



2016 45-day Hearing Section 150.0

California Energy Commission

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45-day Hearing
Hearing Room A
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Changes to Section 150.0 Lighting

- Luminaire Requirements – 150.0(k)1
 1. All luminaires installed in residential dwellings must be high efficacy.
 2. Screw base luminaires – other than downlights - can be considered high efficacy, if installed lamps meets JA8 requirements.
 3. All LED sources and recessed downlight luminaires must meet the JA8 requirements.
 4. All forward phase cut dimmers used with LED light sources shall comply with NEMA SSL 7A.



Changes to Section 150.0 Lighting

- Controls Requirements – 150.0(k)2
 1. Bathrooms, Garages, Laundry Rooms, and Utility Rooms: at least one luminaire in each of these spaces shall be controlled by a vacancy sensor.
 2. Dimmers or vacancy sensors must control all luminaires required to have JA8-compliant light sources, except in hallways and closets less than 70 square feet.



Changes to Section 150.0 Lighting

- Outdoor Lighting – 150.0(k)3
 1. All luminaires must be high efficacy;
 2. Clarified that the bypass controls that override to ON shall return the control to its normal operation within 6 hours. This applies to:
 - Motion Sensors
 - Photocontrols
 - Astronomical Time Controls



Changes to Table 150.0-A

- All high efficacy light sources and JA8 light sources.

High Efficacy Light Sources	Light Sources meeting JA8
<ul style="list-style-type: none">• Pin-based linear or compact fluorescent• Pulse-start metal halide.• High pressure sodium.• Luminaires containing GU-24 sockets. ^a• Luminaires with induction lamp.• LED integral luminaires listed for outdoor wet locations.	<ul style="list-style-type: none">• All light sources in recessed downlight luminaires. Note that recessed downlight luminaires shall not have screw bases.• Any light source not otherwise listed in this table and certified to the Commission as complying with Joint Appendix.
<p>Notes:</p> <p>a. Title 20 does not allow incandescent sources to have a GU-24 base.</p>	



JA8 – Qualification Requirements for Residential luminaires Using High Efficacy Light Sources

1. Covers all LED sources as well as all other sources not included in Table 150.0-A, including all screw base sources that are to be used as high efficacy sources.
2. The light source including the ballast/driver must be certified to the Commission.
3. Power factor of at least 0.90.
4. CCT of 3000K or less within 0.0033 DUV, except for GU-24 base – outdoor lighting is excepted.



JA8 – Qualification Requirements for Residential luminaires Using High Efficacy Light Sources

5. CRI of at least 90 and R9 (red) of at least 50
6. Dimmable down to 3%
7. LED sources controlled by forward phase cut dimmers must meet NEMA standard SSL 7A as Type 1 or Type 2 products.
8. Light source in combination with specified control shall provide "reduced flicker operation" when tested at 100% and 20% of full light output, as having percent amplitude modulation (percent flicker) less than 30% at frequencies less than 200Hz.



JA8 – Qualification Requirements for Residential luminaires Using High Efficacy Light Sources

9. Light source shall not emit noise above 24dBA measured at 1 meter from the light source
10. Start time less than 0.5 seconds
11. Lumen Maintenance – 86.7% light output at 6,000 hours
12. Minimum rated life of 15,000 hours.
13. Recessed and Enclosed Fixture Light Sources:
Elevated Temperature Light Output Ratio and Lumen Maintenance.



JA8 – Qualification Requirements for Residential luminaires Using High Efficacy Light Sources

14. Light source not integral to the luminaire in recessed luminaires or in totally enclosed luminaires shall meet all of the elevated temperature requirements.
15. Marking – Maximum rated input wattage; total luminous flux, CCT, and CRI of the light source must be listed on permanent, factory-installed label on the light source.