

Quality Specification for Linear LED Retrofit Solutions

Million LED Challenge



Linear fluorescent lamps can be replaced with LED alternatives, but care must be taken to ensure LED replacements provide similar or improved performance. LED retrofits should provide better efficacy and deliver equivalent light distribution. By making an informed switch to LEDs, consumers can expect lower operating costs and improved lighting quality as compared to traditional fluorescent lamps.

CLTC recommends the following criteria to help consumers successfully transition to LED retrofit solutions:

Linear LED Lamps (TLEDs)

- Electrical architecture, UL Type C
- Light output, bare single lamp light output of 2,250 lumens for 4' lamps and 1,125 lumens for 2' lamps
- System efficacy, at least 120 lumens per Watt (system includes lamp and driver)
- Dimming, dimming level to at least 10 percent of maximum power
- Controllability, be able to pair with lighting control devices (**control-ready**)
- Flicker, produces no greater than 30 percent flicker at 200 Hz or below when paired with control devices
- Color, R_f value greater than or equal to 90 measured by IES TM-30-18
- Distribution, beam angle of at least 220 degrees with no less than 20 percent of total flux emitted in the 100–180 degree zone
- Driver physical dimensions, provide physical dimensions of driver to allow consumers to compare to space in fixture before purchasing.
- All else, meet **DLC Standard minimum criteria**

LED Retrofit Kits & Fixtures

- System efficacy, at least 120 lumens per Watt (system includes light source, driver and lens)
- Dimming, dimming level to at least 10 percent of maximum power
- Controllability, be able to pair with lighting control devices (**control-ready**)
- Flicker, produces no greater than 30 percent flicker at 200 Hz or below when paired with control devices
- Color, R_f value greater than or equal to 90 measured by IES TM-30-18
- Distribution, provide photometric distribution file in IES LM-63 format
- All else, meet **DLC Standard minimum criteria**

What is control-ready?

Control-ready LED retrofit solutions are able to be paired with lighting controls that will allow for control strategies including personal tuning, occupancy sensing, daylight harvesting and automated demand response, where appropriate.

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