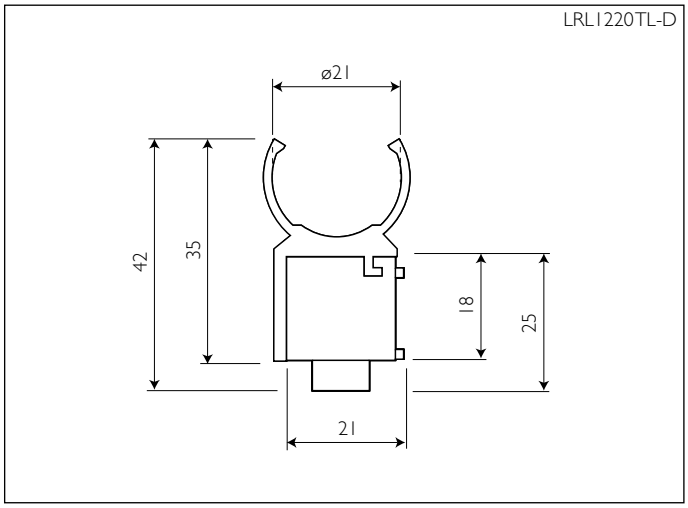
LRL1220

LRL1220TL5



Dimensions in mm

LRL1220TL-D



Dimensions in mm

Description

- LuxSense is a DayLight depending Regulation option (DLR) for luminaires equipped with a Philips HF-R ballast. The sensor measures the reflected light coming from the surface below. It dims the lamp output when the light level exceeds the required light level defined by the light sensor setpoint.
- LuxSense can be installed in the luminaire by clicking it onto the lamp with a clip.
- LuxSense is available in two versions; either with a TL5 or a TL-D lamp clip. A separate sensor is not available.

Features

- LuxSense is connected to the 1-10V_{DC} control input of the HF-R ballast.
- LuxSense is calibrated for use in a standard office situation with 600 lux installed and 500 lux required.
- If needed, LuxSense can be manually adjusted by a rotating diaphragma to adjust the setpoint. The sensitivity of the sensor can be changed within a range from 1/3 to 3.
- The new setpoint can be copied for all LuxSense luminaires with similar daylight and reflections conditions
- LuxSense can regulate up to 20 luminaires equipped with Philips HF-R ballasts

Application

- LuxSense is meant to save energy by reducing excessive light due to:
  - over design (e.g. 600 lux installed and 500 lux required)
  - daylight ingress (see savings potential below)

- Energy savings potential is 35% on average:

		south	north
summer	windowside	55%	45%
	corridorside	35%	25%
winter	windowside	45%	35%
	corridorside	25%	15%

Energy saving potential of LuxSense depending on location and season

Assumptions: 600 lux installed, 500 lux required, average European office building, luminaire position on 1m resp 3.5m from the window, compared to an equivalent installation with electronic non dimmable ballast (HF-P).

- LuxSense is designed for average ceiling heights of 2.5 to 3.5 m.

- LuxSense can be used alone or in combination with other control products in order to add the daylight regulation functionality. (e.g.: combination of LuxSense with Occuswitch).

CE

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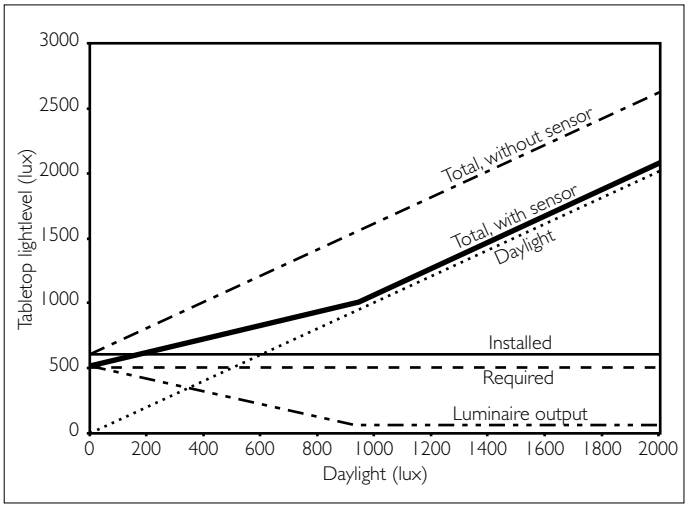
Technical Data

Environmental conditions	
Operation conditions	
Ambient temperature	5°C to 55°C
Rel. humidity	15% to 90%, no condensation
Max. temperature of clip to lamp contact surface	70°C
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 HF-R ballast, the sensor has double isolation to mains connected parts.
Connection	2x0.5mm^2, flying leads, length 700mm.
Colour coding of cable:	white/grey +, white –. When incorrectly connected to the ballast dim input, the ballast input is short circuited, resulting in minimum light output.
Housing	
material	ASA
colour	light grey (similar to RAL 7035)
Weight/dimensions	Approx. 20 grams, 25x21x19mm.
EMC	According to IEC61547/EN61000-6-1
Control signal input	- operating voltage: +1.5 - +10V_{DC} - operating current sink 100µA - 3mA (sufficient for 20 Philips HF-R ballasts) - control voltage variation: < 0.5V 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 (maximum rating): 15 V_{DC} - max. current sink (maximum rating): 50 mA
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 mtr in height) will result in 25 lux seen by the sensor at ceiling height (2.5 mtr) under a viewing angle of 45° - The opening angle can be adapted by the diafragm control, realizing an attenuation factor between 1/3 and 3.

Control characteristics LuxSense compensates approximately for 50% of the added light (simulated and measured with a fluorescent light source). See graph below. In case of a natural light source, the compensation is higher than 50%.



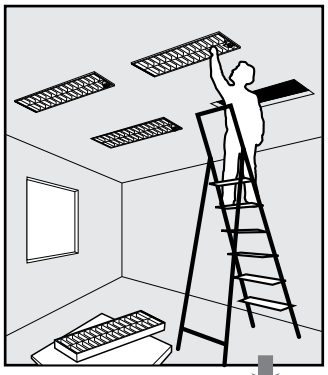
LuxSense control characteristics

Please note that LuxSense is not designed for maintaining a constant light level.

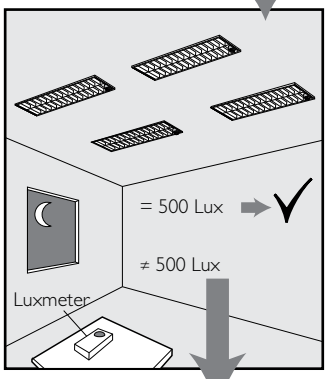
Warnings:

- The LuxSense lamp clips are designed for use on lamps with a surface temperature lower than 70°C. This excludes for instance TL5 High Output (HO) and similar lamps.
- The LuxSense is designed to dim the artificial light when daylight is available. It is not designed to dim the artificial light to a specific level. It is therefore not possible to use the LuxSense to reduce the overall light level in an area. The daylight depending regulation will not function correctly when the LuxSense is set to a light level more than 20% lower than the nominal output of the luminaires.

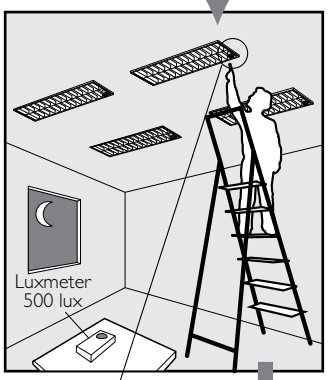
Installation



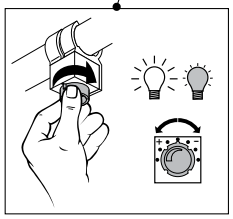
Mount the luminaire with LuxSense DLR option.



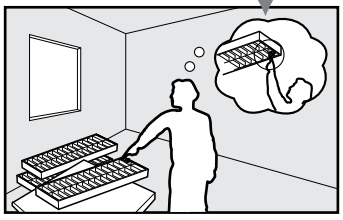
Measure the lux level under the light sensor (with no or negligible daylight contribution).



If needed, turn the diaphragm until the required light level is reached (with no or negligible daylight contribution).

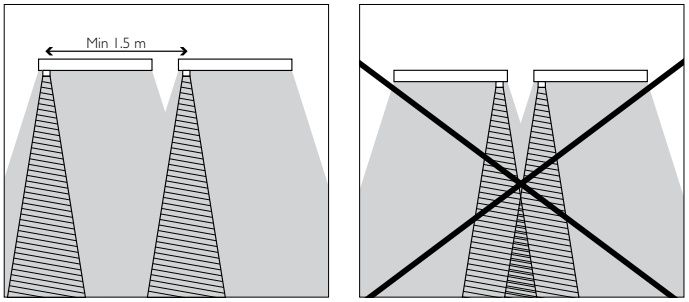


Manual adjustment of the light sensor.



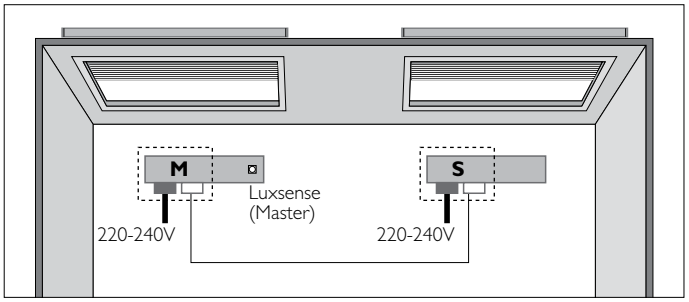
Copy the new setpoint in other rooms in case of similar daylight and reflection conditions below the sensor.

Installation warning

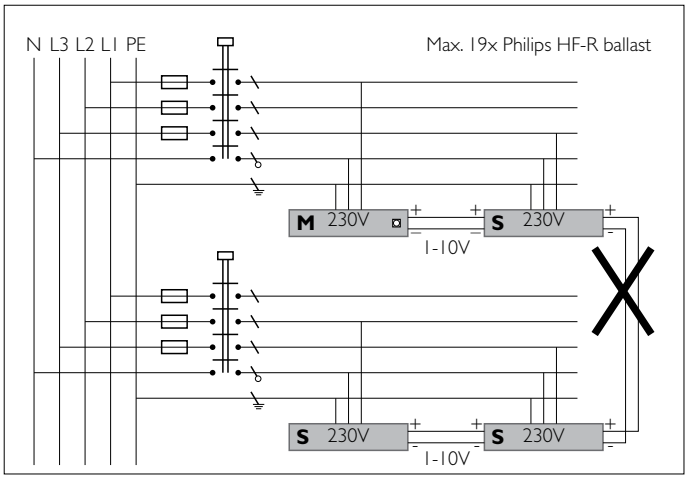


Throughlooping LuxSense Master luminaire (M) to slave luminaire (S)

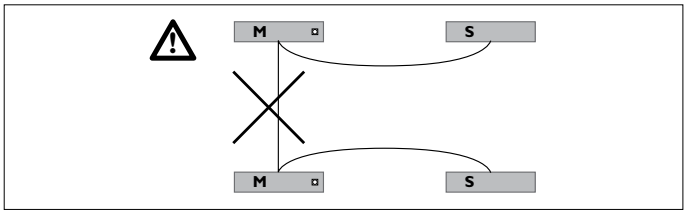
- Up to 19 slave luminaires can be looped through to 1 Master luminaire if all luminaires are equipped with Philips HF-R ballasts.
- Slave luminaires should have similar daylight conditions to the Master luminaire



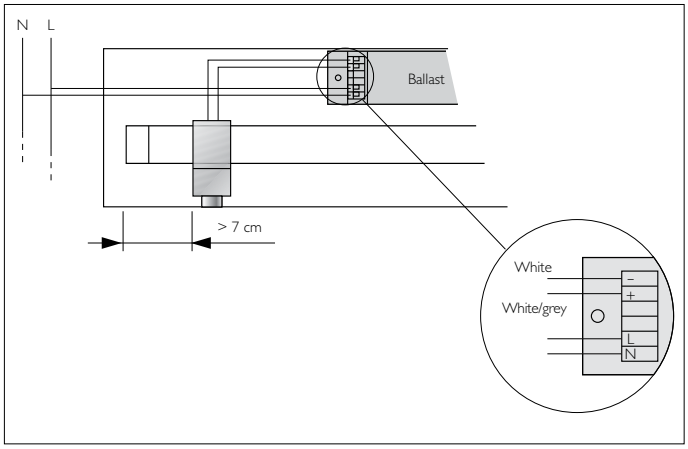
- Through looping shall be done by connecting 1-10V "+ to +" and "– to –" using mains rated cable with a strain relief at each luminaire
- Through looping of luminaires shall only be done within the same distribution circuit



- Never loop through 2 Master luminaires!



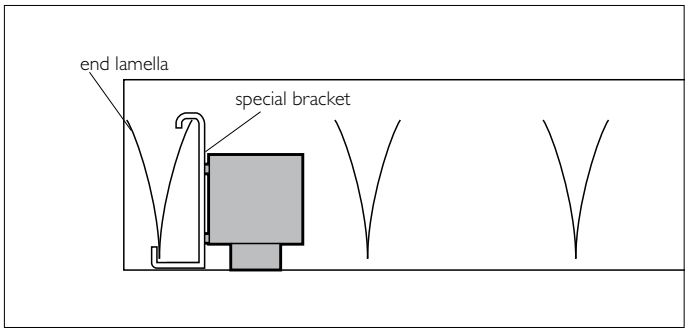
Installation of LuxSense into the luminaire



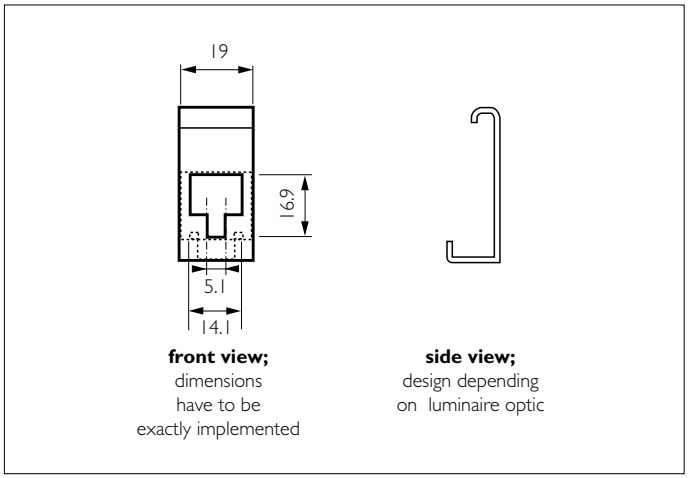
Connecting diagram of the sensor to the ballast

- the maximum ambient temperature Ta should always remain below 55 °C
- the sensitivity opening angle should never be obscured by the optics or any other part of the luminaire
- metal optics shall be properly connected to "earth"

LuxSense can be fixed in the luminaire either with a lamp clip or a special lamella bracket (**not** supplied by Philips).

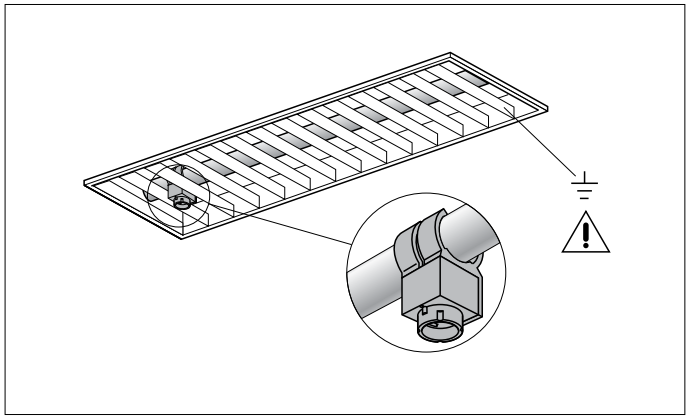


LuxSense on end lamella bracket



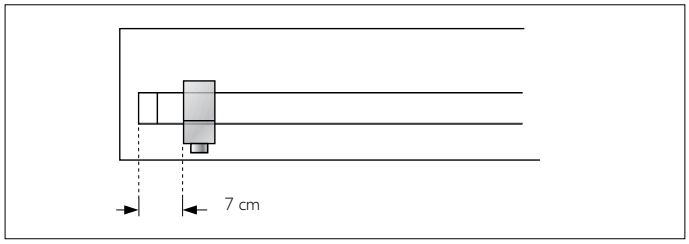
Dimensions for end lamella bracket (example)
Dimensions in mm.

a. Mounting on the lamp

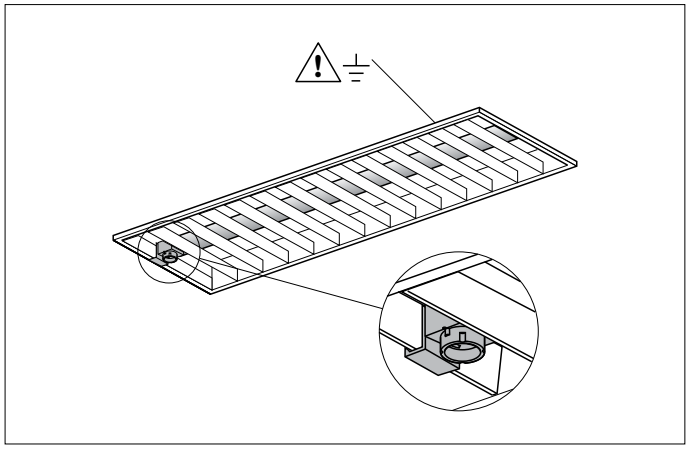


LuxSense mounted with a lamp clip

- Only for TLD and T5 lamps
- Never with High output lamps
- LuxSense shall be positioned 7 cm way from the end cap on the electrically "cold" side of the lamp (that side of the lamp, where the long wires are connected to). This is the side of the lamp that is connected to the terminals of the ballast that allows for the longest wiring to the lamp.



b. Mounting on the end lamella



LuxSense mounted with an end lamella brachet

- As an alternative, the sensor can be mounted to the end lamella with a special bracket provided by the luminaire manufacturer (**not** supplied by Philips).
- The lamella bracket shall be designed in such a way that Ta<55°C.
- It is recommended to mount the sensor 7 cm away from the end cap on the (electrical) "cold" side of the lamp.

Packing data

Type	**Box dimensions** (mm)	**Qty**	**Material**	**Weight (Kg)** net	gross
TL5 Outer Box (100 pcs.)	408 x 328 x 125	100	cardboard	2.4	3
TL-D Outer Box (100 pcs.)	408 x 328 x 125	100	cardboard	2.4	3

Ordering Data

Type	**MOQ**	**Ordering number**	**EAN code level 1**	**EAN code level 3**	**EOC**
LRL1220 TL5 LuxSense	100	9137 001 82182	8711559 670102	8711559 670119	670102 30
LRL1220 TL-D LuxSense	100	9137 001 82282	8711559 670126	8711559 670133	670126 30

3222 636 35053
03/2012
Data subject to change