



## DEPARTMENT OF THE NAVY

NAVAL FACILITIES ENGINEERING COMMAND  
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### T-LED Replacement of Fluorescent Bulbs

Effective immediately, linear LED lamps (T-LED) may be used to replace fluorescent lamps when the resulting system does not create a safety hazard or degrade lighting performance in the space. There are many factors that contribute to lighting performance but the primary criterion is the foot-candle level (amount of light) at the work plane. The amount of light required in a space is based on occupancy classification and the tasks being performed. Lighting requirements can be found in UFC 3-530-01 *Interior Exterior Lighting Systems and Controls*. This supersedes the UFC prohibition on TLED lamp replacements for the Navy and USMC until the UFC is revised.

To mitigate the safety hazard, the replacement must comply with the following:

- T-LED lamps must be Underwriters Laboratories (UL) listed.
- Mechanical or electrical changes to the fixture that would void the UL rating are not permitted. Luminaire conversion retrofit kits that are UL listed under the product category Luminaire Conversions, Retrofit (IEUQ) are acceptable.
- Replacements or retrofit kits that cause harmonics on the electrical system are not permitted. Harmonics can overload wiring or effect electrical equipment which presents a life safety and/or operational risk. Provide T-LED lamps with a total current harmonic distortion (THD) less than or equal to 20% and a Power Factor (PF) greater than or equal to 0.9.

To prevent degrading the lighting performance, the replacement T-LED bulb must:

- Be equivalent to the light levels of the existing system, or
- Meet the lighting levels required in UFC 3-530-01 that define lighting levels in the space at the work plane.
- Be compatible with the existing ballast.
- If the existing light fixture is on a dimmer or dimming system, either:
  - The T-LED lamp be compatible with the existing lighting control system, or
  - Provide a dimmer or dimming system that is compatible with the T-LED to ensure the lamps will not flicker or have drop outs.

  
By Direction