

SAM13/RC12

HF Lowdbay | ON/OFF | RJ12 connector to control body

HYTRONIK[®]
SENSORS & LIGHTING CONTROL



Benefits

Compact: Standard rectangular Plug&Play sensor design

Innovative: Robust HF antenna design against wireless interference

User-Friendly: With one-key commissioning with IR controller

Applications

Master luminaire with sensor

Classrooms

Offices

Check Out the Complete System Solution on the Website:
<https://www.hytronik.com/product/SAM13-RC12>



Product Description

SAM13/RC12 is a HF sensor head. It can work with the linear shaped control base such as HC038 and HC438. It offers powerful number of Plug'n'Play feature options to expand the flexibility of luminaires design.

Functions and Features

See additional details at the end of datasheet



Ambient Daylight
Threshold



Manual Override



ON/OFF Control



Semi-Automatic
Mode (Absence
Detection)

SAM13/RC12

HF Lowdbay | ON/OFF | RJ12 connector to control body

Specifications

Main Capabilities

Dimming (Output) Interface	Relay On/Off
Connector Type	RJ12

Sensor Data

Detection angle	30° - 150°
Max. Detection range (Diameter)	12.0 m
Maximum Mounting Height	6.0 m
Detection area	113 m ²
HF operating frequency (Ghz)	5.8Ghz+/-75MHz
Detection Methods	Microwave (MW)

Electrical Data

Operating voltage range	5 VDC
Warming-up	20 s

SAM13/RC12

HF Lowdbay | ON/OFF | RJ12 connector to control body

Specifications

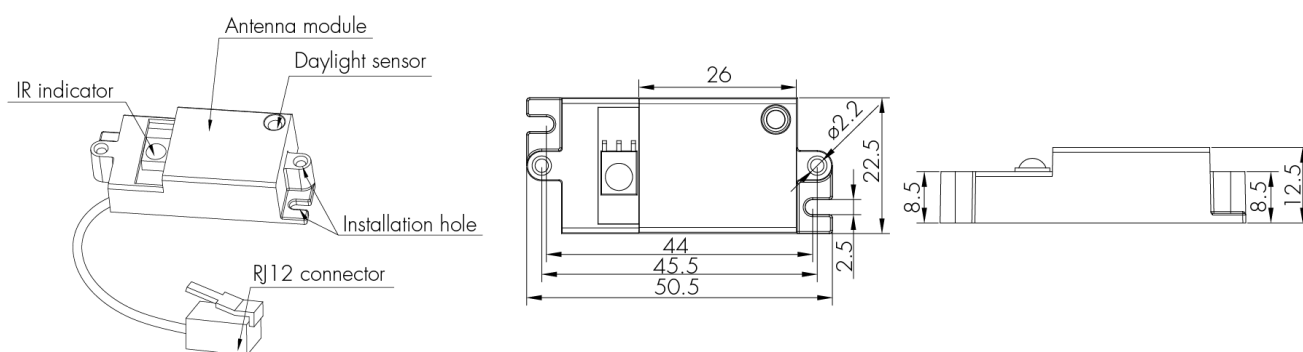
Technical	
Product weight	16.0 g
Product height	12.5 mm
Product length	50.5 mm
Product width	22.5 mm
Ambient temperature	-20 ~ +55 °C
Humidity max	10 ~ 90%
Case Temp.max	80.0 °C
IP Rate	IP20

Standard	
EMC	EN 55015, EN 61000
LVD	AS/NZS60669-1/-2-1, EN60669

SAM13/RC12

HF Lowdbay | ON/OFF | RJ12 connector to control body

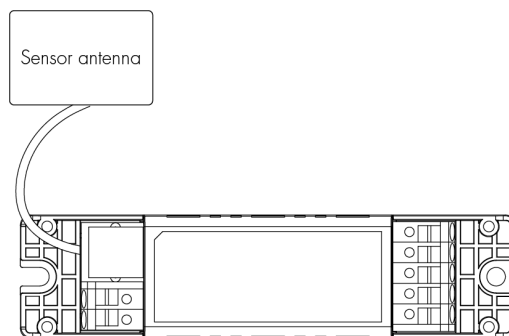
Technical Drawing



SAM13/RC12

HF Lowdbay | ON/OFF | RJ12 connector to control body

Wiring Diagram

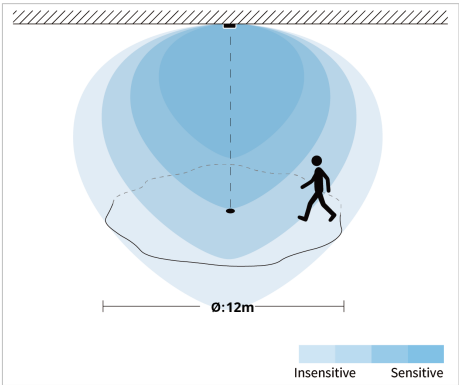


Detection Range

Single Person Walk (Ceiling mount)

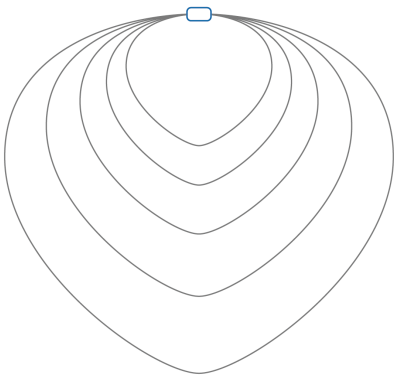
- The data below is tested under following conditions:
- Single person walking
 - Sensor not connected to any driver that may have soft-on period
 - Testing temperature Ta = 20°C

Detection example 6m mounting height:



Sensitivity	
H[m]	100%
	Ø[m]
6	12

Detection schematic diagram

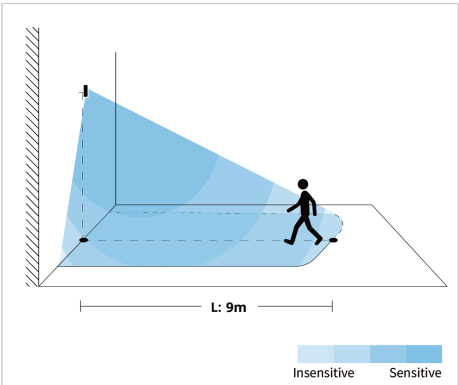


Detection Range

Single Person Walk (Wall mount)

- The data below is tested under following conditions:
- Single person walking
 - Sensor not connected to any driver that may have soft-on period
 - Testing temperature Ta = 20°C

Detection example 4m mounting height:



	Sensitivity
H[m]	100%
	L[m]
4	9

SAM13/RC12

HF Lowdbay | ON/OFF | RJ12 connector to control body



Commissioning Instructions and Precautions

A. Installation Note

1. This product should be installed by a qualified electrician.

Warning: For additional important documents, including installation precautions, product guidelines, and guarantee conditions, please refer to the official downloads.

<https://hytronik.com/service/downloads>

SAM13/RC12

HF Lowdbay | ON/OFF | RJ12 connector to control body

Commissioning via Remote Control

Settings (Remote Control HRC-12)

ON / OFF

Permanent ON/OFF function

Press button "ON/OFF" to select permanent ON or permanent OFF mode.

* Press button "AUTO", "RESET" or "Ambient" to quit this mode.

The mode will change to AUTO Mode after power failure.

RESET

Reset Settings

Press button "RESET", all settings go back to default values.

HIRO2/RC 12 & HIRO4/RC 12 & HIR 18 & HIR 18/R: Hold-time: 5min; Lux disabled.

AUTO

Sensor mode

Press "Auto Mode" button, the sensor starts to function and all settings remain the same as the latest status before the light is switched on/off.

SEMI
AUTO

SEMI-AUTO mode

Press button "SEMI-AUTO" to initiate semi-auto mode. The fixture is manually turned on by pressing the push-switch, and goes off automatically after hold time. (Absence detection mode)

Daylight threshold

Press buttons in zone "Daylight threshold" to set daylight sensor at 2Lux / 10Lux / 50Lux / 100Lux / 300Lux / 500Lux / Disable.

Ambient daylight threshold

Press button "Ambient", the surrounding lux level is sampled and set as the new daylight threshold.

Hold-time

Press buttons in zone "hold-time" to set the hold-time at 5sec / 1min / 5min / 10min / 15min / 30min / 60min.



HRC-12

SAM13/RC12

HF Lowdbay | ON/OFF | RJ12 connector to control body

Options

Compatible products (for full functionality)



HC038

Control body | ON/OFF | Attachable sensor heads
www.hytronik.com/product/HC038



HRC-12

Sensor remote controller | Lightweight | White color
www.hytronik.com/product/HRC-12



HC438

Control body | ON/OFF | Attachable sensor heads
www.hytronik.com/product/HC438

Functions and Features



Ambient Daylight Threshold

This feature allows users to set a custom daylight-harvesting target lux level based on the actual ambient light at the installation site. After manually adjusting the luminaire to a comfortable brightness, the user can record the current lux value as the new daylight threshold via the remote controller or the Koolmesh app. The sensor will then use this stored value as the reference for daylight-dependent dimming, ensuring a personalized and accurate daylight harvesting performance.



Manual Override

With the help of a push switch, the sensor can be manually overridden by the end user to switch the light on/off or adjust the target lux level, providing greater flexibility and improved user experience.

Short press (<1s): On/Off control

On Off: The light turns off immediately and cannot be re-triggered by motion until the preset hold-time expires, after which the sensor returns to normal operation.

Off On: The light turns on and enters sensor mode, regardless of the ambient light level.

Long press (>1s): Target lux adjustment

The target lux level can be adjusted by dimming the light up or down.

Adjustments via push switch and remote control can overwrite each other, with the last setting stored in memory.

Note: If manual override is not required, the "PUSH" terminal can be left unconnected.



ON/OFF Control

The product supports basic ON/OFF control of the connected luminaire, allowing the light to be switched fully on or off through the sensor's detection logic or an external control input. This provides straightforward lighting control for applications that do not require dimming functionality.



Semi-Automatic Mode (Absence Detection)

In semi-automatic mode, the sensor operates as an absence detector, where the lighting must be switched on manually via a wall push switch and remains on while occupancy is detected.

Once the area is vacated, the sensor automatically switches off the lighting after the preset hold-time, improving energy efficiency and ensuring controlled operation.

Manual ON: The light will not turn on automatically and must be switched on manually via the wall switch. The sensor remains inactive while the light is off.

Auto OFF: After the light is switched on, the sensor becomes active and monitors occupancy. When no presence is detected, the light will automatically switch off after the defined delay time.

Note: The wall switch can be configured either for Manual Override or Semi-automatic Mode (Absence Detection), but not both simultaneously. The default setting is Manual Override.

Check out for further explanation of features

<https://hytronik.com/solutions/lighting-control-features>