

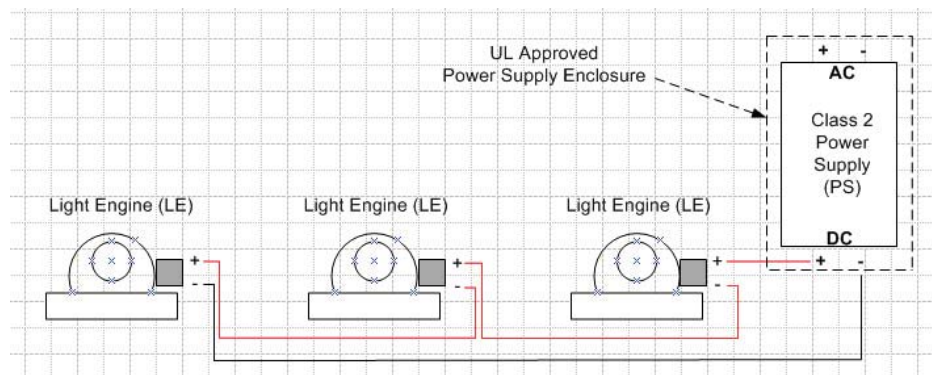
USHIO

LED LIGHTING

INSTALLATION DLS LIGHT ENGINES

1. The maximum drive current for the DLS light engine (white) is 1500mA. Typically they are driven at 1000mA. A Class 2 constant current driver is required. Using any other type of power supply may damage the light engine and void the warranty.
2. The DLS light engine is provided with one lead connected to the **negative** terminal. Facing the LE, the top terminal is **positive** and the bottom is **negative**. In order to connect DLS light engines to one another to form a series circuit, take the lead connected to the 1st light engine and insert it into the open **positive** terminal of the 2nd light engine which will be at the top. Next, insert the 2nd Light Engine's **negative** lead into the next Light Engine's **positive** terminal. Continue this procedure for all the Light Engines in the series circuit. For the **last light engine**, connect the **negative** wire to the LED driver's **negative** constant current output wire. The **1st light engine** in the circuit will have its positive terminal open. Insert a wire into that terminal and run it back to the driver's **positive** constant current output wire. Parallel connection of light engines is not advised without discussion with technical support.

Power Supply Connection to Light Engines — Series Wiring Diagram



3. The LED drivers are designed to maintain a constant current by varying the output voltage. For example, the USHIO power supply item #1000738 driver has an output voltage between 12-24VDC. Since the forward bias voltage of each LED is typically ~3.3VDC, connecting less than 4 light engines to this driver will result in an under-voltage condition, and the light engines will blink on and off. Similarly, if too many light engines (more than 7) are connected to the driver, it will either fail to operate or drop its constant current output to compensate making the light engine dimmer. Please make note of this when designing circuits.

4. The LED's in the light engine cannot tolerate high reverse voltages. Reversing the polarity of the outputs, will more than likely damage the unit and void the warranty. When powering up a circuit for the first time to test, with power off to the driver, make sure all leads are connected and the circuit is completed. Only then, connect power to the driver. Warning: connecting light engines to an energized power supply can damage the LED and void the warranty.

5. Mounting the DLS light engine into any application is easy utilizing the 3 mounting holes you will see in the heat sink. Mechanical fastening is preferred over double-sided tape, but in some applications this would be sufficient.

**DLS LIGHT ENGINE
TERMINAL WIRING PHOTO DIAGRAM**

