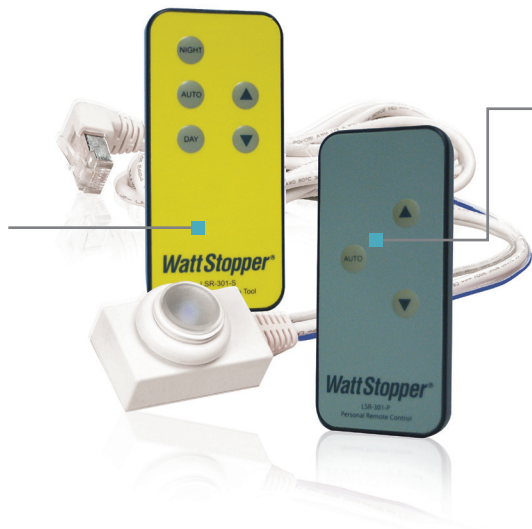


# FIXTURE INTEGRATED DAYLIGHT DIMMING PHOTOSENSOR

FD-301

- Provides automatic dimming based on ambient light levels
- Handheld remote for quick, easy setup without tools or ladders
- Controls standard 0–10 VDC electronic dimming ballasts



- Works with optional occupant controls for temporary adjustments
- Single zone, closed loop daylighting control
- Sliding setpoint prevents over- or under-dimming

## DESCRIPTION

The FD-301 Fixture Integrated Daylight Dimming Photosensor is a low voltage controller that works with standard 0-10 VDC electronic dimming ballasts to control electric lighting in response to daylight.

## OPERATION

A closed loop daylighting system, the FD-301 measures the total light level from daylight and electric light in the controlled area. The integral photocell measures only the narrow bandwidth of visible light to accurately report ambient light levels. Once commissioned, the FD-301 calculates the required light level for any given amount of daylight contribution based on two setpoints. One represents the target level when no daylight is present (night setpoint) and the other when significant daylight is present (day setpoint). Electric light output is automatically varied as the daylight level changes throughout the day to maintain the target light level. If specified, occupant controls may be used to temporarily adjust lighting levels without changing the setpoints. The FD-301 works with an FS-PP power pack.

## ADJUSTMENT USING REMOTE CONTROLS

The FDR-301-S setup remote facilitates quick easy setup from ground level without tools. Raise and lower buttons are used to adjust target lighting levels for the day and night setpoints in the presence and absence of daylight. LEDs confirm setup operations.

An optional occupant remote control, LSR-301-P, includes raise and lower buttons to temporarily increase the target light level by up to 25% or reduce it to the lamp/ballast minimum level. An “Auto” button returns control to the programmed levels.

## APPLICATIONS

The FD-301 is designed for mounting in fluorescent lighting fixtures using 0-10 VDC electronic dimming ballasts. It is an ideal control choice for daylit locations that experience long periods of occupancy including private or open offices, classrooms and cafeterias. The FD-301 may be used with FS occupancy sensors for maximum energy savings.

## FEATURES

- Photocell uses photopic curve to accurately measure light as it is perceived by the human eye
- Provides precise control of lighting to maintain desired light level
- Separate handheld remote control for setup prevents tampering
- Boosts energy savings by reducing maximum lamp output, often resulting in a 20% reduction or more compared with lights at full output
- Optional occupant remote increases user satisfaction and often produces increased energy savings
- Achieves lumen maintenance by holding target light level as lamp output decreases over time

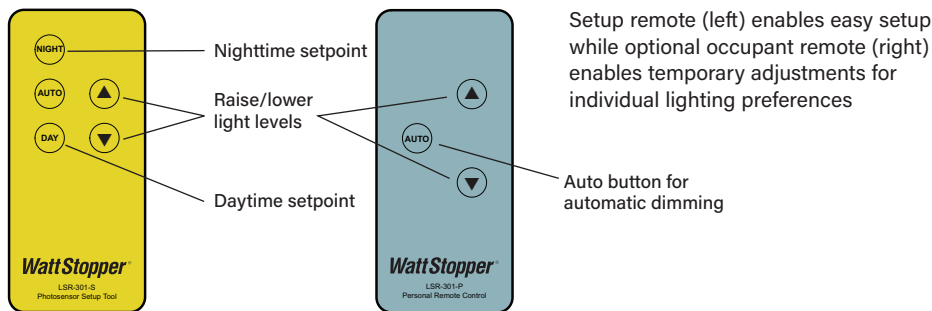
|         |                   |
|---------|-------------------|
| PROJECT | LOCATION/<br>TYPE |
|---------|-------------------|

## SPECIFICATIONS

- Operating voltage: 24 VDC
- Current consumption: 9mA typical, 30mA peak
- Max sink current: 50mA
- Dimensions: 1.57" x .98" x .84"  
(40mm x 25mm x 21.4 mm) L x W x D
- Weight: 64.4 grams (2.27 ounces)
- Enclosure material: ABS
- Color: White
- Operating temperature: 0–40°C (32–104°F)
- Operating humidity: 5–95%, non-condensing
- Full range dimming: .2 VDC (minimum) to 10 VDC (100% lighting) output voltage
- Includes 6' (1.83m) lead with RJ45 connector and 1' (.3m) bare leads for 0–10 VDC signal
- Sliding setpoint control algorithm
- Five year warranty

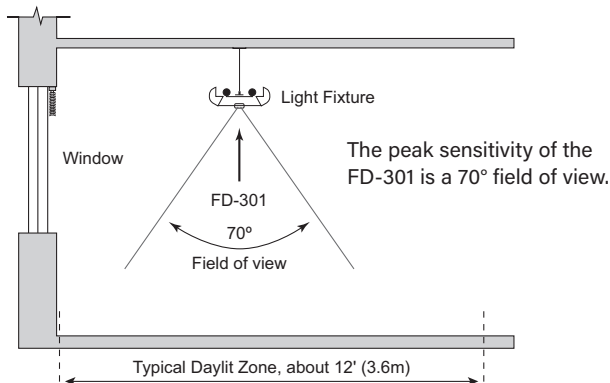
## PRODUCT CONTROLS

### Handheld Remote Controls

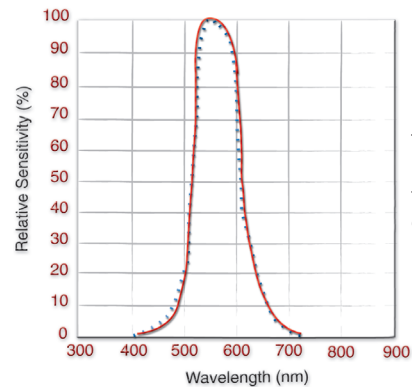


## SENSITIVITY

### Photosensor Spatial Response

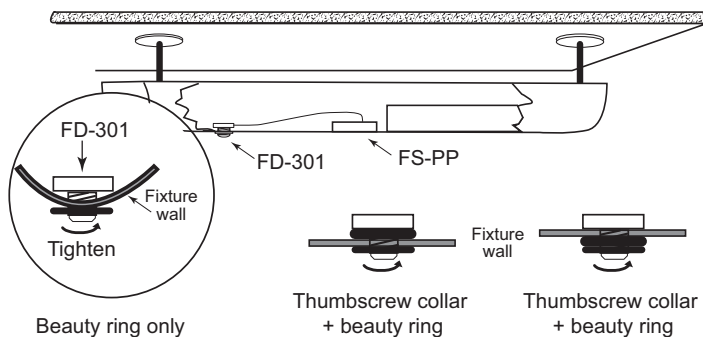


### Photodiode Spectral Response

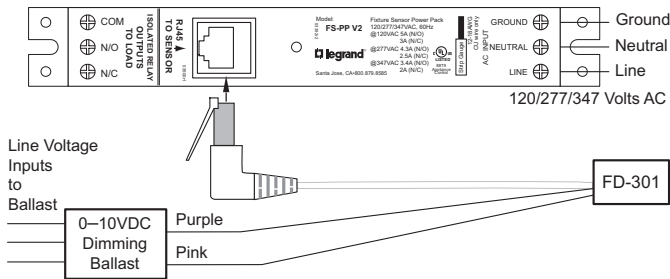


The spectral response of the photodiode closely matches the sensitivity of the human eye.

## MOUNTING AND INSTALLATION

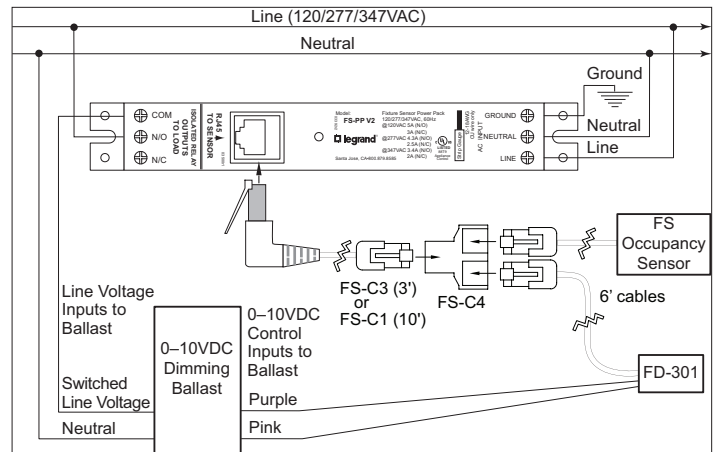


## WIRING

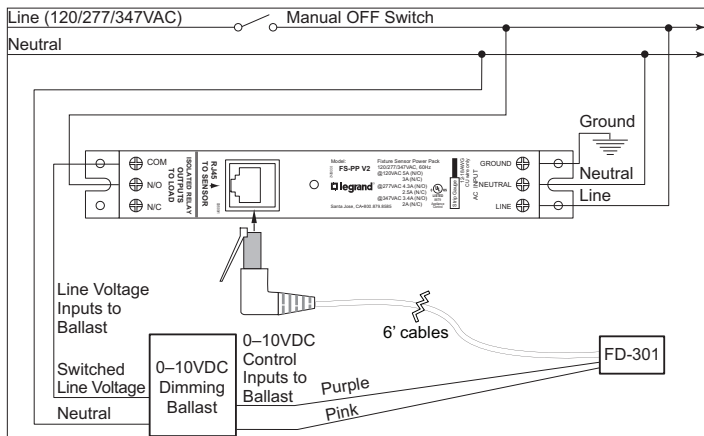


**Basic wiring for daylight dimming control**

**NOTE:** Per UL, the 0-10V negative dimming wire color has been changed from gray to pink.



**Wiring for daylight dimming with occupancy sensor ON/OFF control**



**Wiring for daylight dimming plus manual OFF control**

## ORDERING INFORMATION

| Catalog #                          | Description   | Input Voltage     |
|------------------------------------|---|-------------------|
| <input type="checkbox"/> FD-301    | Fixture Integrated Daylight Dimming Photosensor   | 24 VDC            |
| <input type="checkbox"/> LSR-301-S | Setup Remote Control  |                   |
| <input type="checkbox"/> LSR-301-P | Occupant Remote Control   |                   |
| <input type="checkbox"/> FS-PPv2   | Power Pack  | 120/277 VAC; 60Hz |
| <input type="checkbox"/> FS-C1     | One 10' cable with a shielded RJ45 male connector at each end   |                   |
| <input type="checkbox"/> FS-C1-20  | One 20' cable with a shielded RJ45 male connector at each end   |                   |
| <input type="checkbox"/> FS-C2     | One 6" (152mm) cable with 3 flying leads at one end and a shielded RJ45 male connector at the other   |                   |
| <input type="checkbox"/> FS-C3     | One 3' cable with a shielded 90° RJ45 male connector at one end and a shielded straight male RJ45 connector at the other end, for space-limited areas |                   |
| <input type="checkbox"/> FS-C4     | Shielded RJ45 splitter with female to dual female receptacles   |                   |
| <input type="checkbox"/> FS-C5     | Shielded RJ45 male-to-male coupler  |                   |