

Dual-Mode LED Tubes Gain Market Traction

Aleddra dual-mode DBA+ tube is fail-safe, shock-free, and fool-proof

DesignLights Consortium recently added the *dual-mode* Type D LED tube to its V3.0 technical requirements for rebate qualification. These tubes can operate with both Instant Start electronic ballasts *and* on direct AC line voltage. The three main benefits for the dual-mode tube are:

1. The end user can “plug and play” in linear fixtures with Instant Start ballast, and enjoy immediate energy savings with improved light quality without hiring an electrician.
2. Dual-mode tubes can run on AC line voltage once the ballast fails. The end user now has the flexibility to have their electrician remove the ballast and wire the sockets directly to AC line voltage.
3. Removing the ballast not only reduces energy usage (the ballast draws 2 watts/lamp) and future maintenance costs, but also eliminates the arc flash and burn hazards inherent in ballast-dependent systems. (<https://youtu.be/LSX0L6s4oWE>).

Because of these benefits, Type D LED tubes are gaining market share over Type A (ballast-compatible only) and Type B (line voltage only) tubes. Years ago, there were many *double-ended* Type B tubes on the market. Unfortunately, maintenance crew members installing these Type B tubes, without first turning off the power, would receive nasty electric shocks by inserting one end in the socket and then energizing the system by touching the other end with their hands. UL issued safety requirement 1598C to address this concern and mandated anti-shock protection for all qualified double-end LED tubes. As a result, most double-end Type B tubes have disappeared from the market. Manufacturers have either gone back to single-end tubes or have bypassed UL1598C by acquiring ETL certification, which doesn't require anti-shock protection.

Most Type D LED tubes on the market today have UL certification for Type A operation, but do not have anti-shock protection when operating on line voltage and, as such, are not UL qualified for Type B operation. It is difficult to ascertain whether or not a dual-mode tube has a valid Type B UL certificate by simply reading the manufacturer's label or accompanying literature. An easy test to determine if a tube is Type B certified is to insert one end into a double-end wired fixture on line voltage. If the other end of the tube becomes energized, a shock hazard exists and the tube, thereby, would fail UL1598C. As mentioned above, ETL certified Type D tubes may not have appropriate anti-shock protection and pose a serious safety threat.

Some manufacturers' dual-mode LED tubes require the fixture to be rewired to a single-ended configuration, thus eliminating the shock hazard from their tubes. However, if someone accidentally installs a fluorescent T8 into this single-end wired fixture, the tube will short out at 110V and very likely explode at 277V. Therefore, a single-end wired fixture is neither fail-safe nor fool-proof.

The good news is that there is a safe, high quality dual-mode Type D tube on the market. Aleddra's SureFit DBA+ tube is UL certified for both Type A and B operations, and uses a patented safety switch on both endcaps to provide anti-shock protection per UL requirement 1598C. The DBA+ tube also offers an exclusive field-replaceable driver that can be quickly and easily replaced when the driver fails. This PLUS feature provides an additional 50,000 hours of performance and minimizes impact to your local landfill. For tutorial on DLC tube classification, see: <https://youtu.be/eGYJDa-efeU>.

For more information on SureFit DBA+ tube, please contact info@aleddra.com or 425-430-4555.