CECD1-1-22

IECC: C405.1.1, C405.2.5

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2024 International Energy Conservation Code [RE Project]

Revise as follows:

C405.1.1 Lighting for dwelling units. No less than 90 percent of the permanently installed lighting serving sleeping units and dwelling units, including lighting integrated into range hoods and exhaust fans, shall be provided by lamps with an efficacy of not less than 65 lm/W or luminaires with an efficacy of not less than 45 lm/W.

Exceptions:

1. Lighting integral to ~~a kitchen~~ other appliances ~~appliance or exhaust hood~~.
2. Antimicrobial lighting used for the sole purpose of disinfecting.

C405.2.5 Specific application controls. Specific application controls shall be provided for the following:

1. The following lighting shall be controlled by an occupant sensor complying with Section C405.2.1.1 or a time-switch control complying with Section C405.2.2.1. In addition, a manual control shall be provided to control such lighting separately from the general lighting in the space:

   1.1. Luminaires for which additional lighting power is claimed in accordance with Section C405.3.2.2.1.

   1.2. Display and accent lighting, including lighting in display cases.

   1.3 Supplemental task lighting, including permanently installed under-shelf or under-cabinet lighting.

   1.4 Lighting equipment that is for sale or demonstration in lighting education.

2. *Sleeping units* shall have control devices or systems that are configured to automatically switch off all installed luminaires and switched receptacles within 20 minutes after all occupants have left the unit.

   Exceptions:

   1. Lighting and switched receptacles controlled by card key controls in buildings containing fewer than 50 sleeping units.
   2. Spaces where patient care is directly provided.

3. Lighting for nonvisual applications, such as plant growth and food warming, shall be controlled by a time switch control complying with Section C405.2.2.1 that is independent of the controls for other lighting within the room or space.
4. Task lighting for medical and dental purposes that is in addition to *general lighting* shall be provided with a *manual control*.
5. Lighting integrated into range hoods and exhaust fans shall be controlled independently of fans.

Reason: A quick search of home improvement stores like Home Dept and Lowes makes clear that range hoods and exhaust fans are commonly provided with high efficacy LED lighting. There is no reason not to make this an enforceable requirement of the code similar to other lighting sources.
There is also energy to be saved in controlling ventilation fans separately from lighting in bathrooms. The uses are not coincident. In a bathroom with a window one may choose to use the fan and not the light during the day when bathing. In the evening, one may choose to use the light and not the fan when grooming.

Ceiling fans are subject to NAECA regulation, so efficacy of the lighting kits cannot be regulated under base code. However, these can be included in the lighting efficacy requirements of L06.

Cost Impact: The code change proposal will increase the cost of construction.
This code change will result in a modest increase in the cost of construction. The LED lamps will likely cost $5-$10 more per range hood. And in some instances an additional switch will be required to control the fan separately from the light. But this increase in construction costs will be more than offset by the long-term energy savings.