



Remote Mounting LED Drivers: Considerations

The technical issues limiting remote mounting distances for Drivers are not the same as they are for fluorescent or HID fixtures. Unfortunately, the answer is not as simple either. With LED fixtures, the question becomes **a system question**, not simply a component question. Therefore one cannot answer this question with a simple distance spec.

Constant Current Applications

For constant-current Drivers, the maximum remote mounting distance is a function of the total voltage-drop across the output of the LED Driver. The total voltage-drop is the sum of the voltage drop across the LED light-engine plus the voltage drop across the conductors connecting the Driver to the LEDs. As additional loads are added (i.e., longer leadwires), the driver will increase its output voltage to keep the current constant. Therefore, the limit of a constant-current Driver is a load whose total voltage drop ($V_{LED} + V_{CONDUCTORS}$) does not exceed the driver's rated maximum voltage. As the conductor voltage rises, overall power output also increases. Likewise, the load power consumption ($P_{LED} + P_{CONDUCTORS}$) must not exceed the power output limit of the driver.

Constant Voltage Applications

For constant-voltage drivers, the issues are similar. Here, the voltage output of the Driver stays constant, so as one adds longer conductors and the voltage across those conductors increases, the voltage across the LEDs will drop. The limit here is defined by the minimum voltage drop acceptable across the LED.

Typically, remote mounting is not a problem as long as you use a large gauge wire (e.g., 14AWG).

Remember: There are two wires running from the driver to the LEDs. There is a voltage drop across both.

Visit the following links for useful references regarding wire resistance:

http://en.wikipedia.org/wiki/American_wire_gauge
<http://www.stealth316.com/2-wire-resistance.htm>