



Northwest Trade Ally Network  
Commercial & Industrial Lighting



# Increase savings and customer value through controls

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# Why are controls important?

## More value to the customer

- Energy Savings = \$
- Needs for **sustainability goals** (carbon footprint)
- Keeps **existing buildings competitive** with new building codes
- **Reduce maintenance costs** by extending operating hours on ballasts and lamps
- **Differentiates** sophistication of buildings for tenants and the resale values
- Additional **security benefits**
- Utility incentives available



# Why customers might say no



- Extra up front cost to standard lighting project
- Perceived “extra” cost without understanding the value
- Unaware - ignorant of the technology
- Complicated - might not work - might break
- Employee complaints (having to do the sensor shuffle)
- Call backs!

When the lights are off, you're saving energy and money



If it's new construction, you can't say no....

# Controls used in retrofit projects

## Occupancy sensors

### Technologies available:

- Passive infrared (PIR) – moving heat
- Ultrasonic – Doppler shift
- Microphonic – listens for sounds
- PIR/Ultrasonic and PIR/Microphonic

With two technologies together, PIR usually turns the load on, then the other technology monitors the space. The other technologies are more sensitive so it takes moving heat to activate. Some manufacturers offer options for either technologies in the same unit, field adjustable

# Controls used in new and existing buildings

Occupancy sensors:

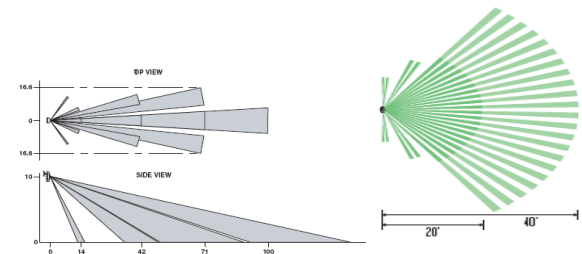
Applications:

- Wall switch
- Ceiling or wall mount
- Fixture mount



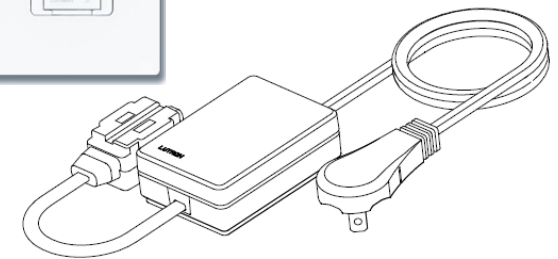
Coverage

- 180, 360 degree and custom coverage (blinders built in or included)
- Square feet: 500, 1,000, 1,500 and 2,000
- Long and skinny views for hallways
- Wide or narrow views for high bay

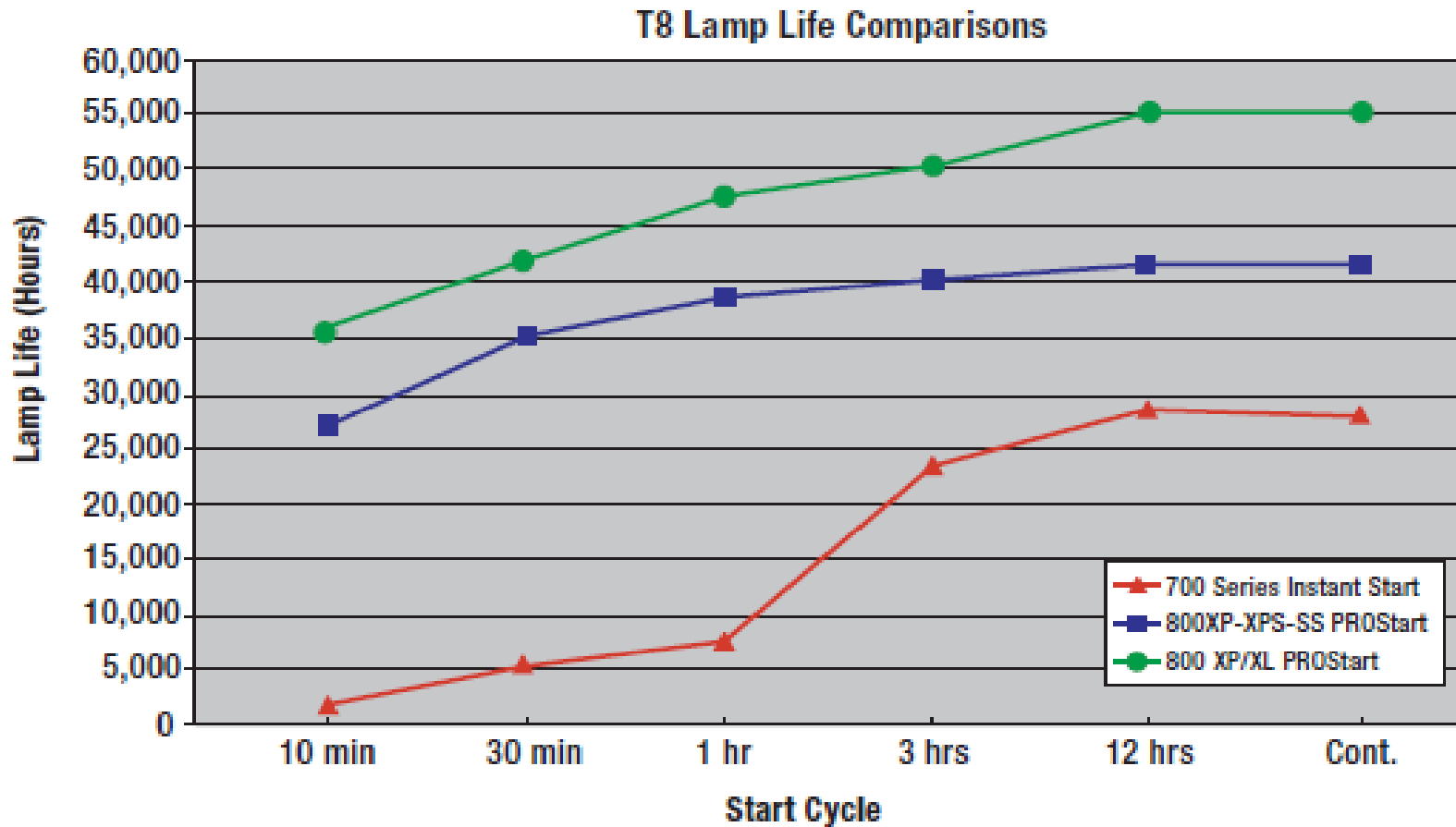


# Wireless Occupancy Sensors

- Install the sensor in the ceiling, no wires!
- Replace the existing wall switch with new switch
- The sensor sends a signal to the switch
- Usually PIR technology
- Some have 10 year batteries
- Some work off a little PV panel
- Great for hard ceilings
- Wireless relay, listens to sensor
- Wireless switch



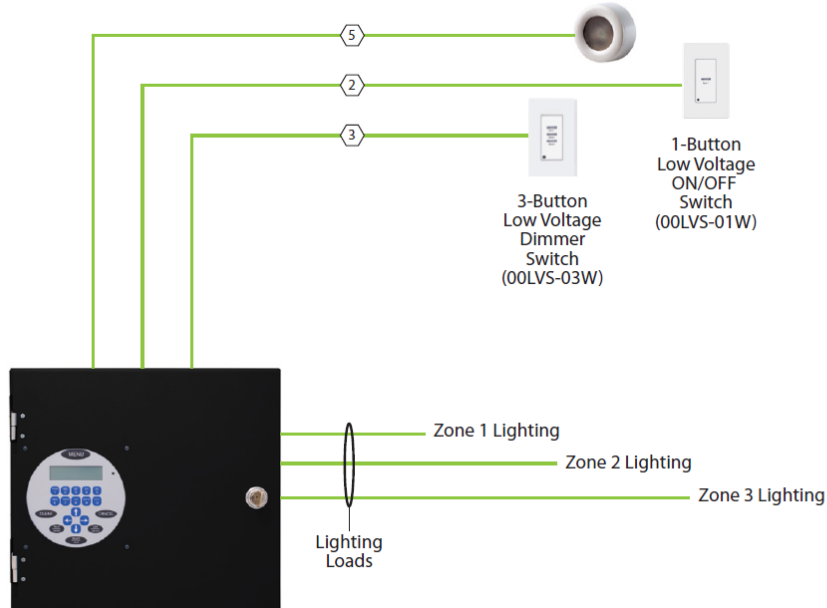
# Lamp life instant start vs. program start. Use *program start* with controls



# Controls used in retrofit projects

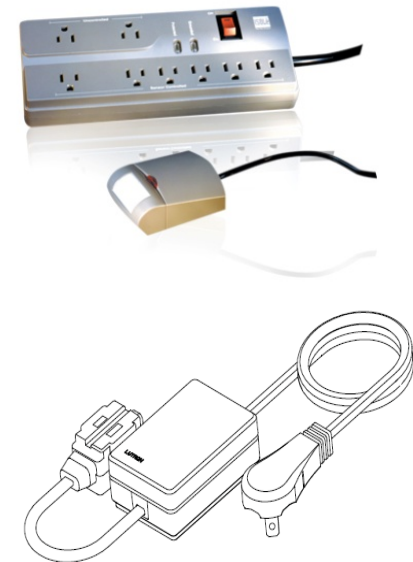
## Relay panels

- Remote or centralized relay panels
- Time of day scheduling
- Sweep commands with two hour overrides
- Contact closure inputs like occupancy sensors and photo cells
- Tie into existing building management systems



*Distributors now stocking relay panels*

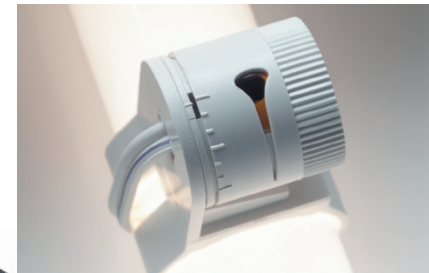
# Good place for a power strip with occupancy sensor



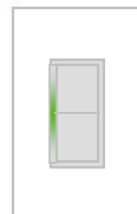
Lutron, Wattstopper

# Daylight harvesting

- Turning lights off with daylight contribution
- Dimming lights with daylight contribution
- Line voltage dimming control with occupancy sensor
- Dimming ballast with integral photo cell for individual control (great for the retro market)
- Low voltage sensors to control 4-wire dimming ballasts in zones
- There's something available for every application



Dimming through the power leads



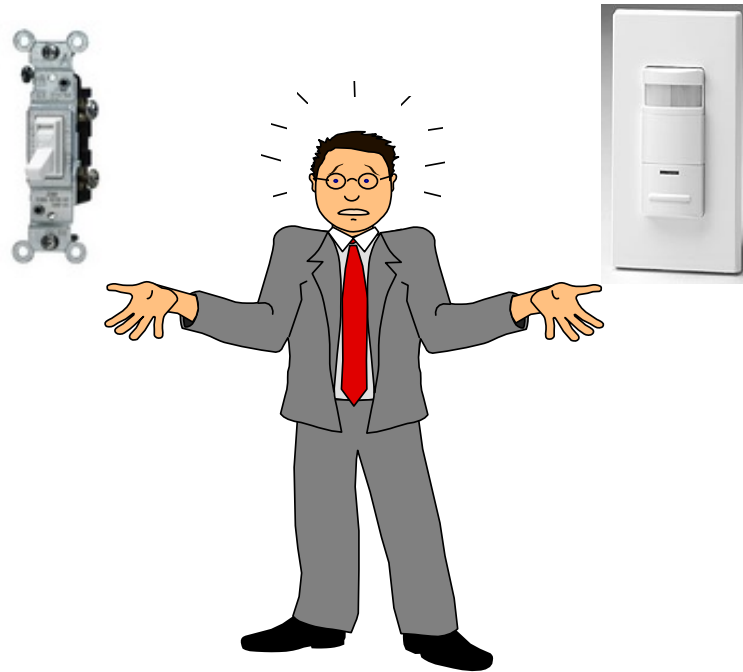
Mark 10 dimmer



# Review

- Occupancy sensors
  - Lighting control panels
  - Wireless controls
  - Daylight harvesting
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- It may or may not cost more up front but the end result is a better ROI....the gift that keeps on giving
  - Contact your local utility for more information on incentive programs.

# Questions?



[www.northwest-lighting.org](http://www.northwest-lighting.org)