

## 2019 RESIDENTIAL ENERGY Mandatory Measures for New Lighting

**PROJECT ADDRESS:** \_\_\_\_\_

All new lighting installed in low-rise residential buildings shall meet the following requirements. This form is required to be posted at the building site or made available for all appropriate inspections.

### Definitions

- **Additions:** Includes any addition of new conditioned square footage and volume, where new luminaires are installed
- **Alterations:** Includes modifications where luminaires are replaced via a building permit
- **Permanently Installed Lighting:** Includes hard wired ceiling luminaires, chandeliers, vanity lamps, wall sconces, under-cabinet luminaires, luminaires in drawers/cabinets, night lights, step and path lights, and any other luminaire that is attached to the building, or buildings, on the property
- **Vacancy Sensor:** A manual-on/automatic-off lighting control, which includes a manual-off option
- **Occupancy Sensor:** Is allowed when it is programmed to function like a vacancy sensor (manual-on) for final inspection

### **MANDATORY FEATURES AND DEVICES:** (Single Family / Duplex / Halfplex)

All residential lighting must be high efficacy. The definition of high efficacy luminaires includes all light sources identified under Table 1, below, for compliant luminaire types. The requirements apply to all permanent installed light fixtures, including screw-based which must contain JA8 compliant lamps.

<b>Lighting Requirement Applicability</b>	
Will Typically Require Compliance	Will Typically Not Require Compliance
<ul style="list-style-type: none"> <li>• New construction and/or when adding onto a home (<i>the new areas of the home must meet the applicable requirements</i>)</li> <li>• When remodeling a home, only the work being done with a permit must meet the applicable requirements                             <ul style="list-style-type: none"> <li>– Existing recessed ceiling luminaires with screw base sockets do not need to be replaced as long as JA8 trim kits/lamps are used</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Changing light bulbs</li> <li>• Changing lighting controls</li> <li>• Replacing lighting fixtures</li> <li>• Moving lighting fixtures</li> <li>• Spaces not being renovated in a renovation project</li> </ul>

### **Table 1. Luminaire Efficacy Classification (JA8)**

All installed luminaires must meet the requirements in the following table:

	<b>Automatically High Efficacy</b>	<b>Using JA8 Certified Lamps</b> <small>(JA8-2016-E must be used for enclosed lamps/luminaires)</small>
<b>Indoor</b>	<ul style="list-style-type: none"> <li>• Pin-based linear fluorescent</li> <li>• Pin-based compact fluorescent</li> <li>• Inseparable SSL luminaires with colored light sources for decorative lighting purpose</li> </ul>	<ul style="list-style-type: none"> <li>• LED luminaires with white integral sources that are not decorative</li> <li>• Screw base LED lamps</li> <li>• Pin-based LED lamps</li> </ul>
<b>Outdoor</b>	<ul style="list-style-type: none"> <li>• Pulse-start metal halide light sources</li> <li>• High pressure sodium light sources</li> <li>• Luminaires with hardwired high frequency generator and induction lamp</li> <li>• LED light sources that are installed outdoors</li> </ul>	<ul style="list-style-type: none"> <li>• Recessed/recessed ceiling downlights or enclosed lights that are not screw base, and that use an Insulation Contact Air Tight (ICAT-rated) can</li> <li>• Any light source not otherwise listed</li> </ul>

*Table 1: High Efficacy Light Source Classification (derived from 2019 California Energy Code Table 150.0-A)*

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**Table 2. Residential Lighting Controls Requirements**

All installed luminaires must also meet the requirements in the following table:

<b>Required Lighting Controls</b>				
All installed luminaires must be high efficacy that are permanently installed or integral to a luminaire exhaust fan or ceiling fan. Portable lighting (plugged in) is not subject to these requirements.				
Location	Control Requirements			Special Considerations
	Vacancy Sensor	Dimmer	On/Off Switch	
<b>Bathroom</b>	At least one luminaire in each of these rooms must be controlled with vacancy/occupancy sensor, no matter the luminaire source type	<ul style="list-style-type: none"> <li>• JA8 light sources must be controlled with either dimmer, vacancy sensor or occupancy sensor</li> <li>• “Automatically” high efficacy luminaires can be controlled with either on/off switch, vacancy/occupancy sensor or dimmer</li> </ul>	<ul style="list-style-type: none"> <li>• On/Off switch must be readily accessible wall-mounted manual controls, allowing occupants easy control of lighting in the space</li> <li>• Ceilings fans with integral lighting can be controlled with remote control</li> </ul>	<ul style="list-style-type: none"> <li>• Exhaust fans must be controlled separately from lighting</li> <li>• Undercabinet lighting must be switched separately from ceiling mounted luminaires in a manor in which only one or the other are on at the same time</li> <li>• Energy Management Control System (EMCS) can be used if required code control requirements are met, and complies with §130.4 EMCS requirements</li> <li>• Dimmers and vacancy/occupancy sensor functions, required by code, must not be bypassed</li> <li>• If multiscene programmable controllers are used, they must meet dimmer requirements of section 110.9 and 150.0(k)</li> </ul>
<b>Laundry/Utility</b>				
<b>Garage</b> (attached or unattached)				
<b>Kitchen</b>	<ul style="list-style-type: none"> <li>• JA8 light sources to be controlled with dimmer, vacancy sensor or occupancy sensor</li> <li>• “Automatically” high efficacy can be controlled with either on/off switch, dimmer, vacancy sensor or occupancy sensor</li> </ul>	<ul style="list-style-type: none"> <li>• On/Off switch must be readily accessible wall-mounted manual controls, allowing occupants easy control of lighting in the space</li> <li>• Ceilings fans with integral lighting can be controlled with remote control</li> </ul>		
<b>All Other:</b> bedrooms, living rooms, office, dining, attic spaces, closets ≥70 ft <sup>2</sup> , detached storage buildings				
<b>Closets &lt; 70 ft<sup>2</sup></b>				
<b>Hallways</b>	Dimmer, vacancy sensor or occupancy sensor is not required even if JA8 light sources are used			
<b>Blank Electrical Boxes</b> (more than 5 feet above floor)	Each box to be controlled by either vacancy sensor, occupancy sensor, dimmer or fan speed control			No greater than the number of bedrooms
<b>Light Features:</b> night lights, step lights, path lights, and light sources in drawers, cabinets and linen closets	Vacancy sensor(s) or occupancy sensor(s) (and the JA8 requirements) are not required if the luminaire is ≤ 5 watts emit ≤150 lumens			Light sources in drawers, cabinets and linen closets must be equipped with controls that turn off when applicable drawer, cabinet or linen closet is closed
<b>Single Family Outdoors:</b> Lighting attached to home or any other building on property	<ul style="list-style-type: none"> <li>• Sensor types allowed include:                             <ul style="list-style-type: none"> <li>– Photocell and motion sensor OR</li> <li>– Photocell and time switch OR</li> <li>– Astronomical time clock OR</li> <li>– EMCS that works like an any of the above</li> </ul> </li> <li>• Illuminated signs must meet nonresidential sign lighting power requirements §140.8, or use no more than 5 watts</li> </ul>		On/Off switch that allows all other outdoor control functions to work automatically	<ul style="list-style-type: none"> <li>• Controls that override to ON are not allowed unless the override automatically reactivates within 6 hours</li> <li>• Landscape lighting exempt</li> <li>• Lighting not attached to building(s) is exempt</li> </ul>

**VERIFICATION STATEMENT:**

I, the undersigned, verify that any new lighting installed shall comply with the mandatory features and devices listed above, as required for compliance with the 2019 California Energy Code section 150.0(k).

**Signature:** \_\_\_\_\_

Owner Or Designer Or Contractor

**Date:** \_\_\_\_\_