Index

Switches, Ceiling and Wall Mount Sensors

H-MOSS|MAXX® Sensors

WL-Series Wireless Sensors and Controls

High Bay and Daylight Harvesting

HSI=GREEN℠

H-MOSS® Occupancy Sensors Combine Innovative Technologies for Industry Proven Performance.

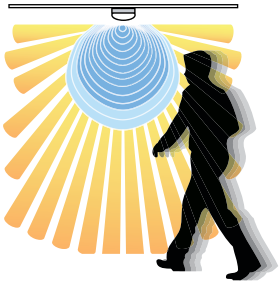
Adaptive Technology

Adaptive Technology is a Hubbell breakthrough that delivers benefits to both building owners and occupants. The building owner achieves reduced energy costs, fewer adjustments and less maintenance, and the building occupant experiences fewer false-offs and disturbances.

Adaptive technology occupancy sensors use microprocessors that make all the decisions for setting adjustments. Internal software constantly monitors the controlled area and automatically adjusts the sensitivity and timer based on environmental history. This means that instead of manually adjusting the sensor for seasonal changes, modified airflow, furniture layout or occupancy pattern changes, the sensor automatically adjusts itself. These automatic adjustments eliminate the need for multiple manual adjustments by maintenance personnel or outside contractors. Hubbell offers adaptive technology throughout its product offering—wall switches, ceiling and wall mount sensors—in conjunction with dual technology, ultrasonic and passive infrared products.

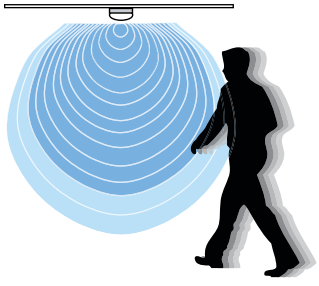
How to Select the Right Technology for the Proper Application

Dual Technology



Dual technology occupancy sensors combine both passive infrared (PIR) and ultrasonic (US) technologies for maximum reliability. Because US and PIR need to both detect occupancy to turn lighting ON, dual technology sensors minimize the risk of lights coming ON when the space is unoccupied—false triggering. Continued detection by only one technology then keeps lighting ON as necessary. Dual technology sensors offer the best performance for most applications.

Ultrasonic (US)



Ultrasonic (US) technology senses occupancy by bouncing sound waves (32 kHz - 45 kHz) off of objects and detecting a frequency shift between the emitted and reflected sound waves. Movement by a person or object within a space causes a shift in frequency, which the sensor interprets as occupancy. While US occupancy sensors have a limited range, they are excellent at detecting even minor motion such as typing and filing, and they do not require an unobstructed line-of-sight. This makes US technology sensors ideal for an application like an office with cubicles or a restroom with stalls.

Passive Infrared (PIR)

Passive infrared (PIR) technology senses occupancy by detecting the movement of heat emitted from the human body against the background space. Unlike US technology, PIR sensors require an unobstructed line-of-sight for detection. These sensors use a segmented lens, which divides the coverage area into zones. Movement between zones is then interpreted as occupancy. PIR sensors are ideal for detecting major motion (e.g. walking), and they work best in small, enclosed spaces with high levels of occupant movement.

Typical Applications

Wall Switch | Ceiling Sensor | Wall Sensor

Applications are generalized. Consult your Hubbell representative for the type of technology and products that fit your needs.

Application		Sensor Technology				Sensor Style		
		Adaptive	Dual	Ultrasonic	PIR	Wall Switch	Ceiling	Wall
Office	Small	✓+	✓+		✓	✓+	✓	
	Large	✓+	✓+	✓			✓+	
Open Office		✓+	✓	✓+			✓+	
Storage/ Warehouse	Small				✓+	✓+		
	Large	✓+			✓+		✓+	✓+
Rest Room	Small			✓+	✓+	✓+	✓	
	Large	✓+		✓+			✓+	
Conference Room	Small	✓+	✓+			✓+	✓	
	Large	✓+	✓+				✓+	
Classroom	Small	✓+	✓+			✓+	✓	
	Large	✓+	✓+				✓+	
Hall		✓+		✓+	✓		✓+	✓

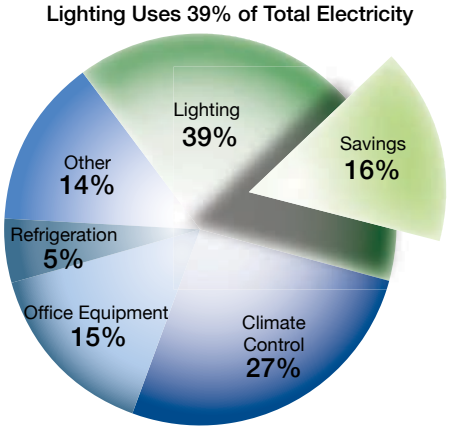
Hubbell Occupancy Sensors Play a Key Role

In the U.S., lighting consumes 22% of electricity and represents $40 billion a year in energy costs. Using advanced technology, Hubbell's H-MOSS® Occupancy Sensors are doing their part to save energy and provide sustainability by automatically and effectively turning lights on when a room is occupied and off when a room is vacant. In a typical office building, where lighting accounts for 35 to 45% of energy use, H-MOSS Occupancy Sensors have the potential to reduce wasted lighting by 13% to 90% for a significant return on investment (ROI).

Code Compliance

Hubbell offers a broad range of occupancy and vacancy sensors and lighting controls that meet the latest codes and standards, including ASHRAE/IESNA 90.1 and California Energy Commission (CEC) Title 24. H-MOSS Occupancy Sensors can also provide LEED® points in categories like Sustainable Sites, Energy and Atmosphere, Indoor Environmental Quality and Innovative Design Process.

Electrical bill impact for a typical office building*



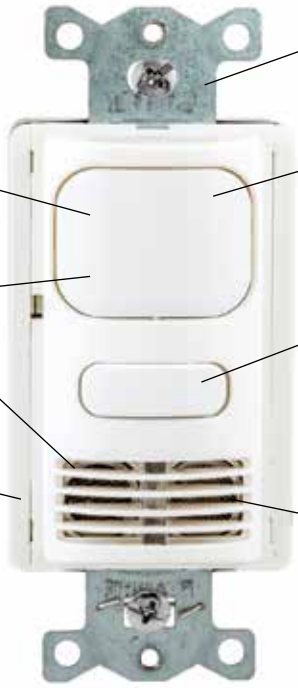
*Note: *Energy Information Administration:*
- Commercial Buildings
- Energy Consumption Survey
***Based on 40% lighting savings from sensors. Actual results may vary.*

Backed by Hubbell Service and Support

H-MOSS® Occupancy Sensors are backed by Hubbell **HSI** = GREEN℠ Sustainability Initiative and superior service and support including:

- Valuable online H-MOSS ROI worksheet for calculating energy savings
- Detailed H-MOSS online e-learning courses that can be taken anywhere, anytime
- Product selection guide for choosing the right H-MOSS Occupancy Sensor and technology
- Online specification assistance through spec wizard, AutoCAD drawings, templates, BIM objects and documentation
- Comprehensive design assistance for deploying occupancy sensors in a variety of applications
- Highly knowledgeable network of specification professionals and trained, dedicated sales staff
- Backed by Hubbell who is committed to safeguarding the environment through environmental stewardship, innovative products and efficient operations

Dual (Ultrasonic and Passive Infrared)



Steel mounting strap

Impact resistant hard lens is standard and color matched to the switch

Built-in photocell with manual super saver mode for daylight harvesting

Dual technology sensing combines the individual advantages of passive infrared and ultrasonic detection

Auto or manual ON operating modes; available in either single relay or dual relay versions for enhanced savings with bi-level switching applications

Designed for use on 120V AC or 277V AC circuits; no neutral needed for fast retrofits

Adaptive technology - “Install and forget” operation, analyzes environment and adjusts sensitivity and timer, eliminating the need for manual adjustment

AD2000W1

Passive Infrared

Steel mounting strap

High density 1200 square foot 180° coverage with tough tamper resistant lens

Heavy duty relay controls up to 1000 watts at 120V AC or 1800 watts at 277V AC

Photocell can prevent lights from turning ON with sufficient natural light

Nightlight version available to provide minimum illumination when the lights are OFF

Front press switch allows the occupant to switch the sensor from automatic operation to momentary OFF mode

Tamper-resistant push button covers the time-out, service switch, vacancy and occupancy operation mode settings

Designed for use on 120V AC or 277V AC circuits; no neutral needed for fast retrofits

ATP2000W

Adaptive Technology

- "Install and forget" operation
- Zero arc point switching
- Dual 120/277V AC operation; no neutral required
- Auto or manual ON operating modes (2000 series)
- Manual ON (Vacancy) operating mode (2001 series)
- No minimum load requirements
- Hard lens (dual technology, passive infrared)
- Steel mounting strap
- Built-in photocell with manual super saver mode for daylight harvesting
- Bi-level switching or dual load control (2 or 2N suffix)
- Compatible with most LED and CFL
- CEC Title 24 Compliant
- cULus

AD2000W1
AD2001W1

Dual (Ultrasonic and Passive Infrared)

1000 square foot coverage with photocell, 800W Incandescent, 1000W Fluorescent at 120V AC, 1800W Fluorescent at 277V AC, 50/60Hz.

		Single Circuit		Dual Circuit	
Description	Color	1 button for manual/auto control	Auto control with no button	2 buttons for manual/auto control	Auto control with no button
Dual (ultrasonic and passive infrared)	Black	**AD2000BK1**	**AD2000BK1N**	**AD2000BK2**	**AD2000BK2N**
	Gray	**AD2000GY1***	**AD2000GY1N**	**AD2000GY2**	**AD2000GY2N**
	Ivory	**AD2000I1***	**AD2000I1N***	**AD2000I2***	**AD2000I2N**
	Light Almond	**AD2000LA1***	**AD2000LA1N**	**AD2000LA2**	**AD2000LA2N**
	White	**AD2000W1***	**AD2000W1N***	**AD2000W2***	**AD2000W2N**
Manual ON (Vacancy)	Black	**AD2001BK1**	—	**AD2001BK2**	—
	Gray	**AD2001GY1**	—	**AD2001GY2**	—
	Ivory	**AD2001I1**	—	**AD2001I2**	—
	Light Almond	**AD2001LA1**	—	**AD2001LA2**	—
	White	**AD2001W1**	—	**AD2001W2**	—

*Note: *Neutral wire versions, use ADN prefix when ordering.*
Wallplate sold separately. See pages E-16 and E-17 for technical specifications, coverage patterns and wiring schematics.

AD2000W1N
AD2000W2N

AU2000W1
AU2001W1

Ultrasonic

400 square foot coverage with photocell, 800W Incandescent, 1000W Fluorescent at 120V AC, 1800W Fluorescent at 277V AC, 50/60Hz.

		Single Circuit		Dual Circuit	
Description	Color	1 button for manual/auto control	Auto control with no button	2 buttons for manual/auto control	Auto control with no button
Ultrasonic	Black	**AU2000BK1**	**AU2000BK1N**	**AU2000BK2**	**AU2000BK2N**
	Gray	**AU2000GY1**	**AU2000GY1N**	**AU2000GY2**	**AU2000GY2N**
	Ivory	**AU2000I1***	**AU2000I1N***	**AU2000I2**	**AU2000I2N**
	Light Almond	**AU2000LA1**	**AU2000LA1N**	**AU2000LA2**	**AU2000LA2N**
	White	**AU2000W1***	**AU2000W1N***	**AU2000W2**	**AU2000W2N**
Manual ON (Vacancy)	Black	**AU2001BK1**	—	**AU2001BK2**	—
	Gray	**AU2001GY1**	—	**AU2001GY2**	—
	Ivory	**AU2001I1**	—	**AU2001I2**	—
	Light Almond	**AU2001LA1**	—	**AU2001LA2**	—
	White	**AU2001W1**	—	**AU2001W2**	—

*Note: *Neutral wire versions, use AUN prefix when ordering.*
Wallplate sold separately. See pages E-16 and E-17 for technical specifications, coverage patterns and wiring schematics.

AU2000W2
AU2001W2

Passive Infrared

1000 square foot coverage with photocell, 800W Incandescent, 1000W Fluorescent at 120V AC, 1800W Fluorescent at 277V AC, 50/60Hz.

		Single Circuit		Dual Circuit	
Description	Color	1 button for manual/auto control	Auto control with no button	2 buttons for manual/auto control	Auto control with no button
Passive infrared	Black	**AP2000BK1**	**AP2000BK1N**	**AP2000BK2**	**AP2000BK2N**
	Gray	**AP2000GY1***	**AP2000GY1N**	**AP2000GY2**	**AP2000GY2N**
	Ivory	**AP2000I1***	**AP2000I1N***	**AP2000I2***	**AP2000I2N**
	Light Almond	**AP2000LA1***	**AP2000LA1N**	**AP2000LA2**	**AP2000LA2N**
	White	**AP2000W1***	**AP2000W1N***	**AP2000W2***	**AP2000W2N**
Manual ON (Vacancy)	Black	**AP2001BK1**	—	**AP2001BK2**	—
	Gray	**AP2001GY1**	—	**AP2001GY2**	—
	Ivory	**AP2001I1**	—	**AP2001I2**	—
	Light Almond	**AP2001LA1**	—	**AP2001LA2**	—
	White	**AP2001W1**	—	**AP2001W2**	—

*Note: *Neutral wire versions, use APN prefix when ordering.*
Wallplate sold separately. See pages E-16 and E-17 for technical specifications, coverage patterns and wiring schematics.

AP2000W1
AP2001W1

AP2000W2
AP2001W2

ATP2000W

Adaptive Technology, Passive Infrared

- "Install and forget" operation
- Passive infrared technology
- Dual 120/277V AC operation, no neutral required
- 1200 sq. ft. coverage
- Built-in photocell for daylight harvesting
- Wallplate included
- Steel mounting strap
- Compatible with most LED and CFL
- CEC Title 24 Compliant
- cULus

Description	Color	Standard	with Nightlight	with Neutral	with Nightlight and Neutral
Adaptive auto-adjusting; selectable manual/auto-ON operation; dual-voltage 120/277V AC; 3-way capable	Gray	**ATP2000GY**	**ATP2000NGY**	**—**	**—**
	Ivory	**ATP2000I**	**ATP2000NI**	**ATP2004I**	**ATP2004NI**
	Light Almond	**ATP2000LA**	**ATP2000NLA**	**—**	**—**
	White	**ATP2000W**	**ATP2000NW**	**ATP2004W**	**ATP2004NW**

Note: See page E-17 for technical specifications, coverage patterns and wiring schematics.

WS2000W
WS1000W

Passive Infrared

- Passive infrared technology
- Manual adjustment time delay (20 sec. to 30 min.)
- Photocell (WS2000 series)
- No neutral required
- 1200 sq. ft. coverage
- Wallplate included
- Steel mounting strap
- Compatible with most LED and CFL
- CEC Title 24 Compliant
- cULus

Description	Color	Standard	with Nightlight	with Neutral	with Nightlight and Neutral
Manual adjusting; selectable manual/auto-ON operation; dual-voltage 120/277V AC; 3-way capable	Gray	**WS2000GY**	**WS2000NGY**	**—**	**—**
	Ivory	**WS2000I**	**WS2000NI**	**WS2004I**	**WS2004NI**
	Light Almond	**WS2000LA**	**WS2000NLA**	**—**	**—**
	White	**WS2000W**	**WS2000NW**	**WS2004W**	**WS2004NW**
Manual adjusting; auto-ON operation; 120V AC only	Ivory	**WS1000I**	**WS1000NI**	**—**	**—**
	White	**WS1000W**	**WS1000NW**	**—**	**—**
Manual adjusting; Manual-ON operation; 120V AC only	Ivory	**WS1001I**	**WS1001NI**	**—**	**—**
	White	**WS1001W**	**WS1001NW**	**—**	**—**

Note: See page E-17 for technical specifications, coverage patterns and wiring schematics.

DT2000W

Digital Timer

Description	Color	Catalog Number
Dip switch enabled preset intervals, user adjustable up to 4 hours, 3-way capable, 960W @ 120V AC and 1200W @ 277V AC. Includes an ON/OFF momentary push button switch feature.	White	**DT2000W**

DT5030W

Count Down Timers

Description	Color	30 Minutes: OFF, 5, 10, 20, 30	60 Minutes: OFF, 15, 30, 45, 60	12 Hours: OFF, 2, 4, 8, 12
1000W @ 120V AC and 1400W @ 277V AC	Ivory	**DT5030I**	**DT5060I**	**DT5012I**
	Light Almond	**DT5030LA**	**DT5060LA**	**DT5012LA**
	White	**DT5030W**	**DT5060W**	**DT5012W**

DSL30W1
DSM30W1

Low Voltage Switches

- Attractive, architectural design
- Available latching or momentary contact
- Mounts to standard single gang box
- 2-year warranty

Description	Color	Catalog Number
Low voltage switch, latching, 1 button	Ivory	**DSL30I1**
	White	**DSL30W1**
Low voltage switch, momentary, 1 button	Ivory	**DSM30I1**
	White	**DSM30W1**
Low voltage switch, momentary, 2 button	Ivory	**DSM30I2**
	White	**DSM30W2**

Note: Wallplate sold separately.

Adaptive Technology

- "Install and forget" operation
- All digital sensing technology
- Photocell and relay to interface with auxiliary systems such as HVAC (CRP models)
- Non-volatile memory settings retained after power outage
- Mounting base included with sensor
- Low voltage units: 24V DC, 33mA
- Line voltage units: 20A, 120-277V AC
- 32kHz (ATD/ATU500C and CRP - 40kHz)
- Compatible with most LED and CFL
- CEC Title 24 Compliant
- cULus

ATD2000

Dual (Ultrasonic and Passive Infrared)

Combines the excellent minor motion detection of ultrasonic with the outstanding passive infrared (PIR) long-range major motion detection.

		Coverage Area		
Description	Color	2000 sq. ft. (360°)	1000 sq. ft. (180°)	500 sq. ft. (180°)
Low voltage sensor with photocell and isolated relay	Office White	**ATD2000CRP**	**ATD1000CRP**	**ATD500CRP**
Low voltage sensor	Office White	**ATD2000C**	**ATD1000C**	**ATD500C**
Line voltage sensor	Office White	**ATD2000CL**	**ATD1000CL**	**—**

Note: Low voltage ATD ceiling sensors must use a CU series control unit. See page E-9 for details.
See pages E-18 to E-21 for technical specifications, coverage patterns and wiring schematics.

ATD1000C/ ATD500C

Ultrasonic

Excellent minor motion detection.

		Coverage Area		
Description	Color	2000 sq. ft. (360°)	1000 sq. ft. (180°)	500 sq. ft. (180°)
Low voltage sensor with photocell and isolated relay	Office White	**ATU2000CRP**	**ATU1000CRP**	**ATU500CRP**
Low voltage sensor	Office White	**ATU2000C**	**ATU1000C**	**ATU500C**
Line voltage sensor	Office White	**ATU2000CL**	**ATU1000CL**	**—**

Note: Low voltage ATU ceiling sensors must use a CU series control unit. See page E-9 for details.
See pages E-18 to E-21 for technical specifications, coverage patterns and wiring schematics.

ATU2000C

Passive Infrared

Outstanding long range major motion detection.

		Coverage Area	
Description	Color	1500 sq. ft. (360°)	450 sq. ft. (360°)
Low voltage sensor with photocell and isolated relay	Office White	**ATP1500CRP**	**ATP600CRP**
Low voltage sensor	Office White	**ATP1500C**	**ATP600C**
Line voltage sensor	Office White	**ATP1500CL**	**ATP600CL**

Note: Low voltage ATP ceiling sensors must use a CU series control unit. See page E-9 for details.
See pages E-18 to E-21 for technical specifications, coverage patterns and wiring schematics.

ATU1000C/ ATU500C

Low Profile, Line Voltage Passive Infrared

Outstanding long range major motion detection in a compact low profile housing.

			Coverage Area
Voltage	Color	Load Rating	1500 sq. ft.
120-347V AC with photocell	White	800W Inc., 1000W Fl. @ 120V AC 1800W Fluorescent @ 277V AC 2200W Fluorescent @ 347V AC	**LVPR1500R**

ATP1500C/ ATP600C

Ceiling Sensors Accessories

Description	Catalog Number
Ceiling sensor infrared, NEMA 4X enclosure	**ACIPE**
Ceiling mount raceway adapter	**ACMRA**
Ceiling mount wire guard	**ACMG**

ACIPE

ACMRA

ACMG

LVPR1500R

Wall Mount Sensors and OPTIMYZER® High Bay, Low Bay

Featuring Adaptive Technology

ATD1600W

Adaptive Technology Wall Mount Sensors

- "Install and forget" operation
- Swivel mounting bracket included for wall or ceiling mounting
- All digital sensing technology
- Compatible with most LED and CFL
- Photocell for daylight harvesting and relay interface with auxiliary systems such as HVAC (RP models)
- 24V DC, 33mA
- CEC Title 24 Compliant
- cULus

Dual (Ultrasonic and Passive Infrared)

Description	Coverage	Color	Catalog Number
Low voltage sensor 32kHz with photocell and isolated relay	1600 sq. ft.	Office White	**ATD1600WRP**
Low voltage sensor 32kHz	1600 sq. ft.	Office White	**ATD1600W**

ATP1600W, ATP120HB

Passive Infrared

Description	Coverage	Color	Catalog Number
Low voltage sensor with photocell and isolated relay	1600 sq. ft.	Office White	**ATP1600WRP**
Low voltage sensor	1600 sq. ft.	Office White	**ATP1600W**
Low voltage sensor for aisle and high bay applications, with photocell and isolated relay	120 linear feet	Office White	**ATP120HBRP**
Low voltage sensor for aisle and high bay applications	120 linear feet	Office White	**ATP120HB**

Note: All wall mount sensors must use a CU series control units. See page E-9 for details.
See pages E-18 to E-21 for technical specifications, coverage patterns and wiring schematics.

AWSG

AWMG

Wall Mount Sensors Accessories

Description	Catalog Number
Wall switch wire guard	**AWSG**
Wall mount wire guard	**AWMG**

HMHB219

OPTIMYZER® High Bay and Low Bay Sensors

- Digital passive infrared (PIR) sensor
- Multiple (single and dual) output versions
- Single and dual timer operation
- Low-profile design
- No minimum load
- Supports mounting heights up to 45 feet (High Bay)
- Supports mounting heights between 8-16 feet (Low Bay)
- Universal voltage (120/277/347V AC) models available

Daylight Harvesting Passive Infrared

Description	Voltage	Catalog Number
Fluorescent high bay PIR sensor, 1 relay with photocell	120-347V AC	**HMHB219**
Fluorescent high bay PIR sensor, 2 relays with photocell	120-347V AC	**HMHB229**
Fluorescent high bay PIR sensor, 1 double pole relay with photocell	208/240V AC	**HMHB23A9**
Fluorescent high bay PIR sensor, 1 double pole relay with photocell	480V AC	**HMHB23B9**
Fluorescent high bay PIR sensor with photocell	24V DC	**HMHB2LV9***

Note: 360° high bay lens included. Low bay lens options sold separately, see below for details.
**For use with CU300HD (120/277V AC, 50/60Hz) control unit.*
See page E-22 for technical specifications and coverage patterns.

HMHBL180

HMHBL360

HMHBLA

HMHBLEA

HMHBSA

Replacement Lenses and Accessories

Description	High Bay	Low Bay
180° Lens	**HMHBL180**	**HMLBL180**
360° Lens	**HMHBL360**	**HMLBL360**
Aisle lens	**HMHBLA**	**HMLBLA**
End of aisle lens	**HMHBLEA**	**HMLBLEA**
Mounting extension adapter	**HMHBSA**	**HMHBSA**

Daylight Harvesting

- Multiple calibration options
- Selectable 3- or 8-second dimming rate
- Low-profile design
- Light-sensitivity wide range of options

Description	Voltage	Catalog Number
Single zone continuous automatic dimming control	10V DC	**DHADC†**
Indoor photocell	24V DC	**DHIP▲**
Outdoor photocell	24V DC	**DHOP▲**
Atrium photocell	24V DC	**DHAP▲**
Skylight photocell	24V DC	**DHSP▲**
Control module	24V DC	**DHCM**
Daylight tracker with ON/OFF control	24V DC	**DHT***
Daylight tracker with dimming control	24V DC	**DHTD†**

*Note: *For use with CU series control units, see below for details.*
†For use with 0-10V DC dimming ballasts.
▲For use with DHCM and CU series control units.


DHADC


DHIP, DHOP


DHAP, DHSP


DHCM


DHT

Control Units

The CU300 series provides 24V DC power supply for sensors or sensor/Add-A-Relay combinations. The control units contain an internal relay for the control of an external load. Control units are plenum rated cULus Listed.

Description	Catalog Number
Automatic-ON operation, 120/277V AC, 50/60Hz for use with 1 to 4 ATD, ATU and ATP series ceiling/wall mount sensors	**CU300A**
Manual-ON operation, 120/277V AC, 50/60Hz for use with 1 to 4 ATD, ATU and ATP series ceiling/wall mount sensors	**CU300M**
Auto or manual-ON operation, 120/277V AC, 50/60Hz for use with 1 to 6 ATD, ATU and ATP series ceiling/wall mount sensors, heavy duty latching relay for reactive loads and plug-load control	**CU300HD**
Automatic-ON operation, 347V AC, 60Hz, for use with 1 to 3 ATD, ATU and ATP series ceiling and wall mount sensors	**CU347A**

Note: See page E-19 for technical specifications.


CU300A(M), CU347A


CU300HD

Add-A-Relay

Hubbell AAR Add-A-Relay contains an internal relay for control of an external load. The AAR requires a 24V DC power supply from the Hubbell CU series control unit. The AAR is typically used when it is desired to switch more than one circuit when occupancy is sensed or the load exceeds the maximum rating of the control unit.

Description	Catalog Number
For use with CU series control units and Hubbell ATD, ATU and ATP series ceiling and wall mount sensors	**AAR**
Heavy duty latching relay; for use with CU300HD in Plug load applications	**AAR20P**

Note: See page E-19 for technical specifications.


AAR


AAR20P

Enclosed 10 Amp SPDT Relays

Description	Catalog Number
Enclosed relay 10 Amp SPDT with 10-30V AC/DC/120V AC coil	**AAR10C120**
Enclosed relay 10 Amp SPDT with 10-30V AC/DC/208-277V AC coil	**AAR10C277**


AAR10C277

Multi-Level Relays

Description	Catalog Number
Enclosed independent control for multiple ballast light fixtures from one existing wall switch, bi-level; 120/208-277V AC	**AARBL2**
Enclosed independent control for multiple ballast light fixtures from one existing wall switch, tri-level; 120/208-277V AC	**AARBL3**


AARBL2

MAXX™ Harsh Environment Occupancy Sensors

Features and Benefits

H-MOSS|MAXX® products provide users with methods to reduce energy usage in harsh environments. These applications often have lights being left on and ventilation/HVAC systems constantly working. MAXX™ products are designed to withstand these challenging environments and provide increased operating efficiency.

IP66, NEMA 4X, outdoor rated

Photocell makes sure lights stay off when there is sufficient daylight

Isolated relay provides signalling to HVAC and ventilation systems

Stainless steel hardware and settings access cover

½" threaded nipple (HAP4)

Multiple mounting kits for existing work boxes and hubs; pendent or wall mounting flexibility

Integrated lens guard protects against accidental damage

Housing manufactured from chemical resistant Valox®

AHP1600WRP
with **HAP4**

IP65, NEMA 3R watertight, and outdoor rated

Two photocells for daylight harvesting

Fixture or work box mounting with ½" threaded nipple

Digital passive infrared (PIR) sensor

Supplied with 360° lens; aisle, end-of-aisle and 180° lenses available separately

HMHB21UPCW

Valox® is a trademark of SABIC Innovative Plastics, acquired from General Electric Company.

Watertight Wall Mount PIR Sensor

IP66, NEMA 4X, outdoor rated, heavy duty wall or pendant mount sensor with -40°F to 149°F (-40°C to 65°C) operating temperature range and 160° of coverage.

Description	Voltage	Catalog Number
PIR sensor, with isolated relay and photocell	24V DC	**AHP1600WRP**
Adaptor plate for single gang FS boxes	—	**HAP1**
Adaptor hub and nipple for Killark NJ series boxes	—	**HAP2**
Adaptor plate for Killark® NV series boxes	—	**HAP3**
½" NPT threaded hub	—	**HAP4**

Note: For use with CU300HD (120/277V AC, 50/60Hz) control unit.
See page E-22 for technical specifications and coverage patterns.

AHP1600WRP

Extreme Temperature PIR Ceiling Sensor

Upgraded ceiling sensor with -40°F to 149°F (-40°C to 65°C) operating temperature range.
Use ACIPE to make NEMA 4X watertight.

Description	Voltage	Catalog Number
Sensor with isolated relay and photocell	24V DC	**AHP1500CRP**
IP66, NEMA 4X enclosure	—	**ACIPE**

Note: For use with CU300HD (120/277V AC, 50/60Hz) control unit.
See page E-22 for technical specifications and coverage patterns.

AHP1500CRP
with **ACIPE**

Heavy Duty Control Unit

Robust latching relay provides reliable performance over many different applications, including plug loads. 20A 100-277V AC, 1HP @ 120V AC, 2HP @ 240/277V AC. Auto or Manual-ON operation. Powers up to six low voltage sensors.

Description	Voltage	Catalog Number
Heavy duty control unit	120-277V AC	**CU300HD**

Note: See page E-19 for technical specifications.

CU300HD

OPTIMYZER® Watertight End Mount PIR Sensor

IP65, NEMA 3R, outdoor rated, -40°F to 149°F (-40°C to 65°C) operating temperature range.

Description	Voltage	Catalog Number
Single relay with photocell	120-347V AC	**HMHB21UPCW**
2 relays with photocell	120-347V AC	**HMHB22UPCW**
1 double pole relay with photocell	208, 240V AC	**HMHB23APCW**
1 double pole relay with photocell	480V AC	**HMHB23BPCW**
Low voltage with photocell	24V DC	**HMHB2LVPCW***

Note: 360° high bay lens included. Low bay lens options sold separately, see below for details.
**For use with CU300HD (120/277V AC, 50/60Hz) control unit.*
See page E-23 for technical specifications and coverage patterns.

HMHB21UPCW

Replacement Lenses

Description	High Bay	Low Bay
180° Lens	**HMHBL180**	**HMLBL180**
360° Lens	**HMHBL360**	**HMLBL360**
Aisle lens	**HMHBLA**	**HMLBLA**
End of aisle lens	**HMHBLEA**	**HMLBLEA**

HMHBL180

HMHBL360

HMHBLA

HMHBLEA

BR15C1WHI

BR20C2WHI

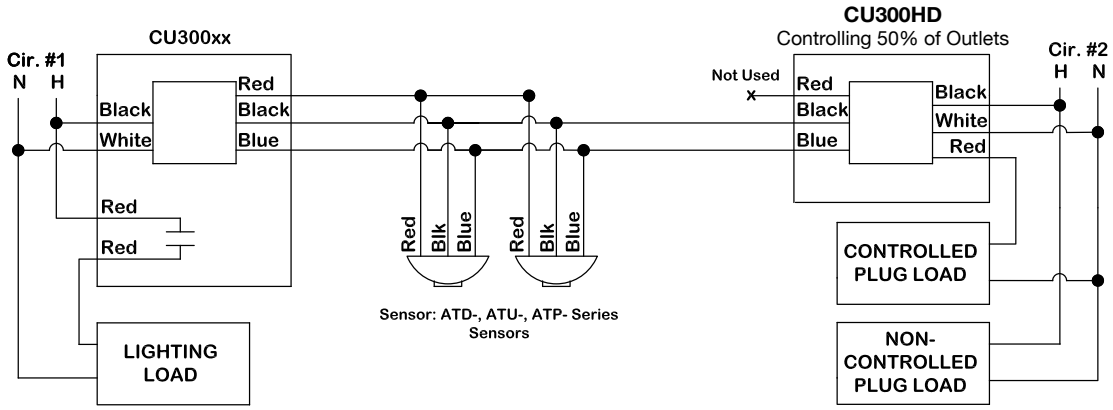
DR15C1I

DR20C2I

ASHRAE 90.1-2010 mandates that 50% of all outlets in private offices, open offices, and computer classrooms must be automatically controlled by occupancy or time based schedules. This also includes outlets in modular furniture. Hubbell provides solutions for compliance that are cost effective and installer friendly. Bellow are two examples. Additional examples and design resources are located at www.hubbell-wiring.com/energy.aspx

Wired

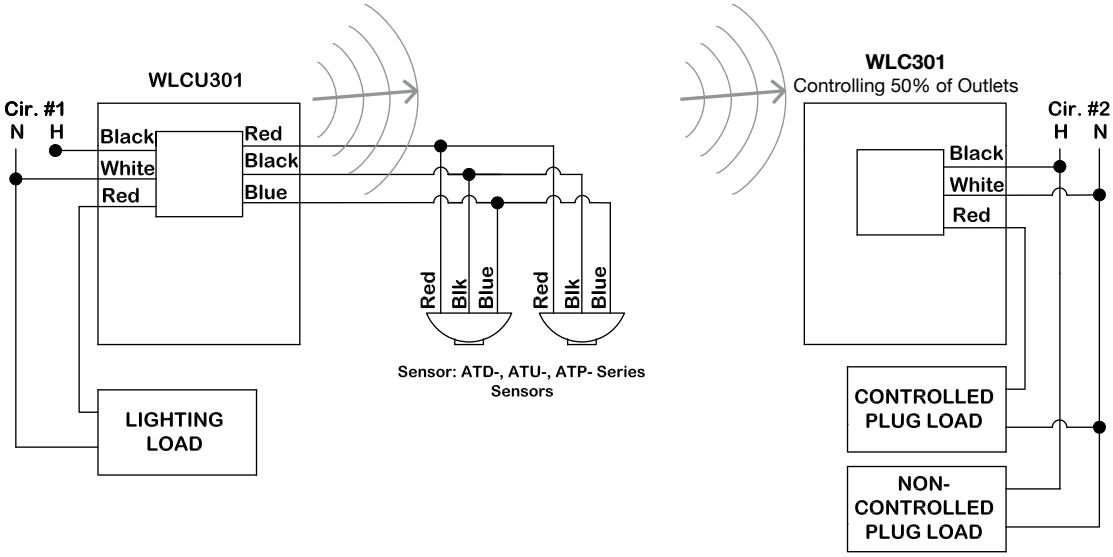
Utilizing low voltage wiring provides installers with a familiar method of wiring and installation. Specify CU300HD to control outlets and use AAR or CU300A to control the lighting. Utilize alternating outlet or split receptacle wiring as required to control at least 50% of the outlets in the space.



Clear Connect™ Enabled

Wireless

Wireless communication takes complexity out of retrofit and difficult installations by eliminating low voltage wires running between lighting and receptacle control units. This gives installers flexibility to quickly deploy, add additional devices, and configure and re-configure the system as needed. Hubbell's WL series controls utilize Clear Connect™ communication and are compatible with other Clear Connect™ devices, such as Hubbell's wireless occupancy sensors.



Clear Connect™ is a registered trademark of Lutron Electronics Co., Inc.

Hubbell Plug Load Control Products
- Wired or wireless flexibility
- Listed for 20A enclosed switching
- Heavy duty 60A rated mechanical latching relay; silver alloy contacts
- 24V DC, 250mA DC power output on applicable units
- Low voltage output short circuit protection
- UL2043 plenum rated except WLC402W
- Compatible with most LED and CFL
- Zero cross switching

Wired

Heavy Duty Control Unit

Robust latching relay provides reliable performance over many different applications, including plug loads. 20A 100-277V AC, 1HP @ 120V AC, 2HP @ 240/277V AC. Auto or Manual-ON operation. Powers up to six low voltage sensors.

Description	Voltage	Catalog Number
Heavy duty control unit	100-277V AC	**CU300HD**
Heavy duty latching relay; for use with CU300HD		**AAR20P**

Note: See page E-25 for technical specifications and wiring schematics.

CU300HD

Straight Blade Specification Grade Receptacles Pre-Marked for Plug Load Applications

Description	Color	15A Duplex	20A Duplex	15A Decorator	20A Decorator
Receptacles marked permanently for Plug Load applications	Ivory	**BR15C1I**	**BR20C2I**	**DR15C1I**	**DR20C2I**
	Light Almond	**BR15C1LA**	**BR20C2LA**	**DR15C1LA**	**DR20C2LA**
	White	**BR15C1WHI**	**BR20C2WHI**	**DR15C1WHI**	**DR20C2WHI**

Note: See Section A for additional products and colors.

BR15C1WHI **DR20C2I**

Wireless

Operates in a “quiet” 434MHz FCC band. Range: 30 feet obstructed or 60 feet line of sight.

Heavy Duty Control Unit with Wireless Transmitter

CU300HD with functionality of WLCA integrated to wirelessly activate additional load control units. 20A 100-277V AC, 1HP @ 120V AC, 2HP @ 240/277V AC. Auto or Manual-ON operation. Powers up to six low voltage sensors.

Description	Voltage	Catalog Number
Heavy duty control unit with Clear Connect™	100-277V AC	**WLCU301**

WLCU301

Wireless Status Transmitter

Low voltage powered unit transmits occupancy or timer status to associated load control receivers. Use with CU300xx and low voltage sensors/timers to upgrade existing lighting control systems to support plug load control.

Description	Voltage	Catalog Number
Wireless transmitter with Clear Connect, for use with CU300xx	24V DC	**WLCA**

WLCA

Heavy Duty Load Control Units with Wireless Receiver

These units receive wireless Clear Connect™ commands to turn ON and OFF power to downstream loads. Utilize these control units to wirelessly switch a circuit of receptacles or any other applicable load. 20A 100-277V AC, 1HP @ 120V AC, 2HP @ 240/277V AC.

Description	Voltage	Catalog Number
Single (1) circuit heavy duty control unit with Clear Connect™	100-277V AC	**WLC301**
Dual (2) circuit heavy duty control unit with Clear Connect™	100-277V AC	**WLC302**

WLC301

WLC302

Furniture Feed Box with Heavy Duty Relays and Wireless Receiver

Furniture feed box receives wireless Clear Connect™ commands and controls two circuits in furniture electrical feeds. It supports wall mounting to existing 1 or 2-gang junction boxes. Additionally, the box can be secured to the furniture or on the floor. 20A 100-277V AC, 1HP @ 120V AC, 2HP @ 240/277V AC.

Description	Voltage	Catalog Number
Dual (2) circuit heavy duty furniture feed box with Clear Connect™	100-277V AC	**WLC402W**

Note: See page E-25 for technical specifications and wiring schematics.

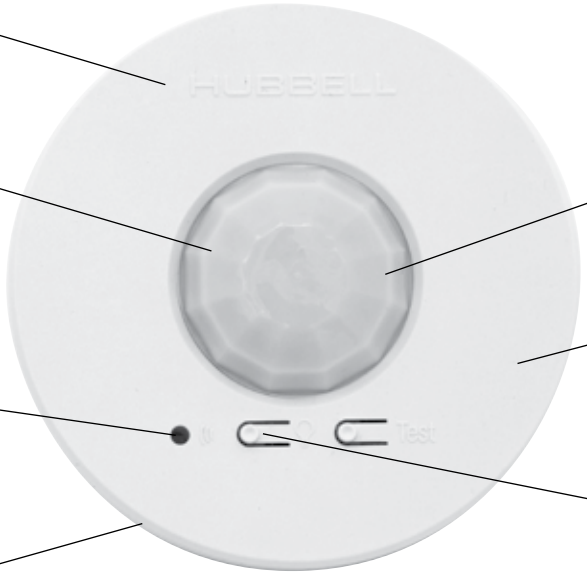
WLC402W

Three operation modes available: Auto-ON, Auto-ON Low-Light and Manual-ON

Passive infrared motion detection with advanced digital signal processing for fine motion detection

Auto-ON Low-Light feature will only turn lights on automatically if there is less than approximately 10 Lux (1 foot candle) of ambient light

10-year battery life design

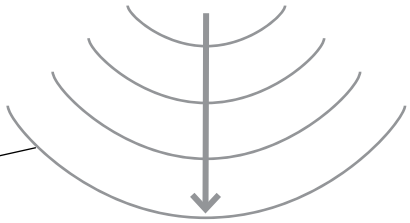


Lens illuminates during test mode to verify coverage

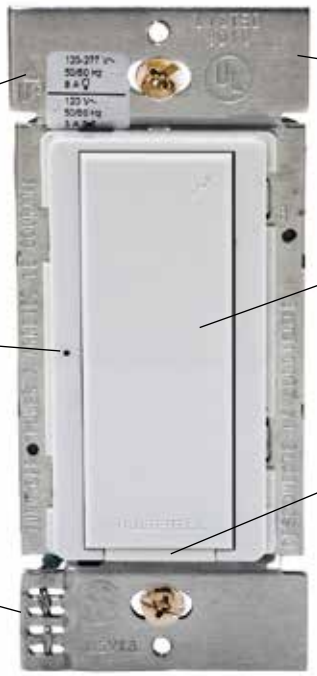
Adjustments available for Timeout, Activity, and Auto-ON settings

Accessible test buttons make setup easy

WLP450C



LUTRON **Clear Connect**™ Enabled



8A lighting, 3A fan load capacity

Green LED provides operation and setup feedback

No neutral required, no leakage to ground

LED and CFL compatible with supplied load adaptor

Digital push button operation provides user control

Service switch prevents lights from coming on during re-lamping

WLS1278W

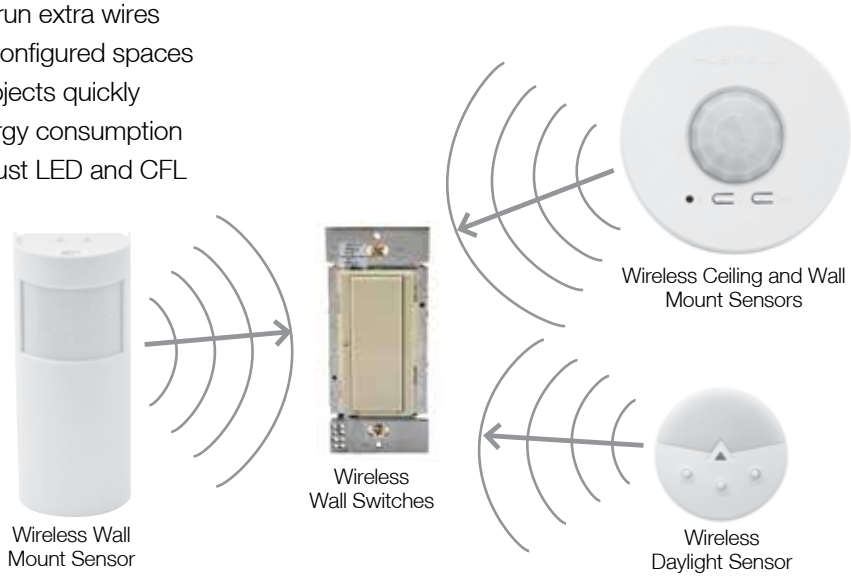
Clear Connect™ is a registered trademark of Lutron Electronics Co., Inc.

WL-Series Wireless Sensors and Controls

Featuring Clear Connect™ Technology

Hubbell's WL-Series Wireless Sensors and Controls are the ideal solution for renovation projects aimed at reducing energy consumption. These sensors use DSP Enhanced passive infrared technology to detect movement of heat from people to turn lights ON when a room is occupied and OFF when vacant. The sensors wirelessly transmit Clear Connect™ commands to the associated control devices, reducing the need for additional wiring for ease and speed of installation and energy savings.

- Eliminates need to run extra wires
- Supports highly reconfigured spaces
- Helps complete projects quickly
- Helps manage energy consumption
- Compatible with must LED and CFL



Wireless Wall Switches

Description	Color	Catalog Number
8A Lighting, 3A Fan (1/10 HP motor, 120V AC only), Spec Grade Electronic Switch 120–277V AC; no neutral wire required	Ivory White	**WLS1278I** **WLS1278W**
Accessory Switch 120V AC	Ivory White	**WLAS120I** **WLAS120W**
Accessory Switch 277V AC	Ivory White	**WLAS277I** **WLAS277W**

Compatible Transmitters: WLP series and WLDH sensors, or any Lutron Clear Connect enabled sensor.

WLS1278I

WLAS277W

Wireless Ceiling Mount Sensor

Description	Color	Catalog Number
Ceiling mount 360° / 324-676 sq. ft.	White	**WLP450C**

WLP450C

Wireless Wall Mount Sensor

- Detection at longer distances is best when motion occurs at right angles to the sensor
- Mount Hallway Sensor at the end of a hallway with a clear view down the length of a hall
- Multiple sensors can be used to extend coverage

Description	Wall mount 180° / 3000 sq. ft.	Corner mount 90° / 2500 sq. ft.	Hallway up to 150 linear feet
Color	White	White	White
Catalog Number	**WLP3000W**	**WLP2500W**	**WLP150H**

Compatible Controls: WSL1278xx switch, WLC316R control unit, or any Lutron Clear Connect enabled control device.

WLP150H

Wireless Control Unit

Description	Catalog Number
Wireless load control unit with isolated relay, 16A, 120V AC or 277V AC	**WLC316R**

Compatible Transmitters: WLP series and WLDH sensors, or any Lutron Clear Connect enabled sensor.

WLC316R

Wireless Daylight Sensor

Description	Color	Catalog Number
Daylight sensor 0–107,000 Lux (0-10,000 foot candles)	White	**WLDH**

Compatible Controls: WSL1278xx switch, WLC316R control unit, or any Lutron Clear Connect enabled control device.
Note: See pages E-26 to E-28 for technical specifications, coverage patterns and wiring schematics.

WLDH

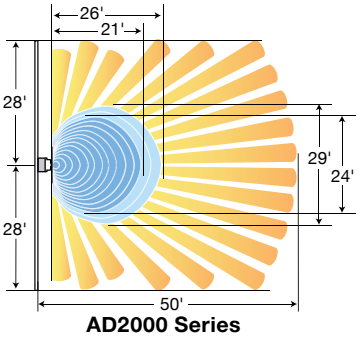
Specifications and Coverage Patterns

Wall Switches

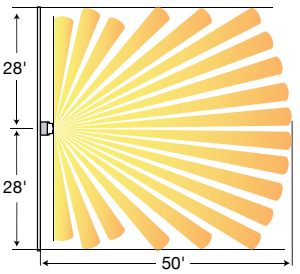
Adaptive Dual Technology Wall Switches		Adaptive Technology Ultrasonic and PIR Wall Switches
Electrical	**AD2000 Series**	**AP2000 and AU2000 Series**
Power Supply	120/277V AC, 50/60Hz	120/277V AC, 50/60Hz
Load Capacity		
Incandescent	0 to 800 watts	0 to 800 watts
120V Ballast	0 to 1000 watts	0 to 1000 watts
277V Ballast	0 to 1800 watts	0 to 1800 watts
Motor Load	1/4HP	1/4HP
Agency Approvals	cULus Listed	cULus Listed
Physical		
Housing	High impact plastic (UL 94-5V)	
Lens	Dual element pyrometer and 12 element cylindrical hard lens (AP2000 only)	
Dimensions	Face 2.57"H x 1.71"W, 0.53"D (from wall out)	
Mounting Height	42 to 54 inches above floor	
Environmental		
Operating	32° F to 104°F (0°C to 40°C); 0% to 95% non-condensing relative humidity	
Controls		
Time Delay	Digital, adaptive 4 to 30 minutes	Digital, adaptive 4 to 30 minutes 20 minutes default
Ambient Light	Adjustable ambient light override, 10 to 500 foot candles	
Front Press Switch	Auto/OFF	Auto/OFF
Sensitivity	Adaptive 0% to 100%	Adaptive 0% to 100%
Service Switch	Air gap OFF	Air gap OFF
Sensing Indicator		
Passive Infrared	Red LED (AD series only)	Red LED (AP series only)
Ultrasonic	Green LED (AD series only)	Green LED (AU series only)

Wall Switches Coverage Patterns

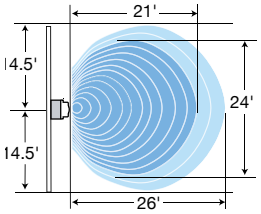
Minor Motion: Ultrasonic PIR
Major Motion: Ultrasonic PIR



AD2000 Series



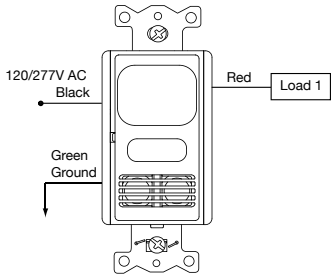
AP2000 Series



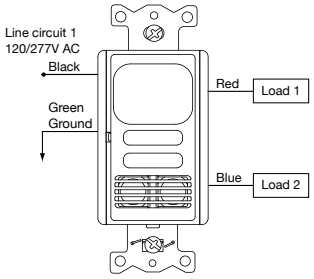
AU2000 Series

Wiring Schematic AD, AU, AP, 2000 Series Wall Switch Sensors

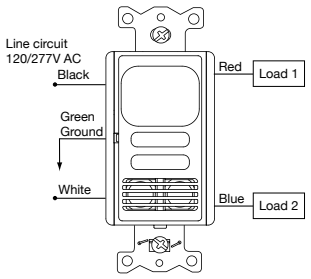
Single Circuit Wiring



Dual Circuit Sensor, Wired for Dual Circuits

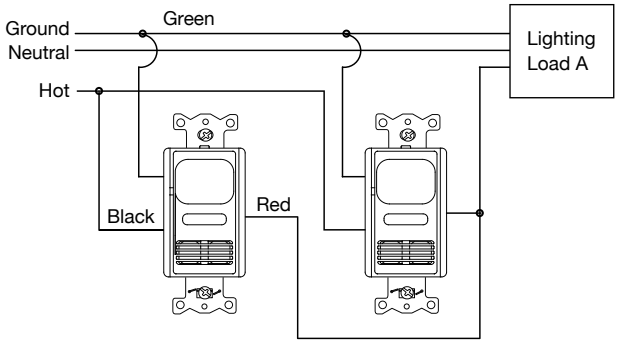


Dual Circuit Sensor, Wired for Dual Circuits with Neutral

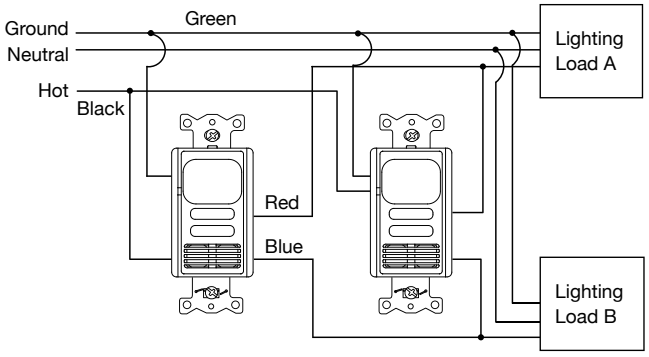


For step dimming, bi-level, and dual ballasted fixtures

Single Circuit Sensors, Wired as 3-Way Sensors*



Dual Circuit Sensors, Wired as 3-Way Sensors*



*Note: *Load can not exceed the rating of one switch.*
Sensor is shipped with all dip switches in the OFF position (factory default).

Adaptive Technology PIR Wall Switches ATP2000, WS2000 and WS1000 Series

Electrical	ATP/WS2000 Series	WS1000 Series
Power Supply	120/277V AC, 60Hz	120V AC, 60Hz
Load Capacity		
Incandescent	0 to 1000 watts	0 to 500 watts
120V Ballast	0 to 1000 watts	0 to 500 watts
277V Ballast	0 to 1800 watts	N/A
Agency Approvals	cULus Listed	cULus Listed
Warranty	5 years	5 years

Physical	ATP/WS2000 and WS1000 Series
Housing	Flame retardant UL 94 V-0 ABS
Lens	Polyethylene
Dimensions	Face 2.59"H x 1.30"W, 0.61"D (from wall out)
Mounting Height	42 to 54 inches above floor

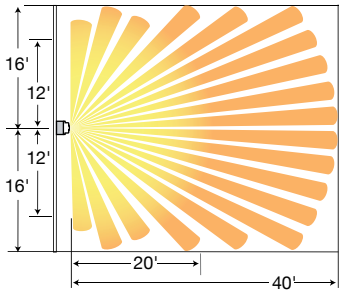
Environmental	ATP/WS2000 and WS1000 Series
Operating	32°F to 122°F (0°C to 50°C) with rate of change not exceeding 20°F (11°C) per hour; 20% to 90% non-condensing relative humidity
Storage	-40°F to 150°F (-40°C to 65°C); 20% to 90% non-condensing relative humidity

Controls	ATP/WS2000 Series	WS1000 Series
Time Delay	ATP: Auto WS: Manual 20 seconds to 30 minutes	Manual 20 seconds to 30 minutes
Ambient Light	Digital, pushbutton, 10 to 500 foot candles	N/A
Front Press Switch	ON/OFF	ON/OFF
Service Switch	OFF (service) Vac (manual-ON) Occ (auto-ON)	OFF (service) ON (normal operation)

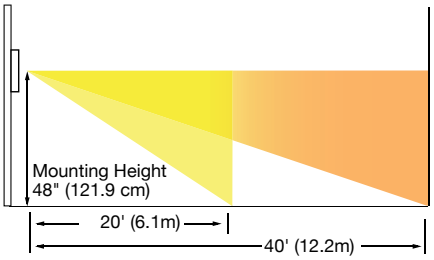
Sensing Indicator	ATP/WS2000 and WS1000 Series
Passive Infrared	Red LED

Wall Switches Coverage Patterns

Minor Motion: PIR **Major Motion:** PIR



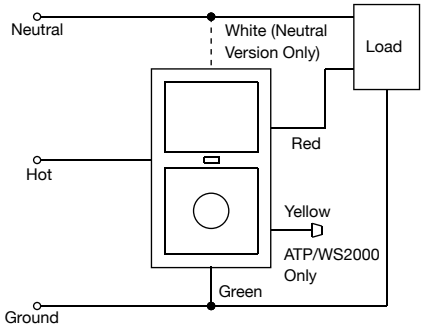
ATP2000, WS1000, WS2000 Series



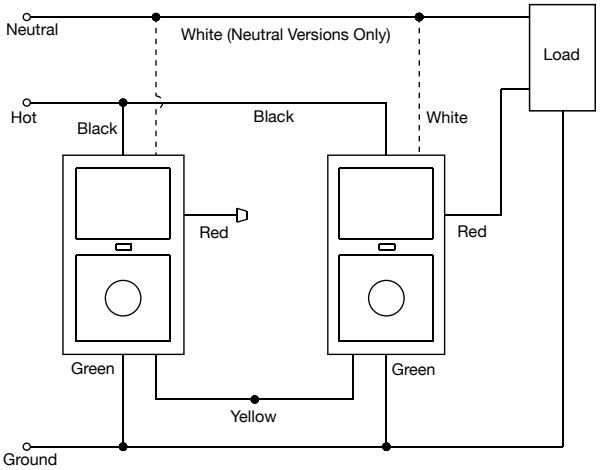
Vertical Coverage
ATP2000, WS1000, WS2000 Series

Wiring Schematic ATP2000, WS1000 and WS2000 Series Wall Switches

Normal Wiring



Sensors Wired as 3-Way Sensors*
(ATP/WS2000 Only)



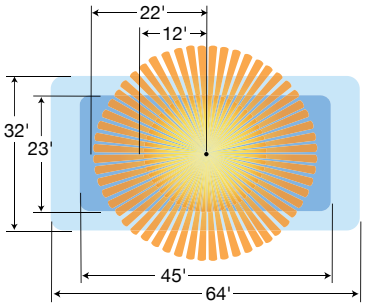
*Note: *Load can not exceed the rating of one switch.*

Adaptive Dual Technology, Ultrasonic and Passive Infrared Ceiling and Wall Mount Sensors
ATD, ATU, and ATP Series

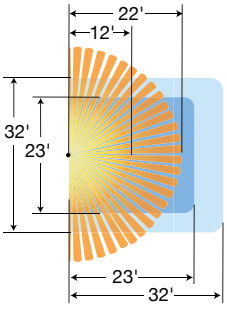
Electrical		
Power Requirements	24V DC nominal, 33mA from Hubbell CU series control unit	
Isolated Relay (sensors with RP suffix)	Normally open and normally closed; terminals available	
Agency Approvals	UL Listed	
Physical	**Ceiling Sensors**	**Wall Mount Sensors**
Housing	Flame retardant UL 94 V-0 ABS	Flame retardant UL 94 V-0 ABS
Lens	Polyethylene	Polyethylene
Dimensions	1.5"H x 4.5"D	6"H x 2"W x 1.5"D
Color	Office white	Office white
Mounting Height	8 to 12 feet	8 to 12 feet, 8 to 30 feet (ATP120HB series)
Environmental		
Operating	32°F to 104°F (0°C to 40°C) with rate of change not exceeding 20°F (11°C) per hour; 0% to 95% non-condensing relative humidity	
Storage	-20°F to 150°F (-29°C to 65°C); 0% to 95% non-condensing relative humidity	
Controls		
Time Delay	Test (8 seconds), adaptive 8 to 40 minutes	
Ambient Light	1 to 1000 foot candles	
Sensitivity	Adaptive 0 to 100%	
Sensing Indicators		
Ultrasonic (ATD and ATU Series)	Green LED	
Passive Infrared (ATD and ATP Series)	Red LED	

Ceiling Sensors Coverage Patterns

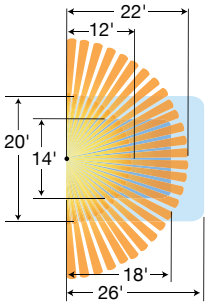
Minor Motion: Ultrasonic PIR **Major Motion:** Ultrasonic PIR



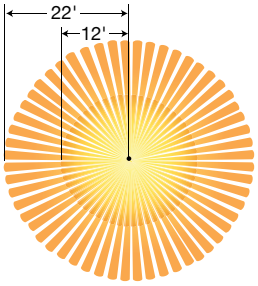
ATD2000C Series



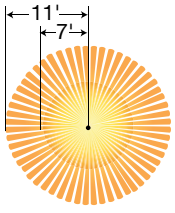
ATD1000C Series



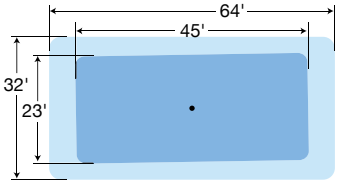
ATD500C Series



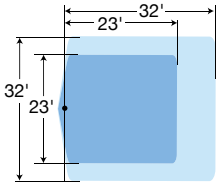
ATP1500C Series



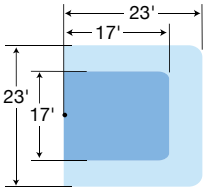
ATP600C Series



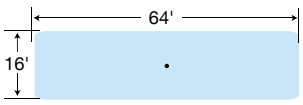
ATU2000C Series



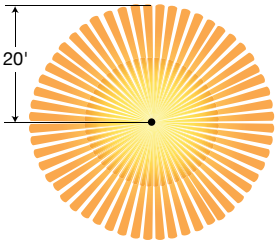
ATU1000C Series



ATU500C Series



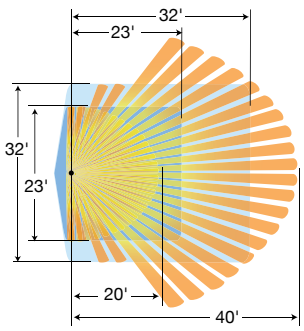
ATU2000C Series
Hallway Application



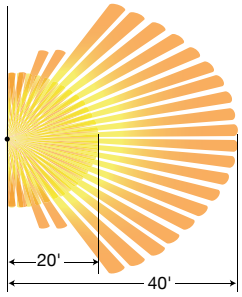
LVPR1500R(P)

Wall Mount Sensors Coverage Patterns

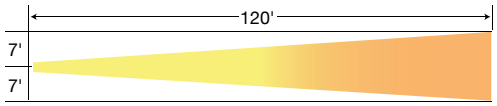
Minor Motion: Ultrasonic PIR **Major Motion:** Ultrasonic PIR



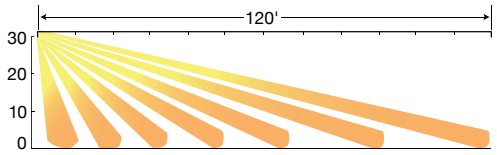
ATD1600W Series



ATP1600W Series



ATP120HB Series
Top View



Side View

Control Units - CU300/347A Series

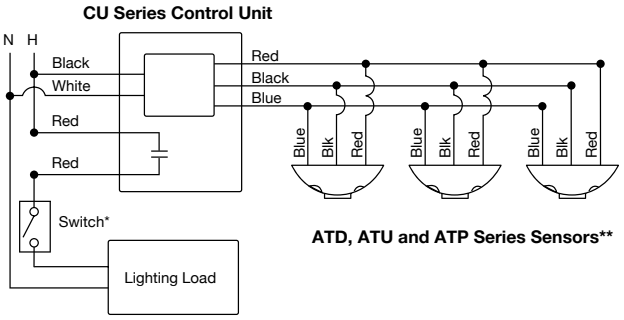
Electrical	CU300A(M)	CU347A	CU300HD
Power Supply	120-277V AC, 50/60Hz	347V AC, 60Hz	100-277V AC, 50/60Hz
Power Output	24V DC, 150mA	24V DC, 100mA	24V DC, 250mA
Load Capacity			
Incandescent, LED & CFL	0 to 1800 watts	N/A	20A, 100-277V AC; 1HP @ 120V AC, 2HP @ 240/277V AC
120V Ballast	0 to 2400 watts	N/A	Motor Loads:
230V Ballast	N/A	N/A	1HP @ 120V
277V Ballast	0 to 5540 watts	N/A	2HP @ 240/277V
347V Ballast	N/A	0 to 5205 watts	
AT Sensor/AAR Capacity	1 to 4 combined	1 to 3 combined	1 to 6 combined
Agency Approvals	UL Listed, cULus Certified	UL Listed, cULus Certified	UL Listed, cULus Certified
Physical			
Housing	Flame retardant UL 94-5VA thermoplastic		Flame retardant UL 94-5VA thermoplastic
Dimensions	3.69"L x 2.33"W x 1.36"H		4.00"L x 3.4"W x 1.73"H
Color	Black		Black
Environmental			
Operating	32°F to 104°F (0°C to 40°C); 0% to 90% non-condensing relative humidity		-40°F to 149°F (-40°C to 65°C). Below 32°F (0°C) must use suitably rated non-metallic enclosure. 0% to 90% humidity, non-condensing
Storage	-20°F to 150°F (-29°C to 65°C); 0% to 90% non-condensing relative humidity		

Add-A-Relay Control Units

Electrical	AAR	AAR20P
Power Input	24V DC nominal, 33mA from Hubbell CU series control unit	24V DC nominal, 50mA from Hubbell CU300HD series control unit
Load Capacity		
Incandescent, LED & CFL	0 to 1800 watts	20A, 100-277V AC; 1HP @ 120V AC, 2HP @ 240/277V AC
120V Ballast	0 to 2400 watts	Motor Loads
230V Ballast	0 to 3680 watts	1HP @ 120V
277V Ballast	0 to 5540 watts	2HP @ 240/277V
347V Ballast	0 to 5205 watts	
AT Sensor/AAR Capacity		1 to 6 combined
Agency Approvals	UL Listed	UL Listed, cULus Certified
Physical		
Housing	Flame retardant UL 94-5V thermoplastic	Flame retardant UL 94-5VA thermoplastic
Dimensions	3.69"L x 2.33"W x 1.36"H	4.00"L x 3.4"W x 1.73"H
Color	Black	Black
Environmental		
Operating	32°F to 104°F (0°C to 40°C); 0% to 90% non-condensing relative humidity	-40°F to 149°F (-40°C to 65°C). Below 32°F (0°C) must use suitably rated non-metallic enclosure. 0% to 90% humidity, non-condensing
Storage	-20°F to 150°F (-29°C to 65°C); 0% to 90% non-condensing relative humidity	

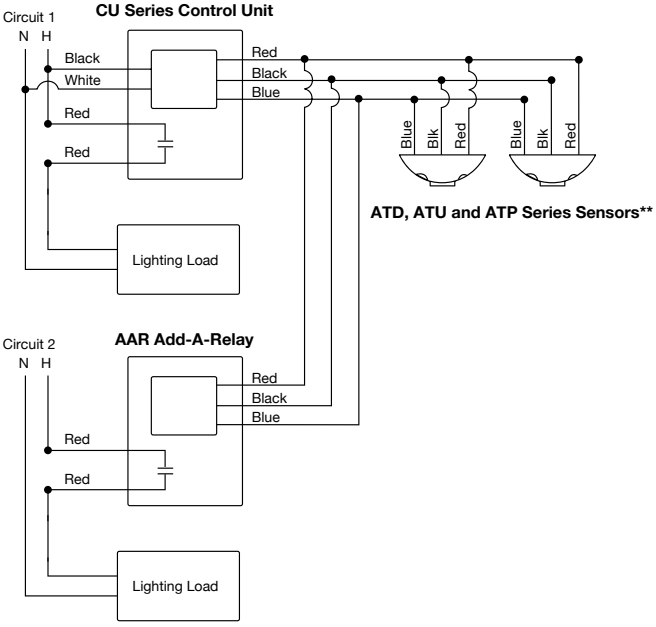
Adaptive Dual Technology, Ultrasonic, and Passive Infrared Ceiling and Wall Mount Sensors
ATD, ATU and ATP Series

Single Circuit Application:
1 to 4 sensors wired to control unit with optional override off switch.



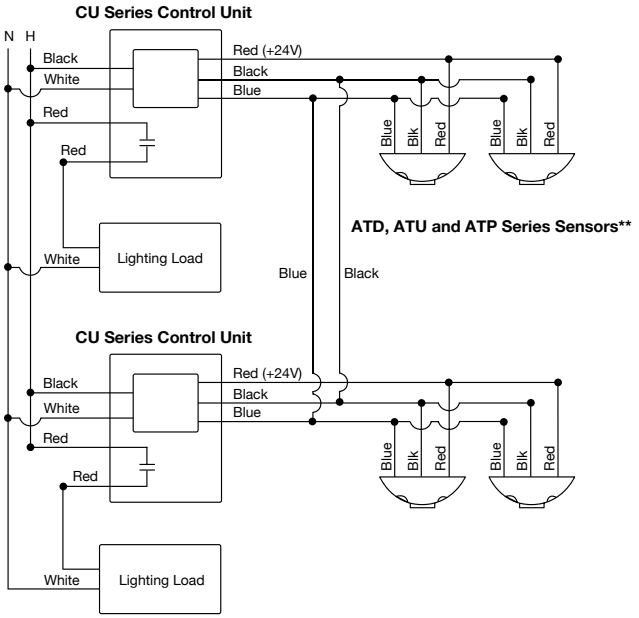
*Optional Override Off Switch

Two Circuit Application:
1 to 4 sensors wired to control unit and Add-A-Relay (control unit switches circuit 1, Add-A-Relay switches circuit 2).

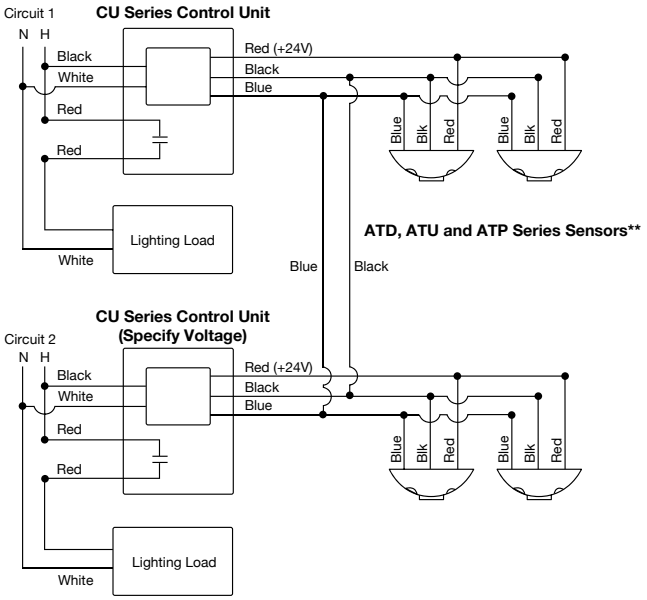


*Note: **For wiring sensors with isolated relay and photocell option (models with "RP" suffix): Photocell Option: Cap off Blue sensor wire. Connect Gray sensor wire to Blue control unit wire. Isolated Relay Option: Common-Blue/White wire, Normally Closed-Black/White wire, Normally Open-Yellow/White wire.*

Single Circuit Application:
Two control units wired in parallel to operate 5 to 8 sensors in a single zone. Maximum 4 sensors per control unit any sensor will activate lighting.

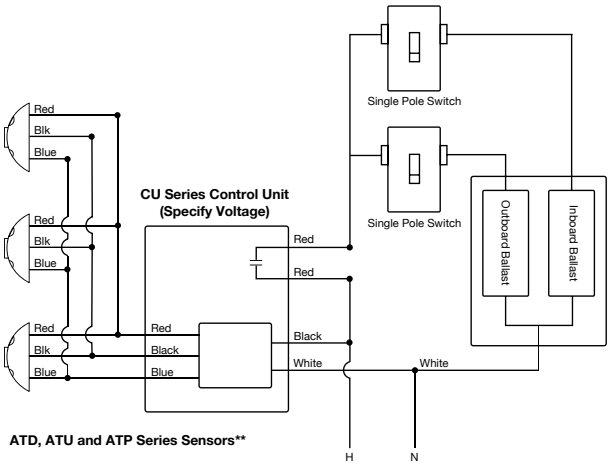


Two Circuit Application:
Two control units wired in two circuits to operate 2 to 8 sensors in a single zone. Maximum 4 sensors per control unit any sensor will activate both lighting loads.

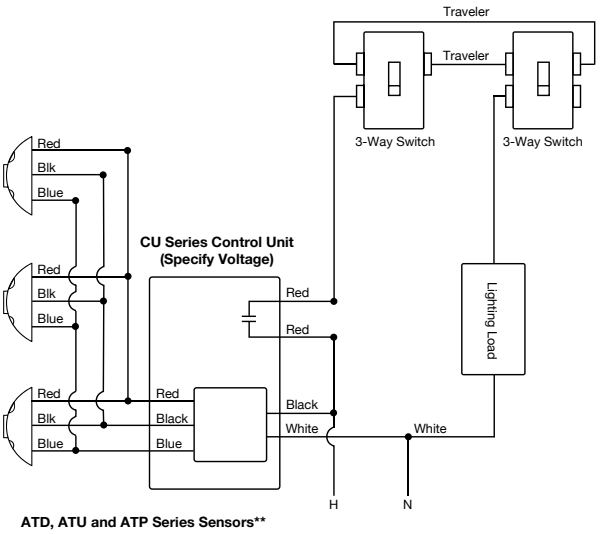


Adaptive Technology Dual, Ultrasonic, and Passive Infrared Ceiling and Wall Mount Sensors ATD, ATU and ATP Series

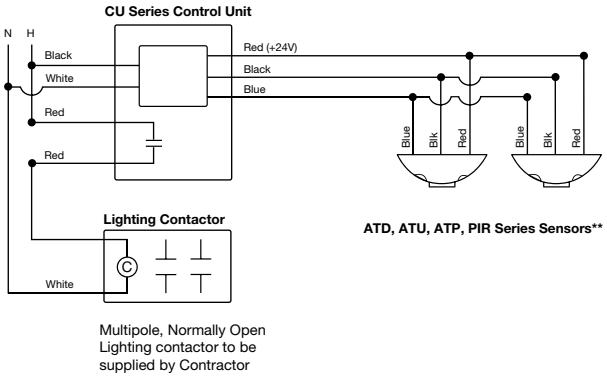
Single Circuit, Dual Level Switching Application:
1 to 4 sensors wired to control unit with optional override off switches.



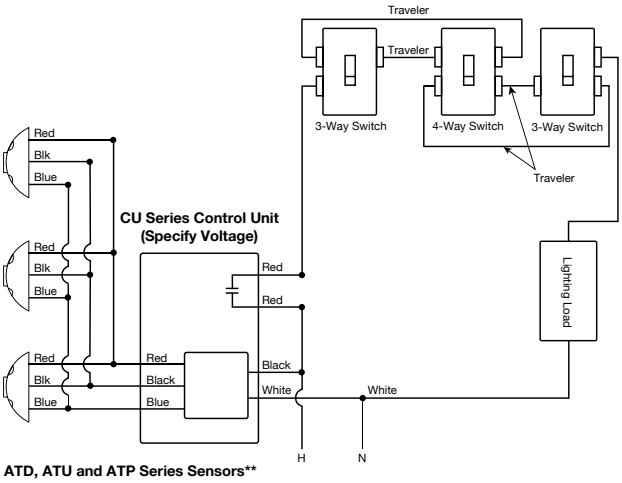
Single Circuit, 3-Way Switching Application:
1 to 4 sensors wired to control unit with optional override off switches.



Multi-Circuit Application:
1 to 4 sensors wired to control unit that is wired to a multi-pole lighting contactor.



Single Circuit, 4-Way Switching Application:
1 to 4 sensors wired to control unit with optional override off switches.



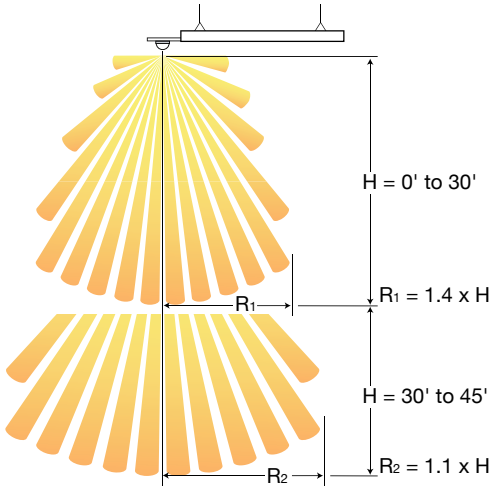
*Note: **For wiring sensors with isolated relay and photocell option (models with "RP" suffix): Photocell Option: Cap off Blue sensor wire. Connect Gray sensor wire to Blue control unit wire. Isolated Relay Option: Common-Blue/White wire, Normally Closed-Black/White wire, Normally Open-Yellow/White wire.*

OPTIMYZER® High Bay Controls
HMHB Series

User Interface	(1) twelve pin dip switch
Timer time-outs	Primary: 8-second test mode, 4, 8, 16 and 30 minute time-outs Secondary: (Can be disabled) 30, 60 and 90 minute time-outs
Passive infrared	Dual element pyrometer and spherical Fresnel lens
Daylight sensor	Dual element pyrometer and spherical Fresnel lens designed for robust detection of a walking person*
Coverage	360° lens provided, 180° aisle and end-of-aisle lenses also available
Load ratings (line voltage units)	120V AC: 0 to 800W ballast or tungsten 277V AC: 0 to 1200W ballast 347V AC: 0 to 1500W ballast 208/240V AC: 0 to 1200W ballast 480V AC: 0-2400W ballast ¼ HP motor load @ 120V AC, ⅛ HP @ 347V AC Output (Low voltage sensors): • 24V DC active high-logic control signal • Relay: N/O + N/C contacts; 500mA rated @ 24V DC; 3-wire isolated relay
Operating environment	Indoor use only Operating temperature: (standard version) 32°F to 149°F (0°C to 65°C); Relative humidity (non-condensing): 0% to 95%
Construction	Casing: High-impact injection-molded thermoplastic
Size and weight	Size: 4.0" Diameter x 1.5" Height; Weight: 7 oz.
Color	White
Mounting	Mounts directly to end of a fixture through an extended ½ inch chase nipple for deeper body fixtures, an optional Extender Adapter (HMHBSA available separately) positions the sensor flush or below the bottom of the reflector for a full field of view
Certifications	cULus Listed
Warranty	5 year limited

Coverage Pattern

Minor Motion: PIR **Major Motion:** PIR



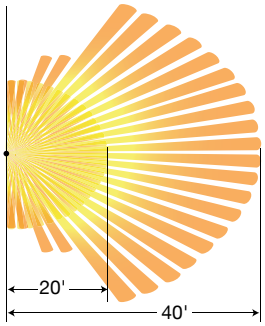
*Note: *When used with program start ballast, a 1-2 second delay from occupancy detection to lamp turn-on may be experienced.*

MAXX™ Harsh Environment Occupancy Sensors
AHP Series

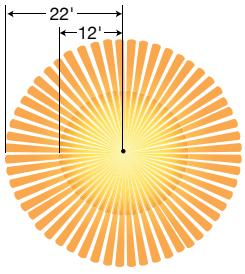
Electrical		
Power Requirements	24V DC nominal, 33mA from Hubbell CU series control unit	
Isolated Relay (sensors with RP suffix)	Normally open and normally closed Terminals available	
Agency Approvals	cULus Listed	
Physical	**Ceiling Sensor**	
Housing	Flame retardant UL 94 V-0 ABS	Flame retardant UL 94 V-0 Valox®
Protection	NEMA 4X, when used with ACIPE	NEMA 4X, IP66, outdoor use rated
Lens	Polyethylene	Polyethylene
Dimensions	4.5" Diameter x 1.5" Height	6"H x 2"W x 1.5"D
Color	Office White	Gray
Mounting Height	8 to 12 feet	8 to 12 feet
Physical	**Wall Mount Sensor**	
Environmental		
Operating	-40°F to 149°F (-40°C to 65°C) with rate of change not exceeding 20°F (11°C) per hour; 0% to 95% non-condensing relative humidity	
Controls		
Time Delay	Test (8 seconds), adaptive 8 to 40 minutes	
Ambient Light	1 to 1000 foot candles	
Sensitivity	Adaptive 0 to 100%	
Sensing Indicators		
Passive Infrared	Red LED	

Coverage Pattern

Minor Motion: PIR **Major Motion:** PIR



AHP1600WRP



AHP1500CRP

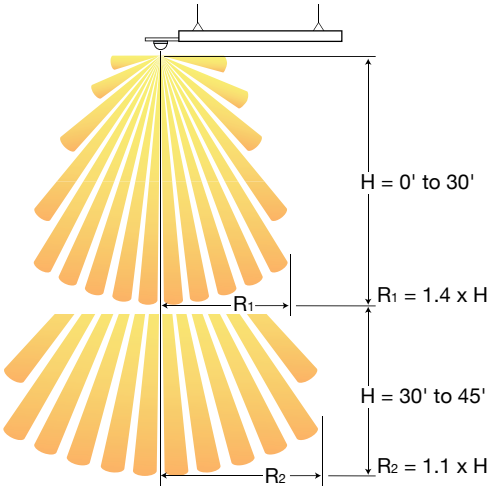
Valox® is a trademark of SABIC Innovative Plastics, acquired from General Electric Company.

MAXX™ OPTIMYZER® Watertight End Mount PIR Sensor HMHBxxUPCW Series

User Interface	(1) twelve pin dip switch
Timer time-outs	Primary: 8-second test mode, 4, 8, 16 and 30 minute time-outs Secondary: (Can be disabled) 30, 60 and 90 minute time-outs
Passive infrared	Dual element pyrometer and spherical Fresnel lens
Daylight sensor	Dual element pyrometer and spherical Fresnel lens designed for robust detection of a walking person*
Coverage	360° lens provided, 180° aisle and end-of-aisle lenses also available
Load ratings (line voltage units)	120V AC: 0 to 800W ballast or tungsten 277V AC: 0 to 1200W ballast 347V AC: 0 to 1500W ballast 208/240V AC: 0 to 1200W ballast 480V AC: 0-2400W ballast ¼ HP motor load @ 120V AC, ⅙ HP @ 347V AC Output (Low voltage sensors): • 24V DC active high-logic control signal • Relay: N/O + N/C contacts; 500mA rated @ 24V DC; 3-wire isolated relay
Operating environment	Indoor and outdoor use Operating temperature: -40°F to 149°F (-40°C to 65°C)
Construction	Casing: High-impact injection-molded thermoplastic
Size and weight	Size: 4.0" Diameter x 1.5" Height; Weight: 7 oz.
Color	White
Mounting	Mounts directly to end of a fixture through an extended ½ inch chase nipple for deeper body fixtures, an optional Extender Adapter (HMHBSA available separately) positions the sensor flush or below the bottom of the reflector for a full field of view
Certifications	Conforms to UL STD 508, UL STD 244A, Conforms to IP65
Warranty	5 year limited

Coverage Pattern

Minor Motion: PIR **Major Motion:** PIR

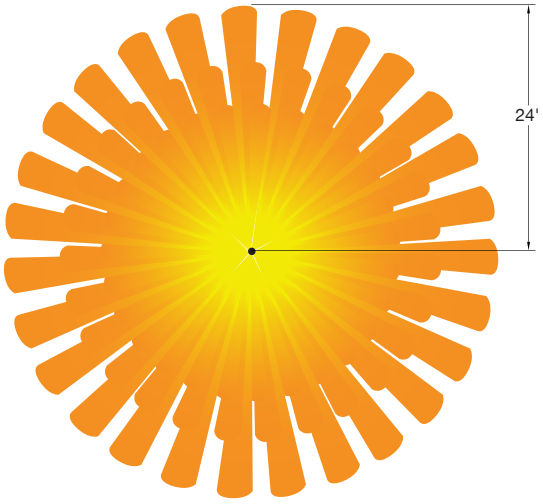


*Note: *When used with program start ballast, a 1-2 second delay from occupancy detection to lamp turn-on may be experienced.*

OPTIMYZER® Low Mount Lens Modification HMLBL 360° Coverage Patterns

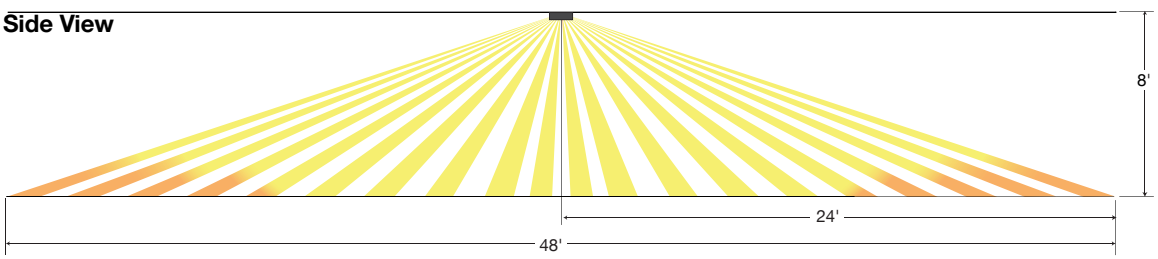
Minor Motion: PIR **Major Motion:** PIR

Top View

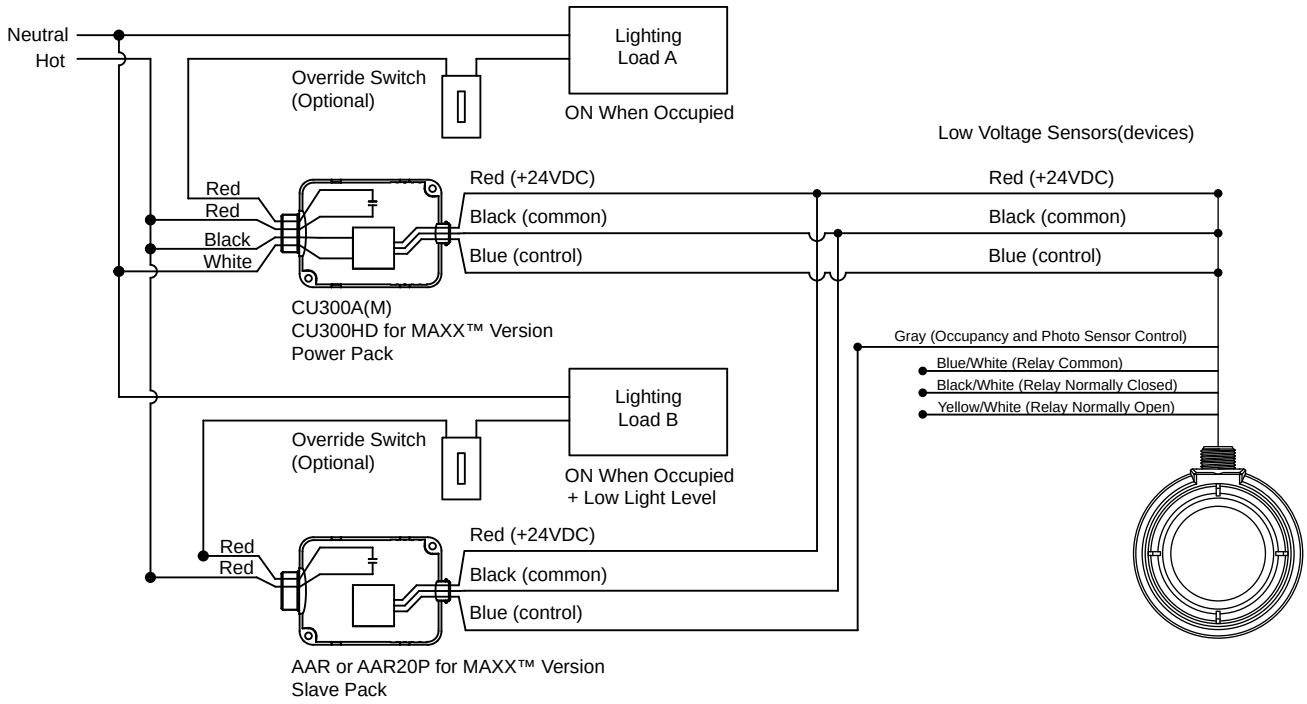


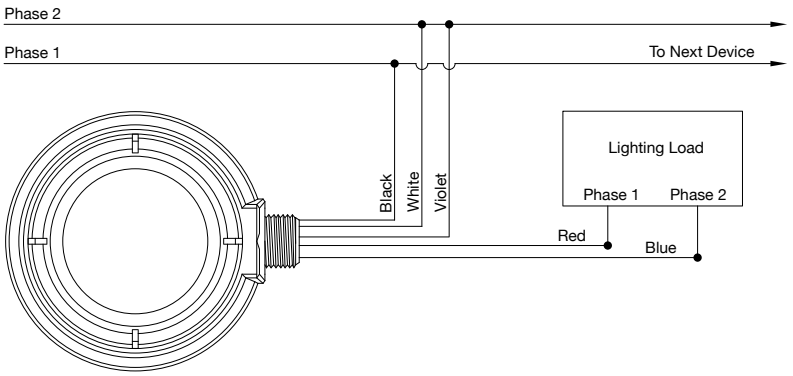
HMLBL360

Side View

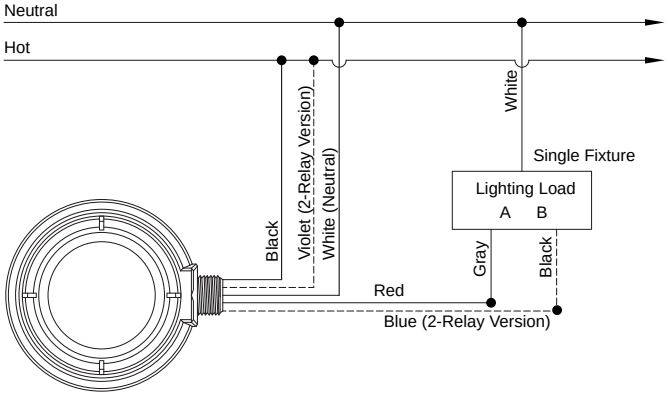


OPTIMYZER® High Bay Controls
HMHB Series, Low Voltage Sensor with Control Unit

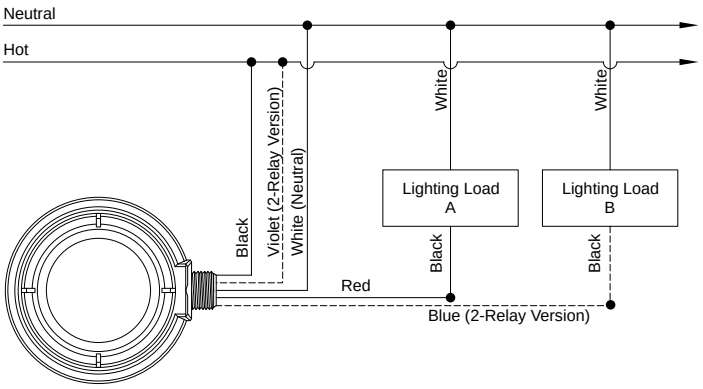




OPTIMYZER® High Bay Controls
HMHB Series, Dual Relay, Single Fixture



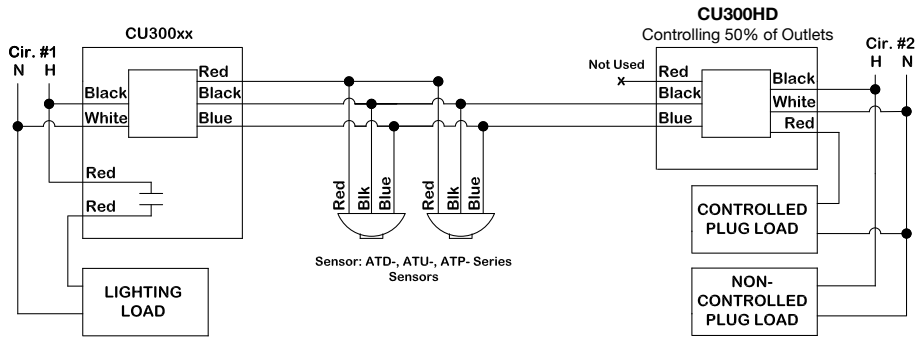
OPTIMYZER® High Bay Controls
HMHB Series, Dual Relay, Two Fixtures



WLC Load Control with Wireless Clear Connect Communication

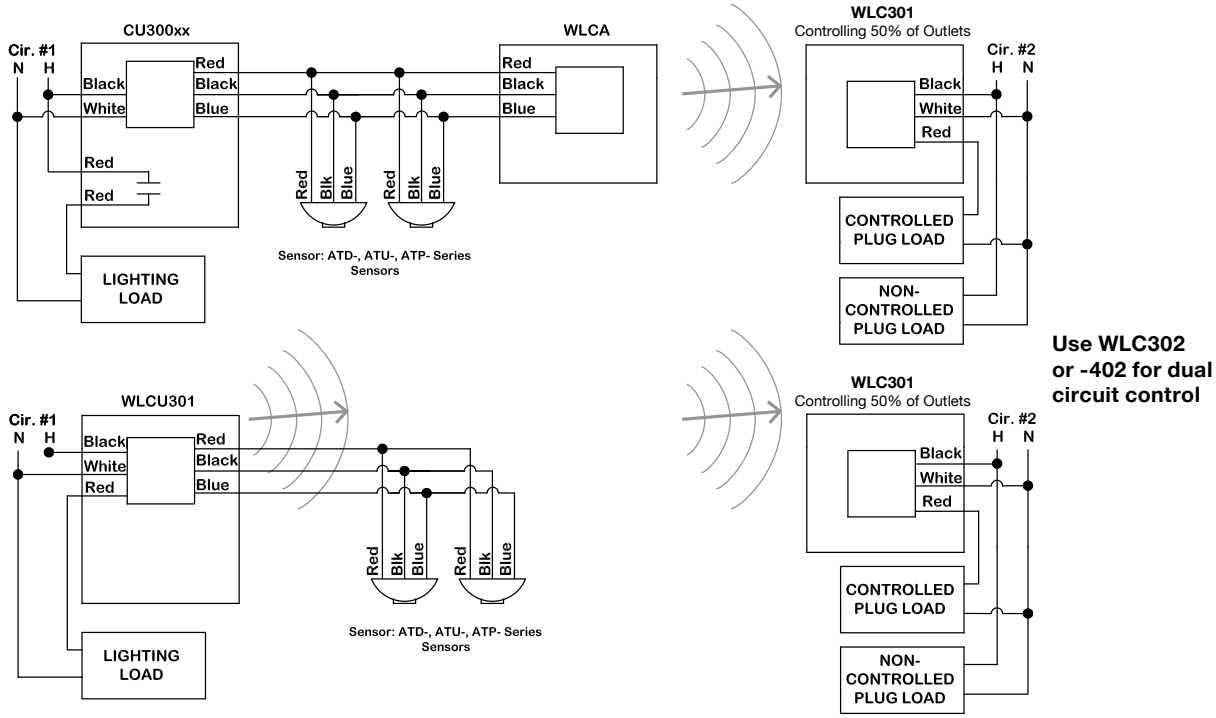
Electrical	WLCA	WLCU301	WLC301	WLC302	WLC402W
Power Supply	24V DC	100-277V AC, 50/60Hz	100-277V AC, 50/60Hz	100-277V AC, 50/60Hz	100-277V AC, 50/60Hz
Power Output	N/A	24V DC 250mA	N/A	N/A	N/A
Circuits Controlled	N/A	1	1	2	2
Load Capacity		100-277V AC, 20A 1HP @ 120V AC 2HP @ 240/277V AC	100-277V AC, 20A 1HP @ 120V AC 2HP @ 240/277V AC	100-277V AC, 20A 1HP @ 120V AC 2HP @ 240/277V AC	100-277V AC, 20A 1HP @ 120V AC 2HP @ 240/277V AC
Agency Approvals	UL Listed, cULus, FCC, IC, UL/cUL 916 listed for energy management equipment				
Device Type (Transmit or Receive)	TX	TX	RX	RX	RX
Range (Standard/ Obtructed)	30 ft. (10m)	30 ft. (10m)	30 ft. (10m)	30 ft. (10m)	30 ft. (10m)
Range (Unobstructed, line of sight)	60 ft. (30m)	60 ft. (30m)	60 ft. (30m)	60 ft. (30m)	60 ft. (30m)
Physical					
Housing	Flame retardant UL 94-5VA thermoplastic				
Dimensions	4.00"L x 3.4"W x 1.73"H				4.68"L x 4.94"W x 2.78"H
Color	Black	Black	Black	Black	White

Wired Lighting and Plug Load Control



Wireless Lighting and Plug Load Control

Easily upgrade existing occupancy based lighting control systems to support automated plug load controls.



Use WLC302 or -402 for dual circuit control

Clear Connect™ is a registered trademark of Lutron Electronics Co., Inc.

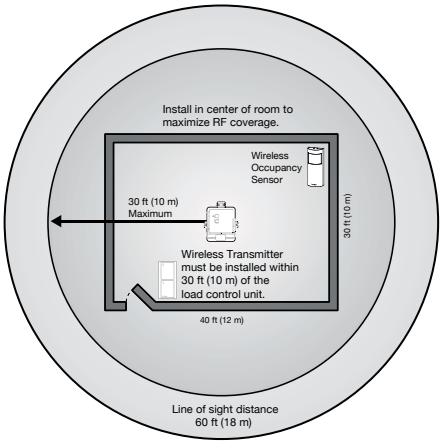
Wireless Wall Switch (WLS1278 Series)

Electrical	Operating voltage: 120/277V AC, 50/60Hz; Green indicator light
Operating Environment	Indoor use only Ambient operating temperature: 32°F to 104°F (0°C to 40°C); relative humidity: 0% to 90% humidity, non-condensing
Wire Size	#20 to 16 AWG (0.5 to 1.5mm^2) solid or stranded wire
Capacity	Up to 9 WLAS accessory switches can be configured to work together with one WLS1278
Range	RF range is 30 ft. (10m) obstructed, 60 ft. (18m) line of sight
Certifications	UL Listed, CSA Certified, FCC Approved; Complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules
Warranty	1 year

Wireless Control Unit (WLC316R)

Electrical	Operating voltage: 120/277V AC, 50/60Hz LED status indicator: displays load status and provides programming feedback Power failure memory: (Relay returns to previous level prior to interruption) Output is non-latching
Operating Environment	Indoor use only Ambient operating temperature: 32°F to 131°F (0°C to 55°C); Relative humidity: 0% to 90% humidity, non-condensing
Load	Maximum load: 16A general purpose. No minimum Motor rating: 0.5 HP (120V AC), 1.5 HP (277V AC)
Isolated Relay	Normally open (NO) and normally closed (NC) dry contacts Maintained latching output The isolated relay is not rated to control unclamped, inductive loads Inductive loads include, but are not limited to relays, solenoids and motors to control these types of equipment
Range	RF range is 30 ft. (10m) obstructed, 60 ft. (18m) line of sight
Certifications	UL Listed, UL 2043 Plenum Rated, FCC Approved. Complies with the limits for a Class B device, pursuant to Part 15 of the FCC rules. CSA and IC
Warranty	1 year

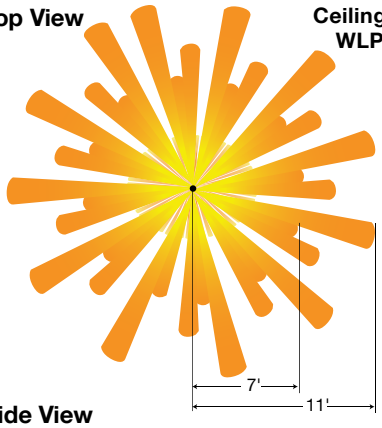
Range Diagram



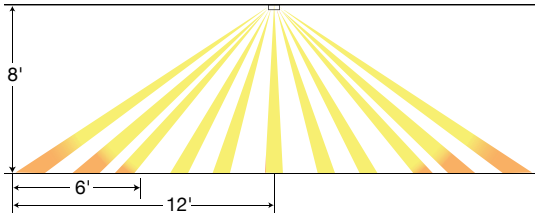
Contact Hubbell first for applications using foil-backed or metallic ceiling tiles.

Wireless Sensor Coverage Patterns

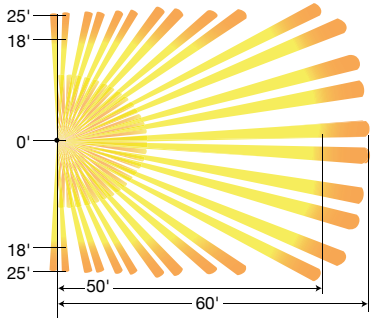
Top View — **Ceiling Mount WLP450C**



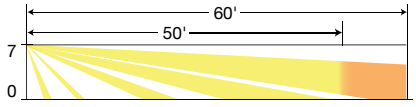
Side View



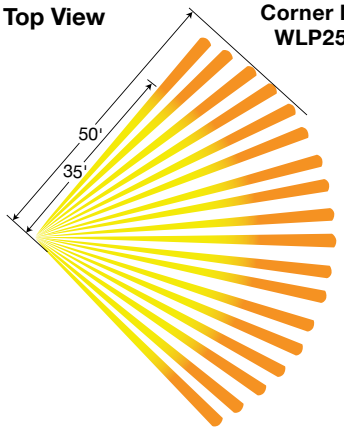
Top View — **Wall Mount WLP3000W**



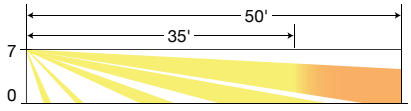
Side View



Top View — **Corner Mount WLP2500W**



Side View



Sensor Coverage Chart (for sensor mounted in center of room)

Ceiling height	Maximum room dimensions for complete floor coverage*	
8 ft. (2.4m)	18 ft. x 18 ft. (5.5m x 5.5m)	324 sq. ft. (30.2m^2)
9 ft. (2.7m)	20 ft. x 20 ft. (6.1m x 6.1m)	400 sq. ft. (37.2m^2)
10 ft. (3.0m)	22 ft. x 22 ft. (6.7m x 6.7m)	484 sq. ft. (44.9m^2)
12 ft. (3.7m)	26 ft. x 26 ft. (7.9m x 7.9m	676 sq. ft. (62.4m^2)

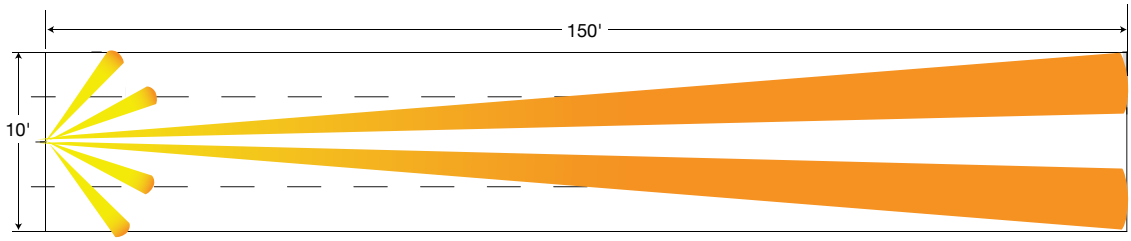
*Note: *12 ft. (3.7m) is the recommended maximum mounting height.*

Wireless Hallway Sensor

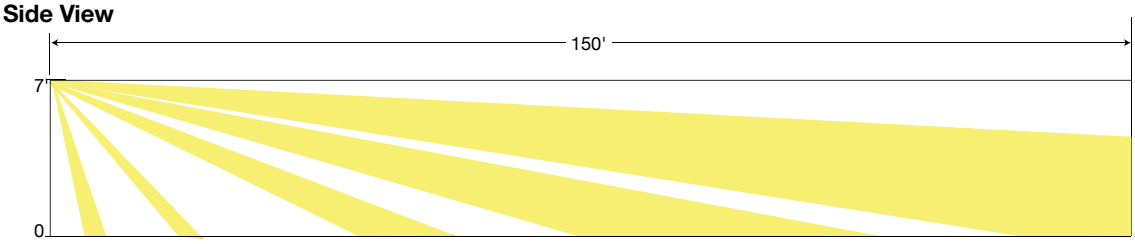
Electrical	Operating voltage: 3V Operating current: 14 µA nominal 10-year battery life design Supplied with one CR 123 lithium battery Non-volatile memory (saved changes are stored during power loss)
Construction	High impact, UL 94-5V plastic
Operating Environment	Indoor use only Operating temperature: 32˚F to 104˚F (0˚C to 40˚C)
Range	RF range is 30 ft. (10m) obstructed, 60 ft. (18m) line of sight
Sensor Coverage Test	Dedicated test button Lens illuminates orange in response to motion during test mode
Wireless Communication Test	Dedicated test button; Turn associated loads ON and OFF
Time Out Options	1 minute (intended for use in high-activity, briefly occupied areas only); 5 minutes; 15 minutes (default setting); 30 minutes
Auto-On Options	“Enabled” – Sensor turns lights ON and OFF automatically – default setting “Disabled” – Lights must be turned ON manually from a switching device Sensor turns lights OFF automatically
Sensitivity Options	Low Activity (default setting); Medium Activity; High Activity
Certifications	cULus Listed, FCC Certified, IC Certified Meets CA (USA) Energy Commission Title 24 requirements
Warranty	1 year

Wireless Hallway Sensor Coverage Patterns

Top View



Side View



WLP150H

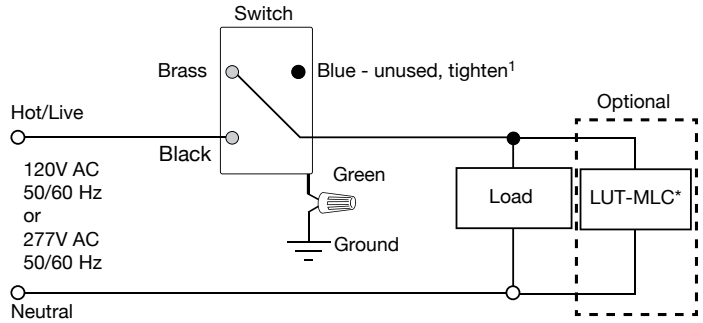
Sensor Coverage Chart (Hallway)

Width of Hall	Length of Hall
6 ft. (1.0m) or less	50 ft. (15.2m)
8 ft. (2.4m)	100 ft. (30.5m)
10 ft. (3.0m) or more	150 ft. (45.7m)

Note: Sensor mounting shown at 7 ft. (2.1m)Mounting height should be between 6 and 8 ft. (1.6 and 2.4m).

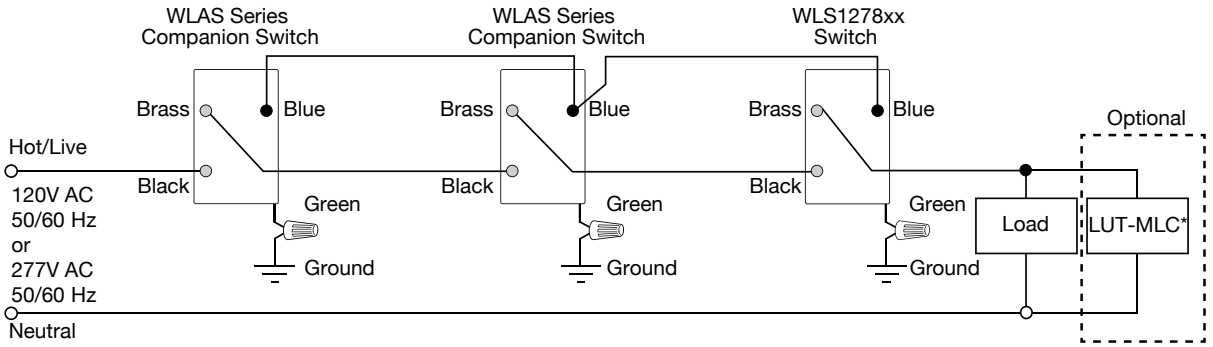
Wireless Wall Switch (WLS1278 Series)

Single Location Installation
WLS1278xx*



*Note: *The included LUT-MLC ensures proper function when fluorescent, CFL, or LED loads are used. Install the LUT-MLC inside a load fixture or in a separate J-box of the circuit.*
1 When using controls in single location installations, tighten the blue terminal without any wires attached. DO NOT connect the blue terminal to any other wiring or to ground.
2 Up to 9 Accessory Switches may be connected to the Wireless Switch. Total blue terminal wire length may be up to 250 ft. (76m).
3 Requires WLAS120 for 120V AC applications, and WLAS277 for 277V AC applications.

Multi-Location Installation[2]
with WLAS1278xx or WLAS277xx[3]



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