Wattstopper®

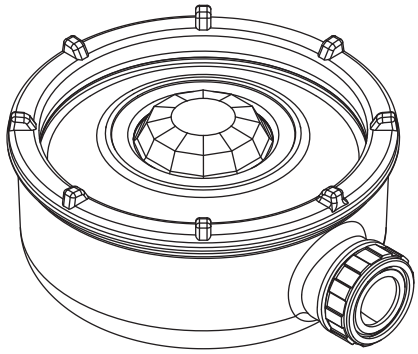
High Bay • Line Voltage • Passive Infrared
IP65 Occupancy Sensors for Wet Locations

No: 24141 – 02/17 rev. 1

Installation Instructions • Instructions d'Installation • Instrucciones de Instalación

Catalog Number • Numéro de Catalogue • Número de Catálogo: HB350W-L3

Country of Origin: Made in China • Pays d'origine: Fabriqué en Chine • País de origen: Hecho en China



SPECIFICATIONS

Voltages..... 120/277VAC,60Hz
Load Requirements
@120VAC, 60Hz .....0-800W ballast or tungsten
@277VAC, 60Hz .....0-1200W ballast
@120VAC.....1/6 hp
Wiring cable..... 3 or 4-conductor 18AWG stranded, UL Style 2517
Unit Dimensions .....4.08" diameter, 1.88" thick
Threaded nipple .....0.81" diameter, 0.40" long
fits standard 1/2" electrical conduit fitting
Weight ..... 0.28 lb (130 grams)
Material..... Polycarbonate, UL94-5VA flame retardant material,
UV resistant, indoor use only,
minimum plastic wall thickness 2.5mm
Environment .....IP65 Compliant
Operating temperature .....-40°F (-40°C) to 131° F (55°C)
Storage temperature .....-40°F (-40°C) to 176°F (80°C)
Operating humidity .....5 to 95% RH, non-condensing
Maximum Dew Point .....29°C (85°F)
US Patents: .....5,640,113 and 5,804,991

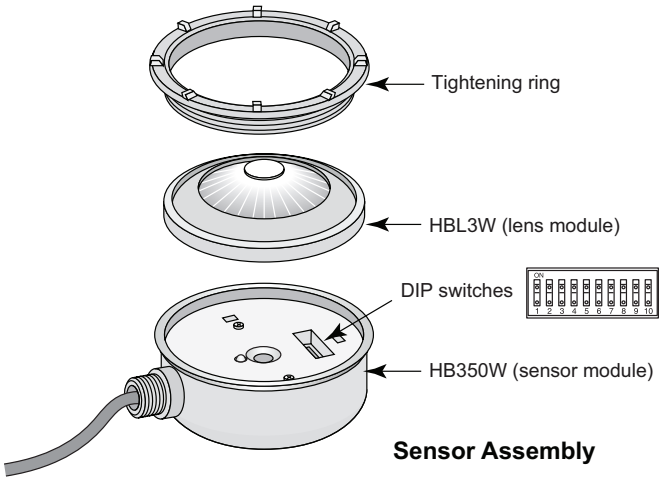
DESCRIPTION AND OPERATION

The HB350W-L3 occupancy sensors is designed for automatic lighting control in high bay wet location applications. The sensor is modular and are made up of two parts, a Sensor Module (HB350W) and a Lens (L3). The sensor uses a set of DIP switches to set the time delay and PIR sensitivity as explained on page 2. The HB350W-L3 provides a single load controlling relay.

INSTALLATION OVERVIEW

1. Review the ADJUSTMENTS section and complete any necessary DIP switch setting changes.
2. Mount the sensor so the lens is below the edge of the fixture and away from the lamps. Heat from the lamps could affect the sensor operation.
   Make sure that you have the appropriate accessories for the sensor mounting configuration. (See Mounting Options.)
3. Assemble any necessary mounting accessories and attach them to the sensor module. Make sure that the flying leads from the sensor module cable are accessible inside the fixture.
4. Connect the line voltage and load wires to the sensor leads as shown in the applicable Wiring Diagram for the sensor module.
   - Do not allow bare wire to show.
   - Make sure all connections are secure.
   - Check all gaskets for watertight fit.
5. Check sensor operation. Refer to the TESTING section.
6. Attach the Lens to the HB350W-L3 as shown in the sensor assembly drawing.

CAUTION
TURN THE POWER OFF AT THE CIRCUIT BREAKER BEFORE INSTALLING THE SENSOR.



Sensor Assembly

COVERAGE AREA

The coverage area is determined by the lens. The lenses are interchangeable with any HB350W series sensor module.

For a description of lens coverage patterns, see the LENS COVERAGE section in this instruction sheet.

ADJUSTMENTS

The sensor is pre-set at the factory to meet the requirements of most applications. Review this section if your application requires changing factory pre-sets.

Sensor factory pre-sets are as follows (default settings are **bold**):

Factory Switch Settings (N/A = not applicable, no effect)

1	2	3	4	5	6	7	8	9	10
ON	**OFF**	**OFF**	**OFF**	**OFF**	**ON**	**ON**	**OFF**	**N/A**	**N/A**

PIR Sensitivity (switches 1&2).....**Normal**
Time Delay (switches 3-7) ..... **15 minutes**
Override (switch 8)....**Occupancy control enabled**

PIR Sensitivity (Switches 1-2)

The factory setting (Normal) is suitable for most applications, but it may be necessary to adjust the PIR sensitivity if there is any environmental interference causing false triggers or if sensitivity needs to be increased for your particular application. Use DIP switches 1 & 2 to adjust sensitivity.

Switch	1	2	PIR SENSITIVITY
	OFF	OFF	High
	ON	**OFF**	**NORMAL**
	OFF	ON	Medium
	ON	ON	Low

Time Delay (Switches 3-7)

Use DIP switches 3 to 7 to adjust the time delay.

Switch	3	4	5	6	7	TIME DELAY
	ON	ON	ON	ON	ON	15 seconds
	OFF	ON	ON	ON	ON	5 minutes
	OFF	OFF	ON	ON	ON	10 minutes
	OFF	**OFF**	**OFF**	**ON**	**ON**	**15 minutes**
	OFF	OFF	OFF	OFF	ON	20 minutes
	OFF	OFF	OFF	OFF	OFF	30 minutes

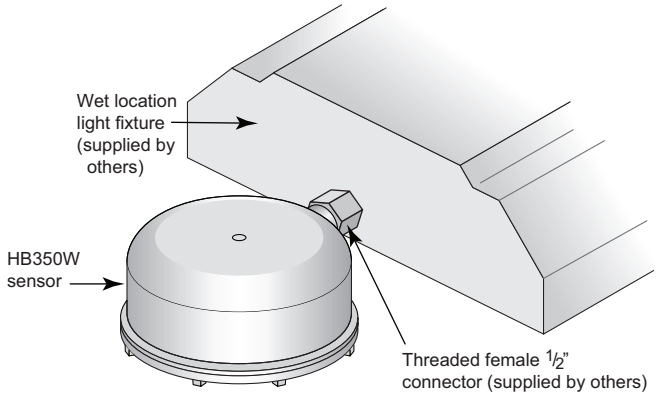
Override (Switch 8)

The override disables the occupancy control feature of the HB350W-L3 sensor module. When occupancy control is disabled, the load remains **ON** as long as the sensor is powered.

Switch	8	Load Effect
	OFF	**Controlled by Occupancy**
	ON	PIR override. Load always ON

MOUNTING OPTIONS

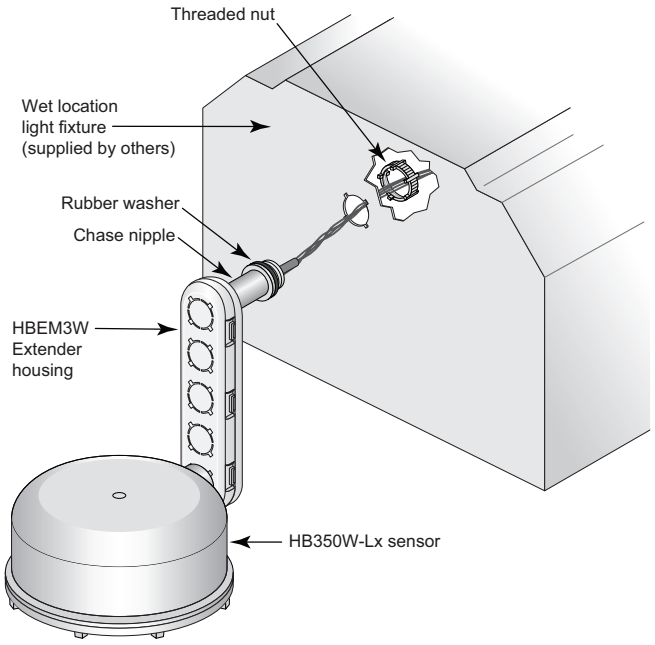
As shown in the illustration, the HB350W-L3 can be attached directly to a watertight fixture or junction box that is equipped with a threaded nipple. The center of the threaded nipple should be no more than approximately one inch (1") from the bottom of the fixture to avoid blocking the sensor's view.



HB350W-L3 attached to a watertight light fixture

The **HBEM3W** extender module allows attaching the sensor to the side of the fixture so that the lens can be positioned below the bottom edge of the fixture. The wiring cable is threaded through it and into the fixture for connection. The two sides of the HBEM3W snap together to protect the cable.

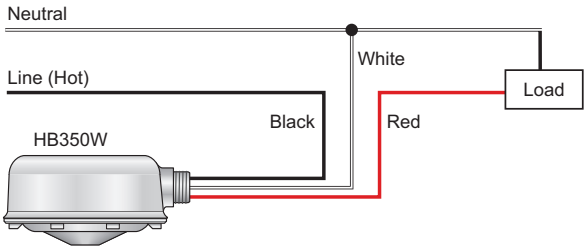
The extender housing is not watertight, but the inner flange rings on the chase nipple and the HB350W-L3 housing fit into grooved rubber rings on the the cable. This keeps moisture from entering the fixture and sensor at those locations.



HB350W-L3 attached to a watertight light fixture using HBEM3W

WIRING

120/277VAC Wiring (HB350W)



IMPORTANT START-UP INFORMATION

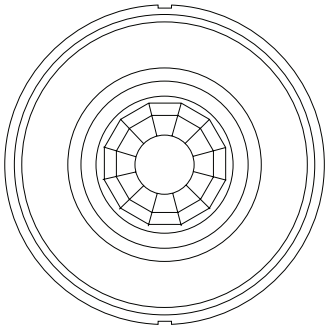
A 60-second start-up period occurs during initial installation and after a power failure of 5 minutes or more. After applying power to the sensor wait at least 60 seconds for the sensor to begin detecting occupancy and the load to turn **ON**. It may turn ON during the start-up period, depending on the state of the relay when power was off.

- If the sensor detects occupancy during the start-up, when the load turns **ON** it stays **ON** as long as the sensor continues to detect motion, plus the Time Delay.
- If no occupancy is detected during the 60-second start-up, the load may come on anyway during the start-up. If no occupancy is detected by the time the start-up is complete, the relay opens and the load turns **OFF**.

LENS COVERAGE

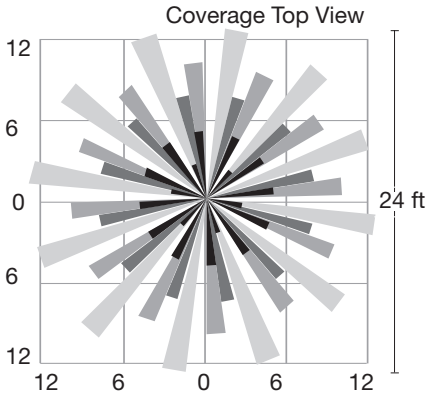
The HB350W-L3 has a multi-cell, multi-tier Fresnel lens with a 360° view. Coverages shown in the diagrams are maximum. They represent coverage for full-step walking motion, with no barriers or obstacles. Temperature variations may affect coverages and sensor detection.

HB350W-L3 360° Lens.

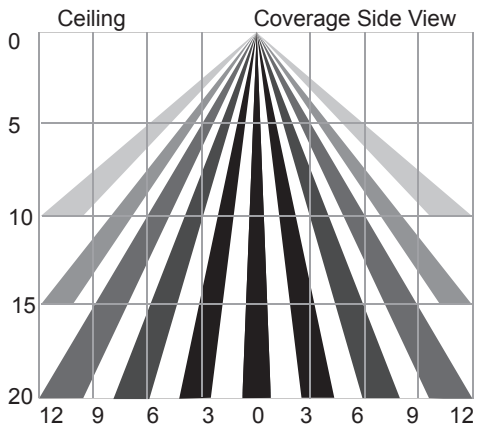


The -L3 has a high density lens that covers a 24’ diameter area at a height of 20’ as shown in the coverage diagrams.

HB350W-L3 top coverage pattern



HB350W-L3 side coverage pattern



* Ambient temperature variations in unconditioned spaces may affect sensor detection and coverage areas.

TESTING

1. When mounting and wiring are complete, cover up the sensor to prevent it from detecting motion.
2. Apply power to the sensor and light fixture. Lights may turn **ON** during the 60-second start-up period.
3. Wait for the start-up period to end. For the next 1 to 2 minutes the sensor runs through a self-diagnostic routine.
4. If the load came on during the start-up period, wait for it to turn **OFF**, indicating the self diagnostic routine is complete.
5. Uncover the sensor and confirm that when the sensor detects motion, it’s red LED blinks and the light turns **ON**.
6. Disconnect power.
7. Attach the lens as shown in the assembly drawing. Tighten securely to ensure that seal is complete.

TROUBLESHOOTING

To confirm proper operation, review the Start-Up and Testing information.

Red LED on sensor module does not blink:

Check for proper sensor wire connections and make sure they are tightly secured.

Red LED blinks but lights do not turn ON:

1. Make sure that power to the sensor has been ON continuously for at least one minute, then
   a. Turn **OFF** power to the sensor.
      The relay will close.
   b. Turn **ON** power to the sensor.
      The load should come **ON**. If not, continue with step 2.
2. Check power connections to the load.
3. Check all sensor wire connections. Verify the load wire is tightly secured.

Lights will not turn OFF:

1. If there is no motion from people or equipment in the sensor's view but the red LED blinks, look for any nearby source of infrared energy (heat) in motion, such as turbulent air from a heating or cooling supply, or other sources such as heat from the fluorescent lamps in the fixture.
   - Mount the sensor so that it's lens is below the edge of the fixture and does not directly view the lamps.
   - Divert the air supply away from the sensor, or move the sensor.
2. Verify time delay set in switches 3-7. The time delay can be set from 15 seconds to 30 minutes. Ensure that the time delay is set to the desired delay and that there is no movement within the sensor's view for that time period.
3. Check Override DIP switch setting. If switch 8 is **ON**, the PIR is overridden. Occupancy control functions are overridden and the load stays **ON**.
4. Check sensor wire connections. Verify that all connections are complete.

ORDERING INFORMATION

Catalog #	Description
HB350W-L3	120/277VAC IP65 Sensor module in watertight enclosure with coverage @ 20' mounting height and 24' diameter
Optional mounting accessories	
HBEM3W	Extender module with 1 chase nipple, extender housing, rubber washer, two threaded nuts

All units are White.
To order preassembled custom configurations of sensors, lenses and mounting accessories, contact technical support.

WARRANTY INFORMATION

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