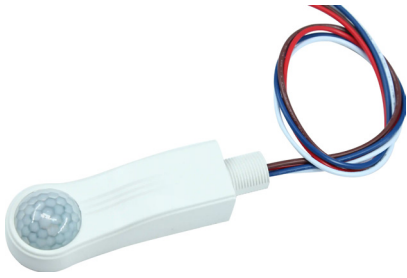


HCD049

DALI-2 PIR Highbay | IR Controller | Batten-fit/Bolt-on mount

HYTRONIK[®]
SENSORS & LIGHTING CONTROL



Benefits

Adaptable: Removable shielding accessory for different detection ranges

Integrated: Built-in 30 mA DALI PSU simplifying system wiring

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

Applications

Warehouses

Logistics Centers

Industrial Facilities

Check Out the Complete System Solution on the Website:
<https://www.hytronik.com/product/HCD049>



Product Description

HCD049 is a DALI-2 high-bay PIR motion sensor designed for batten-style luminaires, supporting installation heights of up to 15 m. It integrates a PIR motion sensor and daylight sensor to provide reliable occupancy detection and daylight-based lighting control. All sensor parameters can be configured via the HRC-11 handheld remote controller, allowing quick setup and convenient commissioning.

Functions and Features

See additional details at the end of datasheet



Built-in DALI PSU



DALI-2 Certified



Daylight Harvest

IP65

IP65 Protection



One-key
Commissioning

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DALI-2 PIR Highbay | IR Controller | Batten-fit/Bolt-on mount

Specifications

Main Capabilities

Dimming (Output) Interface	DALI/DALI-2
----------------------------	-------------

Sensor Data

Detection angle	360°
Max. Detection range (Diameter)	16.0 m
Maximum Mounting Height	15.0 m
Detection area	201 m²
Sensitivity	10% / 50% / 75% / 100%

Electrical Data

Operating voltage range	220-240 VAC 50/60 Hz
Stand-by power (Psb)	<0.5W
Warming-up	20 s
DALI bus maximum rated current (I _n max)	40 mA
DALI bus nominal DC voltage range (U _n)	15 V
DALI bus nominal current (I guaranteed)	30 mA

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DALI-2 PIR Highbay | IR Controller | Batten-fit/Bolt-on mount

Specifications

Technical	
Product weight	90.0 g
Product height	28.2 mm
Product length	107.0 mm
Product width	34.0 mm
Mounting hole	40.0 mm
Ambient temperature	-20 ~ +50°C
Storage temperature	-25 ~ +70°C
Humidity max	10 ~ 90%
IP Rate	IP65

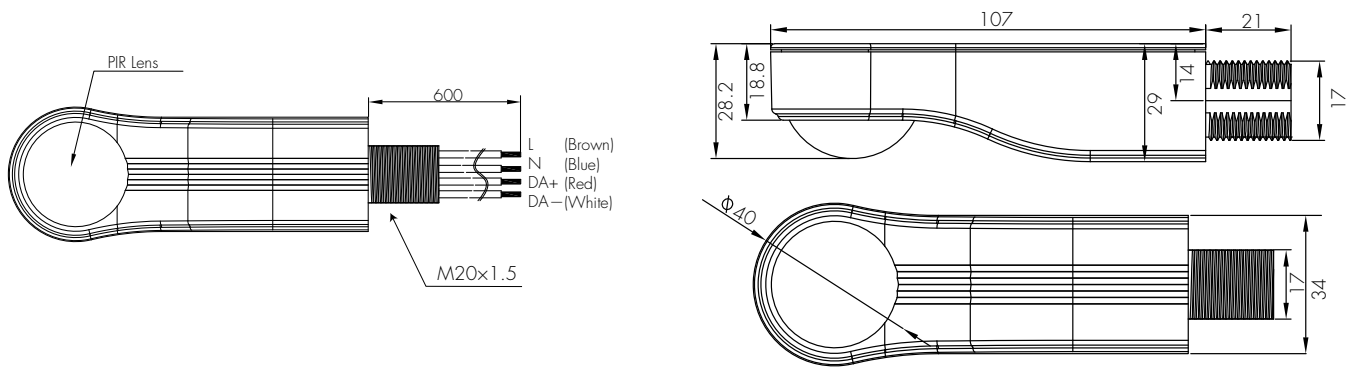
Standard	
EMC	EN 55015, EN61000-3-2/-3-3, EN 61547
LVD	EN 61347-1, EN 61347-2-11

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DALI-2 PIR Highbay | IR Controller | Batten-fit/Bolt-on mount

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Technical Drawing



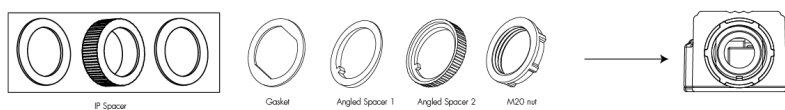
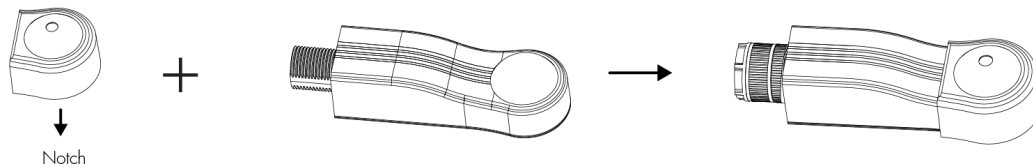
Application Example



HCD049

DALI-2 PIR Highbay | IR Controller | Batten-fit/Bolt-on mount

Installation Process



Detailed Installation Instructions

Installation with shielding cover

The sensor cover is pre-installed on the product. Remove it before use to enable normal detection. If partial shielding of the detection area is required, the cover can be reinstalled as needed.

Installation steps

Step 1: Installation

Align the HAS49 cover with the HCD049 series sensor and press down evenly with two fingers. Once an audible sound is heard, the cover is securely installed.

Step 2: Removal

To detach the HAS49 cover, locate the release notch on the edge. Gently lift the cover upward from the notch to remove it.

*For more details about the shielding cover, please refer to the last page of this datasheet.

Installation with Silicone Gasket (IP65 protection)

A. Standard tri-proof luminaires

B. Tri-proof luminaires with a sloped surface

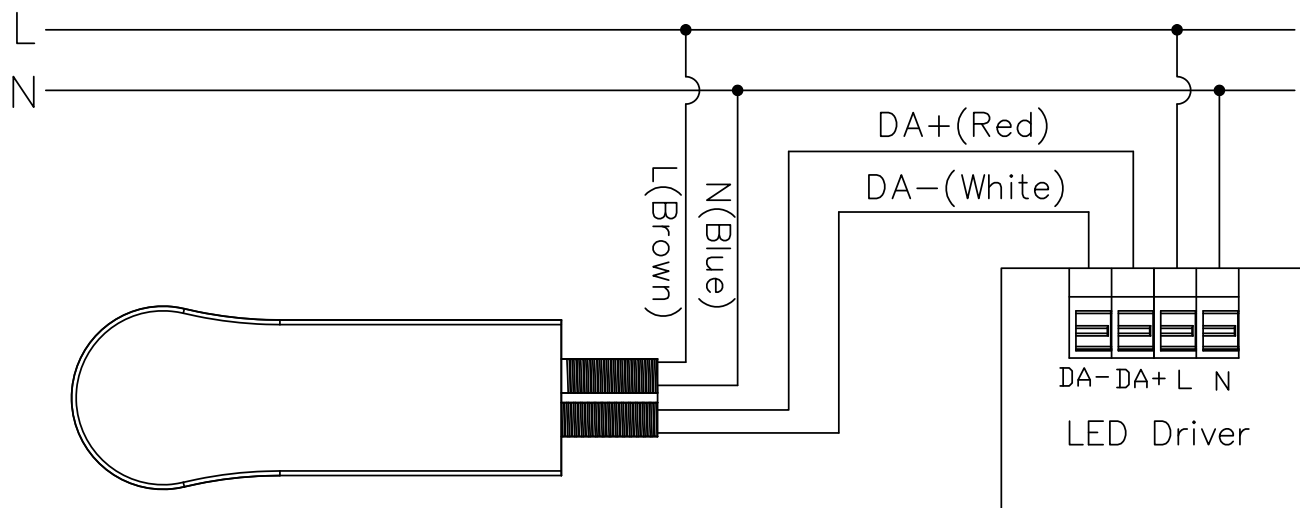
Installation Steps (for both A and B)

1. Place the silicone gasket between the cable and the mounting hole to ensure a proper seal.
2. Evenly tighten the screws to secure the fixture and achieve IP65 protection.

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DALI-2 PIR Highbay | IR Controller | Batten-fit/Bolt-on mount

Wiring Diagram



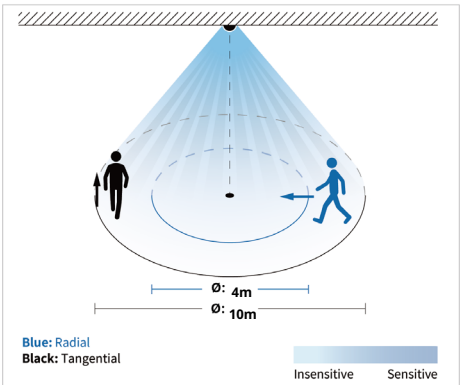
Detection Range

Single Person Walk (Ceiling mount)

The data is tested under following conditions:

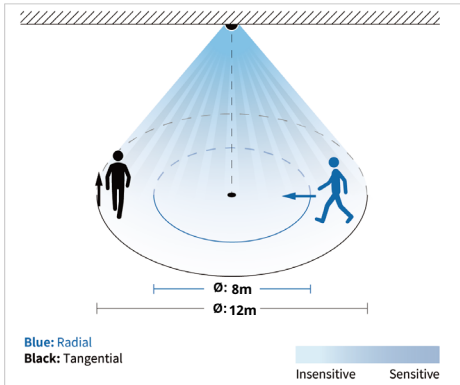
- Single person walking;
- Sensor not connected to any driver that may have soft-on period;
- The testing is conducted in an open and spacious indoor field, without noticeable obstacles or influences that may affect PIR performances;
- The detection range may be significantly reduced under certain conditions due to factors such as sensor placement (angle) and variations in temperature and humidity levels.

Detection example 3m mounting height:



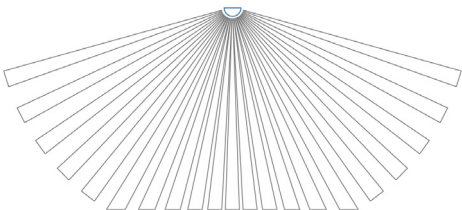
Tangential movement		
H[m]	3	12
Ø[m]	10	12

Detection example 12m mounting height:



Radial movement		
H[m]	3	12
Ø[m]	4	8

Detection schematic diagram

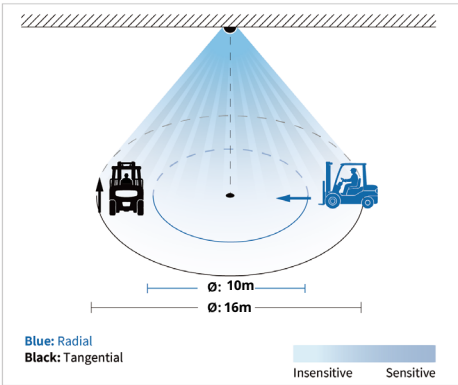


Detection Range

Forklift (Ceiling mount)

- The data is tested under following conditions:
- Forklift driving at a speed of 5km/h;
 - Sensor not connected to any driver that may have soft-on period;
 - Testing temperature Ta = 20°C;
 - The testing is conducted in an open and spacious indoor field, without noticeable obstacles or influences that may affect PIR performances.
 - The detection range may be significantly reduced under certain conditions due to factors such as sensor placement (angle) and variations in temperature and humidity levels.

Detection example 15m mounting height:



Tangential movement	
H[m]	15
Ø[m]	16

Radial movement	
H[m]	15
Ø[m]	10

Commissioning Instructions and Precautions

A. Installation Notes

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

B. Wiring preparation

This product includes a built-in power cord. Please follow the instructions below to wire it correctly.

1. 200 metres (total) max. for 1mm² CSA (Ta = 50°C)
2. 300 metres (total) max. for 1.5mm² CSA (Ta = 50°C)

C. Factory Default

1. Auto mode; Detection range 100%; Hold-time 5 min; Stand-by time 10 min; Stand-by dimming level 20%; Light threshold: 100 lux.

D. Environment

1. When used in -35°C ~ -20°C environment, the sensor still functions but the detection range & life-span would be compromised. The optimal Ta would be -20°C ~ +50°C and we apply 5-year guarantee for such usage condition.

E. DALI-2 Compliance

1. This product has been tested in accordance with IEC 62386 and complies with the relevant DALI-2 application parts. DALI-2 testing was performed using the official DALI test sequence software (version 2.3.3.0), covering the applicable IEC 62386 parts (e.g. Part 101, Part 103). DALI-2 certification verifies compliance within the defined test scope. However, certification does not eliminate the possibility of system-level compatibility issues arising from differences in device implementation or system design among manufacturers. Therefore, functional verification and on-site testing are required as part of the final system commissioning to ensure proper operation and compliance with project requirements.

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

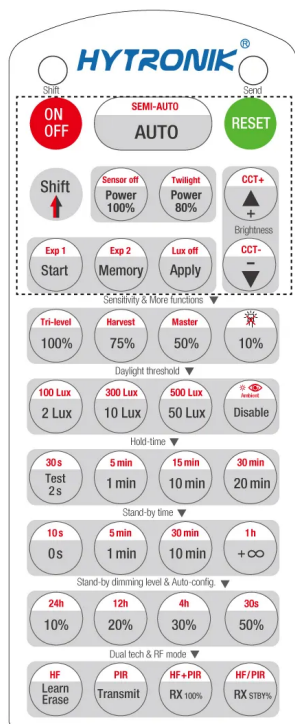
<https://hytronik.com/service/downloads>

HCD049

DALI-2 PIR Highbay | IR Controller | Batten-fit/Bolt-on mount

Commissioning via Remote Control - Page 1

Settings (Remote Control HRC-11)



HRC-11

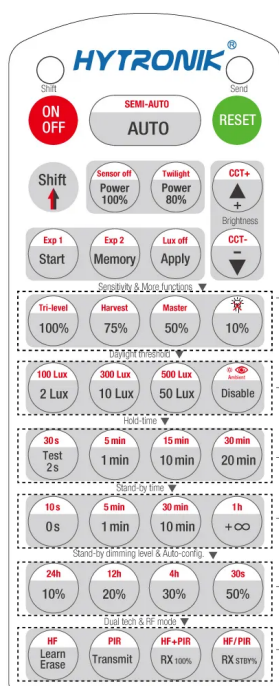
ON OFF	Press button "ON/OFF" to select permanent ON or permanent OFF mode. * Press button "AUTO"/ "RESET" to exit this mode. Note: After a power failure, the unit will default to AUTO mode upon power restoration.
RESET	Press the "RESET" button to apply the latest DIP/rotary switch settings for models equipped with hardware switches, or to restore factory default parameters for models without hardware switches. Factory defaults: Auto mode; Detection range 100%; Hold-time 5 min; Stand-by time 10 min; Stand-by dimming level 20%; Light threshold: 100 Lux.
Shift	Press the "Shift" button to activate the secondary function layer. The LED at the top left corner lights up to indicate mode selection. While the LED is on (20 seconds), all buttons marked in red are enabled and can be selected.
AUTO	Press button "AUTO" to initiate automatic mode. The sensor starts working and all settings remain as before the light is switched ON/OFF;
SEMI-AUTO	This key is not applicable on this product.
Power 100% 80%	Press the buttons in the "Power" zone to select 80% or 100% light output. Selecting 80% output may help optimize system efficiency during the early stage of installation, while 100% output can be applied when higher luminous performance is required over time.
Sensor off	This key is not applicable on this product.
Twilight	Press the "Shift" button (red LED on), then press "Twilight" to activate Twilight mode. In this mode, all the lights turn on automatically, Motion detection is disabled, and the product operates solely based on ambient daylight level, functioning as a pure dusk/dawn daylight sensor. To exit Twilight mode, press "AUTO" or "RESET".
▲ ▼	Press these two buttons to adjust the light output. For Harvest products, the buttons are used to set the target lux level. The daylight sensor measures the ambient illuminance and automatically adjusts the artificial light output to maintain the set target lux level.
CCT+ CCT-	This key is not applicable on this product.
Start Memory Apply	1. Press button "Start" to program. 2. Select the buttons in "Detection range", "Daylight threshold", "Hold-time", "Stand-by time", "Stand-by dimming level" to set all parameters. 3. Press button "Memory" to save all the settings programmed in the remote control. 4. Press button "Apply" to set the settings to each sensor unit(s). For example, to set detection range 100%, daylight threshold Disable, hold-time 5min, stand-by time +∞, stand-by dimming level 30%, the steps should be: Press button "Start", button "100%", "Disable", "Shift", "5min", "Shift", "+∞", "30%", "Memory". By pointing to the sensor unit(s) and pressing "Apply", all settings are passed on the sensor(s).
Lux off	Press the LUX OFF button to enable or disable the Lux off function. Sensor LED indicator references: 1.Fast flash 1s, "Lux off" function activated. 2.Fast flash 2s, "Lux off" function deactivated. The 'Lux off' function is activated by default. When the ambient lux level exceeds the target level during both T1 and T2 periods and the light has been on for more than 5 minutes, it will automatically turn off. * The 'Lux on' function is not available for this product. The light will turn on when the motion sensor is triggered, only if the ambient lux meets the set daylight threshold.
Exp 1 Exp 2	"Exp" refer to Expansion, these two buttons are reserved functions and pending future development.

HCD049

DALI-2 PIR Highbay | IR Controller | Batten-fit/Bolt-on mount

Commissioning via Remote Control - Page 2

Settings (Remote Control HRC-11)



HRC-11

Sensitivity & More functions	
100% 75% 50% 10%	In AUTO modes, press buttons in zone "Detection range" to set detection range at 100%/75%/50%/10%.
Tri-level Harvest	This key is not applicable on this product.
Master	This key is not applicable on this product.
Daylight threshold	
2 Lux 100 Lux 10 Lux 300 Lux 50 Lux 500 Lux Disable	Press buttons in zone "Daylight threshold" to set daylight sensor at 2Lux/ 10Lux / 50Lux / 100Lux / 300Lux/500Lux / Disable. <i>Note: To set daylight sensor at 100Lux / 300Lux/500Lux, press "Shift" button first.</i>
Ambient	1. Press button "Shift", the red LED on. 2. Press button "Ambient", the surrounding lux level is sampled and set as daylight threshold / target Lux level.
Hold-time mode	
Test 30 s 1 min 5 min 10 min 15 min 20 min 30 min	In AUTO modes, press buttons in zone "hold-time" to set the hold-time at 2s / 30s / 1min / 5min / 10min / 15min / 20min / 30min. <i>Note: 1. To set hold-time at 30s / 5min / 15min / 30min, press "Shift" button first. 2. 2s is for testing purpose only, stand-by period and daylight sensor settings are disabled in this mode. *To exit from Test mode, press button "RESET" or any button in "Hold-time".</i>
Stand-by time mode	
0 s 10 s 1 min 5 min 10 min 30 min +∞ 1 h	Press buttons in zone "stand-by time" to set the stand-by period at 0s / 10s / 1min / 5min / 10min / 30min / 1h / +∞. <i>Note: 1. To set stand-by time at 10s / 5min / 30min / 1h, press "Shift" button first. 2. "0s" means on/off control; 3. "+∞" indicates bi-level control. In this mode, the fixture turns 100% on when motion is detected and switches to the stand-by dimming level after the motion hold-time if no presence is detected. During this state, the Lux-off function is deactivated. The light will only turn on when the motion sensor is triggered if the ambient lux level is below the set daylight threshold.</i>
Stand-by dimming level & Auto-config.	
10% 20% 30% 50%	Press the button in zone "stand-by dimming level" to set the stand-by dimming level at 10% / 20% / 30% / 50%.
24h 12h 4h 30s	1. Press button "Shift", the red LED on. 2. Select a time period and the sensor will do light level measurement and determine/save the lowest light level (commission line) with 100% light on, so as to set the target lux level automatically. <i>Note: 1. Make sure the light level measurement covers the night time. 2. The fixture will go into sensor mode after the measurement, all sensor setting remain unchanged.</i>
Dual tech & RF mode	
Learn Erase Transmit	This key is not applicable on this product.
RX 100% RX 50%	This key is not applicable on this product.
HF HF+PIR PIR HF/PIR	This key is not applicable on this product.

HCD049

DALI-2 PIR Highbay | IR Controller | Batten-fit/Bolt-on mount

Options

Included Accessories



Shielding accessory | HAS49

Compatible products (for full functionality)



HRC-11

Sensor remote controller | Diverse function | White color
www.hytronik.com/product/HRC-11

Functions and Features



Built-in DALI PSU

Built-in DALI PSU means the DALI bus power supply is integrated into the product, eliminating the need for an external DALI power unit.

This reduces wiring complexity, saves installation space, and simplifies commissioning, making the system more compact and efficient.



DALI-2 Certified

The product is DALI-2 certified, ensuring compatibility with DALI-2 control devices and compliance with relevant international lighting control standards. Certified product details can be verified via the DALI Alliance product database.



Daylight Harvest

Right time, right place and the right amount of light! Daylight harvest (Also known as daylight regulating or daylight interaction) is a must in the future lighting norms. It automatically measures available natural light and adjusts artificial lighting output to maintain the target illuminance level. Using daylight sensor feedback, control signals are transmitted to the LED drivers via DALI or 0–10V interfaces, ensuring the required light output is delivered only when needed, improving visual comfort and reducing energy consumption.



IP65 Protection

This product features an IP65-rated enclosure, providing complete protection against dust ingress and low-pressure water jets to ensure reliable operation in demanding indoor and outdoor environments. The robust environmental sealing supports long-term stability and consistent performance in applications such as warehouses, parking areas and industrial facilities.



One-key Commissioning

This feature allows commissioning to be completed with a single key operation on the remote controller. A predefined configuration sequence is executed automatically, enabling quick setup and reducing the time and effort required for on-site adjustments. One-key commissioning simplifies complex procedures and supports efficient, reliable deployment of lighting control systems.

Check out for further explanation of features

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

Additional Notes

Shielding accessory (HAS49) detail expiation

Achieve precise adjustment of the detection range, block interference sources (such as moving machines and elevators) to prevent triggering the sensor. the line pattern of the shielding accessory can be freely removed by cutting to achieve a different range of shielding induction, for example, rectangular detection and semi-sphere detection. The portable design also provides an easy installation, which only needs to buckle the shielding accessory onto the lens.

For reference, the next page includes detection pattern and dimensional drawings to support actual installation and application. The detection diagram is based on the following test conditions:

Detection Range Test Conditions:

Single person walking or forklift driving at 5 km/h

Sensor not connected to a driver with soft-on period

Ambient temperature (Ta): 20 °C

Test conducted in a large open indoor area without obstacles affecting PIR performance

Note: Detection range may vary depending on installation angle, temperature, and humidity conditions.

HCD049

DALI-2 PIR Highbay | IR Controller | Batten-fit/Bolt-on mount

Additional Diagram

