

DOCKETED

Docket Number:	15-AAER-06
Project Title:	Small Diameter Directional LED Lamps and General Purpose LED Lamps
TN #:	208935
Document Title:	Acuity Brands Lighting, Inc. Comments: Revised Title 20 15-Day Language - LED Downlight Retrofits and Standby Power
Description:	N/A
Filer:	System
Organization:	Acuity Brands Lighting, Inc./Cheryl English
Submitter Role:	Public
Submission Date:	1/23/2016 12:02:45 AM
Docketed Date:	1/25/2016

Comment Received From: Cheryl English

Submitted On: 1/23/2016

Docket Number: 15-AAER-06

Revised Title 20 15-Day Language - LED Downlight Retrofits and Standby Power

Additional submitted attachment is included below.

January 22, 2016

Submitted online: <https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=15-AAER-06>

Mr. Andrew McAllister
Commissioner
California Energy Commission
1516 Ninth Street
Sacramento, California 95814

Revised Title 20 15-Day Language - LED Downlight Retrofits and Standby Power

Dear Commissioner McAllister,

Acuity Brands appreciates the opportunity to provide comments regarding the Title 20 Appliance Standard. Acuity Brands has a long history of working with the Commission and contractors to promote the adoption of the state energy standards to promote high efficiency lighting products.

Acuity Brands is the leading manufacturer of luminaries and lighting controls in North America. We operate facilities throughout California under the Peerless, Hydrel, Lighting Control & Design and Sunoptics product brands. In addition, our western region manufacturing and distribution center is located in Ontario, CA. The California appliance standard has a direct impact on our investment of nearly 400 California based employees.

Please contact Cheryl or Tanya to discuss our comments in more detail.



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Acuity Brands appreciates the opportunity to provide comments on the Revised Title 20 15-day express terms for small diameter directional LED lamps and General Purpose LED lamps. We want to thank the Commission for your consideration of the comments submitted by Acuity Brands on 11/30/2015. We also want to thank the Commission for the revision to the effective dates to allow for additional time to align new designs with the CA requirements.

We requested data for the analysis of retrofit downlights multiple times throughout this rulemaking. We cannot find any evidence that this class of product was evaluated for technological feasibility or cost effectiveness to justify the performance criteria proposed in the draft language. Much of the data presented by the Commission was obtained from Energy Star lamp data, however Energy Star covers a retrofit downlight under their luminaire program. Therefore the data set used for the California analysis is deficient in representing the performance for this class of product. While the timeline for the effective date has been extended, we continue to question how the proposed values relate to downlight retrofits. Even with the extended timeframe, we are unable to determine how the Commission can justify the energy and color thresholds in the 15-day language related to this class of product.

We reiterate that an LED downlight retrofit is inherently different from most of the lamps covered by this rulemaking. The LED downlight retrofit is penalized by the energy efficiency thresholds because the optical control is incorporated within the retrofit downlight and it is not within a bare lamp. A bare lamp installed within a table lamp or other type of luminaire will result in a lower efficiency of light delivered to the space once it is installed in the luminaire, but this efficiency loss is not considered in the energy thresholds for a bare lamp when compared to a retrofit downlight. We further indicated in our 11/30/2015 comments that many downlights offer various trim styles or low glare lenses based on aesthetic or interior design appeal, and included illustrations of these options. These are features that are proven to be quality attributes for consumers that limit glare or provide aesthetic features to the product. The Commission and public utilities have advocated for the inclusion of quality attributes in the energy standards to promote greater adoption of energy efficient lighting solutions in the California market. We strongly support the interest to promote a balanced approach to lighting quality and energy efficiency. However, this regulation will promote a “race to the bottom” for quality in retrofit downlights because California consumers will be limited to downlight solutions that have more glare and limited trim selection, neither of which are preferred by consumers.

We have reconsidered the intent of the Commission to regulate retrofit downlights and have concluded that perhaps the intent is to include only those LED retrofits that have a permanently attached screw base, such as the one shown to the right, which performs similar to a screw based LED reflector lamp.



We would accept that those types of retrofit downlights could be covered by this lamp rulemaking because they typically do not have complex optical control or special trims. They allow the retrofit to be unscrewed from the socket and replaced with a different lamp.

However, many commercial downlights are designed to be retrofit into an existing screw based socket – or – hardwired to the electrical circuit for new construction/major renovations, within the same luminaire. This allows contractors the flexibility to purchase a single product and install it based on the job site conditions. It also reduces the shelf space required in retail outlets, allowing them to provide a broader selection of energy efficient lighting products. An example of this type of product with a detachable screw base is shown below. These products are commonly used in commercial applications and we do not believe the CEC intended to cover commercial products with this standard for LED lamps.



We also reiterate that the requirements limiting standby power have not been substantiated and have the potential to limit valuable features that provide incremental energy savings or consumer utility. As the features for smart capabilities increase in the future, the standby power is likely to increase even though the overall standby power is very low. Establishing a limit for standby power in LED lamps in California has the potential to restrict the ability to incorporate these features, resulting in inferior products as compared to the rest of the nation. In addition, the limit proposed in this rulemaking is substantially lower than other recognized standards or regulations. It is premature to establish a stringent and unjustified limit on standby power. The following are examples of how other recognized standards organizations have addressed standby power with a limit of 0.5 watts:

Energy Star Lamps Specification v2.0 - Lamps with integral controls (e.g., motion sensors, photosensors, wireless control, standby mode, or connected functionality) shall consume no more than 0.5 watt in standby mode or network mode.

The COMMISSION REGULATION (EC) No 1275/2008 of 17 December 2008 addresses "*standby and off mode electric power consumption of electrical and electronic household and office equipment*".

Four years after this Regulation has come into force: (a) Power consumption in 'off mode': Power consumption of equipment in any off-mode condition shall not exceed 0,50 W.

Recommendations:

- 1) We expect an answer from the Commission to the multiple requests to provide the data and analysis for retrofit downlights in this rulemaking. To date, there has not been a definitive answer to verify that these products have been evaluated when establishing the proposed rule. Therefore the proposed standards do not meet the requirements for technological feasibility or cost effectiveness for this class of product.
- 2) Modify the definition of a state regulated LED lamp as shown below to either exclude all LED downlight retrofit luminaires, or to exclude LED downlight retrofit luminaires that utilize a detachable screw base socket. The first option is preferred since there appears to be no data or analysis supporting the standards for any type of retrofit downlights. The first option also results in less confusion and potential gaming. Either option enables the Commission to resolve the conflicts that have been created between Title 20 and Title 24 JA8 standards. Either option below will be supported by Acuity Brands.

Option 1 – exclude all LED downlight retrofits

"State-regulated Light Emitting Diode (LED) lamp" means a lamp capable of producing light with Duv between - 0.012 and 0.012, and that has an E12, E17, E26, or GU-24 base, ~~including LED lamps that are designed for retrofit within existing recessed can housings that contain one of the preceding bases~~. State-regulated LED lamp does not include a lamp with a brightness of more than 2,600 lumens or a lamp that cannot produce light with a correlated color temperature between 2200 K and 7000 K."

Option 2 – exclude LED downlight retrofits utilizing a detachable screw base adapter

"State-regulated Light Emitting Diode (LED) lamp" means a lamp capable of producing light with Duv between - 0.012 and 0.012, and that has an E12, E17, E26, or GU-24 base, including LED lamps that are designed for retrofit within existing recessed can housings that contain one of the preceding bases **permanently attached to the retrofit lamp**. State-regulated LED lamp does not include a lamp with a brightness of more than 2,600 lumens or a lamp that cannot produce light with a correlated color temperature between 2200 K and 7000 K, **or downlight retrofit luminaires that utilize a detachable screw base adapter.**"

- 3) If the scope includes both types of downlight retrofits, then the Commission will be required to provide the details regarding the data and analysis for this class of product and to address the lack of consistency in the California Title 20 and Title 24 codes.
- 4) Until the capabilities and demands of the functionality of lamps and the associated standby power needs are well-defined and analyzed, we recommend that CEC establish a reasonable limit to restrict excessive standby power. This allows CEC to review and adjust the standby power limit as technology progresses to ensure the most robust features are available to California. We recommend the following changes to the standby power clause, which is justified and consistent with national and international standards:

(D) In addition to the requirements in 1605.3(k)(2)(C), state-regulated LED lamps manufactured on or after January 1, 2019 shall have a standby mode power of ~~0.2 watts~~ **0.5 watts** or less.