

6.6 Outdoor Lighting

§150(k)6

Outdoor lighting attached to a building must be high efficacy, or controlled by a motion sensor with integral photocontrol. Motion sensors used in conjunction with outdoor lighting luminaires should have the capability of turning the lights on automatically. Lighting around swimming pools, water features, or other locations subject to Article 680 of the California Electric Code are exempt.

Section 119 (b) requires control devices, including motion sensors and photocontrols, to have an indicator that visibly or audibly informs the operator that the controls are operating properly, or that they have failed or malfunctioned. A light emitting diode (LED) status signal is typically used to meet this requirement. The LED status signal is also practical for use as a commissioning tool. Another option is to use the lamp in the luminaire as the status signal, as long as the lamp fails in the off position. The intention of this requirement is that if the photocell or motions sensor fails the luminaire will not turn on until the control is fixed.

Amalgam CFLs perform better at both very high and very low temperatures than non-amalgam versions, so are appropriate for outdoor lighting, although they can take a few minutes to reach full output. If instant start is important and temperatures may be low, specify a cold-weather-rated ballast. Alternatively, an incandescent source (fitted with a combination photocontrol/motion sensor) may be a good choice.

Decorative landscape lighting that is not permanently attached to buildings is not regulated by the Standards. Even though it is not required by the Standards, using a time clock or photocontrol on outdoor lighting not attached to buildings will help to prevent people accidentally leaving these lights on during the day and reduce energy use.

Example 6-14

Question

Do all residential outdoor luminaires have to be “cutoff” rated, or “flat glass” types?

Answer

Typical residential outdoor lighting does not have to be “cutoff” rated. However, residential parking lots for eight or more vehicles are required to meet the Nonresidential Standards, which do include cutoff requirements for luminaries greater than 175 watts. Even though not required for most residential outdoor lighting, cutoff luminaires are usually more efficient at providing light in the required area, so a lower wattage lamp and ballast can be used. Cutoff luminaires also reduce stray light and glare problems which can be a source of legal dispute between tenants or with neighboring property owners.

Example 6-15

Question

My house has a row of small incandescent bollards along the walk way to the front door. Do these have to be high efficacy?

Answer

No. The high efficacy requirement only applies to lighting mounted to the building.

Example 6-16

Question

I would like to install low-voltage landscape lighting in my yard. Are these required to be on a motion sensor and photocontrol?

Answer

No. Even though low-voltage lighting does not qualify as high efficacy lighting, lighting not attached to a building, like landscape lighting, is exempt from this requirement.

Example 6-17

Question

If I install high efficacy lighting on the exterior of the building, can I then install lighting that is not high efficacy in the bathrooms?

Answer

No, the provisions for “tradeoff” between exterior lighting and certain interior rooms have been eliminated in the 2005 Standards. However, you now have the option of using a manual-on occupant sensor in conjunction with outdoor luminaires that are not high efficacy.

6.7 Parking Lots and Parking Garages

§150(k)7

§132

§147

§148

Parking lots for eight or more cars must meet the nonresidential lighting requirements (see §148). A maximum lighting power of 0.08 W/ft² is permitted if you are in a rural area and 0.15 W/ft² if you are in an urban area, as defined by the U.S. Census. For more details, see the *2005 Nonresidential Manual*.

Parking garages that house eight or more cars shall meet the interior lighting power requirements of the Nonresidential Standards (see §147). A maximum lighting power of 0.4 W/ft² is permitted.

Parking lots and garages for eight or more cars are generally associated with multifamily housing.

For parking lots and parking garages that accommodate eight or more vehicles the following requirements apply:

- Lamps rated over 100W must have a lamp efficacy of at least 60 lumens per watt, or be controlled by a motion sensor;
- Lamps rated over 175 watts shall be designated “cutoff” in a photometric test report.

- Luminaires shall be controlled by a photocontrol, or an astronomical time switch that turns the lighting off when daylight is available.

Residential parking lots should be lighted uniformly to provide a sense of safety; this means that lighting should fill in shadows and dark corners. Two or more less powerful luminaires in different places are preferable to a single luminaire.
