Dual Technology Wall Mount Occupancy Sensor

The LOS-WDT Series dual technology sensor can be mounted to a wall or ceiling for use in spaces with pendant fixtures, ceiling fans, or high ceilings (higher than 12 ft [3.7 m]). The technology eliminates manual sensitivity and timer adjustments during installation and over the life of the product.

Designed to meet the challenges found in a wide variety of spaces, the sensor works well in spaces with overhead fans and space heaters. Ideal for use in work areas, storage facilities, storerooms, indoor garages, and rooms with pendant fixtures.

Features
- Intelligent, continually adapting sensor
- Ultrasonic (US) combined with Passive Infrared (PIR) sensing provide high sensitivity, high noise immunity, and excellent false tripping immunity
- Suited for complex environments that are difficult to control with single-technology sensors
- Use in rooms with pendant fixtures and storage areas
- Flexible base mounting on wall or ceiling
- Aim and lock: base mount permits fast alignment
- Non-Volatile Memory: settings saved in protected memory are not lost during power outages
- 1600 ft² (148 m²) coverage when used where the ceiling height is between 8 ft to 12 ft (2.4 m to 3.7 m)
- Affords choice of turning lights off or dimming to a preset level in the unoccupied state when integrated with a Lutron® system.

Models Available

Model	Color	Coverage	Field of View
LOS-WDT-WH	White	1600 ft² (148 m²)	110°
LOS-WDT-R-WH	White	1600 ft² (148 m²)	110°

NOTE: BAA-compliant model numbers available. Add a "U" prefix to the model number.

Self-Adaptive Feature

The LOS-WDT Series sensors combine both Ultrasonic (US) motion detection for maximum sensitivity and Passive Infrared (PIR) motion detection for false triggering immunity. The self-adapting internal microprocessor analyzes the composite sum of both signals to eliminate time-consuming adjustments and callbacks found in non-intelligent sensors.

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Job Name:	Model Numbers:
Job Number:	

Specifications

Regulatory Approvals
• UL® and cUL® listed

Power
• Operating voltage: 20 – 24 V⎓, IEC PELV/NEC® Class 2
• Operating current: 33 mA nominal
• Control output: 20 – 24 V⎓ active high logic control signal with short-circuit protection, open collector when unoccupied

Environment
• Temperature: 32 °F to 104 °F (0 °C to 40 °C)
• Relative humidity: less than 95%, non-condensing
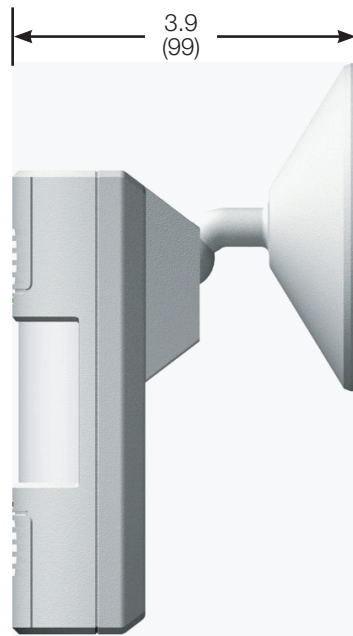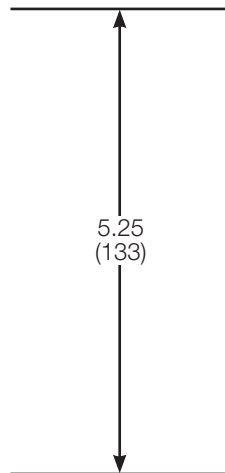• For indoor use only

Timer Adjustment
• Automatic mode: Continually adapting sensor automatically adjusts settings to the space
• Manual mode: 4 to 30 minutes
• Test mode: 8 seconds

LED Lamp
• Red: infrared motion detected
• Green: ultrasonic motion detected

Adaptive Functions
• Installation: 60 minutes
• Learning: 4 weeks for response to error conditions, air current adaptation, and timer optimization
• Post-learning occupancy periods
  —24 hour circadian occupancy periods learned
  —Weekly occupancy periods learned
• Adjustments in post-learning period
  —Generally occupied periods
    (threshold = high-sensitivity mode)
  —Generally unoccupied periods
    (threshold = miser mode)

Contact Rating (LOS-WDT-R-WH only)
• SPDT 500 mA rated at 24 V⎓ isolated relay

Photo Cell (LOS-WDT-R-WH only)
• Prevents light from turning on when there is sufficient natural light
• Sensitivity: 20 lx to 3000 lx adjustable

Dimensions

Measurements shown as: in (mm)

Front View

Side View

Job Name:	Model Numbers:
Job Number:	

Wiring: System Control

Power packs may be required when interfaced to Lutron® lighting control systems. If more than 1 occupancy sensor is connected to the same input, a power pack is required. A maximum of 3 occupancy sensors can be connected to the same input. If more than 3 sensors are required per input, use LOS-WDT-R-WH model.

Power Supply Options

Lutron® Lighting Control System	Power Pack Required?
Digital microWATT™	No
EcoSystem®	No
Energi Savr Node™	No*
GRAFIK 5000™/6000®/7000™	No, when used with seeTouch® wallstations with occupancy sensor connections.
GRAFIK Eye® 3000/4000	Yes
GRAFIK Eye® QS	No*
HomeWorks®	Yes
HomeWorks® QS	No*
LCP128™	No, when used with seeTouch® wallstations with occupancy sensor connections.
microWATT®	No
Quantum®	No*
RadioRA®	Yes
RadioRA® 2	Yes
Softswitch128®	No, when used with seeTouch® wallstations with occupancy sensor connections.

* Some system components do not supply external power for occupancy sensors. Refer to individual product specifications for more information.

Job Name:	Model Numbers:
Job Number:	

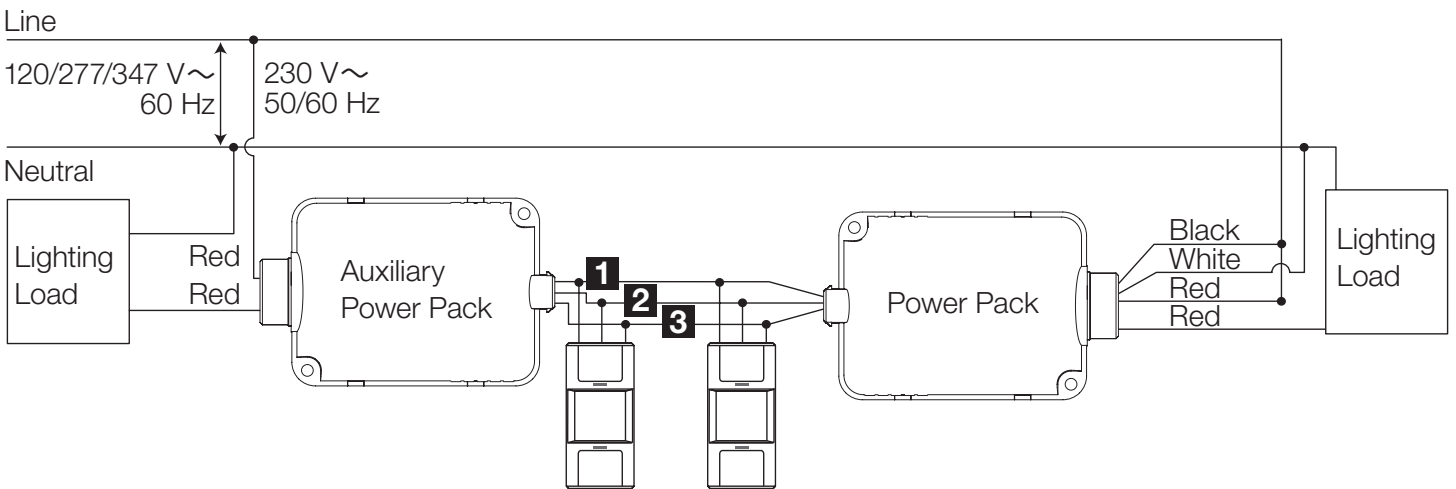369752c 4 06.04.2014

Wiring: Stand-Alone Control

1 to 3 Sensors with Power Pack
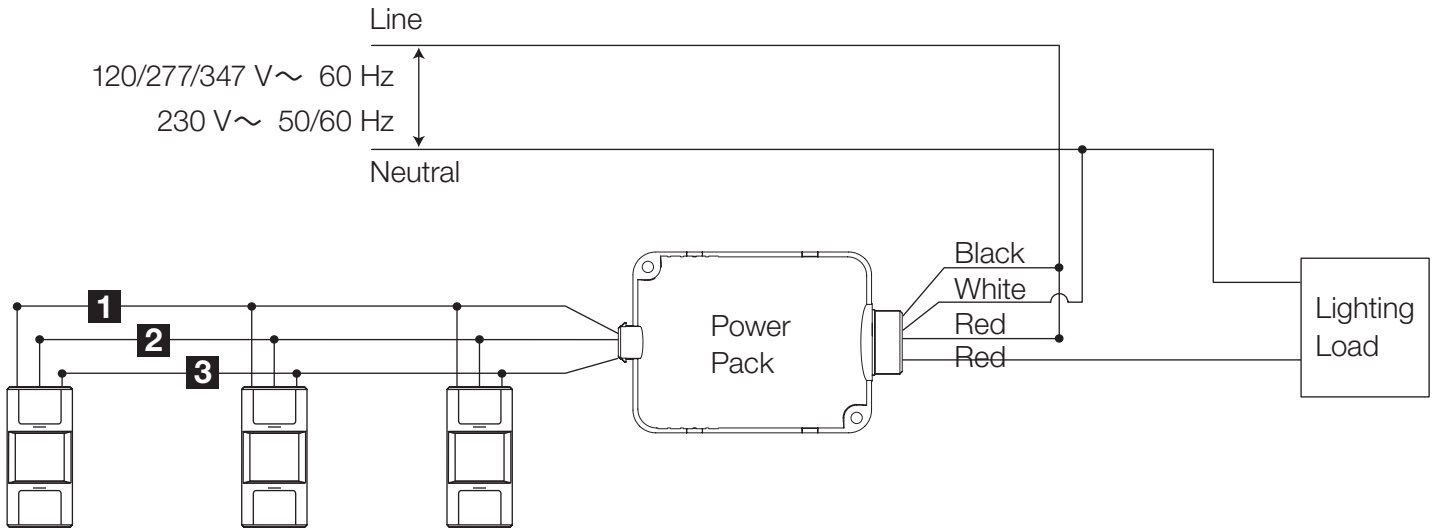
NOTE: Maximum 3 occupancy sensors.

1 Red (+20 – 24 V⎓)
2 Blue* (signal)
3 Black (common)

Switching Multiple Loads with Auxiliary Power Packs

NOTE: Maximum of 3 devices total (occupancy sensors and auxiliary power packs) can be connected to a power pack.

*Use gray wire for LOS-WDT-R-WH.

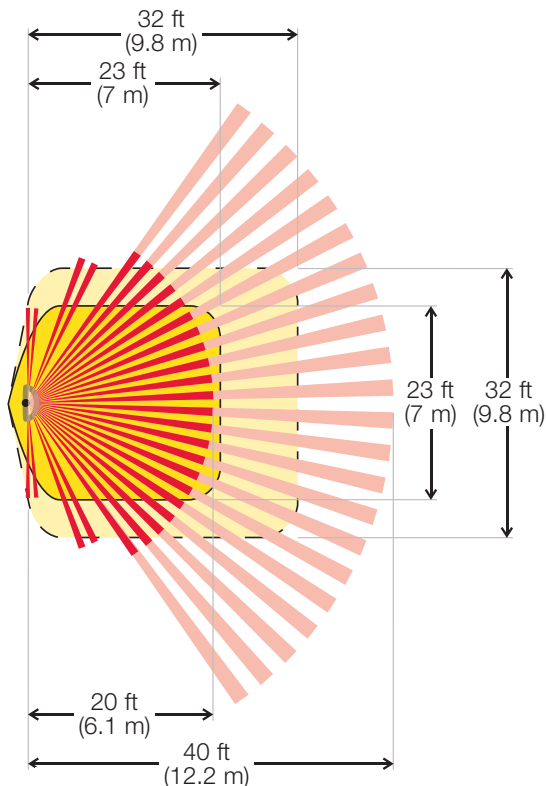| Job Name:	Model Numbers:
Job Number:	

Installation

Sensor Setup

- Sensor setup is available as a service by Lutron. For more information see the **Sensor Layout and Tuning** service document (Lutron® P/N 3601235).
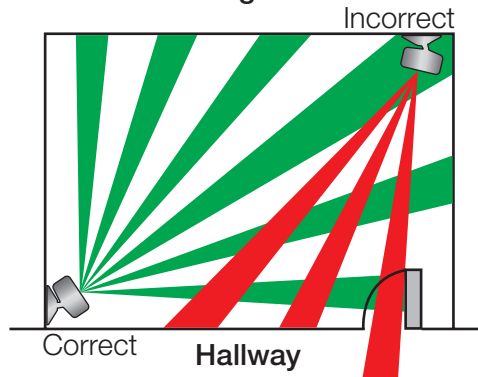
Sensor Placement

- The occupancy sensor must have an unobstructed view of the room. Do not mount behind or near tall cabinets, shelves, indirect hanging fixtures, etc.
- Do not place sensor within 6 ft (1.8 m) of air vents, air handlers, windows, fans, etc., as this may cause false triggering.
- Place the sensor on the same wall as the doorway so that traffic in a hallway will not affect the sensor.
- Closely follow the diagrams shown concerning major and minor motion coverage. The sensor can detect major motion (e.g. person taking a half-step) at a greater distance than it can detect minor motion (e.g. writing at a desk or reading a book).
- Decrease total coverage area by 15% for "soft" rooms (e.g. heavy draperies or thick carpeting).

Range Diagram

32 ft (9.8 m)

23 ft (7 m)

23 ft (7 m)   32 ft (9.8 m)

20 ft (6.1 m)

40 ft (12.2 m)

Placement Diagram

Incorrect

Correct

Hallway

Major motion detection (Ultrasonic)

Minor motion detection (Ultrasonic)

Major motion detection (Passive Infrared)
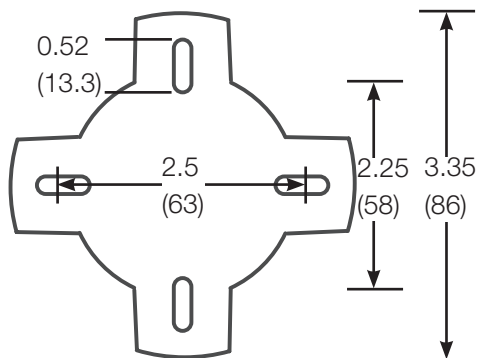
Minor motion detection (Passive Infrared)

Job Name:	Model Numbers:
Job Number:	

Mounting

The sensor can be mounted to a wall, ceiling or acoustic ceiling tile.

Mounting Plate Dimensions

Measurements shown as: in (mm)

Wire Lengths

Number of Sensors	1	2	3	1	2	1
Number of Auxiliary Power Packs	0	0	0	1	1	2
22 AWG	750 ft	375 ft	250 ft	375 ft	250 ft	250 ft
0.5 mm²	365 m	180 m	120 m	90 m	120 m	120 m
20 AWG	1200 ft	600 ft	400 ft	600 ft	400 ft	400 ft
0.75 mm²	730 m	365 m	240 m	365 m	240 m	365 m
18 AWG	2400 ft	1200 ft	800 ft	1200 ft	800 ft	800 ft

Sensor Adjustments

Override Settings

	A		Off (Default)	On
Auto/Manual	1		Automatically Turn Lights On	Manually Turn Lights On
N/A	2		Not Used	Not Used
LED Indicator	3		LED On	LED Off
Settings	4		Lock Settings	Unlock Settings (any change resets learned settings)

OFF ON

	B		Off (Default)				On			
Manual Timer {	1		OFF	} 8 minutes	OFF	} 4 minutes	ON	} 15 minutes	ON	} 30 minutes
	2		OFF		ON		OFF		ON	
Auto Timer	3		Auto Timer Adjust On				Auto Timer Adjust Off			
Auto Sensitivity	4		Auto Sensitivity Adjust On				Auto Sensitivity Adjust Off			

OFF ON

Factory Settings

A

B

Blue:
Photo cell (LOS-WDT-R-WH only)
100% default

Red:
Infrared sensitivity
75% default

Green:
Ultrasonic range
50% default

Timer Test Mode:
Push and Release – 8 second test timer (resets to Normal timer after 1 hour)
Push and Hold (flash) – Normal timer

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Job Name:	Model Numbers:
Job Number:	

Sensor Adjustments *(continued)*

### Adjusting the "Lights Not On" Level
LOS-WDT-R-WH only

1. Place timer in Test Mode (see page 7).
2. Set photo cell to maximum. Turn the blue knob full clockwise (lights on no matter how bright the natural light is), then about 30° counterclockwise.
3. Check for Lights-Out. Move from underneath the sensor, and remain still until the lights turn off. Move around normally to turn the light on.
4. Adjust to desired level. If lights remain off, adjust the blue knob another 30° counterclockwise and repeat step 3 until the lights turn on.
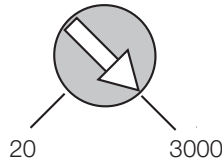
> **NOTE:** Set blue knob to 100% to disable photo cell functionality and leave secondary dry contact closure output functionality intact.
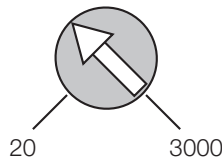
Control Settings (Blue Knob)
LOS-WDT-R-WH only

20   3000
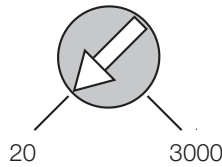
Minimum (low):
Lights will never come on, even though room is occupied.

20   3000

Maximum (high):
Photo cell has no effect on operation (factory setting).

20   3000

Normal:
200 lx to 600 lx is normal range.

Job Name:	Model Numbers:
Job Number:	