SECTION 130.2 – OUTDOOR LIGHTING CONTROLS AND EQUIPMENT

(a) Outdoor Incandescent Lighting.

All outdoor incandescent luminaires rated over 100 watts, determined in accordance with Section 130.0(c)2, shall be controlled by a motion sensor.

(c) Controls for Outdoor Lighting.

Outdoor lighting controls shall be installed that meet the following requirements as applicable:

1. All installed outdoor lighting shall be controlled by a photocontrol or outdoor astronomical time-switch control that automatically turns OFF the outdoor lighting when daylight is available.

2. All installed outdoor lighting shall be controlled and independently controlled from other electrical loads by an automatic scheduling control.

3. All installed outdoor lighting, where the bottom of the luminaire is located 24 feet or less above the ground, shall be controlled with automatic lighting controls that meet all of the following requirements:

   A. Shall be motion sensors or other lighting control systems that automatically controls lighting in accordance with Item (a) or in response to the area being vacated of occupants; and
   
   B. Shall be capable of automatically reducing the lighting power of each luminaire by at least 40 percent but not exceeding 80 percent, or provide continuous dimming through a range that includes 40 percent through 80 percent; and
   
   C. Shall employ only ON functionality when the area becomes occupied; and

4. For Outdoor Sales Frontage, Outdoor Sales Lots, and Outdoor Sales Canopies lighting, an automatic lighting control shall be installed that meets the following requirements:

   A. A part-night outdoor lighting control as defined in Section 100.1; or
   
   B. Motion sensors capable of automatically reducing lighting power by at least 40 percent but not exceeding 80 percent, and which have auto-ON functionality:
   
5. For Building Facade, Ornamental Hardscape and Outdoor Dining lighting, an automatic lighting control shall be installed that meets one or more of the following requirements:

   A. A part-night outdoor lighting control as defined in Section 100.1; or
   
   B. Motion sensors capable of automatically reducing lighting power by at least 40 percent but not exceeding 80 percent, and which have auto-ON functionality; or
   
   C. A centralized time-based zone lighting control capable of automatically reducing lighting power by at least 50 percent.
California’s Title 24 is generally considered the most stringent code in the nation. B.E.G.’s recommended solutions for Parking areas, based on Title 24 meet or exceed California and all other State Energy Codes.

In areas where variable is a concern the Circle sensors can be protected with an optional wire guard.

For adjustment of time delays, day light sensitivity or for testing, Circle sensors can be remotely controlled or adjusted using a smartphone using Android or iOS based software and IR-Adapter. Comprehensive security controls assure that only authorized personnel can make sensor adjustments.

Lighting on exterior levels now must automatically be ON or OFF based on occupancy. This can be accomplished through the use of one or more devices that control a small zone of fixtures (under 1000w total) or by an device integrated into each lighting fixture.

In either case the power needs to be reduced down by at least 50%.

This can be achieved by either the switching of lamps or ballasts or through dimming as long as a uniform level of light is maintained.

Zone Control
Designing for zones allows you to use fewer sensors but also requires that more attention be placed on the requirement of having all possible paths of egress covered.

Solution
A.1. Circle sensors provide 360° of detection, can be surface or box mounted and can provide both switching and dimming solutions.

An unlimited number of secondary sensors can be networked to the primary sensor allowing for total coverage and compliance. The Circle sensors can provide bi-level switching or continuous dimming for a group of fixtures.

For additional energy saving Circle sensors include an integrated photocell which allows daylight to be factored into the design.

Outdoor lighting in most cases requires two levels of control; reduction of lighting based on available daylight and switching or dimming of lighting when the area is vacated by occupants.

Depending on the amount of day light available the lighting needs to be reduced by at least 40% and can not exceed a reduction of more than 80%.

Solution
A.4. B.E.G. solutions provide the most flexible solutions for outdoor motion detection, with the FLEX. The FLEX comes standard up to three PIR detection sensors which allows for unique detection capabilities. The FLEX can be wall, pole, ceiling and even corner mounted providing the most flexible solutions for outdoor motion detection.

Outward looking sensors detection can be avoided by covering along the wall or by hanging directly under the sensor from behind the pole. With the FLEX’s dual-detection capabilities the blind spot is eliminated.

The primary lens has outward and can detect movement up to 130° AfE in ranges of 130°, 230° and 280° from the sensor. The second detection looks down from the sensor and can detect movement directly under the sensor.

The FLEX can be wall, pole, ceiling and even corner mounted and the detection lens can be manually directed to help detect movement in specific areas and to avoid false triggers.

Building Facade, Pole Lights, etc.

### Section 130.1 – Indoor Lighting Controls that Shall be Installed

#### (a) Off-Set Controls

B. In parking garages, parking areas and loading and unloading areas, general lighting shall be controlled by occupant sensing controls having at least one control step between 20 percent and 50 percent of design lighting power. No more than 500 watts of sided lighting power shall be controlled together as a single zone. A 2 percent or lesser level of illumination shall be achieved in compliance with the applicable requirement in SDI 130.1-1A. The occupant sensing controls shall be capable of automatically turning the lighting fully ON only in the separately controlled space, and shall be automatically deactivated from all designated paths of egress.

### Flexible solution for outdoor motion detection

**Image:** Flexible solution for outdoor motion detection.