

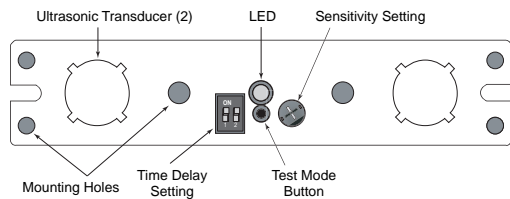
FSL-505 Motion Sensor Board Operating Instructions:

The FSL-505 is an ultrasonic sensor designed to integrate into specially designed lighting fixtures. The Watt Stopper FS sensors are advanced ultrasonic occupancy sensors with a 40 kHz frequency. Utilizing advanced omni-directional, Doppler technology, the sensor detects movement in a controlled area and then switches lighting on through a Watt Stopper Power Pack or our specially designed LED driver. Upon occupancy detection, an adjustable time delay keeps the lights on for a set period of time. If there is no detection of movement during the present time delay period, the light will turn off or go dim.

Specifications: (apply to internal sensor circuit board and power pack only)

Voltage:	24VDC	Sensitivity Adjustment:	Trimpot (min to max)
Current Consumption:	50mA	Operating Temperature:	0° C to +40° C
Power Supply:	The Watt Stopper FS-PP	Operating Humidity:	5% to 95% RH non-condensing
Maximum Current Output:	70mA	Time Delay Adjustment:	5 minutes - 30 minutes
Ultrasonic Frequency:	40 kHz		15 minutes recommended

Sensor Adjustment: (Trimpot)



Time Delay Adjustment: (Dip Switch)

Time Delay	Minutes
1 2	5
• •	10
• •	15
• •	30
• on	– off

The adjusting screws are delicate! Adjustments must be made carefully. ONLY use a small phillips driver for sensitivity adjustments. DO NOT turn screw past Min or Max setting. Damage will occur by turning past limits.

Note: Facing the sensor with the transducers aimed toward you and LED on top, the Sensitivity Trimpot is RIGHT center and the Time Delay Dip-Switch is LEFT center.

Time Delay (Dip-Switch): The time delay is the length of time the lights stay on after no motion has been detected. It is set with the dip-switch. Minimum is 5 minutes, maximum is 30 minutes. Refer to chart above for settings. Note - NEMA recommends a minimum 15 minute time delay for fixtures that are cycled on/off to prolong lamp life.

UNIT IS INTENDED TO BE INSTALLED BY A QUALIFIED ELECTRICIAN

TROUBLESHOOTING - BEFORE CALLING FACTORY CHECK THE FOLLOWING:

FIXTURE IS PROPERLY EARTH GROUNDED - USE A METER

FIXTURE HAS PROPER POLARITY - IF REVERSED SENSOR WILL APPEAR TO BE WORKING BUT NOTHING WILL HAPPEN **THERE ARE NO LOOSE CONNECTIONS -** CONFIRM WIRES ARE INSERTED INTO LED BOARDS FROM DRIVER AND THAT LED BOARDS ARE PLUGGED INTO DRIVER LEADS. IF UNIT IS EQUIPPED WITH WATT STOPPER POWER PACK, CHECK LEADS GOING INTO POWER PACK AND DRIVER DISCONNECT AS WELL.

CONFIRM SENSOR IS PLUGGED INTO RJ-45 CONNECTOR COMING FROM DRIVER OR WATT STOPPER POWER PACK (DEPENDENT ON MODEL).

THERE IS ACTUALLY POWER TO THE FIXTURE - UNIT IS DESIGNED TO OPERATE AT 120 VOLT - 277 VOLT ONLY

IF EQUIPPED WITH EMERGENCY BATTERY PACK, ENSURE THAT SEPARATE BATTERY MODULE IS CONNECTED TO EMERGENCY LED DRIVER.

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www.lamarled.com | www.occusmart.com

OCCLUSMART INSTRUCTIONS
VOL GEN 3 R2



occu-smart®

IMPORTANT!!!

**THESE INSTRUCTIONS MUST BE FOLLOWED FOR PROPER OPERATION OF THIS FIXTURE
SAVE THESE INSTRUCTIONS**

IMPORTANT SAFEGUARDS:

WHEN USING ELECTRICAL EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED INCLUDING THE FOLLOWING:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

- CAUTION - RISK OF FIRE OR ELECTRIC SHOCK
- DISCONNECT POWER PRIOR TO INSTALLATION - DO NOT CONNECT THE FIXTURE TO A/C MAINS WHILE POWER IS ON!
- DO NOT USE OUTDOORS!
- EQUIPMENT SHOULD BE MOUNTED IN LOCATIONS AND AT HEIGHTS WHERE IT WILL NOT BE SUBJECTED TO TAMPERING BY UNAUTHORIZED PERSONNEL
- THE USE OF ACCESSORY EQUIPMENT NOT RECOMMENDED BY THE MANUFACTURER MAY CAUSE AN UNSAFE CONDITION
- DO NOT USE THIS EQUIPMENT FOR OTHER THAN ITS INTENDED USE
- THIS UNIT IS INTENDED TO BE INSTALLED BY A QUALIFIED ELECTRICIAN
- DISCONNECT ALL POWER SOURCES BEFORE INSTALLATION
- UNITS **MUST BE GROUNDED** AND INSTALLED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES
- ALL SERVICING SHOULD BE PERFORMED BY QUALIFIED PERSONNEL
- **DISCONNECT POWER BEFORE SERVICING OR REPLACING LED BOARDS AND DRIVERS**

IT IS THE RESPONSIBILITY OF THE INSTALLER TO PROPERLY COMMISSION THESE UNITS

OCCLUSMART FIXTURES EQUIPPED WITH ULTRASONIC SENSORS MAY NOT OPERATE PROPERLY IN AREAS PRONE TO DRAFTS OR EXPOSED TO HVAC EQUIPMENT

PROPER POLARITY IS CRITICAL TO THE NORMAL OPERATION OF THESE UNITS

Warranties

Occu-Smart® Fixture Warranty

All non-electrical equipment is warranted for a period of one year. A replacement part will be furnished in exchange for any part in a fixture, excluding lamps, which under normal use and service proves defective within one year after purchase. This warranty is null and void if fixtures are installed in a manner other than stated normal conditions. If fixtures have been subjected to abnormal stresses, such as, but not limited to, ambient room temperature or ceiling plenum temperature exceeding 90 degrees F; or if the voltage is more than 5% above the rated line voltage of the driver; or if "insulating blankets" are installed closer than 1" from recessed fixture sides and tops or if surface units are mounted to low density combustible ceilings, thus causing overheating and driver failure. Consult factory if application requires low operating temperatures. Units returned to the factory pre-paid will be repaired or replaced at no charge if the defect is due to defects in materials or workmanship during the warranty period. Damage due to negligence, vandalism or other environmental conditions is not covered under this or any other stated warranties. **NO LABOR CHARGES WILL BE BORNE BY LAMAR LED FOR REMOVAL OR REINSTALLATION OF PRODUCTS WITHOUT PRIOR WRITTEN AUTHORIZATION.**

Certification and Affiliations

All items U.L. Listed and IBEW Union Made

Driver and LED Warranty

All ballasts used by LaMar LED are those of recognized manufacturers and are warranted by the applicable manufacturer for a period of 60 months from the date of manufacture. Any defects in drivers or LED boards occurring out of normal usage will be replaced on a no-charge basis, provided that such failure is within the warranty period. **No allowance for labor charges involved in replacing components will be borne by LaMar LED.** Should there be a part failure, advise us immediately and we will notify the manufacturer of the difficulty and they in turn will notify you as to disposition of this problem. **Do not proceed with repairs until authorization is received from the component manufacturer.**

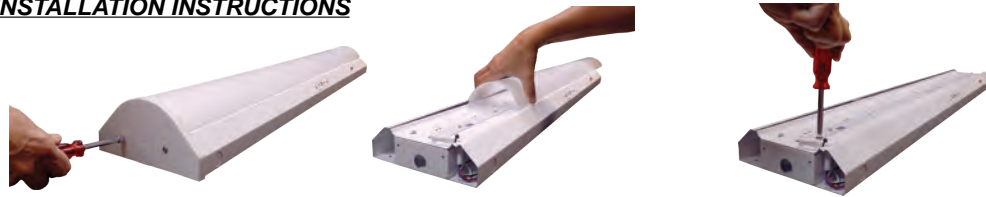
Ultrasonic Occupancy Sensor Warranty

The Watt Stopper®, Inc. warrants its products to be free of defects in materials and workmanship for a period of five years. There are no obligations or liabilities on the part of The Watt Stopper, Inc. for consequential damages arising out of or in connection with the use or performance of this product or other indirect damages with respect to loss of property, revenue or profit, or cost of removal, installation or reinstallation. This warranty covers replacement parts only, no labor. Damage to the sensor components as a result of improper installation, adjustments or vandalism is specifically excluded.

Emergency Battery Pack Warranty (on units so equipped)

Internal emergency packs are warranted by their respective manufacturer for 1-5 years from date of manufacture, provided that the failure is due to defects in materials or workmanship. Repair or replacement will be made at no charge if testing and inspection show that operating conditions have been within specified limits. **Neither battery pack manufacturer nor LaMar LED will be responsible for any labor or back charges without prior written consent. This warranty is for replacement parts only - not removal or replacement labor.**

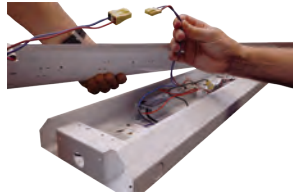
INSTALLATION INSTRUCTIONS



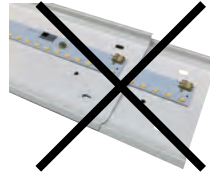
1) Remove one end cap.

2) Slide plastic diffuser back several inches and gently squeeze sides of diffuser to disengage diffuser from fixture. Diffuser may be slid completely off if space allows.

3) Remove four hex head screws or 1/4 turn fastener securing LED board tray to fixture.



Place LED gear try in safe position and avoid stacking gear trays on one another to prevent damage to the LEDs. **Physical damage to the LEDs is not covered under warranty.**



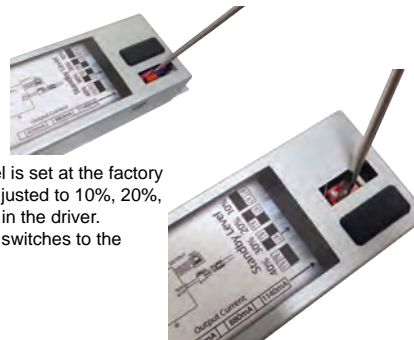
4) Carefully lift tray out of fixture and disconnect the plug connecting wires to the LED driver (if connected).

5) Secure luminaire to wall or ceiling using the mounting holes with appropriate mounting hardware suitable to support the weight of the fixture (not included). Luminaire should not be supported by junction box only. If mounting to sheetrock, suitable drywall fasteners or anchors must be used.

6) Occusmart fixtures must be connected to unswitched power in order to function as intended. Connect black (hot) and white (neutral) to incoming power using proper size wire nuts or appropriate electrical connector (not included). Connect building ground wire to GREEN ground wire riveted to luminaire housing using suitable wire nut or connector. **Sensor will not function properly if polarity is reversed.** For units equipped with battery backup, connect red lead to constant power.

7) **Occupied mode light level adjustment** (adjustments should be done with power disconnected) LED driver output is adjustable. Units are typically shipped in the low setting which is suitable for many applications and offers maximum energy savings.

If higher light levels are desired when motion is detected, remove the rubber plug from the driver using a small screwdriver or similar and carefully slide the switch located in the driver to the medium or high setting as indicated on driver label. Replace rubber plug.



8) **Unoccupied mode light level adjustment** - Standby mode light level is set at the factory to approximately 10% of full (occupied mode) output. Output may be adjusted to 10%, 20%, 30% or 40% (nominal) of full light output using the DIP switches located in the driver. Using a small screwdriver, ball point pen or similar, carefully set the DIP switches to the desired standby light level as indicated on the label.

For units WITHOUT battery backup, skip to step 10

9) For some units equipped with Emergency Battery Backup, locate black plug coming from battery as shown and insert plug into receptacle on emergency driver. (Make sure to insert plug until latch engages). Battery should be fully charged for 24-36 hours prior to testing but LEDs may light up when plug is inserted. **Batteries are NOT shipped fully charged.** If LEDs extinguish quickly or do not come on, battery is depleted and must be charged prior to testing.



10) Connect wire connector plug from LED gear tray to LED driver.

11) Position LED gear tray and secure with screws or 1/4 turn fastener removed in step 3.

12) Install plastic diffuser by sliding on and/or gently squeezing so grooves engage in steel housing. Reinstall end cap(s).

13) Energize fixture - Fixture should fully light upon application of power.

14) **Sensor adjustment** - When fixture is energized, the red LED indicator on the motion sensor will light up indicating it is detecting motion. Using a ball point pen or similar, lightly depress the black button (walk test button), below the red LED, once. Do NOT hold it in, just a quick push. This will put the sensor in a 5 minute test mode. Time delay during this mode is 5-10 seconds. Stand perfectly still. All doors and windows in area should be closed as strong air movements may be detected as motion. Red light will go out when no motion is detected and lights will dim. When motion is detected, the red LED should flash and light level of fixture will come to full brightness.



If the light output does not dim and the red LED is on steady, the sensitivity must be adjusted downward using a small Phillips head screwdriver. Use of a straight tip screwdriver is **NOT RECOMMENDED** as it could allow the trimpot to be over-turned. **DO NOT OVERTURN THE TRIMPOT PAST ITS LIMITS. PERMANENT DAMAGE TO THE SENSOR WILL OCCUR AND IS NOT COVERED UNDER WARRANTY.**

Within the 5 minute test mode, walk away and go up or down the stairs and stand perfectly still. The lights should dim within 10 seconds. If they do not and the red LED is lit or intermittently flashing, the sensitivity must be adjusted down slightly. If the light level stays low and your motion is not detected, increase sensitivity lightly. All adjustments should be made in small increments.

After roughly 5 minutes have passed, fixture will resume normal operation. If adjustments have not been completed satisfactorily during this time, press walk-test button once to re-engage.

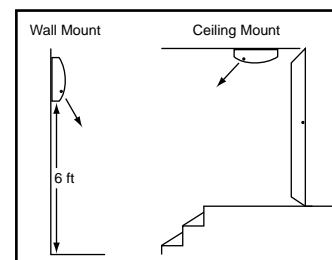
15) **Time delay adjustment** - Time delay is factory set for 15 minutes. If this needs to be changed, using a ball point pen or small flat tip screwdriver, adjust the dip switches to the settings shown for desired time delay (see chart for settings).



16) **For units with emergency battery pack** - Units must be fully charged prior to testing. Full charge takes 24-36 hours depending on battery model (10W=24 hours, 16W=36 hours). The red indicator light on the test button will glow red indicating unit has power and is charging. To test operation, press the button and hold. Lights will dim. Releasing button will resume normal operation. Battery backup unit will supply emergency illumination for at least 90 minutes at reduced light level. For periodic 90 minute test, power to fixture must be disconnected or main breaker shut off. Replacement battery packs are available by contacting LaMar LED.

For ceiling mounting in typical stairwell, luminaire should be mounted with sensor facing the stairs. For wall mounting, luminaire should be mounted at least 6' off the ground with sensor facing downward.

SENSOR SHOULD NOT BE OBSTRUCTED BY PHYSICAL OBJECTS WITHIN AT LEAST 3'
Detection zone should be clear of physical objects to maintain proper sensor operation.



Sensor sensitivity is preset to approx. 1 o'clock. Turning the sensitivity to MAX or MIN in small areas may result in sensor malfunction.