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| **Docket Number:** | 17-BSTD-01 |
| **Project Title:** | 2019 Building Energy Efficiency Standards PreRulemaking |
| **TN #:** | 221604 |
| **Document Title:** | International Association of Lighting Designers |
| **Description:** | N/A |
| **Filer:** | System |
| **Organization:** | John Martin |
| **Submitter Role:** | Public |
| **Submission Date:** | 10/23/2017 10:49:27 PM |
| **Docketed Date:** | 10/23/2017 |

*Comment Received From: John Martin*
*Submitted On: 10/23/2017*
*Docket Number: 17-BSTD-01*

## International Association of Lighting Designers

Please see attached PDF

*Additional submitted attachment is included below.*

**Memorandum**

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| **To:** | California Energy Commission<br>Dockets Office, MS-4<br>1516 Ninth Street<br>Sacramento, CA 95814-5512 | **Date:** | 23 October 2017 |
| | | **From:** | Michael Lindsey<br>IALD Representative |
| | | **Pages:** | 3 |
| **cc:** | | **Project:** | Draft T24 2019 Standards |
| | | | Docket No. 17-BSTD-01 |
| | | **Sent via:** | Email |

**Regarding:** T-24 2019 Building Energy Efficiency DRAFT Standards

Dear California Energy Commission,

On behalf of the IALD Energy & Sustainability Committee, I'm pleased to submit the following comments to the current Draft 2019 California Building Energy Efficiency Standards. Our review and comments specifically focus on lighting related items (interior, exterior, & controls) due to our expertise in that field.

Please review the items listed below organized section within the draft language.

**Section 130 (C), 2 – Luminaire Wattage in Absence of permanently installed drivers, ballasts, etc.:**

We appreciate the move toward counting the maximum rated wattage of the fixture or the lamp wattage, whichever is lower. We believe this is an action supporting our desire to simplify code language and approach and is in line with what our designers are doing in daily practice.

**Section 130 (C), 5 – Classification & Power of Modular Lighting Systems:**

We found that the section was confusing and the intent is not clear.

- It says that the wattage shall be determined "…*based on the component that limits the current available*…" and then immediately in A. says, "…*where there is no current limiting component*…". This in itself, is confusing.
- In Section 130.0 (c),5., A., it says "…*When there is no current limiting component on the circuit*…" How can that be? By code, there always has to be a current limiting device on any electrical circuit. Is the intent to say, "When there is no current limiting component in addition to the current limiting device of the branch circuit…"?

**Section 130 (C), 5 – Classification & Power of Modular Lighting Systems:**

*Reduce the value in 130.0 (c), 5, A, i. from 30 watts per linear foot to 8 watts per linear foot.*

- The 30 watts per foot assumes the use of incandescent track fixtures, for example, a 90-watt incandescent halogen PAR38 fixture every three feet. But if you have a design that uses long lengths of track with few fixtures, you are required to account for much more power than you are actually using. To avoid this problem you can use current limiting devices but this adds complexity and cost. These current limiters have no practical purpose. They prevent someone from theoretically loading

up the track with many high-wattage halogen fixtures, but realistically this isn't going to happen and the current limiters just sit there doing nothing. The world is rapidly shifting from incandescent to LED for track lighting either with new LED fixtures or replacement lamps. Right now, and certainly by the time T24 2019 goes into effect, it is highly unlikely that anyone will be installing incandescent fixtures or lamps. LED track fixtures are typically at a minimum four times more efficacious than incandescent halogen fixtures. Therefore we propose to reduce the wattage allowance to 8 watts per linear foot. This will mean that it will be much less likely that useless current limiters will need to be specified and installed. This will reduce the cost of construction because useless current limiters will no longer need to be installed to comply with code.

This value of 8 watts per linear foot was adopted and recently published in IECC-2018 (http://shop.iccsafe.org/codes/2018-international-codes-and-references/2018-international-energy-conservation-code.html)

**Section 130 (C), 2 – Luminaire Wattage in Absence of permanently installed drivers, ballasts, etc.:**

We appreciate the move toward counting the maximum rated wattage of the fixture or the lamp wattage, whichever is lower. We believe this is an action supporting our desire to simplify code language and approach and is in line with what our designers are doing in daily practice.

**Section 130.1 (a), 3 – Separate control of lighting layers**

Adding this as a code requirement supports common lighting design practice separating lighting layers providing different functions on to separate control zones. Although at first glance, it appears odd to have as a code requirement, it will provide our membership with a stronger leg to stand on, in particular during design-build projects, where often time costs try to outweigh function and proper design.

**Section 130.2 (b) – Luminaire Cutoff Requirements**

As noted in the previous comments submitted on behalf of IALD, we have concern of the dramatic change from 150W threshold to 30W threshold for BUG compliance noted in T24 Part 11. Understanding the baseline being an LED source, this reduction does not seem to reflect equal lumen output when compared to the previous ceramic metal halide baseline. A 150W metal halide is often ~13,000 lumens while even the highest performing 150 lumens/W LED is only delivering 4500 lumens. Accounting for both reflector efficiency and mean lumen values of a metal halide, the previous baseline appears to account for a higher lumen value than the recommended revision.

**Section 130.3 – Sign Lighting Controls**

While internally illuminated signs don't typically fall within a Lighting Designers purview, they do fall within the overall lighted environment which we are sensitive to. We believe that all outdoor signage or signage located inside the building but communicating outside the building envelope be required to be on some sort of dimmable control. 130.3,a,2,B notes that the requirement is only for signs that are illuminated during the day and evening. We have found in practice that there are many signs only on during the evening that are far too bright and need the adjustment in the field to reduce their impact and glare to surrounding neighborhoods.

**Section 140.6 (a), 3, K – Lighting Power Exclusion for Exit Way or Egress Illumination**

This exclusion for exit way or egress illumination is confusing and the meaning is not clear. What is the intent of the added phrase "or that meets the Exception to Section 130.1(a)"?

The exception to 130.1(a) is an exemption from the manual area controls requirements for 0.2 W/ft$^2$ of lighting used for egress illumination. How is this exception to be applied to the determination of lighting wattage excluded?

The same fixtures that provide general lighting also often times provide means of egress illumination. Therefore, am designers supposed to calculate the portion of the total wattage of these fixtures that provide minimum code required light levels of the means of egress? This would be impractical.

Or, can 0.2 watts/ft$^2$ be excluded from the total lighting power density in areas that are part of the means of egress?

The exception to 130.1(a) has a new sentence that mentions "Dedicated" egress lighting. What does "dedicated" mean?

**Section 140.6 (a), 4, B – Additional Power for Tunable White & Warm Dim**

While we appreciate the recognition of an emerging technology in Tunable White & Warm Dim lighting fixtures, we question the reasoning behind a 0.75 factor when applying against allowed LPD. Our belief is that while this technology is a valuable part of the lighting design toolkit, it should be held to the same regulation as more traditional light sources, even if it has a slightly higher input wattage compared to "static" white LED fixtures. This additional 0.75 factor seems to be driving the market toward that technology and influencing a more expensive solution to owners.

Thank you for allowing our team the opportunity to be involved in this critical stage of the code making process as we look to continue leveraging our strong knowledgebase to improve code development. We appreciate our involvement thus far and look forward to our continued successful partnership.

Feel free to contact me directly should you have any questions regarding the submitted comments.

Regards,

Michael Lindsey

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