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Gary R. Flamm Consulting
8459 Cassatt Way
Sacramento, CA 95828
gfenenergy@calweb.com
916-798-2817

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To: The California Energy Commission
Building Energy Efficiency Standard Rulemaking
Docket Number 15-BSTD-01
DOCKET@energy.ca.gov

Declaration Statement

I am submitting these comments solely as a private citizen. I previously worked on earlier editions of the Title 24 Building Energy Efficiency Standards, and retired from the California Energy Commission more than one year ago.

COMMENTS

There continues to be an error in Section 140.6 regarding mounting height multipliers.

To address an error that was discovered in the 2013 Standards, the Energy Commission correctly modified the 2013 Tailored Method Compliance Form, NRCC-LTI-04-E, Page 2 of 7, and appropriately documented the design watts instead of the allotted watts. The correction that was made to the 2013 Certificate of Compliance needs to also be corrected in Section 140.6 of the 2016 Standards.

In the 45 Day Language as currently proposed, when there are wall display or floor display luminaires of varying mounting heights, there is no correct way to assign mounting height multipliers, because there is no association between the mounting height of each luminaire, and the percentage of square footage each luminaire is illuminating in the space.

For example, if one luminaire is mounted at 15 feet, and 11 luminaires are mounted at 10 feet, it is not appropriate to assign a mounting height multiplier to the entire square footage of the space, based on the mounting height of a single luminaire.

To address this in 2013, the Energy Commission correctly modified the Certificate of Compliance, by using inverted numbers from Table 140.6-E, and then reducing the design watts according to the respective mounting height of each luminaire, rather than increasing the allotted watts of the entire space.

Also, in Section 140.6(c)3J, there is an incorrect citation of “wall display” that should have been “floor display.” However, if the 45 Day Language is modified as recommended below, this problem is automatically fixed.

To address the error in the mounting height language, following are recommended modifications to the 45 Day Language:

Section 140.6(c)3I

v. The wall display mounting height multiplier is the applicable factor from TABLE 140.6-E. Mounting height is the distance from the finished floor to the bottom of the luminaire. ~~Wall display lighting with varying mounting heights shall be separately determined under Item vi.~~ The wall display mounting height multipliers shall be used to reduce the design watts of the space.

vi. The additional allowed power for wall display lighting shall be the smaller of:

- a. The product of wall display power determined in accordance with TABLE 140.6-D, times the wall display lengths determined in accordance with Item iv, ~~times the mounting height multiplier determined in accordance with Item v;~~ or
- b. The actual power used for the wall display lighting systems.

Section 140.6(c)3J

ix. For floor display lighting where the bottom of the luminaire is 12 feet or higher above the finished floor, the wattage allowed in column 4 of TABLE 140.6-D may be increased by multiplying the floor display lighting power allowance by the appropriate factor from TABLE 140.6-E

Luminaire mounting height is the distance from the finished floor to the bottom of the luminaire. ~~Wall display lighting with varying mounting heights shall be separately determined under Item x.~~ The floor display mounting height multipliers shall be used to reduce the design watts of the space.

x. The additional allowed power for floor display lighting for each applicable area shall be the smaller of:

- a. The product of allowed floor display and task lighting power determined in accordance with Section 140.6(c)3Jvii times the floor square footage determined in accordance with Section 40.6(c)3Jviii ~~times the height multiplier if appropriate in accordance with Section 140.6(c)3ix;~~ or
- b. The actual power used for the floor display lighting systems.

TABLE 140.6-E

DESIGN WATT ADJUSTMENTS FOR MOUNTING HEIGHT ABOVE FLOOR

Height in feet above finished floor and bottom of luminaire(s) Floor Display or Wall Display – Multiply by

< 12'	1.00	
12' to 16'	1.15	<u>0.87</u>
> 16'	1.30	<u>0.77</u>