# CDP-808D12V/24V HDIR®/Ultrasonic Occupancy Sensor with 0-10V Dimming output

## Operation and Specifications

SUREN

The CDP-808D is a low-voltage Occupancy sensor with SUREN's 8-element pyros and multi-segment lens array to control lighting automatically. The sensor will provide a 0-10V output according to the ambient level.

**SENSOR INITIALIZATION**

Following power-on, the CDP-808D sensor is fully operational after 30sec warm-up.

**SENSOR OPERATION**

**Multi-Tech Mode:** This is the default mode of operation for the sensor.

**Mode 1:** Set SWITCH A1 OFF and A2 OFF: **HDIR®** technology turns lights on in this mode; however, motion detection by either technology will keep the lights ON. If neither technology detects motion, the lights turn off after the delayed-OFF time.

**Mode 2:** Set SWITCH A1 OFF and A2 ON: Either technology turns lights ON and keep the lights ON in this mode. If neither technology detects motion, the lights turn off after the delayed-OFF time.

®

**Single-tech mode:** Only one technology is active in this mode. The technology is selected by the dip switches. Motion detection by the selected technology - **HDIR** or ultrasonic - will turn ON the lights as well as keep them ON. When motion is not detected, the light will turn OFF after the delayed-OFF time.

**Delayed-OFF time:** The sensor is designed to turn the light OFF if no motion is detected after a specified time. The length of time is called the delayed-OFF time and is set using the timer knob on the sensor. The adapting patterns will modify the delayed-OFF time to fit the parameters of each installation based on environmental conditions and occupancy patterns.

**WALK THROUGH(CORRIDOR) MODE:** Toggle dip switch A4=OFF,t he walk-through feature is useful when the area is momentarily occupied, e.g. hallway. With this feature a delay-off time of 15 seconds is set for this mode, if motion is still detected in the detection zone shortly before time off, another 15 seconds time delay will be extended. Further motion will set or revert the timer to the preset delay-off time after the last person leaves the area.

**LED Operation:** Toggle dip switch B2=OFF,t here are two LED indicators that will flash when motion is detected. The LED flash can be disabled using the LED disable switch setting. A Green flash indicates motion detection by ultrasonic technology. A Red flash indicates motion detection by infrared technology.

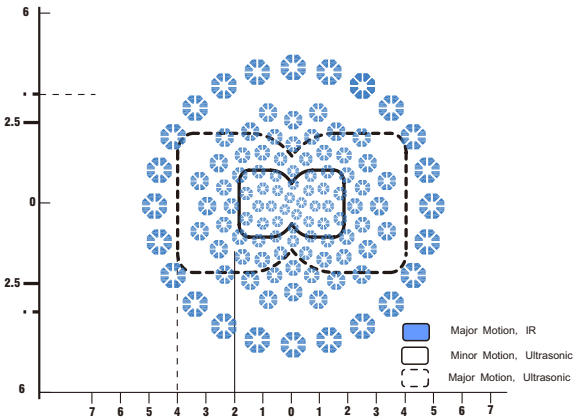
**Dimming:**

Set B1=ON, sensor will provide a 0-10V output according to the ambient light level Set B1=OFF, dimming function will be disable.

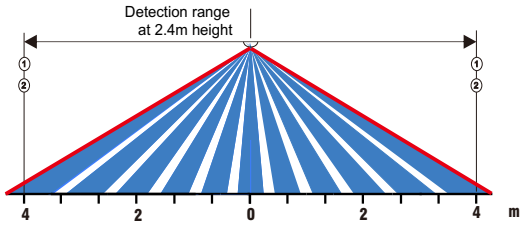
**Walk-Test:** Toggle dip switch B3 (OFF-ON-OFF/ON-OFF) to enter test mode. If B3 is already in the ON position, moving it to the OFF position will also activate test mode. Amber LED will flash once every three seconds when the sensor is in test mode. During this time, the sensor will turn the light off after 5 seconds if there are no movement. sensor will exit test mode after 15 minutes.

## Detection Area:

Top view

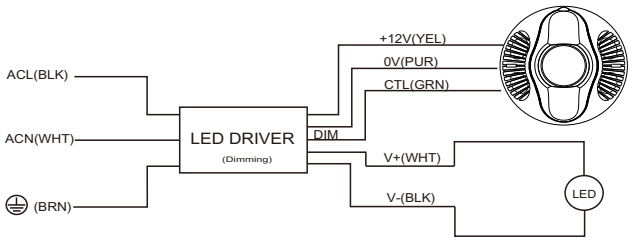



Side view




① HDIR®Sensor detection of minor motion, e.g. hand movement
② Ultrasonic detection of body motion

## Wiring Diagram




## SPECIFICATIONS:

**HDIR®Sensor:**
Pyroelectric,8- elements

**Power Supply:**
12VDC/24VDC

**Housing Material:**
High-impact ABS

**Dimensions:**
Φ110 x 56 mm ( Dia. x D )

**Approvals/qualification:**
**CE**(Approved)

**RF Immunity:**
20 V/m 10-1000 MHz;
10 V/m 1-2 GHz

**Ultrasonic Frequency:**
40KHz

**Operating Temperature Range:**
-10°C to +50° C

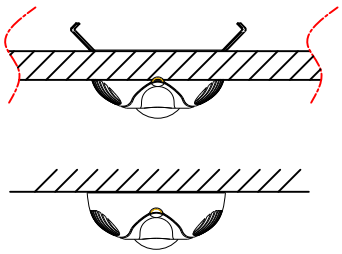
**Accessories:**
Base ring for solid ceiling;
Retaining spring for drop ceiling

©2011 SUREN Systems, Ltd.. All rights reserved. SUREN™, HDIR® are trademarks of SUREN.

SUREN Part no.: N-ML00-0064-01-1 Rev.3 Printed in China

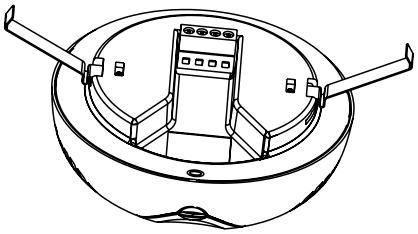
## 1: Sensor Mounting Choices

The sensor may be mounted either in a drop-ceiling panel, or on a solid ceiling. In a drop-ceiling panel, two metal springs serve to retain the sensor in the panel. On a solid ceiling, the sensor is mounted on a base ring (Supplied with the sensor).The base ring is fastened to the ceiling by means of two screws.mounted a height of 2.4m.



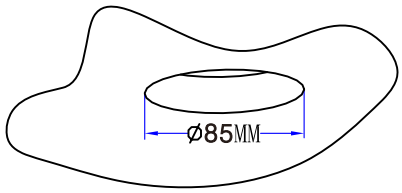
## 2: Drop-ceiling Mounting: Base Preparation

Install the two retaining springs as shown.



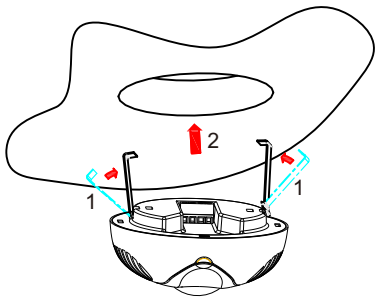
## 3: Drop-ceiling Mounting: Panel Preparation

Use a hole saw to cut a 85 mm circular hole in the drop-ceiling panel at the desired location.




## 4: Drop-ceiling Mounting: Sensor Installation

Press the retaining springs together, then push the springs and the sensor base through the ceiling panel hole until the sensor rim is seated against the panel.



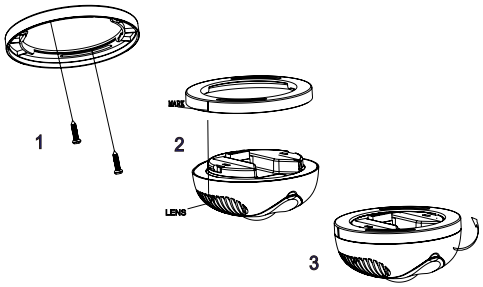

## 5: Solid-ceiling Mounting

1.Use the two screws (supplied with the sensor) to fasten the base ring to the ceiling.

2. Align the grooves of sensor with the tongues of base ring

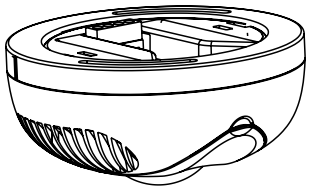
Press the sensor onto the base ring.

3.Turn clockwise to lock the sensor into position



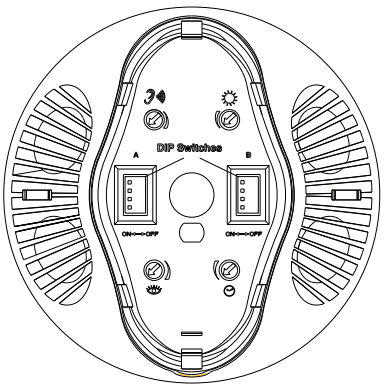

## 6: Sensor Opening

Slide a fingertip under the tab at one end of the control cover. Pull gently to remove the cover.



## 7: Operation Control Console

All aspects of sensor operation can be adjusted here.

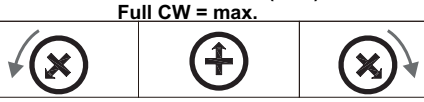



## 8: Ultrasonic Adjustment

For maximum range, Set fully clockwise(CW); If reduced range is required, then turn counter-clock wise (CCW) and test range.

**Sets the ultrasonic range**

**Range setting**
**Full CCW = min.(OFF)**
**Full CW = max.**



## 9: Infrared Adjustment

For maximum range, Set fully clockwise(CW); If reduced range is required, then turn counter-clock wise (CCW) and test range.

**Sets the infrared range**

**Range setting**
**Full CCW = min.(OFF)**
**Full CW = max.**

## 10: Delayed-OFF time Adjustment

Each time motion is detected, the load remains activated for a pre-set time, which is set by the delayed-OFF time adjustment. The fully counter-clockwise setting (30 seconds) can be used for testing. The fully clockwise setting is 30 minutes. If motion is detected during the ON time, then the load remains activated until the full delayed-OFF time has passed since the latest motion detection.

**Delayed-OFF time**

| 30sec | 5min | 10min | 20min | 30min |
|---|---|---|---|---|

## 11: Dimming and Sunset Sensor Adjustment

1.B1 Set ON,Dimming Enable and the sensor output 0~10V with ambient light(10~320 Lux) when the motion is detected .

2.B1 Set OFF, with ambient light is just at a no lighting necessary level, and with the sensor mounted as normal,remove the control cover, set the Light Level control fully clockwise. Replace the cover and walk under the sensor. The LED should light, indicating detection (and load-activation output). Re-adjust the control a little counter-clockwise and test. Continue until the LED does not light .

**Ambient Light**

| 20Lux | 40Lux | 80Lux | 160Lux | 320Lux |
|---|---|---|---|---|

## 12: Operation Mode Adjustment

**TABLE 4: SWITCH SETTINGS**

| SWITCH | SWITCH FUNCTIONS | SWITCH SETTINGS | |
|---|---|---|---|
| | **Bank A** | **OFF** | **ON** |
| A1 | Single/Multi-Tech | Multi-Tech | Single Tech |
| A2* | Multi-Tech (A1 OFF) | Multi-Tech mode1 | Multi-Tech mode2 |
| | Single Tech (A1 ON) | PIR | Ultrasonic |
| A3 | N/A | | |
| A4 | Walk-Through | Walk-Through Enable | Walk-Through Disable |
| | **Bank B** | | |
| B1 | Dimming | Disabled | Enable |
| B2 | LEDs | LEDs Enabled | LEDs Disable |
| B3 | Walk-Test | OFF-ON-OFF / ON-OFF | |
| B4 | N/A | | |

* **NOTE**: This setting is used the Multi Technology and Single Technology Option;

**Test Mode**: To set the delayed-OFF time to 5 seconds for performing a walk test. While the sensor is in test mode, the LEDs will flash amber once every three seconds.

1. ENSURE POWER IS ON.
2. Remove front cover.
3. Locate Dip Switch 3 in Bank B (B3) (refer to Figure 1) B3 will be in the OFF position from the factory.
4. To enter Test Mode, move switch to ON and back to OFF. The test mode has now been entered with a 5 second delayed-OFF time. **NOTE**:If B3 is already in the ON position, then test mode can be entered by just moving it to the OFF position.

**NOTES**:

1. The timer will remain in the 5 second test mode for 15 minutes, then automatically exit test mode and reset to the delayed-OFF time setting as defined by the black timer knob.
2. To manually take the timer out of the 5 second test mode, simply toggle the switch B3 from OFF to ON and back to OFF.