

CECD1-7-22

IECC: C406.2.5.6

Proponents: Michael Jouaneh, representing IECC CE Electrical Power, Lighting, and Renewables Subcommittee
(ieccccelectrical@iccsafe.org)

2024 International Energy Conservation Code [RE Project]

Revise as follows:

C406.2.5.6 L06 Reduced lighting power. Interior lighting within ~~the whole~~ all building areas shall comply with ~~all the requirements~~ of this section. The net connected interior lighting power (LP_n) shall be 95 percent or less than the net interior lighting power allowance (LPA_n) determined in accordance with Section C405.3.2.2. ~~In R-1 and R-2 occupancies the credit is calculated for all common areas other than dwelling units and sleeping units. No less than 95 percent of the permanently installed light fixtures in dwelling units and sleeping units, excluding kitchen appliance lighting, shall be provided by high efficacy lamps with a minimum efficacy of 90 lumens per watt or high efficacy luminaires that have a minimum efficacy of 55 lumens per watt. Energy credits shall not be greater than four times the L06 base credit from Section C406.2 and shall be determined using Equation 4-25:~~

1. The connected interior lighting power (LP) determined in accordance with C405.3.1 shall be 95 percent or less than the interior lighting power allowance (LPA) determined in accordance with Section C405.3.2 using the same method used to comply with C405.3. Energy credits shall not be greater than four times the L06 base credit from Section C406.2 and shall be determined using Equation 4-25.
2. All permanently installed lighting serving *dwelling units and sleeping units*, including ceiling fan light kits and lighting integrated into range hoods and exhaust fans shall be provided by lamps with an efficacy of not less than 90 lumens per watt or by luminaires that have an efficacy of not less than 65 lumens per watt.

Exceptions:

1. Lighting integral to other appliances.
2. Antimicrobial lighting used for the sole purpose of disinfecting.

(Equation 4-25)

$$EC_{LPA} = EC_5 \times 20 \times (LPA_n - LP_n) / LPA_n$$

EC_{LPA} = additional energy credit for lighting power reduction

LP_n = ~~net~~ net connected interior lighting power calculated in accordance with Section C405.3.1, watts, ~~excluding any additional lighting power allowed in Section C405.3.2.2.1~~

LPA_n = interior lighting power allowance calculated in accordance with the requirements of Section C405.3.2.2, watts, ~~less any additional interior lighting power allowed in Section C405.3.2.2.1~~

EC₅ = L06 base credit from Section C406.2

Reason: This section required some editorial fixes to align with IECC 2024 PC#1. Additionally, some minor changes in stringency are proposed. The proponent of CEPI-193 (DoE) was involved in development of these proposed changes.

- The reference to the section that defines how lighting power is calculated was corrected (C405.3.2)
- The explanation that dwelling units and sleeping are excluded from the calculation is no longer needed due to the addition of C405.3.1 exception #1 in PC Draft #1
- The requirement that no less than 95% of lighting comply, was removed. This is appropriate for an additional efficiency option and simplifies the requirement significantly.
- The language regarding kitchen appliance/exhaust fans was revised to match a draft PLR SC proposal that makes this change.
- Wording was revised to match C405.1.1 in PC draft#1
- Luminaire efficacy threshold was increased to 65 LPW. This is appropriate for an additional efficiency option.
- The exclusion of additional lighting power from the calculation of credits was removed. This will align with the way that COMCheck calculates the percentage reduction in power below code allowed and simplifies the calculation. This change may slightly increase stringency for some projects but does not reduce stringency for any project.

Cost Impact: The code change proposal will neither increase nor decrease the cost of construction.
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