

IP65 DALI-2 PIR Motion Sensor (High-bay)

HCD049

DALI-2 Bolt-on/Batten-fit PIR Sensor, Daylight Harvest

HYTRONIK®



IP65

Product Description

HCD049 is a DALI-2 high-bay PIR motion sensor, with capability of up to 15m installation height. HCD049 has a daylight sensor built-in, and is specifically designed for mounting onto a batten style luminaire. All sensor parameters can be programmed through remote controller HRC-11.

Features

 DALI-2 certified

 32mA DALI Broadcast output

 Daylight Harvest

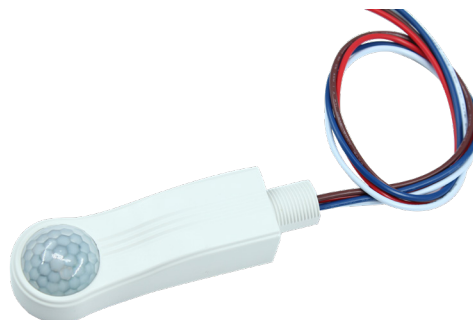
 IP65

 Fixing washers accessory

 High-bay (up to 15m height)

 Remote controllable

 5-year warranty



Technical Specifications

Input Characteristics	
Operating voltage	220 ~ 240VAC 50/60Hz
Stand-by power	<0.5W
Output	I guaranteed: 32mA I max: 40mA U rated: 15VDC
Warming-up	30s
Sensitivity	10% / 30% / 50% / 75% / 100%

Safety and EMC	
EMC standard (EMC)	EN55015, EN61547 EN61000-3-21-3-3
Safety standard (LVD)	EN61347-1, EN61347-2-11
Certification	ENEC, CE, EMC, LVD, RCM

Sensor Data	
Sensor principle	PIR detection
Detection range*	Max installation height: 12m Max detection range: 10m (Radius)
Detection angle	360°

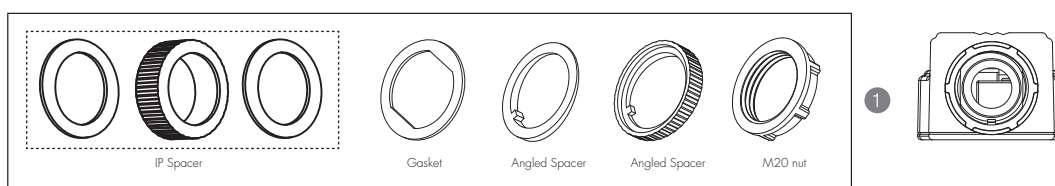
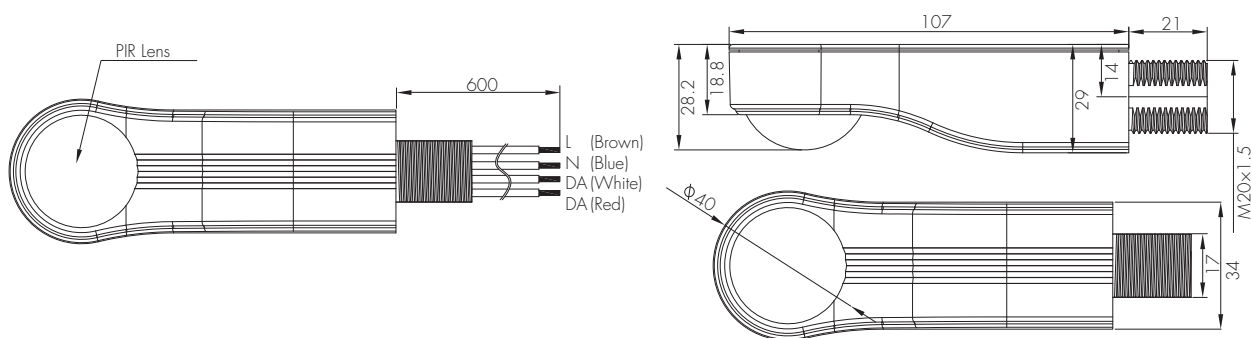
* The detection range is heavily influenced by sensor placement (angle) and different walking paces. It may be reduced under certain conditions.

Environment	
Operation temperature*	Ta: -20°C ~ +50°C
Storage temperature	-30°C ~ +80°C
Relative humidity	0 ~ 90%
IP rating	IP65
Insulation	Class II

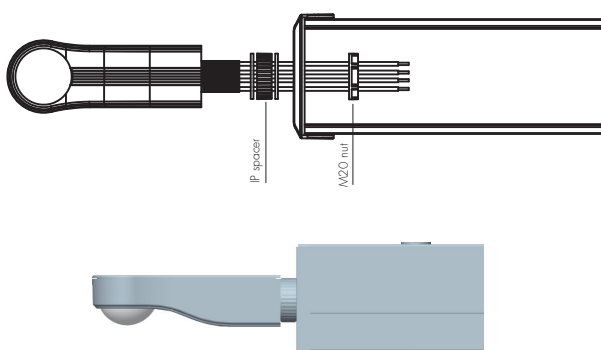
* When used in -35°C ~ -20°C environment, the sensor still functions but the detection range & life-span would be compromised. The optimal Ta would be -20°C ~ +50°C and we apply 5-year guarantee for such usage condition.

Mechanical Structure & Dimensions

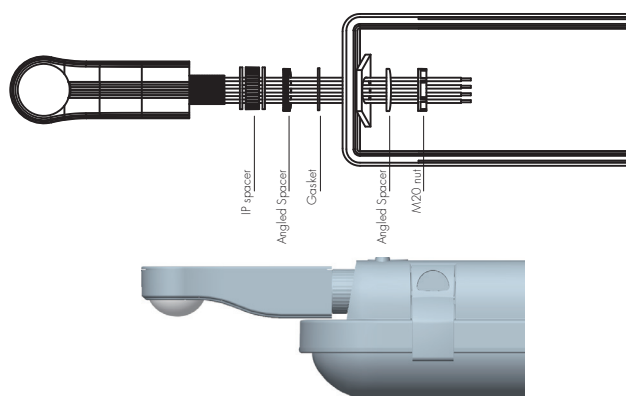
(unit:mm)



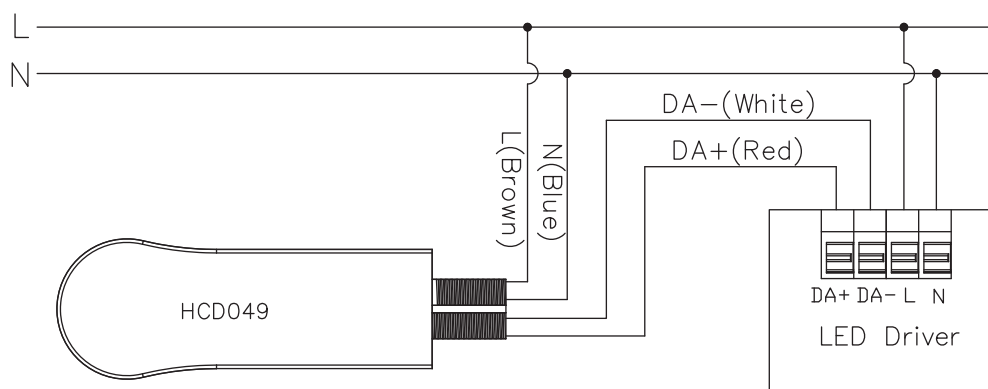
Typical Installation 1



Typical Installation 2



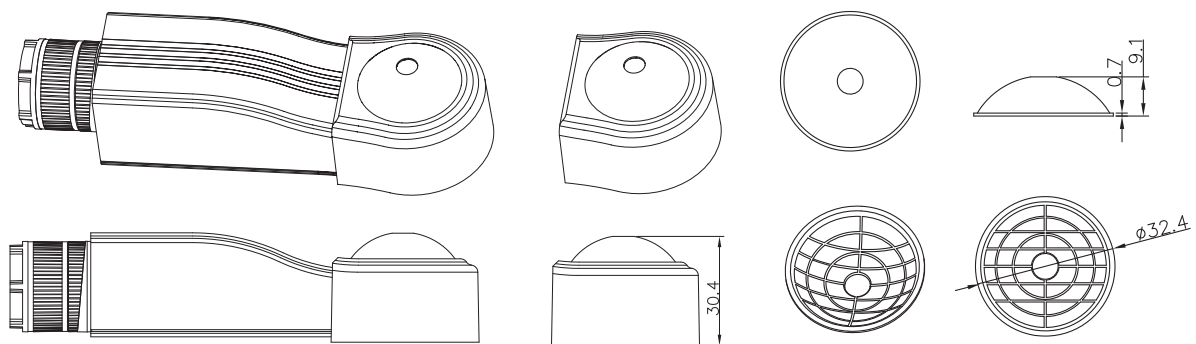
Wiring Diagram



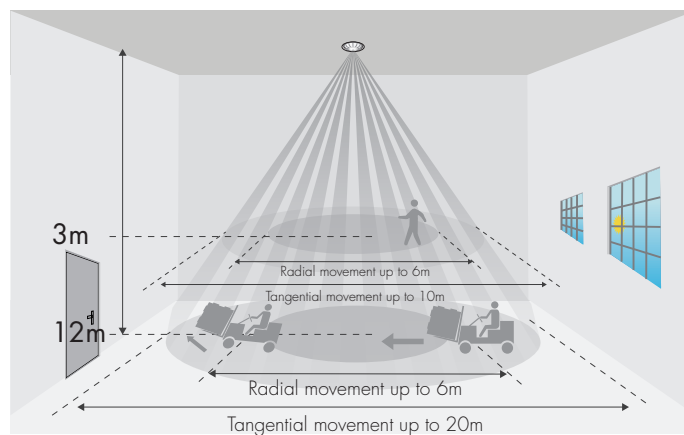
1. 200 metres (total) max. for 1mm² CSA (Ta = 50°C)
2. 300 metres (total) max. for 1.5mm² CSA (Ta = 50°C)

Shielding Accessory

For the application of limited coverage areas (hallways), 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.

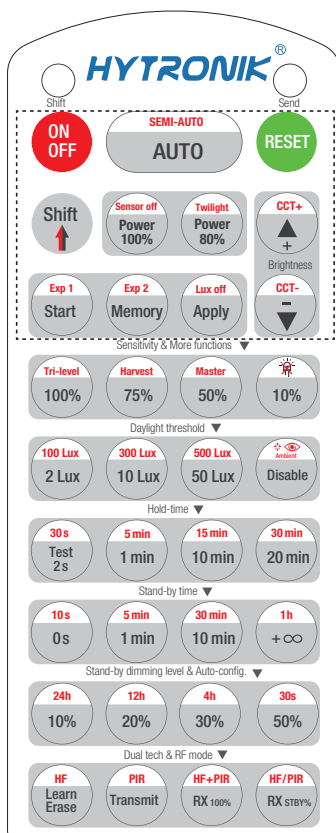


Detection Pattern



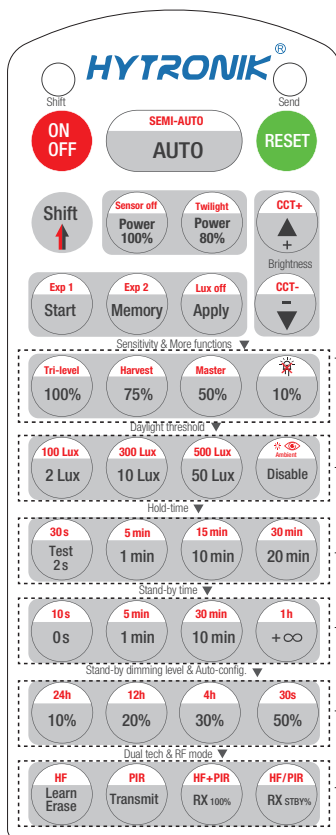
*The detection patterns are based upon 5km/h movement speed.

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.
RESET	Press button "RESET", perform the latest DIP Switch/Rotary Switch settings. The default settings are: Auto mode; DALI Master mode; Detection range 100%; Hold-time 5min; Stand-by time 10min; Stand-by dimming level 20%; Lux off activated.
Shift	Press button "Shift", the LED on the top left corner is on to indicate mode selection. All values / settings in RED are valid for 20 seconds.
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	1. Press button "Shift", the red LED on. 2. Press button "SEMI-AUTO" to initiate Semi-auto mode. The sensor is only activated with the manual press of push switch. To exit this mode, simply press button "AUTO". For Sensor LED indicator references: Remains on 2s, initiate "Semi-auto" mode from "Auto" mode.
Power 100% 80%	Press buttons in zone "Power out" to select the light output at 80% (at initial 10,000 hours) or 100%.
Sensor off	This key is not applicable on this product.
Twilight	1. Press button "Shift", the red LED on. Press button "Twilight", the function of movement detection is disabled, but the function of photocell is still working, and the product becomes a pure dusk/ dawn daylight sensor. To exit from "Twilight" mode, press button "AUTO"/"SEMI-AUTO"/"RESET".
▲ ▼	Press these two buttons to adjust the light output brightness and set a new target lux level. The daylight sensor can measure ambient daylight level and ignore the LED light, so as to calculate how much artificial light is needed to maintain the target lux level.
CCT+ CCT-	1. Press button "Shift", the red LED on. 2. Press "CCT+" or "CCT-" button to adjust colour turning.
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	The "Lux off" function is activated as default. When the ambient lux level exceeds the target level continuously for more than 5 minutes, the lights will be turned off. In AUTO /SEMI-AUTO/Twilight modes, to disable "Lux off": 1. Press "Shift" button first, the red LED on. 2. Press "Lux off" button, the "Lux Off" function will be deactivated. The lights will not turn off even when the ambient lux level exceeds the target lux level but will dim down the brightness to the stand-by time level. For Sensor LED indicator references: 1.Fast flash 1s, "Lux off" function activated. 2.Remains on 2s, "Lux off" function deactivated.
Exp 1 Exp 2	"Exp" refer to Expansion, these two buttons are reserved functions and pending future development.



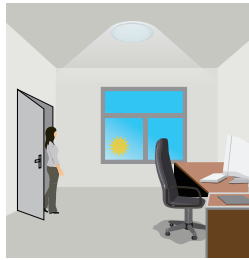
HRC-11

Sensitivity & More functions	
100% 75% 50% 10%	In AUTO /SEMI-AUTO modes, press buttons in zone "Detection range" to set detection range at 100%/75%/50%/10%.
Tri-level Harvest	1.Press button "Shift", the red LED on. 2. Press buttons "Tri-level" or "Daylight harvest" to shift between Tri-level control mode and Daylight harvest mode.
Master	1.Press button "Shift", the red LED on. 2. Press button "Master" to select a DALI sensor in a DALI line to be a "master", so that all other DALI sensors in the same DALI line will perform daylight harvesting/ tri-level control based on the lux reading from this "master" sensor's daylight sensor.
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. Note: To set daylight sensor at 100Lux / 300Lux/500Lux , press "Shift" button first.
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 30s 2s 1 min 5 min 10 min 15 min 20 min 30 min	In AUTO /SEMI-AUTO modes, press buttons in zone "hold-time" to set the hold-time at 2s / 30s / 1min / 5min / 10min / 15min / 20min / 30min. 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".
Stand-by time mode	
0s 10s 1 min 5 min 10 min 30 min + ∞ 1h	Press buttons in zone "stand-by time" to set the stand-by period at 0s / 10s / 1min / 5min / 10min / 30min / 1h / +∞. Note: 1. To set stand-by-time at 10s/ 5min / 30min / 1h, press "Shift" button first. 2. "0s" means on/off control; 3. "+∞" means bi-level control, the fixture is 100% on when there is motion detected, and remains at the stand-by dimming level when no presence after motion hold-time. Only when the stand-by time is set in "+∞" and the ambient lux level is below the target lux level, the lux will auto-on.
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. 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.
Dual tech & RF mode	
Learn Erase Transmit	This key is not applicable on this product.
RX 100% RX STBY%	This key is not applicable on this product.
HF PIR HF+PIR HF/PIR	This key is not applicable on this product.

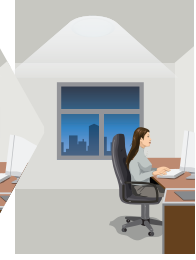
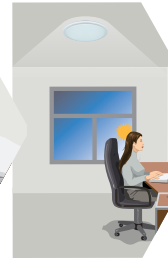
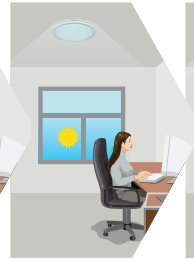
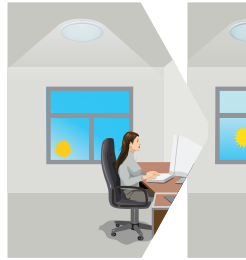
Daylight Harvest



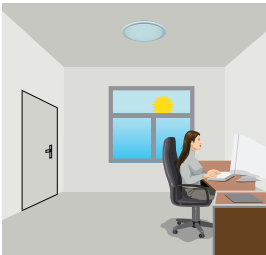
Light will not switch on when natural light is sufficient, even there is motion detected.



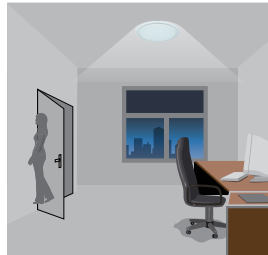
The light switches on automatically with presence when natural light is insufficient.



The light turns on at full or dims to maintain the lux level. The light output regulates according to the level of natural light available.



The light switches off when the ambient natural light is sufficient.



The light dims to stand-by period after hold-time and stays on selected minimum dimming level.



The light switches off completely after the stand-by period.

Additional Information / Documents

1. To learn more about detailed product features/functions, please kindly refer to <https://hytronik.com/product/hcd049>
2. Regarding precautions for PIR Sensors installation and operation, please kindly refer to <https://hytronik.com/service/downloads> (PIR Sensors Precautions for Product Installation and Operation)
3. Data sheet is subject to change without notice. Please always refer to the most recent release on <https://hytronik.com/products/motion-daylight-sensors>
4. Regarding Hytronik standard guarantee policy, please kindly refer to <https://hytronik.com/service/downloads> (Guarantee Conditions document)