

T8 LED Lamp Retrofit Considerations

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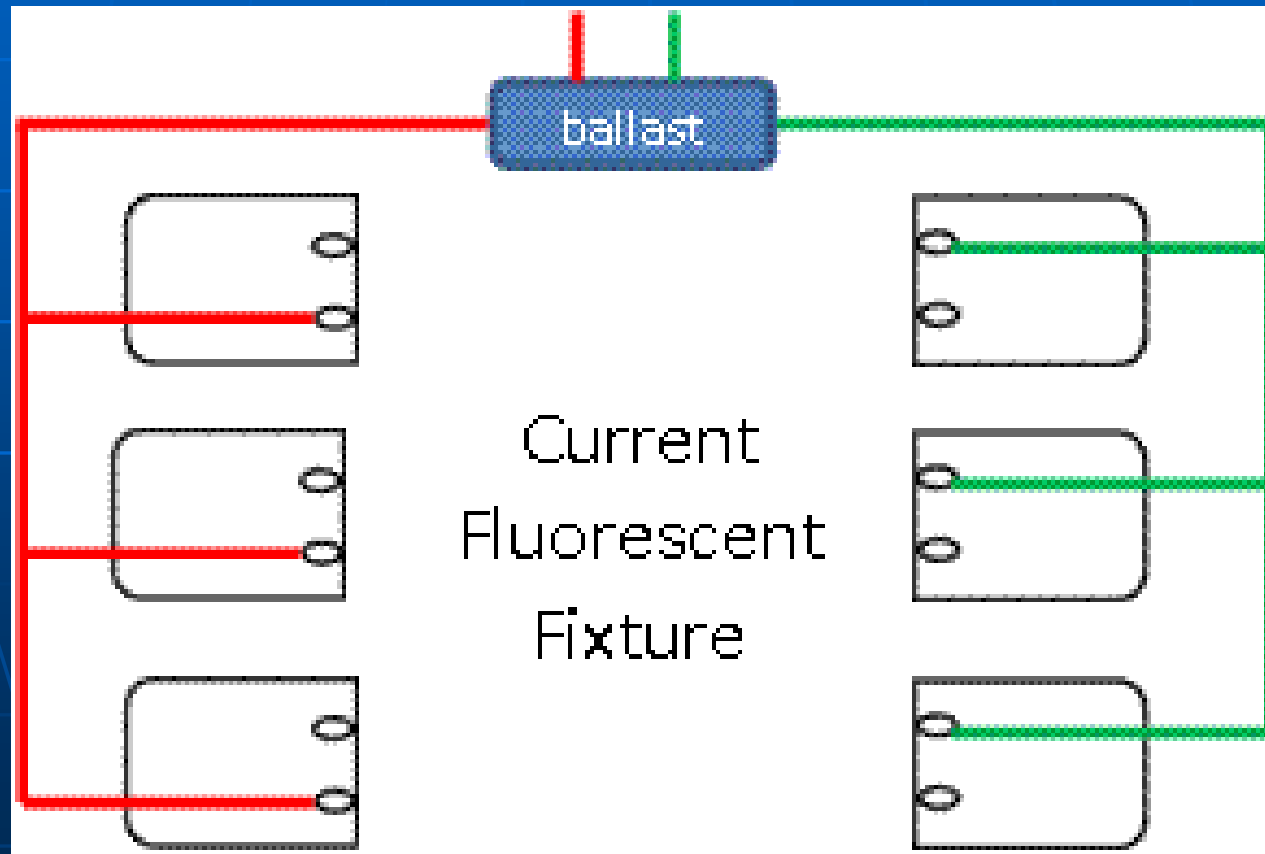
aledra LED Lighting

Outlines

- Types of T8 LED Linear Tubes
- LED Tube Safety Standard
- *UL classified vs. UL listed*
- ENERGY STAR or not
- 240V vs. 277V LED tubes
- Key selection criteria

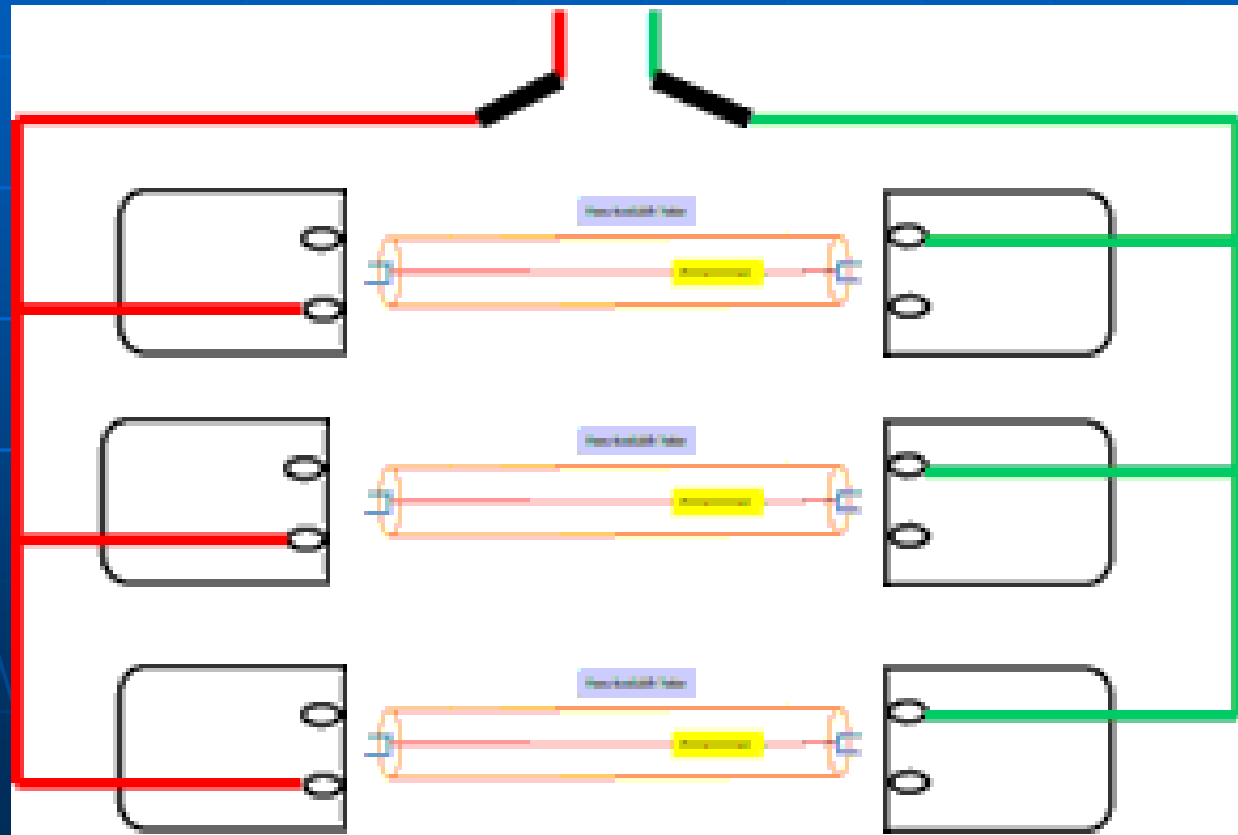
Fixture Wiring

- Existing fluorescent lamp wiring



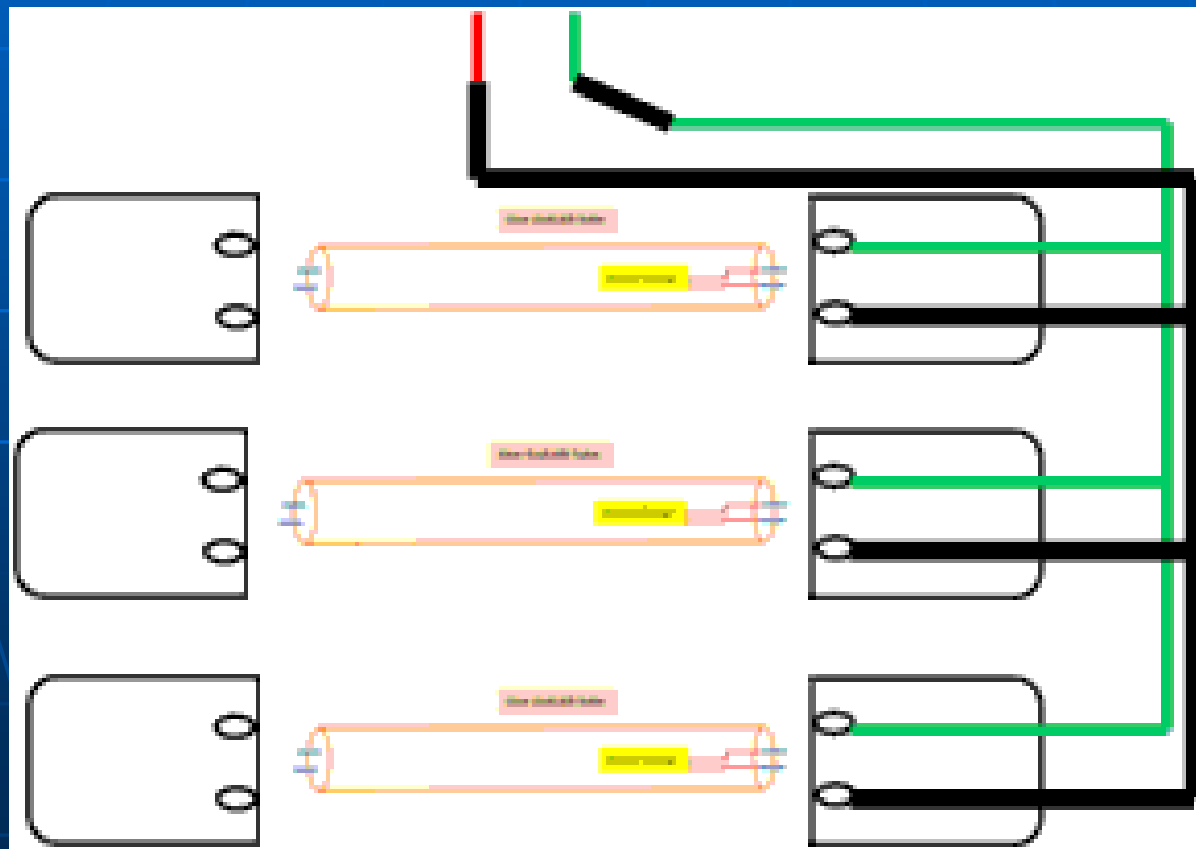
Double-Ended LED Tube

- Rewiring of double-ended LED tube



Single-Ended LET Tube

- Re-wiring of single-ended LED tube



LED Tube Types

- Single-ended tubes won't work with shunted tombstone
- Double-ended tubes work with either shunted or non-shunted tombstone
- Double-ended tubes are easier to install
- Carrying both types of LED tubes for shunted and non-shunted tombstone will cost more money
- The cost (or saving) of retrofit installation adds up quickly, depending on which LED tube you choose.

LED Tube Safety Standards

- Underwriter Laboratory (UL) follows these ANSI standards for certifying LED tube safety:
 - ANSI 1598B
 - 1598C (upcoming)
- ETL

UL Classified vs. UL Listed

- *UL listed* lamps: for installation that require no wiring modification of the existing fixture.
- *UL classified* lamps: may require wiring modification using a qualified electrician.
- For retrofit project, select UL classified LED tube.
- For new fixture designed specifically for LED tubes, it is okay to select UL listed LED tube.
- Are there UL classified double-ended LED tubes available?

Other Considerations

- ENERGY STAR standards for LED tubes do not exist. If someone claim its LED tubes are ENERGY STAR approved, it is simply not true.
- In US, 277V rated LED tubes could be used for 110V or 277V applications.
- Pay attention to voltage requirements for your application: 110V, 277V, or 347V.

Other Considerations

- Could I leave the ballast intact and just replace the fluorescent tube with the LED tube directly? Won't that save more installation time?
- What if the manufacturer of the tombstone of the fixture won't warranty its tombstone with LED tube retrofit?

Key Selection Criteria for Retrofit

- Choose UL classified LED tubes
- Double-ended LED tubes will save you both time and money during installation
- Remember to ask for 110V/270V rated LED tube
- CRI > 80
- LPW > 90