

## Lighting Control With Bluetooth® Wireless Technology

# HYTRONIK®

### HCD038/CA

Built-in Detached Version for use with Casambi lighting control systems



### Applications

The freedom of wireless mesh networks configured by smartphone APP's considerably changes the approach to connected lighting controls. Hytronik has designed such lighting controls using Casambi wireless mesh technology to support the functional demands of most commercial and industrial applications:

- Office / Commercial lighting
- Classrooms
- Car Parks
- Stairwells / Corridors
- High-bay / Low-bay warehouse

### HCD038/CA Control Base with Casambi Bluetooth Module

A control base with Casambi bluetooth module, the linear shape power supply unit can be built behind the PCB board. It is also perfect in applications where space is restricted for cables and externally mounted lighting controls.

Both HCD038/CA operates with a range of different sensor heads to meet the requirements of various applications, or can be used as a simple tranceiver node without occupancy sensor.



Casambi wireless mesh lighting control

### Features

- Multiple push functions can be configured in app.
- Photocell Advance™ built-in daylight control.
- Daylight harvest function to regulate light output for maintaining required lux level
- Tri-level dimming control based upon occupancy (also known as corridor function)
- Free smartphone (iOS and Android) App for set-up and commissioning available from Casambi
- Permanent Settings Memory, Protected against Loss of Power
- 5 Year, 50,000hr Warranty

Free smartphone App for set-up and commissioning



### Note:

This datasheet is intended for information related to the hardware only.

For detailed set-up of features available in the App, please refer to the user guides found on the Casambi website [www.casambi.com](http://www.casambi.com)

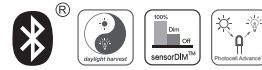
## Technical Data For Control Base

Input Characteristics	
Mains voltage	HCD038/CA: 220~240VAC 50/60Hz
Stand-by power	<1W
Warming-up	20s

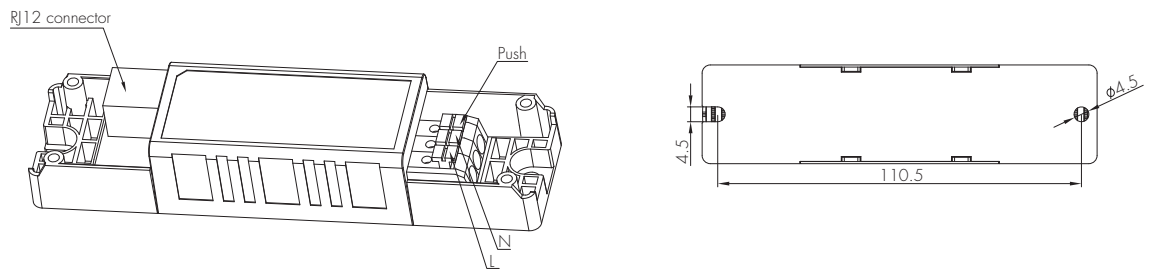
Environment	
Operation temperature	Ta: -20°C ~ +55°C
Case temperature (Max.)	Tc: +80°C
IP rating	IP20

Bluetooth Transceiver	
Operation frequency	2.4 GHz - 2.483 GHz
Transmission power	7dBm
Range (Typical) *	15~30m

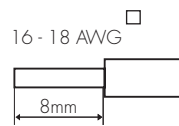
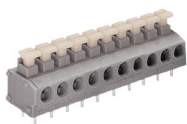
\* Please refer to placement guidance provided later in this document .



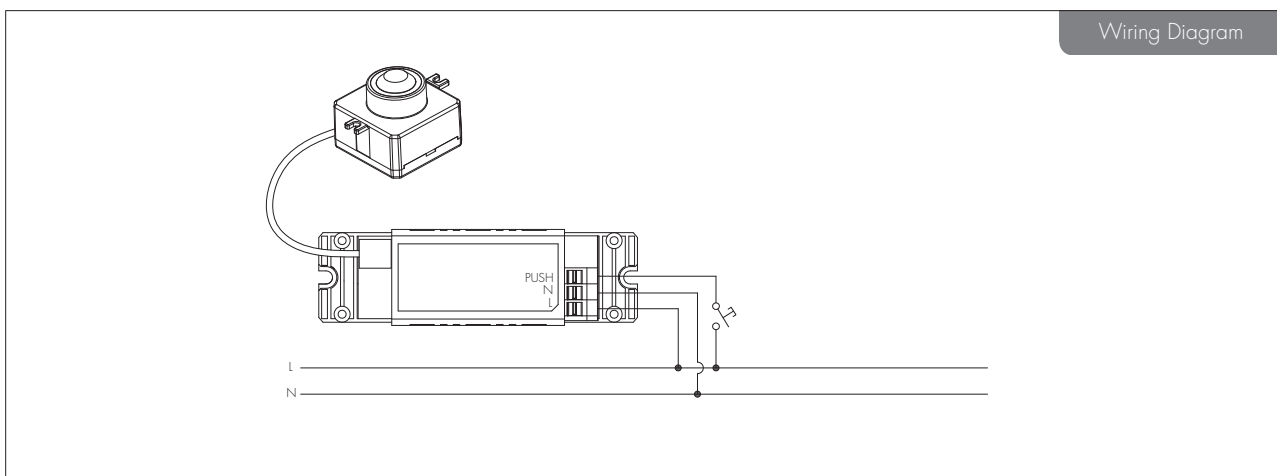
### HCD038/CA



### Wire Preparation



To make or release the wire from the terminal, use a screwdriver to push down the button.

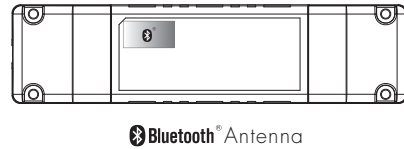


To maximise the bluetooth transmission range in every direction, the following considerations should be taken into account when situating the control base in the luminaire:

HCD038/CA

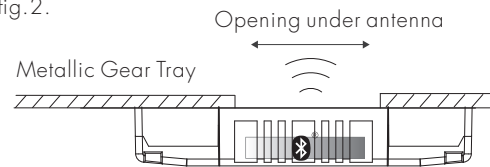
The control base contains the Casambi transceiver module and is located within the device as per fig. 1.

fig. 1.



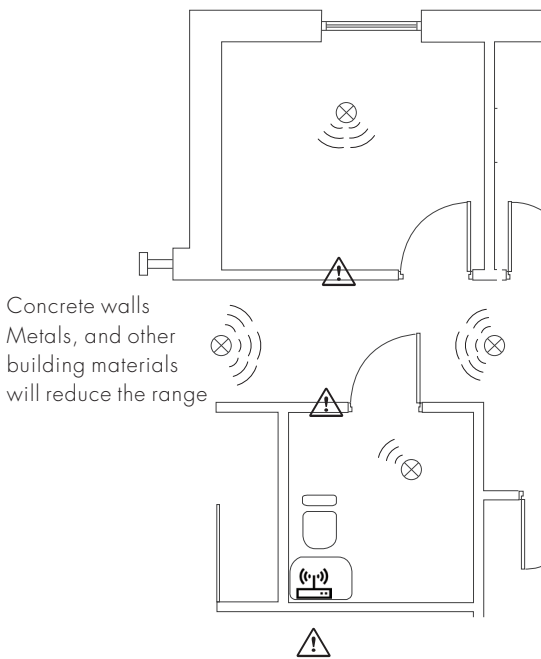
When the antenna is mounted to a metallic backplane, such as a gear tray, a cut-out opening should be made as large as possible as shown in fig. 2.

fig. 2.



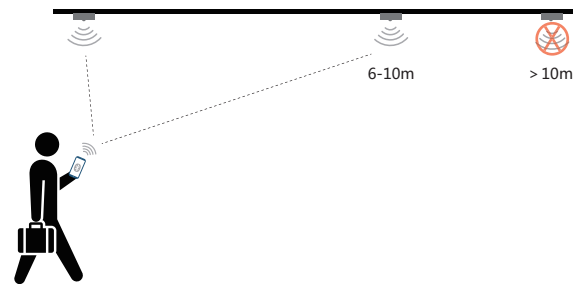
If possible, try to position the sensor as far away as possible from the LED Driver or other strong sources of HF interference.

Device to Device Placement



Device placement may offer up to 30m communication distance. However, we recommend for indoor applications that device placements should be no further apart than 15m.

Smart Phone to Device Range



Notes:

The range for which a smart phone can communicate with the lighting points will vary from model to model and is dependant on its Bluetooth® capability.

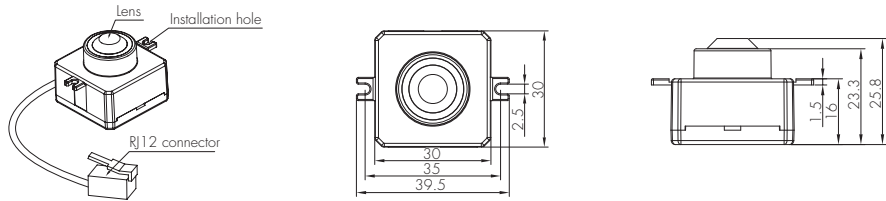
Placement of the antenna within the luminaire will also effect the smart phone communication range and may appear different for each luminaire variant.

Finally, other environmental factors (as per opposite) will influence the ultimate achievable range of communication between smart phone and luminaire device.

Hytronik offers multiple occupancy sensor heads to work with the HCD038 /CA:

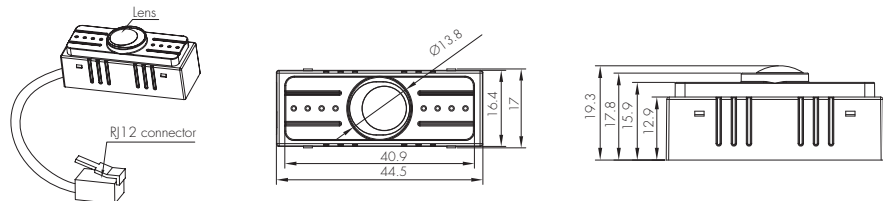
**A. HIR05**

PIR sensor head  
Daylight harvest  
The cable length is around 65cm.



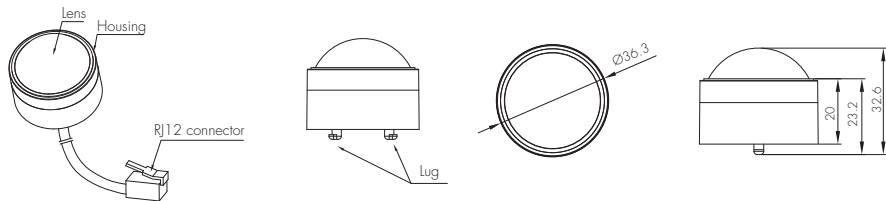
**B. HIR07**

PIR sensor head  
Photocell Advance™  
Daylight harvest  
The cable length is around 30cm.



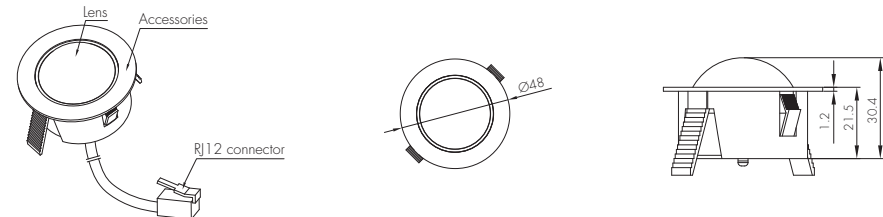
**C. HIR11/S**

PIR sensor head  
Surface mounting  
Daylight harvest  
For highbay application  
IP64(lens part)  
The cable length is around 65cm.



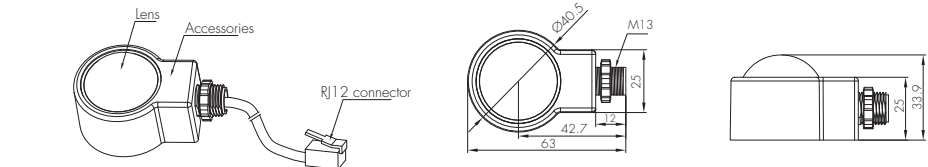
**D. HIR11/F**

PIR sensor head  
Flush mounting  
Daylight harvest  
For highbay application  
IP64(lens part)  
The cable length is around 65cm.



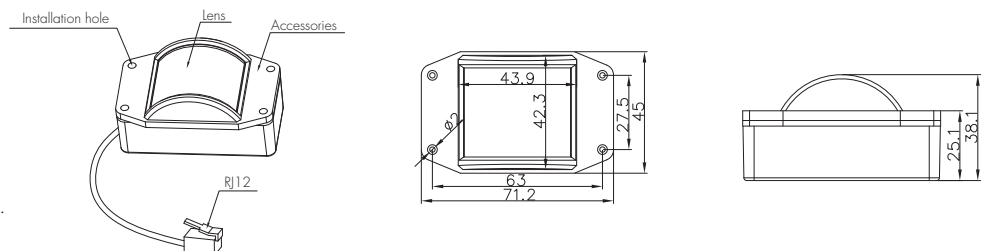
**E. HIR11/C**

PIR sensor head  
Screw to the luminaire by conduit  
Daylight harvest  
For highbay application  
IP64(lens part)  
The cable length is around 65cm.



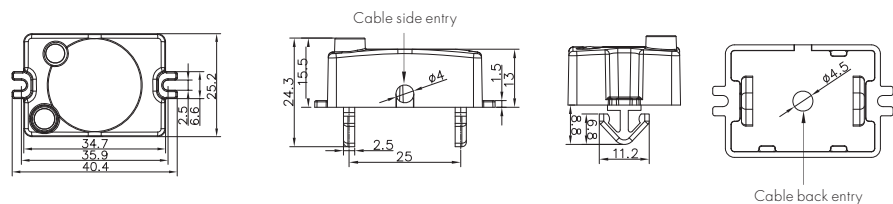
**F. HIR12**

PIR sensor head  
Daylight harvest  
For highbay application  
IP65(lens part)  
The cable length is around 65cm.



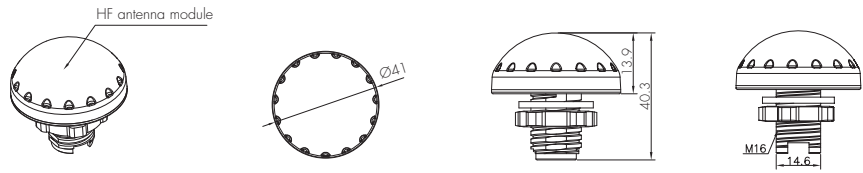
**H. SAM20**

HF sensor head  
Photocell Advance™  
Daylight harvest  
The cable length is around 30cm.



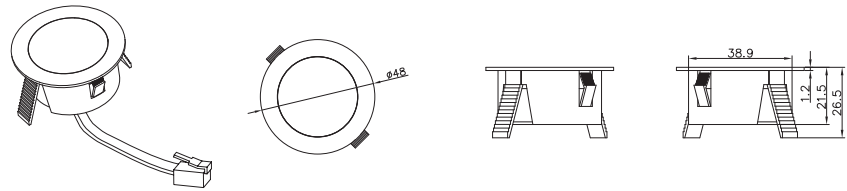
### I. SAM21

HF sensor head  
 Photocell advance™  
 Daylight harvest  
 IP65  
 The cable length is around 65cm.



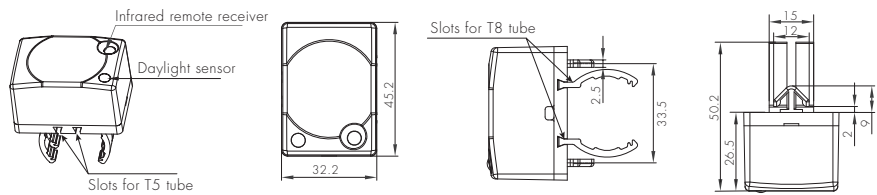
### J. SAM22

HF sensor head  
 Daylight harvest  
 Flush mount  
 The cable length is around 65cm.



### K. SAM23

HF sensor head  
 Photocell advance™  
 Daylight harvest  
 For highbay application  
 The cable length is around 30cm.



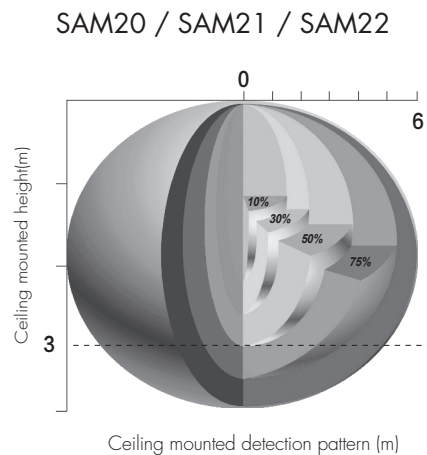
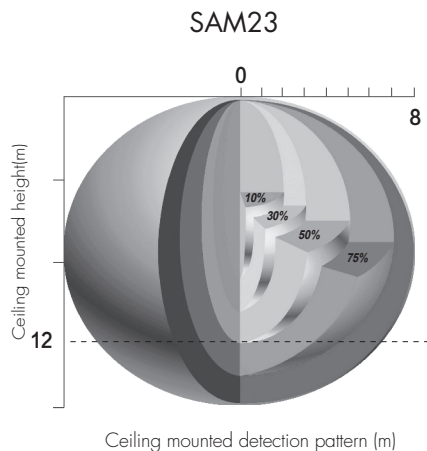
## Technical Data For Sensor Heads

PIR Sensor Properties	
Sensor principle	PIR detection
Operation voltage	5VDC
Detection range *	HIRO5 / HIRO7 (Ø x H) 6m x 3m HIR11 (Ø x H) 16m x 12m HIR12 (L x W x H) 18m x 15m x 6m
Detection angle	360°

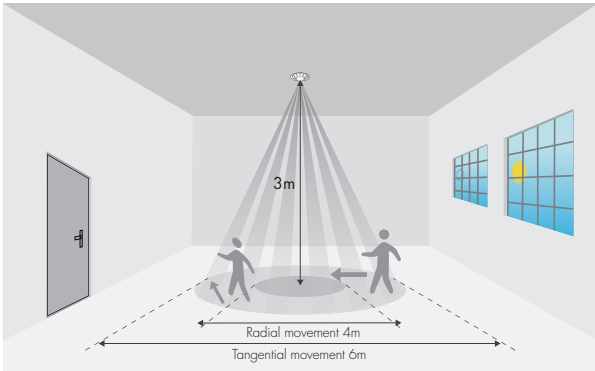
HF Sensor Properties	
Sensor principle	High Frequency (microwave)
Operation frequency	5.8GHz +/- 75MHz
Transmission power	<0.2mW
Detection range *	SAM20 / SAM21 / SAM22 (Ø x H) 12m x 3m SAM23 (Ø x H) 16m x 12m
Detection angle	30° ~ 150°

\* The detection range is heavily influenced by antenna placement (angle of approach) and different walking paces. It may be reduced under certain conditions.

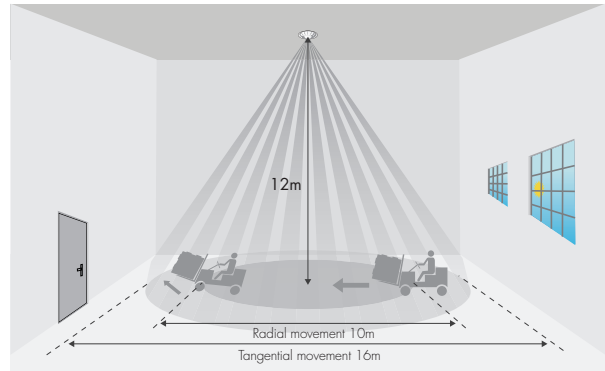
## Detection Pattern



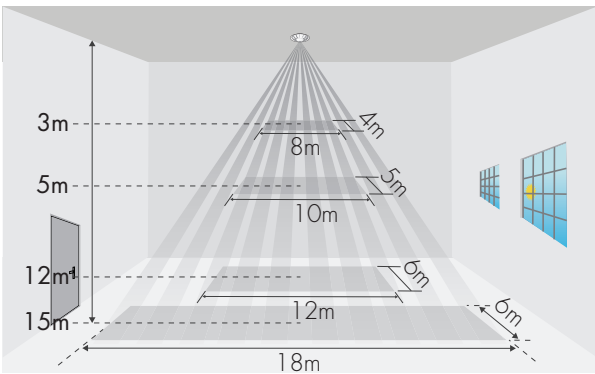
HIRO5 / HIRO7



HIR11



HIR12



\*The detection patterns are based upon 5km/h movement speed.