

## Lighting

Hard-wired lighting meets one of the following:

- (1) 80% of the total hard-wired lighting fixtures, or the bulbs in those fixtures, qualify as ENERGY STAR, high end trimmed dimmers with a high efficiency halogen bulb in the fixture, or equivalent.
- (2) 80% of the total hard-wired lighting fixtures qualify as ENERGY STAR, high end trimmed dimmers with a high efficiency halogen bulb in the fixture, or equivalent.
- (3) 80% of the exterior lighting wattage has an efficiency of at least 40 lumens per watt or be a solar powered light fixture.

### Reason:

In 2005, the state of California adopted a new residential building code that focused on maximizing energy savings. The code is title 24 and it incorporates the use of lighting controls in residential construction. Specifically, within the category of lighting control, dimming is a solution for common areas of a residence. Common areas of a residence include all bedrooms, living areas, and hallways. The builder has three solutions for these spaces. They are high efficacy fixtures (florescent lighting), occupancy sensors, or dimmers. The preferred choice is dimming in these spaces. Dimmers offer significant energy savings while still giving the homeowner the preferred warm light of halogen lamps and the personal variable control.

Previous submissions of using normal dimmers alone were rejected due to the savings being “dependant upon operator usage and not saving significant energy.” Below these valid concerns are addressed.

- A. High-end trim dimmers are set at the manufacturer to save 15% of the energy used even if the dimmer is turned to full bright. There is no “visual” difference to the human eye. This automatic 15% energy savings will also increase the bulb life by at least 4X.
- B. A study performed by California Energy Commission found the average dimming level percentage to be 20%.  
[www.energy.ca.gov/efficiency/lighting/VOLUME01.PDF](http://www.energy.ca.gov/efficiency/lighting/VOLUME01.PDF)
- C. High efficiency halogen bulbs save 30% energy over incandescent bulbs. Lasts at least 2X longer than an incandescent and contain NO mercury.  
<http://www.nam.lighting.philips.com/us/consumer/hes/display.php?mode=1>
- D. A High-end trim dimmer combined with high efficiency halogen bulbs save 40+% of the energy over an incandescent bulb and extend the bulb life over 4X's.

Please contact Erik Anderson (610) 282-6381 – [eanderson@lutron.com](mailto:eanderson@lutron.com) for any documentation needs.