

DOCKETED

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Comment Received From: Mike Moore

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Consideration for Lighting used in Domestic Kitchen Exhaust

Please see attachment.

Additional submitted attachment is included below.



November 17, 2015

CALIFORNIA ENERGY COMMISSION

Re: Docket No. 15-AEER-06

Small Diameter Directional LED Lamps and General Purpose LED Lamps

1516 Ninth Street

Sacramento, CA 95814-5512

Dear CEC Staff:

Thank you for the opportunity to provide comments on the Commission's recent proposed amendments to the Title 20 Section 16 small diameter directional LED lamp requirements. For typical applications, we believe the proposed requirements are attainable; however, we believe that some changes to the proposed language are still needed to accommodate the application of small diameter directional lamps for task lighting in domestic exhaust hoods.

Domestic exhaust hoods are regularly exposed to elevated temperatures from cooking events and are required to be tested and listed to UL safety standards during which they are subjected to ambient temperatures up to 70 °C. Task lighting for domestic range hoods, which is typically provided by small diameter directional lamps, must also be designed to withstand these high temperatures.

We have not been able to identify any retail availability for small diameter directional LED lamps that achieve CEC's proposed specifications (i.e., $\geq 25,000$ hours rated life, and luminous efficacy ≥ 80 or luminous efficacy ≥ 70 and compliance score ≥ 165) and are also rated for the high temperatures experienced when installed in domestic kitchen exhaust hoods (i.e., ≥ 70 °C). Further, most small directional LED lamps that we are aware of do not work well with multi-level lighting controls that are typically provided with range hoods, flickering or failing to illuminate at low-level settings. Installing lamps in domestic kitchen exhaust hoods that are not rated at an ambient temperature ≥ 70 °C is expected to result in premature failure of the lamps (much shorter than the 25,000 life rating proposed by CEC), consumer dissatisfaction, and high costs to the consumer for frequent lamp replacement. And if these LED lamps are not compatible with multi-level lighting controls (our intel tells us most are not), consumers will be highly dissatisfied with their performance on energy-saving, low-power settings.

Presumably, CEC previously recognized this lack of available products when the Commission exempted kitchen exhaust hoods from the lighting efficacy requirements in Title 24 Chapter 6, Section 150.0(k)1.F, as follows:

Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans shall meet the applicable requirements of Section 150.0(k).

EXCEPTION to Section 150.0(k)1F: Lighting installed by the manufacturer in kitchen exhaust hoods.

Similar consideration should also be provided in Title 20 Section 16. Following are two options that the Commission could pursue to address the lack of available

product in the market that could meet CEC's proposed requirements at the elevated temperatures required for kitchen exhaust hood applications:

1. Require small diameter directional LED lamps to have a rated life of 25,000 hours or greater at an ambient temperature ≥ 70 °C, and require these lamps to also be compatible with multi-level lighting controls without exhibiting flicker (could be considered excessive for applications that are not typically subjected to these performance specs).
2. Provide an exception to the proposed luminous efficacy, rated life, CRI, and compliance score requirements for small diameter directional lamps that are rated for installation in locations subjected to ambient temperature ≥ 70 °C. If CEC is concerned that this option could create a compliance loop hole, CEC may consider requiring that such lamps be labeled for use in domestic range hood applications only.

Thanks for the opportunity to provide these comments. If there are follow-up questions, I would be happy to discuss further with staff.

Sincerely,

A handwritten signature in black ink that reads "Mike Moore". The signature is written in a cursive, slightly slanted style.

Mike Moore, P.E.
ASHRAE 62.2 Indoor Air Quality Subcommittee Chair