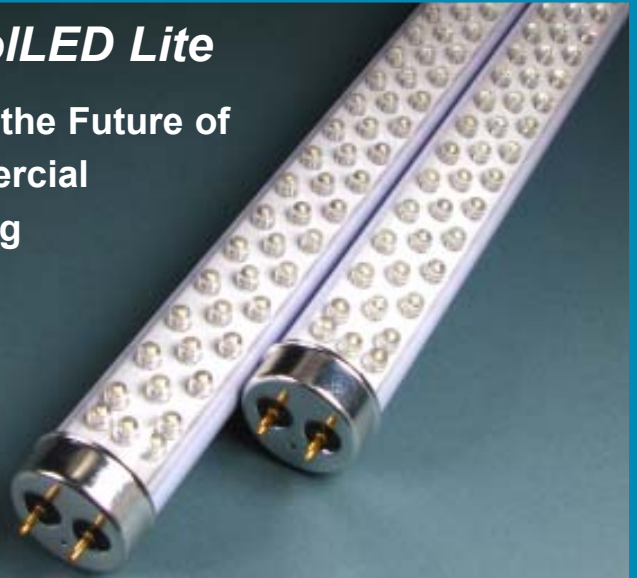


**Energy Saving,
Shatterproof,
Dimmable,
and Nontoxic**

**controlLED
LITE**

controlLED Lite

**LEDs...the Future of
Commercial
Lighting**



1. Environmentally Positive

controlLED Lites are a direct replacement for fluorescent lamps. They use no mercury or lead, playing a positive role in protecting the environment. Fluorescent lamps, by contrast, are the largest source of mercury contamination in municipal landfills. Mercury is the most toxic pollutant after radioactive substances.

2. Saves Money

Over 50% of the energy consumption for lighting is from commercial buildings. Since lighting represents 26% of the energy consumed in a building (over 10% of all U. S. carbon dioxide emissions) it has always been a target for reduction. The power consumption of the *controlLED Lite* is 60% less than conventional fluorescent. This is mainly dependent on the efficiency of the LEDs used. Current LEDs have an efficacy of **68.18 Lumens Per Watt (LPW)** at 77 F (25 C). At lower temperature (0 F/-18 C) the inherent efficacy of the LED tube is greater but the fluorescent tube decreases from 80 to 8 LPW.

3. Intelligent Control (allows dimming and other remote features)

The dimming model of *controlLED Lite* (an ACT patent pending product) uses an electronic LED Driver to mount **in place of the ballasts** (same footprint and fits under the ballast cover). A separate Signal Conditioner receives control signals and features like **local or remote dimming, dimming adjusted by ambient daylight** or **automatic ON/OFF from an occupancy sensor**, can be enjoyed. Other control methods are available depending on your specific needs.

4. Longer Lifetime

LEDs typically have a minimum life time of 50,000 hours or more while older fluorescent lamps typically last approximately. 10,000-20,000 hours. This equates to a two and one half to five times greater life for the *controlLED Lite*. This makes the *controlLED Lite* perfect for large office spaces that are difficult to re-lamp without disturbing personnel, and highly positioned light fixtures in factories or warehouses that are difficult to access. *controlLED Lites* have an even longer life when dimmed or when used at low ambient temperatures.

5. Light Not Heat

Conventional fluorescent lamps and their ballasts generate heat which places a burden on the air conditioning system of a building. *controlLED Lites* convert almost all of the electrical energy into light which saves money when trying to cool a building. Studies suggest that the additional savings from reduced air conditioning demand, especially in **warmer** climates, could generate as much as an additional 50% of the savings achieved in operating *controlLED Lites* versus fluorescent lamps.

6. Quiet

The *controlLED Lite* **does not require the use of a ballast** and therefore makes no humming or buzzing noises. It is an excellent choice for maintaining quiet environments in libraries and offices.

7. No Flickering

Conventional fluorescent lamps utilize alternating current to operate. The electrical discharge through the low pressure gas/mercury mixture has a slightly perceptible flicker equivalent to twice the alternating current cycles (120 cycles per second). This is why conventional fluorescent lamps are not advisable for a workshop, as they create a stroboscopic effect making rotating machinery look as if it stopped.

Some people find this flickering can cause migraine headaches. *controlLED Lites*, however, change AC directly into DC and do not flicker, therefore protect the eyes along with providing safety.

8. Does Not Attract Insects

Unlike fluorescent lamps, *controlLED Lites* do not emit ultraviolet rays which attract mosquitoes and other insects. *controlLED Lites* therefore, make a perfect outdoor light source.

9. Better Light Quality

Fluorescent lamps are most often used where light quality (color temperature) is not important, such as factories, offices and outdoors. When better light quality is needed the fluorescent lamps are often supplemented with halogen or incandescent spot lights. LEDs are available in almost any light quality. The replacement of fluorescent lamps with *controlLED Lites* of the desired color temperature can therefore make the extra halogen and incandescent spot lights unnecessary. It is possible to combine LEDs with different colors in one *controlLED Lite*, achieving an exact color temperature. Using LED light sources, rather than fluorescent lamps, also minimizes the harmful effects of ultraviolet light on printed documents (in museums) and clothing (in retail stores).

10. Operates in a Broad Voltage Range: 109V to 304V

LED lamps will stay bright despite a broad voltage range. The conventional fluorescent lamp illuminates its phosphor coating by passing high voltage (with the help of a ballast) through the mercury/gas vapor inside the tube, and will not work without proper voltage present.

11. No ignition Required

Since the *controlLED Lite* does not need to heat electrodes before starting, like traditional fluorescent lamps, it does not need the use of a starter or ballast. *controlLED Lites* have an immediate turn-on, unlike the well known flickering start of traditional fluorescent lamps. If using dimmable *controlLED Lites*, an external LED Driver and Signal Conditioner is installed in place of the ballast (same size).

12. Vibration Resistant and Safe

controlLED Lites use an acrylic housing unlike the glass of fluorescent lamps. In handling and in operation, users can feel secure about the safety built into these lamps.

13. Less Waste

At the present time over 500 million fluorescent lamps are discarded annually in the U.S.

The *controlLED Lite* is constructed like other electronic devices; therefore the tube and LED core could be disassembled and recycled like other electronics. Since the *controlLED Lite* has a lifetime at least five (5) times longer than most fluorescent tubes, they generate 1/5 of the waste in replacement tubes.

14. Environmentally Conscious

Replacing fluorescent lamps with LED lights may qualify for LEED points. Contact your engineer or LEED consultant for more information.



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