The LS-102 Daylighting Controller is a single zone, on/off switching device designed to be installed in a closed loop application. A self-contained 24 VDC device with an extended range of 1-1400 footcandles, the LS-102 requires a low voltage power pack to operate. The controller consists of an advanced digital multi-band photosensor, an on-board microcontroller, and an LCD display. This photosensor is positioned behind a 100º cone that cuts off unwanted light, preventing false triggers.

### Specifications and Features

- **Model**: LS-102
- **Operating voltage**: 12/24 VDC
- **Power consumption**: 7mA @ 24VDC
- **Output signal**: 24VDC; maximum 120 mA
- **Dimensions**: 2.4” diameter x 0.7” deep (61mm x 17mm)
- **Operating temperature**: 32° to 120°F (0° to 49°C)
- **Operating humidity**: 5% to 95% RH, non condensing
- **Automatic setpoint calculation**
- **On Setpoint Range**: 1 to 850 footcandles
- **Status indicator**: Multi-function green LED
- **Easy-to-read LCD display prompts installer through set-up**
- **Four user-adjustable parameters**: on setpoint, off setpoint, off setpoint time delay, and "Hold-On While Occupied" Mode (if wired with an occupancy sensor)
- **Test mode overrides programmed time delay, enabling installer to verify accuracy of settings**
- **Control load status verification allows testing and confirmation that wiring is correct**
- **LED status indicator identifies when device is in override or test mode, or if device has switched lights on or off**
- **One-hour manual override capability** (when wired with low voltage, push button wall switch)
- **Programmable in most daylight conditions**
- **UL listed**
- **Indoor use only**
- **Five year warranty**

### Materials
- ABS, flame retardant
- Meets materials restrictions of RoHS

### Factory Defaults
- Requires configuration
Placement and Detection Area

The LS-102 Daylighting Controller can be used for top- or side-lit applications to control any type of lighting: incandescent, fluorescent, compact fluorescent (CFL), HID, and LEDs. The devices work in peripheral offices, skylit areas, cafeterias, warehouses and any other indoor area with natural light contribution.

Deadband

If the LS-102’s photosensor lighting level drops below the on setpoint, the lights will remain on. If the sensor’s lighting level rises above the off setpoint, the LS-102 will automatically turn the lights off. If the sensor’s lighting level remains in the predetermined deadband range (25%, 50%, 75% or 100% above the on setpoint) the lighting will be passive until the sensor’s level reaches the high or low setpoints.
Installing the LS-102 Sensor

1. The LS-102 is designed to be mounted in either of two ways. For suspended ceiling tile, a threaded nipple with a retaining nut is attached to the LS-102 (see Figure 4). For sheetrock or other solid surfaces, first remove the threaded nipple by squeezing it near the base of the LS-102 (see Figure 5). Then use the two screw holes located under the cover. Screws are not provided. Select #6 pan head screws appropriate for the mounting surface, typically about 7/8” long.

2. For measuring light, the rotation of the light sensor is not critical, but it may simplify setup and adjustment. Rotate the LS-102 so you can approach it from the side with the status LED. In a typical ceiling application, rotate the LS-102 so that the light sensor is nearest the window. In a wall mount application, it should be rotated so that the light sensor is near the top.

Automatic Startup/Calibration

The LS-102 features automatic setpoint calculations. The device initiates a procedure to select an appropriate value for the on setpoint. As part of the process, the controlled load is first turned on for a brief interval to warm up the lamps, and then switched off. This process is repeated several times.

At the completion of the calibration, a new value for the on setpoint will have been selected. Other adjustable settings include deadband and time delay settings. If desired, the deadband can be adjusted to a value of 25, 50, 75, or 100 percent above the setpoint. The time delay can be adjusted to 3, 10, 20 or 30 minutes.

Wiring Diagrams

- **Figure 6. Basic LS-102 wiring diagram**
- **Figure 7. LS-102 wired to override switch**
Sequence of Operation

Setpoints can be selected either automatically or manually. When ambient light levels exceed the off setpoint for the specified time delay, the controller turns lighting off. It will turn lighting systems back on when the on setpoint is triggered for the duration of the time delay. Because of its automatic calibration feature, many applications require little or no adjustment of the settings. The LS-102 can be paired with a low voltage wall switch to enable manual override, or with an occupancy sensor to enable its 'Hold On While Occupied' feature.

Ordering Information

<table>
<thead>
<tr>
<th>Catalog #</th>
<th>Color</th>
<th>Description</th>
<th>Input Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS-102</td>
<td>White</td>
<td>On/Off Switching Photosensor</td>
<td>12/24 VDC</td>
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<tr>
<td>BZ-50</td>
<td>White</td>
<td>Universal Voltage Power Pack</td>
<td>120/230 (1P, L-N)/277 VAC; 50/60 Hz</td>
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<td>BZ-250</td>
<td>White</td>
<td>Lighting and Plug Load Flex Control Power Pack</td>
<td>120-277 VAC (single -phase); 50/60 Hz</td>
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Information supplied above is subject to change.