

## Introduction

Provided as a pair for your left and right wingtips, these strobes are easy to use and install. We use the latest high power LEDs to provide exceptionally bright color position and flash/strobe functions.

Using state of the art LED driver circuitry, we here at Ztron Labs have managed to provide the highest possible output in the smallest package. With the latest design techniques we can provide all the required functions within an elegantly simple unit.

Your choice of strobe pattern and flash rates is just a button press away.

*For 12V Electrical systems only.*

### Customization

Ztron Labs' Position Lights-Strobes include a button on the underside that allows the customer to change both the flash pattern and flash speed. A simple push will increment the speed, while a lengthy hold of a second or longer will increment the pattern.

Upon pressing the button, a unit will reduce to low intensity (if it has not done so already). This will keep your eyes from being stressed by the high intensity of the lights. After 30 seconds from the last button press a unit will return to maximum intensity.

The available settings are as follows:

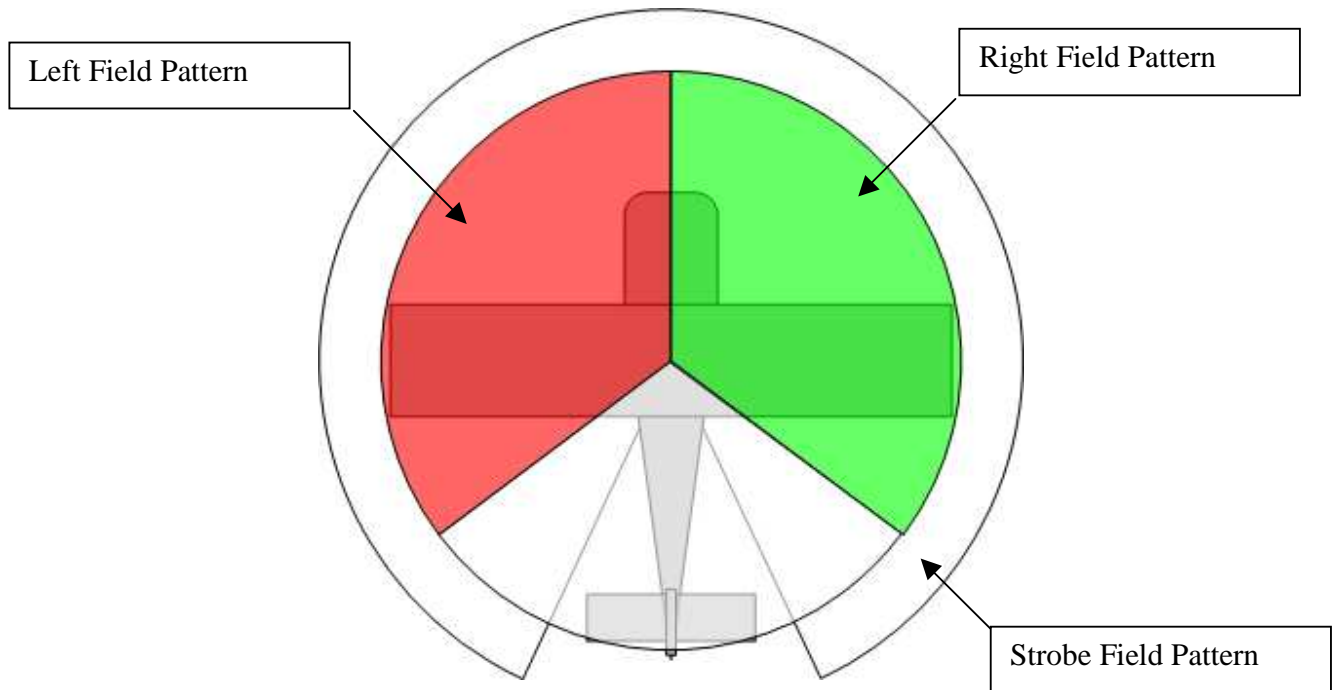
Patterns	Speeds
1 Flash	Once every 0.60 s (100 / min)
2 Flashes ( <i>default</i> )	Once every 0.75 s (80 / min)
3 Flashes	Once every 1.00 s (60 / min) ( <i>default</i> )
	Once every 1.50 s (40 / min)

For example, you can customize your strobe to let out a 3 pulse flash 40 times a minute, or even 1 flash 100 times a minute.

The last setting you selected will be used every time the unit powers up, retained in the units non-volatile memory, until you choose to change the settings again.

If two or more units are wired with their sync signals in common, they will flash at the exact same interval. However, the pattern will remain as you last selected. This allows a tail-light (ZL-PSTL) to have a single flash per interval and the wing-tips to use three, all while repeating on the same beat.

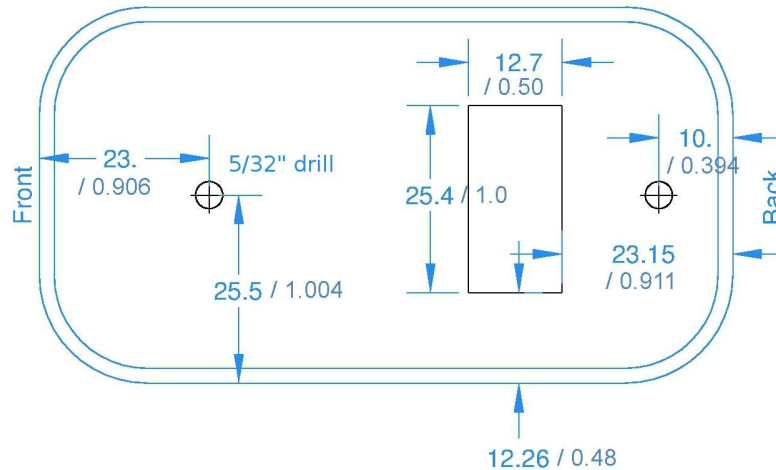
### Field Pattern



The above diagram shows the radial pattern emitted by a pair of properly mounted wingtip lights. The white strobes are visible through an extra 40 degrees of arc.

### Installation

There are no fancy installation extras required, just two 5/32" holes for mounting and a small 1"x0.5" cutout for the power connectors. The connectors themselves are standard 1/4" spades with holes, allowing you to either solder wires on directly, tie wires through, or use female-terminated connectors.

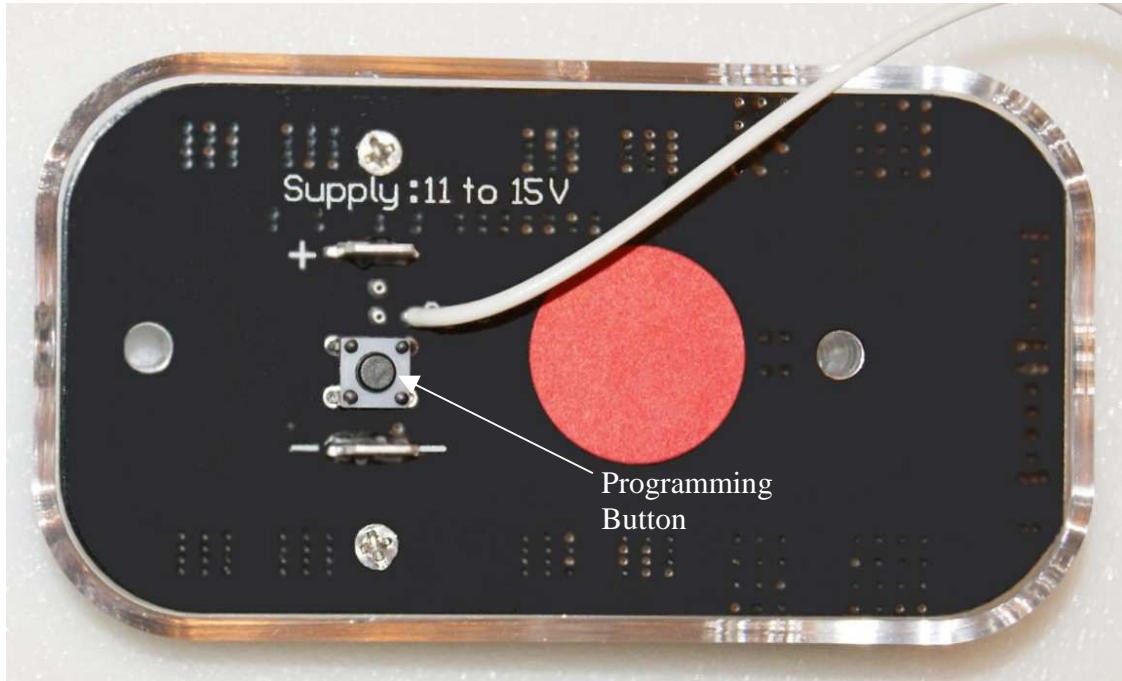


This image is not to scale and is meant for reference only. Please download from our website (cutout.pdf) for a printable version. *Units are in Metric / English!*

Each unit is bolted to the aircraft via two (2) 6-32 thread nuts and bolts, included. Nut plates should be installed at the wingtips (not supplied). It is also suggested that silicone caulking be used to seal around the bottom of each unit to ensure it is secure and airtight. Run a bead along the inside perimeter of the unit, just before you are ready to attach it to the airframe for final assembly. GE Silicone II (GE 284 3TG) is recommended (it is metal safe and mildew resistant). Loctite 5045 is also a choice but it is substantially more expensive.

The power to the unit is connected via the two 1/4" spade terminals. It is recommended that the user use 18 AWG color code wiring up to the female spade. This gauge of wire has approximately 0.0064 Ohms per foot. We expect that 20 feet or less, per power-conductor will be used by the builder. This gives  $20 \times 2 \times 0.0064 = 0.256$  Ohms of resistance drop for the combined supply and return legs of wiring. At 1.5 Amps peak this results in a maximum 0.384 Volt drop in the circuit during the brief strobe flashing. We consider a 0.5 Volt drop or less to be best practice for these strobes.

If possible use Red and Black color-coded wires for the power. The sync wire uses extremely low current and standard 22 AWG wire is suitable. If non color-coded wire is used, verify the power line before connection to strobes and color this wire Red with a non-erasable marker. ***Reversing the supply connections will result in harm to the units. Also do not connect the Sync wire to the positive supply line.***



### ZL-PSLR-12/PSRG-12 Back side

There are two male 1/4 " spade connection terminals on the back side. These are the power connections.

The white wire is the Sync line. Please ensure that the two wires between the lights are connected to each other and not hanging loose. If you have a ZL-PSTL in your system as well, please make sure all three sync lines are connected.

The Sync line can also be used to switch the Strobes function off while in flight. In order to do this, first please make sure all Sync wires connect to one another, then connect the Sync line to a switch that switches to ground. ***Do not switch the Sync line to any power source, as this may damage the units.***

### Specifications

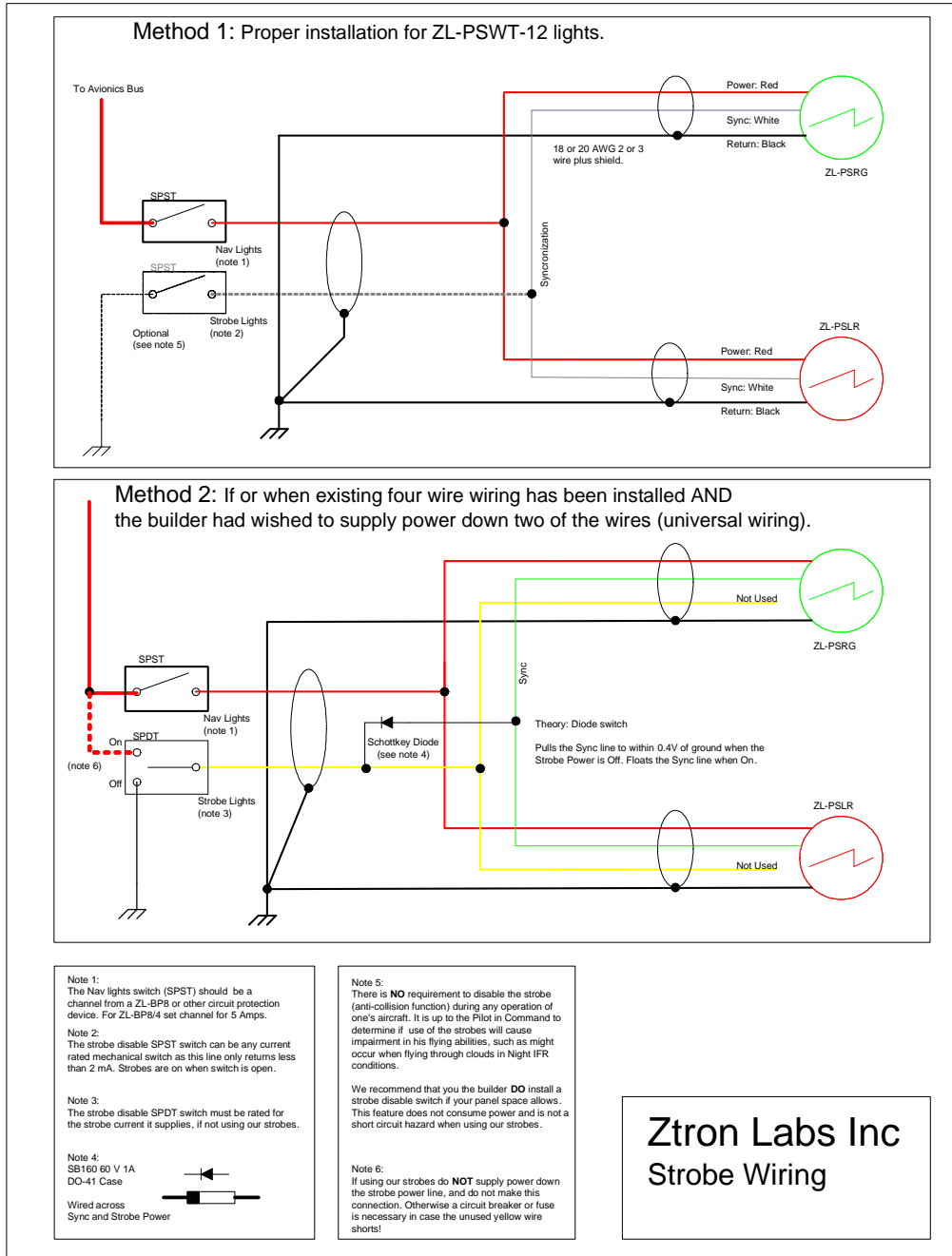
Dimensions	3.7"x 2"x 0.8"
Weight	1.75oz (50 grams)
Input Voltage	11-15 V DC <sub>1</sub>
Current Draw	400mA average, 1.5A peak
Power	5.45 Watts average
Light source(s)	6 High-power White LEDs, 160° field pattern 3 Red or 3 Green LEDs, 120° field pattern
Output	1200 lumens peak <sub>1,2</sub> >400 candles, White strobes >100 candles, Green    >40 candles, Red

#### Per unit

- Notes: 1      Units will function below 11 V (as low as 8V), with reduced output.  
2      Light output will decrease rapidly if the supply is above 15V.

*These newer ZL-PSWT-12 systems utilize a DC linear regulation system, eliminating the source of any possible RF noise. They are also substantially more vibration resistant. Though the RF noise radiated from our older systems was very low, it was possible to break squelch from their RF noise if shielding was sub-standard or if improper grounding was employed. As we began our second round of production we decided it was in everyone's best interest to go with this newer design. The downside is that these are only available for 12 V electrical systems!*

### Wiring Diagram



Three conductor plus shield TEFZEL wire 18 AWG is recommended. Power and Return current flowing in inner conductors. Shields tied to solid electrical ground at electrical distribution panel.