

# INSTALLING LED Lighting

## Top Tips and Things to Avoid

TIPS	THINGS TO AVOID
<b>ANY RETROFIT</b>	
<p><b>(1) Always de-energize the circuit first.</b> Turn the power to the luminaire OFF, preferably at the circuit breaker.</p> <p><b>(2) Always verify you have the appropriate color temperature (CCT) for the space and occupants.</b> Too white or too yellow may spoil the mood or hurt productivity.</p> <p><b>(3) Always research dimming compatibility of the light source and the control before installing.</b> Not all LEDs are dimmable and not all dimmable LEDs are controlled the same way.</p> <p><b>(4) Always check the dimensions for proper fit before purchasing.</b> The lamps or luminaires may be too wide, too long, too tall, or have the wrong sockets.</p> <p><b>(5) For a ballast driven installation, always verify ballast compatibility first.</b> This applies to Type A (ballast-driven or plug-and-play lamps).</p> <p><b>(6) For a ballast bypass installation, always verify the pinout, wiring method and type of lamp holder required.</b> Mis-wiring can damage the product and reworking takes time and costs money.</p> <p><b>(7) Always verify the correct mains voltage.</b></p> <p><b>(8) For a ballast driven installation, always check the age of the ballast if there is a failure.</b> Chances are the ballast may have reached the end of its life, and sometimes the LED exposes it.</p> <p><b>(9) Always account for emergency lighting luminaires and ensure those luminaires have appropriate battery-powered drivers.</b></p>	<p><b>(1) Never hot swap an LED lamp</b> Hot swapping is removing or installing a lamp with the luminaire powered ON</p> <p><b>(2) Avoid extreme CCT unless specified</b> Under 2500K will be very yellow and over 6500K will look blue.</p> <p><b>(3) Never test dimming after all the lamps are installed</b> Reworking takes time and costs money, and there is a chance you may damage the lamps or controller.</p> <p><b>(4) Never force a lamp or luminaire that does not fit.</b> Torqueing, bending, and pushing may damage the product.</p> <p><b>(5) For a ballast driven installation, never test for ballast compatibility after all lamps have been installed.</b> This can lead to lamp and ballast failures, and the rework takes time and costs money.</p> <p><b>(6) For a ballast bypass installation, never test the wiring after all lamps are installed.</b> Test along the way to avoid a major rework after the retrofit is complete.</p> <p><b>(7) Never install lamps or luminaires that do not support the existing main's voltage.</b></p> <p><b>(8) For a ballast driven installation, never assume all existing ballasts are the same make and model.</b></p> <p><b>(9) Never forget to include emergency lighting in the retrofit plan – whether in a luminaire or in dedicated hardware that meets code.</b></p> <div data-bbox="954 1690 1382 1822" style="background-color: #0070C0; color: white; padding: 10px; margin-top: 20px;"> <p><b>Contributing Writer:</b> Jon Lowder Field Applications Director</p> </div>



TIPS	THINGS TO AVOID
<b>RETROFITTING WITH A REPLACEMENT LED LUMINAIRE</b>	
<ul style="list-style-type: none"> <li>Always ensure the new luminaire includes the proper mounting hardware for your application.</li> </ul>	<ul style="list-style-type: none"> <li>Never install a luminaire without utilizing the proper and specified mounting methods.</li> </ul>
<b>RETROFITTING WITH LED KITS</b>	
<ul style="list-style-type: none"> <li>Always check that the existing luminaire mechanically and electronically supports the LED kit.</li> <li>Always cap off 0-10v dimming leads on the LED driver if dimming is not used.</li> </ul>	<ul style="list-style-type: none"> <li>Never purchase an LED kit without first measuring mechanical fit and verifying connectivity.</li> <li>Never install LED kits without verifying the functionality first.</li> </ul>
<b>RETROFITTING WITH LED TUBES</b>	
<ul style="list-style-type: none"> <li>Always verify if the tube requires shunted or unshunted Tombstones.</li> <li>Always verify if the LED replacement lamp is single-ended or double-ended.</li> </ul>	<ul style="list-style-type: none"> <li>Never install an unshunted LED lamp into a shunted lamp holder and vice versa.</li> <li>Never install a single-ended LED replacement lamp in a luminaire wired for double-ended lamps, and vice versa.</li> </ul>
<b>RETROFITTING WITH LED MODULES/LIGHT ENGINES</b>	
<ul style="list-style-type: none"> <li>Always verify the LED engine and LED driver fit and location.</li> <li>Always verify that the luminaire has provisions for both the LED driver wiring and the LED light engine wiring.</li> </ul>	<ul style="list-style-type: none"> <li>Never fasten the LED engine to the luminaire frame until the light engine lays completely flat against the frame sheet metal enclosure.</li> <li>Never install both the LED driver wiring and the LED light engine wiring without creating proper pass-through holes in the enclosure.</li> </ul>

**For specific questions about LED technology:**

- Contact your Field Application Engineer
- Send your questions to Technical Engineering Services at [tes@unvlt.com](mailto:tes@unvlt.com)
- Contact your local Universal Lighting representative
- Email [marketing@unvlt.com](mailto:marketing@unvlt.com)