


ECO	Description	Checked By	Date	Engineer	Date	Eff. Date
	Product Release					

Notes:

1. Material: 80g printing paper, white. A4 size.
2. Printing: Black
3. Pack and tie a label with part number 0-ML00-0039-01-1.

		Suren Systems Ltd.		ITEM NO	0-ML00-0039-01-1	REV	1								
		<table border="1"> <thead> <tr> <th>APPROVALS</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>DWN XIAO FAN</td> <td>2012-11-20</td> </tr> <tr> <td>CHK</td> <td></td> </tr> <tr> <td>ENGR</td> <td></td> </tr> </tbody> </table>		APPROVALS	DATE	DWN XIAO FAN	2012-11-20	CHK		ENGR		MANUAL, CP-1806, ENGLISH		DRAWING NO	N-ML00-0039-01-1
APPROVALS	DATE														
DWN XIAO FAN	2012-11-20														
CHK															
ENGR															
DO NOT SCALE DRAWING		SIZE	A4	SCALE	1:1	SHEET	1 OF 3								

# CP-1806 HDIR Motion Sensor

## Operation and Specifications

# SUREN

The CP-1806 is a motion sensor based on SUREN HDIR™ (High-Definition Infrared) passive infrared technology, which is used to detect people moving in a room by sensing their motion. The sensor provides excellent presence detection capability with its specially designed eight-element interleaved IR detector and multi-segment lens array.

The CP-1806 is recessed for an attractive, unobtrusive appearance, while it still monitors a full 6-meter circular area from a 2.4m height. The sensor is a three-wire unit, and is fitted with a high-capacity relay that is capable of driving a wide range of load types, including lighting or HVAC devices.

### SUREN HDIR™

Many passive infrared sensors exhibit inconsistent detection ranges (or sensitivities to motion) in different directions from the sensor's mounting location. SUREN's patented (and patent-pending) HDIR™ technology eliminates this directional inconsistency. Furthermore, HDIR™ technology allows detection of either a small moving area of a person (e.g. an arm) or an entire person's minor body movement both without weak detection areas as so often found with conventional sensors. Moreover, HDIR™ technology allows highly sensitive occupancy sensors to be designed with small, attractive lens arrays, such as the one in the CP-1806.

### SENSOR INITIALIZATION

Following power-on, the CP-1806 sensor is fully operational after a two-minute warm-up.

### SENSOR OPERATION

Each time motion is detected, the sensor flashes the red "DETECTION" LED (if enabled by installation of JP1) for 2-6 seconds. It can be seen through the lens. The relay will close at the same time that the "DETECTION" LED is ON. (If the LED does not light, then temporarily turn sunset sensor LIGHT LEVEL adjustment fully clockwise to check.)

### SUNSET SENSOR

For lighting applications, a sunset sensor tells if ambient light is above an adjustable threshold level, thus disabling the load activation when lighting is not needed.

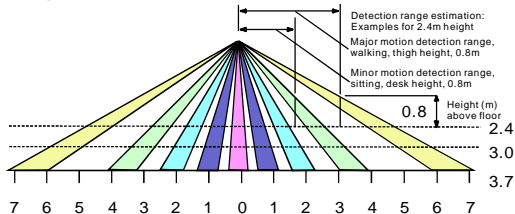
### TIME-ON

The Time-ON adjustment controls how long the relay maintains the load connection after the most recent motion seen by the HDIR™ system. Its adjustment range is from 5 seconds to 30 minutes.

### SPECIFICATIONS (continued)

**Range:** Depending on mounting height; see below.

### Sensor Optical View Pattern (side view, in meters)



**IR Detector:** Pyroelectric, 8-element interlocking

**Warm-up Time:** 1 minute

**Operating Voltage:** 220V/AC-240V/AC  
100V/AC-130V/AC

**Power Frequency:** 50Hz/-60Hz

**Basic Load:** 2000W(220-240VAC)  
1000W(100-130VAC)

**Conductors Required:** Active, Neutral, Switched Load

**Housing Material:** High-impact ABS

**Dimensions:** 98 x 73 x 128 mm ( H x W x D )

**Approvals/qualification:** UL (Pending)  
CE (Pending)

**IP Rating:** IP 44

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

**Operating Temperature Range:** -40° C to +55° C

**Maximum Load Current:** 16A General  
1000W Fluorescent  
1000W Incandescent

### SPECIFICATIONS

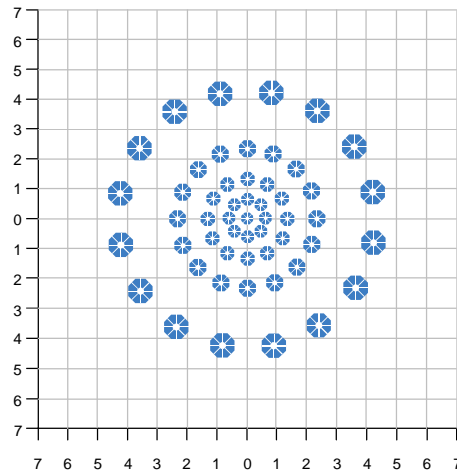
#### Optical Fields-of-View:

Long-range	Mid-range	Short-range	Look-down
256	96	64	8

#### Sensor Optical View Pattern

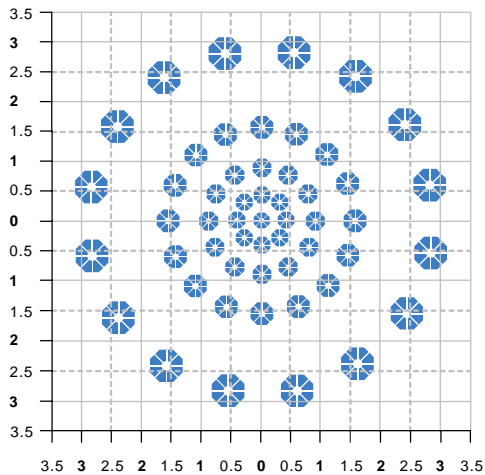
Field-of-view intersection with floor

(Top view, in meters, 2.4m mounting height)



Field-of-view intersection with desk (0.8m high)

(Top view, in meters, 2.4m mounting height)



Limitations of Sensor Products: Sensor products and associated systems do not offer guaranteed performance in ordinary situations or in special situations including but not limited to burglary, fire, or other emergencies. They may fail to function for diverse reasons, including (but not limited to): power failure, dead batteries, improper installation, coverage "blind spots," coverage areas overlooked during installation, component failure, or inadequate maintenance. Sensors and their associated systems should be checked weekly to ensure that all devices are working properly.

#### SUREN LIMITED WARRANTY

SUREN Systems, Ltd., of Fo Tan, Shatin, Hong Kong, warrants its products to be in conformance with its own plans and specifications and to be free from defects in materials and workmanship under normal use and service for twelve months from the date of original purchase. Seller's obligation shall be limited to repairing or replacing, at its option, free of charge for materials or labor, any part which is proved not in compliance with Seller's specifications or proves defective in materials or workmanship under normal use and service. Seller shall have no obligation under this Limited Warranty or otherwise if the product is altered or improperly repaired or serviced by anyone other than Seller. For warranty service, return transportation prepaid, to SUREN Systems, Ltd., Unit 15, 12/F, Block B, Wah Sang Industrial Building, 14-18 Wong Chuk Yeung Street, Fo Tan, Shatin, Hong Kong. Seller has no obligation to attend the buyer's location to retrieve the goods or make repairs on site.

There are no warranties, expressed or implied, of merchantability, or fitness for a particular purpose or otherwise, which extend beyond the description on the face hereof. In no case shall seller be liable to anyone

for any consequential or incidental damages for breach of this or any other warranty, express or implied, or upon any other basis of liability whatsoever, even if the loss or damage is caused by its own negligence or fault.

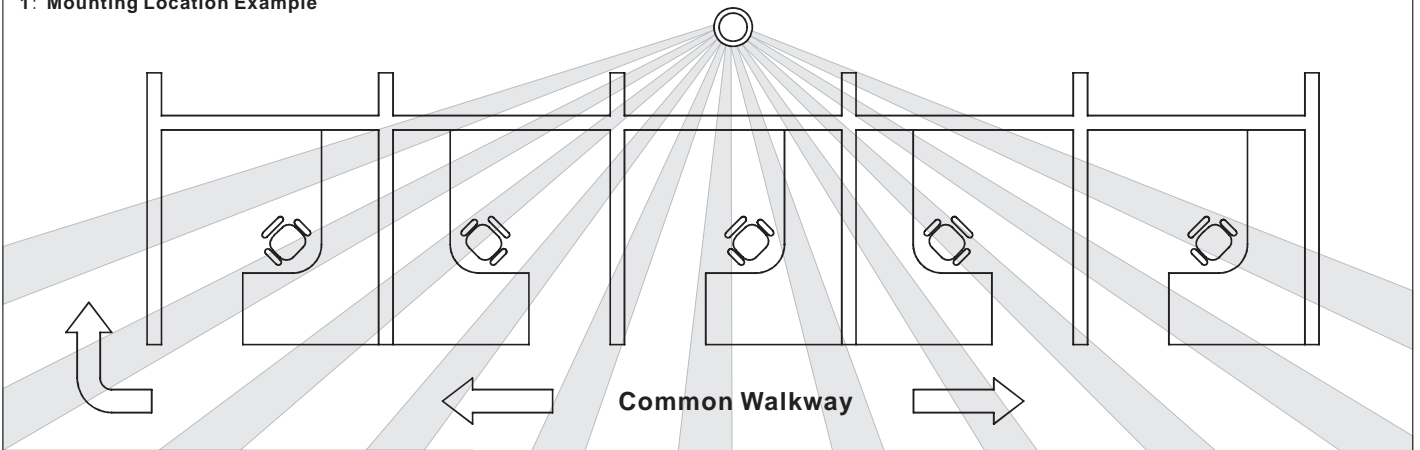
Seller does not represent that the products it sells may not be compromised or circumvented; that the products will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; or that the products will in all cases provide adequate warning or protection. Customer understands that a properly installed and maintained alarm system may only reduce the risk of a burglary, robbery, or fire without warning, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result.

Consequently, seller shall have no liability for any personal injury, property damage or other loss based on a claim the product failed to give any warning. However, if seller is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, seller's maximum liability shall not in any case exceed the purchase price of the product, which shall be the complete and exclusive remedy against seller.

This warranty replaces any previous warranties and is the only warranty made by Seller on this product. No increase or alteration, written or verbal, of the obligations of this Limited Warranty is authorized.

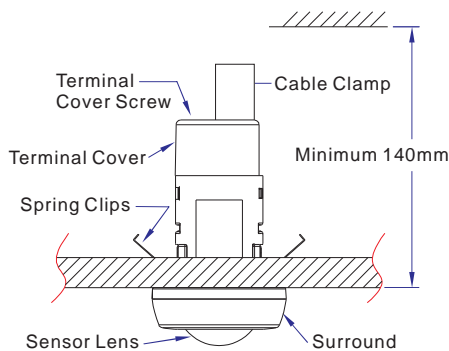
U. S. Patent NO: 7, 579, 595 Patents pending worldwide.

### 1: Mounting Location Example



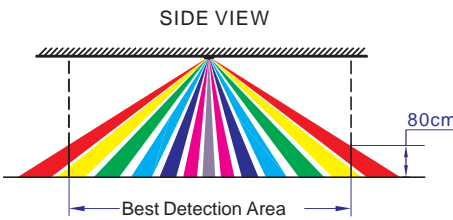
### 2: Location Choices

The sensor may be mounted in a drop-ceiling panel. Two metal springs serve to retain the sensor in the panel.



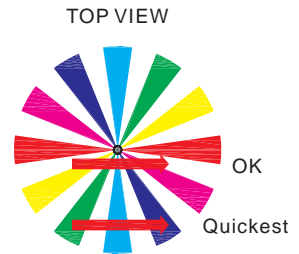
### 3: Detection Area

The sensor's outer limit of detection is where its outer field-of-view descends below about 80 cm from the floor. This depends on mounting height. Locate the sensor so that a person entering the area will pass through an outer field of view to 80 cm or higher from the floor.



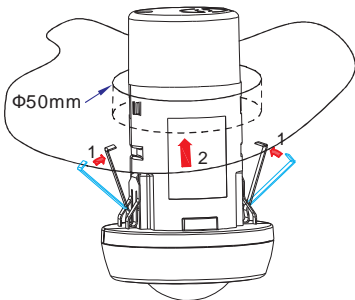
### 4: Mounting Location

For quickest load activation, locate the sensor so that a person entering the area will not be following a straight line leading directly under the sensor. This way, the person entering will be crossing the (radial) fields of view - the best way to be "seen" by the sensor.

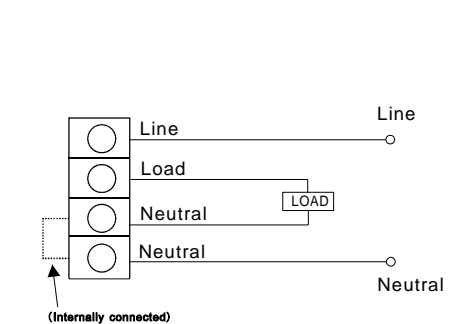


### 5: Sensor Installation

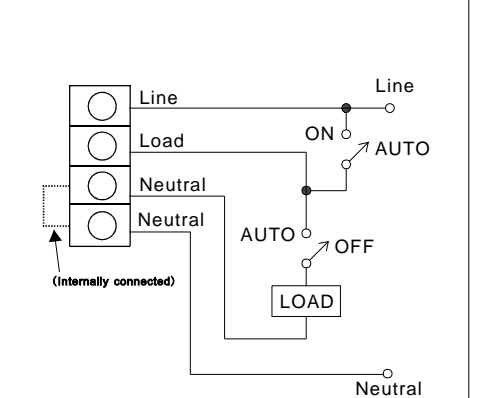
Cut a 50mm circular hole in the drop-ceiling panel. Press the retaining springs together, then push the springs and the sensor base through the ceiling panel hole until the sensor rim is seated against the panel.



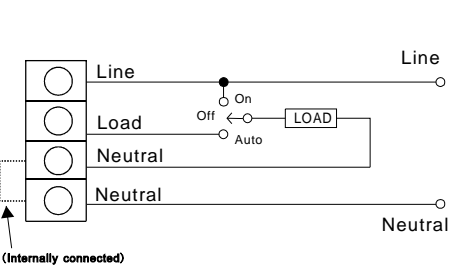
### 6: Wiring Diagram Automatic Operation



### 7: Wiring Diagram: Manual Override

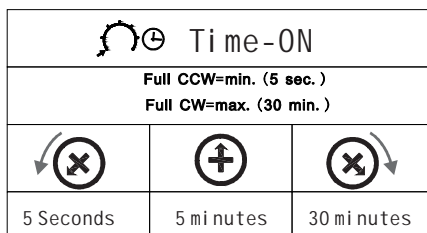


### 8: ON/OFF/Automatic



### 9: Time-ON Adjustment

Each time motion is detected, the load remains activated for a pre-set time, which is set by the Time-ON adjustment. The fully counter-clockwise setting (5 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 ON time has passed since the latest motion detection.



### 10: Sunset Sensor Adjustment

When ambient light is just at a "no lighting necessary" level, and with the sensor mounted in its normal place, remove the surround, and set the Light Level control fully clockwise, and the Time-ON adjustment counter-clockwise to 5 seconds (minimum). Replace the surround and walk under the sensor. The LED should light, indicating detection (and load-activation output). Again remove the surround, adjust the control a little counter-clockwise, replace the surround and test. Continue until the LED does not light during walking. Range-100-3000 LUX.

